АТЛАС СПЕКТРОВ
ГАММА-ИЗЛУЧЕНИЯ ОТ НЕУПРУГОГО РАССЕЯНИЯ БЫСТРЫХ НЕЙТРОНОВ РЕАКТОРА

МОСКВА АТОМИЗДАТ 1978

ATLAS
OF GAMMA-RAY SPECTRA FROM THE INELASTIC SCATTERING OF REACTOR FAST NEUTRONS

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Атлас спектров гамма-излучения от неупругого рассеяния быстрых нейтронов реактора. М., Атомиздат, 1978, 328 с. Авт.: Демидов А. М., Говор Л. И., Черепанцев Ю. К., Ахмед М. Р., аль-Наджар С., аль-Амили М. А., аль-Ассафи Н., Раммо Н.

Представлены результаты измерений спектров γ-квантов от неупругого рассеяния быстрых нейтронов реактора для всех элементов таблицы Менделеева, исключая нестабильные элементы и благородные газы. Дополнительно даны результаты, полученные с разделенными изотопами ^{92}Mo, $^{104,105,106,108,110}Pd$, $^{110,112,114,116}Cd$, $^{116,118,120,122,124}Sn$, $^{124,126,128,130}Te$, $^{144,148,150,152}Sm$, $^{162,164}Dy$ и $^{182,184,186}W$. Приведены спектры γ-квантов, таблицы энергий и интенсивностей γ-переходов, схемы высвечивания уровней и их заселяемости непосредственно в процессе реакции (за исключением заселяемости каскадными γ-переходами с вышележащих уровней). По измерениям спектров γ-квантов смесей элементов для всех γ-переходов установлены значения интенсивности относительно интенсивности γ-линии 847 кэВ в железе.

Представленные результаты измерений спектров γ-квантов для большинства элементов публикуются впервые.

Атлас является совместной работой советской и иракской групп. Обозначения в таблицах и на спектрах γ-излучения даны только на английском языке. Предисловие написано на русском и английском языках.

Предназначен для научных и инженерно-технических работников, специализирующихся в области ядерной и нейтронной физики, физики ядерных реакторов, а также в смежных с ними областях.

Рис. 104. Табл. 142. Список литературы 408 наименований.

Atlas of gamma-ray spectra from inelastic scattering of reactor fast neutrons. Mosco w Atomizdat, 1978, 328 p. Auth.: Demidov A. M., Govor L. I., Cherepantsev Yu. K., Ahmed M. R., Al-Najjar S., Al-Amili M. A., Al-Assafi N., Rammo N.

The measurement results of γ-ray spectra from inelastic scattering of reactor fast neutrons are given for all elements except for nonstable elements and noble gases. Additionally the results with the separated isotopes ^{92}Mo, $^{104,105,106,108,110}Pd$, $^{110,112,114,116}Cd$, $^{116,118,120,122,124}Sn$, $^{124,126,128,130}Te$, $^{144,148,150,152}Sm$, $^{162,164}Dy$ and $^{182,184,186}W$ are presented. The γ-quanta spectra, tables of energies and intensities of γ-transitions, decay schemes of levels and their populations directly in the course of reaction are given (except for levels population by cascade γ-transitions from higher levels). Fof all γ-transitions the intensities relative to the 847 keV γ-line in ^{56}Fe have been found by measuring the γ-quanta spectra of element mixtures.

The measurement data on γ-quanta spectra for most elements presented in the Atlas are published for the first time.

The Atlas is the result of the joint effort of the Soviet and Iraqi research task forces. All symbols in tables and γ-ray spectra are in English only. The Introduction is given both in English and in Russian.

The Atlas is intended for the use by scientific research workers and engineers, specializing in the field of nuclear and neutron physics, nuclear reactor physics and in other related fields of science.

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Принятые обозначения

E_γ — энергия γ-квантов, кэВ; в скобках указаны погрешности (в том же разряде, что и последняя цифра)

I_γ — относительная интенсивность γ-линии при угле θ=90° между направлениями нейтронного пучка и γ-квантов; в скобках указана погрешность (в том же разряде, что и последняя цифра); за 100 принята интенсивность одной из γ-линий спектра

^AZ — излучающий изотоп

E_i, E_f — энергия исходного и конечного состояния в γ-переходе

J_i^π, J_f^π — угловой момент и четность исходного и конечного состояний в γ-переходе; в квадратных скобках указаны характеристики, найденные в настоящей работе

E_i^a — энергия исходного уровня, найденная в работах, которые указаны в заголовке таблицы

P_s — заселяемость уровня непосредственно в реакции в единицах I_γ, принятых в первой таблице для элемента или изотопа. Звездочкой помечены заселяемости, для которых введены поправки с учетом схем, установленных в работах, которые указаны в заголовке таблицы, и на конверсию γ-перехода

K — проекция углового момента J на ось симметрии ядра

c — энергия γ-линии использовалась для градуировки спектра наряду с γ-линиями фона, составляющими основу для градуировки спектра γ-излучения

m — пик в спектре обусловлен двумя или несколькими γ-линиями

SE — пик с вылетом одного аннигиляционного кванта

DE — пик с вылетом двух аннигиляционных квантов

n, γ — γ-линия, возможно, принадлежит реакции (n, γ)

? — есть сомнение в существовании γ-линии (таблицы энергий γ-линий) или уровня (таблицы схем уровней); в последнем столбце первой таблицы и в столбце J^π второй таблицы используются вместо знака вопроса круглые скобки

The symbols used

E_γ — gamma-quanta energy, keV; the errors are shown in parentheses (the same order as the last significant figure)

I_γ — relative γ-line intensity at θ=90° between the neutron beam and γ-quanta directions; the errors are shown in parentheses (the same order as the last significant figure); the intensity of one of the γ-lines is assumed to be 100

^AZ — emitting isotope

E_i, E_f — energies of the initial and final states in γ-transition

J_i^π, J_f^π — angular momentum and parity of the initial and final states, respectively, in γ-transition; the characteristics found in the present work are shown in brackets

$E^a{}_i$ — energy of the initial level taken from the references, indicated in the captions of the tables

P_s — level population directly in the course of the reaction in units I_γ, taken in the first table for the element or isotope; an asterisk means, that the value of P_s is corrected according to the schemes, in the references indicated in the caption of the table, and to the conversion of γ-transition

K — projection of nuclear angular momentum J on nuclear simmetry axis

c — gamma-line energy used for the spectrum calibration along with the background γ-lines serving as the basis for γ-rays spectrum calibration

m — peak in the spectrum due two or more γ-lines

SE — single escape peak

DE — double escape peak

n, γ — gamma-line possibly belongs to the (n, γ) reaction

? — question marks are used to show doubt in the γ-line existence (γ-lines energy tables) or level existence (level scheme tables); in the last column of the first table and in J^π-column of the second table parentheses are used to show doubt

Предисловие

Атлас составлен на основе результатов работ, начатых по предложению одного из авторов — А. М. Демидова. Все измерения на элементах и большинство измерений на изотопах были проведены на реакторе Института ядерных исследований в Багдаде. В этом же Институте спектры обрабатывали на ЭВМ и составляли таблицы энергий и интенсивностей γ-линий. Окончательный анализ экспериментальных данных и составление схем γ-переходов проводили в ИАЭ им. И. В. Курчатова. Там же на реакторе ИРТ-М были измерены спектры γ-излучения изотопов молибдена, кадмия и диспрозия.

В Атласе приведены результаты измерений только для угла 90° между направлением первичного пучка нейтронов и направлением регистрации γ-квантов. При этом угле не должно наблюдаться смещения положения γ-линий из-за доплеровского эффекта и значения энергии γ-квантов можно сравнивать со значениями, полученными другими методами. Относительные интенсивности идущих с одного уровня γ-переходов в реакции $(n, n'\gamma)$ и, например, при β-распаде или в реакции (n, γ) в некотором приближении совпадают при углах 55 и 125° (точное совпадение наблюдается только при a_4=0, где a_4 — коэффициент в разложении углового распределения по по-

Introduction

The Atlas is the result of the investigation sponsored by one of the authors, A. M. Demidov. All measurements with elements and most measurements with isotopes were carried out on the reactor at the Baghdad Nuclear Research Institute. At the same Institute the spectra were computer analyzed and the data on γ-ray energies and intensities were tabulated. The data were finally analyzed and γ-transition schemes constructed at the I. V. Kurchatov Institute of Atomic Energy. There the γ-spectra of molybdenum, cadmium and dysprosium isotopes were measured on the IRT-M reactor.

The Atlas contains the measurement results only for the angle of 90° between the reactor neutron beam and the direction of γ-quanta. With this angle no γ-ray energy shifting due to the Doppler effect is observed, and values of the energy of γ-quanta can be compared with the similar values obtained by other methods. The branching ratios obtained in the $(n, n'\gamma)$ reaction and, for example, in β-decay or in the (n, γ) reaction are approximately the same only with 55° and 125° angles (an exact coincidence is expected only at a_4=0, where a_4 is the coefficient in the expansion of the angular distribution into Legendre polynomials [66Sh]). In the comparison of relative intensities for 90° angle with the data from other reactiлиномам Лежандра [66Sh]). При сравнении относительных интенсивностей для угла 90° с данными, полученными из других реакций, необходимо вводить поправку на угловое распределение γ-квантов в реакции $(n, n'\gamma)$. Эта поправка в некоторых случаях может достигать 30% I_γ (90°).

Ранее спектры γ-квантов в реакции $(n, n'\gamma)$ на быстрых нейтронах реакто-

ons a correction for the angular distribution of γ-quanta in the $(n, n' \gamma)$ reaction must be taken into account. This correction in some cases may reach 30% of I_γ (90°).

Previously the γ-spectra in the $(n, n' \gamma)$ reaction by fast reactor neutrons were measured by Donahue [61Do, 62Do] using the NaI (Tl) spectrometer and for some light elements by Nichol

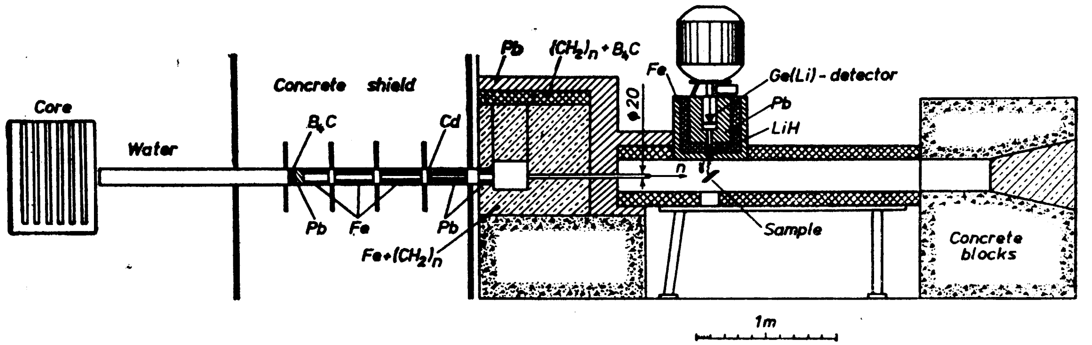


Рис. 1
Схема эксперимента на реакторе ИРТ в Багдаде

Fig. 1
Experimental set-up on the IRT reactor in Baghdad

ра измеряли Донахью [61Do, 62Do] с использованием спектрометра с NaI(Tl) и для некоторых легких элементов Никол и др. [70Ni, 71Ni, 72Ni] с Ge(Li)-детектором и образцом, расположенным около активной зоны реактора. Наша схема эксперимента на реакторе в Багдаде приведена на рис. 1. Пучок нейтронов пропускался через фильтр, состоящий из свинца (9 см), карбида бора (B_4C) (1 см) и кадмия (1 мм) (в последних экспериментах на реакторе ИРТ-М ИАЭ им. И. В. Курчатова вместо свинца использовали фильтр толщиной 50 мм из естественного металлического ура-

et. al. [70Ni, 71Ni, 72Ni] using the Ge(Li)-detector and a sample placed near the reactor core.

The experimental set-up used on the Baghdad reactor is shown in Fig. 1. Neutron beam passed through a filter made of lead (9 cm), boron carbide B_4C (1 cm) and cadmium (1 mm); in the final experiments on the IRT-M reactor (I. V. Kurchatov Institute of Atomic Energy) a 50-mm natural metallic uranium filter was used instead of lead. Because of more effective absorption of γ-rays and resonance neutrons the new filter improved the background conditions. The beam diameter at the

на, что уменьшило фон за счет более эффективного поглощения γ-излучения и резонансных нейтронов). Диаметр пучка на мишени составлял примерно 30 мм. Ge(Li)-детектор имел защиту, состоящую из железа (5 см), парафина с карбидом бора (8 см), свинца (10 см) и ^{6}Li (3 мм). Пучок γ-квантов, идущих от мишени к детектору, фильтровался от быстрых нейтронов слоем гидрида лития (LiH) толщиной 6,8 г/см². Более детально методика эксперимента описана в работе [74Ah1].

Спектры γ-излучения для большинства элементов измеряли в диапазоне значений энергии от 0,12 до 3,4 МэВ. Исключение составляют спектры γ-квантов лития, бериллия, бора, углерода, азота, кислорода, фтора, магния, кремния и кальция, измеренные в диапазоне значений энергии от 0,12 до 7 МэВ. Большинство измерений проведены с Ge(Li)-детектором объемом 30 см³. В начале измерений этот детектор имел разрешение 3,8 кэВ при энергии излучения 1,2 МэВ. Каждый спектр измеряли 20—30 ч. После примерно 5000 ч измерений из-за радиационных повреждений разрешение детектора снизилось до 8 кэВ при энергии излучения 1,2 МэВ. С таким разрешением, например, измерены спектры γ-квантов от неупругого рассеяния нейтронов на ядрах калия, кобальта, иттербия и некоторых других элементов. Измерения для хлора, скандия, брома, лютеция, осмия, иридия и изотопов теллура были проведены с новым детектором объемом 40 см³ с разрешением 2 кэВ при энергии излучения 1,2 МэВ. В легких ядрах ширина пиков существенно увеличивалась из-за эффекта Доплера.

target was about 30 mm. The Ge(Li)-detector had a shielding made of iron (5 cm), paraffin with boron carbide (8 cm), lead (10 cm) and ^{6}Li (3 mm). The γ-ray beam passing from the target to the detector was filtered from fast neutrons with the aid of lithium hydride (LiH) layer 6.8 g/cm² thick. The experimental technique has been described in more detail in [74Ah1].

For most elements the spectra of γ-rays have been measured in the range of energies from 0.12 to 3.4 MeV. Exception has been made for the spectra of γ-quanta of lithium, beryllium, boron, carbon, nitrogen, oxygen, fluorine, magnesium, silicon, and calcium which were measured in the range of energies from 0.12 to 7 MeV. Most measurements were carried out with the use of the 30 cm³ Ge(Li)-detector.

In the beginning of the measurements this detector had a resolution of 3.8 keV at the energy of radiation of 1.2 MeV. Each spectrum has been measured for 20—30 hours. After about 5000 hours the detector resolution due to radiation damage decreased down to 8 keV at the energy of radiation of 1.2 MeV.

The spectra of γ-quanta from inelastic scattering of neutrons by nuclei of potassium, cobalt, ytterbium and some other elements were measured with this resolution. The measurements on chlorine, scandium, bromine, lutecium, osmium, iridium, and tellurium isotopes were carried out with the use of the new 40 cm³ detector with the 2 keV resolution at the energy of radiation of 1.2 MeV. In the light nuclei the peak widths were considerably increased because of the Doppler effect.

The efficiency of the spectrometer

Эффективность всей установки и нелинейность спектрометрического тракта находили с использованием радиоактивных источников (^{75}Se, ^{182}Ta, ^{110}Ag, ^{72}Ga, ^{140}La, ^{24}Na, ^{134}Cs), а при энергиях выше 3 МэВ — с помощью реакции $^{28}Si(n, \gamma)$ ^{29}Si. Эффективность установки с детектором объемом 30 см³ по пику полного поглощения и по пику

and non-linearity of the spectrometric tract were found using the radioactive sources (^{75}Se, ^{182}Ta, ^{110}Ag, ^{72}Ga, ^{140}La, ^{24}Na, ^{134}Cs) and at energies higher than 3 MeV the results were obtained by means of the ^{28}Si (n,γ) ^{29}Si reaction. The full absorption and double escape peak efficiency with the 30 cm³ detector is shown in Fig. 2. The intensity has

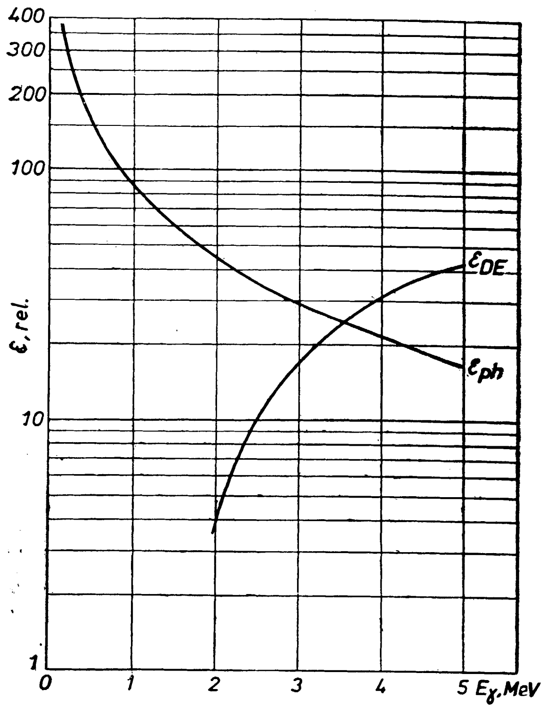


Рис. 2

Эффективность гамма-спектрометра с детектором объемом 30 см³ по пику полного поглощения (ε_{ph}) и с вылетом двух аннигиляционных квантов (ε_{DE})

Fig. 2

Efficiency of gamma-spectrometer with 30cm³ detector for full absorption (ε_{ph}) and double escape (ε_{DE}) peaks

с вылетом двух аннигиляционных квантов приведена на рис. 2. При нахождении интенсивностей учтена поправка на самопоглощение γ-квантов в образце.

Фон измеряли с образцами из графита и бериллия. Спектры фона, измеренные с образцом из графита, для детекторов объемом 30 и 40 см³ приве-

been found with a correction for self-absorption of the γ-quanta in the sample.

The background was measured with samples of graphite and beryllium. The background spectra measured with the graphite sample for the 30 cm³ and 40 cm³ detectors are shown in Figs. 3 and 4. In table 1 the identification of

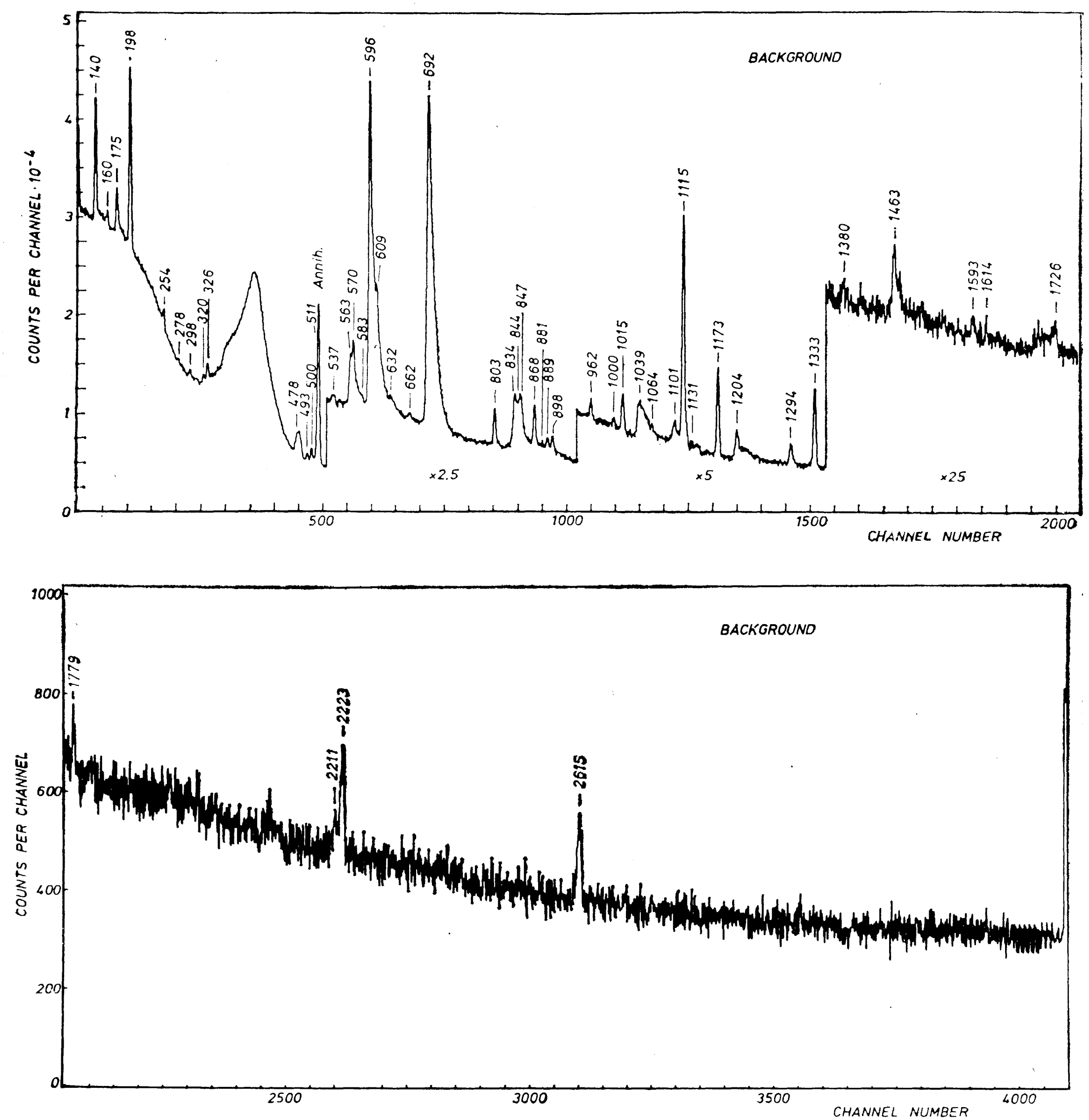


Рис. 3

Спектр γ-излучения фона (с образцом из графита), измеренный детектором объемом 30 см³ с разрешением 3,8 кэВ при энергии излучения 1,2 МэВ

Fig. 3

Background γ-ray spectrum (graphite sample) measured with 30cm³ detector with resolution of 3.8 keV at 1.2 MeV radiation energy

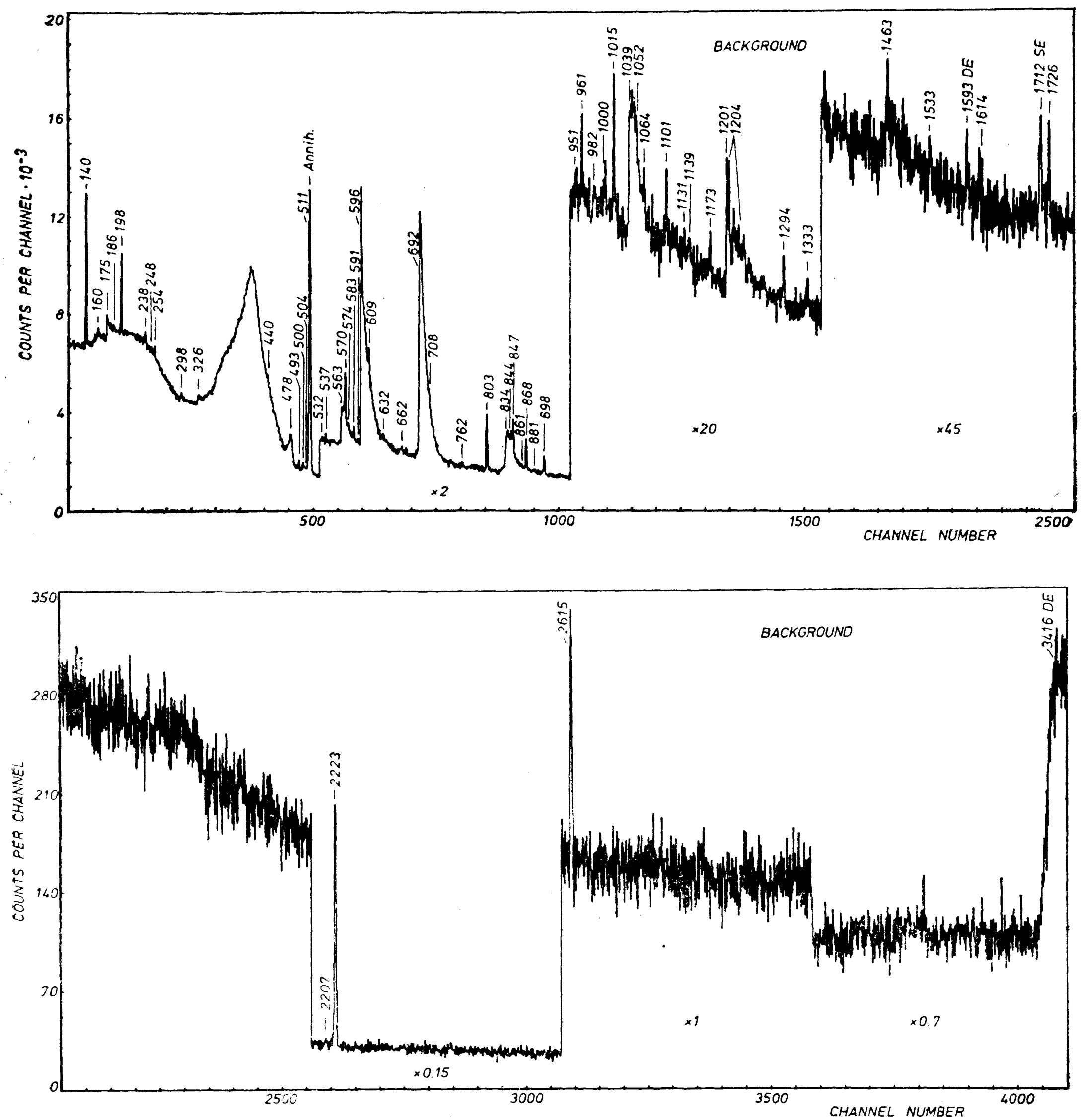


Рис. 4

Спектр γ-излучения фона (с образцом из графита), измеренный детектором объемом 40 см³ с разрешением 2,0 кэВ при энергии излучения 1,2 МэВ

Fig. 4

Background γ-ray spectrum (graphite sample) with 40cm³ detector with resolution of 2.0 keV at 1.2 MeV radiation energy

дены на рис. 3 и 4. В табл. 1 устанавливается принадлежность γ-линий спектра фона, измеренного с детектором объемом 40 см³, излучающим изотопам. Интенсивности γ-линий ^{65}Zn и ^{60}Co изменялись (внешние излучатели) от спектра к спектру. Эксперименты с детектором объемом 40 см³ проводились на новой установке, предназначенной для измерения углового распределения γ-квантов. По сравнению с установкой, показанной на рис. 1, изменилось соотношение между интенсивностями γ-линий от свинца и германия, а также возросла интенсивность γ-линии 2223,34 кэВ из реакции H(n, γ)D. Помимо γ-линий из реакции $(n, n'\gamma)$ у некоторых элементов с $Z<40$ обнаружены γ-линии из реакций $(n, p\gamma)$ и $(n, \alpha\gamma)$. Эти линии были включены в таблицы наряду с γ-линиями из реакции $(n, n'\gamma)$. γ-Линии из реакции $(n, 2n\gamma)$ нами практически не наблюдались. Более существенным является вклад в спектр γ-линий из реакции (n, γ) на резонансных нейтронах, присутствующих в пучке быстрых нейтронов, а в некоторых случаях также вклад от последующего β-распада.

При идентификации γ-линий из реакции (n, γ) мы использовали данные (в основном из обзоров [67Ba, 68Gr, 69Gr], а также из последующих публикаций) о спектрах γ-квантов, полученных при исследовании захвата тепловых нейтронов, с учетом возможного различия в относительных интенсивностях γ-линий при захвате тепловых и резонансных нейтронов.

Спектр быстрых нейтронов водо-водяного реактора после фильтрации пучка слоем свинца толщиной 10 см показан на рис. 5. На этом же рисун-

γ-lines of the background spectrum measured with the 40 cm³ detector is presented. The ^{65}Zn and ^{60}Co intensities vary (external emitters) from spectrum to spectrum. The measurements with the 40 cm³ detector were carried out on a new set-up designed for measuring of γ-quanta angular distributions. The new set-up featured other relation between the intensities of γ-rays from lead and germanium and higher intensity of γ-rays at the radiation energy of 2223.34 keV in the H(n, γ)D reaction as against the set-up shown in Fig. 1.

In addition to γ-rays from the $(n, n'\gamma)$ reaction for some elements with $Z<40$ γ-rays from the $(n, p\gamma)$ and $(n, \alpha\gamma)$ reactions were found. These γ-rays were included in tables together with γ-rays from $(n, n'\gamma)$ reaction. Gamma-rays from the $(n, 2n\gamma)$ reaction were practically not observed in the spectra because of their low intensity. A contribution of γ-rays from the (n, γ) reaction with resonance neutrons and in some cases from the following β-decay was more essential. For the identification of γ-rays from the (n, γ) reaction Compendium of Thermal-Neutron Capture γ-Ray Measurements [67Ba, 68Gr and 69Gr] and the subsequent publications were used, taking into account, however, that there may be a difference between the γ-ray relative intensities for the cases of thermal and resonance neutron capture.

The fast neutron spectrum of the water-moderated water-cooled reactor after filtration of the beam with a 10-cm layer of lead is shown in Fig. 5. The same figure shows the fission neutron spectrum. The fission fast neutron spectrum at $E_n>1.5$ MeV can be approximated by $\exp(-0.75\ E_n)$ law. The ке приведен спектр деления. Спектр быстрых нейтронов деления при $E_n > 1{,}5$ МэВ спадает по закону $N(E_n) \sim \exp(-0{,}75E_n)$. Спектр нейтронов реактора при $E_n > 1{,}0$ МэВ спадает по закону $N(E_n) \sim \exp(-0{,}7E_n)$. Для реакторов различных типов показатель экспоненты колеблется от 0,65 до 0,75 [72Ni], что не очень существенно сказывается на относительных интенсивностях переходов с уровней,

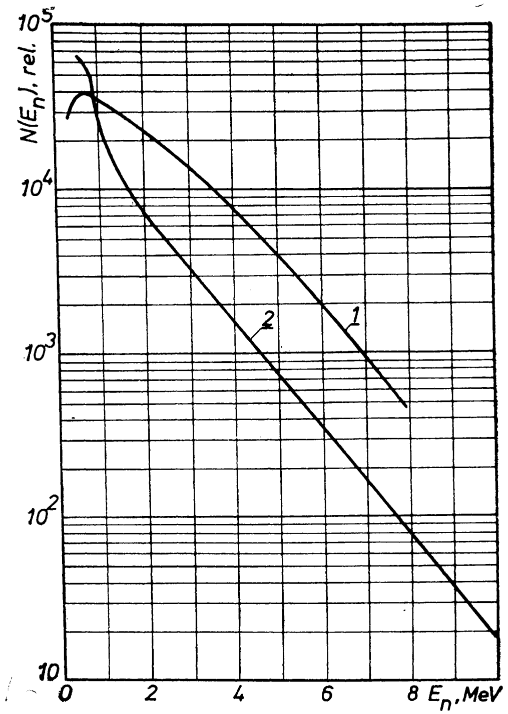


Рис. 5

Спектр нейтронов деления (*1*) и нейтронов от реактора ИРТ (*2*)

лежащих выше 0,5 МэВ. Кроме того, уже в области средних атомных масс (и далее в сторону больших значений A) спектр γ-квантов от неупругого рассеяния быстрых нейтронов реактора в большей степени определяется ростом плотности уровней с увеличе-

reactor neutron spectrum at $E_n > 1.0$ MeV can be approximated by $\exp(-0.7\,E_n)$ law. For different reactor types the exponent varies from 0.65 to 0.75 [72Ni], which does not essentially change the relative intensities of the transitions from the levels above 0.5 MeV. Moreover, even in the region of medium atomic masses (and further towards higher A) γ-ray spectrum from inelastic scattering of reactor fast neutrons is defined mainly by the level density increasing with the rise of energy of nuclear excitations. Thus, with a certain approximation, the data on the γ-transition intensities presented here are universal for the neutron sources based on nuclear fission.

Fig. 5

Fission neutron spectrum (*1*) and the IRT reactor neutron spectrum (*2*)

нием энергии возбуждения ядра. Таким образом, приводимые значения интенсивностей γ-переходов носят в некотором приближении универсальный характер для источников нейтронов, основанных на делении ядер.

В случае непрерывного спектра быстрых нейтронов реактора заселение уровней ядра возможно непосредственно в процессе реакции (n, n') и в результате каскадных γ-переходов с вышележащих уровней. Если схема γ-переходов в реакциях $(n, n'\gamma)$ или $(n, p\gamma)$ составлена, то суммарная заселяемость уровня P определяется как сумма интенсивностей γ-переходов с этого уровня. Каскадная заселяемость P_c находится как сумма интенсивностей γ-переходов на данный уровень. Разность $P_s = P - P_c$ есть заселяемость уровня непосредственно в результате реакции (n, n'). Анализ схем γ-переходов в реакции $(n, n'\gamma)$ на быстрых нейтронах реактора показывает, что для большинства уровней,

In the case of a continuous reactor fast neutron spectrum the population of the nuclear level is possible directly during the (n, n') reaction and as a result of cascade γ-transitions from the higher levels. If the scheme of γ-transitions in the $(n, n'\gamma)$ or $(n, p\gamma)$ reactions is available, the total population P of the level is defined as the sum of intensities of the γ-transitions from this level. The cascade population P_c is found as the sum of intensities of the γ-transitions to this level. The difference $P_s = P - P_c$ is the population of the level directly during the (n, n') reaction. The analysis of the schemes of the γ-transitions in the $(n, n'\gamma)$ reaction with reactor fast neutrons indicates that for most levels, except for four or six lowest ones, P is approximately equal to P_s. This fact is due to sharp decrease in the neutron flux with the increase in neutron energy and the dependence of γ-transitions probability on the energy (in the absence of forbiddennesses the

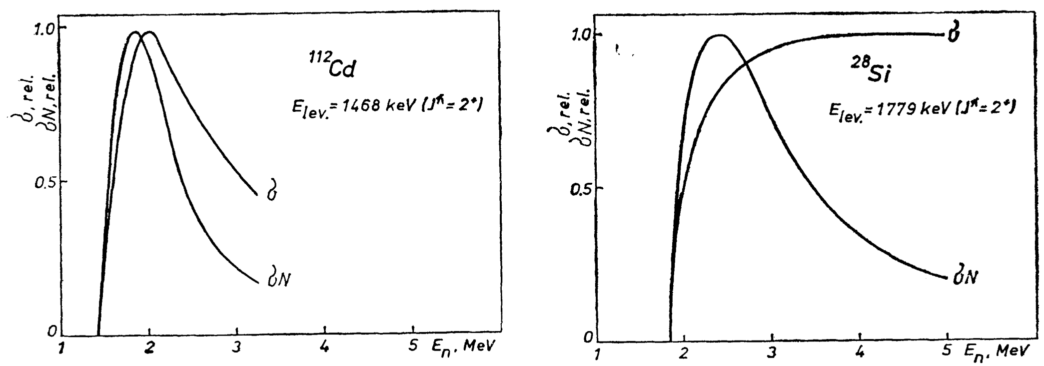


Рис. 6

Зависимость $\sigma(E_n)$ и $\sigma(E_n)N(E_n)$ для уровня 1779 кэВ в ^{28}Si и уровня 1468 кэВ в ^{112}Cd, где $\sigma(E_n)$ — сечение неупругого рассеяния быстрых нейтронов, а $N(E_n)$ — спектр быстрых нейтронов реактора

Fig. 6

The curves of $\sigma(E_n)$ and $\sigma(E_n)\ N\ (E_n)$ for 1779 keV level in ^{28}Si and 1468 keV level in ^{112}Cd, where $\sigma(E_n)$ — is cross section of the inelastic scattering of fast neutrons, and $N\ (E_n)$ — is spectrum of reactor fast neutrons за исключением четырех — шести самых нижних, $P \approx P_s$. Этот факт обусловлен резким уменьшением потока нейтронов с ростом их энергии и зависимостью вероятности γ-переходов от энергии (при отсутствии запретов вероятность высвечивания на нижележащие уровни выше, чем на вышележащие). Однако соотношение $P \approx P_s$ не выполняется, когда на некоторые уровни, резко отличающиеся по своим характеристикам от нижележащих, идет много каскадных переходов. К таким уровням, например, относятся первые уровни с большими угловыми моментами.

Значение P_s определяется соотношением

$$P_s = \int_{E_{\text{пор}}}^{E_{\text{макс}}} \sigma_{\text{ур}}(E_n)\, N(E_n)\, dE_n,$$

где $E_{\text{пор}}$ и $E_{\text{макс}}$ — соответственно пороговая энергия нейтронов для возбуждения данного уровня и максимальная энергия нейтронов в спектре нейтронов реактора.

Сечение реакции $\sigma_{\text{ур}}(E_n)$ для возбуждения данного уровня можно рассчитать, например, по статистической модели. На рис. 6 показана зависимость $\sigma_{\text{ур}}(E_n)$ для возбуждения уровня 1779 кэВ в реакции ^{28}Si$(n, n'\gamma)$ [72Ni] и уровня 1468 кэВ в реакции ^{112}Cd$(n, n'\gamma)$, рассчитанная по статистической модели с использованием формализма Хаузера — Фешбаха и Молдауера [52Ha, 61Mo]. В этом расчете сечения для уровня 1468 кэВ учитывались все известные уровни ядра ^{112}Cd.

На рис. 6 даны также зависимости σN от E_n. Из этого рисунка следует, что уровни в реакции (n, n') возбуждаются в основном нейтронами со средней энергией над порогом реакции $\overline{\Delta E}_n \approx 1{,}3$ МэВ для ^{28}Si и $\overline{\Delta E}_n \approx 0{,}7$ МэВ для ^{112}Cd. Значение $\overline{\Delta E}_n$ определяют из соотношения

$$\int_{E_{\text{пор}}}^{E_{\text{пор}}+\overline{\Delta E}_n} \sigma N dE_n = \int_{E_{\text{пор}}+\overline{\Delta E}_n}^{E_{\text{макс}}} \sigma N dE_n.$$

Эту среднюю энергию имеют рассеянные нейтроны. Зависимость P_s от энергии уровня в значительной степени определяется двумя факторами: уменьшением нейтронного потока с ростом энергии нейтронов и ростом плотности уровней с увеличением энергии возбуждения ядра.

На рис. 7 показана теоретическая зависимость P_s от углового момента для уровня 1468 кэВ в ^{112}Cd и для уровня 673 кэВ в ^{105}Pd. Ядро ^{105}Pd в основном состоянии имеет $I^{\pi} = 5/2^+$. Зависимость P_s от четности состояния значительно слабее, чем от углового момента.

Как пример зависимости дифференциального сечения выхода γ-кван-

probability for the de-excitation to the lower levels is greater than to the higher ones). However P is not aproximately equal to P_s if some levels considerably differing from the lower levels by their characteristics collect many cascade transitions. There are, for example, the first levels with high angular momenta.

The value of P_s is determined from the following equation

$$P_s = \int_{E_{\text{thr}}}^{E_{\text{max}}} \sigma_{\text{lev}}(E_n)\, N(E_n)\, dE_n,$$

where E_{max} and E_{thr} are maximum neutron energy in the reactor neutron spectrum and threshold energy of neutrons exciting the level, respectively.

The cross section $\sigma_{\text{lev}}(E_n)$ of the reactions for excitation of the given level can be calculated, for example, by statistical model. Fig. 6 shows the function $\sigma_{\text{lev}}(E_n)$ for excitation of the 1779 keV level in the ^{28}Si $(n, n'\gamma)$ reaction [72Ni] and the 1468 keV level in the ^{112}Cd $(n, n'\gamma)$ reaction, calculated in terms of the statistical model using Hauser-Feshbach and Moldauer formalism [52Ha, 61Mo]. In the calculation for the 1468 keV level all known levels of the ^{112}Cd nucleus were taken into account.

In Fig. 6 the dependences of σN on E_n are also given. As is seen from the Figure the levels in the (n, n') reaction are mainly excited by neutrons with the average energy $\overline{\Delta E}_n \approx 1.3$ MeV for ^{28}Si and $\overline{\Delta E}_n \approx 0.7$ MeV for ^{112}Cd over the reaction threshold.

The value $\overline{\Delta E}_n$ is found from the relation

$$\int_{E_{\text{thr}}}^{E_{\text{thr}}+\overline{\Delta E}_n} \sigma N dE_n = \int_{E_{\text{thr}}+\overline{\Delta E}_n}^{E_{\text{max}}} \sigma N dE_n.$$

The scattered neutrons have this average energy. Dependence of P_s on the level energy is largely determined by two factors: decrease of the neutron flux with the increase of neutron energy and increase of the level density with the rise of nucleus excitation energy.

Fig. 7 shows theoretical dependence of P_s on the angular momentum for the 1468 keV level in ^{112}Cd and for the 673 keV level in ^{105}Pd. The ^{105}Pd nucleus has $J^{\pi}_0 = 5/2^+$ in the ground state. Dependence of P_s on the parity of the state is appreciably weaker than on the angular momentum.

As an illustration of the dependence of the differential cross section of the γ-quanta yield $d\sigma/d\Omega$ on the angle between the neutron beam and γ-quanta direction in the $(n, n'\gamma)$ reaction with the reactor fast neutrons, Fig. 8 shows the theoretical (solid lines) angular distributions with experimental points for some γ-transitions of the ^{114}Cd even-even nucleus. These dependences change slightly with changing atomic mass and level energy as well as when the mag-

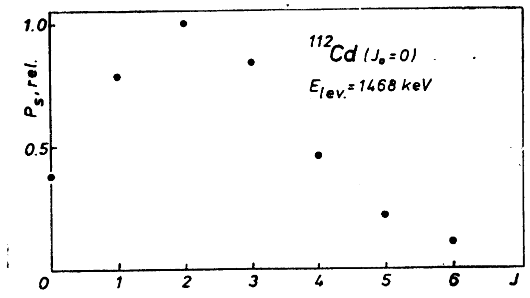


Рис. 7

Зависимость заселяемости уровня в реакции от углового момента для уровней 1468 кэВ в ^{112}Cd и 673 кэВ в ^{105}Pd

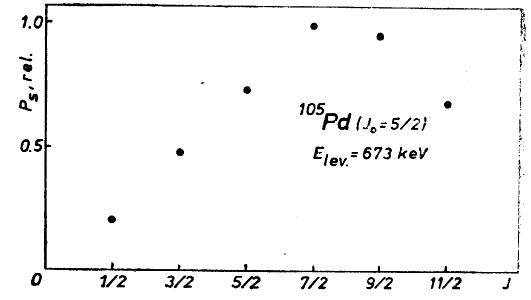


Fig. 7

The dependence of the level population in the reaction on the angular momentum for 1468 keV level in ^{112}Cd and 673 keV level in ^{105}Pd

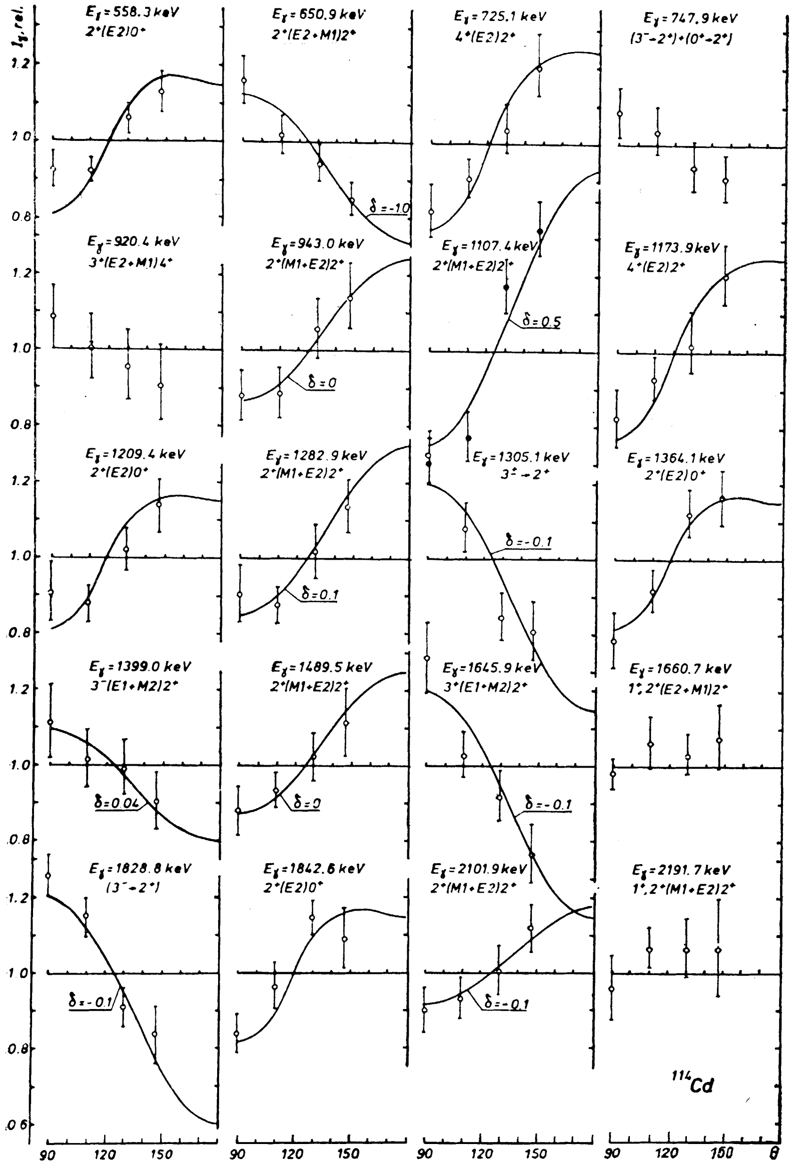


Рис. 8.

Экспериментальные и теоретические угловые распределения γ-квантов относительно пучка нейтронов для некоторых переходов ядра ^{114}Cd

Fig. 8

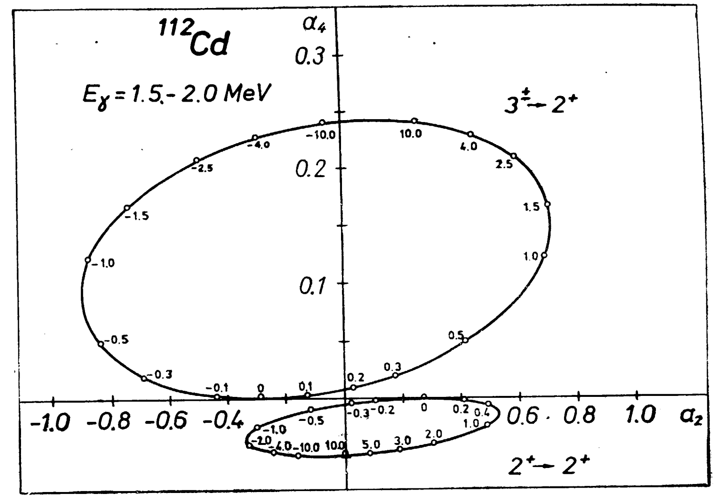
Experimental and theoretical angular distributions of γ-quanta relative to neutron beam for some γ-transitions in ^{114}Cd

Рис. 9

Теоретическая связь коэффициентов a_2 и a_4 в зависимости от параметра смеси мультиполей δ

Fig. 9

Theoretical relationship between coefficients a_2 and a_4 depending upon the parameter of multipole mixture δ



тов $d\sigma/d\Omega$ от угла между направлениями нейтронного пучка и вылета γ-квантов в реакции $(n, n'\gamma)$ с быстрыми нейтронами реактора на рис. 8 показаны теоретические (сплошные линии) угловые распределения с нанесенными на них экспериментальными точками для некоторых γ-переходов четно-четного ядра ^{114}Cd. Эти зависимости слабо меняются при изменении атомной массы и энергии уровней, а также при замене магнитного излучения электрическим [66Sh]. Угловые распределения γ-квантов симметричны относительно угла 90°. На рис. 9 показана связь коэффициентов a_2 и a_4 с параметром смеси квадрупольного и дипольного излучений $\delta=\sqrt{E2/M1}$ (a_2 и a_4 — коэффициенты при полиномах Лежандра) для переходов $3^+\longrightarrow 2^+$ и $2^+\longrightarrow 2^+$ в ^{112}Cd при энергиях уровней и γ-переходов 1,5—2 МэВ. Для спектра быстрых нейтронов реактора энергия налетающих нейтронов при рас-

netic radiation is changed to electric radiation [66Sh]. Angular distributions of γ-quanta are symmetric in relation to the angle of 90°. Fig. 9 shows the relationship between the a_2 and a_4 coefficients and the parameter of the quadrupole and dipole radiation mixture $\delta=\sqrt{E2/M1}$ (a_2 and a_4 are coefficients pertaining to the Legendre polynomials) for the $3^+\rightarrow 2^+$ and $2^+\rightarrow 2^+$ transitions in ^{112}Cd at the 1.5—2 MeV levels and γ-transitions energies. For the purposes of angular distributions calculation in the case of reactor fast neutrons spectrum the energy of the incident neutrons was assumed to be equal to $E_{\text{thr}}+\Delta\overline{E}_n$.

The measured spectra shown in the Atlas for each element are supplied with the data indicated near photopeaks on energies of γ-lines rounded to integers. For the γ-lines with energies over 2.5 MeV the energy is also shown near the double escape (*DE*) peak. Both in the spectra and in the following tables the energies are indicated only for чете угловых распределений принималась равной $E_{пор}+\overline{\Delta E}_n$.

В Атласе для каждого элемента приведен измеренный спектр, на котором около фотопиков указаны энергии γ-линий с округлением до целого числа. Для γ-линий с энергией выше 2,5 МэВ энергия указана также около пика с вылетом двух аннигиляционных квантов (*DE*). Как на спектрах, так и в последующих таблицах энергии даны только для γ-линий из реакций (*n*, *n'*γ), (*n*, *p*γ) и (*n*,αγ). Фоновые γ-линии и γ-переходы из реакции (*n*, γ) не указаны на спектрах и не приведены в таблицах.

Для каждого элемента даны две таблицы. В первой приведены (в порядке следования столбцов) энергии, относительные интенсивности γ-переходов для угла 90°, излучающие изотопы в случае многоизотопных элементов или большого вклада реакций (*n*, *p*γ) и (*n*, αγ) и энергии уровней (округленные до десятых долей), с которых идут переходы. В некоторых случаях излучающий изотоп указывается в скобках после энергии уровня. При отнесении γ-линии к определенному переходу учитывали в основном совпадение энергии γ-линии с разностью энергий уровней, между которыми происходит переход, и значение интенсивности γ-линии.

Для значений E_γ и I_γ в скобках указаны погрешности (в том же разряде, что и последняя цифра). Эти погрешности учитывают статистические ошибки (с 95%-ной вероятностью), погрешности, связанные с градуировкой и нелинейностью спектрометрического тракта для E_γ, погрешности в определении эффективности спектрометра, а также погрешности расчета эффектов самопоглощения γ-квантов в образце для I_γ.

Во второй таблице представлены схемы уровней и γ-переходов ядер, наиболее эффективно возбуждаемых при неупругом рассеянии быстрых нейтронов реактора на данном элементе. В первом столбце этой таблицы даны энергии уровней, полученные на основании наших данных, с учетом энергии отдачи ядра при испускании γ-кванта. Во втором столбце таблицы приведены значения энергии E_i^a всех (до последнего приводимого в таблице уровня) известных уровней, найденные из работ, которые указаны в заголовке рассматриваемой таблицы. Из этих же работ взяты характеристики начального J_i^π и конечного J_f^π состояний, между которыми происходит данный переход. В некоторых случаях наши данные позволили уточнить значения J^π с помощью значений заселяемостей уровней или схем высвечивания, и мы привели эти значения J^π в квадратных скобках. В последнем столбце таблицы схемы уровней даны значения заселяемостей уровней в реакции (*n*, *n'*γ) или (*n*,*p*γ)—P_s(90°) в относительных единицах, принятых в таблице энергий и интенсивностей для I_γ. Звездочкой помечены заселяемости, для которых введены поправки на наличие не выделенных нами из спектра γ-переходов, как с данного уровня, так и на него, а также на внутреннюю конверсию переходов. Эти поправки сделаны на основании схем высвечивания уровней, взятых из работ, которые указаны в заголовке таблицы.

γ-lines from the (*n*, *n'*γ), (*n*, *p*γ) and (*n*, αγ) reactions. The background γ-lines and γ-transitions from the reaction (*n*, γ) are not shown in the spectra and tables.

Two tables are given for each element. The first of them lists (in order of increasing column numbers) energies, relative intensities of the γ-transitions for the angle of 90°, emitting isotopes in the case of multi-isotope elements or large contribution from the (*n*, *p*γ) and (*n*, αγ) reactions and energies of the initial levels (given with an accuracy to 0.1 keV). In some cases the emitting isotope is indicated in parentheses after the level energy. Basic consideration for assigning a γ-line to a certain transition was the coincidence of the γ-line energy with the difference between energies of the levels participating in the transition, and the intensity of the γ-line.

Errors of the same order as the last significant figure are given in parentheses following the E_γ and I_γ values. These errors include statistic errors (with 95% probability), errors due to calibration and non-linearity of the spectrometric tract for E_γ and errors in determination of efficiency of the spectrometer as well as errors due to γ-quanta self-absorption effects in the sample for I_γ.

The second table presents schemes of levels and γ-transitions for nuclei excited most effectively by inelastic scattering of reactor fast neutrons for the given element. In the first column of the table the level energies obtained from our data are given with due account of the energy recoil for γ-quantum. The second column of the table gives energies (E_a^i) of all (up to the last level presented in the table) known levels and these data were taken from the references listed at the caption of the table. Characteristics of the initial (J_i^π) and final (J_f^π) states between which the transition takes place are taken from the same reference. In some cases our data on level population values and de-excitation schemes allowed J^π values to be as certained and these values of J^π are shown in square brackets. The last column of the level scheme table outlines the level population values in the reaction (*n*, *n'*γ) or (*n*, *n'*γ)—P_s (90°) in relative units accepted in table of energies and intensities for I_γ. The populations with corrections for the transitions both outgoing and incoming, which we did not observe in the spectrum, and with corrections for the transitions internal conversion are marked with asterisks. These corrections are found on the basis of level de-excitation schemes taken from the references listed in the table caption.

The results of the measurements of γ-quanta angular distributions in relation to the direction of the neutron beam were used to determine level characteristics of $^{110, 112, 114, 116}$Cd and $^{124, 126, 128, 130}$Te. Since in tellurium isotopes we revealed many new level characteristics, the additional column with the revealed characteristics (J_i^π) was introduced while the characteristics known from other sources were placed in the column $J_i^{\pi a}$.

In the case of heavy nuclei a number of difficulties arised in the determination of level population. These difficulties are due to the fact that the γ-spectrum was measured beginning

При нахождении характеристик уровней $^{110,112,114,116}Cd$ и $^{124,126,128,130}Te$ были использованы результаты проведенных нами измерений угловых распределений γ-квантов относительно нейтронного пучка. Поскольку для этих изотопов найдено много новых характеристик уровней, был введен в изотопах теллура дополнительный столбец с установленными нами характеристиками (J_i^{π}), а характеристики, известные из работ других авторов, помещены в столбце $J_i^{\pi a}$.

Для тяжелых ядер возникает ряд трудностей, связанных с определением заселяемости уровней. Эти трудности обусловлены тем, что спектр γ-излучения измерялся только начиная со значения энергии 0,12 МэВ, а в тяжелых ядрах, особенно в нечетных по A, число и интенсивность γ-переходов ниже этой энергии возрастают и, следовательно, составленные нами схемы γ-переходов оказываются неполными. В тяжелых ядрах также возрастает вклад внутренней конверсии γ-переходов, который трудно учесть в переходах смешанного типа, если отсутствуют экспериментальные значения коэффициентов внутренней конверсии. Из-за указанных трудностей для ряда элементов значения заселяемости уровней мы не смогли получить.

Вследствие возрастания плотности уровней и одинаковой структуры уровней в деформированных ядрах для многоизотопных элементов велика вероятность совпадения энергий γ-переходов в пределах энергетического разрешения гамма-спектрометра. Такие совпадения сильно затрудняли определение принадлежности γ-линий излучающим изотопам и соответственно нахождение энергий уровней по нашим данным. По этой причине для ряда многоизотопных редкоземельных элементов мы отказались от составления схем уровней, а в последнем столбце таблицы энергий и интенсивностей привели энергии уровней, с которых идут переходы, взятые из работ других авторов (E_i^a).

Исследованные элементы перечислены в первом столбце табл. 2. В этой же таблице указаны химические соединения, которые использовались в качестве образцов при измерении спектра γ-квантов элемента (второй столбец), а также массы образцов (третий столбец) и времена измерений (четвертый столбец).

Дополнительно мы провели работу по сравнению интенсивностей γ-линий всех представленных в Атласе элементов. Для этого были измерены спектры γ-квантов образцов, состоящих из смеси элементов, и определены интенсивности γ-линий элементов по отношению к интенсивности γ-перехода с $E_\gamma = 847$ кэВ в ^{56}Fe. В пятом столбце табл. 2 указана энергия γ-линии элемента, для которой проведено сравнение с γ-линией 847 кэВ железа. Относительная интенсивность этой линии в таблице энергий и интенсивностей каждого элемента принята равной 100.

В шестом столбце указан изотоп, которому принадлежит данная γ-линия. В последнем столбце табл. 2 приведена интенсивность γ-линии, указанной в пятом столбце, относительно γ-линии железа с энергией 847 кэВ [I_γ (Fe) есть отношение интенсивности данной линии к интенсивности γ-линии 847 кэВ при равном содержа-

only from the 0.12 MeV energy but in heavy nuclei, especially in odd ones the quantity and intensity of γ-transitions below this energy increase and, consequently, our γ-transition schemes are incomplete. In the heavy nuclei there increases also the contribution of the internal conversion of γ-transitions which is difficult to take into account in transitions of the mixed type if experimental values for internal conversion coefficients are not known. Because of the mentioned difficulties the level populations have not been given for a number of elements.

Due to the increase of the level density and to similar level structure in deformed nuclei the probability of coincidence of γ-transition energies within the limits of gamma-spectrometer energy resolution proves to be high for multi-isotope elements. Such coincidences largely hindered the γ-line assignment to emitting isotopes and, consequently, the determination of level energies from our data. For that reason we decided not to construct level schemes for a number of multi-isotope rare-earth elements and in the last column of energy and intensity table we have given energies of levels from which the transition takes place from other sources (E_i^a).

The investigated elements are listed at the first column of table 2. The same table furnishes the data on chemical compounds, used as samples for measurement of γ-quanta spectrum from the element, (second column) as well as sample masses (third column) and measurement times (fourth column).

In addition, we carried out the comparison of the γ-ray intensities of all elements presented in the Atlas. For this purpose we measured γ-spectra of the samples which were the mixtures of the elements and determined the intensities of element γ-lines in relation to the intensity of the γ-transition with $E_\gamma = 847$ keV in ^{56}Fe. The results of these experiments are shown in table 2. The fifth column of this table shows the γ-line energy of the element, for which comparison with the 847 keV γ-line of ^{56}Fe was made. In the tables of energies and intensities of each element the relative intensity of this line was taken as equal to 100. The isotope, to which this γ-line is referred, is indicated in the sixth column of the table. In the last column the intensity of the γ-line, given in the fifth column, is shown relative to the 847 keV γ-ray of iron [I_γ (Fe) is the ratio of intensity of the given γ-ray to the intensity of 847 keV γ-ray with the same quantity of nuclei of the element under investigation and of the iron in the sample].

Table 3 lists the isotope abundances in the natural mixture.

Table 4 lists the isotope composition of enriched isotope samples. Masses and chemical composition of these samples are also given in this table.

The investigation results presented in the Atlas for most elements have not been published previously. The results on indium, iodine, cesium, praseodymium, isotopes of ^{162}Dy and ^{164}Dy, tantalum, isotopes of ^{186}W and ^{184}W and bismuth have been published in our joint works with the Research Institute of Nuclear Physics, Moscow State University. The results with separated isotopes have been published in different magazines. Corresponding references are shown in level scheme captions. The distribution of the most intensive γ-liнии числа ядер излучаемого элемента и железа в образце].

В табл. 3 приведено содержание изотопов в естественной смеси.

В табл. 4 дан изотопный состав образцов из обогащенных изотопов. Там же указаны массы этих образцов и их химический состав.

Приводимые в Атласе результаты исследования для большинства элементов публикуются впервые. Результаты по индию, иоду, цезию, празеодиму, изотопам ^{162}Dy и ^{164}Dy, танталу, изотопам ^{186}W и ^{184}W и висмуту опубликованы в наших совместных работах с НИИЯФ МГУ. Результаты исследований с разделенными изотопами опубликованы в различных журналах, ссылки на которые указаны в заголовках схем уровней соответствующих изотопов. Распределение наиболее интенсивных γ-линий в спектрах обсуждалось в [75Ah]. Более детально исследование описано в обзоре [75De].

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nes in the spectra is discussed in [75Ah]. The investigation has been described in more detail in [75De].

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Table 1

Energies and intensities (area) of the background rays

E_γ	I_γ	$^A Z$	E_γ	I_γ	$^A Z$
139.80 *c*	120 (10)	^{75}Ge	846.9 (2)	18 (2)	^{56}Fe
159.5 (4)	9.0 (15)	^{77}Ge	860.69 (20)	2.3 (4)	^{208}Pb
174.9 (5)	21 (3)	^{71}Ge	868.04 (15)	17 (2)	^{74}Ge
185.5 (3)	4.1 (15)		880.9 (4)	2.9 (5)	^{206}Pb
198.35 (10)	70 (6)	^{71}Ge	898.1 (3)	11.2 (15)	^{207}Pb; ^{204}Pb
238.5 (2)	14 (2)		950.9 (8)	3.0 (10)	
247.7 (4)	4 (2)	^{71}Ge	961.3 (2)	4.8 (10)	^{74}Ge
253.6 (3)	9.3 (2)	^{75}Ge	982.1 *m*	4.4 (15)	
297.5 (4)	4.5 (15)	^{73}Ge	1000.5 (4)	1.6 (5)	
326.0 (3)	8.0 (15)	^{73}Ge	1014.53 (10)	7.1 (6)	^{27}Al
440.0 (4)	5.0 (15)	^{23}Na	1039.48	60 (6)	^{70}Ge
477.9	60 (6)	^{7}Li	1051.5 (4)	1.5 (4)	^{72}Ge
493.1 (2)	9.4 (25)	^{74}Ge	1063.6 (4)	2.1 (4)	^{207}Pb
500.0 (3)	10 (3)	^{71}Ge	1101.4 (2)	3.5 (5)	^{74}Ge
504.3 (6)	5.7 (25)		1131.0 (4)	1.2 (4)	
511.00 *c*	438 (20)	Annih.	1139.3 *m*	3.1 (5)	^{71}Ge
531.5 (5)	3.2 (8)	^{74}Ge	1173.1 (2)	2.0 (4)	^{60}Ni
537.4 (4)	3.7 (7)	^{206}Pb	1201.15 (20)	6.0 (6)	^{2}H(*DE*.)
562.89	100	^{76}Ge	1204.38 (20)	6.0 (6)	^{74}Ge
569.65 (10)	20 (2)	^{207}Pb		27 (3)	^{74}Ge
573.8 (4)	2.0 (10)	^{75}Ge	1293.7 (3)	2.6 (5)	^{116}Sn?
583.26 (20)	6.0 (15)	^{208}Pb	1332.6 (3)	2.2 (4)	^{60}Ni
590.6 (5)	2.3 (10)		1463.3 (8)	3.3 (15)	^{72}Ge
595.89	585 (50)	^{74}Ge	1533.0 (8)	2.3 (10)	
608.7 (4)	12 (2)	^{74}Ge	1592.9 (4)	1.7 (5)	^{208}Pb (*DE*)
631.5 (8)	3.5 (10)		1613.5 (7) *m*	2.9 (5)	
661.6 (10) *m*	3.4 (15)	^{137}Ba; ^{206}Pb	1711.7 (4) *m*	3.8 (5)	^{2}H (*SE*)
692.5	704 (70)	^{70}Ge	1725.6 (3)	3.0 (5)	
708.0 (8)	4.0 (15)	^{71}Ge	2206.8 (7)	2.0 (5)	
762.3 (6)	3.6 (15)	^{208}Pb	2223.34 *c*	40 (4)	^{2}H
803.10 (10)	28 (3)	^{206}Pb	2614.54 (15)	6.9 (7)	^{208}Pb
834.03	100 (10)	^{72}Ge	3416.3	90 (9)	^{12}C (*DE*)
843.7 (2)	6.9 (7)	^{27}Al			

Table 2

Some data for the measured samples

Element	Sample	Mass, g	Exposition, h	E_γ	$^A Z$	I_γ(Fe), %
Li	Li	8.5	10.5	477	^{7}Li	53 (7)
Be	Be	5.5	13.6	—	—	—
B	B	4.0	36.4	2124	^{11}B	1.25 (13)
C	C	9.6	21.0	4438	^{12}C	1.27 (21)
N	$CO(NH_2)_2$	11.2	22.9	2313	^{14}N	1.33 (16)

Cont'd (Table 2)

Element	Sample	Mass, g	Exposition, h	E_γ	^{A}Z	I_γ(Fe), %
O	$Y(NO_3)_3 \cdot 6H_2O$	28.3	22.0	1983	^{18}O	0.11 (4)
F	^{6}LiF	11.1	22.6	1236	^{19}F	5.9 (7)
Na	NaOH	22.5	22.0	440	^{23}Na	139 (28)
Mg	Mg	7.9	24.7	1369	^{24}Mg	28 (3)
Al	Al	11.0	14.1	1014	^{27}Al	28 (3)
Si	Si	13.0	37.2	1779	^{28}Si	27.0 (25)
P	P_2O_5	13.2	21.3	1266	^{31}P	21 (3)
S	S	23.7	14.3	2230	^{32}S	15.1 (20)
Cl	C_6Cl_6	7.0	22.0	1220	^{35}Cl	5.2 (5)
K	KOH	24.0	25.5	2814	^{39}K	2.6 (4)
Ca	Ca	11.3	24.2	3904	^{40}Ca	2.2 (4)
Sc	$Sc+Sc_2O_3$	6.4+6.0	24.0	364	^{45}Sc	28 (4)
Ti	Ti	24.5	13.5	983	^{48}Ti	77 (8)
V	V_2O_5	14.2	22.9	320	^{51}V	115 (16)
Cr	Cr	23.5	24.8	1434	^{52}Cr	52 (6)
Mn	MnO_2	32.8	24.7	858	^{55}Mn	16.8 (18)
Fe	Fe_2O_3	17.4	8.0	847	^{56}Fe	100
Co	CoO	17.0	23.5	1190	^{59}Co	33 (4)
Ni	Ni	41.4	22.9	1454	^{58}Ni	40 (5)
Cu	Cu	20.5	21.0	962	^{63}Cu	54 (6)
Zn	Zn	31.5	6.0	992	^{64}Zn	52 (5)
Ga	Ga	15.5	23.0	574	^{69}Ga	27 (3)
Ge	Ge	4.7	44.0	596	^{74}Ge	108 (18)
As	As	22.1	21.0	280	^{75}As	135 (44)
Se	Se	24.0	12.9	666	^{80}Se	92 (10)
Br	Br(in glass)	32.0	12.0	276	^{81}Br	173 (43)
Rb	Rb_2CO_3	15.5	23.0	402	^{87}Rb	65 (15)
Sr	$SrCo_3$	12.1	9.0	1836	^{88}Sr	55 (6)
Y	$Y(NO_3)_3 \cdot 6H_2O$	28.9	22.0	909	^{89}Y	40 (5)
Zr	ZrO_2	42.0	16.1	934	^{92}Sr	25 (3)
Nb	Nb	28.3	25.1	744	^{93}Nb	48 (5)
Mo	MoO_3	44.5	17.2	787	^{98}Mo	33 (3)
Ru	Ru	10.0	23.0	539	^{100}Ru	35 (6)
Rh	Rh	2.35	36.0	611	^{103}Rh	64 (13)
Pd	Pd	10.8	23.3	556	$^{102,104}Pd$	14.6 (25)
Ag	Ag	25.5	3.5	551	^{107}Ag	10.3 (12)
Cd	Cd	76.2	3.4	558	^{114}Cd	70 (8)
In	In_2O_3	23.0	22.4	934	^{115}In	46 (5)
Sn	Sn	34.0	20.4	1171	^{120}Sn	40 (4)
Sb	Sb	30.0	25.0	910	^{121}Sb	16 (3)
Te	Te	32.0	3.0	743	^{128}Te	42 (6)
I	I	18.7	18.5	418	^{127}I	57 (9)
Cs	$Cs_2CO_3 \cdot 2H_2O$	25.3	20.3	768	^{133}Cs	21.5 (24)
Ba	BaO	19.7	10.2	1436	^{138}Ba	65 (6)
La	La	18.1	13.0	1421	^{139}La	17.8 (20)
Ce	Ce	30.2	11.0	1596	^{140}Ce	96 (11)
Pr	Pr_6O_{11}	11.1	24.5	1127	^{141}Pr	33 (6)
Nd	Nd	5.5	26.0	697	^{144}Nd	32 (5)
Sm	Sm_2O_3	5.0	11.5	550	^{148}Sm	52 (7)

Cont'd (Table 2)

Element	Sample	Mass, g	Exposition, h	E_γ	^{A}Z	I_γ(Fe), %
Eu	Eu_2O_3	1.0	28.0	307	$^{151,153}Eu$	21 (5)
Gd	Gd_2O_3	4.65	13.4	944	^{158}Gd	6.5 (11)
Tb	Tb_4O_7	2.0	35	331	^{159}Tb	76 (12)
Dy	Dy_2O_3	10.8	21.4	755	^{164}Dy	14.5 (19)
Ho	Ho_2O_3	5.0	34.3	362	^{165}Ho	275 (44)
Er	Er_2O_3	3.0	18.0	816	^{168}Er	26 (3)
Tm	Tm	4.0	37.0	475	^{169}Tm	18 (3)
Yb	Yb	2.7	26.0	400	^{173}Yb	8.1 (16)
Lu	Lu_2O_3	15.7	20.2	354	^{175}Lu	274 (56)
Hf	Hf	11.5	24.0	214	$^{178,179,180}Hf$	277 (51)
Ta	Ta_2O_5	20.0	20.5	482	^{181}Ta	127 (15)
W	W	50.7	21.3	739	$^{182,186}W$	33 (4)
Re	Re	23	25.0	646	$^{185,187}Re$	20 (3)
Os	Os	20.2	14.0	558	^{190}Os	24 (3)
Ir	Ir	24.0	6.0	559	^{193}Ir	8.2 (10)
Pt	Pt	7.1	14.0	328	^{194}Pt	168 (34)
Au	Au	13.0	22.1	279	^{197}Au	108 (12)
Hg	Hg	125	8.2	368	^{200}Hg	81 (9)
Tl	Tl_2O_3	28.1	5.1	720	^{205}Tl	33 (4)
Pb	Pb	27.4	21.4	803	^{206}Pb	41 (6)
Bi	Bi	34.3	21.6	896	^{209}Bi	48 (7)
Th	ThOH	26.3	17.2	666	^{232}Th	36 (4)
U	U_3O_8	40.0	22.2	635	^{238}U	29 (4)

Table 3

Isotopic abundances of elements

Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %
$_{1}H$	1	99.9850	$_{10}Ne$	20	90.92	$_{17}Cl$	35	75.529	$_{22}Ti$	48	73.94
	2	0.01492		21	0.257		37	24.471		49	5.51
$_{2}He$	3	0.000137		22	8.82	$_{18}Ar$	36	0.337		50	5.34
	4	99.999863	$_{11}Na$	23	100		38	0.063	$_{23}V$	50	0.24
$_{3}Li$	6	7.42	$_{12}Mg$	24	78.70		40	99.600		51	99.76
	7	92.58		25	10.13	$_{19}K$	39	93.10	$_{24}Cr$	50	4.31
$_{4}Be$	9	100		26	11.17		40	0.01181		52	83 76
$_{5}B$	10	19.61	$_{13}Al$	27	100		41	6.88		53	9.55
	11	80.39	$_{14}Si$	28	92.21	$_{20}Ca$	40	96.97		54	2.38
$_{6}C$	12	98.893		29	4.70		42	0.64	$_{25}Mn$	55	100
	13	1.107		30	3.09		43	0.145	$_{26}Fe$	54	5.84
$_{7}N$	14	99.6337	$_{15}P$	31	100		44	2.06		56	91.66
	15	0.3663	$_{16}S$	32	95.0		46	0.0033		57	2.19
$_{8}O$	16	99.759		33	0.760		48	0.185		58	0.33
	17	0.0374		34	4.22	$_{21}Sc$	45	100	$_{27}Co$	59	100
	18	0.2039		36	0.0136	$_{22}Ti$	46	7.93	$_{28}Ni$	58	67.88
$_{9}F$	19	100					47	7.28		60	26.23

Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %
$_{28}$Ni	61	1.19	$_{42}$Mo	96	16.53	$_{52}$Te	128	31.79	$_{67}$Ho	165	100
	62	3.66		97	9.46		130	34.48	$_{68}$Er	162	0.136
	64	1.08		98	23.78	$_{53}$I	127	100		164	1.56
$_{29}$Cu	63	69.09		100	9.63	$_{55}$Cs	133	100		166	33.41
	65	30.91	$_{44}$Ru	96	5.51	$_{56}$Ba	130	0.101		167	22.94
$_{30}$Zn	64	48.89		98	1.87		132	0.097		168	27.07
	66	27.81		99	12.72		134	2.42		170	14.88
	67	4.11		100	12.62		135	6.59	$_{69}$Tm	169	100
	68	18.57		101	17.07		136	7.81	$_{70}$Yb	168	0.135
	70	0.62		102	31.61		137	11.32		170	3.03
$_{31}$Ga	69	60.4		104	18.58		138	71.66		171	14.31
	71	39.6	$_{45}$Rh	103	100	$_{57}$La	138	0.089		172	21.82
$_{32}$Ge	70	20.52	$_{46}$Pd	102	0.96		139	99.911		173	16.13
	72	27.43		104	10.97	$_{58}$Ce	136	0.193		174	31.84
	73	7.76		105	22.23		138	0.250		176	12.73
	74	36.54		106	27.33		140	88.48	$_{71}$Lu	175	97.41
	76	7.76		108	26.71	$_{59}$Pr	141	100		176	2.59
$_{33}$As	75	100		110	11.81	$_{60}$Nd	142	27.11	$_{72}$Hf	174	0.18
$_{34}$Se	74	0.87	$_{47}$Ag	107	51.35		143	12.17		176	5.20
	76	9.02		109	48.65		144	23.85		177	18.50
	77	7.58	$_{48}$Cd	106	1.22		145	8.30		178	27.14
	78	23.52		108	0.88		146	17.22		179	13.75
	80	49.82		110	12.39		148	5.73		180	35.24
	82	9.19		111	12.75		150	5.62	$_{73}$Ta	180	0.0123
$_{35}$Br	79	50.537		112	24.07	$_{62}$Sm	144	3.09		181	99.9877
	81	49.463		113	12.26		147	14.97	$_{74}$W	180	0.135
$_{36}$Kr	78	0.354		114	28.86		148	11.24		182	26.41
	80	2.27		116	7.58		149	13.83		183	14.40
	82	11.56	$_{49}$In	113	4.28		150	7.44		184	30.64
	83	11.55		115	95.72		152	26.72		186	28.41
	84	56.90	$_{50}$Sn	112	0.96		154	22.71	$_{75}$Re	185	37.07
	86	17.37		114	0.66	$_{63}$Eu	151	47.82		187	62.93
$_{37}$Rb	85	72.15		115	0.35		153	52.18	$_{76}$Os	184	0.018
	87	27.85		116	14.30	$_{64}$Gd	152	0.200		186	1.59
$_{38}$Sr	84	0.56		117	7.61		154	2.15		187	1.64
	86	9.86		118	24.03		155	14.73		188	13.3
	87	7.02		119	8.58		156	20.47		189	16.1
	88	82.56		120	32.85		157	15.68		190	26.4
$_{39}$Y	89	100		122	4.72		158	24.87		192	41.0
$_{40}$Zr	90	51.46		124	5.94		160	21.90	$_{77}$Ir	191	37.3
	91	11.23	$_{51}$Sb	121	57.25	$_{65}$Tb	159	100		193	62.7
	92	17.11		123	42.75	$_{66}$Dy	156	0.0524	$_{78}$Pt	190	0.0127
	94	17.40	$_{52}$Te	120	0.089		158	0.0902		192	0.78
	96	2.80		122	2.46		160	2.294		194	32.9
$_{41}$Nb	93	100		123	0.87		161	18.88		195	33.8
$_{42}$Mo	92	15.84		124	4.61		162	25.53		196	25.3
	94	9.04		125	6.99		163	24.97		198	7.21
	95	15.72		126	18.71		164	28.18			

Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %	Element	A	Isotopic Abundance, %
$_{79}$Au	197	100	$_{80}$Hg	201	13.22	$_{82}$Pb	204	1.48	$_{90}$Th	232	100
$_{80}$Hg	196	0.146		202	29.80		206	23.6	$_{92}$U	234	0.0056
	198	10.02		204	6.85		207	22.6		235	0.7205
	199	16.84	$_{81}$Tl	203	29.50		208	52.3		238	99.2739
	200	23.13		205	70.50	$_{83}$Bi	209	100			

Table

Some data for the isotopic samples

Isotope	Compound	Mass in metal, g	Abundance of the isotopes, %									
			92	94	95	96	97	98	100			
^{92}Mo	MoO_3	10	95.2	0.9	0.99	0.9	0.47	1.2	0.39			
			102	104	105	106	108	110				
^{104}Pd	Pd	5.8	<0.1	91.2	6.8	1.5	0.5	<0.1				
^{105}Pd	Pd	1.3	<0.1	1.6	93.7	3.9	0.5	0.3				
^{106}Pd	Pd	7.4	<0.1	0.5	1.9	96.3	1.0	0.3				
^{108}Pd	Pd	6.0	<0.1	0.1	0.3	0.9	98.4	0.4				
^{110}Pd	Pd	4.4	<0.1	<0.1	<0.1	0.1	0.9	99.0				
			106	108	110	111	112	113	114	116		
^{110}Cd	Cd	10	—	—	91.5	3.2	2.2	1.0	1.7	0.4		
^{112}Cd	Cd	10	0.04	0.14	0.3	0.96	95.75	1.68	1.02	0.12		
^{114}Cd	Cd	10	<0.01	0.01	0.10	0.13	0.36	0.16	99.0	0.24		
^{116}Cd	Cd	10	0.01	0.01	0.60	0.75	2.30	0.88	4.85	90.6		
			112	114	115	116	117	118	119	120	122	124
^{116}Sn	Sn	8.1	—	0.1	0.1	95.6	1.9	1.3	0.2	0.6	0.1	0.1
^{118}Sn	Sn	8.1	<0.01	<0.01	<0.01	0.1	0.1	98.5	0.71	0.5	0.04	0.05
^{120}Sn	Sn	8.2	<0.01	<0.01	<0.01	0.1	0.06	0.21	0.21	99.2	0.14	0.08
^{122}Sn	Sn	8.4	—	0.3	0.3	0.6	0.5	1.2	0.8	4.0	90.9	1.4
^{124}Sn	Sn	8.9	0.02	0.01	0.02	0.54	0.22	0.84	0.44	1.45	0.56	95.6
			120	122	123	124	125	126	128	130		
^{124}Te	TeO_2	10	<0.04	0.07	0.09	90.8	4.46	2.7	0.96	0.92		
^{126}Te	TeO_2	10	<0.03	<0.03	0.03	0.06	0.12	98.2	1.20	0.42		
^{128}Te	TeO_2	10	<0.03	<0.03	<0.02	0.03	0.05	0.27	98.7	0.93		
^{130}Te	TeO_2	10	≤0.03	<0.03	<0.06	<0.03	<0.05	0.16	0.44	99.4		

Isotope	Compound	Mass in metal, g	Abundance of the isotopes, %						
			144	147	148	149	150	152	154
^{144}Sm	Sm_2O_3	10	92.4	2.4	1.2	1.1	0.4	1.4	1.1
^{148}Sm	Sm_2O_3	10	0.1	1.0	95.4	2.6	0.3	0.4	0.2
^{150}Sm	Sm_2O_3	10	—	0.4	0.5	1.1	95.0	2.3	0.7
^{152}Sm	Sm_2O_3	10	—	—	0.1	0.1	0.1	99.0	0.7
^{154}Sm	Sm_2O_3	10	—	0.1	0.1	0.2	0.1	0.9	98.6
			156	158	160	161	162	163	164
^{162}Dy	Dy_2O_3	10	<0.1	<0.1	<0.1	0.95	95.2	3.12	0.73
^{164}Dy	Dy_2O_3	10	<0.06	<0.06	<0.06	0.042	0.59	1.79	97.2
			180	182	183	184	186		
^{182}W	W	8	0.03	91.6	5.03	2.46	0.91		
^{184}W	W	10	<0.02	0.60	0.98	96.3	2.12		
^{186}W	W	10	0.04	0.55	0.35	1.80	97.3		

ЧАСТЬ 1

ОСНОВНЫЕ ТАБЛИЦЫ ЭНЕРГИЙ И ИНТЕНСИВНОСТЕЙ ГАММА-КВАНТОВ, СХЕМ УРОВНЕЙ И ГАММА-ПЕРЕХОДОВ, СПЕКТРЫ ГАММА-КВАНТОВ ЭЛЕМЕНТОВ от $_{3}$Li до $_{42}$Mo

PART 1

MAIN TABLES OF ENERGY AND INTENSITY VALUES OF GAMMA-RAYS, DECAY SCHEMES AND GAMMA-TRANSITIONS, GAMMA-RAY SPECTRA OF ELEMENTS from $_{3}$Li to $_{42}$Mo

Lithium $_3$Li

$E_\gamma = 478.4(3)$ keV; $I_\gamma = 100$.

Beryllium $_4$Be

Gamma-rays were not observed in the spectrum.

Carbon $_6$C

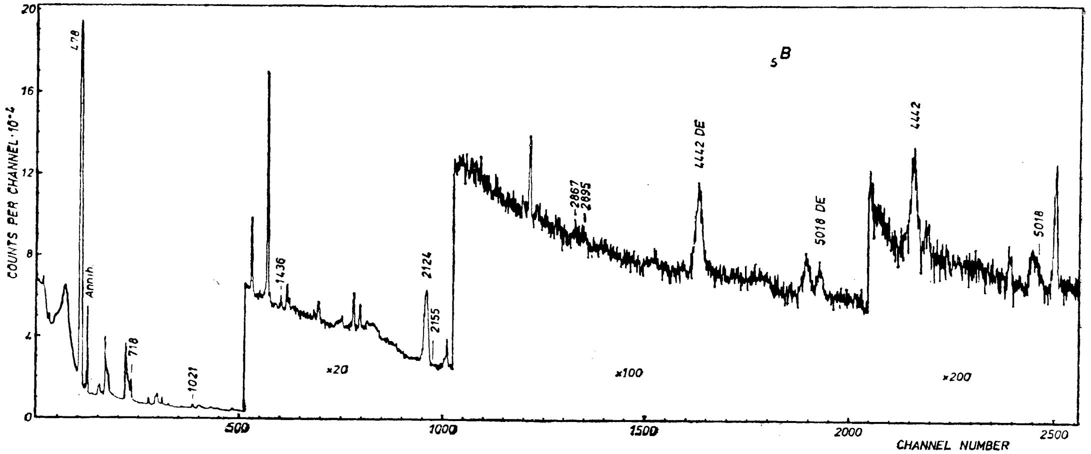
$E_\gamma = 4438(2)$ keV; $I_\gamma = 109$.

Oxygen $_8$O

E_γ	I_γ	^AZ	E_i
1983.0 (4)	100	^{18}O	1983.1
6129.3 (10)	595 (120)	^{16}O	6130.6

Boron $_5$B

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
477.7 (2)	1048 (50)	^{7}Li	477.7	2155.0 (6)	1.1 (4)	^{10}B	2154.9
718.18 (15)	38 (8)	^{10}B	718.2	2867.3 (8)	4.2 (8)	^{10}B	3585.9
1021.4 (3)	4.7 (7)	^{10}B	1739.8	2895.1 (8)	4.6 (8)	^{11}B	5019.8
1436.5 (5)	1.6 (4)	^{10}B	2154.9	4442.2 (9)	38 (8)	^{11}B	4443.2
2124.0 (3)	100	^{11}B	2124.3	5018.4 (12)	18 (3)	^{11}B	5019.8



Level schemes of ^{10}B [66La] and ^{11}B [68Aj, 71Br]

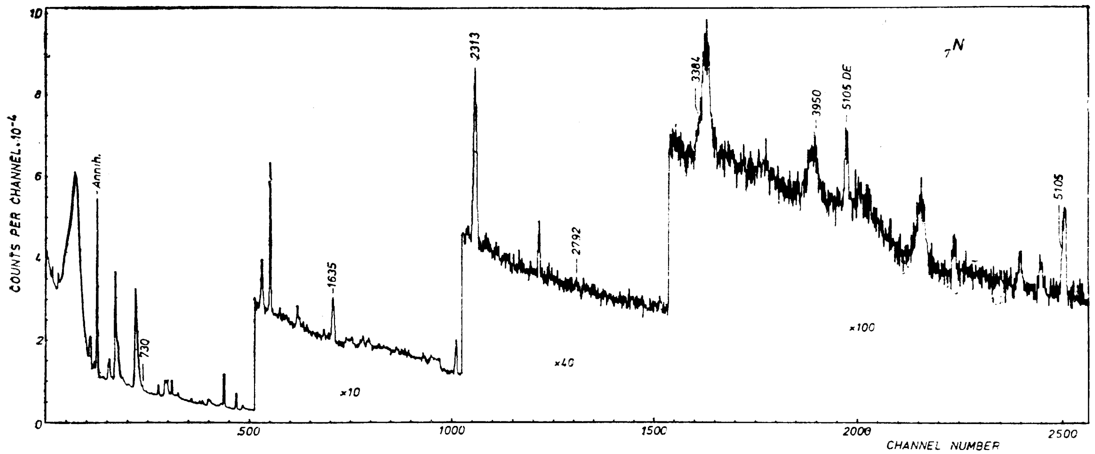
^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{10}B	718.21 (15)	717.3	1+	718.18	38	0	3+	27
	1739.6 (4)	1740.0	0+	1021.4	4.7	718.2	1+	1.6*
	2154.9 (6)	2154	1+	2155.0	1.1	0	3+	4.3*
				1436.5	1.6	718.2	1+	
	3585.9 (10)	3585	2+	2867.3	4.2	718.2	1+	7.4*
^{11}B	2124.3 (3)	2124.4	1/2−	2124.0	100	0	3/2−	95
	4443.2 (9)	4444.4	5/2−	4442.2	38	0	3/2−	38
	5019.8 (11)	5020.7	3/2−	5018.4	18	0	3/2−	23
				2895.1	4.6	2124.3	1/2−	

Nitrogen $_7$N

E_γ	I_γ	E_i	E_γ	I_γ	E_i
729.6 (5)	12 (2)	5834.2	3384 (3)	11 (2)	5697
1634.6 (3)	67 (5)	3947.7	3949.9 (25)	3.6 (20)	3947.7
2312.8 (3)	100	2313.0	5104.6 (8)	22 (5)	5105.6
2792.5 (20)	5.7 (16)	5105.6			

Level scheme of ^{14}N [70Aj]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2313.0 (3)	2312.81	0+	2312.8	100	0	1+	16
3947.7 (5)	3944.7	1+	3949.9	3.6	0	1+	71
			1634.6	67	2313.0	0+	
—	4913.4	(0,1)−	—	—	—	—	—
5105.6 (8)	5105.87	2−	5104.6	22	0	1+	28
			2792.5	5.7	2313.0	0+	
5697 (3)	5691	1−	3384	11	2313.0	0+	17*
5834.2 (11)	5833	3−	729.6	12	5105.6	2−	16*

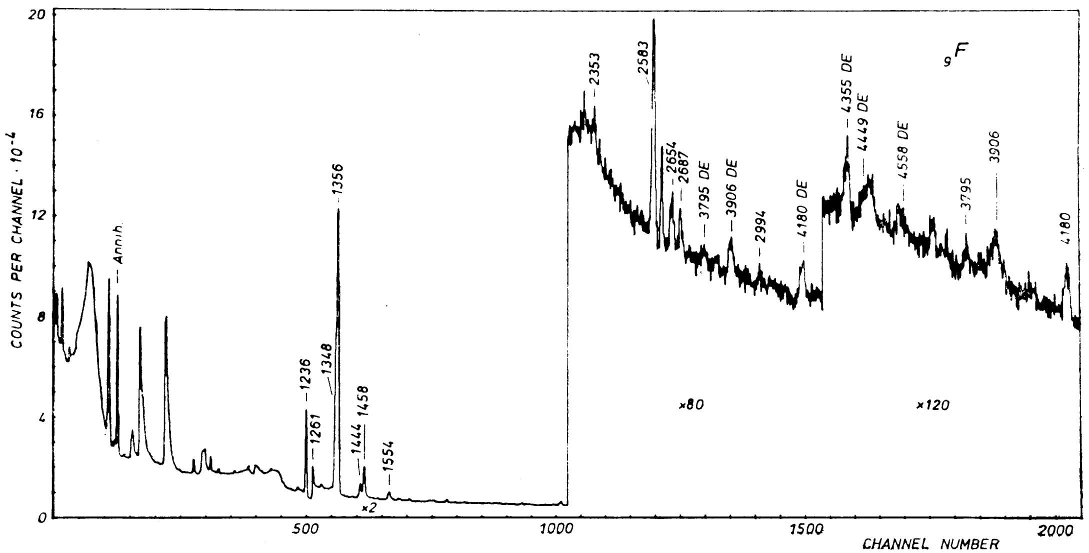


Fluorine $_9$F

E_γ	I_γ	E_i	E_γ	I_γ	E_i
197.1 (2)	2700 (200)	197.1	2653.8 (5)	5.4 (13)	3999.6
1235.80 (10)	100	1345.7	2686.6 (5)	3.7 (13)	4032.5
1261.1 (3)	20 (4)	1458.4	2993.6 (20)	1.1 (3)	
1348.0 (5)	120 (30)	1458.4	3794.9 (15)	1.0 (2)	3906.2
1356.5 (5)	265 (60)	1553.9	3905.9 (15)	3.5 (18)	3906.2
1444.0 (4)	15 (5)	1553.9	4180.2 (15)	3.0 (8)	4377.9
1458.4 (4)	33 (6)	1458.4	4354.8 (25)	2.0 (10)	4552.4
1554.0 (6)	8.0 (22)	1553.9	4449.3 (25)	2.0 (10)	4558.9
2352.6 (12)	1.0 (3)	3906.2	4558.3 (25)	2.0 (10)	4558.9
2582.6 (2)	20 (3)	2779.9			

Level scheme of ^{19}F [72Aj]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
109.9	109.893	1/2−	—	—	—	—	—
197.1 (2)	197.147	5/2+	197.1	2700	0	1/2+	2390
1345.74 (10)	1345.72	5/2−	1235.80	100	109.9	1/2−	91
1458.4 (4)	1458.5	3/2−	1458.4	33	0	1/2+	173
			1348.0	120	109.9	1/2−	
			1261.1	20	197.1	5/2+	
1553.9 (5)	1554.1	3/2+	1554.0	8.0	0	1/2+	286
			1444.0	15	109.9	1/2−	
			1356.5	265	197.1	5/2+	
2779.9 (3)	1779.80	9/2+	2582.6	20	197.1	5/2+	20
3906.2 (15)	3907.1	3/2(+)	3905.9	3.5	0	1/2+	6.5*
			3794.9	1.0	109.9	1/2−	
			2352.6	1.0	1553.9	3/2+	
3999.6 (6)	3998.5	7/2−	2653.8	5.4	1345.7	5/2−	6.8*
4032.5 (6)	4032.5	9/2−	2686.6	3.7	1345.7	5/2−	3.7
4377.9 (16)	4377.7	7/2+	4180.2	3.0	197.1	5/2+	4.0*
4552.4 (225	4555	5/2+	4354.8	2.0	197.1	5/2+	3.0*
4558.9 (5))	4557.5	3/2−	4558.3	2.0	0	1/2+	4.9*
			4449.3	2.0	109.9	1/2−	



Sodium $^{23}_{11}Na$

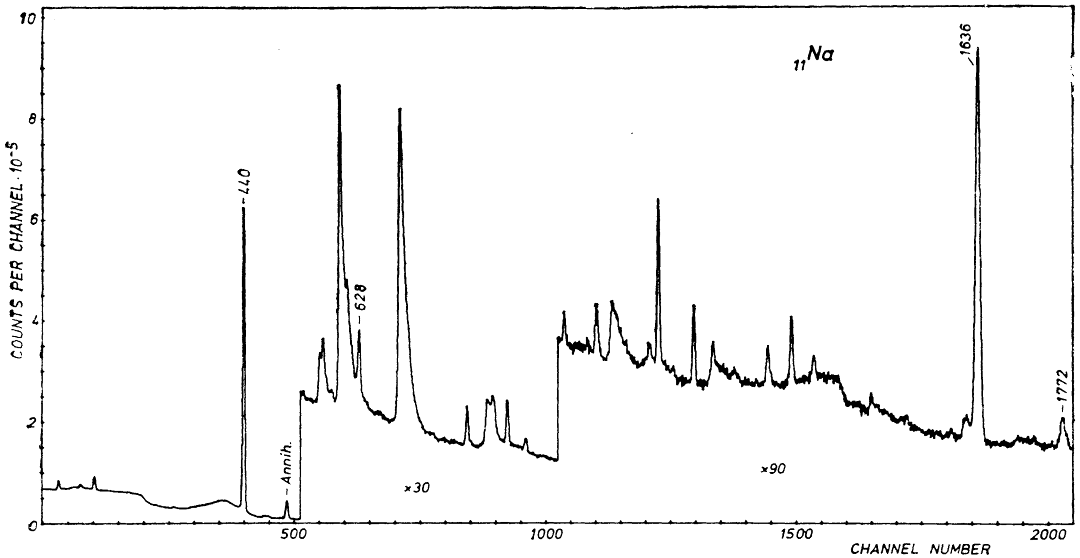
E_γ	I_γ	E_i	E_γ	I_γ	E_i
440.0(2)	100	440.0	2542.0(5)	1.1(2)	2982.2
627.6(2)	0.90(15)	2073.5	2640.1(5)	2.0(4)	2640.3
1635.8(2)	8.6(8)	2076.0	2698.1(10)	0.15(5)	4774.3
1772.5(10)	0.80(15)	3848.5	2981.7(10)	1.4(2)	2982.2
1839.3(15)	0.10(5)	3915.0	3238.2(12)	0.90(15)	3678.5
1951.0(4)	1.1(3)	2390.9	3848.2(15)	0.20(8)	3848.5
2075.3(6)	0.85(10)	2076.0	3914.8(18)	0.45(15)	3913.8
2263.2(5)	1.2(2)	2703.5	4334(2)	0.40(10)	4774.3
2390.6(5)	1.8(2)	2390.9	4430.4(12)	0.35(10)	4430.9

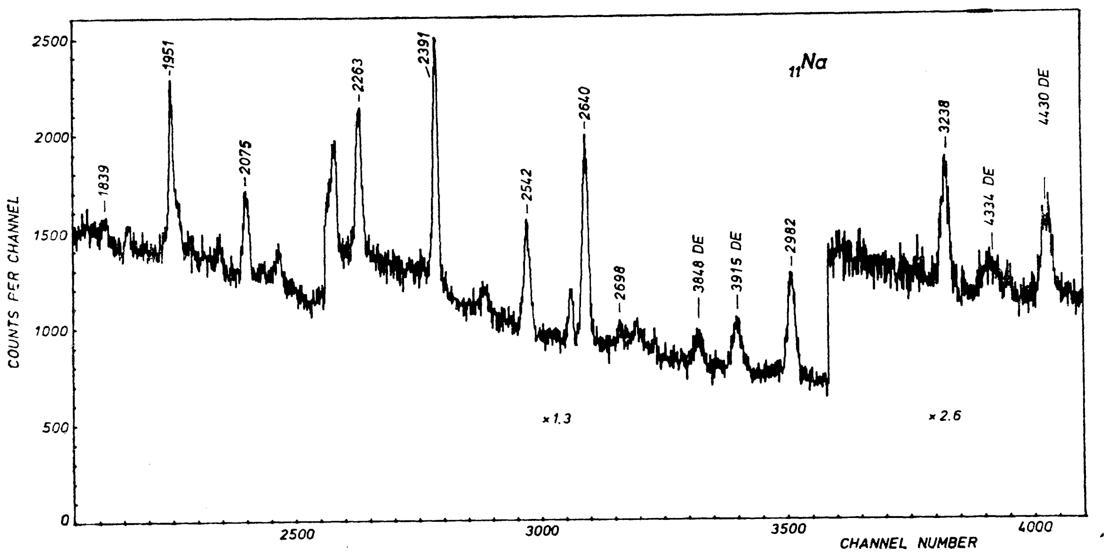
Level scheme of ^{23}Na [72Ko, 73En, 73Ko, 73Me]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
440.0(2)	439.9	5/2+	440.0	100	0	3/2+	86
2076.0(4)	2076.4	7/2+	2075.3	0.85	0	3/2+	7.4
			1635.8	8.6	440.0	5/2+	
2390.9(5)	2390.9	1/2+	2390.6	1.8	0	3/2+	2.9
			1951.0	1.1	440.0	5/2+	
2640.3(5)	2639.8	1/2−	2640.1	2.0	0	3/2+	1.8*
2703.5(6)	2703.7	9/2+	2263.2	1.2	440.0	5/2+	2.1
			627.6	0.90	2076.0	7/2+	
2982.2(6)	2982.4	3/2+	2981.7	1.4	0	3/2+	2.5
			2542.0	1.1	440.0	5/2+	
3678.5(14)	3678.3	3/2−	3237.2	0.90	440.0	5/2+	1.1*
3848.5(14)	3848.2	5/2−	3848.2	0.20	0	3/2+	1.0
			1772.5	0.80	2076.0	7/2+	
3915.0(18)	3914.7	5/2+	3914.8	0.45	0	3/2+	0.60*
			1839.3	0.10	2076.0	7/2+	
4430.9(12)	4432	1/2+	4430.4	0.35	0	3/2+	0.35
4774.3(14)	4775.6	7/2+	4334	0.40	440.0	5/2+	0.65*
			2698.1	0.15	2076.0	7/2+	

Magnesium $_{12}Mg$

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
350.5(2)	3.9(10)	^{21}Ne	350.5	584.90(10)	15(2)	^{25}Mg	584.9
389.7(4)	5.6(10)	^{25}Mg	914.6	974.6(3)	5.4(8)	^{25}Mg	974.6
472.0(8)	1.6(4)	^{24}Na	472.0	989.7(4)	0.85(15)	^{25}Mg	1964.2

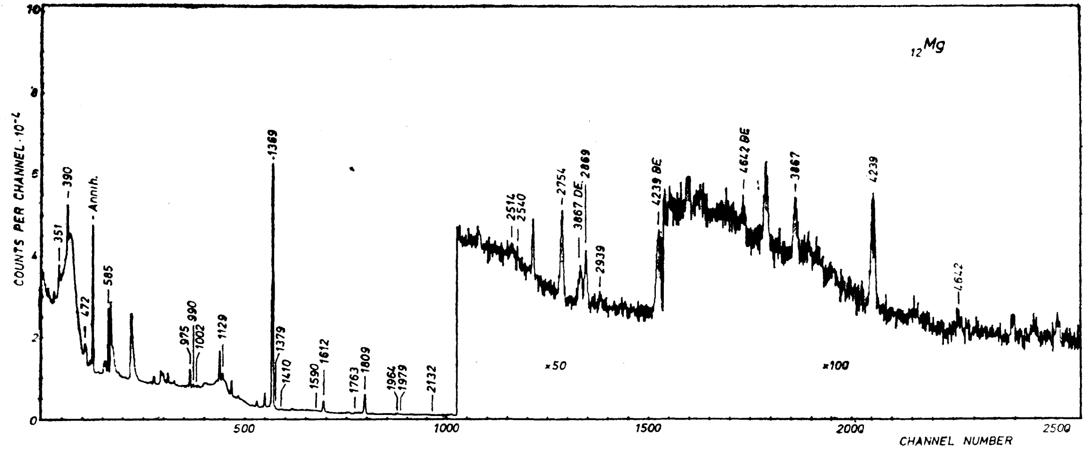




E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1001.8(6)	0.80(20)	^{26}Mg	3940.3	1979.3(20)	0.50(15)	^{25}Mg	2564.5
1129.2(3)	3.2(6)	^{26}Mg	2938.0	2132.1(15)	0.35(15)	^{26}Mg	3940.3
1368.53(10)	100	^{24}Mg	1368.6	2514.0(18)	0.30(15)	^{26}Mg	4322.7
1379.1(12)	1.6(8)	^{25}Mg	1964.2	2540.0(10)	0.35(15)	^{26}Mg	4348.6
1410.4(15)	0.35(15)	^{26}Mg	4348.6	2754.2(6)	4.3(8)	^{24}Mg	4123.0
1590.0(20)	0.20(10)	^{25}Mg	2564.5	2869.4(8)	1.7(4)	^{24}Mg	4238.7
1611.6(3)	6.0(8)	^{25}Mg	1611.7	2938.7(20)	0.40(15)	^{26}Mg	2938.0
1763.0(12)	0.90(20)	^{25}Mg	2737.7	3867.4(10)	1.7(4)	^{24}Mg	5236.3
1808.6(3)	11(2)	^{26}Mg	1808.7	4238.6(6)	4.0(4)	^{24}Mg	4238.7
1963.7(12)	0.85(15)	^{25}Mg	1964.2	4641.7(10)	0.95(20)	^{24}Mg	6010.8

Level schemes of ^{24}Mg [73En], ^{25}Mg [73En, 73Ro] and ^{26}Mg [73En, 73Kl]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{24}Mg	1368.57(10)	1368.59	2+	1368.53	100	0	0+	91
	4123.0(6)	4122.82	4+	2754.2	4.3	1368.6	2+	4.3
	4238.7(6)	4238.5	2+	4238.6	4.0	0	0+	5.6*
				2869.4	1.7	1368.6	2+	
	5236.3(11)	5236.0	3+	3867.4	1.7	1368.6	2+	1.7
	6010.8(11)	6010.3	4+	4641.7	0.95	1368.6	2+	1.1*
^{25}Mg	584.91(15)	585.11	1/2+	584.90	15	0	5/2+	7.3
	974.6(3)	974.80	3/2+	974.6	5.4	0	5/2+	11
				389.7	5.6	584.9	1/2+	
	1611.7(3)	1611.69	7/2+	1611.6	6.0	0	5/2+	6.0
	1964.2(5)	1964.9	5/2+	1963.7	0.85	0	5/2+	3.3
				1379.1	1.6	584.9	1/2+	
				989.7	0.85	974.6	3/2+	
	2564.5(23)	2564.0	1/2+	1979.3	0.50	584.9	1/2+	0.7
				1590.0	0.20	974.6	3/2+	
	2737.7(15)	2736	7/2+	1763.0	0.90	974.6	3/2+	1.1*
^{26}Mg	1808.7(3)	1808.73	2+	1808.6	11	0	0+	6.8
	2938.0(5)	2938.41	2+	2938.7	0.40	0	0+	2.4
				1129.2	3.2	1808.7	2+	
	—	3588.3	0+	—	—	—	—	—
	3940.3(12)	3940.9	3+	2132.1	0.35	1808.7	2+	1.2
				1001.8	0.80	2938.0	2+	
	4322.7(21)	4319.8	4+	2514.0	0.30	1808.7	2+	0.3
	—	4332.3	(2)+	—	—	—	—	—
	4348.6(18)	4350.1	3+	2540.0	0.35	1808.7	2+	0.70
				1410.4	0.35	2938.0	2+	



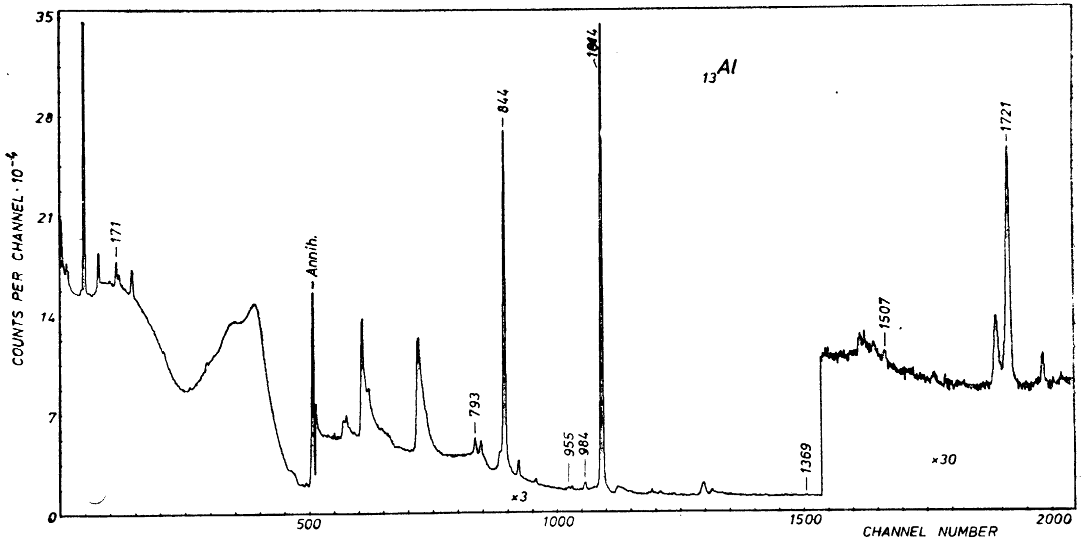
Aluminium

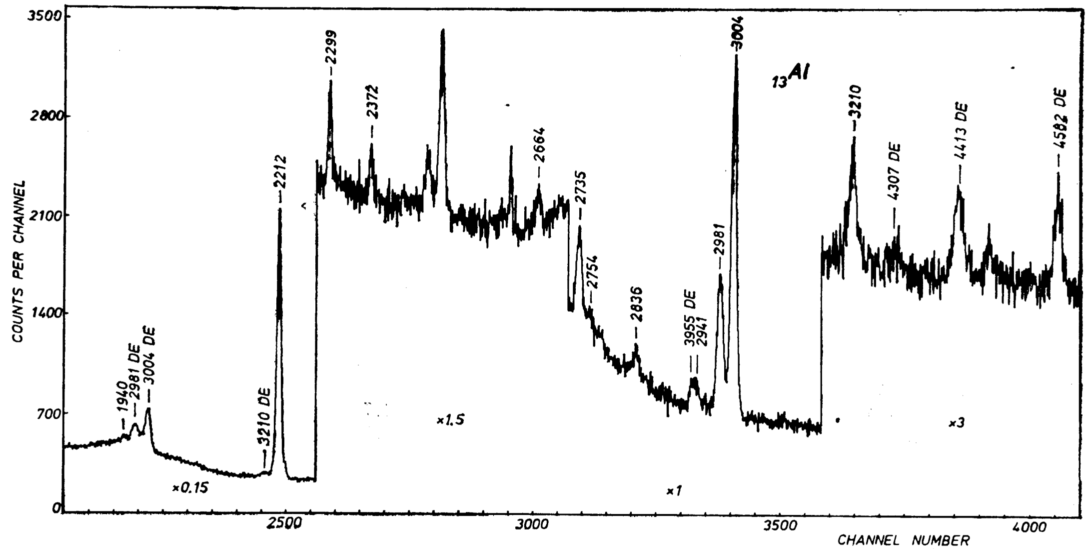
$_{13}$**Al**

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
170.6(2)	4.9(10)	^{27}Al	1014.4	2664.5(8)	0.9(2)	^{27}Al	3679.3
793.0(2)	3.1(3)	^{27}Al	3004.8	2735.3(5)	3.4(3)	^{27}Al	2735.2
843.75 *c*	60(4)	^{27}Al	843.8	2754.0(15)	0.20(10)	^{24}Mg	4122.8
955.2(2)	0.50(10)	^{27}Mg	1939.8	2835.8(7)	1.1(2)	^{27}Al	3679.3
984.50(15)	1.7(3)	^{27}Mg	984.5	2940.6(8)	0.8(3)	^{27}Al	3954.7
1014.40(15)	100	^{27}Al	1014.4	2981.3(4)	7.7(13)	^{27}Al	2981.4
1369.3(8)	0.30(10)	^{27}Al+^{24}Mg	2211.8	3004.5(3)	18 (3)	^{27}Al	3004.8
1507.3(7)	0.30(10)	^{27}Al	4511.6	3210.4(7)	2.1(4)	^{27}Al	4054.3
1720.8(3)	14(2)	^{27}Al	2735.2	3954.9(11)	0.6(3)	^{27}Al	3954.7
1940.2(4)	0.4(2)	^{27}Mg	1939.8	4307.0(15)	0.4(2)	^{27}Al	5151.1
2211.8(2)	52(5)	^{27}Al	2211.8	4413.4(8)	1.1(4)	^{27}Al	4413.6
2299.2(5)	1.6(2)	^{27}Al	4511.6	4582.0(8)	1.4(5)	^{27}Al	4582.2
2371.7(6)	0.8(2)	^{27}Al	4582.2				

Level scheme of ^{27}Al [73En, 74Na]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
843.76	843.76	1/2+	843.75	60	0	5/2+	50
1014.42(15)	1014.46	3/2+	1014.40	100	0	5/2+	90
			170.6	4.9	843.8	1/2+	
2211.8(2)	2210.5	7/2+	2211.8	52	0	5/2+	47
			1369.3	0.3	843.8	1/2+	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2735.2(3)	2734.0	5/2+	2735.3	3.4	0	5/2+	17
			1720.8	14	1014.4	3/2+	
2981.4(4)	2981.1	3/2+	2981.3	7.7	0	5/2+	7.7
3004.8(7)	3004.2	9/2+	3004.5	18	0	5/2+	21
			793.0	3.1	2211.8	7/2+	
3679.3(7)	3678.4	1/2+	2835.8	1.1	843.8	1/2+	2.0
			2664.5	0.9	1014.4	3/2+	
3954.7(11)	3955.9	(3/2,5/2)+	3954.9	0.6	0	5/2+	1.4
			2940.6	0.8	843.8	1/2+	
4054.3(7)	4054.3	(1/2,3/2)−	3210.4	2.1	843.8	1/2+	2.4*
4413.6(8)	4409.4	5/2+	4413.4	1.1	0	5/2+	1.6*
4511.6(6)	4510.3	11/2+	2299.2	1.6	2211.8	7/2+	1.9
			1507.3	0.3	3004.8	9/2+	
4582.2(8)	4580.0	7/2+	4582.0	1.4	0	5/2+	2.2
			2371.7	0.8	2211.8	7/2+	
—	4812	5/2	—	—	—	—	—
5151.1(15)	5155	(1/2, 3/2)−	4307.0	0.4	843.8	1/2+	0.4

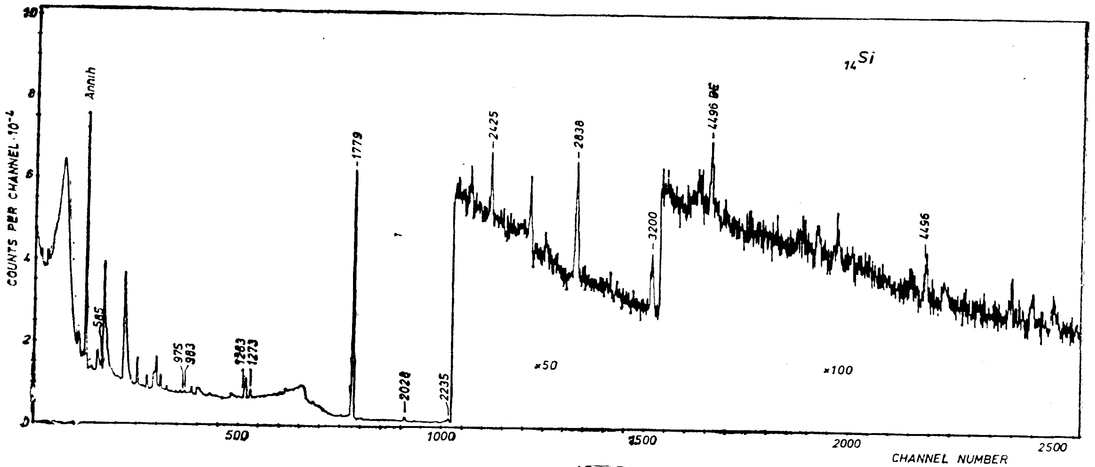
Silikon $_{14}$Si

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
584.6(5)	0.85(15)	^{25}Mg	584.6	2027.9(5)	2.0(4)	^{29}Si	2028.0
974.8(7)	0.25(5)	^{25}Mg	974.8	2234.9(5)	2.4(5)	^{30}Si	2235.0
983.4(5)	0.35(10)	^{28}Al	1014.0	2425.2(5)	0.85(20)	^{29}Si	2425.3
1262.9(8)	0.60(20)	^{30}Si	3497·9	2837.9(10)	2.7(3)	^{28}Si	4616.9
1272.8(4)	4.2(10)	^{29}Si	1272.8	3199.9(15)	1.0(2)	^{28}Si	4979.0
1778.8(3)	100	^{28}Si	1778.9	4496.3(15)	0.84(30)	^{28}Si	6275.6

Level schemes of ^{28}Si, ^{29}Si and ^{30}Si [73En]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{28}Si	1778.9(3)	1778.88	2+	1778.8	100	0	0+	95
	4616.9(12)	4617.8	4+	2837.9	2.7	1778.9	2+	2.7
	4979.0(17)	4979.1	0+	3199.9	1.0	1778.9	2+	1.0
	6275.6(17)	6276.5	3+	4496.3	0.84	1778.9	2+	0.9*
^{29}Si	1272.9(4)	1273.3	3/2+	1272.8	4.2	0	1/2+	4.0*
	2028.0(5)	2028.2	5/2+	2027.9	2.0	0	1/2+	2.1*
	2425.3(5)	2425.6	3/2+	2425.2	0.85	0	1/2+	1.0*

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{30}Si	2235.0(5)	2235.5	2+	2234.9	2.4	0	0+	1.8
	3497.9(8)	3498.2	2+	1262.9	0.60	2235.0	2+	1.1*

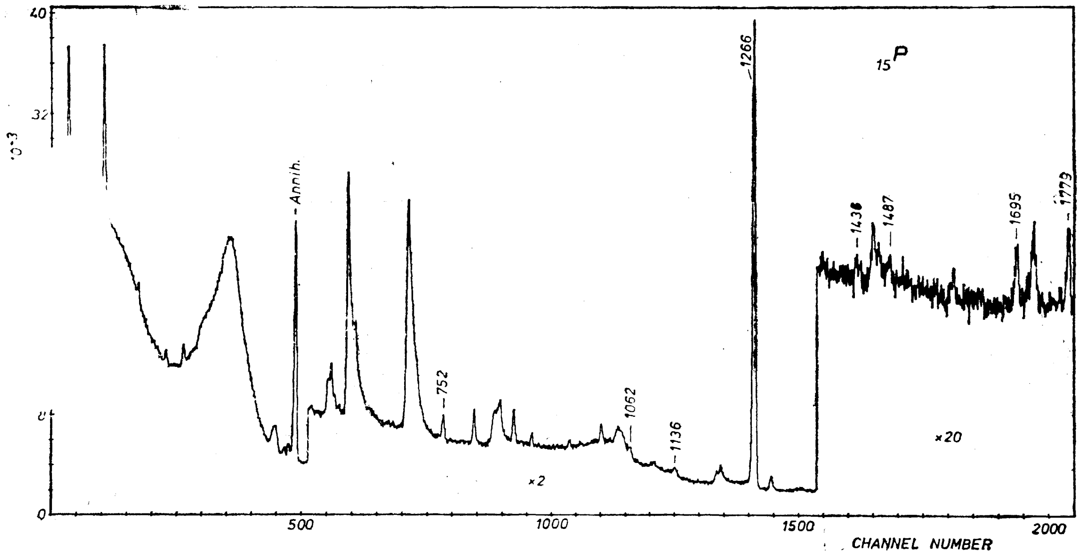


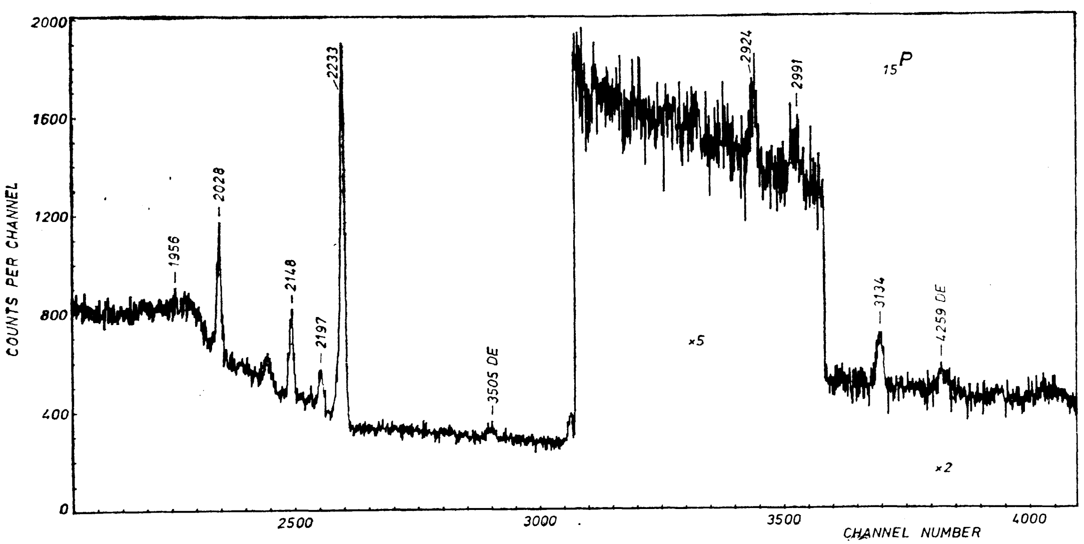
Phosphorus $^{31}_{15}$P

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
752.3(3)	3.2(5)	^{31}Si	752.5	2028.4(2)	6.2(4)	^{31}P	3294.9
1061.6(9)	1.5(3)	^{31}P	3294.9	2148.0(3)	5.1(4)	^{31}P	3414.4
1136.1(6)	1.8(3)	^{31}P	4430.5	2196.8(6)	2.3(4)	^{31}P	4430.5
1266.07(10)	100	^{31}P	1266.1	2233.40(10)	29(2)	^{31}P	2233.5
1435.8(10)	0.75(25)	^{31}Si	3131.0	2923.8(12)	2.5(3)	^{31}P	4190.2
1487.4(10)	1.3(2)	^{31}P	4782.4	2991.1(15)	0.60(20)	^{31}P	4259.1
1695.1(4)	2.0(3)	^{31}Si	1695.1	3134.2(7)	3.6(4)	^{31}P	3134.4
1778.9(2)	2.7(3)	^{28}Si	1778.9	3505.1(20)	2.4(3)	^{31}P	3505.3
1956.3(10)	0.7(3)	^{31}P	4190.2	4258.8(20)	1.2(2)	^{31}P	4259.1

Level scheme of ^{31}P [73En]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1266.10(10)	1266.13	3/2+	1266.07	100	0	1/2+	84*
2233.50(10)	2233.8	5/2+	2233.40	29	0	1/2+	24
3134.4(7)	3134.7	1/2+	3134.2	3.6	0	1/2+	3.6
3294.7(3)	3295.0	5/2+	2028.4	6.2	1266.1	3/2+	4.6
			1061.6	1.5	2233.5	5/2+	





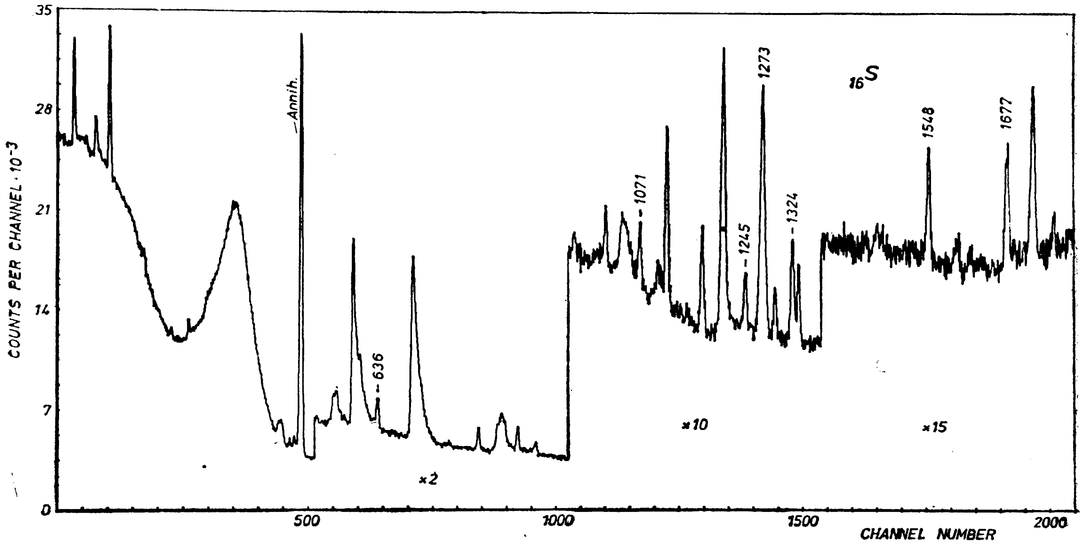
E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
3414.4(4)	3414.6	7/2+	2148.0	5.1	1266.1	3/2+	5.1
3505.3(20)	3506.1	3/2+	3505.1	2.4	0	1/2+	3.9*
4190.2(13)	4190.9	5/2+	2923.8	2.5	1266.1	3/2+	3.2
			1956.3	0.7	2233.5	5/2+	
4259.1(20)	4260.4	3/2+	4258.8	1.2	0	1/2+	1.8
			2991.1	0.60	1266.1	3/2+	
4430.4(7)	4431.2	7/2−	2196.8	2.3	2233.5	5/2+	4.1
			1136.1	1.8	3294.7	5/2+	
—	4592.5	3/2+	—	—	—	—	—
—	4634.2	7/2+(5/2+)	—	—	—	—	—
4782.4	4783.4	5/2+	1487.4	1.3	3294.7	5/2+	3.9*

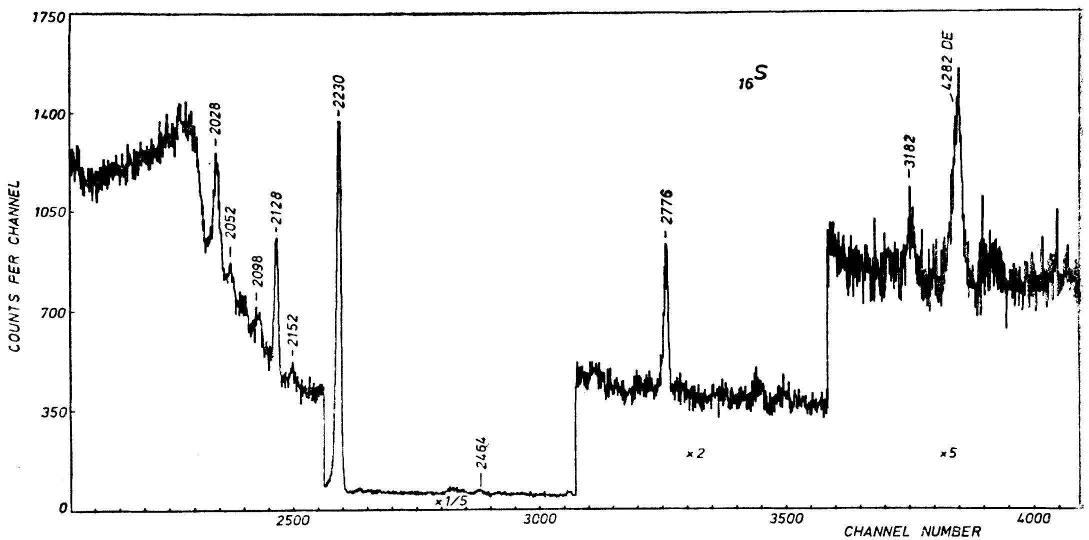
Sulfur $_{16}$S

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
636.2(2)	2.2(4)	^{32}P	1149.2	2097.5(8)	2.0(3)	^{32}P	2175.6
1071.1(2)	1.6(2)	^{32}P	1149.2	2127.5(8)	5.6(5)	^{34}S	2127.6
1245.2(2)	2.1(3)	^{32}P	1323.4	2151.6(10)	0.70(20)	^{32}P	2229.8
1273.0(2)	13.0(10)	^{29}Si	1273.0	2230.20(10)	100	^{32}S	2230.3
1323.7(4)	3.0(4)	^{32}P	1323.4	2464.4(14)	1.4(3)	^{32}S	4694.8
1548.1(3)	3.2(3)	^{32}S	3778.5	2776.1(3)	4.0(4)	^{32}S	5006.6
1676.9(4)	4.6(4)	^{32}P	1755.0	3182.0(12)	1.2(3)	^{32}S	5412.5
2028.4(5)	6.2(8)	^{29}Si	2028.4	4281.3(15)	4.0(6)	^{32}S	4281.9
2052.0(8)	0.50(10)	^{32}S	4281.9				

Level schemes of ^{32}S [73En, 73Mo, 73Ko1] and ^{32}P [73En]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{32}S	2230.28(10)	2230.2	2+	2230.20	100	0	0+	90
	3778.5(4)	3778.7	0+	1548.1	3.2	2230.3	2+	3.2
	4281.9(8)	4281.6	2+	4281.3	4.0	0	0+	4.5
				2052.0	0.50	2230.3	2+	
	4694.8(15)	4695.3	1+	2464.4	1.4	2230.3	2+	2.3*
	5006.6(4)	5006.8	3−	2776.1	4.0	2230.3	2+	4.2*
	5412.5(13)	5412.6	3+	3182.0	1.2	2230.3	2+	1.2
^{32}P	78.1	78.1	2+	—	—	—	—	—
	513.1	513.1	0+	—	—	—	—	—
	1149.2(3)	1149.4	1+	1071.1	1.6	78.1	2+	4.9*
				636.2	2.2	513.1	0+	
	1323.4(3)	1323.6	2+	1323.7	3.0	0	1+	5.1
				1245.2	2.1	78.1	2+	
	1755.0(5)	1754.9	3+	1676.9	4.6	78.1	2+	4.8*
	2175.6(9)	2175.3	3+	2097.5	2.0	78.1	2+	2.2*
	—	2216.5	2+(1+)	—	—	—	—	—
	2229.8(11)	2229.8	1+	2151.6	0.70	78.1	2+	0.85*

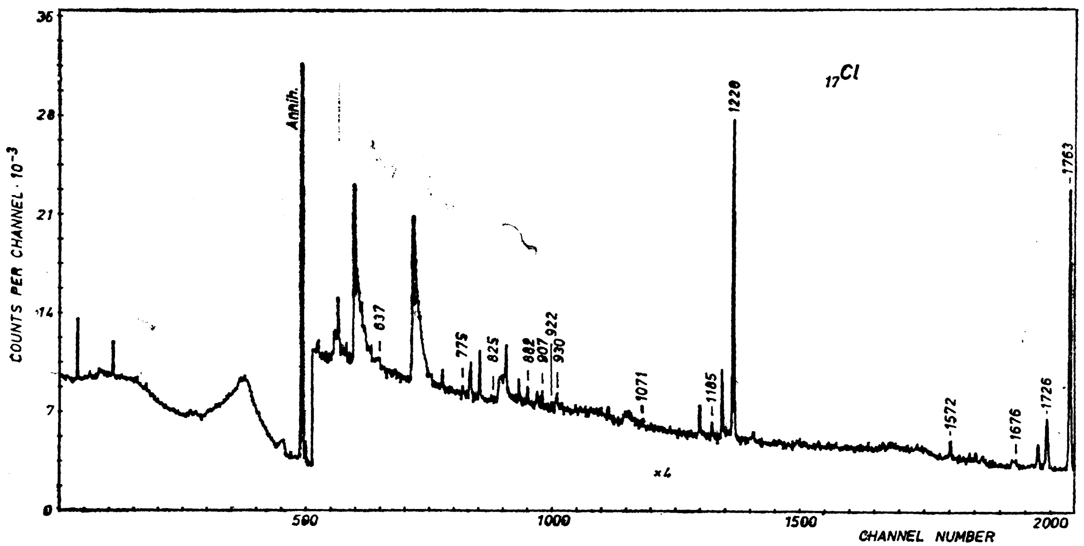


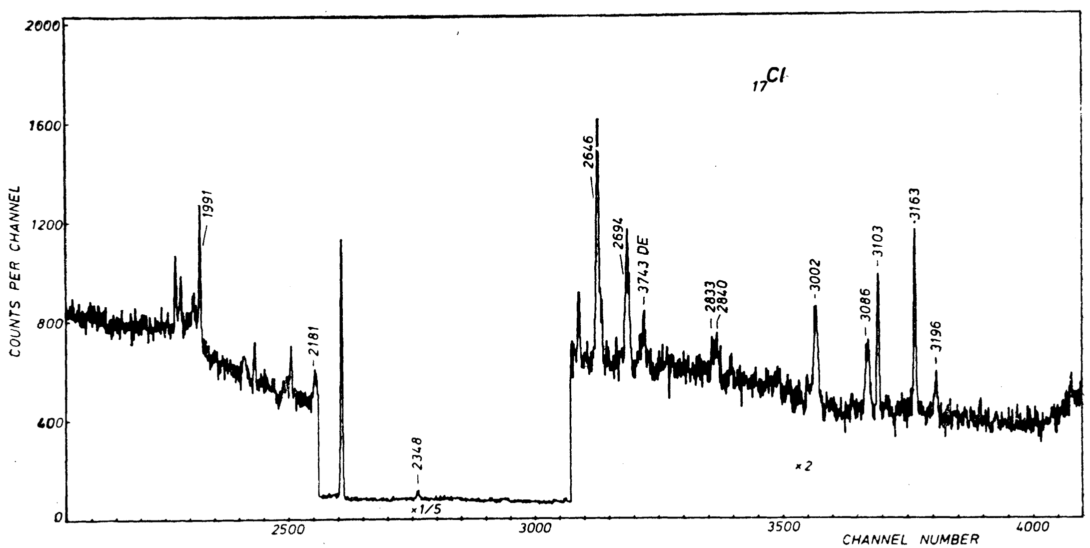


E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
637.2 (8)	2.8 (8)	^{32}P	1149.5	1763.27(10)	129 (4)	^{35}Cl	1763.3
775.0 (2)	1.3 (3)	^{35}S	2347.3	1991.43(15)	11.6(10)	^{35}S	1991.5
824.8 (10)	0.7 (2)			2180.8(3)	6.2(6)	^{35}Cl	3943.2
882.35 (15)	3.8 (4)	^{35}Cl	2645.7	2347.9(4)	6.6(6)	^{35}S	2348.0
906.64 (15)	2.9 (4)	^{37}Cl	4010.1	2645.7(2)	25.7(15)	^{35}Cl	2645.7
922.0 (3)	1.8 (4)			2694.0(2)	19.1(15)	^{35}Cl	2694.1
930.5 (5)	3.0 (10)	^{35}Cl	2694.1	2832.9(4)	4.3(5)		
1070.6 (6)	3.0 (7)	^{32}P	1149.5	2840.3(4)	5.4(6)	^{35}Cl	4059.9
1184.72 (15)	3.8 (4)			3002.2(2)	15.5(15)	^{35}Cl	3002.3
1219.52 (10)	100	^{35}Cl	1219.5	3086.3(3)	11.2(10)	^{37}Cl	3086.4
1572.32 (13)	5.9 (5)	^{35}S	1572.3	3103.29(15)	14.6(15)	^{37}Cl	3103.4
1676.4 (3)	2.7 (5)			3162.52(15)	16.3(15)	^{35}Cl	3162.7
1726.50 (10)	25 (2)	^{37}Cl	1726.5	3195.9(5)	5.0(6)		
				3742.9(5)	3.0(10)	^{37}Cl	3743.0

Level schemes of ^{35}Cl [73En, 73Fa] and ^{37}Cl [73En, 72Al, 73Pi]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{35}Cl	1219.54(10)	1219.4	1/2+	1219.52	100	0	3/2+	93
	1763.30(10)	1763.2	5/2+	1763.27	129	0	3/2+	122
	2645.75(20)	2645.7	7/2+	2645.7	26	0	3/2+	26*
				882.35	3.8	1763.5	5/2+	
	2694.1 (2)	2693.5	3/2+	2694.0	19	0	3/2+	27*
				930.5	3.0	1763.3	5/2+	
	3002.3(2)	3002.6	5/2+	3002.2	15	0	3/2+	15
	3162.66(15)	3162.60	7/2−	3162.52	16	0	3/2+	18*
	—	3917.9	3/2	—	—	—	—	—
	3943.2(4)	3942.3	9/2+	2180.8	6.2	1763.3	5/2+	6.7*
	—	3967.3	1/2+	—	—	—	—	—
	4059.9(4)	4058.4	3/2−	2840.3	5.4	1219.5	1/2+	5.6*
^{37}Cl	1726.54(10)	1726.6	1/2+	1726.50	25	0	3/2+	25
	3086.4(3)	3087.1	5/2(+)	3086.3	11	0	3/2+	11
	3103.43(15)	3103.1	7/2−	3103.29	15	0	3/2+	15
	—	3285	—	—	—	—	—	—
	—	3626	—	—	—	—	—	—
	—	3710	5/2−	—	—	—	—	—
	3743.0(5)	3741.8	—	3742.9	3.0	0	3/2+	3.0
	4010.1(2)	4009	9/2(−)	906.64	2.9	3103.4	7/2−	2.9

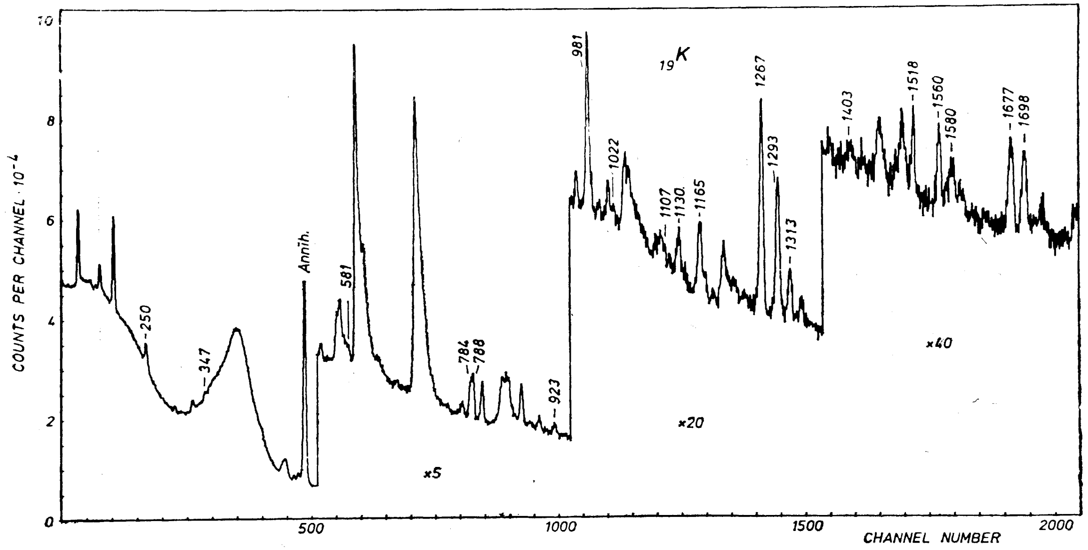


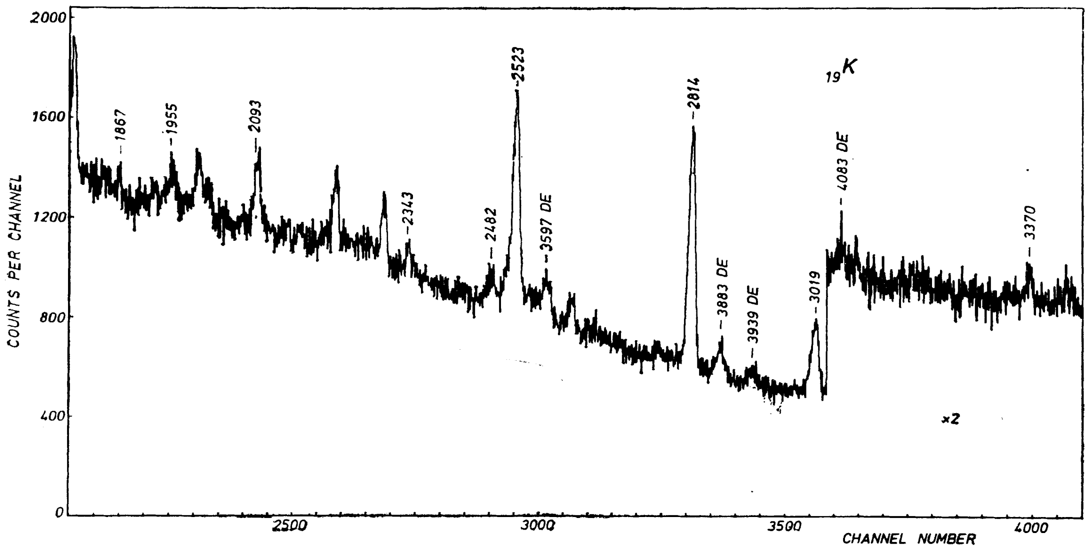


E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
250.2(4)	13(4)	^{39}Ar	1517.7	1560.1(4)	11(2)	^{41}K	1560.1
346.9(3)	8.0(10)	^{39}K	3943.9	1580.4(8)	5(2)	^{39}K	4103,2
580.7(10)	3.0(10)	^{41}K	1560.1	1676.7(4)	20(3)	^{41}K	1676.7
783.7(5)	16(3)	^{39}K	3597.2	1698.3(4)	17(3)	^{41}K	1698.3
788.5(5)	22(3)	^{36}Cl	788.5	1866.6(6)	3.3(8)	^{39}K	4680.4
923.3(8)	7.2(16)	^{39}K	4520.6	1955.4(10)	6(2)	^{39}K	4478.2
980.6(2)	31(5)	^{41}K	980.6	2092.7(6)	20(4)	^{39}Ar	2092.7
1022.5(10)	2.5(8)			2343.2(6)	7.2(15)	^{39}Ar	2343.3
1106.9(6)	2.2(6)			2481.5(10)	7.2(25)	^{39}Ar	2481.6
1192.9(5)	9(2)	^{39}K	3943.9	2522.8(3)	67(6)	^{39}K	2522.9
1165.2(4)	18(2)	^{39}Ar	2432.4	2813.8(4)	100	^{39}K	2813.9
		^{36}Cl	1165.2	3018.6(8)	35(5)	^{39}K	3018.7
1267.2(2)	52(5)	^{39}Ar	1267.2	3369.5(20)	5.6(16)		
1293.3(8)	24(6)	^{41}K	1293.3	3596.8(12)	22(4)	^{39}K	3597.2
1313.3(4)	12(2)	^{39}K	4127.1	3883.1(10)	20(4)	^{39}K	3882.9
1403.4(12)	5.2(16)			3938.7(15)	7.5(32)	^{39}K	3938.9
1517.7(3)	10(2)	^{39}Ar	1517.8	4083.2(12)	3.3(15)	^{39}K	4083.0

Level schemes of ^{39}K [73En, 74Al], ^{41}K [73En, 73Go] and ^{39}Ar [73En]

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{39}K	2522.9(3)	2522.6	1/2+	2522.8	67	0	3/2+	54*
	2813.9(4)	2813.8	7/2−	2813.7	100	0	3/2+	60
	3018.7(8)	3019.3	3/2−	3018.6	35	0	3/2+	32*
	3597.2(8)	3598	9/2−	3596.8	22	0	3/2+	23
				783.7	16	2813.9	7/2−	
	3883.1(10)	3383	(3/2,5/2) −	3882.9	20	0	3/2+	20
	3938.9(15)	3938.9	(1/2—5/2)	3938.7	7.5	0	3/2+	8.2*
	3943.9(15)	3942.7	11/2−	1129.9	9	2813.9	7/2−	15*
				346.9	8.0	3597.2	9/2−	
	4083.0(7)	4083.0	3/2	4083.2	3.3	0	3/2+	5.2*
	4103.2(11)	4096	1/2+	1580.4	5	2522.9	1/2+	5.5*
	4127.1(7)	4126.4	5/2(−)	1313.3	12	2813.9	7/2−	11*
	4478.2(9)	4476	—	1955.4	6	2522.9	1/2+	16*
	—	4514.1	—	—	—	—	—	—
	4520.5(16)	4520.5	9/2(−), (11/2−)	923.3	7.2	3597.2	9/2−	9*
	4680.4(9)	4682	—	1866.6	3.3	2813.9	7/2−	4*
^{41}K	980.6(2)	980.42	1/2+	980.6	31	0	3/2+	28
	1293.3(8)	1293.66	7/2−	1293.3	24	0	3/2+	24
	1560.1(4)	1559.8	—	1560.1	11	0	3/2+	14
				580.7	3.0	980.8	1/2+	
	—	1582.1	—	—	—	—	—	—
	—	1594	—	—	—	—	—	—
	1676.7(4)	1677.1	—	1676.7	20	0	3/2+	20
	1698.3(4)	1698.1	—	1698.3	17	0	3/2+	17





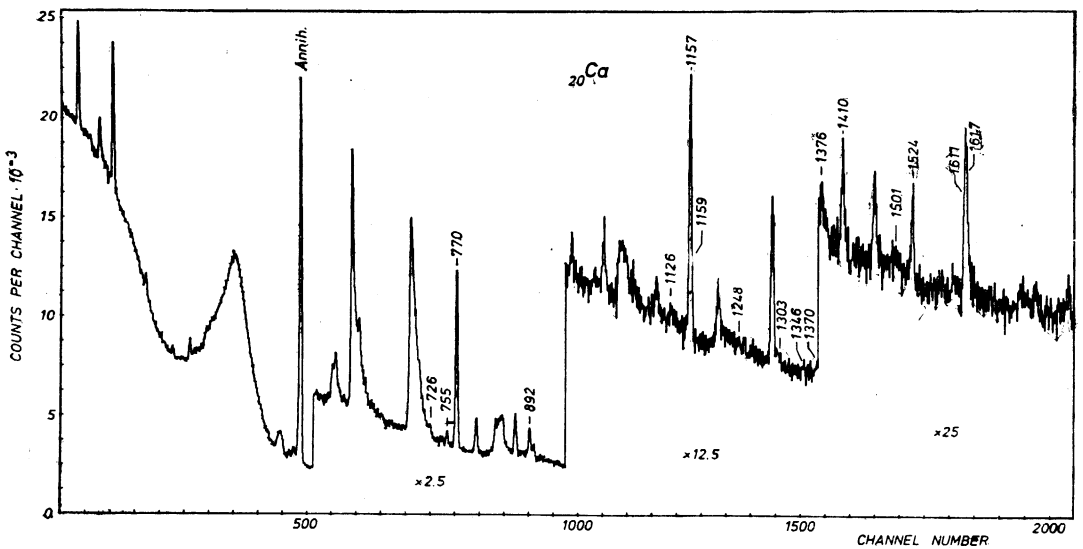
^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{39}Ar	1267.2(2)	1267.20	3/2−	1267.2	52	0	7/2−	36
	1517.7(3)	1517.43	3/2+(5/2+)	1517.7	10	0	7/2−	26
				250.2	13	1267.2	3/2−	
	2092.8(6)	2093.0	(5/2,7/2)−	2092.7	20	0	7/2−	20*
	2343.3(6)	2341	—	2343.2	7.2	0	7/2−	7.2
	—	2358.19	1/2+	—	—	—	—	—
	2432.4(6)	2432	[3/2−]	1165.2	18	1267.2	3/2−	24*
	2481.6(10)	2480	(5/2,7/2)−	2481.5	7.2	0	7/2−	9*

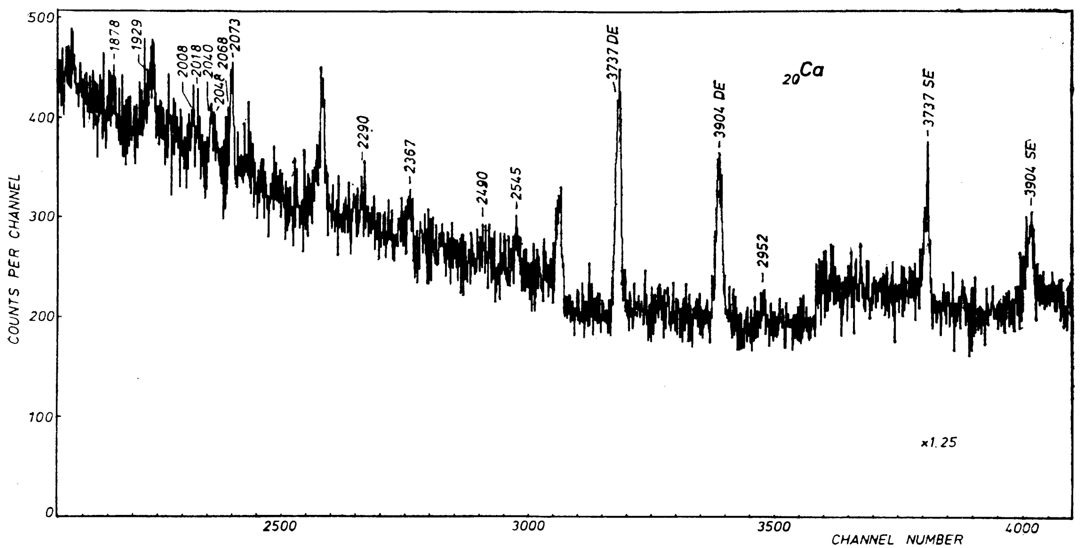
Calcium $_{20}$Ca

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
726.3(10)	12(3)	^{44}Ca	1883.2	1929.2(16)	6.1(10)	^{40}K	1959.0
755.0(4)	15(3)	^{40}Ca	4492.1	2007.8(9)	8.3(13)		
770.3(2)	204(10)	^{40}K	799.9	2017.8(9)	5.8(12)	^{40}K	2047.5
891.6(4)	59(7)	^{40}K	891.6	2040.4(10)	8.0(13)	^{40}K	2069.3
1125.5(10)	8.2(20)	^{44}Ca	2282.4	2047.8(15)	4.8(11)	^{40}K	2047.5
1156.9(5)	87(6)	^{44}Ca	1156.9	2068.3(16)	6.0(12)	^{40}K	2069.3
1159.1(8)	26(4)	^{40}K	1959.0	2073.4(10)	13(2)	^{40}K	2102.9
1247.5(6)	7.5(22)	^{40}K	2047.5	2289.8(12)	11(2)	^{40}K	2289.9
1303.0(6)	8.1(20)	^{40}K	2102.9	2366.6(20)	4.8(10)	^{40}K	2396.3
1345.6(8)	5.5(15)	^{40}Ca	5250.0	2490.0(10)	9(2)	^{37}Ar	2490.1
1369.5(10)	11(2)			2545.1(10)	14(2)	^{40}K	2574.8
1375.7(10)	10(2)	^{40}Ca	5280.1	2951.9(16)	10(3)		
1409.8 *c*	21(3)	^{37}Ar	1409.8	3736.9(8)	123(9)	^{40}Ca	3737.1
1500.6(8)	4.6(12)	^{44}Ca	2657.5	3904.2 *c*	100	^{40}Ca	3904.4
1524.4(4)	20(3)	^{42}Ca	1524.4	5250(2)	27(5)	^{40}Ca	5250.0
1611.2(6)	48(5)	^{37}Ar	1611.2	5628(2)	21(5)	^{40}Ca	5628
1616.8(10)	17(4)	^{40}K	1646.4	5902(4)	16(5)	^{40}Ca	5902
1877.5(9)	7.8(12)	^{40}Ca	5614.6				

Level schemes of ^{40}Ca [73En, 73De], ^{44}Ca [73En] and ^{40}K [73En]

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{40}Ca	—	3352.9	0+	—	—	—	—	—
	3737.1(8)	3736.8	3−	3736.9	123	0	0+	100
	3904.4	3904.4	2+	3904.2	100	0	0+	84
	4492.1(9)	4491.5	5−	755.0	15	3737.1	3−	12*
	—	5212.2	0+	—	—	—	—	—





^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{40}Ca	5250.0(8)	5249.0	2+	5250	27	0	0+	33
				1345.6	5.5	3904.4	2+	
	5280.1(11)	5278.9	4+	1375.7	10	3904.4	2+	10
	5614.6(9)	5614.3	4−	1877.5	7.8	3737.1	3−	10*
	5628(2)	5627.9	2+	5628	21	0	0+	23*
	5902(4)	5902.5	1−	5902	16	0	0+	16
^{44}Ca	1156.9(5)	1156.95	2+	1156.9	87	0	0+	62
	1883.2(11)	1883.5	0+	726.3	12	1156.9	2+	12
	2282.4(11)	2283.08	4+	1125.5	8.2	1156.9	2+	8.2
	2657.5(10)	2656.3	2+	1500.6	4.6	1156.9	2+	5.2*
^{40}K	29.6	29.6	3−	—	—	—	—	—
	799.9(2)	800.1	2−	770.3	204	29.6	3−	158
	891.6(4)	891.6	5−	891.6	59	0	4−	56*
	1646.4(10)	1643.7	0+	1616.8	17	29.6	0+	20*
	1959.0(9)	1959.0	2+	1929.2	6.1	29.6	3−	32
				1159.1	26	799.9	2−	
	2047.5(5)	2047.4	2−	2047.8	4.8	0	4−	18
				2017.8	5.8	29.6	3−	
				1247.5	7.5	799.9	2−	
	2069.3(10)	2069.7	3−	2068.3	6.0	0	4−	14
				2040.4	8.0	29.6	3−	
	2102.9(6)	2103.6	(1−)	2073.4	13	29.6	3−	21
				1303.0	8.1	799.9	2−	
	—	2260.5	3+	—	—	—	—	—
	—	2289.9	1	—	—	—	—	—
	2289.9(12)	2290.9	4(3−)	2289.8	11	0	4−	14*
	2396.3(20)	2397.6	4−	2366.6	4.8	29.6	3−	6.8*
	—	2419.1	2−	—	—	—	—	—
	—	2542.7	(5,7+)	—	—	—	—	—
	2574.8(10)	2575.4	(2,4)	2545.1	14	29.6	3−	14

Scandium $^{45}_{21}$Sc

E_γ	I_γ	E_i	E_γ	I_γ	E_i
171.9(5)	0.95(35)	1409.0	424.62(10)	7.30(16)	1661.8
174.31(10)	6.9(3)	174.3(^{45}Ca)	431.52(10)	8.0(2)	974.4
253.4(6)	0.8(3)	1661.8	459.03(10)	8.4(2)	1433.5
347.19(10)	6.73(15)	1067.5	488.09(10)	4.40(12)	1555.5
364.17(10)	100	376.6	496.92(10)	1.06(8)	1800.3
376.57(10)	9.3(2)	376.6	530.51(10)	65.7(14)	542.9

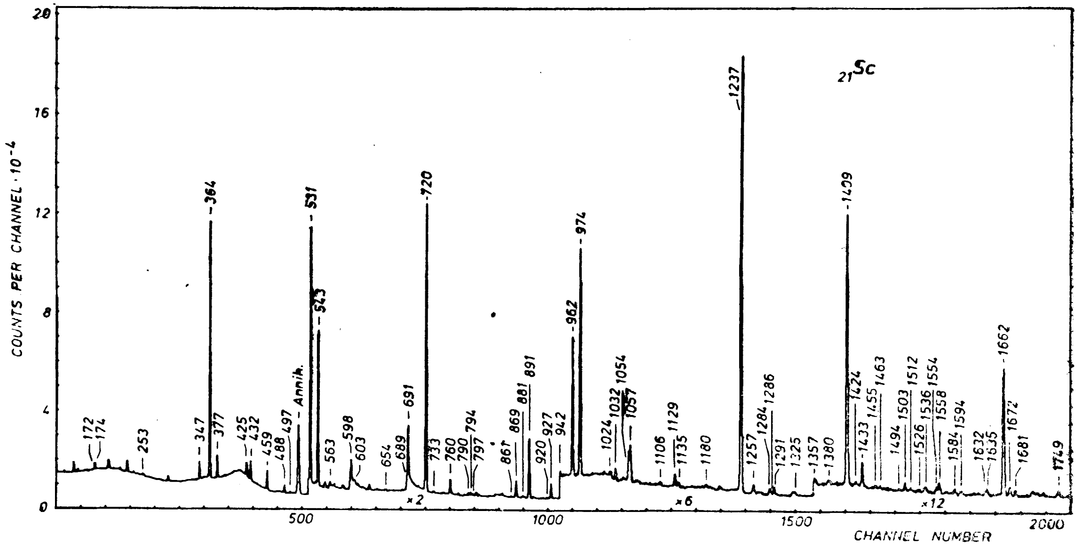
Cont'd ($^{45}_{21}$Sc)

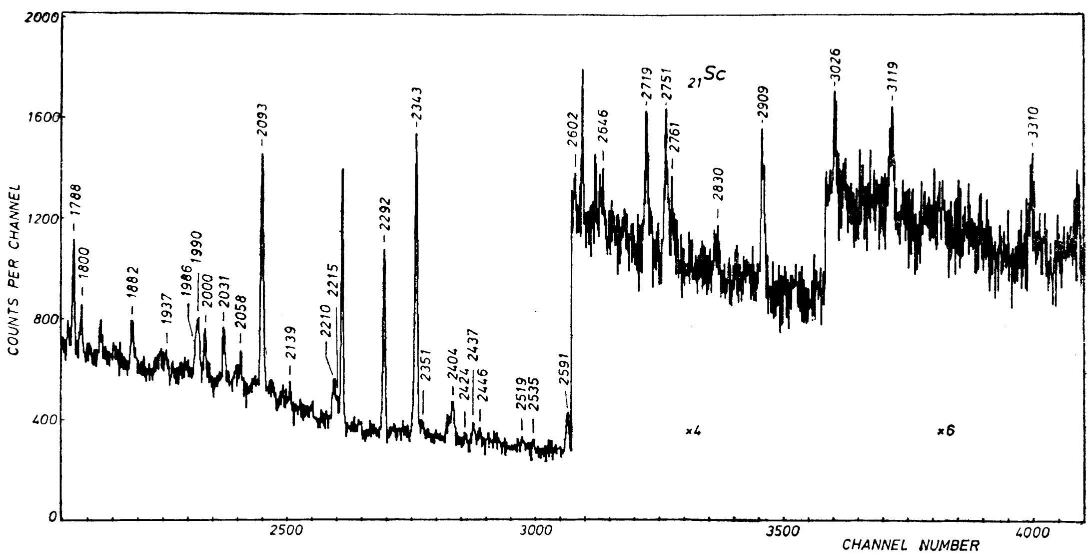
E_γ	I_γ	E_i
542.90(10)	45.6(12)	542.9
562.7(2)	1.7(2)	939.2
597.7(5)	4.7(10)	2031.1
603.0(4)*m*	1.9(2)	
653.8(2)	0.55(10)	
688.8(3)	3.4(7)	1409.0
690.9(2)	21(2)	1067.5
720.26(10)	97(2)	720.3
732.7(2)	0.45(10)	1800.3
760.38(10)	5.25(14)	1303.3
790.1(2)	0.90(9)	
794.1(2)	1.08(9)	2031.2
797.1(3)	0.50(10)	2352.3
860.8(3)	0.35(8)	1800.3
869.21(10)	6.6(2)	1936.7
880.6(4)*m*	1.33(15)	
890.57(10)	26.0(8)	1433.5
920.3(4)	0.45(10)	
926.75(10)	6.3(2)	939.2
		1303.3
941.5(2)	0.65(10)	
962.07(10)	20.4(8)	974.4
974.44(10)	36.0(10)	974.4
1024.0(2)	1.1(2)	
1032.4(2)	1.8(2)	1409.0
1054.3(2)	5.4(2)	2028.7
1056.8(2)	6.6(2)	1433.5
1105.6(2)	0.90(10)	2343.0
1129.12(15)	2.41(9)	
1135.0(2)	1.16(12)	
1180.0(2)	0.85(10)	1555.5
1237.24(10)	93(2)	1237.3
1257.44(10)	2.30(9)	1800.3
1283.5(2)	1.40(14)	2222.7
1286.2(3)	0.45(8)	
1290.9(2)	1.55(15)	1303.3
1325.2(2)	0.75(10)	
1357.1(2)	1.26(13)	
1379.6(3)	0.85(10)	
1409.03(10)	38.5(15)	1409.0
1423.5(3)	0.65(10)	1800.3
1433.49(10)	3.50(17)	1433.5
1455.0(4)	0.45(10)	
1462.8(3)	0.35(8)	
1493.7(5)	0.25(8)	
1503.4(2)	1.40(14)	

E_γ	I_γ	E_i
1512.1(4)	0.60(10)	
1525.9(2)	0.50(5)	
1536.0(2)	1.63(15)	
1554.0(2)	0.80(8)	
1558.4(2)	2.1(2)	2532.9
1583.6(2)	0.75(9)	2304.0
1593.6(5)	0.90(10)	2532.9
1631.7(3)	0.45(8)	2352.3
1635.3(2)	1.29(13)	
1661.79(10)	25.2(10)	1661.8
1672.0(2)	1.75(15)	2909.2
1681.1(2)	1.12(12)	
1749.4(6)	1.42(14)	
1787.92(15)	2.4(2)	1800.3
1800.5(4)	1.0(2)	1800.3
1882.3(4)	1.3(2)	
1937.1(6)	0.70(15)	1936.7
1985.9(6)	1.7(2)	
1990.0(6)	1.4(2)	2532.9
1999.7(5)	1.08(11)	2719.6
2030.8(3)	1.4(2)	2031.2
2058.2(6)	0.50(10)	2601.8
2092.53(10)	7.5(5)	2092.5
2138.9(6)	0.45(10)	2138.9
2210.2(8)	1.4(3)	2222.7
2215.1(8)	0.85(25)	2591.2
2291.51(10)	5.7(3)	2304.0
2343.02(10)	10.3(5)	2343.0
2351.6(15)	0.45(10)	2352.3
2403.5(6)	1.4(2)	2780.1
2424(2)	0.30(10)	
2436.8(5)	0.60(10)	
2446(2)	0.45(15)	
2519(2)	0.40(15)	2532.9
2535.1(8)	0.25(8)	
2591.0(3)	1.9(2)	2591.2
2602.1(5)	0.35(10)	2601.8
2646.1(10)	0.35(10)	
2719.1(5)	1.4(2)	2719.6
2751.4(4)	1.5(2)	2751.5
2761.0(9)	0.60(15)	
2830(2)	0.50(15)	
2909.1(4)	2.0(3)	2909.2
3026.2(6)	0.55(10)	3026.3
3118.9(8)	0.80(20)	
3310.5(8)	1.1(2)	

Level scheme of ^{45}Sc [70Le, 72Ek, 73Ko2, 73Be, 74Ru]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
12.39(14)	12.4	3/2+	—	—	—	—	—
376.56(10)	376.6	3/2−	376.57	9.3	0	7/2−	73
			364.17	100	12.4	3/2+	
542.90(10)	543.2	5/2+	542.90	45.6	0	7/2−	68
			530.51	65.7	12.4	3/2+	
720.26(10)	720.4	5/2−	720.26	97	0	7/2−	85
939.19(14)	939.1	1/2+	926.75	4.8	12.4	3/2+	3.8
			562.7	1.7	376.6	3/2−	
974.45(10)	974.3	7/2+	974.44	36.0	0	7/2−	48
			962.07	20.4	12.4	3/2+	
			431.52	8.0	542.9	5/2+	
1067.45(14)	1068.4	3/2−	690.9	21	376.6	3/2−	16
			347.19	6.73	720.3	5/2−	
1237.26(10)	1237.3	11/2−	1237.24	93	0	7/2−	81
1303.30(14)	1303.3	3/2+	1290.9	1.55	12.4	3/2+	7.2
			926.75	1.5	376.6	3/2−	
			760.38	5.25	542.9	5/2+	
1409.04(10)	1409.0	7/2−	1409.03	38.5	0	7/2−	44
			1032.4	1.8	376.6	3/2−	
			688.8	3.4	720.3	5/2−	
			171.9	0.95	1237.3	11/2−	
1433.50(10)	1433.5	9/2+	1433.49	3.50	0	7/2−	40
			1056.8	6.6	376.6	3/2−	
			890.57	26.0	542.9	5/2+	
			459.03	8.4	974.4	7/2+	
1555.54(14)	1557	1/2−, 3/2−	1180.0	0.85	376.6	3/2−	4.8
			488.09	4.40	1067.5	3/2−	
1661.84(10)	1662.0	9/2−	1661.79	25.2	0	7/2−	33
			424.62	7.10	1237.3	11/2−	
			253.4	0.8	1409.0	7/2−	
1800.28(14)	1800.6	5/2+	1800.5	1.0	0	7/2−	8.2
			1787.92	2.4	12.4	3/2+	
			1423.5	0.65	376.6	3/2−	
			1257.44	2.30	542.9	5/2+	
			860.8	0.35	939.2	1/2+	
			732.7	0.45	1067.5	3/2−	
			496.92	1.06	1303.3	3/2+	
1936.66(14)	1936	—	1937.1	0.70	0	7/2−	7.3
			869.21	6.6	1067.5	3/2−	
2028.7(3)	2029.6	(11/2+)	1054.3	5.4	974.4	7/2+	5.4
2031.2(3)	2031	(11/2)	2030.8	1.4	0	7/2−	7.2
			794.1	1.08	1237.3	11/2−	
			597.7	4.7	1433.5	9/2+	
2092.53(10)	2092.2	(5/2−)	2092.53	7.5	0	7/2−	7.5
2138.9(6)	2138.4	3/2−	2138.9	0.45	0	7/2−	0.70*
2222.7(3)	2221.8	3/2, 5/2−	2210.2	1.4	12.4	3/2+	2.8
			1283.5	1.40	939.2	1/2+	
2303.96(14)	2303.8	—	2291.51	5.7	12.4	3/2+	6.4
			1583.6	0.75	720.3	5/2−	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2343.05(10)	2341.2	—	2343.02	10.3	0	7/2−	11.2
			1105.6	0.90	1237.3	11/2−	
2352.3(4)	2352.1	—	2351.6	0.45	0	7/2−	1.4
			1631.7	0.45	720.3	5/2−	
			797.1	0.50	1555.5	1/2−, 3/2−	
2532.9(3)	2531	3/2	2519	0.40	12.4	3/2+	4.8
			1990.0	1.4	542.9	5/2+	
			1593.6	0.90	939.2	1/2+	
			1558.4	2.1	974.4	7/2+	
2591.2(3)	2590	—	2591.0	1.9	0	7/2−	2.8
			2215.1	0.85	376.6	3/2−	
2601.8(6)	2602.0	—	2602.1	0.35	0	7/2−	0.85
			2058.2	0.50	542.9	5/2+	
2719.6(5)	2719	—	2719.1	1.4	0	7/2−	2.5
			1999.7	1.08	720.3	5/2−	
2751.5(4)	2750	5/2−, 7/2−	2751.4	1.5	0	7/2−	1.5
2780.1(7)	2780	3/2, 5/2	2403.5	1.4	376.6	3/2−	1.4
—	2895	—	—	—	—	—	—
2909.2(3)	—	—	2909.1	2.0	0	7/2−	3.8
			1672.0	1.75	1237.3	11/2−	
3026.3(6)	3025	1/2−, 3/2−	3026.2	0.55	0	7/2−	0.55

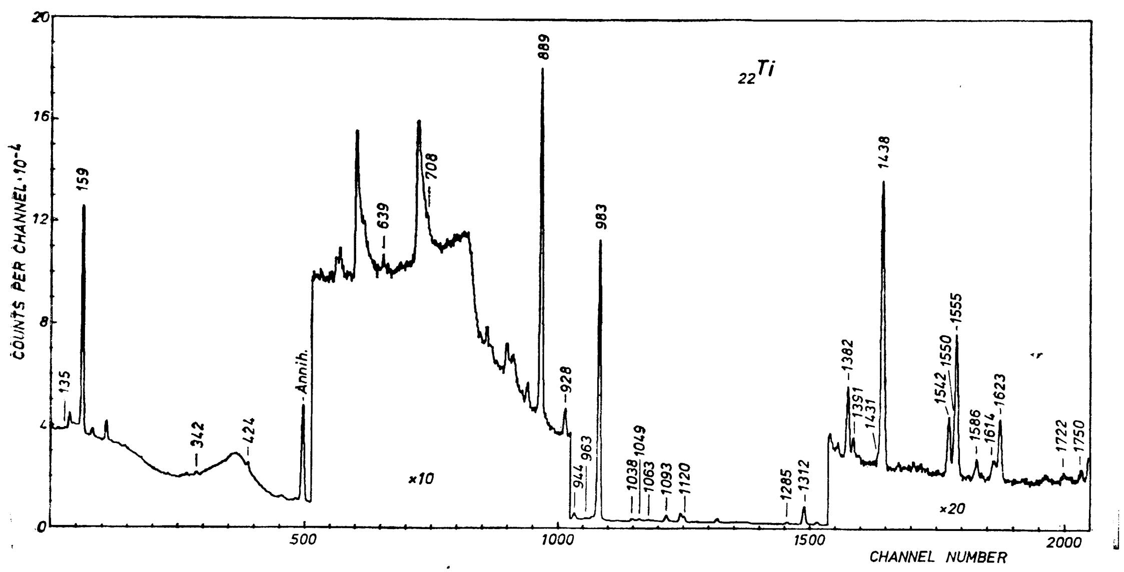
Titanium $_{22}$Ti

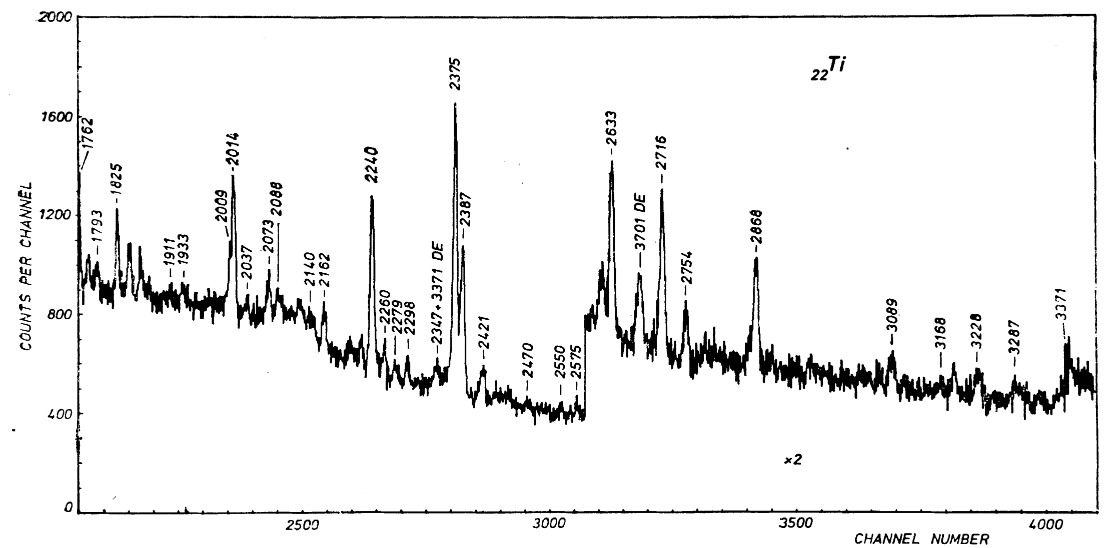
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
134.8(12)	0.12(5)	^{48}Ti	3358.9	1312.2(2)	8.1(10)	^{48}Ti	2295.7
159.4(2)	17(2)	^{47}Ti	159.4	1381.9(3)	1.7(4)	^{49}Ti	1381.9
341.6(6)	0.70(20)	^{49}Ti	1723.5	1390.7(4)	0.50(10)	^{47}Ti	1549.8
423.6(5)	0.65(20)	^{48}Ti		1430.6(12)	0.30(15)		
638.6(8)	0.25(10)			1437.5(2)	7.7(10)	^{48}Ti	2421.0
708.2(8)	0.25(10)			1542.3(3)	1.6(4)	^{49}Ti	1542.3
889.24(15)	9.7(8)	^{46}Ti	889.2	1549.7(8)	0.45(15)	^{47}Ti	1549.8
928.1(6)	0.80(10)	^{48}Ti	3224.0	1555.0(3)	3.8(8)	^{50}Ti	1555.0
944.2(6)	1.8(3)	^{48}Ti	3239.9	1586.4(5)	0.55(15)	^{49}Ti	1586.4
962.8(10)	0.45(15)			1613.6(8)	0.90(25)		
983.49(10)	100	^{48}Ti	983.5	1623.1(4)	1.9(3)	^{49}Ti	1623.1
1037.7(5)	0.35(15)	^{48}Ti	3333.4	1722.4(10)	0.25(10)	^{46}Ti	2611.6
1048.8(7)	0.40(15)	^{46}Ti	3058.5	1750.4(8)	0.40(10)		
1063.0(10)	0.35(15)	^{48}Ti	3358.9	1762.3(6)	0.90(20)	^{49}Ti	1762.3
1092.8(4)	2.1(4)	^{47}Ti	1252.2	1793.3(10)	0.15(5)	^{47}Ti	1793.3
1120.5(6)	1.9(6)	^{46}Ti	2009.7	1825.4(5)	0.55(10)	^{47}Ti	1825.4
		^{50}Ti	(2674.8)	1911.2(2)	0.10(5)		
1284.9(7)	0.75(20)	^{47}Ti	1444.3	1932.6(14)	0.20(10)		

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
2008.7(7)	0.40(10)	^{47}Ti	2168.1	2420.8(6)	0.50(2)	^{48}Ti	2421.0
2014.2(5)	1.2(2)	^{48}Ti	2997.7	2470(2)	0.20(10)	^{49}Ti	2470
2037.2(14)	0.15(5)	^{48}Ti		2549.9(15)	0.10(5)	^{47}Ti	2550.0
2072.6(8)	0.40(10)	^{46}Ti	2961.8	2575.1(15)	0.15(5)		
2088.2(8)	0.35(10)			2632.8(5)	1.5(3)	^{48}Ti	3616.4
2140.5(14)	0.25(10)			2715.9(5)	1.3(5)	^{48}Ti	3699.6
2161.9(8)	0.55(15)	^{47}Ti	2161.9	2754.5(8)	0.45(10)		
2240.5(3)	2.3(3)	^{48}Ti	3224.0	2868.2(5)	0.95(20)	^{48}Ti	
2260.5(8)	0.30(10)	^{49}Ti	2260.5	3088.7(18)	0.25(10)		
2278.9(10)	0.15(5)	^{46}Ti	3168.3	3168.3(18)	0.15(5)	^{46}Ti	3168.3
2297.8(7)	0.30(10)	^{47}Ti	2297.8	3228.5(14)	0.30(10)		
2346.9(10)	0.25(15)	^{46}Ti	3236.1	3287.0(16)	0.20(10)		
2375.4(3)	3.6(5)	^{48}Ti	3358.9	3371(2)	0.35(10)	^{48}Ti	3370.9
2387.3(4)	2.0(4)	^{48}Ti	3370.9	3700.6(15)	0.75(10)	^{48}Ti	3699.6

Level shcemes of ^{46}Ti [71Ca, 72Ko1, 73Ba, 72Ca, 70Au], ^{47}Ti [72Ko2, 73Me1, 73Fi, 73Sa, 70Le1], ^{48}Ti [72Si, 73Ba1, 69Fe, 70Ra] and ^{49}Ti [72Ga1, 72Ko2, 69Tr, 70Ra1]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{46}Ti	889.25(15)	889.253	2+	889.24	10	0	0+	7.0
	2009.7(7)	2009.68	4+	1120.5	1.9	889.2	2+	1.5
	2611.6(12)	2611.3	0+	1722.4	0.25	889.2	2+	0.25
	2961.8(10)	2962.2	2+	2072.6	0.40	889.2	2+	0.42*
	3058.5(10)	3058.6	3−	1048.8	0.40	2009.7	4+	0.44*
	3168.3(12)	3168.2	1−	3168.3	0.15	0	0+	0.30
				2278.9	0.15	889.2	2+	
	3236.1(12)	3235.7	2+	2346.9	0.25	889.2	2+	0.30*
^{47}Ti	159.4(2)	159.4	7/2−	159.4	17	0	5/2−	13
	1252.2(5)	1252.5	9/2−	1092.8	2.1	159.4	7/2−	2.0*
	1444.3(9)	1444.5	11/2−	1284.9	0.75	159.4	7/2−	0.85*
	1549.8(6)	1550.0	3/2−	1390.7	0.50	159.4	7/2−	0.95*
	1793.3(10)	1794.2	1/2−	1793.3	0.15	0	5/2−	0.15
	1825.4(5)	1821	(3/2)+	1825.4	0.55	0	5/2−	0.55
	2161.9(8)	2163.0	3/2−	2161.9	0.55	0	5/2−	0.58*
	2168.1(7)	2167.1	5/2−	2008.7	0.40	159.4	7/2−	0.40
	—	2256	—	—	—	—	—	—
	2297.8(7)	2298	—	2297.8	0.30	0	5/2−	0.30
	—	2360	1/2+	—	—	—	—	—
	—	2414	—	—	—	—	—	—
	—	2525.9	—	—	—	—	—	—
	2550.0(15)	2548.8	(3/2−)	2549.9	0.10	0	5/2−	0.10



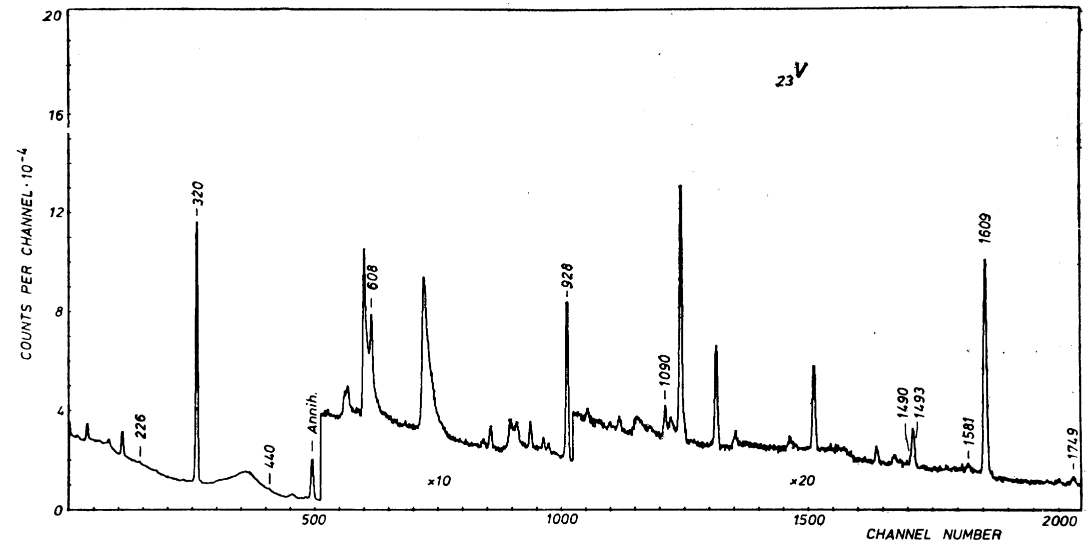


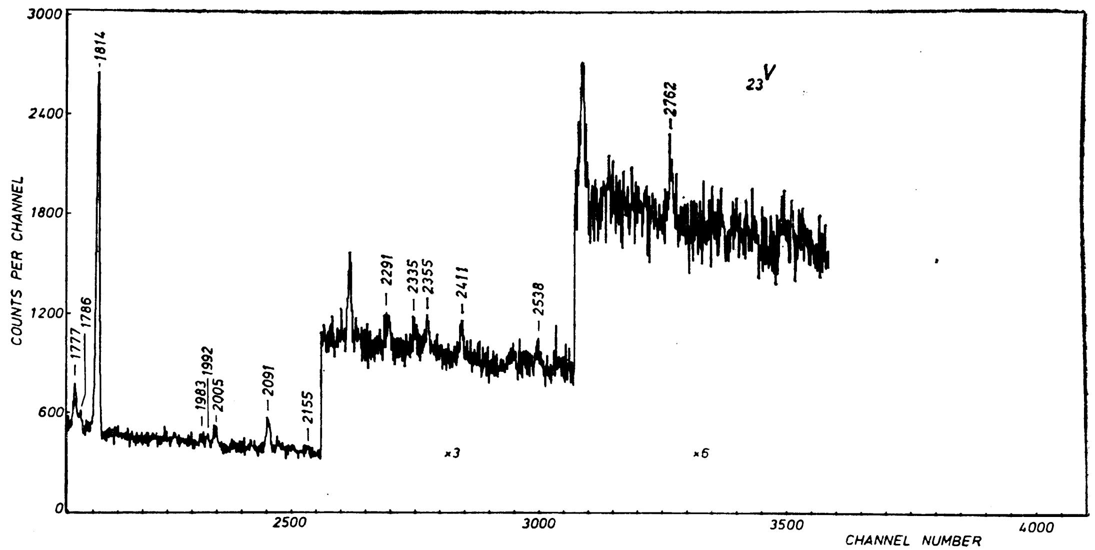
^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{48}Ti	983.50(10)	983.5	2+	983.49	100	0	0+	72
	2295.7(3)	2295.1	4+	1312.2	8.1	983.5	2+	4.8
	2421.0(3)	2421.2	2+	2420.7	0.50	0	0+	8.2
				1437.5	7.7	983.5	2+	
	2997.7(6)	2997	0+	2014.2	1.2	983.5	2+	1.2
	3224.0(4)	3223.6	4+	2240.5	2.3	983.5	2+	3.1
				928.1	0.80	2295.7	4+	
	3239.9(10)	3239.4	(4+)	944.2	1.8	2295.7	4+	1.8
	3333.4(9)	3332.5	6+	1037.7	0.35	2295.7	4+	0.35
	3358.9(4)	3359	3−	2375.4	3.6	983.5	2+	4.1
				1063.0	0.35	2295.7	4+	
				134.8	0.12	3224.0	4+	
	3370.9(5)	3371	2+	3371	0.35	0	0+	2.4
				2387.3	2.0	983.5	2+	
	—	3511.1	(5+, 6+)	—	—	—	—	—
	3616.4(6)	3623	2+	2632.8	1.5	983.5	2+	1.5
	—	3633	(3, 4)+					—
	3699.6(6)	3710	1	3700.6	0.75	0	0+	2.0
				2715.9	1.3	983.5	2+	
^{49}Ti	1381.9(3)	1381.5	3/2−	1381.9	1.7	0	7/2−	1.0
	1542.3(3)	1542	—	1542.3	1.6	0	7/2−	1.6
	1586.4(5)	1585.3	3/2−	1586.4	0.55	0	7/2−	0,55
	1623.1(4)	1622	—	1623.1	1.9	0	7/2−	1.9
	1723.5(9)	1723.4	1/2−	341.6	0.70	1381.9	3/2−	0.70
	1762.3(6)	1762.0	—	1762.3	0.90	0	7/2−	0.90
	2260.5(8)	2262	(7/2−)	2260.5	0.30	0	7/2−	0.30
	2470(2)	2470	7/2−	2470	0.20	0	7/2−	0.20

Vanadium

$^{51}_{23}$**V**

E_γ	I_γ	E_i	E_γ	I_γ	E_i
226.5(3)	0.45(10)	226.5 (^{50}V)	1813.5(2)	14(2)	1813.5
320.20(10)	100	320.2	1982.8(10)	0.40(15)	(^{18}O)
439.8(6)	0.60(15)	(^{23}Na?)	1992.4(10)	0.40(15)	
608.5(2)	3.4(10)	928.5	2005.0(6)	0.9(2)	3614.3
928.50(15)	16.0(10)	928.5	2090.6(5)	1.6(3)	2410.8
1090.2(3)	1.6(4)	2699.4	2154.6(12)	0.30(15)	3082.9
1489.9(5)	0.6(2)	3900.6	2290.8(6)	0.8(2)	3219.4
1493.2(5)	3.1(5)	1813.5	2335.0(7)	0.5(2)	3263.5
1581.4(8)	0.60(15)		2354.6(6)	0.6(2)	
1609.3(2)	22(2)	1609.3	2410.7(6)	0.6(2)	2410.8
1749.0(5)	1.2(3)	2677.5	2537.8(8)	0.5(2)	
1777.2(10)	0.7(2)	3386.5	2762.5(9)	0.7(2)	3082.9
1785.5(6)	0.45(15)	3394.8			



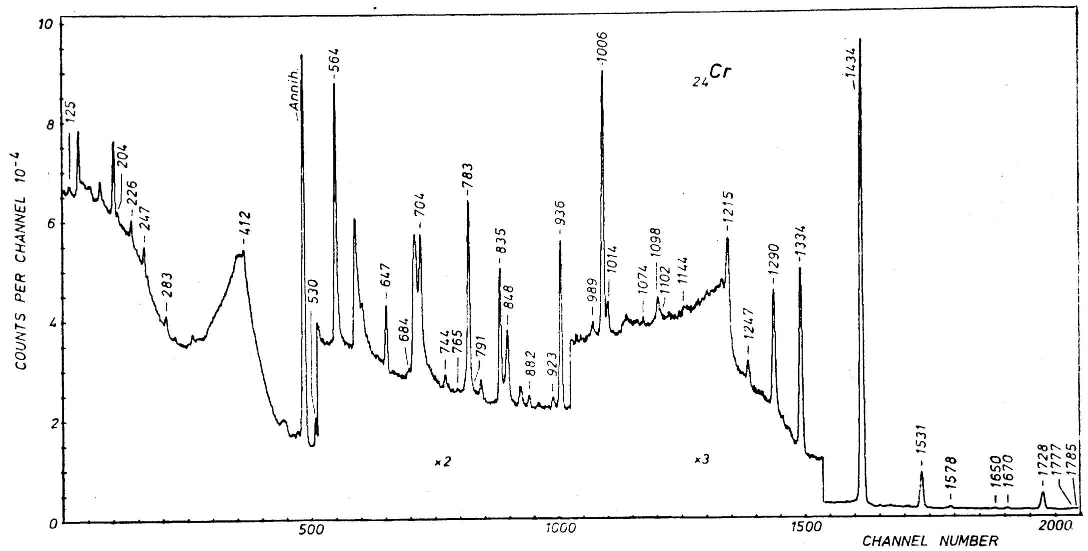


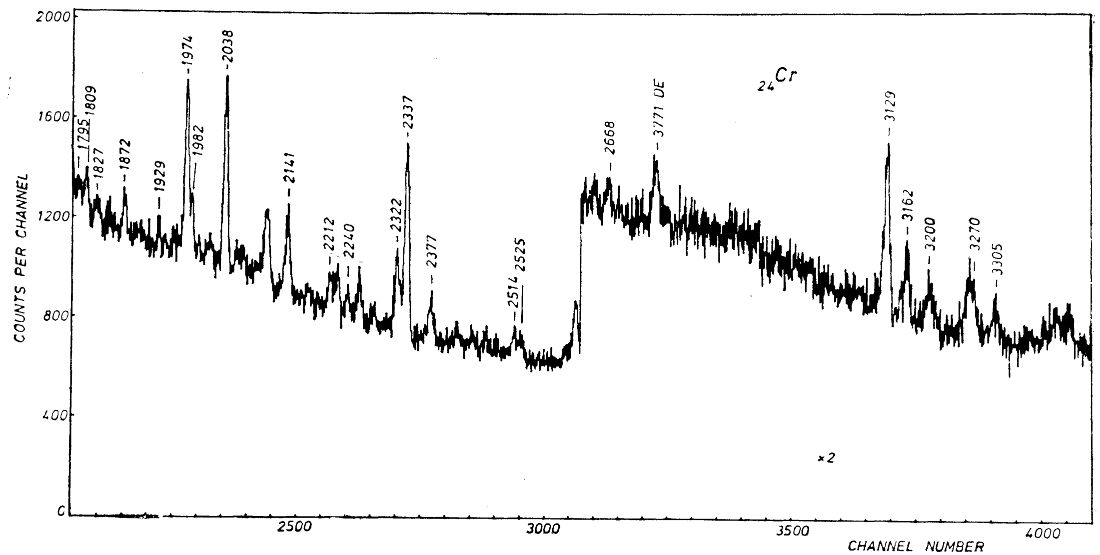
Level scheme of ^{51}V [70Ma, 70Ra2, 71Ma, 73Ro1]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
320.20(10)	320.11	5/2−	320.20	100	0	7/2−	91
928.51(15)	929	3/2−	928.50	16.0	0	7/2−	17
			608.5	3.4	320.2	5/2−	
1609.3(2)	1609	11/2−	1609.3	22	0	7/2−	19
1813.5(2)	1813	9/2−	1813.5	14	0	7/2−	17
			1493.2	3.1	320.2	5/2−	
2410.8(6)	2409	3/2−	2410.7	0.6	0	7/2−	2.4*
			2090.6	1.6	320.2	5/2−	
—	2545	1/2+	—	—	—	—	—
2677.5(7)	2675	3/2+	1749.0	1.2	928.5	3/2−	1.2
2699.4(5)	2699	15/2−	1090.1	1.6	1609.3	11/2−	1.6
—	2790	1/2, 3/2	—	—	—	—	—
3082.9(10)	3082	5/2−, 7/2−	2762.5	0.7	320.2	5/2−	1.4*
			2154.6	0.30	928.5	3/2−	
3219.4(10)	3215	3/2−	2290.8	0.8	928.5	3/2−	1.1*
3263.5(10)	3262	—	2335.0	0.5	928.5	3/2−	0.5
—	3279	—	—	—	—	—	—
—	3376	1/2−, 3/2−	—	—	—	—	—
3386.5(10)	3382	—	1777.2	0.7	1609.3	11/2−	0.7
3394.8(8)	3392	—	1785.5	0.45	1609.3	11/2−	0.45

Chromium $_{24}Cr$

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
124.8(10) *m*	0.30(5)	^{52}V	(147.8)	935.55(10)	8.4(4)	^{52}Cr	2369.8
203.9(9)	0.30(10)		(141.6)	988.7(3)	0.55(15)	^{54}Cr	1823.7
226.5(2)	0.85(15)	^{50}V	226.5	1006.49(10)	9.1(5)	^{53}Cr	1006.5
246.9(2)	0.95(15)	^{53}Cr	1536.7	1014.5(2)	1.1(2)	^{27}Al	
283.2(4)	0.60(15)	^{53}Cr	1289.7	1074.3(5)	0.20(8)	^{52}Cr	4039.6
412.2(2)	1.1(2)			1097.8(3)	0.40(10)	^{50}Cr	1881.1
530.2(2)	2.2(2)	^{53}Cr	1536.7	1102.0(13)	0.20(10)	^{52}Cr	3472.0
564.34(10)	8.8(6)	^{53}Cr	564.3	1143.6(15) *m*	0.40(15)	(^{52}Cr)	(4562.9)
647.3(2)	2.2(2)	^{52}Cr	3415.4	1214.7(2)	1.8(3)	^{52}Cr	2648.9
684.5(6)	0.30(10)	^{53}Cr	1974.2	1247.0(2)	0.90(15)	^{52}Cr	3616.6
704.2(2)	3.3(8)	^{52}Cr	3472.0	1289.7(2)	5.6(3)	^{52}Cr	1289.7
744.2(3)	1.2(3)	^{52}Cr	3114.0	1333.70(10)	9.2(5)	^{53}Cr	2767.9
765.1(8)	0.10(3)			1434.20(10)	100	^{52}Cr	1434.2
783.30(10)	8.3(6)	^{50}Cr	783.3	1530.94(15)	8.8(5)	^{52}Cr	2965.2
791.4(8)	0.40(15)	^{52}Cr	4562.9	1577.8(5)	0.60(15)	^{52}Cr	3947.7
835.0(2)	4.1(5)	^{54}Cr	835.0	1650.0(6)	0.30(10)	^{52}Cr	4019.8
848.5(2)	1.0(3)	^{52}Cr	3616.6	1670.0(6)	0.40(10)	^{52}Cr	4039.6
882.5(4)	0.50(10)	^{53}Cr	2172.2	1727.6(2)	5.3(3)	^{52}Cr	3161.8
922.6(3)	0.50(10)			1777.3(6)	0.45(15)	^{52}Cr	4742.5





E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1784.8(7)	0.45(15)	^{54}Cr	2619.8	2322.0(6)	1.1(2)	^{53}Cr	2322.0
1795.0(8)	0.20(10)	^{52}Cr	4562.9	2336.8(4)	2.3(3)	^{52}Cr	3771.0
1808.9(6)	0.30(10)			2376.8(9)	0.60(10)	^{50}Cr	3160.2
1826.7(12)	0.15(5)			2513.7(10)	0.35(10)	^{52}Cr	3947.7
1871.9(8)	0.35(10)	^{52}Cr	4837.1	2524.9(12)	0.25(10)		
1928.6(10)	0.15(5)			2667.8(13)	0.25(10)	^{53}Cr	2667.9
1974.1(3)	1.5(2)	^{53}Cr	1974.2	3129.0(8)	1.3(2)	^{52}Cr	4562.9
1981.6(5)	0.40(10)	^{52}Cr	3415.4	3161.7(10)	0.45(10)	^{52}Cr	3161.8
2037.7(3)	1.7(2)	^{52}Cr	3472.0	3199.5(14)	0.50(15)	^{52}Cr	4633.8
2140.6(5)	0.85(15)	^{50}Cr	2923.9	3270.3(15)	0.35(15)	^{52}Cr	4704.6
2211.5(12)	0.50(15)	^{27}Al		3305.0(16)	0.25(10)		
2239.8(8)	0.15(5)	^{54}Cr	3074.8	3771.1(10)	0.40(10)	^{52}Cr	3771.0

Level schemes of ^{50}Cr [70Au1, 71Ba, 73De1], ^{52}Cr [70Ra3, 71Ok], ^{53}Cr [70Au2, 72Ko3, 72Al1] and ^{54}Cr [70Ve]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{50}Cr	783.31(10)	783.4	2+	783.30	8.3	0	0+	6.4
	1881.1(4)	1881.6	4+	1097.8	0.40	783.3	2+	0.40
	2923.9(6)	2922	2	2140.6	0.85	783.3	2+	0.85
	3160.2(10)	3161.1	2+	2376.8	0.60	783.3	2+	0.60
^{52}Cr	1434.22(10)	1434.19	2+	1434.20	100	0	0+	60
	2369.8(2)	2369.8	4+	935.55	8.4	1434.2	2+	4.8
	2648.9(3)	2647	0+	1214.7	1.8	1434.2	2+	1.8
	2767.9(2)	2768.0	4+	1333.70	9.2	1434.2	2+	2.5
	2965.2(3)	2965.0	2+	1530.94	8.8	1434.2	2+	7.8
	3114.0(5)	3113.8	6+	744.2	1.2	2369.8	4+	1.2
	3161.8(4)	3162.0	2+	3161.7	0.45	0	0+	5.8
				1727.6	5.3	1434.2	2+	
	3415.4(4)	3414	(3, 4)+	1981.6	0.40	1434.2	2+	2.6
				647.3	2.2	2767.9	4+	
	3472.0(4)	3472	[3]	2037.7	1.7	1434.2	2+	5.2
				1102.0	0.20	2369.8	4+	
				704.2	3.3	2767.9	4+	
	3616.6(4)	3616.6	5+	1247.0	0.90	2369.8	4+	2.2*
				848.5	1.0	2767.9	4+	
	3771.0(5)	3771	2+	3771.1	0.40	0	0+	2.3
				2336.8	2.3	1434.2	2+	
	3947.7(7)	3947	—	2513.7	0.35	1434.2	2+	0.95
				1577.8	0.60	2369.8	4+	
	4019.8(8)	4015	—	1650.0	0.30	2369.8	4+	0.30
	4039.6(8)	4039	—	1670.0	0.40	2369.8	4+	0.60
				1074.3	0.20	2965.2	2+	

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{52}Cr	4562.9(8)	4563	3−	3129.0	1.3	1434.2	2+	1.9
				1795.0	0.20	2767.9	4+	
				791.4	0.40	3771.0	2+	
	4633.8(14)	4630	—	3199.5	0.50	1434.2	2+	0.50
	4704.6(15)	4706	—	3270.3	0.35	1434.2	2+	0.35
	4742.5(7)	4742	0+	1777.3	0.45	2965.2	2+	0.45
	—	4808	—	—	—	—	—	—
	4837.1(8)	4837	—	1871.9	0.35	2965.2	2+	0.35
^{53}Cr	564.34(10)	564.3	1/2−	564.34	8.8	0	3/2−	8.6*
	1006.50(10)	1006	5/2−	1006.49	6.3	0	3/2−	6.3
	1289.7(2)	1287	7/2−	1289.7	5.6	0	3/2−	4.4
				283.2	0.60	1006.5	5/2−	
	1536.7(3)	1538	7/2−	530.2	2.2	1006.5	5/2−	3.5*
				246.9	0.95	1289.7	7/2−	
	1974.2(3)	1975	⩾3/2−	1974.1	1.5	0	3/2−	1.8
				684.5	0.30	1289.7	7/2−	
	2172.2(6)	2173	11/2−	882.5	0.50	1289.7	7/2−	0.50
	—	2233	9/2− (5/2−)	—	—	—	—	—
	2322.0(6)	2320.3	3/2−	2322.0	1.1	0	3/2−	1.1
	—	2455	3/2− (5/2−)	—	—	—	—	—
	2667.9(13)	2669.2	1/2−	2667.8	0.25	0	3/2−	0.40*
^{54}Cr	835.0(2)	834.825	2+	835.0	4.1	0	0+	3.0
	1823.7(5)	1826	4+	988.7	0.55	835.0	2+	0.55
	2619.8(9)	2619.52	2+	1784.8	0.45	835.0	2+	0.45
	—	2829.43	0+	—	—	—	—	—
	3074.8(10)	3073.93	2+	2239.8	0.15	835.0	2+	0.15

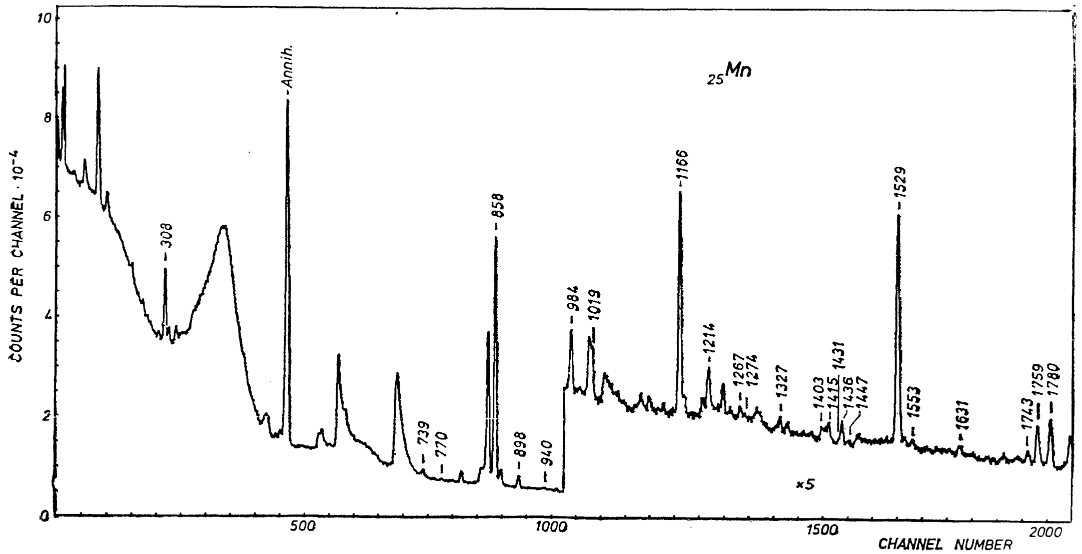
Manganese $^{55}_{25}$Mn

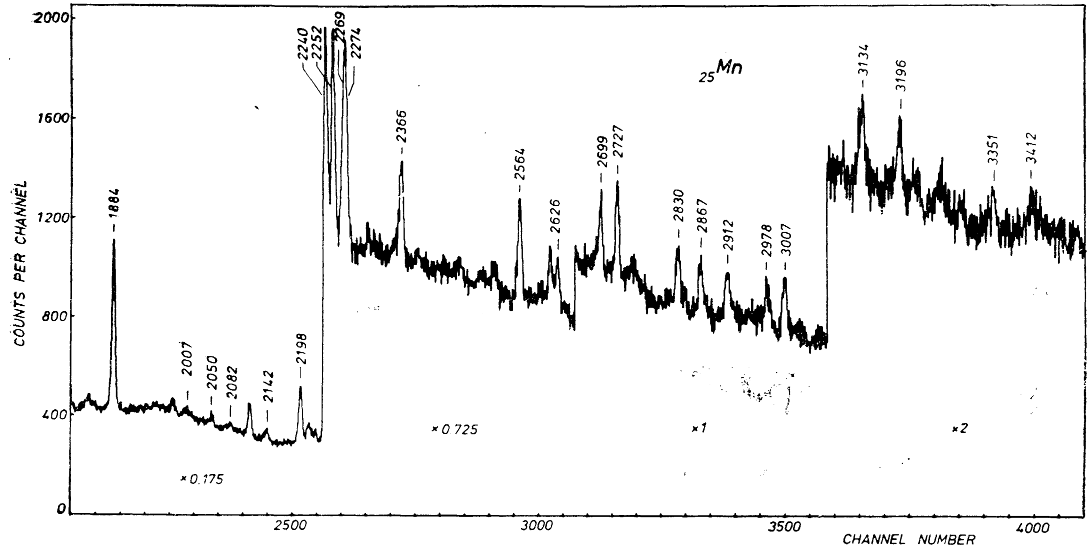
E_γ	I_γ	E_i	E_γ	I_γ	E_i
308.06(10)	12(2)	1292.3	1266.7(4)	1.6(4)	
738.7(4)	2.0(4)		1273.7(8)	0.6(2)	
770.3(6)	0.75(20)		1326.6(10)	0.7(4)	2311.4
858.45(10)	100	984.4	1403.2(6)	1.8(6)	1528.7
898.3(2)	3.4(12)	2427.0	1414.7(6)	2.2(6)	2399.6
940.3(10)	1.4(4)	2824.7	1431.3(10)	0.6(2)	
984.4(2)	6.3(6)	984.4	1436.5(4)	3.5(6)	
1019.2(4)	4.9(10)	2311.4	1446.9(8)	0.5(2)	
1166.30(10)	27(4)	1292.3	1528.70(15)	40(4)	1528.7
1214.1(2)	6.5(5)	2198.4	1552.7(3)	1.0(3)	3081.4

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1630.8(4)	1.9(5)	3159.5	2366.1(4)	5.4(7)	2366.0
1743.1(3)	2.0(5)	2727.4	2563.5(4)	5.9(8)	2563.6
1758.6(2)	8.8(10)	1884.4	2626.5(4)	2.5(8)	2752.5
1779.5(2)	10.0(12)	^{28}Si?	2698.7(5)	2.7(6)	2824.7
1884.42(10)	22(4)	1884.4	2727.2(8)	3.6(8)	2727.4
2007.4(10)	0.8(3)	2992.4	2829.5(8)	3.1(8)	2955.3
2050.3(6)	0.7(3)		2866.9(8)	2.5(8)	2992.4
2081.7(6)	0.75(30)		2911.5(8)	2.5(8)	3037.5
2142.5(6)	1.4(5)	2268.8	2977.5(10)	2.1(8)	2977.6
2198.4(3)	10(2)	2198.4	3006.6(8)	3.2(7)	3006.7
2240.0(3)	8.1(10)	2366.0	3133.9(10)	3.3(8)	3259.9
2252.3(3)	8.5(10)	2252.3	3196.2(10)	1.7(4)	3196.3
2269.0(5)	6.0(20)	2268.8	3351.0(15)	0.9(3)	3351.1
2274.1(5)	7.0(20)	2399.6	3411.6(15)	0.8(3)	

Level scheme of ^{55}Mn [70An3, 72Sa, 73Hi, 73Hi1, 74Te]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
125.9(2)	125.95	7/2−	—	—	—	—	—
984.4(2)	984.2	9/2−	984.4	6.3	0	5/2−	82
			858.45	100	125.9	7/2−	
1292.3(2)	1292.4	11/2−	1166.30	27	125.9	7/2−	34
			308.06	12	984.4	9/2−	
1528.72(15)	1529.8	3/2−	1528.70	40	0	5/2−	36
			1403.2	1.8	125.9	7/2−	
1884.45(10)	1885.3	7/2−	1884.42	22	0	5/2−	29
			1758.6	8.8	125.9	7/2−	
2198.4(2)	2198.5	7/2(−)	2198.4	10	0	5/2−	16
			1214.1	6.5	984.4	9/2−	
—	2215.3	(5/2−, 7/2−)	—	—	—	—	—
2252.3(2)	2253.7	(3/2−)	2252.3	8.5	0	5/2−	8.5
2268.8(5)	2269.5	1/2—5/2	2269.0	6.0	0	5/2−	7.4
			2142.5	1.4	125.9	7/2−	
—	2285	—	—	—	—	—	—
2311.4(7)	2311.5	13/2−	1326.6	0.7	984.4	9/2−	5.6
			1019.2	4.9	1292.3	11/2−	
2366.0(4)	2366.0	5/2−	2366.1	5.4	0	5/2−	13.5
			2240.0	8.1	125.9	7/2−	
2399.6(7)	2399.0	5/2−—9/2−	2274.1	7.0	125.9	5/2−	9.2
			1414.7	2.2	984.4	9/2−	
2427.0(3)	2428.6	[1/2+]	898.3	3.4	1528.7	3/2−	3.4
2563.6(4)	2564.8	3/2−	2563.5	5.9	0	5/2−	5.9
—	2582	—	—	—	—	—	—





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2727.4(4)	2727.0	7/2	2727.2	3.6	0	5/2-	5.6
			1743.1	2.0	984.4	9/2-	
2752.5(6)	2752.9	9/2(-), 5/2-	2626.5	2.5	125.9	7/2-	2.5
—	2822.8	9/2	—	—	—	—	—
2824.7(7)	2824.6	5/2, 9/2	2698.7	2.7	125.9	7/2-	4.1
			940.3	1.4	1884.4	7/2-	
—	2874	—	—	—	—	—	—
2955.3(9)	2952.3	7/2(-), 9/2	2829.3	3.1	125.9	7/2-	3.1
2977.6(10)	2975	3/2-, 5/2(-)	2977.5	2.1	0	5/2-	2.1
—	2984	3/2+, 5/2+	—	—	—	—	—
2992.4(9)	2990	—	2866.9	2.5	125.9	7/2-	3.3
			2007.4	0.8	984.4	9/2-	
3006.7(8)	3004	—	3006.6	3.2	0	5/2-	3.2
—	3028	1/2-, 3/2-	—	—	—	—	—
3037.5(9)	3036.6	—	2911.5	2.5	125.9	7/2-	2.5
—	3046.3	—	—	—	—	—	—
—	3049.5	—	—	—	—	—	—
3081.4(4)	3082.4	—	1552.7	1.0	1528.7	3/2-	1.0
—	3126.4	—	—	—	—	—	—
3159.5(5)	3160.9	1/2—5/2	1630.8	1.9	1528.7	3/2-	1.9
3196.3(10)	3195	—	3196.2	1.7	0	5/2-	1.7
3259.9(15)	3261	—	3133.9	3.3	125.9	7/2-	3.3
—	3270	—	—	—	—	—	—
—	3342	—	—	—	—	—	—
3351.1(15)	3351	—	3351.0	0.9	0	5/2-	0.9

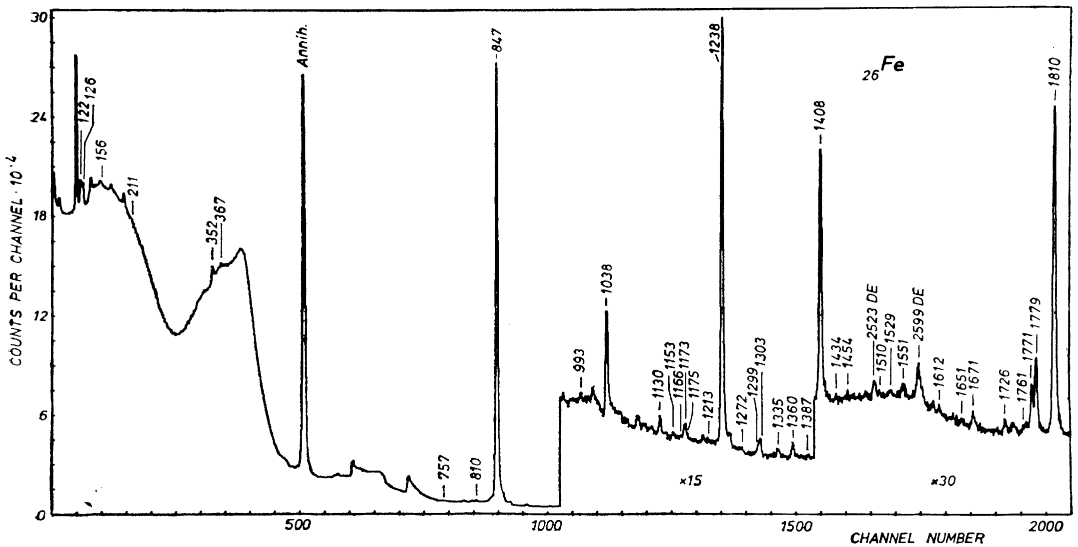
Iron $_{26}$Fe

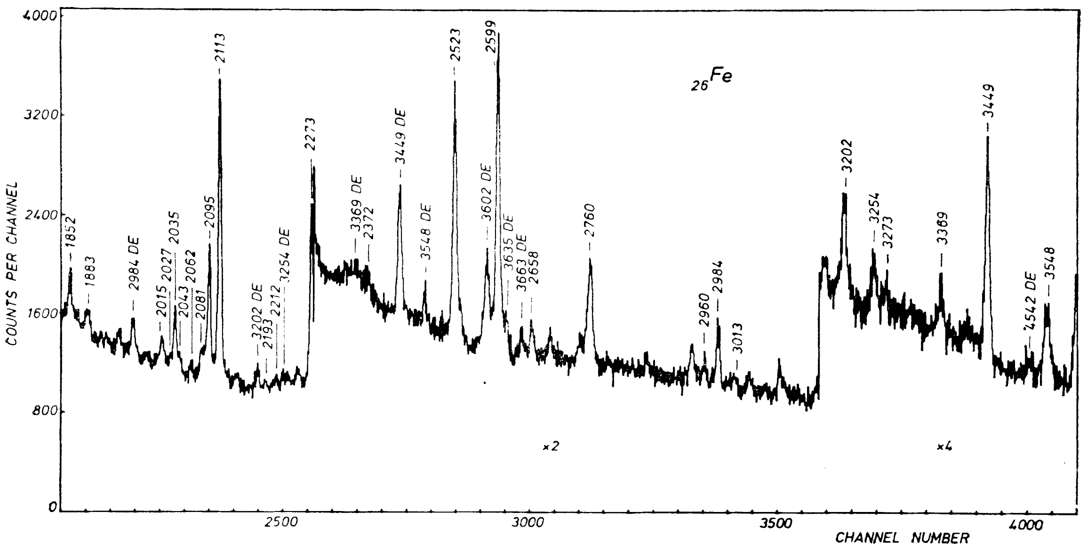
E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
122.1(2)	2.2(2)	^{57}Fe	122.1	1165.9(6)	0.08(3)		
126.0(2)	1.6(2)	^{55}Mn	126.0	1173.?(8)	0.25(10)	^{56}Fe	3830.6
156.5(2)	0.40(10)	^{54}Mn	156.5	1175.0(8)	0.15(10)	^{56}Fe	4297.4
211.0(3)	0.22(3)	^{56}Mn	211.0	1213.0(7)	0.06(3)		
352.5*c*	1.6(2)	^{57}Fe	367.0	1238.3(2)	10.5(5)	^{58}Fe	2085.1
367.1(2)	0.54(5)	^{57}Fe	367.0	1271.9(10)	0.05(2)	^{56}Fe	4395.4
757.3(4)	0.10(3)	^{53}Fe	757.3	1298.9(4)	0.12(4)		
810.3(2)	0.43(3)	^{58}Fe	810.3	1303.2(3)	0.64(10)	^{56}Fe	3388.3
846.78*c*	100	^{56}Fe	846.8	1334.6(4)	0.18(3)	^{56}Fe	4457.6
992.8(4)	0.10(3)			1359.9(3)	0.40(4)	^{56}Fe	3445.4
1037.85*c*	2.15(10)	^{56}Fe	3122.9	1386.6(10)	0.06(3)		
1130.0(3)	0.39(4)	^{54}Fe	2538.2	1408.2(2)	3.5(2)	^{55}Fe	1408.2
1152.8(4)	0.14(3)	^{54}Fe	2561.0	1434.2(10)	0.05(2)		

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
1454.5(10)	0.07(3)			2192.9(10)	0.06(3)		
1509.7(10)	0.08(3)			2211.7(7)	0.11(3)	^{56}Fe	4297.4
1528.6(4)	0.17(4)			2273.2(2)	2.03(12)	^{56}Fe	3120.0
1551.2(4)	0.25(5)	^{54}Fe	2959.4	2372.2(7)	0.09(3)	^{56}Fe	4457.6
1612.2(10)	0.07(3)	^{57}Fe		2523.2(2)	1.28(10)	^{56}Fe	3370.0
1650.8(9)	0.09(3)			2598.52 *c*	2.6(2)	^{56}Fe	3445.4
1671.1(6)	0.32(5)	^{56}Fe	3756.2	2658.3(8)	0.14(4)	^{56}Fe	2657.5
1725.6(4)	0.20(4)	^{57}Fe		2760.0(3)	1.24(10)	^{56}Fe	3606.9
1760.8 *m*	0.21(7)			2959.6(6)	0.20(4)	^{56}Fe, ^{54}Fe	2959.7
1771.33 *c*	0.91(8)	^{56}Fe	3856.4	2983.7(6)	0.46(7)	^{56}Fe	3830.6
1778.8(2)	1.25(20)	^{28}Si?		3013.1(10)	0.12(4)		
1810.5(2)	6.9(4)	^{56}Fe	2657.5	3202.18 *c*	0.78(13)	^{56}Fe	4049.1
1851.8(3)	0.39(6)	^{56}Fe	4509.5	3253.7(6)	0.36(7)	^{56}Fe	4100.6
1882.6(3)	0.33(5)	^{56}Fe	4539.4	3272.6(10)	0.17(4)	^{56}Fe	4119.9
2015(2)	0.15(8)	^{56}Fe	4100.6	3369.2(8)	0.24(5)	^{56}Fe	3370.0
2027.0(7)	0.09(3)			3448.6(4)	1.13(20)	^{56}Fe	3448.7
2034.8(3)	0.46(7)	^{56}Fe	4119.9	3548.5(5)	0.65(16)	^{56}Fe	4395.4
2042.8(8)	0.12(3)			3601.9(3)	1.5(3)	^{56}Fe	3602.0
2062.4(7)	0.09(3)			3634.9(14)	0.15(5)		
2080.8(5)	0.18(3)			3663.1(6)	0.43(14)	^{56}Fe	4509.5
2094.6(2)	1.08(7)	^{56}Fe	2941.4	4541.7(16)	0.15(5)	^{56}Fe	4539.4
2112.9(2)	3.2(2)	^{56}Fe	2959.7				

Level scheme of ^{56}Fe [68Gu, 70Ra5, 74La, 74Ti]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
846.79	846.8	2+	846.78	100	0	0+	68
2085.1(3)	2085.1	4+	1238.3	10.5	846.8	2+	5.3
2657.5(2)	2657.6	2+	2658.3	0.14	0	0+	6.4
			1810.5	6.9	846.8	2+	
2941.4(2)	2941.7	0+	2094.6	1.08	846.8	2+	1.1
2959.7(2)	2960.0	2+	2959.6	—	0	0+	3.3*
			2112.9	3.2	846.8	2+	
3120.0(2)	3120.0	1+	2273.2	2.03	846.8	2+	2.0
3122.9(3)	3123.0	4+	1037.85	2.15	2085.1	4+	1.8
3370.0(2)	3370.2	2+	3369.2	0.24	0	0+	1.5
			2523.2	1.28	846.8	2+	
3388.3(4)	3388.1	6+	1303.2	0.64	2085.1	4+	0.64
3445.37	3445.4	3+	2598.52	2.6	846.8	2+	3.0
			1359.9	0.40	2085.1	4+	
3448.7(4)	3449.3	1+	3448.6	1.13	0	0+	1.1
3602.0(3)	3601.9	2+	3601.9	1.5	0	0+	1.5
3606.9(3)	3607.0	0+	2760.0	1.24	846.8	2+	1.2
3756.2(6)	3755	6+	1671.1	0.32	2085.1	4+	0.32





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
3830.6(6)	3832.0	2+	2983.7	0.46	846.8	2+	0.71
			1173.2	0.25	2657.5	2+	
3856.4(3)	3856.5	3+	1771.33	0.91	2085.1	4+	0.91
4049.07	4049.0	3+(4+)	3202.18	0.78	846.8	2+	0.78
4100.6(6)	4100.3	3+	3253.7	0.36	846.8	2+	0.51
			2015	0.15	2085.1	4+	
4119.9(4)	4120.0	4+	3272.6	0.17	846.8	2+	0.63
			2034.8	0.46	2085.1	4+	
4297.4(8)	4298.2	4+	2211.7	0.11	2085.1	4+	0.35*
			1175.0	0.15	3122.9	4+	
—	4302.0	(0+)	—	—	—	—	—
4395.4(5)	4395.0	3+	3548.5	0.65	846.8	2+	0.70
			1271.9	0.05	3122.9	4+	
—	4401.0	2+(1+)	—	—	—	—	—
4457.6(5)	4458.4	3+(4+)	2372.2	0.09	2085.1	4+	0.27
			1334.6	0.18	3122.9	4+	
4509.5(4)	4510.0	3-(3+)	3663.1	0.43	846.8	2+	1.0*
			1851.8	0.39	2657.5	2+	
4539.4(4)	4539.5	1+, 2+	4541.7	0.15	0	0+	0.48
			1882.6	0.33	846.8	2+	

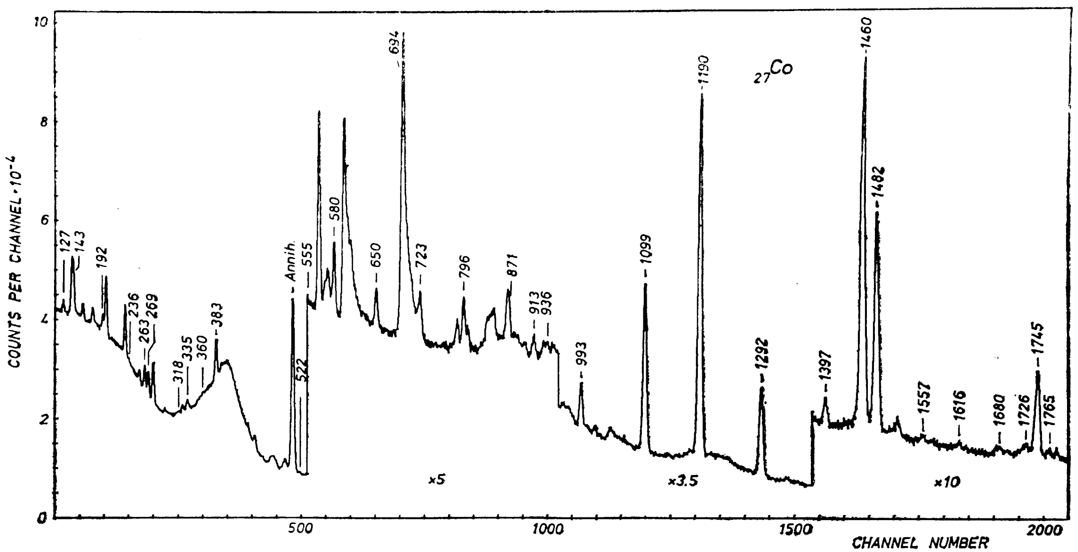
Cobalt $^{59}_{27}Co$

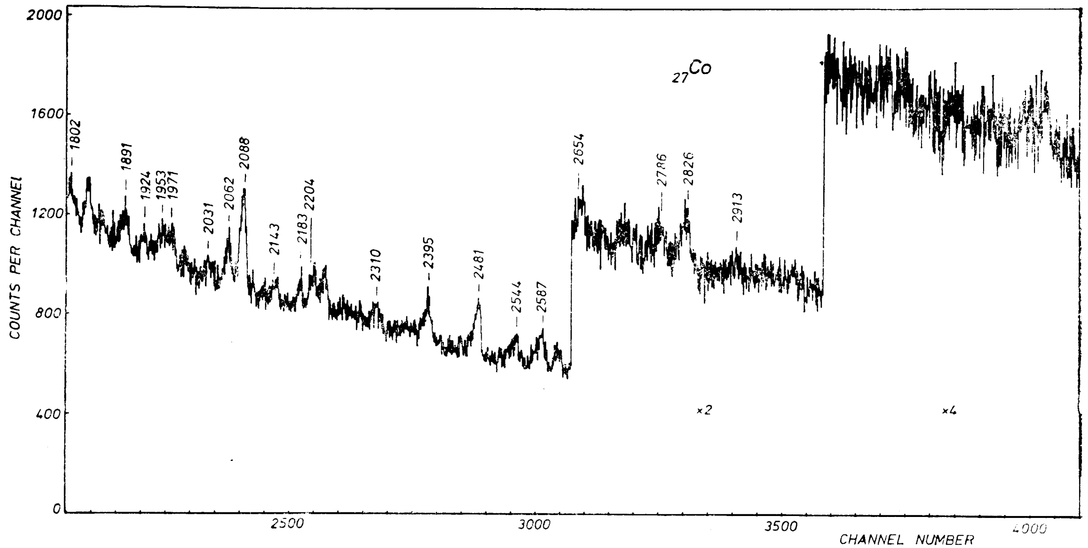
E_γ	I_γ	E_i	E_γ	I_γ	E_i
127.2(4)	1.4(2)		1291.6(2)	26.0(10)	1291.6
142.7(3)	6.3(15)	1434.1	1397.2(3)	2.5(4)	2587.6
192.4(4)	2.0(3)	1291.6	1459.5(2)	47(2)	1459.6
236.3(6)	0.65(15)		1481.7(2)	28.0(10)	1481.7
263.2(2)	3.5(4)	1745.1	1557.2(8)	0.75(15)	
269.3(2)	4.0(5)	1459.6	1616.2(10)	0.70(20)	2715.4
317.9(10)	0.40(10)	2061.7	1680.5(15)	1.5(5)	
334.8(3)	2.1(2)	1434.1	1726.2(12)	2.0(4)	2825.6
360.5(10)	0.40(10)	2543.7	1745.1(3)	13.0(10)	
382.6(2)	9.7(12)	1481.7	1765.0(10)	1.2(2)	1745.1
522.1(8)	0.70(20)		1801.8(15)	1.2(2)	
554.8(3)	8.5(20)	1745.1	1891(2)	1.6(5)	
580.0(2)	5.0(6)	2061.7	1924.1(15)	0.90(20)	
650.1(2)	3.1(4)	2395.5	1953(2)	1.4(7)	
694.4(4)	7.0(20)	2154.0	1970.8(15)	1.4(7)	
723.4(8)	3.2(5)	2182.9	2031(2)	1.1(3)	
795.9(3)	5.2(6)	2087.6	2062.3(8)	2.0(3)	2061.7
871.3(4)	4.4(10)	2061.7	2088.0(10)	5.3(10)	2087.6
913.4(3)	2.4(4)	2204.9	2142.6(12)	0.75(20)	
936.5(6)	1.2(4)	2395.5	2182.9(10)	1.0(2)	2182.9
992.51(10)	8.0(6)	2182.9	2204.4(10)	1.6(3)	2204.9
1099.22 c	41.0(10)	1099.2	2309.8(10)	1.2(2)	
1190.4(2)	100	1190.4			

E_γ	I_γ	E_i	E_γ	I_γ	E_i
2395.4(10)	2.6(3)	2395.5	2654.2(15)	1.2(5)	
2481.4(12)	2.2(4)	2481.4	2786(2)	1.3(6)	2786
2544.3(15)	1.2(2)	2543.7	2826(2)	1.7(7)	2825.6
2586.8(15)	2.0(3)	2587.6	2913(2)	0.80(20)	2913

Level scheme of ^{59}Co [68Ve, 68Da, 70Co, 71Sw, 73Pa, 74Mn]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1099.23	1099.224	3/2−	1099.22	41.0	0	7/2−	24
1190.4(2)	1190.4	9/2−	1190.4	100	0	7/2−	73
1291.6(2)	1291.564	3/2−	1291.6	26.0	0	7/2−	14
			192.4	2.0	1099.2	3/2−	
1434.1(3)	1434.03	1/2−	334.8	2.1	1099.2	3/2−	8.4
			142.7	6.3	1291.6	3/2−	
1459.6(2)	1458.8	11/2−	1459.5	47	0	7/2−	40
			269.3	4.0	1190.4	9/2−	
1481.7(2)	1481.7	5/2+	1481.7	28.0	0	7/2−	29
			382.6	9.7	1099.2	3/2−	
1745.1(3)	1745	7/2−	1745.1	13.0	0	7/2−	22
			554.75	8.5	1190.4	9/2−	
			263.2	3.5	1481.7	5/2+	
2061.7(3)	2062	5/2−, 7/2−	2062.3	2.0	0	7/2−	12
			871.3	4.4	1190.4	9/2−	
			580.0	5.0	1481.7	5/2+	
			317.9	0.40	1745.1	7/2−	
2087.6(4)	2085	(5/2−)	2088.0	5.3	0	7/2−	10
			795.9	5.2	1291.6	3/2−	
2154.0(5)	2154.1	—	694.4	7.0	1459.6	11/2−	7.0
2182.9(2)	2183	—	2182.9	1.0	0	7/2−	12
			992.51	8.0	1190.4	9/2−	
			723.4	3.2	1459.6	11/2−	
2204.9(4)	2205	—	2204.4	1.6	0	7/2−	4.0
			913.4	2.4	1291.6	3/2−	
2395.5(4)	2395	—	2395.4	2.6	0	7/2−	6.9
			936.5	1.2	1459.6	11/2−	
			650.1	3.1	1745.1	7/2−	
2481.4(12)	2479	—	2481.4	2.2	0	7/2−	2.2
2543.7(10)	2541	—	2544.3	1.2	0	7/2−	1.6
			360.5	0.40	2182.9	—	
2587.6(4)	2585	5/2−, 7/2−	2586.8	2.0	0	7/2−	4.5
			1397.2	2.5	1190.4	9/2−	
2715.4(10)	2712	[1/2+]	1616.2	0.70	1099.2	3/2−	0.70
—	2720	—	—	—	—	—	—
—	2770	—	—	—	—	—	—
2786	2783	—	2786	1.3	0	7/2−	1.3
2825.6(12)	2825	(3/2−)	2826	1.3	0	7/2−	3.3
			1726.2	2.0	1099.2	3/2−	
2913(2)	2913	—	2913	0.80	0	7/2−	0 .



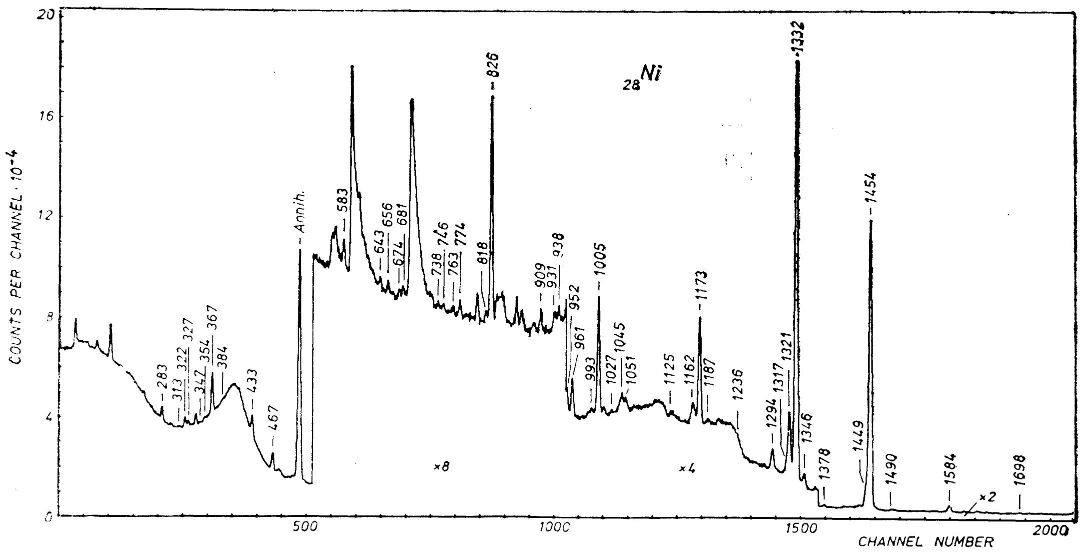


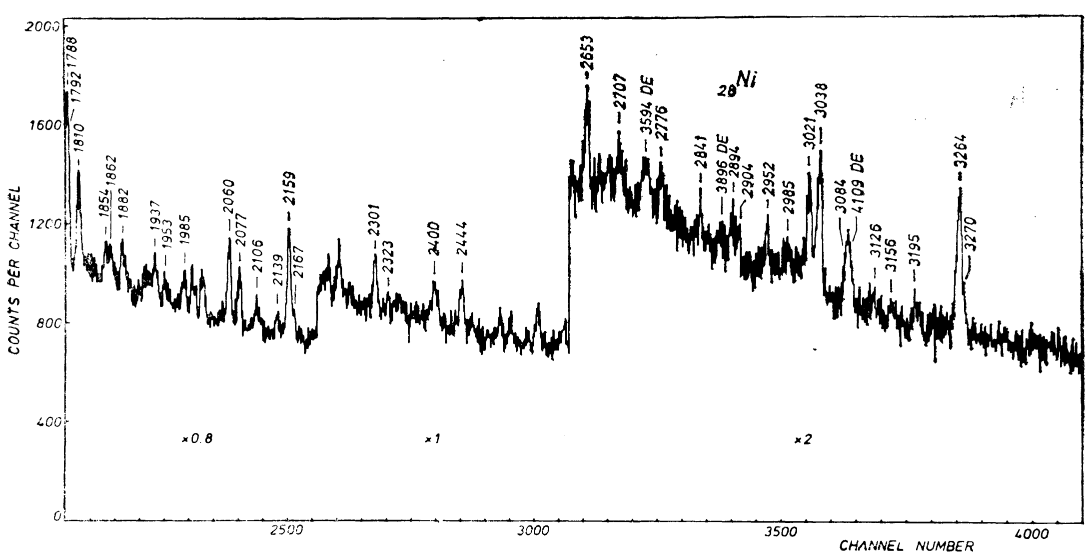
E_γ	I_γ	^AZ	E_i
283.0(2)	1.8(3)	^{61}Ni	283.0
312.9(2)	0.30(10)	^{58}Co	366.6
321.5(2)	1.3(4)	^{58}Co	(432.9)
327.0(3)	0.6(2)	^{58}Co	1378.1
346.8(6)	0.30(10)		
354.4(8)	0.45(10)	^{58}Ni	3776.0
366.6(2)	7.0(5)	^{58}Co	366.6
383.5(8)	0.25(10)	^{58}Ni	3420.4
432.9(2)	3.7(6)	^{58}Co	432.9
467.1(2)	3.2(4)	^{60}Ni	2626.0
582.8(2)	0.9(2)		
643.1(6)	0.35(10)	^{60}Ni	3269.6
655.9(5)	0.40(10)	^{61}Ni	655.9
674.1(7)	0.30(10)		
680.7(6)	0.30(10)	^{60}Ni	3186.2
738.1(8)	0.25(10)	^{58}Ni	3776.0
746.5(6)	0.40(10)		
762.9(8)	0.30(10)		
774.5(4)	0.60(15)		
817.8(6)	0.6(2)	^{58}Ni	3593.6
826.08(15)	10.7(8)	^{60}Ni	2158.7
908.6(6)	0.60(10)	^{60}Ni	3194.9
		^{61}Ni	908.6
931.0(5)	1.0(2)		
938.3(7)	0.7(3)	^{58}Co	1051.0
952.4(3)	2.8(6)	^{60}Ni	2284.9
961.3(2)	3.7(5)	^{58}Ni	3420.4
993.3(6)	0.60(15)	^{60}Ni	3619.3
1004.80(15)	12.3(10)	^{58}Ni	2459.1
1026.9(8)	0.40(10)	^{60}Ni	3186.2
1044.7(4)	0.9(2)		
1051.0(6)	0.8(2)	^{58}Co	1051.0
1125.4(8)	0.35(15)	^{58}Co	1235.9
1161.7(3)	3.3(8)	^{58}Ni	3620.9
1173.10(15)	13.3(10)	^{60}Ni	2505.8
		^{62}Ni	1171.7
1187.1(8)	0.7(3)	^{58}Co	1187.1
1235.9(12)	0.4(2)	^{58}Co	1235.9
1293.5(2)	2.0(6)	^{60}Ni	2626.0
1316.9(4)	2.3(10)	^{58}Ni	3776.0
1321.4(2)	8.7(12)	^{58}Ni	2775.7
1332.50 *c*	60(5)	^{60}Ni	1332.5
1345.7(3)	1.8(4)	^{64}Ni	1345.7
1378.1(6)	0.60(15)	^{58}Co	1378.1

E_γ	I_γ	^AZ	E_i
1448.6(10)	9.9(20)	^{58}Ni	2903.5
1454.28(10)	100	^{58}Ni	1454.3
1490.1(9) *m*	0.55(15)	^{58}Ni	2942.4
1583.7(3)	2.6(3)	^{58}Ni	3037.9
1697.5(9)	0.30(10)	^{58}Ni	4474.8
1787.8(8)	1.4(3)	^{60}Ni	3120.3
1791.7(8)	1.4(3)	^{60}Ni	3124.7
1809.5(3)	1.4(2)	^{58}Ni	3263.8
1853.9(8)	0.45(15)	^{60}Ni	3186.2
1862.4(8)	0.50(15)	^{60}Ni	3194.9
1882.5(8)	0.65(20)		
1936.8(7)	0.6(2)	^{60}Ni	3269.6
1952.6(10)	0.30(10)		
1984.6(9)	0.60(15)	^{60}Ni	3317.1
2059.8(8)	0.8(3)	^{60}Ni	3392.3
2077.0(5)	0.9(2)	^{58}Ni	3531.4
2106.1(10)	0.45(15)		
2139.4(6)	0.30(10)	^{58}Ni	3593.6
2158.9(3)	2.0(4)	^{60}Ni	2158.7
2167.1(8)	0.45(15)	^{58}Ni	3620.9
2301.0(6)	0.95(20)	^{62}Ni	2301.0
2322.8(10)	0.30(10)	^{58}Ni	3776.0
2399.5(16) *m*	1.2(3)		
2444.4(6)	1.1(2)	^{58}Ni	3898.4
2652.9(6)	1.0(2)	^{58}Ni	4107.6
2707.3(10)	0.65(20)		
2776.1(13)	0.50(15)	^{58}Ni	2775.7
2841.1(10)	0.35(10)	^{58}Ni	4295.5
2893.6(12)	0.5(2)	^{58}Ni	4348.0
2904.1(12)	0.45(15)	^{58}Ni	2903.5
2951.6(8)	0.45(10)	^{58}Ni	4406.0
2984.7(18)	0.30(10)		
3021.1(6)	1.2(2)	^{58}Ni	4474.8
3037.5(8)	1.6(4)	^{58}Ni	3037.9
3083.7(15)	0.60(15)	^{58}Ni	4534.8
3125.6(12)	0.15(5)	^{60}Ni	3124.7
3155.9(12)	0,20(10)		
3195.4(15) *m*	0.55(20)	^{60}Ni	3194.9
3263.6(6)	1.7(3)	^{58}Ni	3263.8
3270.4(8)	0.6(2)	^{60}Ni	3269.6
3593.6(10)	1.3(3)	^{58}Ni	3593.6
3896.1(20)	0.35(15)	^{58}Ni	3898.4
4109.3(15)	0.8(3)	^{58}Ni	4107.6

Level schemes of ^{58}Co [70Ra4], ^{58}Ni [70Ra4, 71Ca, 71St, 72Ev, 71Mo, 74Ko] and ^{60}Ni [71Mo, 71Da, 73Ro2, 74Ba, 74Ko]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{58}Co	—	24.9	(5+)	—	—	—	—	—
	54.4(3)	54	(3,4)+	—	—	—	—	—
	112.0(9)	116	(3,4)+	—	—	—	—	—
	366.6(2)	367	(3+)	366.6	7.0	0	2(+)	7.3
				312.2	0.30	54.4	(3,4)+	
	432.9(2)	432	—	432.9	3.7	0	2(+)	5.0
				321.5?	1.3	112.0	(3,4)+	
	1051.0(6)	1051	(2+)	1051.0	0.8	0	2(+)	0.9
				938.3	0.7	112.0	(3,4)+	
	1187.1(8)	1188	3+—5+	1187.1	0.7	0	2(+)	0.7
	1235.9(12)	1238	1+, 2+	1235.9	0.4	0	2(+)	0.75
				1125.4	0.35	112.0	(3.4)+	
	1378.1(6)	1378	0+—2+	1378.1	0.60	0	2(+)	1.2
				327.0	0.6	1051.0	(2+)	
^{58}Ni	1454.30(10)	1454.0	2+	1454.28	100	0	0+	58
	2459.1(2)	2459.1	4+	1004.80	12.3	1454.3	2+	3.0
	2775.7(3)	2775.3	2+	2776.1	0.50	0	0+	8.3
				1321.4	8.7	1454.3	2+	
	2903.5(11)	2901.7	1+	2904.1	0.45	0	0+	<10.4
				1448.6	9.9	1454.3	2+	
	—	2942.4	0+	1490.1	<0.55	1454.3	2+	—
	3037.9(4)	3037.8	2+	3037.5	1.6	0	0+	3.7
				1583.7	2.6	1454.3	2+	
	3263.8(4)	3263.5	2+	3263.6	1.7	0	0+	3.1
				1809.5	1.4	1454.3		
	3420.4(4)	3420.3	(3+)	961.3	3.7	2459.1	4+	3.5
				383.5	0.25	3037.9	2+	
	3531.4(6)	3530.9	0+	2077.0	0.9	1454.3	2+	0.90
	3593.6(7)	3593.4	1+	3593.6	1.3	0	0+	2.2
				2139.4	0.30	1454.3	2+	
				817.8	0.6	2775.7	2+	
	3620.9(5)	3620.4	4+	2167.1	0.45	1454.3	2+	3.8
				1161.7	3.3	2459.1	4+	
	3776.0(5)	3774.6	(3+)	2322.8	0.30	1454.3	2+	3.3
				1316.9	2.3	2459.1	4+	
				738.1	0.25	3037.9	2+	
				354.4	0.45	3420.4	(3+)	
	3898.4(7)	3898.5	2+	3896.1	0.35	0	0+	1.4
				2444.4	1.1	1454.3	2+	
	4107.6(7)	4107.9	2+	4109.3	0.8	0	0+	2.1*
				2652.9	1.0	1454.3	2+	
	4295.5(11)	4299	—	2841.1	0.35	1454.3	2+	0.35
	4348.0(13)	4347	—	2893.6	0.5	1454.3	2+	0.50
	4406.0(9)	4405	4+	2951.6	0.45	1454.3	2+	0.45
	4474.8(7)	4475	3−	3021.1	1.2	1454.3	2+	1.5
				1697.5	0.30	2775.7	4+	
	4538.1(16)	4536	—	3083.7	0.60	1454.3	2+	0.60





^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{60}Ni	1332.52	1332.52	2+	1332.50	60	0	0+	25
	2158.7(2)	2158.9	2+	2158.9	2.0	0	0+	9.1
				826.08	10.7	1332.5	2+	
	2284.9(3)	2284.9	0+	952.4	2.8	1332.5	2+	2.2
	—	2505.75	4+	1173.10	<13.3	1332.5	2+	—
	2626.0(2)	2626.2	3+	1293.5	2.0	1332.5	2+	4.2
				467.1	3.2	2158.7	2+	
	3120.3(8)	3120	4+	1787.8	1.4	1332.5	2+	1.4
	3124.7(8)	3124.1	2+	3125.6	0.15	0	0+	1.6
				1791.7	1.4	1332.5	2+	
	3186.2(7)	3186.4	3+	1853.9	0.45	1332.5	2+	1.2
				1026.9	0.40	2158.7	2+	
				680.7	0.30	2505.8	4+	
	3194.9(8)	3194.1	1+	3195.4	<0.55	0	0+	<1.6
				1862.4	0.50	1332.5	2+	
				908.6	<0.60	2284.9	0+	
	3269.6(7)	3269.4	2+	3270.4	0.6	0	0+	1.6
				1936.8	0.6	1332.5	2+	
				643.1	0.35	2626.0	3+	
	3317.1(9)	3318.3	0+	1984.6	0.60	1332.5	2+	0.60
	3392.3(8)	3393.6	2+	2059.8	0.8	1332.5	2+	0.8
	—	3588	—	—	—	—	—	—
	3619.3(8)	3619	(3)	993.3	0.60	2626.0	3+	0.85*

Copper $_{29}$Cu

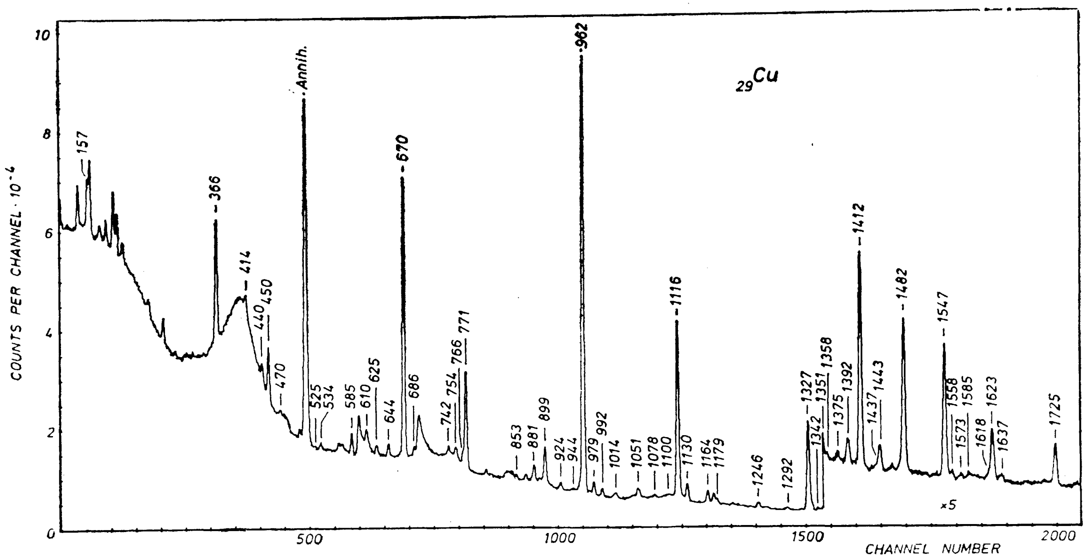
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
156.7(3)	3.4(6)	^{63}Ni	156.7	742.4(3)	1.4(3)	^{63}Cu	1412.1
365.5 *m*	14(2)	^{65}Cu	1481.8	754.2(4)	1.1(3)	^{63}Cu	2081.3
		^{63}Ni	525.0	765.7(10)	1.7(5)	^{63}Cu	2092.4
413.9(3)	1.9(4)			770.6(2)	17(2)	^{65}Cu	770.6
440.4(3)	1.6(4)	^{23}Na?		852.7(6)	0.45(15)	^{65}Cu	1623.3
450.2(2)	5.6(8)	^{63}Cu	1412.1	881.1(15)	3.3(10)	^{63}Cu	2208.1
470.1(8)	0.90(20)	^{65}Cu	2094.3	899.2(2)	7.8(8)	^{63}Cu	1861.3
525.0(6)	0.30(10)	^{63}Ni	525.0	924.5(5)	1.5(3)	^{63}Cu	2336.6
534.5(4)	0.60(15)	^{63}Cu	2081.3	944.4(9)	0.25(10)	^{63}Ni	944.4
585.0(2)	2.8(3)	^{63}Cu	1547.0	962.03(10)	100	^{63}Cu	962.0
609.6(10)	1.0(2)	^{65}Cu	1724.9	978.8(4)	2.5(4)	^{65}Cu	2094.3
625.3(3)	1.2(4)	^{65}Cu	2107.3	992.0(4)	1.8(4)	^{65}Cu	2107.3
644.5(2)	1.9(3)			1013.5(6)	1.6(3)		
669.68(10)	46(2)	^{63}Cu	669.7	1050.7(3)	2.6(5)	^{63}Cu	
686.3(9)	1.4(4)			1077.6(8)	0.50(15)	^{63}Cu	2404.7

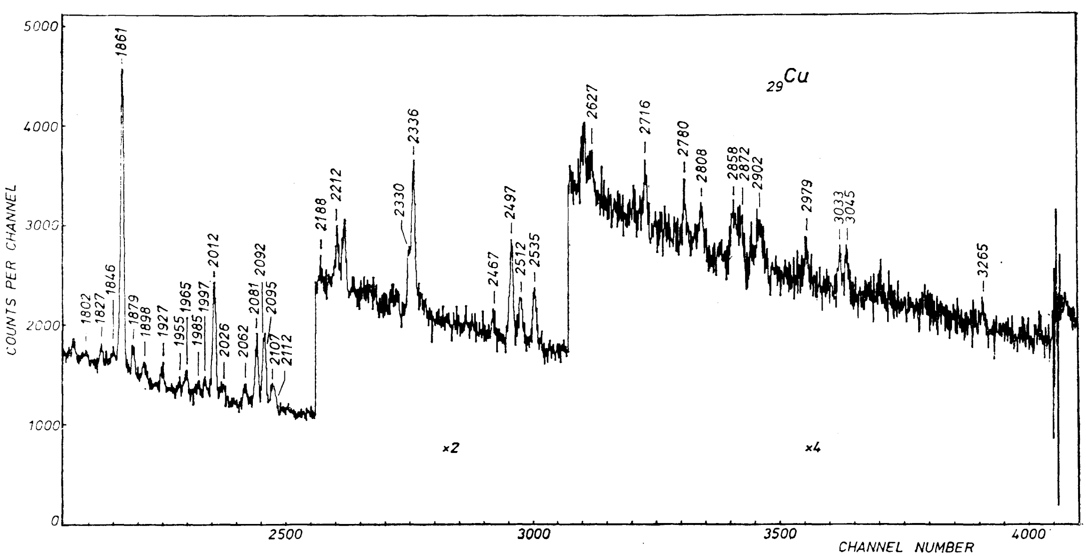
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1099.9(10)	0.40(10)	^{63}Cu	2511.7	1955.4(10)	0.35(15)		
1115.54(10)	37(3)	^{65}Cu	1115.6	1965.4(8)	0.80(25)		
1130.5(2)	3.8(4)	^{63}Cu	2092.4	1984.9(12)	0.45(10)		
1163.5(3)	3.8(6)	^{65}Cu	2279.0	1997.0(10)	0.45(10)		
1178.7(7)	1.4(4)	^{63}Cu	2505.7	2011.8(3)	3.5(5)	^{63}Cu	2011.8
1246.1(6)	2.0(5)	^{63}Cu	2208.1	2025.7(12)	0.70(20)	^{63}Cu	2695.4
1292.3(10)	0.70(20)	^{65}Cu	2407.7	2062.0(9)	0.60(15)	^{63}Cu	2061.2
1327.00(10)	32(3)	^{63}Cu	1327.0	2081.3(5)	2.0(3)	^{63}Cu	2081.3
1342.5(10)	0.60(20)	^{63}Cu	2011.8	2091.8(10)	1.0(2)	^{63}Cu	2092.4
1357.9(8)	0.40(10)			2095.0(8)	1.6(2)	^{65}Cu	2094.3
1374.7(7)	0.55(15)	^{63}Cu	2336.6	2106.8(12)	0.50(15)	^{65}Cu	2107.3
1391.5(5)	2.0(3)	^{63}Cu	2061.2	2112.0(15)	0.55(20)	^{63}Cu	2780.3
1412.11(10)	15(2)	^{63}Cu	1412.1	2187.9(8)	0.45(15)	^{63}Cu	2857.7
1436.6(10)	0.50(20)	^{63}Cu	2404.7	2212.3(6)	0.55(10)	^{65}Cu	2212.8
1442.9(8)	2.1(5)	^{65}Cu	2212.8	2329.6(10)	0.85(20)	^{65}Cu	2329.2
1481.80(10)	12(2)	^{65}Cu	1481.8	2336.4(5)	1.9(4)	^{63}Cu	2336.6
1547.03(10)	12(2)	^{63}Cu	1547.0	2467.0(8)	0.30(10)		
1558.2(7)	0.80(25)	^{65}Cu	2329.2	2496.9(5)	1.8(3)	^{63}Cu	2496.9
1573.3(8)	0.40(15)	^{63}Cu	2535.0	2511.7(10)	1.0(2)	^{63}Cu	2511.7
1584.9(10)	0.35(15)			2535.0(5)	1.0(2)	^{63}Cu	2535.0
1617.5(10)	0.60(20)			2627.3(2)	0.45(15)		
1623.3(3)	4.8(10)	^{65}Cu	1623.3	2716.2(8)	0.60(15)	^{63}Cu	2716.7
1637.2(9)	0.60(15)	^{65}Cu	2407.7	2780.3(9)	0.40(10)	^{63}Cu	2780.3
1724.9(2)	4.0(5)	^{65}Cu	1724.9	2808.0(10)	0.45(15)	^{63}Cu	2808.0
1801.7(12)	0.20(5)			2858.0(15)	0.65(20)	^{63}Cu	2857.7
1827.0(8)	0.40(10)	^{63}Cu	2496.9	2871.7(15)	0.60(20)		
1846.4(10)	0.30(10)			2902.2(15)	0.70(25)		
1861.3(2)	7.7(8)	^{63}Cu	1861.3	2979.0(15)	0.35(10)	^{63}Cu	2979.1
1879.3(5)	0.55(15)	^{63}Cu	2547.5	3033.1(15)	0.35(10)	^{63}Cu	3033.2
1897.9(8)	0.60(15)			3044.6(15)	0.45(15)	^{63}Cu	3044.7
1926.6(10)	0.50(15)	^{63}Cu	2888.6	3264.6(20)	0.30(10)		

Level schemes of ^{63}Cu [67Ve, 67Ba1, 70Ki, 75Au, 74Kl] and ^{65}Cu [68Pa, 73Ra, 72Pa, 70Ro]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{63}Cu	669.68(10)	669.62	1/2$^-$	669.68	46	0	3/2$^-$	39*
	962.04(10)	962.06	5/2$^-$	962.03	100	0	3/2$^-$	70
	1327.01(10)	1327.03	7/2$^-$	1327.00	32	0	3/2$^-$	27*
				365.5	<14	962.0	5/2$^-$	
	1412.12(10)	1412.03	5/2$^-$	1412.11	15	0	3/2$^-$	18*
				742.4	1.4	669.7	1/2$^-$	
				450.2	5.6	962.0	5/2$^-$	

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{63}Cu	1547.04(10)	1547.02	3/2$^-$	1547.03	12	0	3/2$^-$	13*
				585.0	2.8	962.0	5/2$^-$	
	1861.3(2)	1861.3	5/2$^-$, 7/2$^-$	1861.3	7.7	0	3/2$^-$	15*
				899.2	7.8	962.0	5/2$^-$	
	2011.8(3)	2011.1	3/2$^-$	2011.8	3.5	0	3/2$^-$	4.1
				1342.5	0.60	669.7	1/2$^-$	
	2061.2(5)	2062.2	1/2$^-$, 3/2$^-$	2062.0	0.60	0	3/2$^-$	3.0*
				1391.5	2.0	669.7	1/2$^-$	
	2081.3(5)	2081.5	3/2$^-$, 5/2$^-$	2081.3	2.0	0	3/2$^-$	3.7
				754.2	1.1	1327.0	7/2$^-$	
				534.5	0.60	1547.0	3/2$^-$	
	2092.4(3)	2092.7	7/2$^-$	2091.8	1.0	0	3/2$^-$	5.6*
				1130.5	3.8	962.0	5/2$^-$	
				765.7	1.7	1327.0	7/2$^-$	
	2208.1(7)	2208.0	—	1246.1	2.0	962.0	5/2$^-$	5.3
				881.1	3.3	1327.0	7/2$^-$	
	2336.6(5)	2336.53	5/2$^-$	2336.9	1.9	0	3/2$^-$	4.0
				1374.7	0.55	962.0	5/2$^-$	
				924.5	1.5	1412.1	5/2$^-$	
	2404.7(9)	2404.8	—	1442.9	0.8	962.0	5/2$^-$	1.3
				1077.6	0.50	1327.0	7/2$^-$	
	2496.9(5)	2496.9	3/2$^-$	2496.9	1.8	0	3/2$^-$	2.2
				1827.0	0.40	669.7	1/2$^-$	
	2505.7(8)	2507	—	1178.7	1.4	1327.0	7/2$^-$	1.4
	2511.7(10)	2512.0	—	2511.7	1.0	0	3/2$^-$	1.4
				1099.9	0.40	1412.1	5/2$^-$	
	2535.0(5)	2535.77	3/2$^-$, 5/2$^-$	2535.0	1.0	0	3/2$^-$	4.2*
				1573.3	0.40	962.0	5/2$^-$	
	—	2673	—	—	—	—	—	—
	2695.4(13)	2695	1/2$^-$—5/2$^-$	2025.9	0.70	669.7	1/2$^-$	2.1*
	2716.2(8)	2716.70	3/2$^-$, 5/2$^-$	2716.2	0.60	0	3/2$^-$	4.0*
	2780.3(9)	2780.4	1/2$^-$—5/2$^-$	2780.6	0.40	0	3/2$^-$	1.1*
				2112.0	0.55	669.7	1/2$^-$	
	2808.0(10)	2806.4	3/2$^-$, 5/2$^-$	2808.0	0.45	0	3/2$^-$	0.60*
	—	2831	—	—	—	—	—	—
	2857.7(8)	2857.7	1/2$^-$—5/2$^-$	2858.0	0.65	0	3/2$^-$	1.6*
				2187.9	0.45	669.7	1/2$^-$	
	2888.6(10)	2889.4	1/2$^-$—5/2$^-$	1926.6	0.50	962.0	5/2$^-$	1.0*
	2979.1(15)	2977.5	(1/2, 3/2)	2979.0	0.35	0	3/2$^-$	0.35
	3033.2(15)	3033.1	—	3033.1	0.35	0	3/2$^-$	0.35
	3044.7(15)	3044.6	1/2—5/2	3044.6	0.45	0	3/2$^-$	0.45
^{65}Cu	770.6(2)	770.6	1/2$^-$	770.6	17	0	3/2$^-$	14
	1115.55(10)	1115.54	5/2$^-$	1115.54	37	0	3/2$^-$	22*
	1481.81(10)	1481.83	7/2$^-$	1481.80	12	0	3/2$^-$	13*
				365.5	<14	1115.6	5/2$^-$	
	1623.3(3)	1623.44	5/2$^-$	1623.3	4.8	0	3/2$^-$	7.2*
				852.7	0.45	770.6	1/2$^-$	





^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{65}Cu	1724.9(2)	1724.94	3/2⁻	1724.9	4.0	0	3/2⁻	5.0
				609.6	1.0	1115.6	5/2⁻	
	2094.3(5)	2090	5/2⁻, 7/2⁻	2095.0	1.6	0	3/2⁻	5.0
				978.8	2.5	1115.6	5/2⁻	
				470.1	0.90	1623.3	5/2⁻	
	2107.3(4)	2102	—	2106.8	0.50	0	3/2⁻	3.5
				992.0	1.8	1115.6	5/2⁻	
				625.3	1.2	1481.8	7/2⁻	
	2212.8(6)	2208	1/2⁻, 3/2⁻	2212.3	0.55	0	3/2⁻	1.8
				1442.9	1.3	770.6	1/2⁻	
	2279.0(4)	2276	5/2⁻, 7/2⁻	1163.5	3.8	1115.6	5/2⁻	3.8
	2329.2(9)	2325	1/2⁻, 3/2⁻	2329.6	0.85	0	3/2⁻	1.6
				1558.2	0.80	770.6	1/2⁻	
	2407.8(10)	2407	—	1637.2	0.60	770.6	1/2⁻	1.3
				1292.3	0.70	1115.6	5/2⁻	

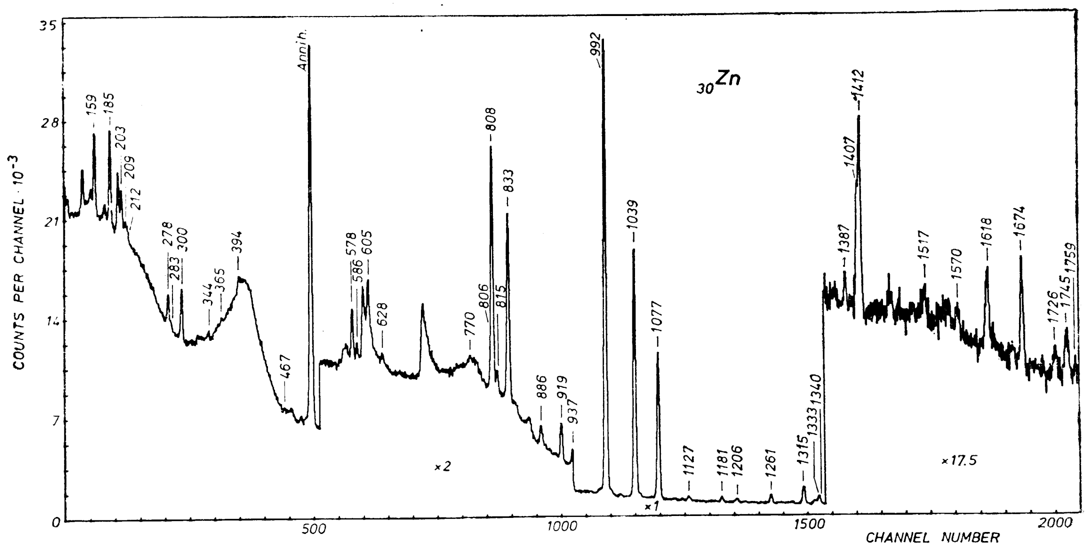
Zinc $_{30}$Zn

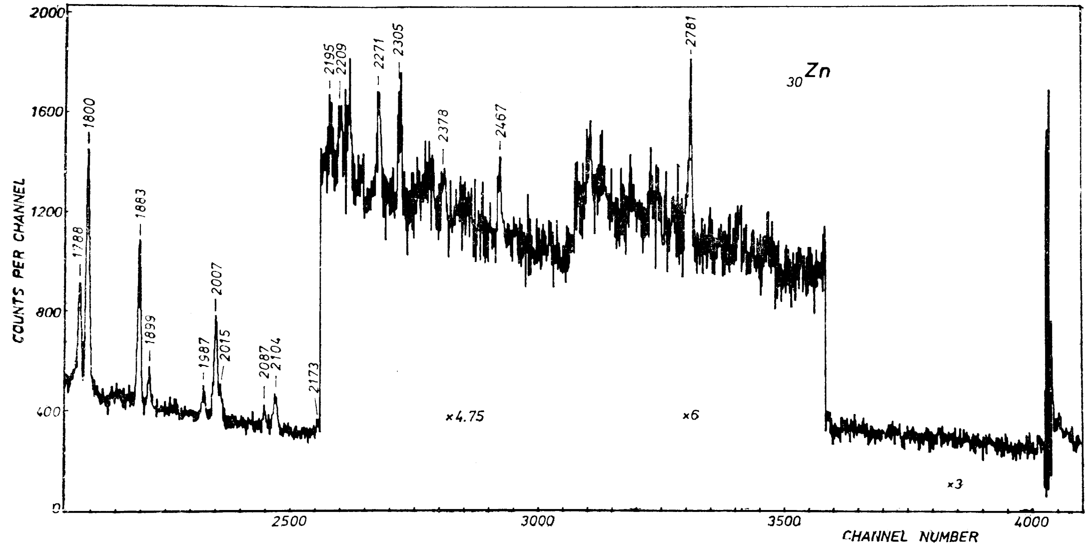
E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
159.3(2)	3.8(5)	^{64}Cu	159.3	991.50(10)	100	^{64}Zn	991.5
184.7(2)	5.0(4)	^{67}Zn	184.7				(2791.4)
202.9(3)	2.6(6)	^{64}Cu	362.2	1039.20(10)	57(4)	^{66}Zn	1039.2
208.8(5)	1.0(3)	^{67}Zn	393.6	1077.35 *c*	34(3)	^{68}Zn	1077.4
212.0(10)	0.70(20)	^{64}Cu	574.2	1126.6(5)	1.3(2)		
278.3(3)	2.0(3)	^{64}Cu	278.3	1180.7(5)	1.2(2)	^{64}Zn	2980.4
282.8(12)	0.35(15)			1206.4(16)	0.70(20)	^{64}Zn	3006.1
300.2(2)	3.4(3)	^{67}Zn	393.6	1261.4(3)	2.6(4)	^{68}Zn	2338.8
343.6(6)	0.35(10)	^{64}Cu	343.6	1315.2(2)	5.2(4)	^{64}Zn	2306.7
365.0(10)	0.20(5)			1333.4(6)	1.5(4)	^{66}Zn	2372.6
393.9(6)	1.2(4)	^{67}Zn	393.6	1340.3(4)	2.5(4)	^{68}Zn	2417.8
467.4(6)	0.45(10)	^{64}Cu	745.7	1387.0(4)	0.40(10)	^{64}Zn	3186.7
578.5(2)	3.1(3)	^{68}Zn	1455.6	1407.1(10)	1.6(4)	^{64}Zn	3206.8
586.1(4)	0.80(15)	^{67}Zn	979.7	1411.8(10)	2.8(4)	^{66}Zn	2451.0
604.8(3)	3.2(6)	^{67}Zn	604.8	1516.8(10)	0.50(15)		
627.9(8)	0.45(15)	^{66}Zn	3078.9	1570.4(8)	0.50(10)		
770.1(10)	0.60(20)			1617.9(4)	1.8(3)	^{64}Zn	2609.4
805.7(4)	4.5(5)	^{68}Zn	1883.1	1673.5(3)	2.0(4)	^{68}Zn	2750.9
808.0(2)	18.5(5)	^{64}Zn	1799.7	1726.2(8)	0.50(10)		
815.1(4)	1.7(3)			1745.1 *m*	1.5(3)	^{64}Zn	2736.7
833.35(20)	17(3)	^{66}Zn	1872.6	1758.8(10)	0.35(10)		
885.7(4)	1.9(3)	^{70}Zn	885.7	1787.5(3)	2.6(3)	^{66}Zn	2826.7
918.7(2)	3.6(4)	^{64}Zn	1910.2	1799.9(3)	6.2(5)	^{64}Zn	1799.7
937.0(3)	1.6(3)	^{64}Zn	2736.7				(2791.4)

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1883.09 *c*	4.1(3)	^{68}Zn	1883.1	2195.2(12)	0.40(10)	^{64}Zn	3186.7
1899.4(4)	0.80(15)	^{66}Zn	2938.6	2209.3(10)	0.60(15)	^{64}Zn	3200.8
1987.4(5)	0.70(15)			2270.7(8)	1.0(2)	^{64}Zn	3262.2
2007.0(7)	2.9(5)			2305.2(10)	0.90(20)	^{64}Zn	3296.7
2014.6(10)	0.75(25)	^{64}Zn	3006.1	2377.8(15)	0.50(15)		
2086.6(8)	0.45(10)	^{64}Zn	3078.1	2467.2(10)	0.80(20)		
2103.7(10)	1.4(2)			2780.6(6)	0.90(20)	^{66}Zn	2780.6
2172.8(12)	0.30(15)	^{66}Zn					

Level schemes of ^{64}Zn [74Au, 67Vel], ^{66}Zn [68Ma, 71Ca2, 72Hu, 73Ko3, 73Sz], ^{67}Zn [68Pa2] and ^{68}Zn [71Ot, 74Di]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{64}Zn	991.51(10)	991.52	2+	991.50	100	0	0+	65
	1799.7(3)	1799.42	2+	1799.9	6.2	0	0+	19
				808.0	18.5	991.5	2+	
	1910.2(3)	1910.31	(0+)	918.7	3.6	991.5	2+	3.4*
	2306.7(3)	2305	4+	1315.2	5.2	991.5	2+	5.2
	2609.4(5)	2609.12	0+	1617.9	1.8	991.5	2+	1.8
	2736.7(5)	2737	(2+)	1745.1	1.5	991.5	2+	3.1
				937.0	1.6	1799.7	2+	
	—	2793	4+	(1799.9)	—	—	—	—
	2980.4(5)	2983	(3−)	1180.7	1.2	1799.7	2+	1.2
	3006.1(8)	3002	—	2014.6	0.75	991.5	2+	1.45
				1206.4	0.70	1799.7	2+	
	3078.1(8)	3078	—	2086.6	0.45	991.5	2+	0.45
	—	3092	—	—	—	—	—	—
	3186.7(5)	3186.74	1+	2195.2	0.40	991.5	2+	1.0*
				1387.0	0.40	1799.7	2+	
	3200.8(10)	3197	—	2209.3	0.60	991.5	2+	0.60
	3206.8(12)	3206	—	1407.1	1.4	1799.7	2+	1.4
	3262.2(8)	3261.96	1,2	2270.7	1.0	991.5	2+	1.1*
	3296.7(10)	3295	—	2305.2	1.0	991.5	2+	1.0
^{66}Zn	1039.21(10)	1039.24	2+	1039.20	57	0	0+	32
	1872.56(20)	1872.70	2+	833.35	17	1039.2	2+	17
	2372.6(6)	2372.24	0+	1333.4	1.5	1039.2	2+	1.5
	2451.0(10)	2450	4+	1411.8	2.8	1039.2	2+	2.4
	—	2704	—	—	—	—	—	—
	2780.6(6)	2780.65	2+	2780.6	0.90	0	0+	0.90
	2826.7(4)	2828	3−	1787.5	2.6	1039.2	2+	2.6
	2938.6(4)	2938.6	2+	1899.4	0.80	1039.2	2+	0.80
	3078.9(12)	3080	4+	627.9	0.45	2451.0	4+	0.45





^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{67}Zn	—	93.31	1/2−	—	—	—	—	—
	184.7(2)	184.6	3/2−	184.7	5.0	0	5/2−	4.8*
	393.6(3)	393.6	3/2−	393.9	1.2	0	5/2−	4.8
				300.2	3.4	93.3	1/2−	
				208.8	1.0	184.7	3/2−	
	604.8(3)	602	(9/2+)	604.8	3.2	0	5/2−	3.2
	—	888.0	(1/2−, 3/2−)	—	—	—	—	—
	979.7(6)	978	—	586.1	0.80	393.6	3/2−	0.80
^{68}Zn	1077.36	1077.38	2+	1077.35	34	0	0+	21
	1655.9(2)	1655.94	0+	578.5	3.1	1077.4	2+	3.1
	1883.12	1883.16	2+	1833.09	4.1	0	0+	6.7
				805.7	2.6	1077.4	2+	
	2338.8(4)	2338.43	2+	1261.4	2.6	1077.4	2+	2.6
	2417.8(4)	2417.39	4+	1340.4	2.5	1077.4	2+	2.5
	2750.9(3)	2750.75	3−	1673.5	2.0	1077.4	2+	2.0

Gallium $_{31}$Ga

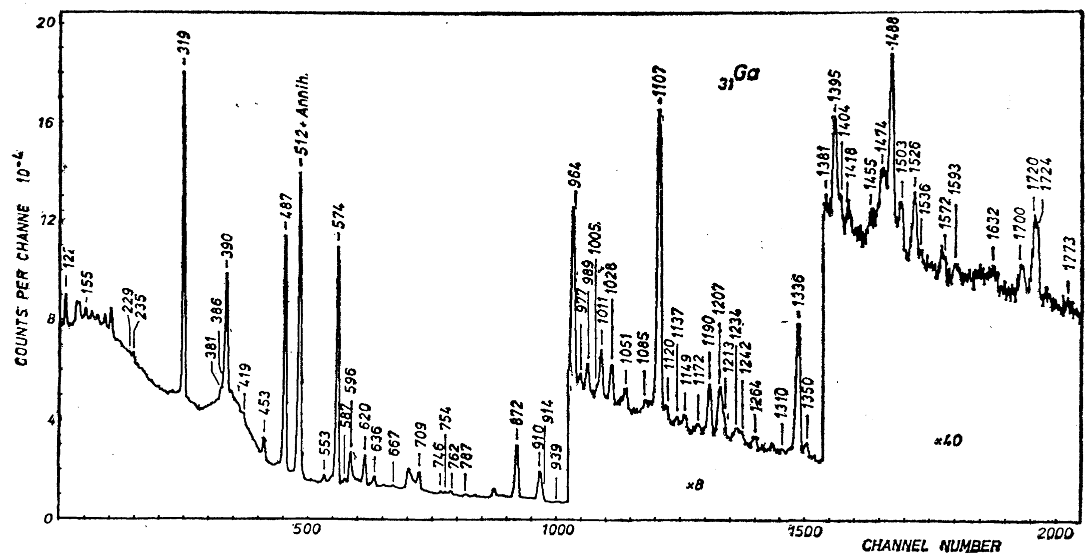
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
121.5(2)	6.6(5)	^{71}Ga	511.5	753.6(8)	1.3(2)	^{71}Ga	2246.5
155.1(3)	1.8(3)			762.0(6)	1.9(3)	^{69}Ga	1336.0
228.9(8)	0.45(8)	^{69}Ga	1336.0	787.2(10)	1.3(2)	^{69}Ga	1106.7
234.8(4)	1.2(2)	^{69}Ga	1106.7	871.8(3)	37(2)	^{69}Ga	871.8
318.6(2)	75(3)	^{69}Ga	318.6	910.2(8)	23(2)	^{71}Ga	910.2
381.4(7)	3.1(4)	^{69}Ga	1487.6	914.2(8)	4.0(5)	^{69}Ga	1487.9
385.7(10)	4.5(10)	^{71}Ga	1492.9	938.9(8)	0.80(20)	^{69}Ga	2426.8
389.8(3)	43(2)	^{71}Ga	389.8	964.5(2)	18.0(10)	^{71}Ga	964.5
418.8(6)	1.8(2)	^{69}Ga	1525.8	977.0(5)	1.0(2)		
453.2(3)	5.7(4)	^{69}Ga	1028.0	988.8(3)	2.7(2)	^{71}Ga	1476.1
		^{71}Ga	964.5	1005.3(10)	0.45(15)	^{71}Ga	1394.9
487.34 *c*	87(2)	^{71}Ga	487.3	1011.3(4)	4.6(3)	^{71}Ga	1498.6
511.5(8)	67(10)	^{71}Ga	511.5	1028.1(3)	3.8(3)	^{69}Ga	1028.0
553.2(3)	2.2(2)	^{69}Ga	871.8	1051.0(10)	2.6(4)	^{69}Ga	1923.4
574.1(2)	100	^{69}Ga	574.1	1085.3(8)	0.95(15)		
587.2(4)	1.4(2)	^{69}Ga	1923.4	1106.7(3)	40(3)	^{69}Ga	1106.7
596.2(10)	6.0(10)	^{71}Ga	1107.2	1119.7(8)	1.7(3)	^{71}Ga	1631.5
619.9(3)	12.0(12)	^{71}Ga	1107.2	1136.8(6)	1.3(2)		
635.6(4)	4.1(5)			1148.8(6)	1.7(2)	^{69}Ga	1723.0
666.6(5)	0.85(20)	^{71}Ga	1631.5	1171.5(6) *m*	1.3(2)		
709.3(4)	12.0(10)	^{69}Ga	1028.0	1190.2(3)	6.0(4)	^{71}Ga	1701.7
746.0(6)	1.2(2)			1207.4(8)	5.2(10)	^{69}Ga	1525.8

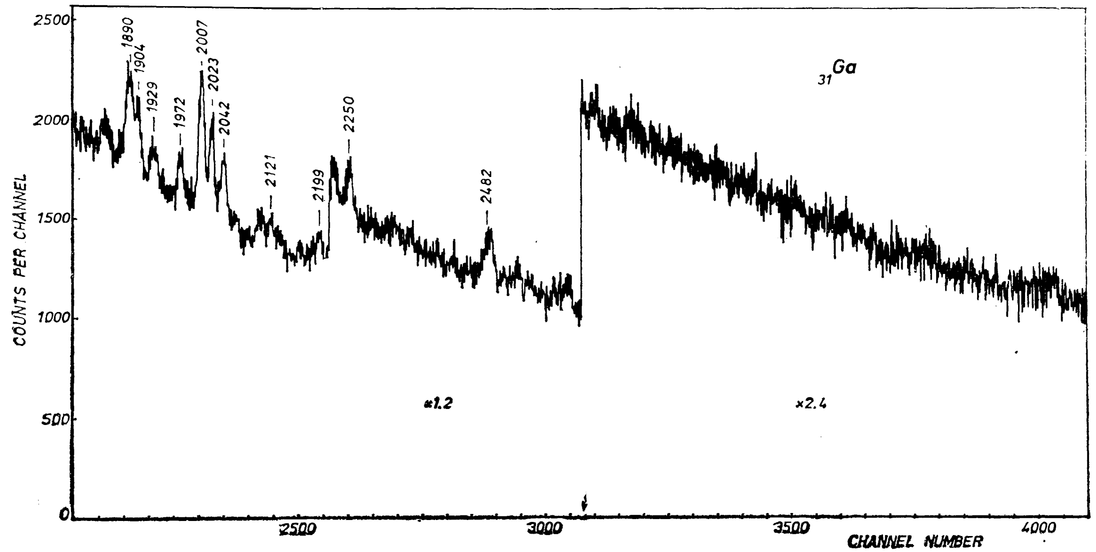
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1213.2(8)	2.0(5)			1593.3(8)	0.90(25)		
1234.4(10) *m*	2.6(6)	^{71}Ga	1719.8	1632.1(10)	0.70(15)	^{71}Ga	1631.5
1242.4(8)	1.2(3)	^{71}Ga	1631.5	1699.5(6)	1.4(2)		
1264.3(6)	1.8(2)			1719.8(10)	2.8(3)	^{71}Ga	1719.8
1309.5(8)	0.35(10)			1723.8(10)	1.6(3)	^{69}Ga	1723.0
1336.0(3)	20.0(10)	^{69}Ga	1336.0	1772.6(12)	0.45(15)		
1349.7(6)	2.0(4)	^{69}Ga	1923.4	1890.1(12)	3.1(4)	^{69}Ga	1890.1
1380.9(10)	0.60(20)			1903.8(12)	2.1(4)	^{71}Ga	2293.6
1394.9(6)	3.8(6)	^{71}Ga	1394.9	1928.9(10)	1.4(2)		
1404.1(10)	0.75(20)	^{69}Ga	1723.0	1971.9(10)	1.6(3)		
1418.0(8)	0.75(15)			2006.7(8)	5.2(4)	^{71}Ga	2006.7
1455.0(8)	1.1(2)	^{69}Ga	2482.8	2023.2(8)	3.2(4)	^{69}Ga	2023.2
1474.4(14) *m*	5.8(8)			2042.3(8)	2.5(3)	^{69}Ga	2042.3
1487.9(3)	6.2(8)	^{69}Ga	1487.9	2120.7(12)	0.60(15)		
1503.4(8)	1.7(3)			2199.0(10)	1.2(2)	^{69}Ga	2199.0
1525.8(4)	2.4(2)	^{69}Ga	1525.8	2250.0(10)	1.2(2)		
1536.2(10)	0.30(8)			2482.0(15)	0.90(15)	^{69}Ga	2482.8
1571.8(6)	1.4(2)	^{69}Ga	1890.1				

Level schemes of ^{69}Ga [68Pa1, 69Ve, 72An, 73Mo1, 73Ar, 74Iv] and ^{71}Ga [69Ve, 70Ta, 70Zo, 72An, 73Ar, 73Al, 74Iv, 74Dz]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{69}Ga	318.6(2)	318.4	1/2−	318.6	75	0	3/2−	52
	574.1(2)	573.9	5/2−	574.1	100	0	3/2−	90
	871.8(3)	871.7	3/2−	871.8	37	0	3/2−	35
				553.2	2.2	318.6	1/2−	
	1028.0(3)	1027	1/2−	1028.1	3.8	0	3/2−	16*
				709.3	12	318.6	1/2−	
				453.2	—	574.1	5/2−	
	1106.7(3)	1106.4	3/2−	1106.7	40	0	3/2−	37
				787.2	1.3	318.6	1/2−	
				234.8	1.2	871.8	3/2−	
	1336.0(3)	1336.2	7/2−	1336.0	20	0	3/2−	21
				762.0	1.9	574.1	5/2−	
				228.9	0.45	1106.7	3/2−	
	1487.9(3)	1487.8	3/2−, 7/2−	1487.9	6.2	0	3/2−	12
				914.2	4.0	574.1	5/2−	
				381.4	3.1	1106.7	3/2−	
	1525.8(4)	1525.7	(3/2, 5/2)−	1525.8	2.4	0	3/2−	9.4
				1207.4	5.2	318.6	1/2−	
				418.8	1.8	1106.7	3/2−	
	1723.0(8)	1723.5	(5/2−)	1723.8	1.6	0	3/2−	4.0
				1404.1	0.75	318.6	1/2−	
				1148.8	1.7	574.1	5/2−	

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{69}Ga	1890.1(7)	1890.8	$3/2^-$	1890.1	3.1	0	$3/2^-$	4.5
				1571.8	1.4	318.6	$1/2^-$	
	1923.4(8)	1923.0	—	1349.7	2.0	574.1	$5/2^-$	6.0
				1051.0	2.6	871.8	$3/2^-$	
				587.2	1.4	1336.0	$7/2^-$	
	2023.2(8)	2022.2	$(3/2^-, 7/2^-)$	2023.2	3.2	0	$3/2^-$	3.5*
	2042.3(8)	2042.6	$(1/2^-)$	2042.3	2.5	0	$3/2^-$	2.5
	2199.0(10)	2197	—	2199.0	1.2	0	$3/2^-$	1.2
	—	2352	—	—	—	—	—	—
	2426.8(11)	2426	—	938.9	0.80	1487.9	$3/2^-$, $7/2^-$	0.80
	—	2457	3/2	—	—	—	—	—
	2482.8(10)	2484	5/2	2482.0	0.90	0	$3/2^-$	2.0
				1455.0	1.1	1028.0	$1/2^-$	
^{71}Ga	389.8(3)	389.87	$1/2^-$	389.8	43	0	$3/2^-$	32*
	487.34	487.34	$5/2^-$	487.34	87	0	$3/2^-$	65
	511.5(4)	511.55	$3/2^-$	511.5	67	0	$3/2^-$	52*
				121.5	6.6	389.8	$1/2^-$	
	910.2(8)	910.3	$3/2^-$	910.2	23	0	$3/2^-$	22*
	964.5(2)	964.7	$5/2^-$	964.5	18	0	$3/2^-$	21*
				453.2	—	511.5	$3/2^-$	
	1107.2(3)	1107.4	$7/2^-$	619.9	12.0	487.3	$5/2^-$	15*
				596.2	6.0	511.5	$3/2^-$	
	1394.9(6)	1395.2	$(5/2^-)$	1394.9	3.8	0	$3/2^-$	4.2
				1005.3	0.45	389.8	$1/2^-$	
	1476.1(4)	1476.1	$5/2^-$, $7/2^-$	988.8	2.7	487.3	$5/2^-$	4.8*
	1492.9(11)	1493.8	$9/2^+$	385.7	4.5	1107.2	$7/2^-$	3.2*
	1498.6(5)	1498.7	$5/2^-$, $7/2^-$	1011.3	4.6	487.3	$5/2^-$	4.9*
	1631.5(5)	1631.6	$3/2^-$, $(1/2^-)$	1632.1	0.70	0	$3/2^-$	4.4
				1242.4	1.2	389.8	$1/2^-$	
				1119.7	1.7	511.5	$3/2^-$	
				666.6	0.85	964.5	$5/2^-$	
	1701.7(5)	1702.1	—	1190.2	6.0	511.5	$3/2^-$	8.6*
	1719.8(10)	1719.7	$5/2^-$	1719.8	2.8	0	$3/2^-$	6.3*
				1234.4	<2.6	487.3	$5/2^-$	
	2006.7(8)	2010	—	2006.7	5.2	0	$3/2^-$	5.2
	—	2064.6	$1/2^-$, $3/2^-$	—	—	—	—	—
	2246.5(15)	2247.2	—	753.6	1.3	1492.9	$9/2^+$	2.7*
	2293.6(12)	2294.5	$(1/2, 3/2)^-$	1903.8	2.1	389.8	$1/2^-$	3.0*



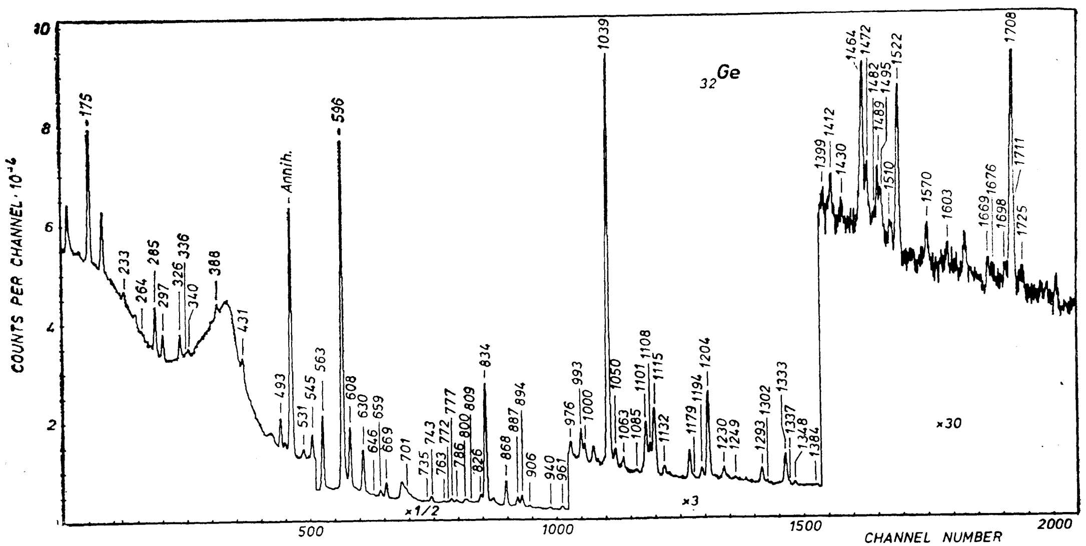


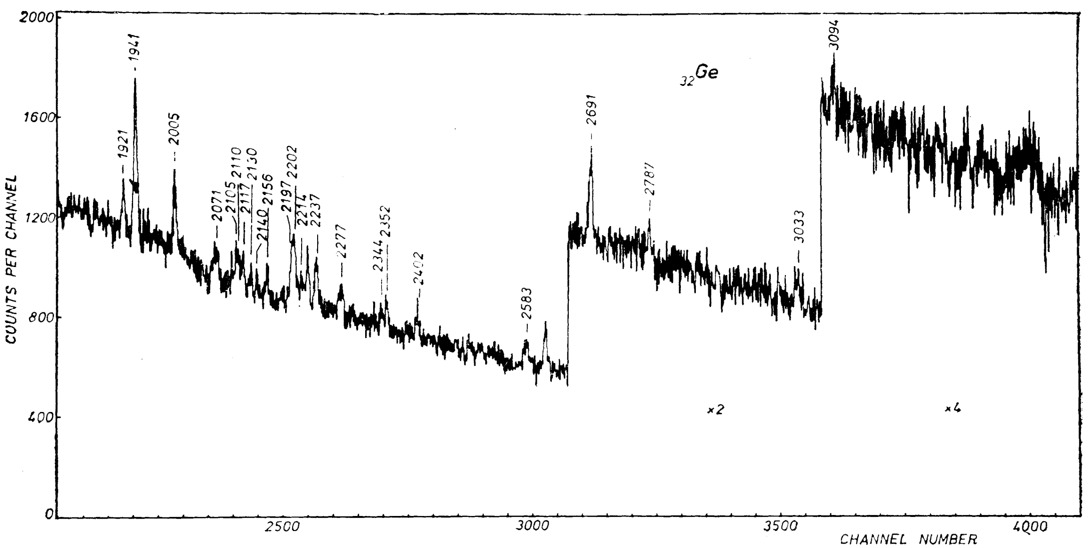
E_γ	I_γ	$^A Z$	E_i	E_γ	I_γ	$^A Z$	E_i
175.47(15)	6.5(4)	^{70}Ge	1214.9	1131.5(3)	0.90(20)		
233.2(4)	0.55(15)			1178.8(10)	0.20(10)		
264.2(8)	0.25(10)	^{72}Ge	1728.4	1193.612)	0.85(20)		
284.80(15)	3.4(3)	^{73}Ge	353.5	1204.3((10)	7.8(8)	^{74}Ge	1204.3
297.28(15)	1.7(2)	^{73}Ge	364.0	1230.3(6)	0.90(20)	^{72}Ge	2064.3
325.85(15)	1.9(2)	^{73}Ge	392.4	1249.2610)	0.15(5)		
335.7(8)	0.35(10)	^{72}Ge	2064.3	1293.4((10)	1.6(3)	^{116}In?	
340.0(8)	0.60(20)			1301.8(8)	0.25(10)		
388.2(4)	1.0(2)			1332.6(5)	0.7(3)		
430.6(6)	1.8(4)	^{76}Ge	1538.8	1337.4(10)	0.30(15)		
492.93(10)	4.0(3)	^{74}Ge	1697.2	1348.3(10)	0.30(10)	^{76}Ge	1911.2
531.1(2)	1.4(2)			1383.5(6)	0.20(10)		
545.49(10)	3.1(2)	^{76}Ge	1108.4	1398.6(10)	0.30(10)		
562.89(10)	20(2)	^{76}Ge	562.9	1412.3(10)	0.75(20)	^{70}Ge	2451.0
595.88(10)	100	^{74}Ge	595.9	1429.6(16)	0.25(10)		
608.40(10)	16(3)	^{74}Ge	1204.3	1463.7(3)	2.4(4)	^{72}Ge	1464.0
629.92(10)	13(2)	^{72}Ge	1464.0	1471.6(6)	0.90(20)		
645.9(8)	0.50(15)			1482.3(14)	0.30(15)	^{72}Ge	2944.3
658.8(2)	1.9(3)			1489.2(10)	0.80(25)	^{74}Ge	2693.5
668.21(10)	4.5(5)	^{70}Ge	1707.7	1495.2(10)	0.60(15)	^{70}Ge	2534.7
701.3(12)	0.75(35)	^{74}Ge	2165.4	1510.3(10)	0.35(10)	^{74}Ge	
735.3(12)	0.45(15)	^{74}Ge	2197.7	1522.4(2)	2.1(3)	^{70}Ge	2561.9
743.25(10)	20(2)	^{70}Ge	2451.0	1569.5(8)	0.45(10)	^{74}Ge	2165.4
763.4(6)	0.75(20)			1602.6(10)	0.35(10)	^{74}Ge	2197.7
771.9(10)	0.65(20)	^{72}Ge	1464.0	1669.3(8)	0.35(15)		
776.6(3)	1.9(3)			1676.4(12)	0.30(15)		
785.5(5)	0.9(2)	^{72}Ge	2514.5	1697.6(10)	0.25(10)		
799.0(6)	1.1(3)			1707.8(3)	3.1(4)	^{70}Ge	1707.7
808.8(8)	0.40(15)			1710.8(6)	1.1(4)	^{72}Ge	2402.0
826.2(2)	4.3(2)			1724.6(12)	0.30(10)		
834.03(10)	36(2)	^{72}Ge	834.0	1920.8(4)	0.50(10)	^{72}Ge	2754.8
867.92(10)	10.0(10)	^{74}Ge	1463.8	1940.7(2)	2.1(2)	^{74}Ge	2536.6
886.98(10)	3.9(5)	^{74}Ge	1482.9	2004.6 6)	0.80(15)		
894.33(10)	5.0(8)	^{72}Ge	1728.4	2071.2(*m*	0.80(20)		
906.5(4)	0.70(20)			2105.3(10)	0.40(15)	^{72}Ge	2939.3
940.4(3)	0.90(20)			2110.3(10)	0.30(15)	^{72}Ge	2944.3
961.1(2)	1.7(2)	^{74}Ge	2165.4	2116.6(10)	0.50(15)	^{72}Ge	2950.6
975.9(3)	1.0(2)	^{76}Ge	1538.8	2129.7(10)	0.30(10)		
993.4(6)	1.1(3)	^{74}Ge	2197.7	2139.5(14)	0.20(5)		
999.7(8)	0.80(20)	^{74}Ge	2203.0	2156.3(10)	0.50(15)		
1039.48(10)	32(2)	^{70}Ge	1039.5	2197.2(10)	0.80(20)	^{74}Ge	2197.7
1050.5(3)	1.5(3)	^{72}Ge	2514.5	2202.5(10)	0.80(20)	^{72}Ge	3036.5
1063.3(4)	0.70(15)			2213.8(10)	0.60(15)		
1085.3(8)	0.25(10)			2237.0(8)	0.95(20)		
1101.3(2)	4.6(6)	^{74}Ge	1697.?	2277.3(14)	0.60(15)		
1108.0(3)	2.5(6)	^{76}Ge	1108.4	2343.8(14)	0.35(10)		

E_γ	I_γ	$^A Z$	E_i	E_γ	I_γ	$^A Z$	E_i
2352.3(14)	0.45(15)	^{74}Ge	2948.2	2787.1(10)	0.35(10)		
2402.5(10)	0.45(10)	^{72}Ge		3033.0(16)	0.50(15)		
2582.7(10)	0.60(20)	^{72}Ge	2582.8	3093.5(18)	0.25(10)	^{72}Ge	3093.6
2690.7(8)	0.85(15)						

Level schemes of ^{70}Ge [72Al2, 74Dz], ^{72}Ge [74Al1, 74Dz, 74Ch], ^{74}Ge [74Dz, 74Ch, 72We, 70Cu] and ^{76}Ge [74Dz, 71Ca1]

$^A Z$	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{70}Ge	1039.48(10)	1039.6	2+	1039.48	32	0	0+	18
	1214.95(25)	1215.8	0+	175.47	6.5	1039.5	2+	6.5
	1707.69(20)	1708.0	2+	1707.8	3.1	0	0+	5.6
				668.21	4.5	1039.5	2+	
	—	2154.3	(4+)	—	—	—	—	—
	—	2158.0	(2+)	—	—	—	—	—
	—	2307.1	—	—	—	—	—	—
	2451.0(2)	2451.6	(3)	1412.3	0.75	1039.5	2+	2.8
				743.25	2.0	1707.7	2+	
	2534.7(10)	2536.1	—	1495.2	0.60	1039.5	2+	0.75*
	2561.9(3)	2562.3	3−	1522.4	2.1	1039.5	2+	2.1
^{72}Ge	—	691.2	0+	—	—	—	—	—
	834.03(10)	834.01	2+	834.03	36	0	0+	14*
	1463.95(15)	1463.93	2+	1463.7	2.4	0	0+	11*
				771.9	0.65	691.2	0+	
				629.92	13	834.0	2+	
	1728.36(15)	1728.25	4+	894.33	5.0	834.0	2+	3.8*
	2064.3(6)	2064.82	3+	1230.3	0.90	834.0	2+	4.3*
				335.7	<0.35	1728.4	4+	
	2402.0(10)	2402.16	—	1710.8	1.1	691.2	0+	1.6*
	—	2463.77	(4+)	—	—	—	—	—
	2514.5(3)	2514.69	3−	1050.5	1.5	1464.0	2+	2.7*
				785.5	0.9	1728.4	4+	
	2589.8(10)	2583.5	—	2582.7	1.0	0	0+	1.0
	2754.8(4)	2754.1	(1−, 3+)	1920.8	0.50	834.0	2+	0.50
	2939.3(10)	2939.9	—	2105.3	0.40	834.0	2+	1.0*
	2944.3(10)	2943.45	(3−)	2110.3	0.30	834.0	2+	0.60*
	2950.6(10)	2950.3	—	2116.6	0.50	834.0	2+	0.50
	3036.5(10)	3035.63	(2−)	2202.5	0.80	834.0	2+	0.90*
	3093.6(18)	3094.2	—	3093.5	0.25	0	0+	0.40*





^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{74}Ge	595.89(10)	595.88	2+	595.89	100	0	0+	62
	1204.30(10)	1204.28	2+	1204.31	7.8	0	0+	15*
				608.40	16	595.9	2+	
	1463.81(15)	1463.68	4+	867.92	10.0	595.9	2+	8.8
	1482.87(15)	1482.60	0+	868.98	3.9	595.9	2+	3.5*
	1697.23(15)	1697.25	(3+)	1101.3	4.6	595.9	2+	8.6
				492.93	4.0	1204.3	2+	
	2165.4(2)	2165.22	4+	1569.5	0.45	595.9	2+	2.9
				961.1	1.7	1204.3	2+	
				701.3	0.75	1463.8	4+	
	2197.7(6)	2197.85	2+	2197.2	0.80	0	0+	3.1*
				1602.6	0.35	595.9	2+	
				993.4	1.1	1204.3	2+	
				735.3	0.45	1463.8	4+	
	2203.0(8)	2210	1−	2202.5	0.80	0	0+	1.6
				999.7	0.80	1204.3	2+	
	2536.6(2)	2536.5	3−	1940.7	2.1	595.9	2+	2.8*
	—	2575	—	—	—	—	—	—
	2693.5(10)	2693.7	(2,3−)	1489.2	0.80	1204.3	2+	1.0*
	—	2821.6	(2,4+)	—	—	—	—	—
	2948.2(14)	2949.4	3−	2352.3	0.45	595.9	2+	0.50*
^{76}Ge	562.89(10)	562.93	2+	562.89	20	0	0+	15.6
	1108.38(15)	1108.42	2+	1108.0	2.5	0	0+	3.8
				545.49	3.1	562.9	2+	
	—	1401.05	4+	—	—	—	—	—
	1538.8(3)	1539.4	(3+)	975.9	1.0	562.9	2+	2.8
				430.6	1.8	1108.4	2+	
	1911.2(10)	1911.1	0+	1348.3	0.30	562.9	2+	0.30

Arsenic $^{75}_{33}$As

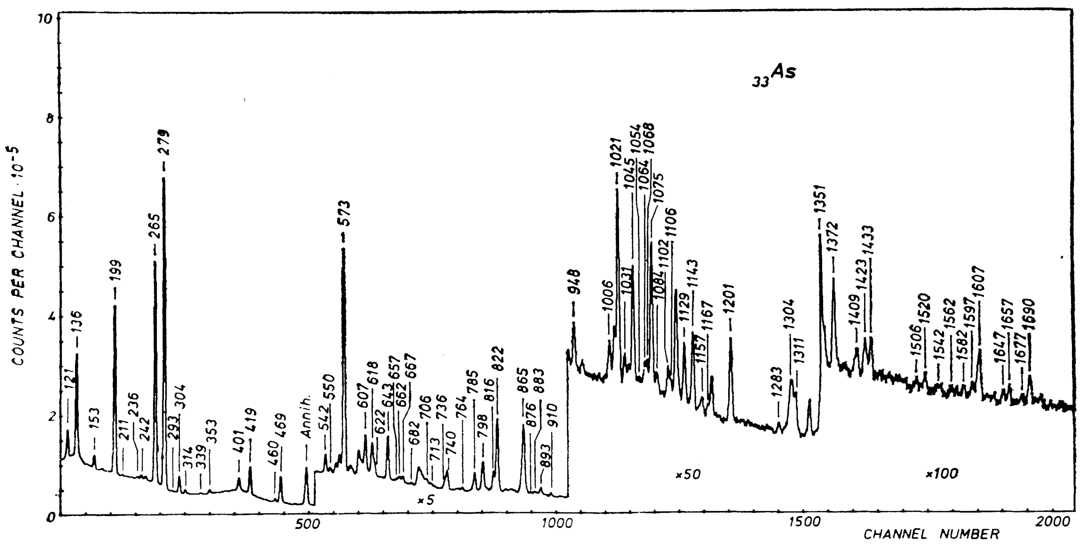
E_γ	I_γ	E_i	E_γ	I_γ	E_i
121.3(2)	13(2)	400.7	279.49(10)	100	279.5
136.2(3)	34(3)	400.7	292.6(6)	0.25(10)	864.6
153.4(2)	5.0(5)		303.91(10)	5.9(5)	303.9
198.6(2)	41(3)	198.6	313.8(3)	1.5(2)	886.3
211.1(5)	0.40(10)		338.8(6)	0.65(20)	617.7
235.6(5)	0.70(20)		353.2(2)	1.6(2)	617.7
241.9(3)	1.3(2)		400.74(10)	6.6(6)	400.7
264.65 *c*	67(3)	264.6	419.09(10)	12.0(10)	617.7

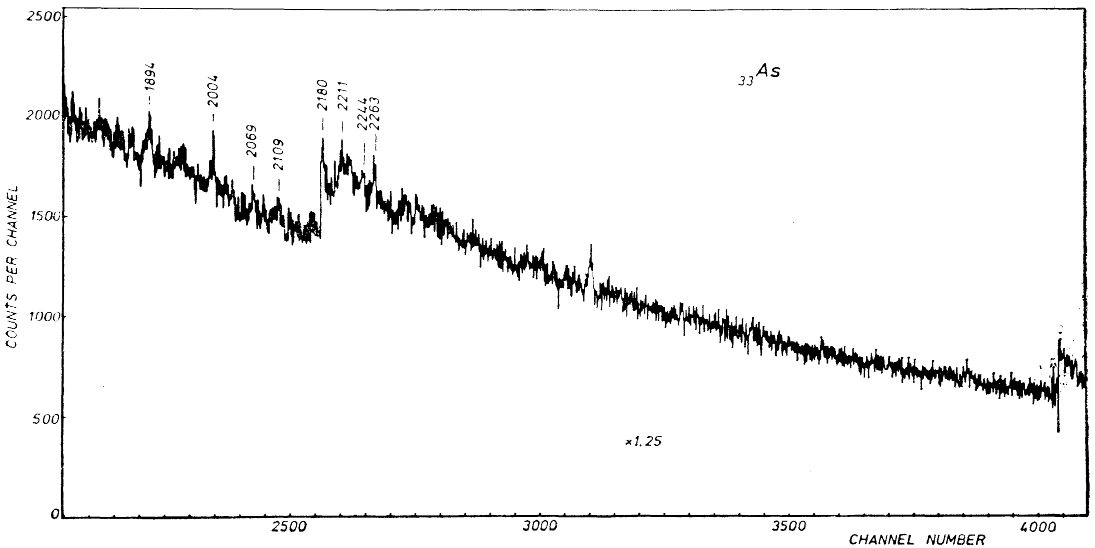
E_γ	I_γ	E_i	E_γ	I_γ	E_i
459.8(3)	1.6(3)	860.5	1075.35(10)	3.3(3)	1075.4
468.90(10)	14.0(10)	468.9	1083.6(4)	0.35(10)	
542.45(10)	2.1(3)	821.9	1102.0(8)	0.45(10)	1502.5
550.3(3)	0.60(15)	1372.2	1106.0(8)	0.30(10)	
572.52(10)	29(2)	572.5	1128.73(10)	1.20(13)	1128.7
606.79(10)	4.0(5)	886.3	1142.92(10)	1.40(14)	1422.5
617.7(3)	3.6(5)	617.7	1157.3(8)	0.35(10)	1422.5
622.0(8)	1.3(5)	886.3	1167.3(10)	0.25(10)	1432.8
643.23(10)	5.7(2)	1044.0	1200.51(10)	2.1(2)	1200.5
657.3(10)	0.20(8)		1282.6(4)	0.25(10)	
661.8(9)	0.60(15)	860.5	1303.6(4)	2.5(3)	1502.5
667.4(6)	0.80(15)		1310.7(6)	0.75(20)	1310.5
681.5(8)	0.25(10)	1502.5	1350.9(2)	1.8(2)	1350.9
706.1(8)	0.40(10)		1372.2(2)	1.8(2)	1372.2
713.4(10)	0.35(10)		1409.2(5)	0.60(10)	1607.5
735.6(4)	1.2(5)	1204.7	1422.7(3)	1.4(2)	1422.5
740.2(4)	2.8(6)	1044.0	1432.8(3)	1.2(2)	1432.8
764.3(6)	0.55(15)	1044.0	1506.4(15)	0.20(5)	
784.63(10)	2.8(3)	1064.1	1519.8(8)	0.25(5)	
798.12(10)	5.0(5)		1541.9 *m*	0.40(10)	
815.8(2)	3.2(8)	1080.4	1562.5(9)	0.20(5)	
		or	1582.4(8)	0.15(5)	
		1095.3	1597.0(8)	0.25(10)	
821.83(10)	12.0(10)	821.9	1607.4(2)	0.90(10)	1607.5
864.56(10)	15(2)	864.6	1647.3(6)	0.30(10)	
876.3(8)	0.15(5)	1075.4	1656.9(5)	0.30(10)	1656.5
883.3(8)	0.40(10)		1676.9(8)	0.10(3)	
893.1(2)	1.3(2)		1689.6(4)	0.55(10)	1689.6
909.9(6)	0.45(10)	1309.7	1894.1(10)	0.10(3)	
948.4(2)	0.85(15)		2003.6(7)	0.30(10)	
1006.2(2)	1.0(2)	1204.7	2068.7(9)	0.20(10)	
1021.15(10)	3.7(5)	1300.6	2109.0(9)	0.10(5)	
1030.9(3)	0.65(20)	1310.5	2180.2(8)	0.15(5)	
1045.04(10)	2.5(3)	1309.7	2211.4(8)	0.30(10)	
1054.4(8)	0.10(5)		2244.5(10)	0.15(7)	
1064.0(6)	0.30(10)	1064.1	2263.1(10)	0.15(8)	
1067.8(6)	0.35(10)				

Level scheme of ^{75}As [74Mc, 74Wa, 71Wi]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
198.6(2)	198.60	1/2−	198.6	41	0	3/2−	24
264.65	264.65	3/2−	264.65	67	0	3/2−	27
279.49(10)	279.53	5/2−	279.49	100	0	3/2−	69
303.91(10)	303.90	9/2+	303.91	5.9	0	3/2−	3.1

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
400.74(10)	400.64	5/2+	400.74	6.6	0	3/2−	45
			136.2	34	264.6	3/2−	
			121.3	13	279.5	5/2−	
468.90(10)	468.8	1/2−	468.90	14	0	3/2−	13
572.52(10)	572.6	5/2−	572.52	29	0	3/2−	27
617.69(15)	617.9	[3/2−]	617.7	3.6	0	3/2−	17
			419.09	12	198.6	1/2−	
			353.2	1.6	264.6	3/2−	
821.87(10)	821.8	7/2−	821.83	12	0	3/2−	13
			542.45	2.1	279.5	5/2−	
860.5(3)	860.8	1/2+	661.8	0.60	198.6	1/2−	4.7*
			459.8	1.6	400.7	5/2+	
864.56(10)	864.5	(3/2, 5/2)	864.56	15	0	3/2−	15
			292.6	0.25	572.5	5/2−	
886.28(15)	886.3	3/2	622.0	1.3	264.6	3/2−	6.8
			606.79	4.0	279.5	5/2−	
			313.8	1.5	572.5	5/2−	
1043.98(15)	1043.8	7/2	764.3	0.55	279.5	5/2−	9.0
			740.2	2.8	303.9	9/2+	
			643.23	5.7	400.7	5/2+	
1064.12(15)	1064.4	3/2	1064.0	0.30	0	3/2−	3.1
			784.63	2.8	279.5	5/2−	
1075.36(10)	1075.5	[3/2−]	1075.35	3.3	0	3/2−	3.4
			876.3	0.15	198.6	1/2−	
1080.4	1080.8	—	815.8	3.2	264.6	3/2−	3.2
or	or						
1095.3(3)	1095.8	(1/2)	815.8	3.2	279.5	5/2−	3.2
1128.74(10)	1128.5	(1/2−, 3/2−)	1128.73	1.20	0	3/2−	1.2
1200.52(10)	—	—	1200.51	2.1	0	3/2−	2.1
1204.7(3)	1204.5	3/2	1006.2	1.0	198.6	1/2−	2.2
			735.6	1.2	468.9	1/2−	
1300.64(15)	1300.8	(3/2)+	1021.15	3.7	279.5	5/2−	3.7
1309.70(10)	1310.0	3/2—7/2	1045.04	2.5	264.6	3/2−	3.0
			909.9	0.45	400.7	5/2+	
1310.5(3)	—	—	1310.7	0.75	0	3/2−	1.4
			1030.9	0.65	279.5	5/2−	
—	(1310.4)	(9/2, 11/2)	—	—	—	—	—
1350.9(2)	1350.0	(1/2, 3/2)	1350.9	1.8	0	3/2−	1.8
—	1355	—	—	—	—	—	—
1372.2(2)	1371.4	(3/2, 7/2)	1372.2	1.8	0	3/2−	2.4
			550.3	0.60	821.9	7/2−	
1422.47(15)	1422.8	(3/2, 7/2)	1422.7	1.4	0	3/2−	3.2
			1157.3	0.35	264.6	3/2−	
			1142.92	1.40	279.5	5/2−	
1432.8(3)	1432.4	(1/2−, 3/2−)	1432.8	1.2	0	3/2−	1.2
1502.5(4)	1503.0	[3/2−]	1303.6	2.5	198.6	1/2−	3.2
			1102.0	0.45	400.7	5/2+	
			681.5	0.25	821.9	7/2−	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	1565.5	1/2	—	—	—	—	—
	or						
—	1580.5		—	—	—	—	—
1597.0(8)	1595.4	—	1597.0	0.25	0	3/2−	0.25
1607.5(2)	1607.9	(1/2, 3/2)	1607.4	0.90	0	3/2−	1.5
			1409.2	0.60	198.6	1/2−	
1656.5(4)	1656.6	1/2	1656.9	0.30	0	3/2−	0.65
			1083.6	0.35	572.5	5/2−	
—	1687.3	—	—	—	—	—	—
1689.6(4)	1690.0	—	1689.6	0.55	0	3/2−	0.55

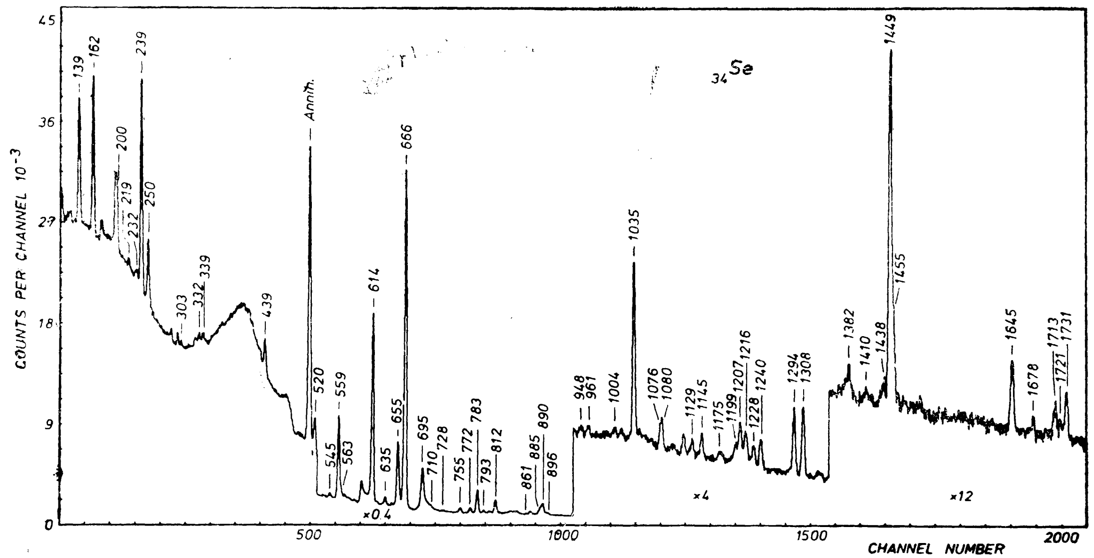
Selenium $_{34}Se$

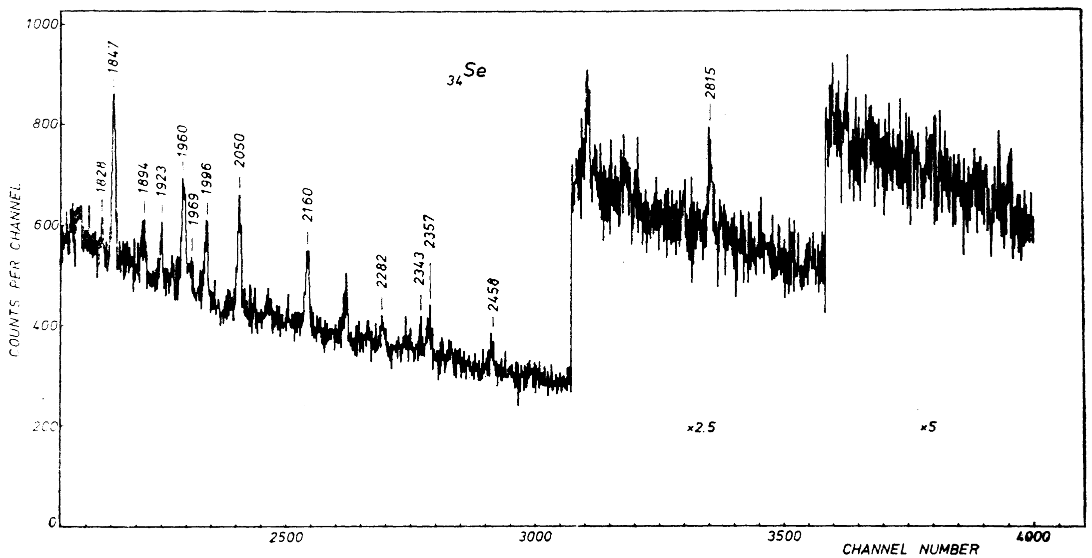
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
139.4(8)	3.0(5)	^{77}Se	301.2	896.0(8)	0.90(15)		
161.83 *c*	7.2(5)	^{77}Se	161.8	948.4(10)	0.45(15)		
200.4(8)	2.0(5)	^{77}Se	439.4	960.9(10)	0.45(15)		
218.7(4)	0.45(10)			1004.0(10)	0.45(15)	^{78}Se	2507.6
231.6(4) *m*	1.0(2)			1034.95(13)	7.9(5)	^{80}Se	1701.1
238.98 *c*	11(2)	^{77}Se	239.0	1076.2(10)	0.90(20)	^{82}Se	1731.0
249.76(10)	3.7(4)	^{77}Se	249.8	1080.4(10)	1.4(2)	^{82}Se	1735.5
302.7(8)	0.30(10)			1129.2(5)	0.95(20)	^{76}Se	1688.3
331.8(6)	0.80(20)	^{77}Se	581.6	1145.0(4)	1.1(2)	^{78}Se	1758.7
338.6(8)	1.3(2)			1174.8(10) *m*	0.86(15)		
439.40(10)	2.4(4)	^{77}Se	439.4	1199.3(6)	0.8(2)	^{78}Se	2507.6
520.2(2)	4.6(4)	^{77}Se	520.2	1207.0(3)	2.3(3)	^{80}Se	1873.2
545.2(3)	0.95(20)	^{78}Se	1853.6	1215.6(8)	1.9(3)	^{76}Se	1215.6
559.10(10)	23(2)	^{76}Se	559.1	1228.4(4)	0.95(15)	^{76}Se	1787.5
563.2(8)	1.5(6)	^{76}Se	1122.3	1240.0(4)	1.7(3)	^{78}Se	1853.6
613.68(10)	51(4)	^{78}Se	613.7	1293.54(15)	4.0(4)	^{80}Se	1959.6
635.0(2)	3.0(4)	^{74}Se	635.0	1308.27(15)	4.3(4)	^{78}Se	1308.3
655.12(10)	20(2)	^{82}Se	655.1	1382.0(6) *m*	0.80(20)	^{78}Se	1996.2
666.14(7)	100	^{80}Se	666.1	1410.0(10)	0.25(10)		
694.6(6)	8(2)	^{78}Se	1308.3	1437.6(5)	0.50(10)		
709.5(5)	0.25(10)			1449.30(13)	9.4(4)	^{80}Se	1449.3
727.5(5)	0.27(10)			1454.9(4)	2.1(4)	^{80}Se?	(2121.0)
755.3(2)	1.4(2)			1644.7(3)	2.3(3)	^{80}Se	2310.8
772.1(2)	1.5(2)	^{76}Se	1331.2	1678.0(8)	0.40(10)		
783.16(10)	7.6(5)	^{80}Se	1449.3	1712.8(10) *m*	1.1(2)	^{78}Se	2327.7
792.9(3)	0.85(20)			1721.4(10)	0.60(15)	^{78}Se	2335.1
812.40(10)	4.6(5)	^{80}Se	1478.5	1731.0(5)	1.6(2)	^{82}Se	1731.0
861.4(8)	0.15(5)	^{80}Se	2310.8	1828.5(10)	0.20(10)		
884.6(8)	3.0(5)	^{78}Se	1498.3	1847.35(13)	1.8(2)	^{80}Se	2513.5
890.0(8)	3.7(5)	^{78}Se	1503.7	1894.3(10)	0.90(15)	^{78}Se	2507.6

E_γ	I_γ	$^A Z$	E_i	E_γ	I_γ	$^A Z$	E_i
1923.4(8)	0.40(10)	^{78}Se	2537.1	2282.0(10)	0.40(10)		
1959.5(4)	1.8(3)	^{80}Se	1959.6	2343.4(10)	0.20(10)		
1969.2(12)	0.40(10)			2357.3(10)	0.80(25)		
1996.2(4)	1.2(2)	^{78}Se	1996.2	?458(2)	0.50(15)		
2050.3(4)	1.4(2)			2814.9(10)	0.75(20)	^{80}Se	2814.9
2160.1(4)	1.2(2)	^{80}Se	2826.2				

Level schemes of ^{76}Se [73Na, 74Na1], ^{77}Se [69Sa, 71Ra, 74Br], ^{78}Se [73Hi2, 74Dz] and ^{80}Se [73Sz1, 71Mc]

$^A Z$	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{76}Se	559.10(10)	559.10	2+	559.10	23	0	0+	15*
	1122.3(8)	1122.33	0+	563.2	1.5	559.1	2+	1.2*
	1215.6(8)	1216.08	2+	1215.6	1.9	0	0+	5.0*
	1331.2(3)	1330.86	4+	772.1	1.5	559.1	2+	1.5
	1688.3(6)	1688.97	(3+)	1129.2	0.95	559.1	2+	1.3*
	1787.5(4)	1787.64	2+	1228.4	0.95	559.1	2+	1.6*
^{77}Se	161.83	161.83	7/2+	161.83	7.2	0	1/2−	9.9*
	—	174.9	(9/2+)	—	—	—	—	—
	238.98	238.98	3/2−	238.98	11	0	1/2−	8.4*
	249.76(10)	249.65	5/2−	249.76	3.7	0	1/2−	4.7*
	301.2(8)	300.78	(5/2+)	139.4	3.0	161.8	7/2+	3.2*
	439.40(10)	439.42	5/2−	439.40	2.4	0	1/2−	4.4
				200.4	2.0	239.0	3/2−	
	520.2(2)	520.59	3/2−	520.2	4.6	0	1/2−	5.2*
	581.6(6)	580.90	5/2+	331.8	0.80	249.8	5/2−	1.2*
^{78}Se	613.68(10)	613.66	2+	613.68	51	0	0+	30
	1308.27(15)	1308.5	2+	1308.27	4.3	0	0+	9.5*
				694.6	8	613.7	2+	
	1498.3(8)	1498.4	[0+]	884.6	3.0	613.7	2+	3.0
	1503.7(8)	1502.5	(4+)	890.0	3.7	613.7	2+	3.2
	1758.7(4)	1758.4	[0+]	1145.0	1.1	613.7	2+	0.5*
	1853.6(3)	1854.1	(3+)	1240.0	1.7	613.7	2+	2.6
				545.2	0.95	1308.3	2+	
	1996.2(4)	1996.0	(2+)	1996.2	1.2	0	0+	2.5*
				1382.0	⩽0.8	613.7	2+	
	—	2190	—	—	—	—	—	—
	—	2327.7	—	1712.8	⩽1.1	613.7	2+	⩽1.1
	2335.1(10)	2334.6	—	1721.4	0.60	613.7	2+	1.5*
	2507.6(6)	2508.1	(3−)	1894.3	0.90	613.7	2+	2.2
				1199.3	0.80	1308.3	2+	
				1004.0	0.45	1503.7	(4+)	
	2537.1(5)	2537.3	1+, 2+	1923.4	0.40	613.7	2+	0.50*





^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{80}Se	666.14(7)	666.41	2+	666.14	100	0	0+	66
	1449.30(13)	1449.50	2+	1449.30	9.4	0	0+	17
				783.16	7.6	666.1	2+	
	1478.54(13)	1479.50	0+	812.40	4.6	666.1	2+	4.3*
	1701.10(15)	1690	—	1034.95	7.9	666.1	2+	7.9
	1873.2(3)	1873.86	0,2(+)	1207.0	2.3	666.1	2+	2.3
	1959.65(17)	1960.43	2+	1959.5	1.8	0	0+	5.8
				1293.54	4.0	666.1	2+	
	2121.0(5)?	2101	—	1454.9	2.1	666.1	2+	2.1
	—	2150	—	—	—	—	—	—
	2310.8(3)	2310.32	2(+)	1644.7	2.3	666.1	2+	2.4
				861.4	0.15	1449.3	2+	
	—	2330	—	—	—	—	—	—
	—	2490	—	—	—	—	—	—
	2513.49(15)	2514.69	2(+)	1847.35	1.8	666.1	2+	2.4*
	—	2627.46	—	—	—	—	—	—
	—	2717	—	—	—	—	—	—
	—	2774.2	—	—	—	—	—	—
	2814.9(10)	2814.16	2(+)	2814.9	0.75	0	0+	0.75
	2826.2(4)	2827.51	2(+)	2160.1	1.2	666.1	2+	1.3*

Bromine $_{35}$Br

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
174.03(10)	2.3(3)	^{79}Br	381.4	397.40(10)	8.6(2)	^{79}Br	397.4
207.41(10)	14.5(3)	^{79}Br	207.4	429.75(15)	1.3(2)		
217.01(10)	47.5(8)	^{79}Br	217.0	457.3(3)	0.39(7)	^{81}Br	1023.2
223.4(2)	0.9(2)	^{81}Br	789.1	468.9(2)	0.49(5)		
234.5(2)	1.1(2)			484.0(5)	0.70(10)		
238.25(15)	0.89(8)	^{79}Br	761.3	486.8(4)	0.75(10)		
252.88(15)	0.54(8)	^{81}Br	789.1	490.98(15)	1.52(10)	^{81}Br	766.8
260.94(10)*m*	40(2)	^{79}Br	260.9	523.07(10)	15.6(5)	^{79}Br	523.1
		^{81}Br	536.2	525.4(8)	1.0(2)	^{79}Br	831.8
275.86(10)	100	^{81}Br	275.9	532.1(2)	1.03(10)	^{79}Br	793.3
290.00(10)	13.0(15)	^{81}Br	565.9	538.03(10)	9.4(2)	^{81}Br	538.0
294.2(2)	0.60(10)			544.21(10)	5.8(3)	^{79}Br	761.3
299.64(10)	2.2(2)	^{79}Br	606.0	552.4(2)	2.0(2)	^{81}Br	828.2
306.40(10)	15.8(4)	^{79}Br	306.4	553.9(5)	0.68(15)	^{79}Br	761.3
344.3(3)*m*	1.2(2)			560.13(10)	15.0(5)	^{81}Br	836.0
366.42(15)	0.53(5)	^{79}Se		565.88(10)	6.16(25)	^{81}Br	565.9
381.42(10)	24.0(5)	^{79}Br	381.4	571.26(10)	1.55(15)	^{81}Br	1399.6
388.90(10)	1.22(10)	^{79}Br	606.0	576.26(10)	2.5(2)	^{79}Br	793.3

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
582.00(10)	0.89(10)			910.7(8)	0.24(8)		
589.21(10)	1.20(10)			914.84(10)	2.64(8)	^{79}Br	1175.7
605.95(10)	6.0(3)	^{79}Br	606.0	934.9(10)	0.09(4)	^{79}Br	1332.0
613.8(8)	0.16(5)	^{79}Br	831.8	940.1(7)	0.18(2)		
619.1(8)	0.66(15)			945.31(10)	0.96(8)		
624.9(4)	0.34(8)			953.59(10)	0.81(6)	^{79}Br	953.6
629.3(6)	0.21(9)			972.5(2)	2.70(15)		
632.9(6)	0.20(9)			975.1(3)	0.67(15)		
638.1(4)	0.26(8)			984.00(10)	1.47(8)		
640.8(2)	0.72(8)			990.0(3)	1.53(20)		
649.88(10)	7.9(2)	^{81}Br	649.9	991.8(3)	1.14(20)		
656.8(5)	0.25(8)			997.55(15)	0.76(10)		
660.1(5)	0.37(8)			1004.8(3)	0.56(8)		
667.1(3)	0.70(8)			1008.7(7)	0.16(8)		
669.2(6)	0.20(8)	^{79}Br	1430.6	1014.01(10)	1.04(8)		
674.1(5)	0.20(4)			1020.6(8)	0.18(8)		
678.6(3)	0.51(7)			1023.6(4)	0.35(8)	^{81}Br	1023.2
684.1(4)	0.38(7)			1030.5(8)*m*	0.43(8)		
692.7(2)	2.2(3)	^{79}Br	953.6	1035.8(3)*m*	0.18(8)		
698.24(10)	5.6(3)			1046.02(10)	2.61(15)	^{81}Br	1322.0
713.9(4)	0.79(10)			1069.9(9)	0.12(6)	^{79}Br	1332.0
716.0(4)	0.53(10)			1075.47(10)	2.12(15)	^{81}Br	1075.5
730.2(2)	0.48(8)			1089.0(2)	0.50(5)		
734.1(4)	0.32(10)	^{79}Br	1131.4	1104.2(2)	2.9(2)	^{81}Br	1104.2
736.80(15)	1.28(15)	^{79}Br	953.6	1110.0(7)	0.32(10)		
747.31(10)	3.4(2)	^{81}Br	1023.2	1115.0(5)	0.38(5)	^{79}Br	1332.0
751.8(2)	0.42(6)			1124.17(10)	1.30(8)	^{79}Br	1124.1
761.35(10)	2.9(2)	^{79}Br	761.3	1131.42(10)	1.14(8)	^{79}Br	1131.4
766.84(10)	10.0(5)	^{81}Br	766.8	1143.4(4)	0.31(6)		
773.8(4)	0.30(8)	^{81}Br	1541.0	1147.3(6)	0.20(6)		
784.7(7)	0.23(6)			1159.3(7)	0.10(3)		
789.10(10)	7.3(3)	^{81}Br	789.1	1167.6(8)	0.12(4)		
793.38(10)	3.0(3)	^{79}Br	793.3	1175.5(2)	0.48(8)	^{79}Br	1175.7
797.0(6)	0.32(6)			1181.3(6)	0.21(6)		
805.9(8)	0.17(6)			1190.86(10)	2.20(10)	^{79}Br	1190.9
809.2(4)	0.37(6)	^{79}Br	1332.0	1213.52(10)	0.95(6)	^{79}Br	1430.6
815.8(4)*m*	0.49(8)			1227.6(7)	0.12(3)		
822.6(7)	0.24(8)			1235.2(8)	0.13(4)		
828.2(2)	5.7(4)	^{81}Br	828.2	1239.4(7)	0.15(4)		
831.9(2)	3.7(4)	^{79}Br	831.8	1251.4(2)	0.58(5)	^{79}Br	1512.0
836.0(2)	3.1(4)	^{81}Br	836.0	1258.4(6)	0.21(5)	^{81}Br	1534.1
851.17(10)	1.9(2)	^{79}Br	1112.1	1265.0(2)	1.04(6)	^{81}Br	1541.0
859.1(4)	0.40(10)			1273.4(4)	0.25(5)		
863.0(4)	0.48(10)	^{79}Br	1124.1	1282.1(6)	0.16(4)		
869.2(5)*m*	0.69(15)			1291.6(8)*m*	0.16(4)		
874.64(15)	1.86(20)			1299.9(10)	0.07(4)		
895.7(6)*m*	0.26(5)			1305.0(8)	0.13(4)		
906.8(2)	1.17(8)	^{79}Br	1124.1	1310.3(5)	0.25(6)	^{81}Br	1586.2

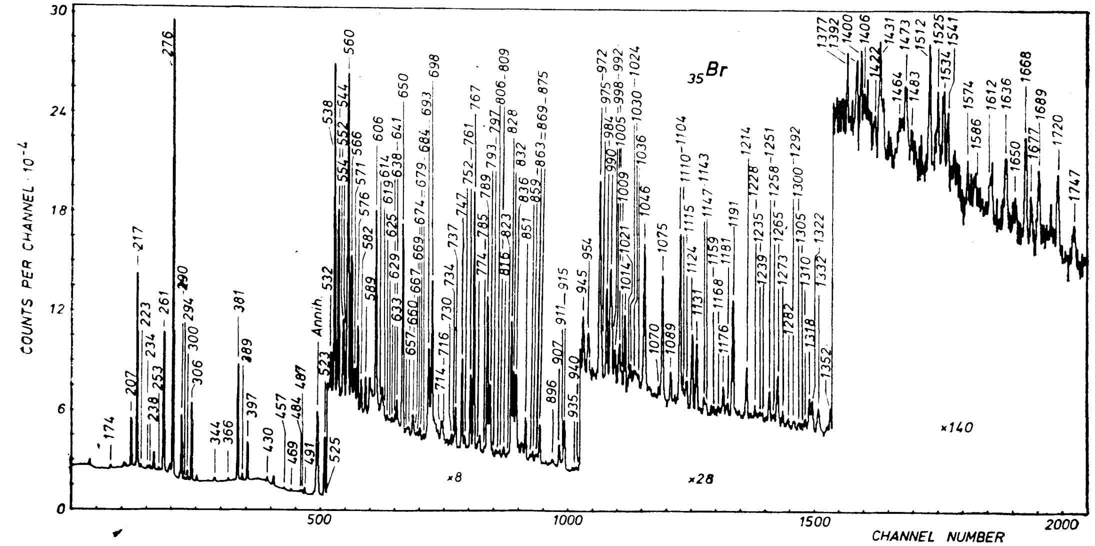
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1317.5(2)	0.63(10)			1635.6(5)	0.53(6)		
1322.0(2)	0.58(10)	^{81}Br	1322.0	1650.5(8)*m*	0.43(10)		
1332.0(6)	0.71(15)	^{79}Br	1332.0	1668.0(4)	0.71(8)	^{71}Br	1668.1
1351.5(6)	0.47(8)			1677.4(5)	0.29(6)		
1376.9(5)	0.28(6)			1689.3(4)	0.53(7)	^{79}Br	1689.6
1392.5(5)	0.36(8)	^{81}Br	1668.1	1720.5(4)	0.51(6)		
1400.0(4)	0.33(6)	^{81}Br	1399.6	1747.0(7)	0.34(8)		
1406(2)*m*	0.31(10)			1798.1(5)	0.41(10)		
1422.2(6)	0.15(5)			1810.7(10)*m*	0.27(10)		
1430.8(3)	0.51(10)	^{79}Br	1430.6	1841.9(12)*m*	0.23(10)		
1464.4(15)*m*	0.31(8)			1869.9(8)	0.12(6)		
1473.0(5)	0.63(8)	^{79}Br	1689.6	1887.5(10)*m*	0.39(10)		
1482.8(10)	0.16(8)			1902.8(7)	0.15(8)		
1511.7(2)	0.64(8)	^{79}Br	1512.0	1912.9(9)	0.09(5)		
1525.1(6)*m*	0.42(8)			1939.5(10)*m*	0.15(8)		
1534.1(4)	0.40(8)	^{81}Br	1534.1	2023.5(8)	0.19(8)		
1541.4(3)	0.30(6)	^{81}Br	1541.0	2040.1(8)	0.18(8)		
1573.5(6)	0.13(4)			2067.3(12)*m*	0.20(8)		
1586.5(9)*m*	0.22(6)	^{81}Br	1586.2	2142.4(10)	0.16(6)		
1611.5(8)*m*	0.36(6)			2197.0(8)	0.13(6)		

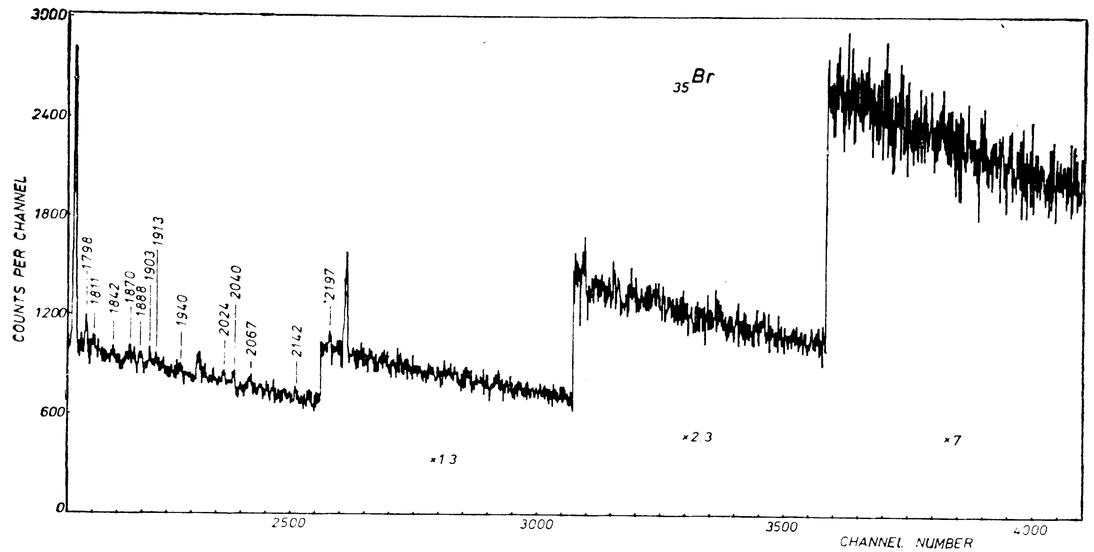
Level schemes of ^{79}Br [71Ba1, 73Lu, 74Co] and ^{81}Br [71Ba1, 69Sa1, 72Ro, 69Zo, 71Do]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{79}Br	207.41(10)	207.2	9/2+	207.41	14.5	0	3/2−	11.5
	217.01(10)	217.03	5/2−	217.01	47.5	0	3/2−	33
	260.94	261.34	(3/2−)	260.94	⩽40	0	3/2−	⩽31
	306.40(10)	306.46	1/2−	306.40	15.8	0	3/2−	12.6
	381.42(10)	—	[5/2+]	381.42	24.0	0	3/2−	26
				174.03	2.3	207.4	9/2+	
	397.40(10)	397.44	(3/2)−	397.40	8.6	0	3/2−	8.9*
	523.07(10)	523.00	(5/2)−	523.07	15.6	0	3/2−	14.3
	605.96(10)	605.97	(3/2)−	605.95	6.0	0	3/2−	9.3
				388.90	1.22	217.0	5/2−	
				299.64	2.2	306.4	1/2−	

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{79}Br	761.31(10)	761.2	7/2−	761.35	2.9	0	3/2−	10.1
				553.9	0.68	207.4	9/2+	
				544.21	5.8	217.0	5/2−	
				238.25	0.89	523.1	(5/2−)	
	793.31(10)	793.9	—	793.38	2.9	0	3/2−	6.4
				576.26	2.5	217.0	5/2−	
				532.1	1.03	260.9	(3/2−)	
	831.8(2)	831.95	(3/2)−	831.9	3.7	0	3/2−	4.9
				613.8	0.16	217.0	5/2−	
				525.4	1.0	306.4	1/2−	
	953.65(10)	954.7	—	953.59	0.81	0	3/2−	4.3
				736.80	1.28	217.0	5/2−	
				692.7	2.2	260.9	(3/2−)	
	1112.11(15)	1112.48	—	851.17	1.9	260.9	1/2−	3.6*
	1124.11(10)	1124	—	1124.17	1.30	0	3/2−	3.0
				906.8	1.17	217.0	5/2−	
				863.0	0.48	260.9	(3/2)−	
	1131.43(10)	1131.59	—	1131.42	1.14	0	3/2−	1.8*
				734.1	0.32	397.4	(3/2)−	
	1175.67(12)	1176?	—	1175.5	0.48	0	3/2−	3.1
				914.84	2.64	260.9	(3/2)−	
	1190.87(10)	1190	—	1190.86	2.20	0	3/2−	2.2
	1332.0(4)	1332.19	—	1332.0	0.71	0	3/2−	1.7
				1115.0	0.38	217.0	5/2−	
				1069.9	0.12	260.9	(3/2)−	
				934.9	0.09	397.4	(3/2)−	
				809.2	0.37	523.1	(5/2)−	
	1430.58(15)		—	1430.8	0.51	0	3/2−	1.7
				1213.52	0.95	217.0	5/2−	
				669.2	0.20	761.3	7/2−	
	1512.0(3)	1513	—	1511.7	0.64	0	3/2−	1.2
				1251.4	0.58	260.9	(3/2−)	
	—	1575	—	—	—	—	—	—
	—	1613	—	—	—	—	—	—
	1689.6(5)	1692	—	1689.3	0.53	0	3/2−	1.2
				1473.0	0.63	217.0	5/2−	

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{81}Br	275.86(10)	275.99	5/2-	275.86	100	0	3/2-	61
	536.2(2)	536.1	9/2+	260.94	—	0	3/2-	—
	538.03(10)	538.2	[1/2-]	538.03	9.4	0	3/2-	9.4
	565.88(10)	566.2	(3/2)-	565.88	6.16	0	3/2-	17.9
				290.00	13.0	275.9	5/2-	
	649.88(10)	650.0	(1/2, 3/2)-	649.88	7.9	0	3/2-	7.9
	766.84(10)	767.3	(3/2, 5/2)-	766.84	10.0	0	3/2-	11.2
				490.98	1.52	275.9	5/2-	
	789.10(10)	—	5/2+, 7/2-	789.10	7.3	0	3/2-	8.7
				252.88	0.54	536.2	9/2+	
				223.4	0.9	565.9	(3/2)-	
	828.2(2)	828.5	—	828.2	5.7	0	3/2-	6.2
				552.4	2.0	275.9	5/2-	
	835.99(15)	836.5	7/2-	836.0	3.1	0	3/2-	18.1
				560.13	15.0	275.9	5/2-	
	1023.23(15)	1023.9	—	1023.6	0.35	0	3/2-	4.1
				747.31	3.4	275.9	5/2-	
				457.3	0.39	565.9	3/2-	
	1075.48(10)	1076 ?	—	1075.47	2.12	0	3/2-	2.1
	1104.2(2)	1105 ?	—	1104.2	2.9	0	3/2-	2.9
	—	1122	—	—	—	—	—	—
	—	1203	—	—	—	—	—	—
	—	1237	—	—	—	—	—	—
	—	1266	—	—	—	—	—	—
	1321.92(15)	1322.7	—	1322.0	0.58	0	3/2-	3.2
				1046.02	2.61	275.9	5/2-	
	1399.6(2)	1401 ?	—	1400.0	0.33	0	3/2-	1.9
				571.26	1.55	828.2	—	
	1534.1(4)	1536	—	1534.1	0.40	0	3/2-	0.6
				1258.4	0.21	275.9	5/2-	
	1541.0(2)	1543	—	1541.4	0.30	0	3/2-	1.6
				1265.0	1.04	275.9	5/2-	
				773.8	0.30	766.8	(3/2, 5/2)-	
	1586.2(4)	1587	—	1586.5	<0.22	0	3/2-	<0.47
				1310.3	0.25	275.9	5/2-	
	1668.1(4)	1670	—	1668.0	0.71	0	3/2-	1.1
				1392.5	0.36	275.9	5/2-	



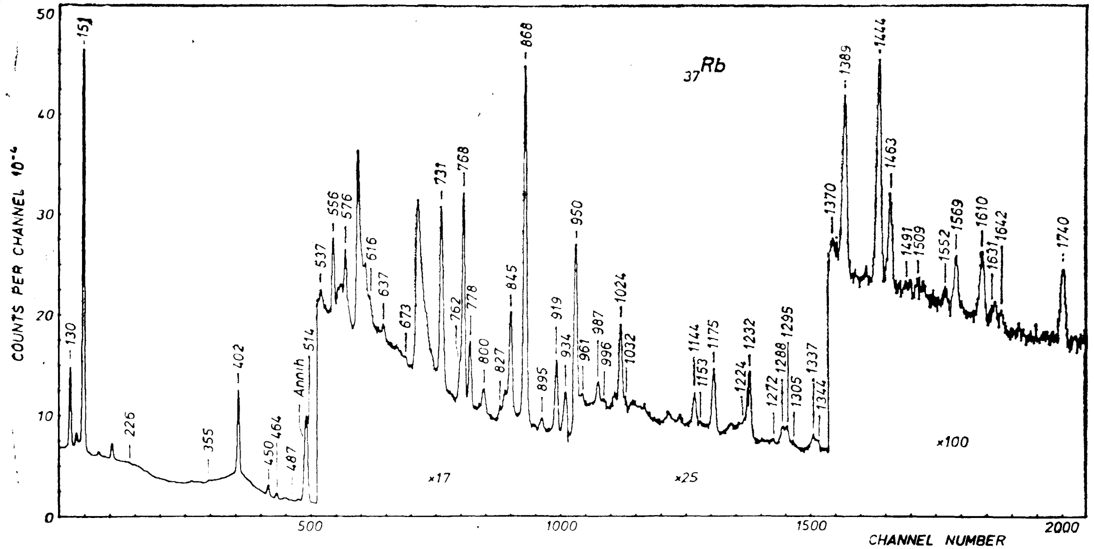


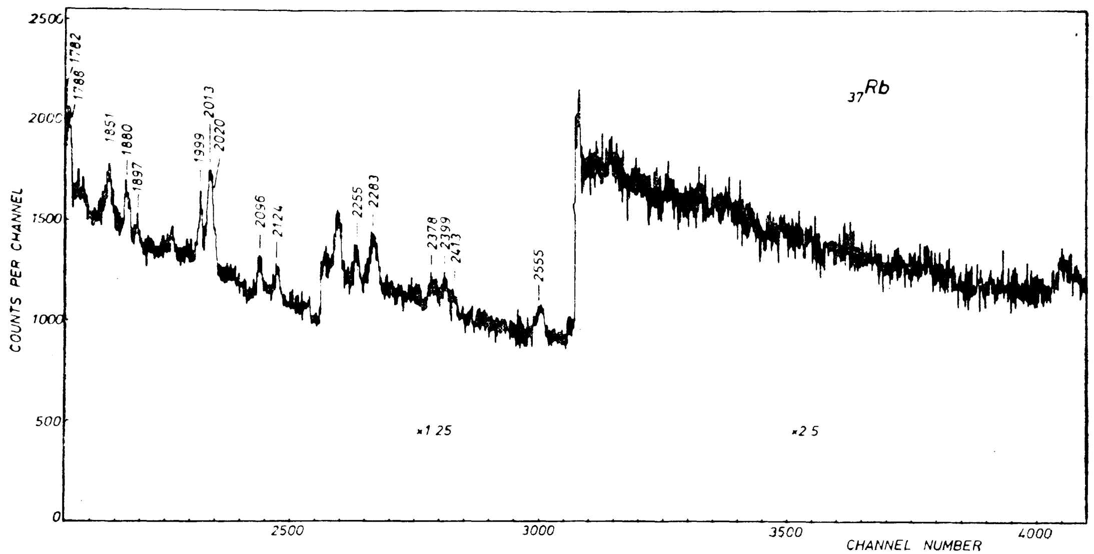
Rubidium $_{37}$Rb

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
129.52(15)	50(10)	^{85}Rb	280.7	1232.5(4)	8.2(15)	^{85}Rb	1383.4
151.21(15)	200(40)	^{85}Rb	151.2	1272.2(10)	0.6(2)		
225.8(10)	2.3(5)			1287.6(8)	3.4(7)		
354.8(8)	1.5(4)	^{85}Rb	868.4	1294.9(8)	3.5(7)	^{85}Rb	1295.0
402.37(10)	100	^{87}Rb	402.4	1304.7(10)	0.8(4)		
450.3(2)	15(?)	^{85}Rb	731.1	1337.0(10)	2.7(7)	^{87}Rb	1740.4
464.0(3)	8.3(8)	^{85}Rb	1383.4	1343.9(12)	2.1(7)		
487.1(6)	1.4(3)			1370.1(10)	0.6(2)		
513.8(2)	116(20)	^{85}Rb	513.8	1389.0(3)	10.4(9)	^{87}Rb	1389.0
536.8(8)	1.8(4)			1444.5(3)	13.2(10)	^{85}Rb	1444.4
555.7(4)	6.6(7)			1462.8(3)	4.9(5)	^{87}Rb	1462.8
575.8(5)	5.5(9)	^{85}Rb	1444.4	1491.4(10)*m*	0.9(3)		
615.6(10)	1.0(3)			1509.1(10)	1.1(3)		
637.2(8)	2.4(7)	^{87}Rb	2377.6	1551.6(10)	0.8(3)		
673.4(10)	1.0(4)	^{87}Rb	2414.5	1569.0(6)	3.3(4)		
731.2(3)	28(3)	^{85}Rb	731.1	1610.5(5)	5.0(5)		
761.5(10)	4.9(15)			1630.6(10)	2.0(6)		
767.7(3)	31(3)	^{85}Rb	919.0	1642.1(10)	1.0(3)		
778.4(3)	9.8(9)	^{85}Rb	1292.2	1740.4 *c*	6.2(6)	^{87}Rb	1740.4
799.7(8)	3.3(8)	^{85}Rb	950.5	1781.6(8)	1.5(4)		
827.2(10)	1.6(4)			1787.5(8)	2.4(5)		
844.7(6)	12(2)	^{87}Rb	844.7	1850.8(10)	3.4(8)		
868.4(3)	60(5)	^{85}Rb	868.4	1879.8(10)	2.3(5)		
894.9(10)	2.6(5)	^{87}Rb	1740.4	1897.2(10)	0.5(2)		
919.1(3)	13.0(12)	^{85}Rb	919.0	1999.3(8)	2.5(5)		
933.8(4)	9.6(9)			2012.8(10)	4.0(10)	^{87}Rb	2414.5
950.4(3)	19.7(15)	^{85}Rb	950.5	2019.5(10)	2.8(7)		
960.7(10)	0.9(3)			2096.4(10)	2.2(6)		
986.7(5)	3.3(5)	^{87}Rb	1389.0	2124.0(10)	2.0(5)		
996.1(10)	0.8(3)			2255.0(10)	1.6(4)		
1023.8(3)	12.2(15)	^{85}Rb	1175.0	2282.7(10)	3.6(8)		
1032.0(12)	1.4(4)			2377.8(15)	2.0(7)	^{87}Rb	2377.6
1143.8(4)	4.6(6)	^{85}Rb	1295.0	2398.8(15)	2.0(7)		
1152.9(10)	0.5(2)			2412.7(10)	0.9(3)		
1175.0(4)	9.8(9)	^{85}Rb ^{87}Rb	1175.0 1578	2554.8(10)	2.6(9)	^{87}Rb	2554.8
1224.5(15)	1.3(4)						

Level schemes of ^{85}Rb [72To, 73Ba2, 74Va] and ^{87}Rb [71Sh, 72To, 73Ba2]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{85}Rb	151.21(15)	151.28	3/2−	151.21	247	0	5/2−	132
	280.7(2)	280.5	[1/2−]	129.52	61	151.2	3/2−	46
	513.8(2)	513.98	9/2+	513.8	116	0	5/2−	105





	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{85}Rb	731.1(3)	731.9	[5/2−]	731.2	28	0	5/2−	43
				450.3	15	280.7	1/2−	
	868.4(3)	868.7	(7/2,9/2)−	868.4	60	0	5/2−	56
				354.8	1.5	513.8	9/2+	
	919.0(3)	919.6	—	919.1	13.0	0	5/2−	36
				767.7	31	151.2	3/2−	
	950.5(3)	951.3	—	950.4	19.7	0	5/2−	23
				799.7	3.3	151.2	3/2−	
	1175.0(3)	1176.0	—	1175.0	<9.8	0	5/2−	<22
				1023.8	12.2	151.2	3/2−	
	1292.2(4)	1294	—	778.4	9.8	513.8	9/2+	9.8
	1295.0(4)	—	—	1294.9	3.5	0	5/2−	8.1
				1143.8	4.6	151.2	3/2−	
	1383.4(3)	1383	—	1232.5	3.3	151.2	3/2−	11.6
				464.0	8.3	919.0	—	
	1444.4(3)	1445	—	1444.5	13.2	0	5/2−	18.7
				575.8	5.5	868.4	(7/2−,9/2−)	
^{87}Rb	402.37(10)	402.7	5/2−	402.37	100	0	3/2−	≈80
	844.7(6)	846	[1/2−]	844.7	12	0	3/2−	9.4
	—	1349.0	(9/2±)	—	—	—	—	—
	1389.0(3)	1390.2	—	1389.0	10.4	0	3/2−	13.7
				986.7	3.3	402.4	5/2−	
	1462.8(3)	1463	—	1462.8	4.9	0	3/2−	4.9
	—	1578	(7/2−)	1175.0	<9.8	402.4	5/2−	<9.8
	1740.4	1740.4	(5/2−)	1740.4	6.2	0	3/2−	8.1
				1337.0	2.7	402.4	5/2−	
				894.9	2.6	844.7	1/2−	
	2377.6(8)	2378	(3/2−,5/2−)	2377.8	2.0	0	3/2−	4.4
				637.2	2.4	1740.4	(5/2−)	
	2414.5(10)	2414	(7/2+)	2012.8	4.0	402.4	5/2−	5.0
				673.4	1.0	1740.4	(5/2−)	
	2554.8(10)	2555	5/2±, 7/2−	2554.8	2.6	0	3/2−	2.

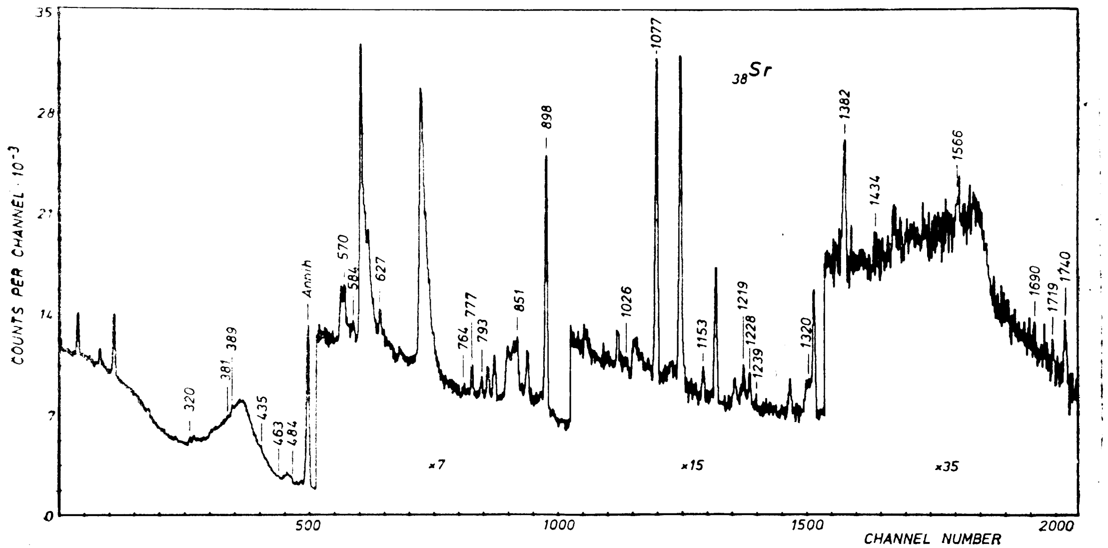
Strontium $_{38}$Sr

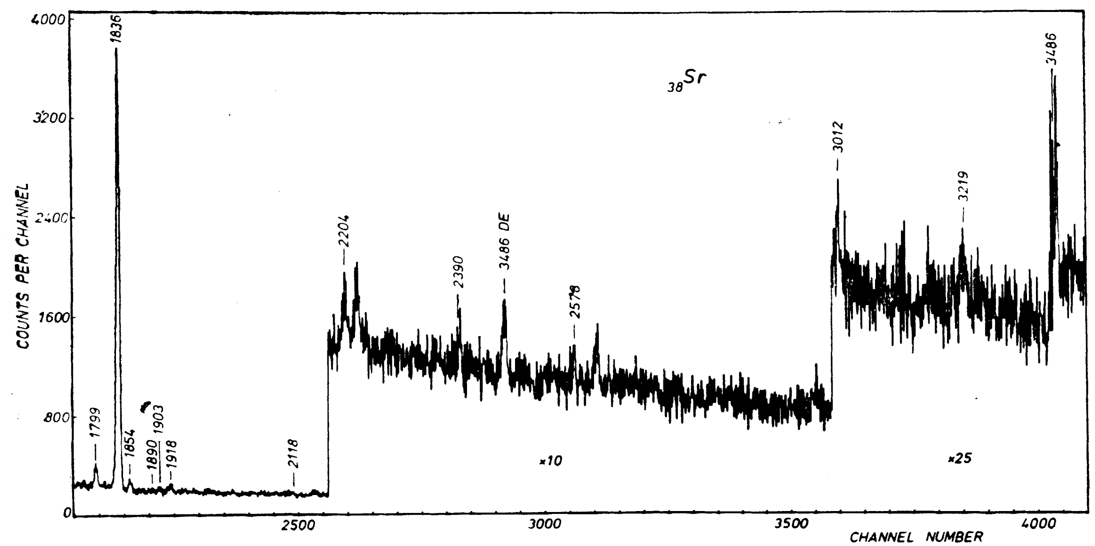
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
319.8(8)	0.60(15)	^{87}Sr	1548.2	483.8(10)	0.85(25)	^{87}Sr	872.4
381.0(10)	0.25(10)			570.2(8)	0.90(20)		
388.6(7)	1.6(3)	^{87}Sr	388.6	584.0(9) *m*	0.90(20)	^{88}Sr	4167.8
435.4(10)	0.70(20)			627.1(7)	1.0(2)	^{86}Sr	2481.0
462.6(12)	0.65(15)	^{88}Sr	3952.7	763.9(12)	0.70(15)		

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
777.27(10)	2.5(3)	^{86}Sr	1853.9	1719.3(8)	1.1(2)	^{88}Sr	4453.4
792.69(15)	1.6(3)	^{84}Sr	792.7	1739.6(3)	2.8(4)		
850.7(8)	1.8(4)	^{88}Sr	3584.8	1799.2(2)	5.6(6)	^{88}Sr	3635.3
897.95(10)	27(2)	^{88}Sr	2734.1	1836.13 *c*	100	^{88}Sr	1836.1
1026.3(10)	0.4(2)	^{86}Sr	2102.9	1854.4(8) *m*	4.4(6)	^{86}Sr	1853.9
1076.63(10)	18(2)	^{86}Sr	1076.6	1889.7(12)	0.95(25)		
1152.7(2)	1.8(3)	^{86}Sr	2229.3	1902.6(10)	1.2(3)		
1218.6(5)	1.8(4)	^{88}Sr	3952.8	1918.1(9)	1.4(3)		
1228.4(3)	1.8(4)	^{87}Sr	1228.4	2117.6(15)	0.40(10)	^{88}Sr	3952.8
1239.0(10)	0.40(10)			2203.5(8)	4.1(5)	^{88}Sr	4039.6
1320.1(10)	2.4(5)	^{88}Sr	3156.2	2390.1(10)	1.1(3)	^{88}Sr	4226.2
1382.5(2)	4.4(3)	^{88}Sr	3218.7	2578.4(10)	1.0(2)	^{88}Sr	4414.6
1433.7(12)	0.75(20)	^{88}Sr	4167.8	3011.8(10)	1.5(3)		
1566.5(10)	1.4(3)	^{88}Sr	4300.6	3219(2)	1.5(4)	^{88}Sr	3218.7
1690.0(10)	0.80(15)			3486.4(8)	3.1(5)	^{88}Sr	3486.4

Level schemes of ^{86}Sr [71Au, 73Ba3], ^{87}Sr [72Gr, 71Ve] and ^{88}Sr [70Go, 73Ba3, 74Se, 74Ar]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{86}Sr	1076.63(10)	1076.63	2+	1076.63	18	0	0+	14
	1853.90(15)	1854.2	2+	1854.4	<4.4	0	0+	3.5
				777.27	2.5	1076.6	2+	
	2102.9(10)	2100	0+	1026.3	0.4	1076.6	2+	0.4
	2229.3(3)	2229.68	2+, 3+, 4+	1152.7	1.8	1076.6	2+	1.8
	2481.0(8)	2481.91	3−	627.1	1.0	1853.9	2+	1.0
^{87}Sr	388.6(7)	388.40	1/2−	388.6	1.6	0	9/2+	1.1*
	872.4(15)	873.2	3/2−	483.8	0.85	388.6	1/2−	0.85
	1228.4(3)	1236	[7/2−]	1228.4	1.8	0	9/2+	1.8
	1548.2(9)	1550	—	319.8	0.60	1228.4	7/2−	0.60
^{88}Sr	1836.15	1836.15	2+	1836.13	100	0	0+	54
	2734.10(15)	2734.1	3−	897.95	27	1836.1	2+	20
	3156.2(10)	3150	0+	1320.1	2.4	1836.1	2+	2.4
	3218.7(3)	3219.5	2+	3219	1.5	0	0+	5.9
				1382.5	4.4	1836.1	2+	
	3486.4(8)	3487.0	(1+)	3486.4	3.1	0	0+	3.1
	—	3522.6	—	—	—	—	—	—
	3584.8(9)	3584.7	(4,5)−	850.7	1.8	2734.1	3−	<1.8
	3635.3(3)	3635.2	(3+)	1799.2	5.6	1836.1	2+	5.6
	3952.8(6)	3952.6	—	2117.6	0.40	1836.1	2+	2.2
				1218.6	1.8	2734.1	3−	





11022-29

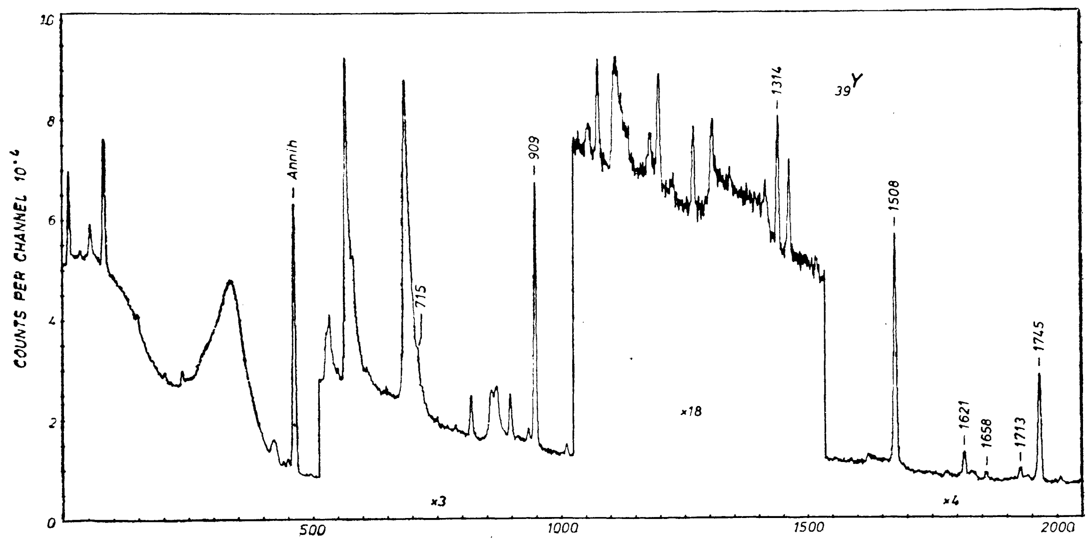
A_Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{88}Sr	4039.6(9)	4033	2+	2203.5	4.1	1836.1	2+	4.1
	4167.8(12)	4170.1	—	1433.7	0.75	2734.1	3−	<1.6
				584.2	<0.90	3584.8	(4.5)−	
	4226.2(10)	4227.3	4+	2390.1	1.1	1836.1	2+	1.1
	4300.6(10)	4300.5	4+	1566.5	1.4	2734.1	3−	1.4
	4414.6(10)	4413.9	—	2578.4	1.0	1836.1	2+	1.0
	4453.4(9)	4452.0	—	1719.3	1.1	2734.1	3−	1.1

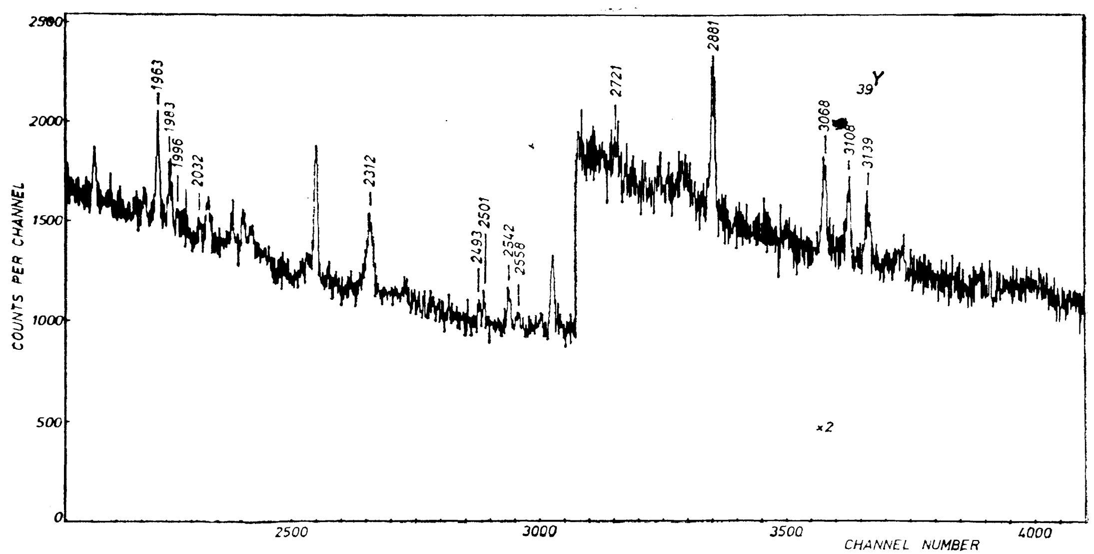
Yttrium $^{89}_{39}$Y

E_γ	I_γ	E_i	E_γ	I_γ	E_i
715.2(10)	4.9(12)	2222.7	2031.9(6)	1.5(4)	
909.05(10)	100	909.0	2312.5(3)	10.4(12)	2312.7(^{14}N)
1313.7(2)	11.0(6)	2222.7	2493.2(6)	1.6(4)	
1507.57(10)	97(4)	1507.6	2501.1(6)	1.9(4)	3410.2
1621.3(2)	13.0(12)	2530.3	2542.4(3)	3.8(4)	3451.5
1657.7(4)	3.6(5)	2566.7	2558.1(15)	0.7(2)	
1713.2(3)	5.4(5)	2622.2	2721.0(7)	2.1(5)	3630.1
1744.89(10)	57(4)	1744.9	2881.4(3)	8.1(8)	2881.4
1963.0(3)	6.6(5)	2872.0	3067.5(3)	5.8(6)	3067.5
1983.0(4)	4.2(4)	1983.1(^{18}O)	3107.5(4)	4.2(5)	3107.6
1995.5(6)	1.3(3)	3503.1	3138.6(5)	4.0(5)	3138.7

Level scheme of ^{89}Y [70Jo, 71Vo, 71Um]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
909.05(10)	909.1	9/2+	909.05	100	0	1/2−	55
1507.58(10)	1507.4	3/2−	1507.57	97	0	1/2−	91
1744.91(10)	1744.5	5/2−	1744.89	57	0	1/2−	57
2222.7(2)	2221	5/2+	1313.7	11.0	909.0	9/2+	16
			715.2	4.9	1507.6	3/2−	
2530.3(2)	2529.9	7/2+	1621.3	13.0	909.0	9/2+	13
2566.7(4)	2566.4	11/2(+)	1657.7	3.6	909.0	9/2+	3.6
2622.2(3)	2622.2	(9/2+)	1713.2	5.4	909.0	9/2+	5.4
2872.0(3)	2871	(7/2)+	1963.0	6.6	909.0	9/2+	6.6
2881.4(3)	2882	3/2	2881.4	8.1	0	1/2−	8.1
3067.5(3)	3068	3/2(—)	3067.5	5.8	0	1/2−	5.8





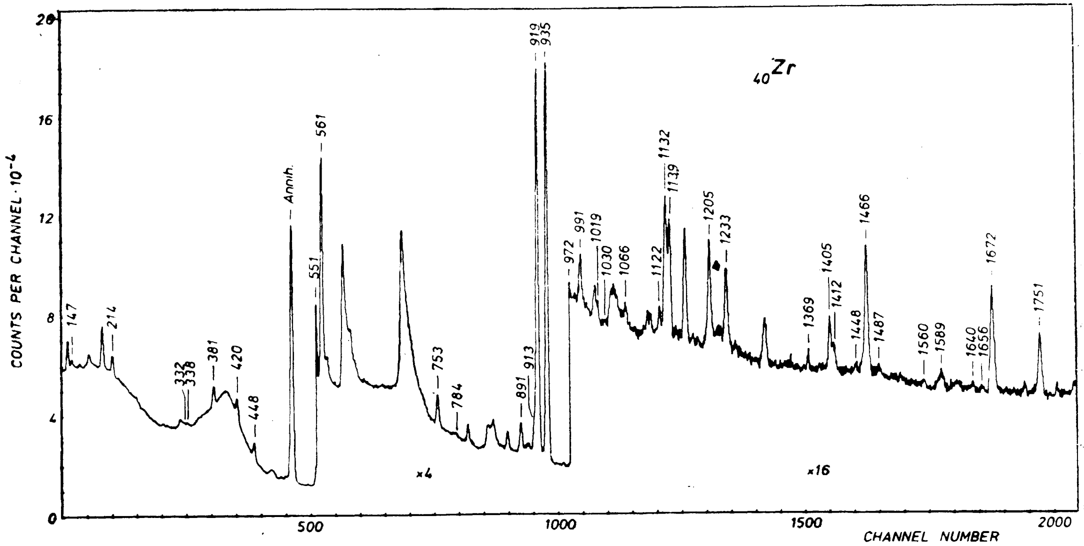
E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	I_f^π	P_s
3107.6(4)	3106	5/2−	3107.5	4.2	0	1/2−	4.2
3138.7(5)	3138	5/2−	3138.6	4.0	0	1/2−	4.0
3410.2(6)	3412	—	2501.1	1.9	909.0	9/2+	1.9
3451.5(3)	3451	—	2542.4	3.8	909.0	9/2+	3.8
3503.1(6)	3502	(3/2−, 1/2−)	1995.5	1.3	1507.6	3/2−	1.3
—	3511	—	—	—	—	—	—
—	3559	—	—	—	—	—	—
3630.1(8)	3625	—	2721.0	2.1	909.0	9/2+	2.1

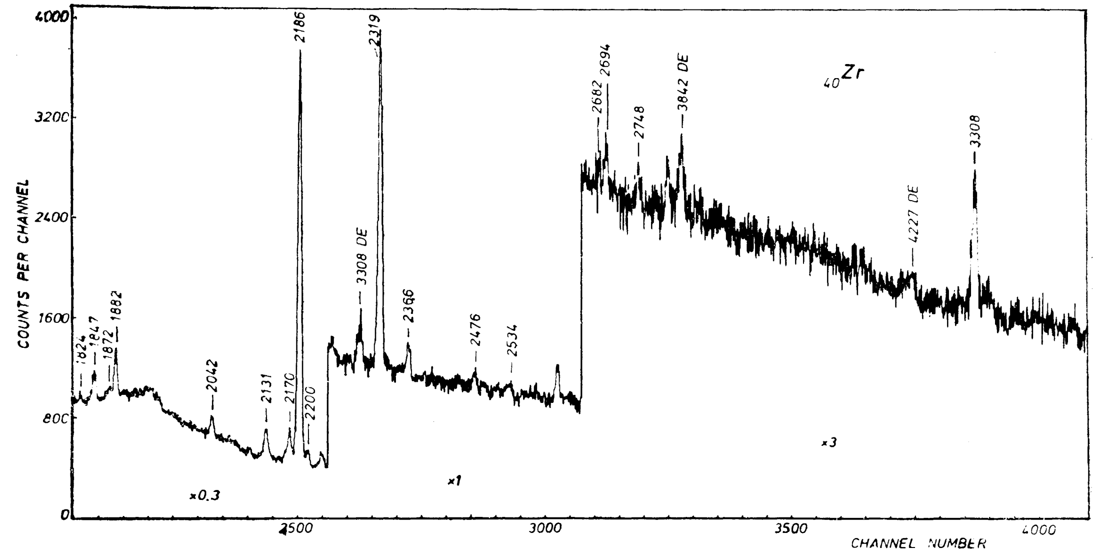
Zirkonium $_{40}$Zr

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
146.8(2)	6.1(4)	^{92}Zr?		1448.3(8)	0.35(10)	^{94}Zr	2366.6
213.8(2)	10.5(10)	Hf?		1466.23(10)	11.0(8)	^{91}Zr	1466.2
331.6(8)	2.0(5)	^{90}Zr		1486.8(8)	0.75(15)		
338.0(8)	1.9(5)	^{90}Zr	3077.1	1560.3(8)	0.65(15)		
381.3(2)	13.0(10)	^{94}Zr	1300.1	1588.6(8) *m*	1.9(3)		
420.0(2)	12(2)	^{90}Zr	2738.9	1640.4(8)	0.35(10)	^{90}Zr	(3959.3)
448.0(2)	10.2(10)	^{92}Zr	1382.6	1655.6(10)	0.35(10)	^{90}Zr	3841.8
550.98(10)	14.1(10)	^{94}Zr	1469.8	1671.6(3)	8.7(10)	^{94}Zr	1671.5
561.49(10)*m*	40(3)	^{90}Zr	2748.1	1750.87(10)	7.4(5)	^{96}Zr	1750.9
		^{92}Zr	1495.6	1824.4(8)	0.65(15)		
752.70(10)	6.0(5)	^{94}Zr	1671.5	1847.0(3)	4.2(4)	^{92}Zr	1847.0
783.7(8)	0.75(20)			1872.1(6)	1.6(3)	^{90}Zr	(4058.4)
890.71(10)	6.6(4)	^{90}Zr	3077.1	1882.2(2)	5.5(4)	^{91}Zr	1882.2
912.6(4)	6.8(10)	^{92}Zr	1847.0	2042.2(3)	2.9(3)	^{91}Zr	2042.2
918.79(10)	97(3)	^{94}Zr	918.8	2131.16(10)	5.1(5)	^{91}Zr	2131.2
934.55(10)	100	^{92}Zr	934.6	2169.9(2)	5.0(6)	^{91}Zr	2169.9
971.8(8)	0.60(15)			2186.33(10)	75(2)	^{90}Zr	2186.4
990.9(3)	2.6(3)			2200.4(8)	2.2(7)	^{91}Zr	2200.4
1019.3(8)	0.90(20)			2318.92(10)	20.3(8)	^{90}Zr	2318.9
1030.5(8)	0.40(10)	^{90}Zr	4338.7	2366.5(5)	1.9(2)	^{94}Zr	2366.6
1065.7(8)	0.50(10)	Hf?		2476.3(5)	0.95(20)	^{92}Zr	2476.3
1121.9(2)	1.6(2)	^{90}Zr	3308.2	2533.5(20)*m*	1.2(3)		
1132.1(2)	11(2)	^{92}Zr	2066.6	2681.9(10)	0.50(20)	^{91}Zr	2682.0
1138.6(2)	9.6(14)	^{94}Zr	2057.4	2694.4(10)	0.85(20)		
1204.83(10)	7.0(7)	^{91}Zr	1204.8	2748.1(10)	0.85(20)	^{90}Zr	2748.1
1232.66(10)	5.7(6)	^{94}Zr	2151.4	3308.0(8)	3.9(5)	^{90}Zr	3308.2
1369.1(2)	0.85(15)			3841.6(10)	1.5(3)	^{90}Zr	3841.8
1405.3(3)	4.8(8)	^{92}Zr	2339.8	4227(2)	0.55(15)	^{90}Zr	4227
1412.2(5)	2.4(6)	^{94}Zr	2331.0				

Level schemes of ^{90}Zr [70Ba, 71Gl], ^{91}Zr [74Gl], ^{92}Zr [74Fl, 72Ko4] and ^{94}Zr [73Si, 72Te, 72Ho, 74Fl]

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{90}Zr	—	1761	0+	—	—	—	—	—
	2186.35(10)	2186	2+	2186.33	75	0	0+	≈36*
	2318.94(10)	2319	5−	2318.92	20.3	0	0+	13*
	2738.9(2)	2738	4−	420.0	12	2318.9	5−	10
	2748.1(10)	2748	3−	2748.1	0.85	0	0+	—
				561.49	<40	2186.3	2+	
	3077.06(15)	3077	4+	890.71	6.6	2186.3	2+	8.5
				338.0	1.9	2738.9	4−	
	3308.2(2)	3310	2+	3308.0	3.9	0	0+	5.1
				1121.9	1.6	2186.3	2+	
	—	3448	6+	—	—	—	—	—
	—	3589	8+	—	—	—	—	—
	3841.8(10)	3840	2+	3841.6	1.5	0	0+	1.8
				1655.6	0.35	2186.3	2+	
	3959.3(8)?	3970	5−	1640.4	0.35	2318.9	5−	0.35
	4058.4(7)?	4070	3−	1872.1	1.6	2186.3	2+	1.6
	4227(2)	4230	2+	4227	0.55	0	0+	0.55
	4338.7(8)	4330	4+	1030.5	0.40	3308.2	2+	0.40
^{91}Zr	1204.83(10)	1204.7	1/2+	1204.83	7.0	0	5/2+	7.0
	1466.24(10)	1466.4	5/2+	1466.23	11.0	0	5/2+	11.0
	1882.2(2)	1882.4	7/2+	1882.2	5.5	0	5/2+	5.5
	2042.2(3)	2042.4	3/2+	2042.2	2.9	0	5/2+	2.9
	2131.18(10)	2131.4	9/2+	2131.16	5.1	0	5/2+	5.1
	2169.9(2)	2169.7	(11/2−)	2169.9	5.0	0	5/2+	5.0
	—	2190.2	5/2+	—	—	—	—	—
	2200.4(8)	2200.8	7/2+	2200.4	2.2	0	5/2+	2.2
	—	2309	11/2−	—	—	—	—	—
	—	2541	1/2+	—	—	—	—	—
	2682.0(10)	2681	5/2+	2681.9	0.50	0	5/2+	0.50
^{92}Zr	934.55(10)	934.46	2+	934.55	100	0	0+	≈50
	1382.6(2)	1383.0	0+	448.0	10.2	934.6	2+	10.2
	—	1495.6	4+	561.49	<40	934.6	2+	—
	1847.0(3)	1847.3	2+	1847.0	4.2	0	0+	11
				912.6	6.8	934.6	2+	
	2066.6(2)	2066.9	2+	1132.1	11	934.6	2+	11
	2339.8(3)	2339.9	3−	1405.3	4.8	934.6	2+	6.5*
	2476.3(5)	2475.2	[1±, 2+]	2476.3	0.95	0	0+	0.95
^{94}Zr	918.79(10)	918.24	2+	918.79	97	0	0+	46
	1300.1(2)	1299.99	0+	381.3	13.0	918.8	2+	13.0
	1469.77(15)	1468.34	4+	550.98	14.1	918.8	2+	14.1
	1671.49(15)	1668.74	2+	1671.6	8.7	0	0+	14.7
				752.70	6.0	918.8	2+	





^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{94}Zr	2057.4(2)	2057.36	3−	1138.6	9.6	918.8	2+	9.6
	2151.45(15)	2151.02	2+	1232.66	5.7	918.8	2+	5.7
	2331.0(5)	2336	(4+)	1412.2	2.4	918.8	2+	2.4
	2366.6(5)	2365.5	2+	2366.5	1.9	0	0+	2.2
				1448.3	0.35	918.8	2+	

Niobium $^{93}_{41}$Nb

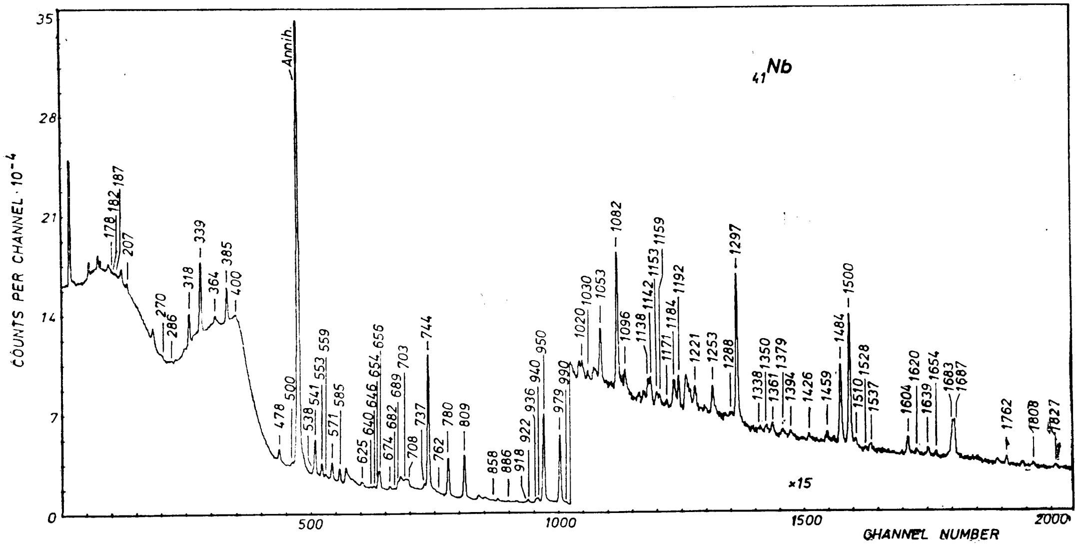
E_γ	I_γ	E_i	E_γ	I_γ	E_i
178.0(2)	2.7(4)		886.2(3)	0.66(10)	
182.3(4)	1.1(3)	1665.6	917.8(6)	0.34(12)	2598.0
186.8(4)	1.1(3)	1686.7	921.8(2)	2.6(3)	1665.6
207.42(15)	2.8(4)		936.4(3)	2.9(3)	1679.9
269.7(4)	1.1(3)		939.6(3)	2.3(3)	1683.3
285.6(5)	0.4(2)		949.8(2)	84(6)	949.8
318.36(10)	15.8(11)	1297.1	978.9(2)	71(5)	978.9
338.67(8)	36.4(25)	1082.5	990.2(4)	1.0(2)	1968.9
364.3(2)	3.0(4)	1679.9	1019.8(3)	1.4(3)	
385.31(10)	17.9(13)	1335.1	1030.1(3)	0.29(7)	
399.7(4)	0.76(19)		1052.7(2)	3.5(3)	2002.5
477.52(10)	7.1(5)	1968.9?	1082.5(2)	8.6(7)	1082.5
500.3(3)	2.3(7)		1096.1(3)	1.26(2)	
537.6(5)	2.2(7)		1138.2(4)	1.9(5)	1948.2
541.21(10)	22.0(13)	1491.0	1142.2(4)	2.4(5)	1950.4
553.20(10)	7.4(5)	1297.1	1153.1(3)	1.20(15)	
559.4(2)	1.5(2)	1369.3	1158.7(3)	0.61(12)	
571.45(12)	11.4(8)	1315.2	1171.1(5)	0.35(7)	2506.8
585.08(12)	8.8(6)	1394.7	1184.5(2)	2.7(3)	2163.4
625.0(2)	3.5(3)	1603.7	1192.3(2)	2.2(2)	2171.0
639.6(4)	0.4(2)	2123.2	1221.4(2)	2.1(2)	2171.0
645.8(3)	1.09(13)	1728.3	1253.3(2)	2.0(2)	2203.2
653.6(3)	6.8(5)	1603.7	1287.5(4)	0.63(10)	
656.0(2)	11.4(8)	686.4	1297.0(2)	12.0(8)	1297.1
674.4(2)	2.1(2)	1483.4	1338.5(5)	0.46(9)	1369.3
682.0(4)	0.48(10)		1350.0(4)	0.66(11)	
689.0(4)	2.0(2)		1360.9(3)	1.07(14)	
703.2(5)	3.5(7)		1379.3(5)	0.49(9)	2123.2
708.2(5)	5.4(9)	1686.7	1393.6(5)	0.46(9)	2203.2
736.6(3)	2.3(7)	1686.7	1426.5(5)	0.39(8)	
743.85(15)	100	743.8	1459.3(4)	0.90(13)	2203.2
761.5(5)	0.47(10)		1483.6(2)	7.4(6)	1483.4
779.63(15)	31.2(22)	810.0	1500.1(2)	12.0(10)	1500.1
808.68(15)	37.6(26)	808.7	1510.1(5)	0.54(10)	
858.4(3)	0.68(10)	1544.8	1527.8(7)	0.20(9)	2506.8

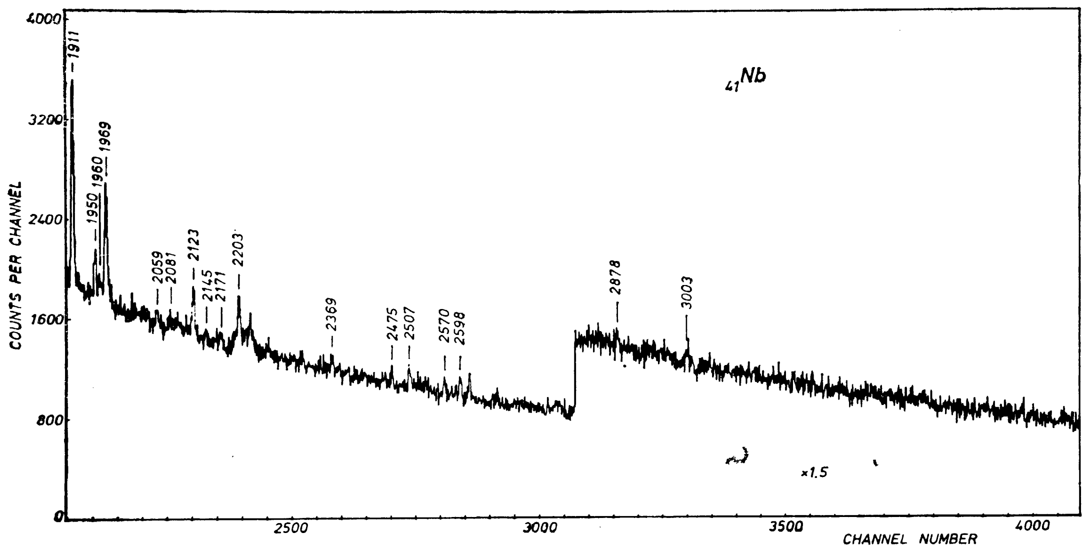
E_γ	I_γ	E_i	E_γ	I_γ	E_i
1536.9(4)	0.74(12)	1567.3	2058.7(5)	0.33(9)	
1603.7(3)	1.6(2)	1603.7	2081.4(6)	0.24(9)	
1619.5(5)	0.40(9)	2598.0	2123.2(3)	1.2(2)	2123.2
1639.4(4)	0.79(13)		2145.0(6)	0.24(9)	
1653.6(5)	0.43(9)		2170.8(6)	0.26(9)	2171.0
1683.2(4)	2.9(6)	1683.3	2203.3(3)	1.4(2)	2203.2
1686.7(3)	3.2(6)	1686.7	2369.4(6)	0.44(10)	
1761.9(5)	0.53(12)	2570.4	2475.0(6)	0.49(12)	
1807.7(5)	0.40(9)		2507.0(6)	0.49(12)	2506.8
1826.7(5)	0.53(12)	2570.4	2570.2(6)	0.40(10)	2570.4
1910.8(2)	4.2(4)	1910.8	2597.7(4)	0.75(16)	2598.0
1950.0(4)	0.87(13)	1950.4	2878.1(7)*m*	0.28(12)	
1960.1(5)	0.33(9)		3003.0(6)	0.36(12)	3003.0
1968.9(3)	2.7(3)	1968.9			

Level scheme of ^{93}Nb [73Ta1, 73Va, 72Zi]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
30.4(4)	30.4	1/2−	—	—	—	—	—
686.4(4)	686.8	3/2−	656.0	11.4	30.4	1/2−	11.4
743.85(15)	743.7	7/2+	743.85	100	0	9/2+	35
808.68(15)	808.4	5/2+	808.68	37.6	0	9/2+	33
810.0(4)	809.8	3/2− (5/2−)	779.63	31.2	30.4	1/2−	19
949.8(2)	949.6	13/2+	949.8	84	0	9/2+	27
978.9(2)	978.6	11/2+	978.9	71	0	9/2+	57
1082.52(17)	1082.3	9/2+	1082.5	8.6	0	9/2+	42
			338.67	36.4	743.8	7/2+	
—	1127	5/2+,7/2	—	—	—	—	—
1297.1(2)	1296.8	9/2+	1297.0	12.0	0	9/2+	35
			553.20	7.4	743.8	7/2+	
			318.36	15.8	978.9	13/2+	
1315.30(19)	1315.3	5/2−	571.45	11.4	743.8	7/2+	8.4
1335.1(2)	1334.3	17/2+	385.3	17.9	949.8	13/2+	17.5
1369.3(5)	1369	(1/2,3/2)	1338.5	0.46	30.4	1/2−	2.0
			559.4	1.5	810.0	3/2− (5/2−)	
1395.1(4)	1395.0	(5/2)	585.08	8.8	810.0	3/2− (5/2−)	8.8
1483.4(3)	1483.1	(5/2,7/2) 9/2+	1483.6	7.4	0	9/2+	8
			674.4	2.1	808.7	5/2+	
1491.0(2)	1490.7	13/2+ (17/2+)	541.21	22.0	949.8	13/2+	22(15)
1500.1(2)	1499.4	(5/2,7/2)	1500.1	12.0	0	9/2+	11
1544.8(5)	1546.0?	(3/2)	858.4	0.68	686.4	3/2−	0.68
1567.3(5)	1572	(1/2−,3/2−)	1536.9	0.74	30.4	1/2−	0.74
1603.7(3)	1602.8	—	1603.7	1.6	0	9/2+	11.9
			653.6	6.8	949.8	13/2+	
			625.0	3.5	978.9	11/2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1665.6(3)	1665.2	(3/2)	921.8	2.6	743.8	7/2+	3.7
			182.3	1.1	1483.4	(5/2,7/2)9/2+	
1679.9(3)	1679.6	(5/2,7/2)	936.4	2.9	743.8	7/2+	5.6
			364.3	3.0	1315.3	5/2−	
1683.3(4)	1682.6	(7/2)	1683.2	2.9	0	9/2+	5.2
			939.6	2.3	743.8	7/2+	
1686.7(3)	1686.1	—	1686.7	3.2	0	9/2+	12
			736.6	2.3	949.8	13/2+	
			708.2	5.4	978.9	11/2+	
			186.8	1.1	1500.1	(5/2,7/2)	
1728.3(4)?	1728.1?	(3/2)	645.8	1.09	1082.5	9/2+	1.1
1910.8(2)	1910.4	(7/2)	1910.8	4.2	0	9/2+	4.2
—	1914.7	(5/2,7/2)	—	—	—	—	—
1948.2(5)	1947.4	(5/2)	1138.2	1.9	810.0	3/2− (5/2−)	1.9
1950.4(5)	1949.6	(5/2)	1950.0	0.87	0	9/2+	3.3
			1142.2	2.4	808.7	5/2+	
1968.9(3)	1968.3	(13/2+)	1968.9	2.7	0	9/2+	3.7(10.8)
			990.2	1.0	978.9	11/2+	
			477.52	7.1?	1491.0	13/2+ (17/2+)	
2002.5(3)	2001.9	(17/2)	1052.7	3.5	949.8	13/2+	3.5
—	2018.8?	(3/2)	—	—	—	—	—
—	2117.4	(17/2+)	—	—	—	—	—
2123.2(3)	—	—	2123.2	1.2	0	9/2+	2.1
			1379.3	0.49	743.8	7/2+	
			639.6	0.4	1483.4	(5/2,7/2)9/2+	
—	2153.4	(5/2)	—	—	—	—	—
2163.4(3)	2162.2?	—	1184.5	2.7	978.9	11/2+	2.7
2171.0(6)	2171.1	—	2170.8	0.26	0	9/2+	2.8
			1221.4	2.1	949.8	13/2+	
			1192.3	0.49	978.9	11/2+	
2203.2(3)	2203.3	—	2203.3	1.4	0	9/2+	4.3
			1459.3	0.90	743.8	7/2+	
			1253.3	2.0	949.8	13/2+	
—	2300	5/2+	—	—	—	—	—
2506.8(6)	—	—	2507.0	0.49	0	9/2+	1.0
			1527.8	0.20	978.9	11/2+	
			1171.1	0.35	1335.1	17/2+	
2570.4(6)	—	—	2570.2	0.40	0	9/2+	1.5
			1826.7	0.53	743.8	7/2+	
			1761.9	0.53	808.7	5/2+	
2598.0(4)	—	—	2597.7	0.75	0	9/2+	1.5
			1619.5	0.40	978.9	11/2+	
			917.8	0.34	1679.9	(5/2,7/2)	
3003.0(6)	—	—	3003.0	0.36	0	9/2+	0.36





E_γ	I_γ	^AZ	E_i
159.38(10)	17(2)	^{100}Mo	695.0
180.5(8)	2.5(8)		
203.90(10)	75(4)	^{95}Mo	203.9
238.44(10)	4.8(2)	^{97}Mo	719.4
244.06(10)	7.1(7)	^{92}Mo	2526.6
259.0(6)	1.0(2)	^{98}Mo	2017.6
319.9(4)	0.8(2)	^{97}Mo	1436.5
351.1(4)	1.2(2)		
369.63(10)	9.1(3)	^{96}Mo	1147.8
385.7(8)	1.5(2)		
480.96(10)	19.6(15)	^{97}Mo	481.0
528.31(10)	12.2(8)	^{100}Mo	1063.9
535.67(10)	68(2)	^{100}Mo	535.7
543.9(3)	1.6(2)		
549.6(4)	0.58(14)	^{97}Mo	1269.1
582.06(10)	4.3(3)	^{95}Mo	786.0
600.8(6)	3.9(10)	^{100}Mo	1136.5
616.5(6)	2.4(8)	^{95}Mo	820.7
644.79(10)	9.7(3)	^{98}Mo	1432.2
658.20(10)	15.9(8)	^{97}Mo	658.2
672.7(6)	1.6(2)	^{98}Mo	2104.9
679.6(2)	2.3(3)	^{97}Mo	679.6
702.5(10)	5.2(6)	^{94}Mo	1573.7
		^{100}Mo	1765.7
720.81(12)*m*	36.0(15)	^{96}Mo	1497.8
		^{97}Mo	719.4
		^{97}Mo	720.7
		^{98}Mo	1510.1
737.3(3)	1.7(3)	^{96}Mo	2235.1
751.6(3)	1.8(3)	^{97}Mo	1409.8
765.96(10)	21.4(12)	^{95}Mo	766.0
772.8(5)	10(2)	^{92}Mo	2282.5
778.18(10)	93(5)	^{96}Mo	778.2
787.35(10)	100	^{98}Mo	787.4
820.73(10)	5.3(3)	^{95}Mo	820.7
848.3(3)	16(2)	^{96}Mo	1625.7
		^{96}Mo	1628.2
852.4(6)	9(3)	^{95}Mo	1056.3

E_γ	I_γ	^AZ	E_i
870.95(15)	42(2)	^{94}Mo	871.0
897.5(6)	0.80(20)		
909.5(6)	0.90(25)	^{98}Mo	2419.6
928.4(3)	2.3(3)	^{100}Mo	1464.1
934.6(6)	0.91(15)		
947.74(10)	17.6(8)	^{95}Mo	947.7
961.3(3)	1.4(2)		
970.6(2)	5.2(3)	^{98}Mo	1758.0
993.21(10)	4.7(2)	^{94}Mo	1864.2
1010.6(10)	0.8(2)	^{92}Mo	2519.1
1024.1(4)	10.6(8)	^{97}Mo	1024.7
		^{98}Mo	1758.0
1056.27(10)	2.9(3)	^{95}Mo	1056.3
1063.83(15)	4.1(3)	^{100}Mo	1063.9
1074.02(10)	11.8(8)	^{95}Mo	1074.0
1091.78(15)	5.9(3)	^{96}Mo	1870.0
1110.6(6)	1.6(4)	^{98}Mo	2620.6
1116.62(10)	6.1(4)	^{97}Mo	1116.6
1128.2(6)	0.71(12)		
1165.3(3)	1.2(2)	^{95}Mo	1369.2
1176.3(3)	0.76(15)		
1196.4(4)	2.5(4)	^{94}Mo	2067.3
1200.5(4)	3.4(4)	^{96}Mo	1978.7
1222.4(3)	1.6(2)	^{95}Mo	1426.3
			(1222.5)
1230.29(10)	4.3(2)	^{98}Mo	2017.6
1251.0(3)	1.2(2)	^{98}Mo	1984.2
1264.6(6)	1.4(2)		
2169.2(6)	2.0(2)	^{97}Mo	1269.1
1284.9(10)*m*	1.6(3)		
1317.5(2)	3.7(2)	^{96}Mo	2095.7
		^{98}Mo	2104.9
1340.7(2)	2.1(2)	^{92}Mo	2850.4
1370.3(2)	2.5(3)	^{95}Mo	1369.2
1419.4(2)	2.1(2)	^{98}Mo	2206.7
1432.3(2)	8.1(3)	^{98}Mo	1432.2
1440.4(10)	0.95(20)	^{96}Mo	2218.6
1457.6(10)	1.7(4)	^{96}Mo	2235.1

E_γ	I_γ	^AZ	E_i
1497.8(2)	2.7(3)	^{96}Mo	1497.8
1509.7(2)	30.4(8)	^{92}Mo	1509.7
1523.3(10)	0.55(20)	^{94}Mo	2394.2
1546.4(2)	2.0(2)	^{98}Mo	2333.7
1566.2(10)	1.5(2)		
1617(2)*m*	1.8(2)		
1625.7(8)	1.4(3)	^{96}Mo	1625.7
1644.4(9)*m*	1.4(2)		
1663.3(8)	0.59(15)	^{94}Mo	2534.2
1676.2(6)	0.75(15)		
1762.1(9)*m*	1.3(2)	^{98}Mo	1758.0
1775.5(8)	1.0(2)	^{98}Mo	2562.8
1831.3(10)*m*	0.65(15)		
1847.7(10)*m*	0.49(15)		

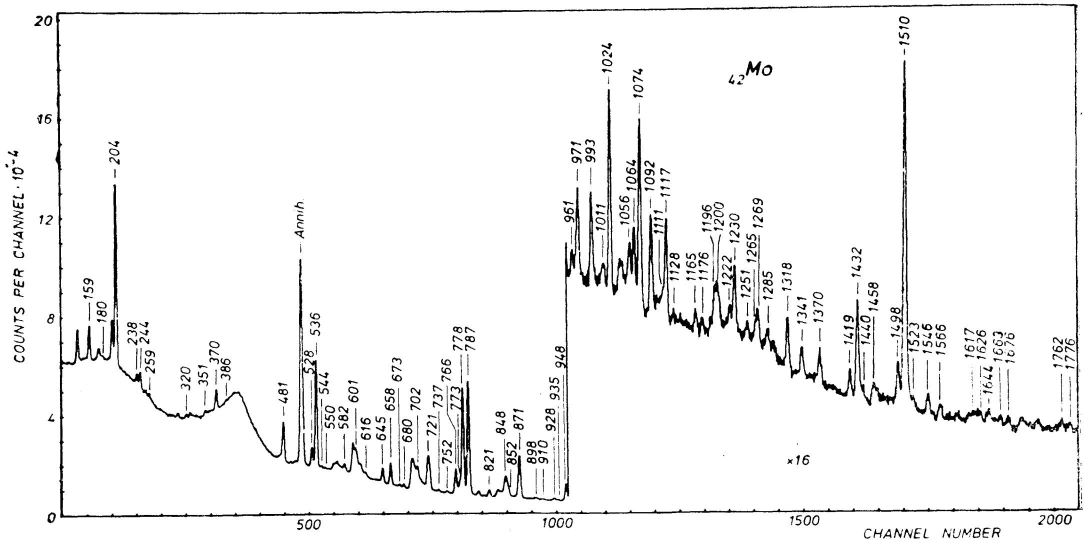
E_γ	I_γ	^AZ	E_i
1865.4(10)*m*	0.80(20)		
1913.6(10)	0.40(10)	^{98}Mo	2700.9
1968.7(10)	0.73(25)		
1981.8(10)	0.41(10)		
2010.8(10)	0.30(10)		
2017.5(10)	0.90(15)		
2033.0(8)	0.76(15)	^{92}Mo	3542.7
2050.6(8)	0.62(15)		
2115.7(10)	0.52(15)		
2156.2(10)	0.63(15)		
2248.1(10)	0.40(15)		
2508.7(10)	0.79(20)		
3091.8(10)	1.4(2)	^{92}Mo	3091.5

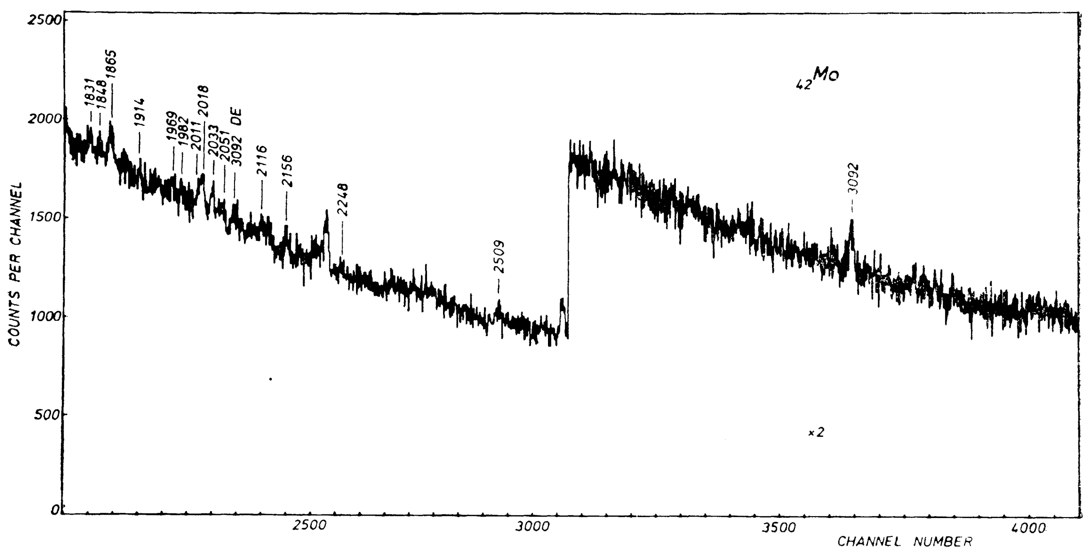
Level schemes of ^{94}Mo [73La, 72Ba, 68Ar], ^{95}Mo [74An, 69Mo, 69Ch], ^{96}Mo [74Ga, 72Ga1, 70 He], ^{97}Mo [72Ba1, 72Me, 70Ar, 66Aj, 64Hj], ^{98}Mo [73Sh, 71He, 69Ch], ^{100}Mo [72Ba, 72He]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{94}Mo	870.95(15)	871.099	2+	870.95	42	0	0+	≳28
	—	1573.726	4+	702.5	<5.2	871.0	2+	<4.9*
	1864.16(15)	1864.2	2+	993.21	4.7	871.0	2+	4.7
	2067.3(4)	2067.2	2+	1196.4	2.5	871.0	2+	2.2*
	2394.2(10)	2392.9	2+	1523.3	0.55	871.0	2+	0.6*
	—	2423.37	(6)+	—	—	—	—	—
	2534.2(8)	2533.6	(3−)	1663.3	0.59	871.0	2+	1.4*
^{95}Mo	203.90(10)	203.94	3/2+	203.90	75	0	5/2+	56
	765.96(10)	765.83	7/2+	765.96	21.4	0	5/2+	21
	785.96(15)	786.2	1/2+	582.06	4.3	203.9	3/2+	5.4*
	820.73(10)	820.65	(3/2+, 5/2+)	820.73	5.3	0	5/2+	7.7
				616.5	2.4	203.9	3/2+	
	947.74(10)	947.8	9/2+	947.74	17.6	0	5/2+	18
	—	1039.2	1/2+	—	—	—	—	—

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{95}Mo	1056.27(10)	1057.1	[5/2+]	1056.27	2.9	0	5/2+	12
				852.4	9	203.9	3/2+	
	1074.02(10)	1074.0	7/2+	1074.02	11.8	0	5/2+	13*
	—	1222.5?	—	1222.4	<1.6	0	5/2+	<1.6
	—	1310	1/2+	—	—	—	—	—
	1369.2(3)	1376	(3/2,5/2)+	1370.3	2.5	0	5/2+	3.7
				1165.3	1.2	203.9	3/2+	
	1426.3(3)	1426.5	(5/2)+	1222.4	1.6	203.9	3/2+	1.6
^{96}Mo	778.18(10)	778.26	2+	778.18	93	0	0+	≈43
	1147.81(15)	1147.93	0+	369.63	9.1	778.2	2+	9
	1497.8(2)	1497.82	2+	1497.8	2.7	0	0+	—
				720.81	<36	778.2	2+	
	1625.7(8)	1625.93	2+	1625.7	1.4	0	0+	—
				848.3	<16	778.2	2+	
	—	1628.22	4+	848.3	<16	778.2	2+	—
	1869.96(20)	1869.47	4+	1091.78	5.9	778.2	2+	5.9
	1978.7(4)	1978.30	3+	1200.5	3.4	778.2	2+	4.2*
	2095.7(10)	2095.6	—	1317.5	<3.7	778.2	2+	<3.7
	2218.6(10)	2219.16	4+	1440.4	0.95	778.2	2+	—
	2235.1(5)	2234.63	3−	1457.6	1.7	778.2	2+	3.7*
				737.3	1.7	1497.8	2+	
^{97}Mo	480.96(10)	480.9	(3/2+)	480.96	19.6	0	5/2+	15
	658.20(10)	658.1	7/2+	658.20	15.9	0	5/2+	14
	679.6(2)	679.6	[1/2+]	679.6	2.3	0	5/2+	2.3
	719.40(15)	719.0	(5/2)+	720.81	<36	0	5/2+	≈18*
				238.44	4.8	481.0	(3/2+)	
	—	720.71	(1/2—5/2)+	720.81	<36	0	5/2+	—
	—	888.2	1.2+	—	—	—	—	—
	—	1024.7	7/2+	1024.1	<10.6	0	5/2+	<10.6
	—	1092.6	(3/2,5/2)+	—	—	—	—	—
	1116.62(10)	1116.7	9/2+	1116.62	6.1	0	5/2+	5.3
	—	1136	—	—	—	—	—	—
	—	1148.6	—	—	—	—	—	—
	1269.1(4)	1268.8	7/2+	1269.2	2.0	0	5/2+	2.6
				549.6	0.58	719.4	(5/2+)	

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{97}Mo	—	1273	(3/2,5/2)+	—	—	—	—	—
	—	1284	(13/2+)	—	—	—	—	—
	1409.8(3)	1409.5	(11/2+)	751.6	1.8	658.2	7/2+	1.8
	1436.5(4)	1437.3	(11/2)−	319.9	0.8	1116.6	9/2+	0.8
^{98}Mo	—	734.9	0+	—	—	—	—	—
	787.35(10)	787.42	2+	787.35	100	0	0+	≈60*
	1432.20(15)	1432.32	2+	1432.3	8.1	0	0+	15*
				644.79	9.7	787.4	2+	
	—	1510.13	4+	720.81	<36	787.4	2+	—
	1758.0(2)	1758.5	2+	1762.1	<1.3	0	0+	≈13*
				1024.1	<10.6	734.9	0+	
				970.6	5.2	787.4	2+	
	—	1812	—	—	—	—	—	—
	—	1880.9	—	—	—	—	—	—
	—	1965	—	—	—	—	—	—
	1984.2(4)?	1984.8	—	1251.0	1.2	734.9	0+	1.2
	2017.64(15)	2017.61	3−	1230.29	4.3	787.4	2+	4.3*
				259.0	1.0	1758.4	2+	
	—	2039	—	—	—	—	—	—
	2104.9(3)	2104.9	2+	1317.5	<3.7	787.4	2+	4.2*
				672.7	1.6	1432.2	2+	
	2206.7(2)	2206.9	2+	1419.4	2.1	787.4	2+	2.1
	—	2224.0	2+—4+	—	—	—	—	—
	2333.7(2)	2333.4	2+	1546.4	2.0	787.4	2+	3.4*
	—	2343.7	6+	—	—	—	—	—
	2419.6(10)	2419.8	3−	909.5	0.90	1510.1	4+	1.3*
	—	2485.4	2+—4+	—	—	—	—	—
	—	2506.3	—	—	—	—	—	—
	2562.8(8)	2562.3	—	1775.5	1.0	787.4	2+	1.2*





^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{98}Mo	—	2572.9	4+	—	—	—	—	—
	2620.6(9)	2620.9	—	1110.6	1.6	1510.1	4+	3.9*
	—	2646	—	—	—	—	—	—
	2700.9(10)	2700.5	2+	1913.6	0.40	787.4	2+	0.40
^{100}Mo	535.67(10)	535.6	2+	535.67	68	0	0+	32
	695.05(15)	694.4	0+	159.38	17	535.7	2+	12*
	1063.90(15)	1063.7	2+	1063.83	4.1	0	0+	<16
				528.31	12.2	535.7	2+	
	1136.5(6)	1136.1	4+	600.8	3.9	535.7	2+	3.9
	1464.1(3)	1463.3	—	928.4	2.3	535.7	2+	4.9*
	—	1765.7	—	702.5	<5.2	1063.9	2+	<5.2

Molybdenum-92 $^{92}_{42}$Mo

E_γ	I_γ	E_i	E_γ	I_γ	E_i
148.6(8)	0.7(2)	2760.3	1340.7(2)	6.5(3)	2850.4
244.06(5)	17(3)	2526.6	1509.7(2)	100	1509.7
304.0(5)	1.5(2)	3367.9	1581.8(2)	0.80(15)	3091.5
329.2(7)	1.3(2)	2611.7	2033.0(4)	2.2(4)	3542.7
361.4(8)	1.0(2)	3367.9	2113.0(2)	1.6(3)	3622.7
479.8(2)	4.0(10)	3006.4	2179.3(3)	0.60(20)	3689.0
537.3(2)	5.9(2)	3063.9	2417.6(4)	0.30(10)	3927.3
772.8(5)	26(2)	2282.5	3091.4(5)	2.5(2)	3091.5
941.7(2)	0.55(10)		3927.2(10)	0.35(15)	3927.3
946.3(2)	0.60(10)	4010.2	3944.8(10)	0.40(15)	3944.8
1009.4(4)	2.2(4)	2519.1	4022.1(7)?	0.75(25)	

Level scheme of ^{92}Mo [75De3, 74Mc1, 73La, 73Ta, 71Le, 69Li, 68Ko, 66Di]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1509.7(2)	1509.4	2+	1509.7	100	0	0+	60
2282.5(6)	2282.5	4+	772.8	26	1509.7	2+	8
2519.1(5)	2517	0+	1009.4	2.2	1509.7	2+	2.2
2526.6(6)	2526.2	5−	244.06	17	2282.5	4+	7
2611.7(8)	2611.8	6+	329.2	1.3	2282.5	4+	0.7*
2760.3(8)	2759.4	8+	148.6	0.7	2611.7	6+	0.7
2850.4(3)	2848.7	3−	1340.7	6.5	1509.7	2+	6.5

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
3006.4(7)	3005	—	479.8	4.0	2526.6	5−	3.0
3063.9(7)	3063	[4]	537.3	5.9	2526.6	5−	3.8
3091.5(3)	3092	2+	3091.4	2.5	0	0+	3.3
			1581.8	0.80	1509.7	2+	
3367.9(8)	3370	—	361.4	1.0	3006.4	—	2.5
			304.0	1.5	3063.9	4	
3542.7(5)	3543	2+	2033.0	2.2	1509.7	2+	2.2
—	3572	—	—	—	—	—	—
3622.7(3)	3621	—	2113.0	1.6	1509.7	2+	1.6
—	3625	(7−)	—	—	—	—	—
3689.0(4)	3688	—	2179.3	0.60	1509.7	2+	0.60
—	3765	—	—	—	—	—	—
—	3810	—	—	—	—	—	—
—	3836	0+	—	—	—	—	—
—	3870	—	—	—	—	—	—
3927.3(5)	3930	2+	3927.2	0.35	0	0+	0.65
			2417.6	0.30	1509.7	2+	
3944.8(10)	3945	[1±, 2+]	3944.8	0.40	0	0+	0.40
4010.2(8)	4008	—	946.3	0.60	3063.9	2+	0.60

ЧАСТЬ 2

ОСНОВНЫЕ ТАБЛИЦЫ ЭНЕРГИЙ И ИНТЕНСИВНОСТЕЙ ГАММА-КВАНТОВ, СХЕМ УРОВНЕЙ И ГАММА-ПЕРЕХОДОВ, СПЕКТРЫ ГАММА-КВАНТОВ ЭЛЕМЕНТОВ от $_{44}$Ru до $_{92}$U

PART 2

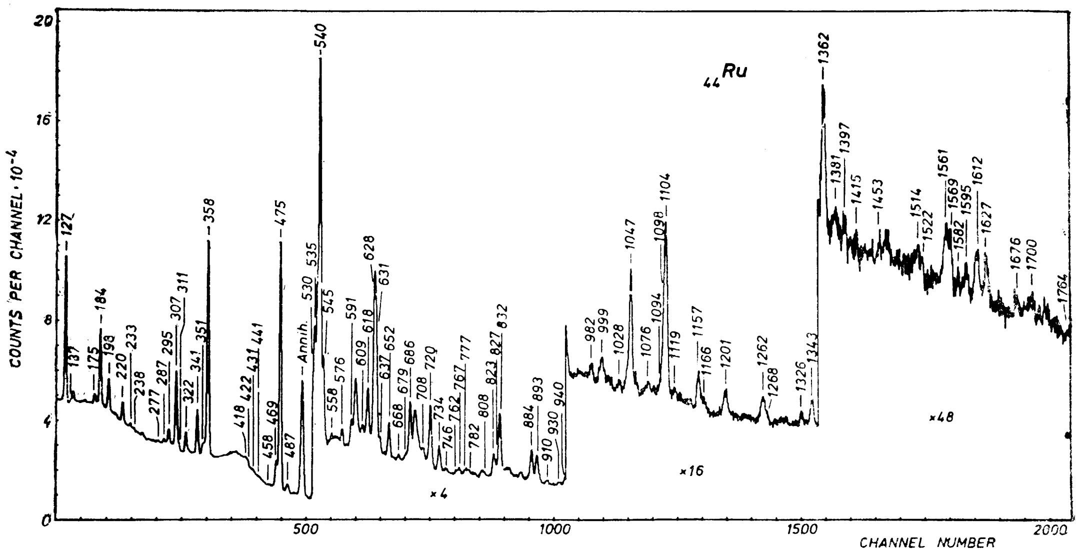
MAIN TABLES OF ENERGY AND INTENSITY VALUES OF GAMMA-RAYS, DECAY SCHEMES AND GAMMA-TRANSITIONS, GAMMA-RAY SPECTRA OF ELEMENTS from $_{44}$Ru to $_{92}$U

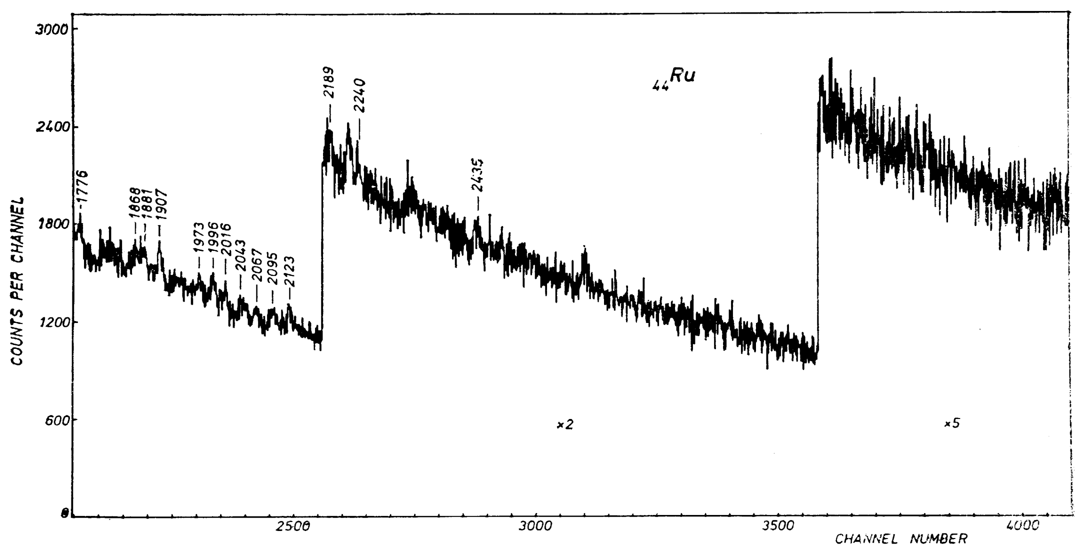
E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
127.22 *c*	88(9)	^{101}Ru	127.2	631.3(6)	30(6)	^{102}Ru	1106.4
136.7(8)	2.2(6)	^{101}Ru	461.6	637.2(5)	2.9(5)	^{102}Ru	1581.0
174.9(6)	4.6(10)			652.41 *c*	8.4(7)	^{98}Ru	652.4
184.00(15)	36(4)	^{101}Ru	311.2	668.1(6)	1.1(2)		
197.7(4)	5.3(15)	^{101}Ru	324.9	679.4(7)	2.0(5)		
220.45(18)	9.7(10)	^{101}Ru	527.3	686.5(3)	15.0(15)	^{100}Ru	1226.5
233.1(4)	1.7(3)	^{99}Ru	322.4			^{96}Ru	1518.9
		^{101}Ru	545.2	708.4(5)	2.4(4)		
238.4(8)	0.7(3)	^{101}Ru	545.2	719.8(2)	19.3(15)	^{99}Ru	719.8
277.3(5)	1.5(3)	^{99}Ru	617.6	734.3(2)	7.4(7)	^{99}Ru	734.3
287.0(4)	2.4(4)			746.0(8)	1.2(3)	^{98}Ru	1398.4
294.9(2)	9.0(7)	^{101}Ru	422.1	761.8(12)	0.8(3)	^{98}Ru	1414.4
306.81 *c*	50(3)	^{101}Ru	306.8	766.6(8)	1.6(4)	^{102}Ru	1873.0
311.3(4)	4.3(7)	^{101}Ru	311.2	777.0(8)	1.5(4)		
322.4(2)	11.9(12)	^{99}Ru	322.4	781.8(8)	1.3(4)		
340.79(15)	27(2)	^{99}Ru	340.8	808.1(10)	1.4(4)		
351.3 *m*	6(2)	^{99}Ru	441.2	822.9(3)	8.3(10)	^{100}Ru	1362.2
357.92(12)	140(7)	^{104}Ru	357.9	826.8(6)	2.5(5)		
418.5(6)	4.0(6)	^{102}Ru	1521.7	832.5(3)	21(2)	^{96}Ru	832.5
422.2(6)	3.5(6)	^{101}Ru	422.1	884.3(2)	11.5(10)	^{104}Ru	1242.2
431.0(7)	0.8(4)			893.2(3)	10.8(11)	^{104}Ru	893.1
441.2(8)	0.6(3)	^{99}Ru	441.2	910.1(6)	1.5(3)		
457.5(6)	1.0(3)			929.5(6)	1.7(3)		
468.74(15)	29(2)	^{102}Ru	943.8	939.6 *m*	5.4(6)		
475.00(10)	222(11)	^{102}Ru	475.1	982.2(6)	1.5(3)		
487.0 *m*	8.6(8)	^{99}Ru	575.8	999.4 *m*	3.0(5)		
530.1(5)	25(3)	^{104}Ru	888.0	1027.5(9)	0.7(3)		
534.9(6)	33(7)	^{104}Ru	893.2	1046.59 *c*	11.3(13)	^{102}Ru	1521.7
539.5(3)	100	^{100}Ru	539.5	1076.2(8)	1.0(3)		
545.2(3)	18(2)	^{101}Ru	545.2	1094.4(10)	1.7(5)		
558.2(8)	1.2(4)			1098.4(8)	5.1(12)		
575.8(4)	3.4(5)	^{99}Ru	575.8	1104.0 *m*	20(3)	^{102}Ru	1103.5
590.8(5)	6.1(10)	^{100}Ru	1130.3	1118.6(12)	0.8(3)		
608.8(5)	2.3(4)			1157.3(4)	5.2(6)		
617.5(2)	13.3(15)	^{99}Ru	617.6	1166.2 *m*	2.2(5)		
628.4(6)	37(7)	^{102}Ru	1103.5	1201.4 *m*	3.9(6)	^{100}Ru	1740.7

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1262.0(7)	3.8(6)			1675.6(16)	1.1(4)		
1267.9(10)	1.5(5)			1700.0 *m*	1.5(4)		
1325.7(7)	1.5(3)			1764.3(19)	1.0(4)		
1342.6(5)	4.5(5)			1775.5(17)	1.8(4)		
1362.0(4)	5.9(6)	^{100}Ru	1362.2	1867.7(17)	1.4(4)		
		^{102}Ru	1837.1	1880.8(17)	1.5(4)		
1380.8 *m*	2.1(5)			1907.2(15)	1.7(4)		
1396.6(10)	1.3(4)			1972.7(17)	1.3(4)		
1414.7(18)	0.7(3)	^{98}Ru	1414.4	1995.8(17)	1.9(4)		
1452.9(18)	0.7(3)			2016.2(18)	1.1(4)		
1513.6 *m*	2.2(6)			2042.8(18)	1.3(4)		
1522.2(14)	1.3(4)			2067.3(20)	1.1(4)		
1561.0 *m*	3.7(7)			2095 *m*	2.0(6)		
1568.8(9)	2.7(7)			2122.8(18)	1.2(4)		
1581.5(20)	0.7(3)			2189(2)	2.0(6)		
1594.6(12)	1.5(4)			2240(3)	0.8(4)		
1612.3 *m*	3.7(5)			2435(3)	1.5(5)		
1627.2(9)	2.9(4)						

Level schemes of ^{96}Ru [71Le, 71Do1], ^{98}Ru [71Le], ^{99}Ru [74Er, 74An1], ^{100}Ru [69Be], ^{101}Ru [74Er, 74Ba, 72Co, 71Le, 71Si], ^{102}Ru [70Si, 69Ge] and ^{104}Ru [68Mc, 65Ro, 76Sa]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{96}Ru	832.5(3)	832.3	2+	832.5	21	0	0+	<21
	—	1477	(2+)	—	—	—	—	—
	—	1518.9	4+	686.5	<15.0	832.5	2+	<15
^{98}Ru	652.41 *c*	652.41	2+	652.41	8.4	0	0+	6.4
	1398.4(8)	1398.0	4+	746.0	1.2	652.4	2+	1.2
	1414.4(12)	1414.9	2+	1414.7	0.7	0	0+	1.5
				761.8	0.8	652.4	2+	
^{99}Ru	—	89.75	3/2+	—	—	—	—	—
	322.4(2)	322.45	5/2+	322.4	11.9	0	5/2+	12
				233.1	<1.7	89.8	3/2+	
	340.79(15)	340.4	7/2+	340.79	27	0	5/2+	26
	441.2(8)	442.0	3/2+	441.2	0.6	0	5/2+	<6.6
				351.3	<6	89.8	3/2+	
	575.8(4)	576.2	(3/2, 5/2)+	575.8	3.4	0	5/2+	<12
				487.0	<8.6	89.8	3/2+	
	617.6(2)	618.0	(7/2+)	617.5	13.3	0	5/2+	15
				277.3	1.5	340.8	7/2+	
	719.8(2)	719.2	(9/2+)	719.8	19.3	0	5/2+	19
	734.3(2)	734.2?	—	734.3	7.4	0	5/2+	7.4
^{100}Ru	539.5(3)	539.59	2+	539.5	100	0	0+	>67
	1130.3(6)	1130.42	0+	590.8	6.1	539.5	2+	6.1
	—	1226.5	4+	686.5	<15.0	539.5	2+	<15
	1362.4(4)	1362.1	2+	1362.0	<5.9	0	0+	<14
				822.9	8.3	539.5	2+	
	—	1740.7	(0+)	1201.4	<3.9	539.5	2+	<3.9
^{101}Ru	127.22 *c*	127.22	3/2+	127.22	88	0	5/2+	38
•	306.81 *c*	306.81	7/2+	306.81	50	0	5/2+	39
	311.22(16)	311.2	5/2+	311.3	4.3	0	5/2+	40
				184.00	36	127.2	3/2+	
	324.9(4)	325.0	1/2+	197.7	5.3	127.2	3/2+	4.1*
	—	344.1	—	—	—	—	—	—
	422.1(2)	422.0	3/2+	422.2	3.5	0	5/2+	16*
				294.9	9.0	127.2	3/2+	
	461.6(8)	462.3	[1/2+]	136.7	2.2	324.9	1/2+	3.7*
	527.26(19)	526.8	11/2−	220.45	9.7	306.8	7/2+	9.7
	545.2(3)	544.95	7/2+	545.2	18	0	5/2+	19
				238.4	0.7	306.8	7/2+	
				233.1	<1.7	311.2	5/2+	
^{102}Ru	475.09(10)	474.9	2+	475.09	222	0	0+	109
	943.83(18)	943.7	0+	468.74	29	475.1	2+	26
	1103.5(6)	1103.2	2+	1104.0	<20	0	0+	<53
				628.4	37	475.1	2+	
	1106.4(6)	1106.6	4+	631.3	30	475.1	2+	28
	1521.68(16)	1521.9	3+	1046.59	11.3	475.1	2+	15
				418.5	4.0	1103.5	2+	
	1581.0(6)	1580.8	2+	637.2	2.9	943.8	0+	5.8*
	—	1799.0	(3)4+	—	—	—	—	—
	—	1837.1	0+	1362.0	<5.9	475.1	2+	<5.9
	1873.0(10)	1873.2	5+(6)	766.6	1.6	1106.4	4+	1.6
^{104}Ru	357.92(12)	357.99	2+	357.90	140	0	0+	70
	888.0(5)	888.5	4+	530.1	25	357.9	2+	25
	893.1(3)	893.0	2+	893.2	10.8	0	0+	44
				534.9	33	357.9	2+	
	—	988.1	(0+)	—	—	—	—	—
	1242.2(2)	1242.3	—	884.3	11.5	357.9	2+	11.5



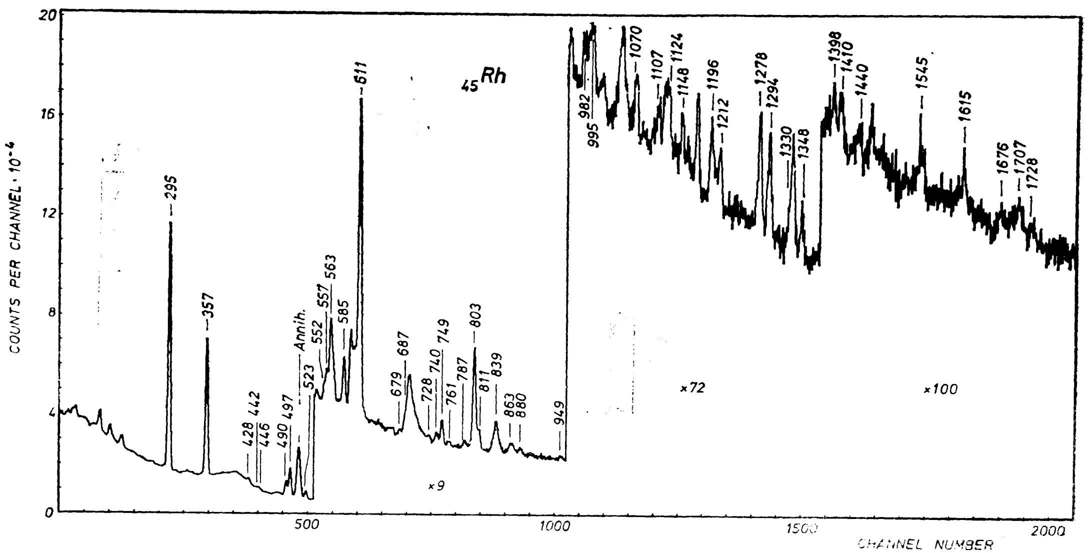


E_γ	I_γ	E_i	E_γ	I_γ	E_i
295.02(10)	279(18)	295.0	863.0(8)	4.0(10)	
357.45(10)	192(13)	357.4	880.1(6)	3.6(6)	880.3
427.7(4)	5.5(6)	(1035.3)	948.7(10)	2.6(6)	
442.2(8)	2.0(6)		982.4(10)	2.5(6)	1277.5
446.2(8)	2.4(6)	803.1	995.1 *m*	3.5(8)	
490.4(2)	26(2)	847.8	1069.8(7)	3.3(5)	
497.0(2)	53(4)	536.7	1107.3(8)	2.7(6)	1106.8
523.1(2)	14.4(10)	880.3	1124.5(8)	3.7(7)	
552.1(8)	3.1(9)	847.8	1147.9(8)	2.5(5)	
556.8(8)	5.9(15)	649.8	1196.1(6)	4.3(8)	
562.8(6)	16(3)	920.2	1211.6(8)	3.9(6)	1251.4
585.3(2)	12.2(8)	880.3	1277.6(5)	7.9(8)	1277.5
611.1 *m*	100	649.8	1293.7(12)	4.5(12)	
		651.8	1329.5(10)	4.3(10)	
678.9(8)	1.0(4)		1347.8(8)	2.9(6)	
687.3(8)	5.5(14)		1398.5(10)	2.5(6)	1398.5
728.2(7)	1.4(4)		1410.4(10)	3.1(6)	
740.4(6)	3.9(6)	1277.5	1440(2)	1.4(6)	1439.5
749.4(3)	7.9(10)	1106.8	1544.7 *m*	3.2(7)	
760.7(9)	1.7(5)		1615.0(12)	2.3(6)	
787.2(6)	2.0(5)		1676(2)	1.1(6)	
803.0(4)	34(3)	803.1	1706.7(18)	1.8(7)	
811.2(6)	6.7(10)	1106.8	1728(2)	1.6(7)	
839.4(6)	9(3)	1196.8			

Level scheme of ^{103}Rh [75Re, 70Pe]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	39.750	7/2+	—	—	—	—	—
—	93.035	9/2+	—	—	—	—	—
295.02(10)	294.98	3/2−	295.02	279	0	1/2−	220*
357.45(10)	357.46	5/2−	357.45	192	0	1/2−	134*
536.8(2)	536.84	5/2+	497.0	53	39.8	7/2+	49
—	607.63	7/2+	—	—	—	—	—
649.8(8)	650.09	5/2+	611.1	<100	39.8	7/2+	~46*
			556.8	5.9	93.0	9/2+	
—	651.80	3/2+	611.1	<100	39.8	7/2+	~60*
803.1(4)	803.1	1/2−	803.0	34	0	1/2−	51*
			446.2	2.4	357.4	5/2−	
847.8(2)	847.5	7/2−	552.1	3.1	295.0	3/2−	29
			490.4	26	357.4	5/2−	
880.4(2)	880.6	5/2−	880.1	3.6	0	1/2−	30

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
			585.3	12.2	295.0	3/2-	
			523.1	14.4	357.4	5/2-	
920.2(6)	920.0	9/2-	562.8	16	357.4	5/2-	16
1035.3(4)?	1034.9?	(9/2+)	427.7	5.5	607.6	7/2+	5.5
1106.8(3)	1107.2	5/2-	1107.3	2.7	0	1/2-	17
			811.2	6.7	295.0	3/2-	
			749.4	7.9	357.4	5/2-	
1196.8(6)	1197.1?	(5/2-)	839.4	9	357.4	5/2-	9
1251.4(8)	1251.9?	(5/2-)	1211.6	3.9	39.8	7/2+	8*
1277.5(5)	1277.2	3/2-	1277.6	7.9	0	1/2-	14
			982.4	2.5	295.0	3/2-	
			740.4	3.9	536.7	5/2+	
—	1293.7?	(9/2-)	—	—	—	—	—
1398.5(10)	1400	—	1398.5	2.5	0	1/2-	2.5
1440(2)	1438	—	1440	1.4	0	1/2-	1.4

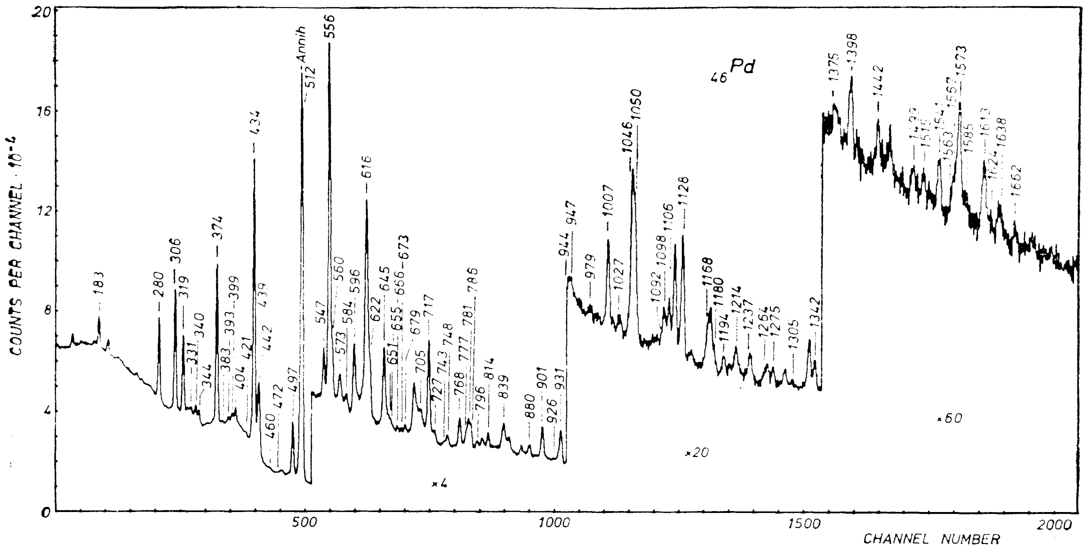


Palladium

E_γ	I_γ	^AZ	E_i
182.66(15)	23.8(15)	^{105}Pd	489.1
280.46(10)	65(3)	^{105}Pd	280.4
306.30(10)	99(4)	^{105}Pd	306.2
319.24(10)	66(5)	^{105}Pd	319.2
331.4(3)	10.6(25)	^{105}Pd	650.6
339.5(2)	9.9(5)	^{155}Pd	781.6
344.2(2)	8.0(4)	^{105}Pd	344.5
373.88(10)	157(7)	^{110}Pd	373.8
383.1(3)	3.2(3)		
393.1(3)	8.0(7)	^{105}Pd	672.9
398.8(4)	6.7(7)	^{110}Pd	1212.4
404.3(3)	14.7(10)	^{108}Pd	1335.2
420.9(6)	3.8(6)	^{105}Pd	727.1
433.96 *c*	331(10)	^{108}Pd	433.9
439.1(8)	24(8)	^{110}Pd	813.5
441.9(3)	73(8)	^{105}Pd	442.2
459.8(6)	2.0(5)	^{104}Pd	1793.8
471.9(6)	1.4(3)	^{106}Pd	2472.6
497.22(10)	64(4)	^{108}Pd	931.2
511.8(6)	390(80)	^{106}Pd	511.8
547.1(2)	10.6(5)	^{110}Pd	920.8
555.74(10)	100	^{102}Pd 8%	556.4
		^{104}Pd 92%	555.7
560.3(4)	15(2)	^{105}Pd	560.6
573.1 *m*	13.5(8)	^{110}Pd	946.7
583.5(4)	5.7(6)	^{110}Pd	1398.0
596.3(4)	4.9(10)		
615.61(15)	103(5)	^{106}Pd	1127.9
		^{108}Pd	1048.1
621.8(3)	17(3)	^{106}Pd	1133.6
644.71(15)	32(2)	^{105}Pd	644.7
650.7(3)	4.7(6)	^{105}Pd	650.6
655.3 *m*	3.1(5)	^{110}Pd	1470.1
666.1(3)	1.4(2)	^{105}Pd	
673.2(4)	1.1(2)	^{105}Pd	672.9
679.4(3)	2.8(4)	^{106}Pd	2242.4
704.8(8)	2.8(6)	^{105}Pd	1011.3
717.24(15)	39(4)	^{106}Pd	1229.0
726.6(4)	3.3(5)	^{105}Pd	727.1
742.9(8)	1.2(3)		
747.9(3)	4.7(4)	^{106}Pd	2305.5
767.78(15)	12.6(5)	^{104}Pd	1323.5
777.4(6)	3.7(6)	^{104}Pd	1333.7
781.4(4)	11.0(14)	^{106}Pd	1909.4
		^{105}Pd	781.6

E_γ	I_γ	^AZ	E_i
785.6(4)	9.2(8)	^{104}Pd	1341.6
796.0(5)	2.7(3)	^{110}Pd	1170.6
813.5(2)	5.9(3)	^{110}Pd	813.5
838.8 *m*	8(2)	^{110}Pd	1212.4
		^{110}Pd	1214.5
880.2(3)	5.5(4)	^{108}Pd	1314.2
901.26(15)	15.5(5)	^{108}Pd	1335.2
926.2(6)	1.9(3)	^{104}Pd	2249.4
931.00(15)	15.9(6)	^{108}Pd	931.2
943.8(8)	1.3(3)		
947.2(8)	1.3(3)	^{108}Pd	2282.5
978.6(8)	1.3(3)	^{104}Pd	2799.1
1007.15(15)	11.4(8)	^{108}Pd	1441.3
1026.8(8)	1.3(3)	^{108}Pd	
1045.7(4)	22(3)	^{106}Pd	1557.7
1050.5(4)	21(3)	^{106}Pd	1562.3
1092.3(8)	1.2(3)		
1097.9 *m*	6.3(5)	^{110}Pd	1470.1
1106.3(4)	3.1(4)	^{108}Pd	1540.0
1128.1(2)	18(2)	^{106}Pd	1127.9
1168.4(4)	6.4(5)	^{104}Pd	
		^{106}Pd	
1179.5(8)	1.3(3)	^{104}Pd	2521.1
1194.5(3)	2.9(4)	^{106}Pd	1706.1
1214.5 *m*	5.5(5)	^{110}Pd	1214.5
1237.4 *m*	5.3(5)	^{104}Pd	1793.8
1263.9 *m*	5.4(8)	^{104}Pd	1820.8
1274.6(4)	2.4(4)	(^{105}Pd)	
1305.4(8)	0.59(30)	^{105}Pd	1650.5
			1866.1
1341.7(2)	5.7(5)	^{104}Pd	1341.6
1374.7 *m*	3.3(5)	^{106}Pd	2500.1
1397.6(2)	4.8(5)	^{106}Pd	1909.4
1441.7 *m*	3.3(5)	^{108}Pd	1441.3
1498.9 *m*	1.8(3)	^{106}Pd	2626.4
1515.2(6)	1.5(3)	^{110}Pd	1889.7
1540.7(4)	3.0(3)	^{108}Pd	1540.0
1562.8(8)	1.3(3)	^{106}Pd	1562.3
1566.8(8)	1.6(3)	^{106}Pd	2079.5
1572.8(4)	7.6(5)	^{106}Pd	2084.2
1585.0(8)	1.2(3)		
1612.9(4)	5.2(5)	^{108}Pd	2046.6
1624.2(8)	0.60(20)		
1637.6(5)	1.7(3)	^{104}Pd	2193.2
1662.5 *m*	1.5(3)	^{110}Pd	2037.6
1765.6 *m*	1.7(4)	^{106}Pd	
		^{110}Pd	2140.5

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
1783.7(5)	2.5(4)	^{108}Pd	2218.1	1909.1 *m*	2.4(3)	^{106}Pd	1909.4
1795.7(5)	1.2(3)	^{106}Pd	2308.8	1988.3(6)	1.5(3)	^{106}Pd	2500.1
1848.3 *m*	1.3(3)	^{108}Pd	2281.2	2284.8 *m*	2.5(4)	^{108}Pd	2720.0



Palladium-104

$^{104}_{46}$Pd

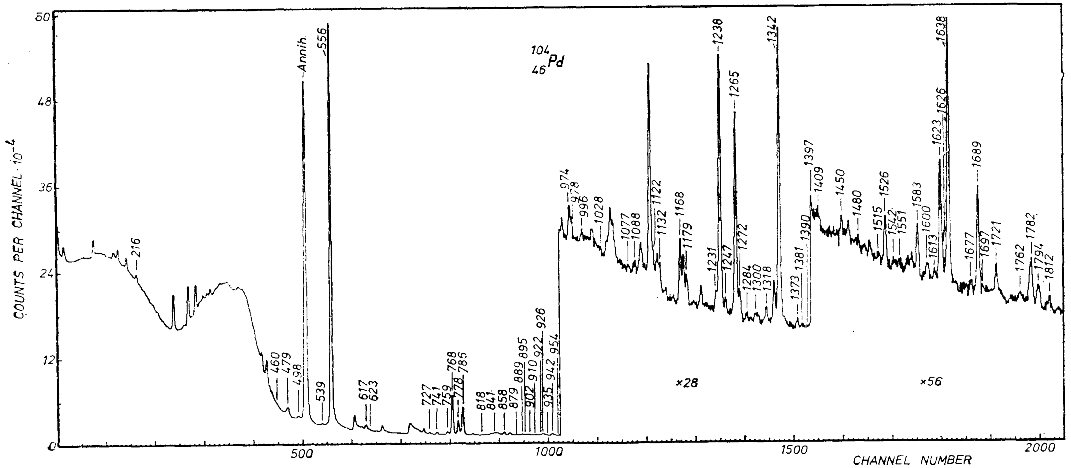
E_γ	I_γ	E_i	E_γ	I_γ	E_i
215.6(2)	0.7(2)		777.93(10)	4.2(2)	1333.7
460.0(5)	0.16(3)	1793.8	785.81(10)	9.2(5)	1341.7
478.8(3)	1.4(2)	1820.8	818.5(9)	0.059(15)	
497.8(10)	0.07(4)	1820.8	841.0(7)	0.11(3)	2181.6
539.4(5)	0.15(2)		858.01(15)	0.80(7)	2181.6
555.74(7)	100	555.7	879.3(8)	0.067(16)	
617 *m*	0.32(10)	1941.2	889.4(6)	0.12(4)	
623 *m*	0.14(4)	2445.2	895.1(10)	0.05(2)	
727.4(5)	0.16(4)		902.4(6)	0.13(3)	2244.7
740.62(12)	0.79(7)	2082.2	910.2(4)	0.22(4)	2992.4
758.69(12)	0.84(7)	2082.2	922.5(8)	0.13(5)	2265.3
767.77(10)	12.1(6)	1323.5	925.9(2)	0.65(9)	2249.4

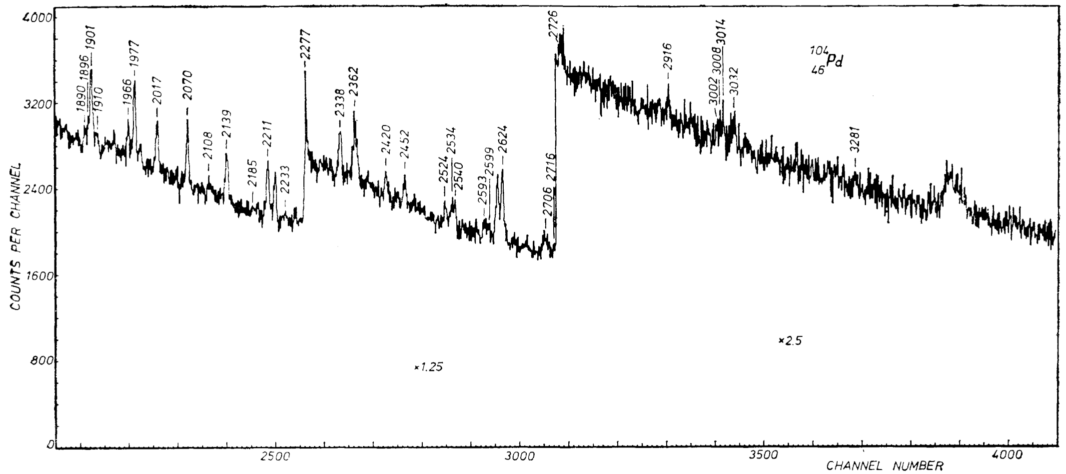
E_γ	I_γ	E_i	E_γ	I_γ	E_i
934.8(9)	0.062(15)	2276.7	1688.92(14)	1.38(14)	2244.7
941.78(15)	0.74(6)	2?65.3	1696.8(6)	0.13(3)	3031.2
953.9(7)	0.076(16)	3135.8	1720.7(3)	0.35(4)	2276.7
974.4(2)	0.40(5)		1762 *m*	0.18(3)	3084
978.3(4)	0.22(3)	2799.1	1782 *m*	0.59(10)	2338.3
996.0(7)	0.10(3)	2338.3	1794 *m*	0.48(6)	1793.8
1028.1(9)	0.09(3)	2362.4			2351.6
1077.2(10)	0.08(3)		1812.5(7)	0.12(3)	3135.8
1088.1(5)	0.14(3)		1889.7(8)	0.10(3)	
1121.6(6)	0.30(10)		1895.8(6)	0.13(3)	
1132.1(3)	0.38(4)	2465.8	1900.8(2)	0.55(6)	2456.6
1167.56(13)	1.00(7)		1909.8(10)	0.08(3)	2465.8
1179.3(2)	0.49(5)	2521.1	1966.2(5)	0.16(3)	2521.1
1230.7(2)	0.41(8)	2572.5	1977.4(3)	0.52(6)	2533.1
1238.05(9)	4.9(3)	1793.8	2016.9(3)	0.33(4)	2572.5
		1792.9	2070.0(3)	0.43(5)	2625.7
1247.4(5)	0.24(5)	2570.9	2108.5(7)	0.14(3)	
1265.09(10)	4.0(3)	1820.8	2138.7(3)	0.35(4)	2694.4
1271.69(16)	0.59(5)	2613.3	2184.7(14)	0.05(2)	
1284.1(4)	0.18(3)	3104.9	2210.6(3)	0.43(5)	2766.3
1300.0(8)	0.10(3)	2641.7	2232.8(11)	0.07(2)	
1318.2(3)	0.30(3)	2641.7	2276.9(3)	0.46(5)	2276.7
1341.73(9)	6.0(4)	1341.7	2338.3(3)	0.31(4)	2338.3
1372.6(9)	0.09(3)	2714.5	2362.4(4)	0.31(6)	2362.4; (2917.9)
1381.4(8)	0.10(3)	2714.5	2420 *m*	0.21(3)	2975
1390.1(11)	0.07(3)	2714.5	2452.2(7)	0.14(3)	3007.7
1397 *m*	0.26(3)		2523.6(7)	0.12(3)	3079.3
1409 *m*	0.26(3)		2534.4(7)	0.14(3)	
1450.5(4)	0.19(3)	2774.0	2540.4(6)	0.15(3)	3096.1
1480.4(10)	0.08(3)		2593.1(6)	0.15(4)	
1514.9(10)	0.08(3)		2598.8(10)	0.10(4)	
1526.4(2)	0.60(5)	2082.2	2623.6(4)	0.54(6)	2623.6
1542 *m*	0.16(3)		2705.5(7)	0.13(3)	
1551.0(7)	0.11(3)	2874.5	2715.8(6)	0.17(4)	
1583.0(2)	0.77(7)	2138.7	2726.1(11)	0.09(3)	3281.5
1599.9(4)	0.18(3)	2923.4	2916.2(10)	0.11(3)	
1612.6(14)	0.04(2)		3001.6(12)	0.08(3)	3000.3
1622.8(2)	1.36(14)	2178.5	3007.6(10)	0.10(3)	3007.7
1625.9(4)	0.34(6)	2181.6	3013.5(9)	0.12(3)	
1637.50(14)	3.2(3)	2193.2	3032.0(8)	0.14(4)	3031.2
1676.6(5)	0.15(3)	3000.3	3281.3(11)	0.07(3)	3281.5

Level scheme of ^{104}Pd [71Do2, 69Di, 71Mu, 72Si1]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
555.74(10)	555.81	2+	555.74	100	0	0+	54
1323.51(15)	1323.59	4+	767.77	12.1	555.7	2+	7.1
1333.67(15)	1333.58	0+	777.93	4.2	555.7	2+	3.3
1341.66(9)	1341.68	2+	1341.73	6.0	0	0+	10.9
			785.81	9.2	555.7	2+	
—	1792.86	0+	1238.05	⩾0.7	555.7	2+	⩾0.7
1793.75(15)	1793.83	1+, 2+	1794	⩽0.48	0	0+	⩽4.3*
			1238.05	⩽4.2	555.7	2+	
			460.0	0.16	1333.7	0+	
1820.83(15)	1820.65	3+	1265.09	4.0	555.7	2+	5.1
			497.8	0.07	1323.5	4+	
			478.8	1.4	1341.7	2+	
—	1941.2	(4+, 5+, 6+)	617	<0.32	1323.5	4+	<0.3
—	1946.4	(4+, 5+, 6+)	—	—	—	—	—
2082.2(2)	2082.39	4+	1526.4	0.60	555.7	2+	2.0
			758.69	0.84	1323.5	4+	
			740.62	0.79	1341.7	2+	
2138.7(2)	2135	—	1583.0	0.77	555.7	2+	0.77
2178.5(2)	—	(3)+	1622.8	1.36	555.7	2+	1.36
2181.6(2)	2181.58	4+	1625.9	0.34	555.7	2+	1.2
			858.01	0.80	1323.5	4+	
			841.0	0.11	1341.7	2+	
2193.24(17)	2191.8	3−	1637.50	3.2	555.7	2+	3.2
2244.66(17)	2244.9	2+, 3+	1688.92	1.38	555.7	2+	1.38
2249.4(2)	2249.0	6+	925.9	0.65	1323.5	4+	0.65
2265.3(2)	2265.31	4+	941.78	0.74	1323.5	4+	0.87
			922.5	0.13	1341.7	2+	
2276.7(3)	2276.1	1+, 2+	2276.9	0.46	0	0+	0.87
			1720.7	0.35	555.7	2+	
			934.8	0.062	1341.7	2+	
2338.3(3)	2337.9	1+, 2+	2338.3	0.31	0	0+	<1.0
			1782	<0.59	555.7	2+	
			996.0	0.10	1341.7	2+	
—	2352	—	—	—	—	—	—
2362.4(4)	2362.4	1+, 2+	2362.4	0.31	0	0+	0.40
			1028.1	0.09	1333.7	0+	
—	2445.2	4+	623	<0.14	1941.2	(4, 5, 6)+	<0.14
2456.6(4)	2454	1+—4+	1900.8	0.55	555.7	2+	0.55
2465.8(4)	2465	1+, 2+	1909.8	0.08	555.7	2+	0.46
			1132.1	0.38	1333.7	0+	
2521.1(3)	2521	—	1966.2	0.16	555.7	2+	0.65
			1179.3	0.49	1341.7	2+	
2533.1(3)	2532.9	2+, 3+	1977.4	0.52	555.7	2+	0.52
2570.9(5)	2570.3	4+	1247.4	0.24	1323.5	4+	0.24
2572.5(2)	—	—	2016.9	0.33	555.7	2+	0.74
			1230.7	0.41	1341.7	2+	
2613.3(2)	2613	2+, 3+	1271.69	0.59	1341.7	2+	0.59
2623.6(4)	2621.4	—	2623.6	0.54	0	0+	0.54

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2625.7(3)	—	—	2070.0	0.43	555.7	2+	0.43
2641.7(4)	2640	—	1318.2	0.30	1323.5	4+	0.40
			1300.0	0.10	1341.7	2+	
2694.4(3)	2694.4	2+, 3+	2138.7	0.35	555.7	2+	0.35
2714.5(8)	2713	—	1390.1	0.07	1323.5	4+	0.26
			1381.4	0.10	1333.7	0+	
			1372.6	0.09	1341.7	2+	
2766.3(3)	—	—	2210.6	0.43	555.7	2+	0.43
2774.0(5)	2773.4	4+	1450.5	0.19	1323.5	4+	0.19
—	2784	1+—5+	—	—	—	—	—
2799.1(5)	2799	1+—5+	978.3	0.22	1820.8	3+	0.22
—	2810.0	2+, 3+	—	—	—	—	—
2874.5(7)	2874.8	4+, 5+	1551.0	0.11	1323.5	4+	0.11
2917.9?	2917.5	2, 3+	2362.4?	0.31	555.7	2+	0.31
2923.4(5)	2922.9	4, 5+	1599.9	0.18	1323.5	4+	0.18
—	2933	0+—5+	—	—	—	—	—
—	2974.8	2+, 3+	2420	<0.21	555.7	2+	<0.21
2992.4(6)	2991	2+, 3+	910.2	0.22	2082.2	4+	0.22
3000.3(6)	3000	(2+)	3001.6	0.08	0	0+	0.23
			1676.6	0.15	1323.5	4+	
3007.7(8)	3006?	—	3007.6	0.10	0	0+	0.24
			2452.2	0.14	555.7	2+	
—	3014	—	—	—	—	—	—
—	3020	—	—	—	—	—	—
3031.2(8)	3033.5	1+, 2+	3032.0	0.14	0	0+	0.27
			1696.8	0.13	1333.7	0+	
3079.3(7)	3077.7	2+, 3+	2523.6	0.12	555.7	2+	0.12
—	3084	4+, 5+	1762	<0.18	1323.5	4+	<0.18
3096.1(7)	3092	2+, 3+	2540.4	0.15	555.7	2+	0.15
3104.9(5)	3104.0	4+	1782	<0.59	1323.5	4+	<0.77
			1284.1	0.18	1820.8	3+	
—	3111.8	6+	—	—	—	—	—
—	3115.2	4+, 5+	—	—	—	—	—
3135.8(8)	3136.2	4+	1812.5	0.12	1323.5	4+	0.2
			953.9	0.076	2181.6	4+	
—	3156.7	6+	—	—	—	—	—
—	3182.1	2+, 3+	—	—	—	—	—
—	3213.6	2+	—	—	—	—	—
3281.5(10)	3284.5	2+, 3+	3281.3	0.07	0	0+	0.16
			2726.1	0.09	555.7	2+	





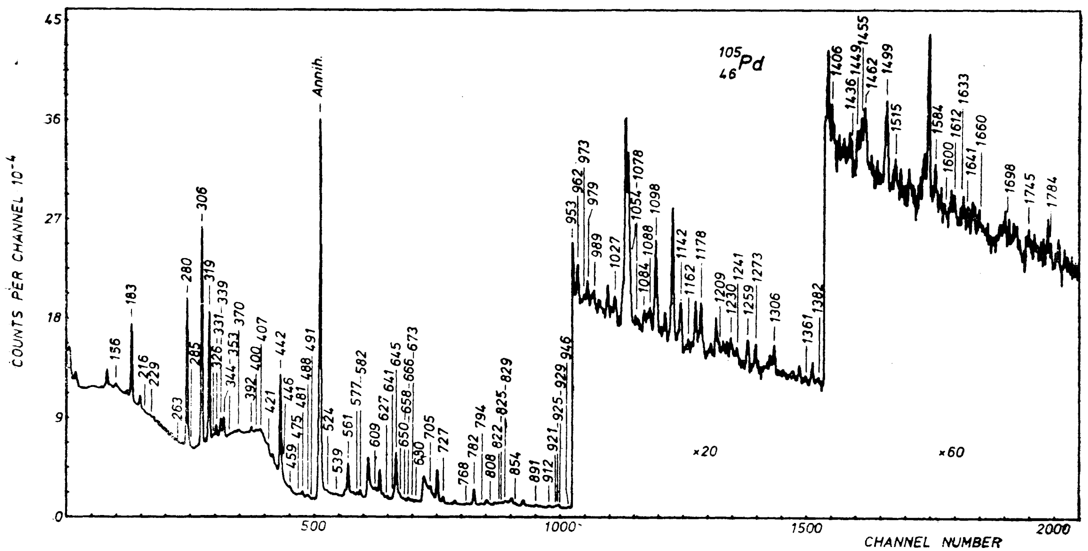
Palladium-105

E_γ	I_γ	E_i	E_γ	I_γ	E_i
155.6(2)	1.4(2)	644.7	825.1(3)	0.57(10)	
182.85(10)	27(3)	489.1	829.3(3)	1.30(10)	
216.3(4)	0.87(15)	560.6	853.8(4)	0.53(8)	
228.9(4)	0.9(3)	(1011.4)	890.7(4)	0.91(10)	
263.3(5)	0.58(12)	1405.5	912.5(4)	0.76(10)	
280.38(10)	68(2)	280.4	921.3(4)	0.78(10)	1201.6
285.0(6)	2.2(4)	727.1	925.3(3)	1.10(10)	
		929.1	928.9(3)	1.70(11)	929.1
306.25 *c*	100	306.2	945.9(4)	0.67(10)	
319.18(10)	61(2)	319.2	952.6(3)	1.30(10)	1259.1
326.5(3)	1.30(10)	644.7	961.6(8)	0.30(6)	961.6
		672.9	973.3(8)	0.24(6)	
331.46(13)	6.3(3)	650.6	979.0(4)	0.64(10)	1259.1
339.36(12)	9.7(3)	781.6	988.6(7)	0.67(10)	(1477.7)
344.49(12)	10.0(3)	344.5	1026.7(4)	0.57(10)	
353.1(6)	0.80(10)	672.9	1054.1(4)	0.83(10)	
370.3(3)	2.00(12)	650.6	1078.0(5)	0.47(10)	1521.2
392.5(2)	3.4(2)	672.9	1084.0(8)	0.30(7)	
400.4(4)	1.50(10)	(961.6)	1088.1(4)	0.61(10)	1088.3
406.9(3)	2.10(12)	727.1	1098.5 *m*	2.30(12)	1098.4
420.8(2)	4.1(2)	727.1			1405.5
442.23(10)	57(2)	442.2	1142.2(2)	1.50(11)	1142.1
446.0(10)	2.5(6)	727.1	1162.1(8)	0.25(6)	
459.0(5)	1.10(10)	1600.4	1177.7(3)	1.10(10)	(1177.7)
475.0(4)	1.30(10)	781.6	1208.7(8)	0.27(7)	1650.5
480.8(2)	3.50(16)	969.9	1230.4(7)	0.46(10)	
487.7(5)	1.40(10)	929.1	1240.8(7)	0.29(7)	1521.2
491.2(5)	1.40(10)	1142.1	1259.2(3)	1.10(10)	1259.1
523.6(7)	0.45(8)	(1011.4)	1273.0(4)	0.78(11)	
539.1(7)	0.48(8)		1305.5(4)	0.80(11)	1650.5
560.57(12)	13.1(4)	560.6	1360.7(8)	0.24(6)	
576.7(3)	0.74(10)		1382.4(16)	0.13(7)	
582.1(2)	2.40(12)	(1142.1)	1405.5(7)	0.31(8)	1405.5
608.9(4)	0.60(10)	929.1	1436.4(16)	0.17(7)	
627.0(4)	0.55(10)		1449.4(7)	0.33(8)	
640.8(5)	1.70(11)	1201.6	1455.3(5)	0.57(11)	
644.68(12)	18.5(6)	644.7	1461.9 *m*	0.63(11)	
650.4(3)	4.8(2)	650.6	1499.2(4)	1.00(11)	
658.0(3)	0.94(10)		1514.7(8)	0.46(11)	
666.3(2)	1.60(10)		1583.9(6)	0.39(10)	
672.8(3)	0.70(10)	672.9	1600.4(16)	0.14(7)	1600.4
680.0(6)	0.25(6)	961.6	1611.8(8)	0.50(11)	
705.2(2)	1.40(10)	1011.4	1633.0(14)	0.19(7)	
727.2(2)	2.40(18)	727.1	1641.2(20)	0.12(6)	
768.4(5)	0.12(6)	(1074.4)	1660.0(10)	0.20(7)	
781.5(2)	7.5(2)	781.6	1697.5(15)	0.16(7)	
793.8(5)	0.30(6)	(1074.4)	1745.2(7)	0.56(11)	
808.2(5)	0.78(10)	1088.2	1784.3(16)	0.15(7)	
821.7(4)	1.20(10)	(1102.1)	1935.0(16)	0.16(7)	

Level scheme of ^{105}Pd [75Go3, 76Av, 74Be]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
280.38(10)	280.51	3/2+	280.38	68	0	5/2+	50*
306.25 c	306.25	7/2+	306.25	100	0	5/2+	52*
319.18(10)	319.18	5/2+	319.18	61	0	5/2+	51
344.49(12)	344.52	1/2+	344.49	10.0	0	5/2+	7.5
442.23(10)	442.23	7/2+	442.23	57	0	5/2+	44
489.11(15)	489.11	(11/2−)	182.85	27	306.2	7/2+	31*
560.57(12)	560.75	(3/2+, 5/2+)	560.57	13.1	0	5/2+	8.2*
			216.3	0.87	344.5	1/2+	
644.68(12)	644.50	(7/2−)	644.68	18.5	0	5/2−	20*
			326.5	<1.30	319.2	5/2+	
			155.6	1.4	489.1	11/2−	
650.64(15)	650.69	3/2+	650.4	4.8	0	5/2+	12
			370.3	2.0	280.4	3/2+	
			331.46	6.3	319.2	5/2+	
672.9(2)	673.18	1/2+ (3/2+)	672.8	0.70	0	5/2+	4.8*
			392.5	3.4	280.4	3/2+	
			353.1	0.80	319.2	5/2+	
			326.5	<1.30	344.5	1/2+	
—	694	(7/2+, 9/2+)	—	—	—	—	—
727.1(2)	727.17	5/2+	727.2	2.40	0	5/2+	12*
			446.0	2.5	280.4	3/2+	
			420.8	4.1	306.2	7/2+	
			406.9	2.10	319.2	5/2+	
			285.0	<2.2	442.2	7/2+	
781.58(16)	781.32	9/2+	781.5	7.5	0	5/2+	18
			475.0	1.30	306.2	7/2+	
			339.36	9.7	442.2	7/2+	
—	787	(1/2+)	—	—	—	—	—
929.1(3)	929.41	(5/2+)	928.9	1.70	0	5/2+	4.4*
			608.9	0.60	319.2	5/2+	
			487.7	1.40	442.2	7/2+	
			285.0	≤2.2	644.7	7/2−	
—	939	(1/2+)	—	—	—	—	—
961.6(6)	962.37	1/2+	961.6	0.30	0	5/2+	≤3.5*
			680.0	0.25	280.4	3/2+	
			400.4?	1.50	560.6	(3/2+, 5/2+)	
969.9(3)	970.1	(15/2−)	480.8	3.5	489.1	11/2−	3.5
1011.4(3)	1011.3	11/2+	705.2	1.40	306.2	7/2+	≤2.7
			523.6?	0.45	489.1	11/2−	
			228.9?	0.9	781.6	9/2+	
—	1072.2	(5/2+)	—	—	—	—	—
1074.4(5)?	1075	(1/2+)	793.8	0.30	280.4	3/2+	0.42
			768.4	0.12	306.2	7/2+	
1088.3(4)	1087.93	3/2−	1088.1	0.61	0	5/2+	2.5*
			808.2	0.78	280.4	3/2+	
—	1098.39	5/2+ (7/2+)	1098.5	≤2.30	0	5/2+	≤2.5*
1102.1(5)?	—	—	821.7	1.2	280.4	3/2+	1.2
1142.1(2)	1141	1/2+ (3/2+)	1142.2	1.50	0	5/2+	≤3.6

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
			582.1?	2.4	560.6	(3/2+, 5/2+)	
			491.2	1.40	650.6	3/2+	
1177.7(3)?	—	(1/2+)	1177.7	1.10	0	5/2+	1.1
1201.6(5)	1201	3/2+ (5/2+)	921.3	0.78	280.4	3/2+	2.5
			640.8	1.70	560.6	(3/2+, 5/2+)	
1259.1(3)	1263	(3/2+)	1259.2	1.10	0	5/2+	3.0
			979.0	0.64	280.4	3/2+	
			952.6	1.30	306.2	7/2+	
1405.5(7)	1402	3/2+ (5/2+)	1405.5	0.31	0	5/2+	>0.9
			1098.5	≤2.3	306.2	7/2+	
			263.3	0.58	1142.1	1/2+ (3/2+)	
1477.7(8)?	1479.4	11/2−	988.6	0.67	489.1	11/2−	0.7
1521.2(5)	1522	3/2+ (5/2+)	1240.8	0.29	280.4	3/2+	0.8
			1078.0	0.47	442.2	7/2+	
1600.4(16)	1602	3/2+ (5/2+)	1600.4	0.14	0	5/2+	1.2
			459.0	1.10	1142.1	1/2+ (3/2+)	
1650.5(5)	1652	3/2+ (5/2+)	1305.5	0.80	344.5	1/2+	1.1
			1208.7	0.27	442.2	7/2+	



Palladium-106

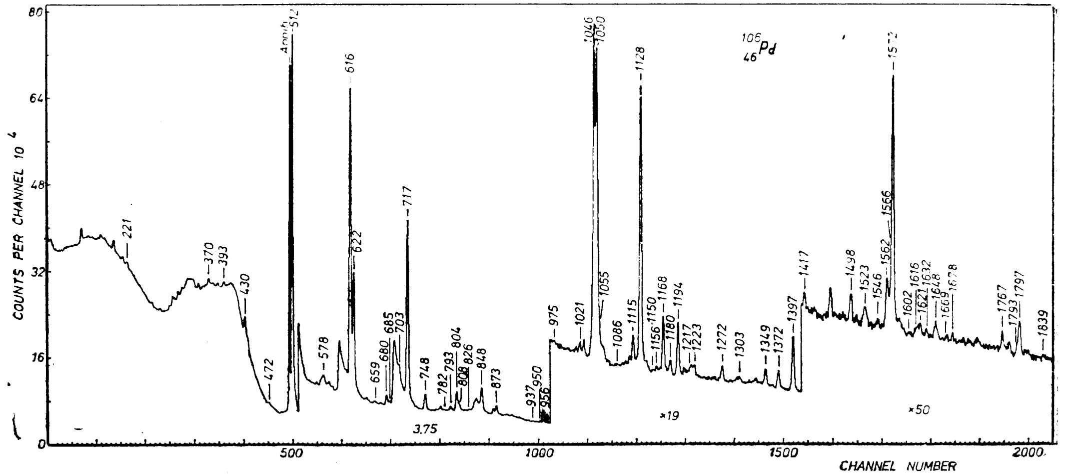
E_γ	I_γ	E_i	E_γ	I_γ	E_i
221.0(2)	0.23(2)	2305.5	1523.2(2)	0.28(3)	
370.0(2)	0.46(5)	1931.8	1546.3(6)	0.069(15)	
392.7(2)	0.48(5)		1562.4(2)	0.50(5)	1562.3
429.84(10)	3.14(19)	1557.7	1566.3(4)	0.30(8)	2078.1
471.5(2)	0.27(2)	2472.6	1572.39(10)	2.5(3)	2084.2
511.80(10)	100	511.8	1602.2(12)	0.020(10)	3161.1
578.1(2)	0.13(1)	1706.1	1616.4(6)	0.061(18)	3173.7
616.10(10)	14.9(8)	1127.9	1621.3(4)	0.090(17)	2850.3
621.84(10)	5.2(4)	1133.6	1631.7(6)	0.057(13)	2861.0
659.3(3)	0.10(2)	2591.1	1648.4 *m*	0.23(3)	2774.7
680.0(2)	0.57(8)	2242.4	1668.8(7)	0.058(13)	2897.8
685.0(3)	0.20(2)	2242.4	1678.4(7)	0.064(13)	
702.8(2)	0.42(5)	1931.8	1766.7(4)	0.20(3)	2278.5
717.19(10)	10.0(6)	1229.0	1792.8(7)	0.11(3)	
748.1(2)	0.93(2)	2305.5	1797.1(3)	0.39(5)	2308.8
781.6(5)	0.038(12)	1909.4	1838.6(10)	0.020(10)	2350.6
792.9(2)	0.25(4)	2350.6	1868.2(7)	0.069(13)	
803.9(2)	0.84(8)	1931.8	1889.7(4)	0.17(4)	2400.9
808.3(2)	0.37(4)	2366.0	1909.5(3)	0.46(5)	1909.4
825.6(4)	0.064(15)		1927.2(3)	0.31(4)	2439.4
847.5 *m*	0.79(24)	2076.1;	1973.1(10)	0.038(18)	2484.7
		2078.1	1988.3(3)	0.50(5)	2500.1
873.2(2)	0.58(6)	2001.1	2019.4(9)	0.051(12)	
937.3(4)	0.055(14)	2499.6	2034.3(9)	0.050(12)	
949.5(6)	0.024(10)		2045.1(9)	0.066(15)	3173.7
956.1(3)	0.17(3)	2084.2	2095.2(9)	0.057(14)	
975.0(6)	0.034(10)		2114.7(5)	0.13(2)	2626.4
1020.7(3)	0.18(3)	2578.4	2193.3(4)	0.15(2)	2705.5
1045.9(2)	5.2(4)	1557.7	2212.1(14)	0.030(14)	
1050.5(2)	4.7(4)	1562.3	2229.5(10)	0.056(14)	2740.9
1055.3(5)	0.41(10)	2284.3	2236.3(4)	0.17(2)	2748.1
1086.5(5)	0.047(13)	2649.0	2243.5(7)	0.056(20)	2242.4
1114.7(7)	0.30(10)	2242.4	2272.3(4)	0.108(17)	2784.1
1127.9(2)	4.9(4)	1127.9	2309.2(4)	0.089(15)	2308.8
1150.2(7)	0.038(15)	2278.5			2820.6
1156.3(4)	0.08(2)	2284.3	2315.9(7)	0.044(12)	
1168.2(2)	1.08(10)		2374.6(7)	0.051(13)	2886.4
1180.4(3)	0.25(3)	2308.8	2391.0(4)	0.099(16)	2902.8
1194.4(2)	0.94(10)	1706.1	2396.8(7)	0.066(15)	2908.6
1217.0(3)	0.19(4)	2774.7	2406.2(7)	0.051(12)	2918.0
1222.7(3)	0.24(5)	2350.6	2424.1(6)	0.076(15)	2935.9
1272.4(3)	0.33(4)	2400.9	2439.7(4)	0.112(19)	2439.4
1303.4(4)	0.11(3)	2861.0	2457.9(3)	0.27(3)	2969.7
1349.3(3)	0.36(4)	2578.4	2484.7(3)	0.48(5)	2484.7
1371.7(3)	0.37(4)	2499.6	2543.0(7)	0.051(13)	3054.8
1397.4(2)	1.32(13)	1909.4	2558.0(6)	0.081(15)	3069.8
1417.3(4)	0.11(2)		2571.3(6)	0.060(14)	3083.1
1498.4(2)	0.27(3)	2626.4			

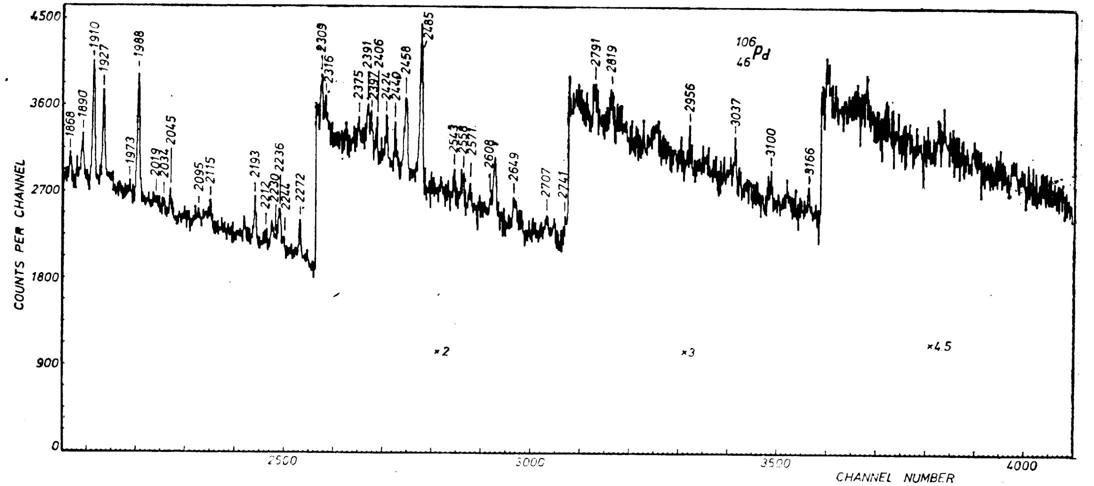
E_γ	I_γ	E_i	E_γ	I_γ	E_i
2608.1(10)	0.038(13)	3119.9	2819.2(7)	0.080(16)	2820.6
2649.3(5)	0.088(16)	3161.1	2956.5(7)	0.062(15)	
2706.6(7)	0.060(14)	2705.5	3036.6(10)	0.051(25)	3036.6
2740.9(5)	0.11(3)	2740.9	3100.0(10)	0.060(30)	
2790.7(5)	0.13(3)		3166.1(10)	0.036(14)	3166.2

Level scheme of ^{106}Pd [74Ah, 75Go1, 74Be1, 73Ma]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
511.80(10)	511.85	2+	511.80	100	0	0+	52
1127.90(15)	1128.02	2+	1127.9	5.5	0	0+	13.3
			616.10	14.9	511.8	2+	
1133.64(15)	1133.6	0+	621.84	5.2	511.8	2+	5.2
1228.99(15)	1229.20	4+	717.19	10.0	511.8	2+	7.2
1557.74(17)	1557.67	3+	1045.9	5.2	511.8	2+	6.0
			429.84	3.14	1127.9	2+	
1562.3(2)	1562.1	2+	1562.4	0.50	0	0+	4.1
			1050.5	4.7	511.8	2+	
1706.1(2)	1706.1	0+	1194.4	0.94	511.8	0+	1.1
			578.1	0.13	1127.9	2+	
1909.4(2)	1910.4	2+	1909.5	0.46	0	0+	1.8
			1397.4	1.32	511.8	2+	
			781.6	0.038	1127.9	2+	
1931.8(2)	1932.32	4+	803.9	0.84	1127.9	2+	1.6
			702.8	0.42	1229.0	4+	
			370.0	0.46	1562.3	2+	
2001.1(3)	2001.2	0+	873.2	0.58	1127.9	2+	0.31
—	2076.1	6+	847.5	≤1.23	1229.0	4+	≤1.2
2078.1(5)	2077.39	4+	1566.3	0.30	511.8	2+	≤1.5
			847.5	≤1.23	1229.0	4+	
2084.19(15)	2084.27	3−	1572.39	2.5	511.8	2+	2.4
			956.1	0.17	1127.9	2+	
2242.4(4)	2242.4	2+	2243.5	0.056	0	0+	1.1
			1114.7	0.30	1127.9	2+	
			685.0	0.20	1557.7	3+	
			680.0	0.57	1562.3	2+	
2278.5(5)	2278.0	0+	1766.7	0.20	511.8	2+	0.24
			1150.2	0.038	1127.9	2+	
2284.3(5)	2282.92	4+	1156.3	0.08	1127.9	2+	0.49
			1055.3	0.41	1229.0	4+	
2305.5(4)	2306.02	4−	748.1	0.93	1557.7	3+	1.2
			221.0	0.23	2084.2	3−	
2308.8(4)	2308.6	2+	2309.2	≤0.089	0	0+	≤0.73
			1797.1	0.39	511.8	2+	
			1180.4	0.25	1127.9	2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2350.6(3)	2350.84	4+	1838.6	0.020	511.8	2+	0.51
			1222.7	0.24	1127.9	2+	
			792.9	0.25	1557.7	3+	
2366.0(3)	2366.00	(4)+	808.3	0.37	1557.7	3+	0.37
2400.9(5)	2401.4	(3−)	1889.7	0.17	511.8	2+	0.50
			1272.4	0.33	1127.9	2+	
2439.4(4)	2438.6	2+	2439.7	0.112	0	0+	0.42
			1927.2	0.31	511.8	2+	
2472.6(5)	2472	—	471.5	0.27	2001.1	0+	0.27
2484.7(3)	2485.4	1−	2484.7	0.48	0	0+	0.52
			1973.1	0.038	511.8	2+	
2499.6(4)	2500.5	2−, 3−	1371.7	0.37	1127.9	2+	0.42
			937.3	0.055	1562.3	2+	
2500.1(4)	2502	2+	1988.3	0.50	511.8	2+	0.50
2578.4(4)	2578.8	(4−)	1349.3	0.36	1229.0	4+	0.54
			1020.7	0.18	1557.7	3+	
2591.1(5)	2590.5	2+, 3+, 4+	659.3	0.10	1931.8	4+	0.10
2626.4(3)	2624.4	(0+, 2+)	2114.7	0.13	511.8	2+	0.40
			1498.4	0.27	1127.9	2+	
2649.0(6)	2648	(1, 4)+	1086.5	0.047	1562.3	2+	0.05
2705.5(5)	2706.6	[1±, 2+]	2706.6	0.060	0	0+	0.21
			2193.3	0.15	511.8	2+	
—	2714	2+, 3+	—	—	—	—	—
—	2736	—	—	—	—	—	—
2740.9(5)	2741.0	[1±, 2+]	2740.9	0.11	0	0+	0.17
			2229.5	0.056	511.8	2+	
2748.1(5)	2749	(2−, 3−)	2236.3	0.17	511.8	2+	0.17
—	2757.3	(5)+	—	—	—	—	—
2774.7(4)	2776	2+, 3+	1648.4	<0.23	1127.9	2+	<0.42
			1217.0	0.19	1557.7	3+	
2784.7(5)	2783.5	(2)	2272.3	0.108	511.8	2+	0.11
—	2788.9	—	—	—	—	—	—
2820.6(7)	2821.2	(2+)	2819.2	0.08	0	0+	<0.17
			2309.2	<0.089	511.8	2+	
—	2829.8	(0)	—	—	—	—	—
2850.3(5)	2848	2+, 3+	1621.3	0.090	1229.0	4+	0.09
2861.0(5)	2861	2+, 3+, 4+	1631.7	0.057	1229.0	4+	0.17
			1303.4	0.11	1557.7	3+	
—	2878.3	(0)+	—	—	—	—	—
2886.4(8)	2886.1	—	2374.6	0.051	511.8	2+	0.05
2897.8(8)	2898.8	(4−)	1668.8	0.058	1229.0	4+	0.06
2902.8(5)	2902.7	(2)+	2391.0	0.099	511.8	2+	0.10
2908.6(8)	2908.5	1−	2396.8	0.066	511.8	2+	0.066
2918.0(8)	2917.8	(2)+	2406.2	0.051	511.8	2+	0.05
2935.9(7)	2936.2	(2−, 3−)	2424.1	0.076	511.8	2+	0.08
—	2952.01	(5)+	—	—	—	—	—
—	2962.1	8+	—	—	—	—	—
2969.7(4)	2969	(2−, 3−)	2457.9	0.27	511.8	2+	0.27





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	2977	—	—	—	—	—	—
—	3027.1	—	—	—	—	—	—
3036.6(10)	3037.2	1±, 2+	3036.6	0.051	0	0+	0.05
3054.8(8)	3055.2	—	2543.0	0.051	511.8	2+	0.05
3069.8(7)	3071.8	(2−, 3−)	2558.0	0.081	511.8	2+	0.08
3083.1(7)	3083.2	—	2571.3	0.060	511.8	2+	0.06
—	3098	—	—	—	—	—	—
3119.9(10)	3121	2+, 3+	2608.1	0.038	511.8	2+	0.04
—	3144	2+, 3+	—	—	—	—	—
—	3150.8	—	—	—	—	—	—
3161.1(6)	3163.4	—	2649.3	0.088	511.8	2+	0.11
			1602.2	0.020	1557.7	3+	
3166.2(10)	3167.5?	[1±, 2+]	3166.1	0.036	0	0+	0.036
3173.7(8)	3175	—	2045.1	0.066	1127.9	2+	0.13
			1616.4	0.061	1557.7	3+	

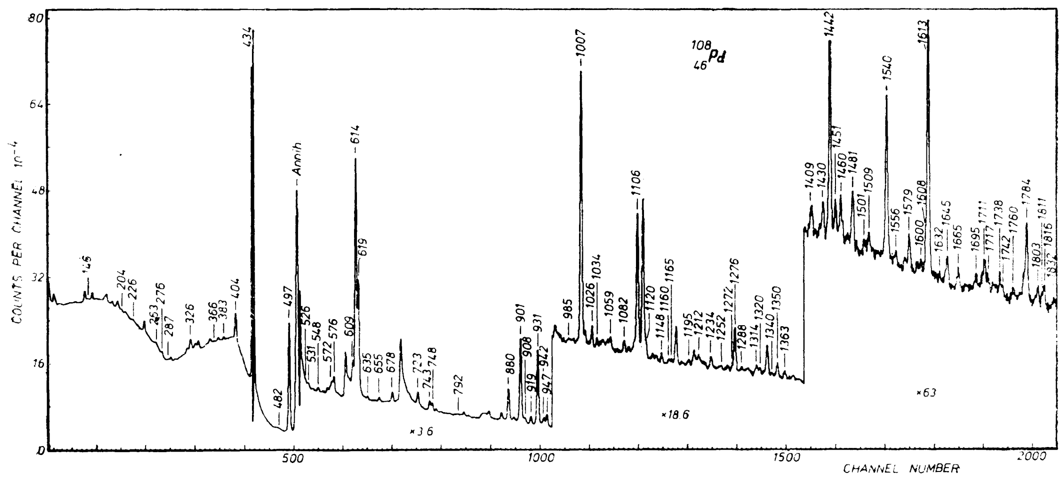
Palladium-108 $^{108}_{46}$Pd

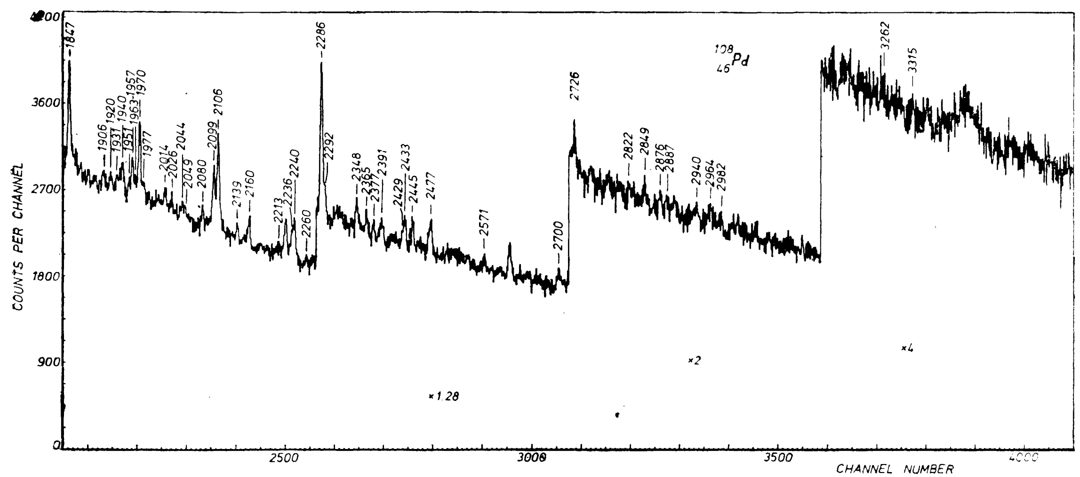
E_γ	I_γ	E_i	E_γ	I_γ	E_i
145.5(2)	0.41(4)		618.72(12)	4.7(4)	1052.6
204.5(3)	0.28(3)	(1540.0)	634.6(6)	0.078(13)	
225.6(2)	0.35(4)	(1540.0)	655.1(3)	0.13(2)	(1989.8)
263.0(3)	0.19(3)		677.99(13)	0.42(3)	
276.1(3)	0.20(4)		722.76(12)	0.56(4)	1770.9
286.8(3)	0.16(3)		743.35(13)	0.46(3)	
325.9(5)	0.50(2)		747.9(2)	0.28(3)	
366.0(3)	0.16(3)		791.6(8)	0.050(12)	
383.2(2)	0.35(3)	1314.2	880.26(11)	1.7(10)	1314.2
404.07(9)	4.8(5)	1335.2	901.31(10)	4.6(3)	1335.2
433.93(8)	100	433.9	908.3(3)	0.29(3)	
481.9(6)	0.11(2)		919.2(2)	0.33(3)	
497.22(7)	20.5(3)	931.2	931.15(10)	4.5(3)	931.2
526.2(8)	0.05(2)		941.65(15)	0.49(4)	(1989.8)
531.1(8)	0.05(2)		947.27(14)	0.64(5)	2282.5
548.2(3)	0.18(2)	(1989.8)	985.3(8)	0.06(13)	
572.1(3)	0.20(4)		1007.21(10)	3.3(2)	1441.1
575.7(2)	0.50(5)		1025.9(2)	0.21(2)	
608.73(13)	0.70(8)	1540.0	1034.5(6)	0.088(14)	
614.19(12)	9.4(7)	1048.1	1058.6(5)	0.10(2)	(1989.8)

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1082.5(3)	0.15(2)		1847.2(2)	0.37(4)	(2281.2)
1106.04(11)	2.1(2)	1540.0	1906.4(8)	0.058(13)	
1120.4(2)	0.21(2)		1920.2(8)	0.057(13)	
1147.6(4)	0.122(15)		1930.6(8)	0.057(13)	
1160.1(10)	0.040(11)		1939.8(4)	0.13(2)	
1164.9(9)	0.048(12)	2218.3	1951.4(8)	0.054(13)	
1194.7(5)	0.100(14)		1957.2(4)	0.11(2)	2888.7;
1212.5(5)	0.100(14)				(2391.2)
1234.1(4)	0.140(16)	2282.5	1963.1(14)	0.031(12)	
1251.9(8)	0.057(12)		1970.1(3)	0.32(3)	(2404.0)
1271.8(5)	0.11(2)		1977.4(8)	0.058(15)	
1276.04(14)	0.70(5)		2014.3(8)	0.058(13)	
1287.7(6)	0.079(13)	2218.1	2025.8(12)	0.040(12)	
1313.6(3)	0.19(2)		2044.4(8)	0.063(16)	2477.6
1319.5(5)	0.094(13)		2049.2(9)	0.045(15)	
1340.5(2)	0.021(10)		2079.5(8)	0.052(13)	
1350.1(2)	0.21(2)	(2281.2)	2098.6(3)	0.26(3)	(2098.6)
1362.9(3)	0.140(16)		2106.4(3)	0.44(5)	2540.3
1409.3(3)	0.150(17)		2139.4(8)	0.055(13)	
1429.5(3)	0.15(2)	2477.6	2159.7(5)	0.11(2)	
1441.60(20)	1.1(8)	(1441.1)	2213.4(12)	0.036(12)	
1451.1(3)	0.18(2)		2236.2(5)	0.12(3)	
1460.4(3)	0.18(2)	(2391.2)	2239.9(5)	0.13(3)	
1481.0(2)	0.37(3)		2260.0(16)	0.026(12)	
1500.9(6)	0.073(13)		2286.0(3)	0.58(6)	2720.0
1508.9(8)	0.06(2)		2292.3(6)	0.073(15)	
1540.04(14)	0.98(7)	1540.0	2347.9(5)	0.100(16)	
1555.9(6)	0.077(13)	(1989.8)	2364.8(7)	0.072(15)	
1579.4(2)	0.25(3)		2377.1(10)	0.044(13)	
1600.0(8)	0.054(10)		2391.4(7)	0.073(15)	(2391.2)
1608.5(5)	0.19(4)	2540.3	2428.9(9)	0.058(14)	
1612.72(14)	1.64(16)	2046.6	2433.2(6)	0.084(16)	
1632.3(16)	0.026(10)		2445.2(5)	0.12(2)	2888.7
1645.2(3)	0.22(2)		2476.8(5)	0.19(2)	2477.6
1664.8(4)	0.14(2)	(2098.6)	2571.0(10)	0.042(13)	
1695.4(5)	0.086(15)		2699.5(6)	0.080(16)	
1710.9(3)	0.19(2)		2726.3(7)	0.071(15)	
1717.4(6)	0.07(2)		2822.1(17)	0.028(13)	
1738.1(5)	0.09(2)		2849.3(9)	0.058(15)	
1742.5(12)	0.034(10)		2876.4(10)	0.047(14)	
1760.4(7)	0.08(2)		2887.1(17)	0.027(13)	
1784.1(2)	0.59(6)	2218.1	2940.4(10)	0.052(15)	
1803.4(4)	0.14(2)		2964.1(8)	0.081(20)	
1811.3(6)	0.06(2)		2981.8(9)	0.069(20)	
1815.5(4)	0.12(2)		3262.3(14)	0.035(15)	
1831.6(7)	0.073(15)		3315.3(13)	0.046(16)	

Level scheme of ^{108}Pd [75 Go2, 72Be]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
433.93(8)	433.95	2+	433.93	100	0	0+	49
931.15(10)	931.2	2+	931.15	4.5	0	0+	18
			497.22	20.5	433.9	2+	
1048.12(15)	1048.32	4+	614.19	9.4	433.9	2+	8.1
1052.65(15)	1052.80	0+	618.72	4.7	433.9	2+	4.7
1314.19(14)	1314.21	[0+]	880.26	1.7	433.9	2+	⩾1.7
			383.2	0.35	931.2	2+	
1335.24(13)	1335.6	[3+]	901.31	4.6	433.9	2+	⩾8.4
			404.07	4.8	931.2	2+	
1441.14(13)	1441.14	[2+]	1441.60?	1.1	0	0+	⩽4.2
			1007.21	3.3	433.9	2+	
1539.97(14)	1539.9	[1+, 2+]	1540.04	0.98	0	0+	⩽4.4
			1106.04	2.1	433.9	2+	
			608.73	0.70	931.2	2+	
			225.6?	0.35	1314.2	0+	
			204.5?	0.28	1335.2	3+	
1770.88(18)	1771.32	6+	722.76	0.56	1048.1	4+	0.56
1989.8(2)?	—	—	1555.9	0.077	433.9	2+	0.98
			1058.6	0.10	931.2	2+	
			941.65	0.49	1048.1	4+	
			655.1	0.13	1335.2	3+	
			548.2	0.18	1441.3	2+	
2046.65(16)	2046	3−	1612.72	1.64	433.9	2+	1.64
2098.6(3)?	—	—	2098.6	0.26	0	0+	0.40
			1664.8	0.14	433.9	2+	
2218.1(2)	2200	—	1784.1	0.59	433.9	2+	0.72
			1287.7	0.079	931.2	2+	
			1164.9	0.048	1052.6	0+	
2281.2(2)?	—	—	1847.2	0.37	433.9	2+	0.58
			1350.1	0.21	931.2	2+	
2282.5(2)	2283	—	1234.1	0.14	1048.1	4+	0.78
			947.27	0.64	1335.2	3+	
—	2310	—	—	—	—	—	—
2391.2(4)?	2380	—	2391.4	0.073	0	0+	⩽0.36
			1957.2?	0.11	433.9	2+	
			1460.4	0.18	931.2	2+	
2404.0(4)?		—	1970.1	0.32	433.9	2+	0.32
2477.6(4)	2470	—	2476.8	0.19	0	0+	0.40
			2044.4	0.063	433.9	2+	
			1429.5	0.15	1048.1	4+	
2540.3(4)	2540	—	2106.4	0.44	433.9	2+	0.63
			1608.5	0.19	931.2	2+	
—	2630	—	—	—	—	—	—
2720.0(4)	2710	—	2286.0	0.58	433.9	2+	0.58
—	2790	—	—	—	—	—	—
—	2863.9	—	—	—	—	—	—
2888.7(5)	2880	—	2445.2	0.12	433.9	2+	0.23
			1957.2	0.11	931.2	2+	





Palladium-110

$^{110}_{46}Pd$

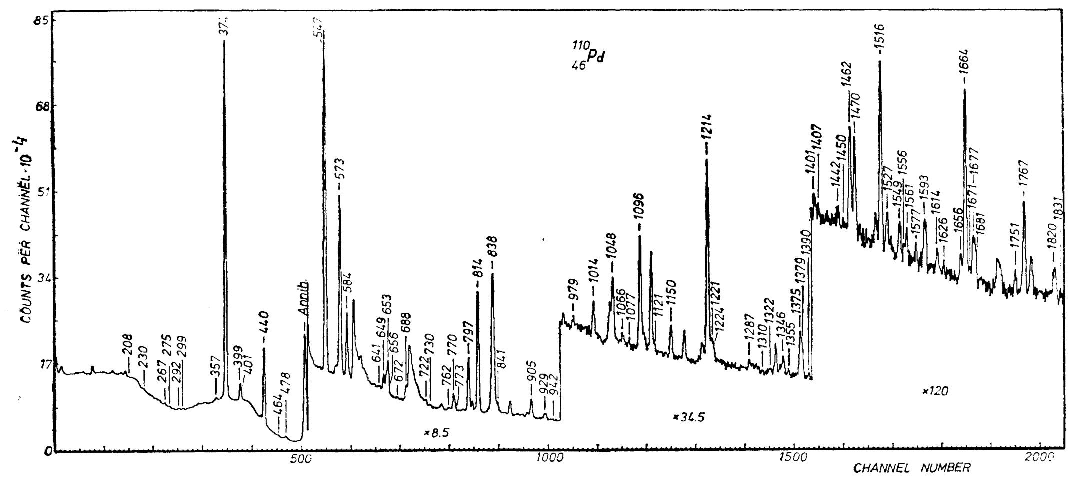
E_γ	I_γ	E_i	E_γ	I_γ	E_i
208.3(5)	0.095(2)		1309.6(8)	0.051(15)	
230.2(5)	0.12(2)		1322.1(7)	0.057(15)	
267.4(3)	0.61(10)	1214.5	1345.5(2)	0.23(2)	1718.9
275.0(3)	0.23(3)		1354.9(7)	0.062(15)	2276.0
291.6(2)	0.54(4)	1212.4	1375.3(3)	0.64(7)	2322.2
298.8(3)	0.22(4)	1470.1	1378.8(4)	0.44(7)	2193.0
356.9(2)	0.88(4)	1170.6	1390.2(8)	0.051(13)	
373.80(8)	100	373.8	1401.2(4)	0.09(2)	2322.2
398.8(2)	5.2(5)	1212.4	1407.1(10)	0.036(13)	2805.2
401.0(7)	0.7(3)	1214.5	1441.6(7)	0.061(15)	
439.76(8)	23.6(3)	813.5	1449.5(20)	0.019(9)	2369.7
463.9(4)	0.18(2)	1934.5	1462.5(3)	0.30(3)	2276.0
477.5(3)	1.02(15)	1398.0	1470.2(2)	0.40(4)	1470.1
547.04(10)	9.2(5)	920.8	1515.9(2)	0.92(8)	1889.7
572.89(10)	5.4(3)	946.7	1526.7(4)	0.17(2)	1900.1
584.48(10)	1.65(10)	1398.0	1548.6(3)	0.20(2)	
641.0(11)	0.040(15)		1556.3(10)	0.056(15)	2369.7
648.51(16)	0.51(4)		1560.8(4)	0.14(2)	1934.5
653.1(2)	0.52(5)	1573.9	1577.3(7)	0.07(2)	(2498.8)
656.42(15)	0.93(6)	1470.1	1592.9(3)	0.25(3)	2805.2
672.4(11)	0.039(15)		1614.5(5)	0.11(2)	
687.7(3)	0.16(2)	1900.1	1626.3(20)	0.024(10)	
722.5(4)	0.110(15)	1934.5	1655.9(5)	0.13(3)	
729.9(10)	0.07(2)	1900.1	1663.8(2)	1.10(11)	2037.6
762.2(4)	0.13(2)		1671.4(9)	0.075(20)	
770.3(2)	0.61(5)		1677.4(4)	0.26(5)	
773.0(8)	0.11(3)		1681.4(6)	0.16(5)	
796.83(10)	1.84(12)	1170.6	1751.3(5)	0.10(2)	2125.2
813.52(10)	4.2(3)	813.5	1766.7(3)	0.57(6)	(2140.5)
838.5(3)	3.0(5)	1212.4	1819.8(4)	0.26(3)	2193.0
840.9(7)	1.6(4)	1214.5	1830.8(11)	0.043(15)	(2777.1)
905.2(2)	0.82(6)	1718.9	1846.6(6)	0.10(2)	
929.2(3)	0.29(4)	2141.7	1859.5(11)	0.043(12)	2805.2
941.5(12)	0.031(14)	1889.7	1865.0(7)	0.07(2)	
978.8(5)	0.078(16)	1900.1	1873.2(5)	0.10(3)	2686.6
1014.0(5)	0.12(3)	1934.5	1900.2(20)	0.022(10)	2714.8
1048.3(2)	0.54(4)	2446.3	1919.5(3)	0.28(5)	2293.3
1065.5(4)	0.10(2)		1948.7(11)	0.04(2)	2322.2
1076.7(8)	0.047(15)	1889.7	1967.5(8)	0.06(2)	
		2474.2	1978.1(13)	0.038(13)	
1096.29(13)	1.31(9)	1470.1	2029.2(8)	0.060(15)	
1120.8(3)	0.11(2)	1934.5	2043.8(8)	0.059(15)	
1150.09(16)	0.38(3)		2056.9(8)	0.05(2)	
1214.5(2)	2.52(16)	1214.5	2066.9(8)	0.050(13)	
1221.0(4)	0.26(3)	(2141.7)	2092.4(4)	0.14(3)	
1224.2(3)	0.22(2)	2037.6	2100.0(6)	0.08(2)	2474.2
1286.7(4)	0.11(2)	(2498.8)	2117.8(6)	0.08(2)	

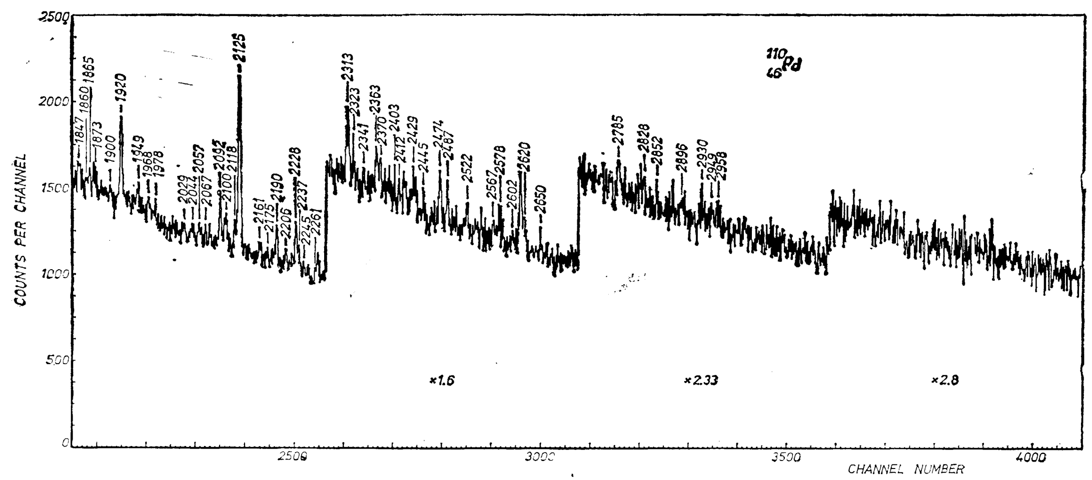
E_γ	I_γ	E_i	E_γ	I_γ	E_i
2125.3(3)	0.68(7)	2125.2	2445.4(8)	0.050(13)	
2161.0(7)	0.065(15)		2474.4(4)	0.14(2)	2474.2
2174.8(12)	0.034(12)		2487.1(5)	0.096(20)	
2190.0(4)	0.12(2)	2563.8	2521.5(6)	0.069(16)	
2205.9(8)	0.047(13)		2567.3(6)	0.071(16)	
2228.0(6)	0.08(2)		2578.2(4)	0.11(2)	
2237.1(13)	0.029(12)		2601.5(7)	0.059(14)	
2244.7(10)	0.040(12)		2620.5(4)	0.11(2)	
2260.6(5)	0.12(2)		2649.6(9)	0.045(13)	
2312.7(4)	0.19(2)	2686.6	2784.8(5)	0.090(20)	
2322.6(10)	0.040(12)	2322.2	2827.8(10)	0.041(12)	
2341.0(10)	0.039(12)	2714.8	2851.5(13)	0.029(12)	
2363.0(5)	0.094(2)		2896.1(7)	0.072(20)	
2369.6(6)	0.071(16)	2369.7	2930.4(7)	0.071(20)	
2402.8(10)	0.038(12)	(2777.1)	2949.2(8)	0.055(20)	
2412.0(5)	0.085(2)		2958.5(7)	0.084(20)	
2428.8(8)	0.056(14)				

Level scheme of ^{110}Pd [75Go2, 71Be, 73De2]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
373.80(8)	373.8	2+	373.80	100	0	0+	50
813.54(10)	813.8	2+	813.52	4.2	0	0+	16
			439.76	23.6	373.8	2+	
920.84(14)	920.5	4+	547.04	9.2	373.8	2+	6.4
946.69(14)	946.3	0+	572.89	5.4	373.8	2+	4.0
1170.63(14)	1168	[0+]	796.83	1.84	373.8	2+	2.4
			356.9	0.88	813.5	2+	
1212.4(2)	—	[3+]	838.5	3.0	373.8	2+	7.8
			398.8	5.2	813.5	2+	
			291.6	0.54	920.8	4+	
1214.5(2)	1212.4	[2+]	1214.5	2.52	0	0+	5.4
			840.9	1.6	373.8	2+	
			401.0	0.7	813.5	2+	
			267.4	0.61	946.7	0+	
1398.0(2)	1397.8	[2+, 3±, 4+]	584.48	1.65	813.5	2+	2.1
			477.5	1.02	920.8	4+	
1470.1(2)	1472	[1±, 2+]	1470.2	0.4	0	0+	2.7
			1096.29	1.31	373.8	2+	
			656.42	0.93	813.5	2+	
			298.8	0.22	1170.6	0+	
1573.9(3)	1574.1	6+	653.1	0.52	920.8	4+	0.52
1718.9(3)	1713	—	1345.5	0.23	373.8	2+	1.05
			905.2	0.82	813.5	2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1889.7(3)	—	—	1515.9	0.92	373.8	2+	<1.0
			1076.7	<0.047	813.5	2+	
			941.5	0.031	946.7	0+	
1900.1(5)	1900.4	—	1526.7	0.17	373.8	2+	0.48
			978.8	0.078	920.8	4+	
			729.9	0.07	1170.6	0+	
			687.7	0.16	1212.4	3+	
1934.5(4)	1933	—	1560.8	0.14	373.8	2+	0.66
			1120.8	0.11	813.5	2+	
			1014.0	0.12	920.8	4+	
			722.5	0.110	1212.4	3+	
			463.9	0.18	1470.1	1±, 2+	
2037.6(3)	2038	3−	1663.8	1.10	373.8	2+	1.32
			1224.2	0.22	813.5	2+	
2125.2(3)	2135	1−	2125.3	0.68	0	0+	0.78
			1751.3	0.10	373.8	2+	
2140.5(4)?	—	—	1766.7	0.57	373.8	2+	0.57
2141.7(4)?	—	—	1221.0	0.26	920.8	4+	0.55
			929.2	0.29	1212.4	3+	
2193.0(6)	2193	—	1819.8	0.26	373.8	2+	0.70
			1378.8	0.44	813.5	4+	
2276.0(4)	—	—	1462.5	0.30	813.5	2+	0.36
			1354.9	0.062	920.8	4+	
2293.3(4)	2293	—	1919.5	0.28	373.8	2+	0.28
2322.2(4)	—	—	2322.6	0.040	0	0+	0.81
			1948.7	0.04	373.8	2+	
			1401.2	0.09	920.8	4+	
			1375.3	0.64	946.7	0+	
2369.7(6)	2370	—	2369.6	0.071	0	0+	0.15
			1556.3	0.056	813.5	2+	
			1449.5	0.019	920.8	4+	
2446.3(4)	2446	—	1048.3	0.54	1398.0	2+, 3±, 4+	0.54
—	2447.1	—	—	—	—	—	—
2474.2(4)	—	—	2474.4	0.14	0	0+	<0.27
			2100.0	0.08	373.8	2+	
			1076.7	<0.047	1398.0	2+, 3±, 4+	
2498.8(5)?	2499	—	1577.3	0.07	920.8	4+	0.18
			1286.7	0.11	1212.4	3+	
2563.8(5)	2554	—	2190.0	0.12	373.8	2+	0.12
2686.6(5)	2673	—	2312.7	0.19	373.8	2+	0.29
			1873.2	0.10	813.5	2+	
2714.8(10)	2713	—	2341.0	0.039	373.8	2+	0.06
			1900.2	0.022	813.5	2+	
2777.1(10)?	2778	—	2402.8	0.038	373.8	2+	0.08
			1830.8	0.043	946.7	0+	
—	2791.1	—	—	—	—	—	—
2805.2(5)	2804.7	—	1859.5	0.043	946.7	0+	0.33
			1592.9	0.25	1212.4	3+	
			1407.1	0.036	1398.0	2+, 3±, 4+	

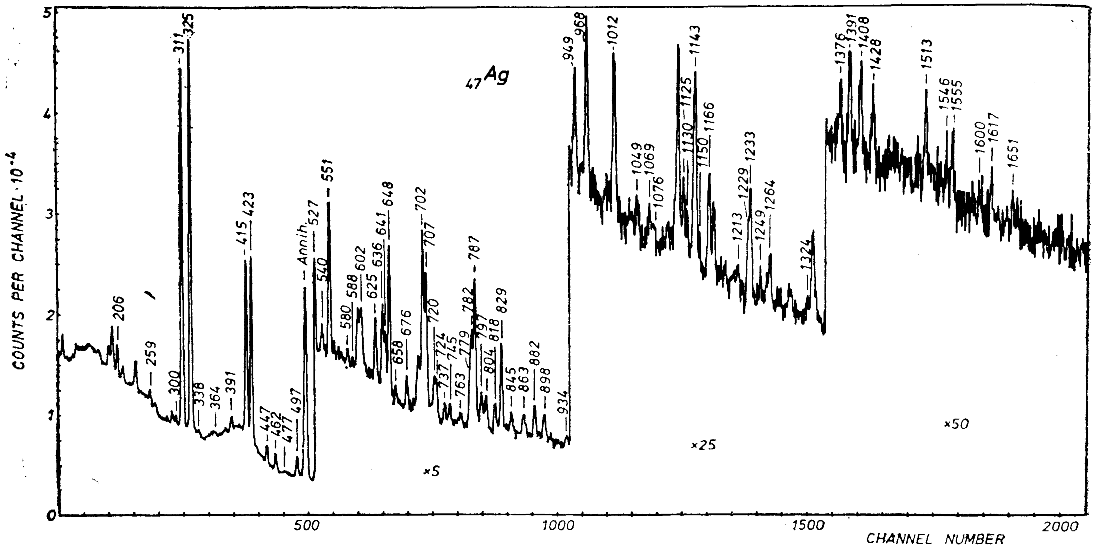




E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
206.4(2)	53(8)			804.2(3)	19(3)		
259.2(2)	22(3)			818.4(3)	25(3)	^{107}Ag	1143.3
300.4(3)	13(3)			829.00(13)	71(4)	^{107}Ag	922.1
311.44(12)	749(60)	^{109}Ag	311.4	844.9(4)	12(4)		
324.95(12)	809(60)	^{107}Ag	325.0	863.3(8)	18(6)	^{109}Ag	862.6
337.5(6)	7.5(24)			882.5(2)	22(3)		
363.6(6)	10(3)	^{107}Ag	786.7	898.1 *m*	27(3)	^{107}Ag	1223.3
390.6(3)	28(3)	^{109}Ag	702.0	934.2(6)	8(2)		
415.17(10)	465(20)	^{109}Ag	415.2	948.9(4)	19(3)	(^{107}Ag)	(949.8)
423.25(10)	465(20)	^{107}Ag	423.2	967.5(2)	33(3)	^{109}Ag	1100.3
447.45(15)	46(3)	^{109}Ag	862.6	1012.3 *m*	39(4)	^{109}Ag	1324.2
461.84(17)	43(3)	^{107}Ag	786.7	1048.9(10)	10(3)	^{107}Ag	(1143.3)
476.9 *m*	9(2)			1069.3(8)	7(3)		
496.95(10)	58(4)	^{109}Ag	912.1	1075.8(12)	3.0(15)		
526.51(10)	55(4)	^{107}Ag	949.8	1124.7(4)	12(2)		
540.3(10)	9(4)			1130.2(6)	5(2)	^{107}Ag	1223.3
550.61(10)	100	^{107}Ag	973.2	1142.6 *m*	62(5)	^{107}Ag	1143.3
		^{109}Ag	862.6	1150.2(8)	4(2)		
579.8(4)	8(2)			1165.8(3)	26(3)		
587.7(7)	3.8(18)			1212.6(6)	10(3)		
602.2(3)	25(4)	^{109}Ag	735.0	1229.0(5)	22(4)		
624.8(2)	43(4)	^{107}Ag	949.8	1233.3(4)	27(4)		
636.4(2)	59(4)	^{109}Ag	724.4	1248.8(8)	4(2)		
640.9(2)	39(3)			1264.2(5)	9(2)		
647.54(12)	109(5)	^{109}Ag	735.0	1324.2(9)	4(2)	^{109}Ag	1324.2
		^{107}Ag	973.2	1376.0(6)	9(2)		
657.5(4)	8(2)			1391.0(4)	16(3)		
675.5(3)	23(3)	^{109}Ag	1090.7	1408.2(5)	14(3)		
701.97(12)	110(6)	^{109}Ag	702.0	1428.2(6)	12(3)		
707.07(12)	88(6)	^{109}Ag	839.9	1512.6(6)	10(2)		
719.7(6)	24(5)	^{107}Ag	1143.3	1545.9(9)	6(2)		
723.9(6)	24(5)	^{107}Ag	1147.1	1555.0(6)	10(2)		
736.9(4)	15(2)	^{109}Ag	869.5	1600.0 *m*	9(2)		
745.2(3)	15(2)			1617.0(8)	7(2)		
763.1(6)	10(2)			1651.0(12)	4(2)		
778.6(7)	55(13)	^{109}Ag	911.4	1820.3 *m*	7(3)		
782.3(6)	75(13)	^{109}Ag	869.5	1834.7(15)	7(3)		
786.6(3)	101(15)	^{107}Ag	786.7	1854.0(16)	6(3)		
796.6(3)	19(3)	^{107}Ag	922.1	1970.2(14)	5(2)		

Level schemes of ^{107}Ag [72Be1, 73Co1, 74Bu2] and ^{109}Ag [71Be2, 73Au3, 73Co1, 74Bu2]

A_Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{107}Ag	—	93.08	7/2+	—	—	—	—
	125.5(3)	125.7	(9/2)+	—	—	—	—
	324.95(12)	324.6	3/2−	324.95	809	0	1/2−
	423.25(10)	422.6	5/2−	423.25	465	0	1/2−
	786.73(21)	786.5	3/2−	786.6	101	0	1/2−
				461.84	43	325.0	3/2−
				363.6	10	423.2	5/2−
	922.08(13)	922.0	(5/2+)	829.00	71	93.1	7/2+
				796.6	19	125.5	9/2+
	949.76(14)	949.0	5/2−	948.9?	19	0	1/2−
				624.8	43	325.0	3/2−
				526.51	55	423.2	5/2−
	973.2	973.2	—	647.54	<109	325.0	3/2−
				550.61	<100	423.2	5/2−
	1143.3(3)	1142.4	—	1142.6	<62	0	1/2−
				1048.9?	10	93.1	7/2+
				818.4	25	325.0	3/2−
				719.7	24	423.2	5/2−
	1147.1(6)	1146.8	—	723.9	24	423.2	5/2−
	—	1160	—	—	—	—	—
	1223.3(6)	1222.4	(5/2+)	1130.2	5	93.1	7/2+
				898.1	<27	325.0	3/2−
^{109}Ag	—	88.032	7/2+	—	—	—	—
	—	132.8	(9/2)+	—	—	—	—
	311.44(12)	311.4	3/2−	311.44	749	0	1/2−
	415.17(10)	415.3	5/2−	415.17	465	0	1/2−
	701.97(12)	701.9	3/2−	701.97	110	0	1/2−
				390.6	28	311.4	3/2−
	724.4(2)	724.4	(3/2+)	636.4	59	88.0	7/2+
	735.0(4)	735.3	(5/2+)	647.54	<109	88.0	7/2+
				602.2	25	132.8	(9/2)+
	839.9(2)	839.8	—	707.07	88	132.8	(9/2)+
	862.59(18)	862.7	5/2−	863.3	18	0	1/2−
				550.61	<100	311.4	3/2−
				447.45	46	415.2	5/2−
	869.5(4)	869.5	(5/2+)	782.3	75	88.0	7/2+
				736.9	15	132.8	(9/2)+
	911.4(7)	911.0	5/2,7/2,9/2−	778.6	55	132.8	(9/2)+
	912.12(14)	912.3	—	496.95	58	415.2	5/2−
	1090.7(3)	1090.6	—	675.5	23	415.2	5/2−
	1100.3(3)	1099?	—	967.5	33	132.8	(9/2)+
	—	1200	—	—	—	—	—
	—	1260	—	—	—	—	—
	1324.2(9)	1324.2	(3/2−)	1324.2	4	0	1/2−
				1012.3	<39	311.4	3/2−



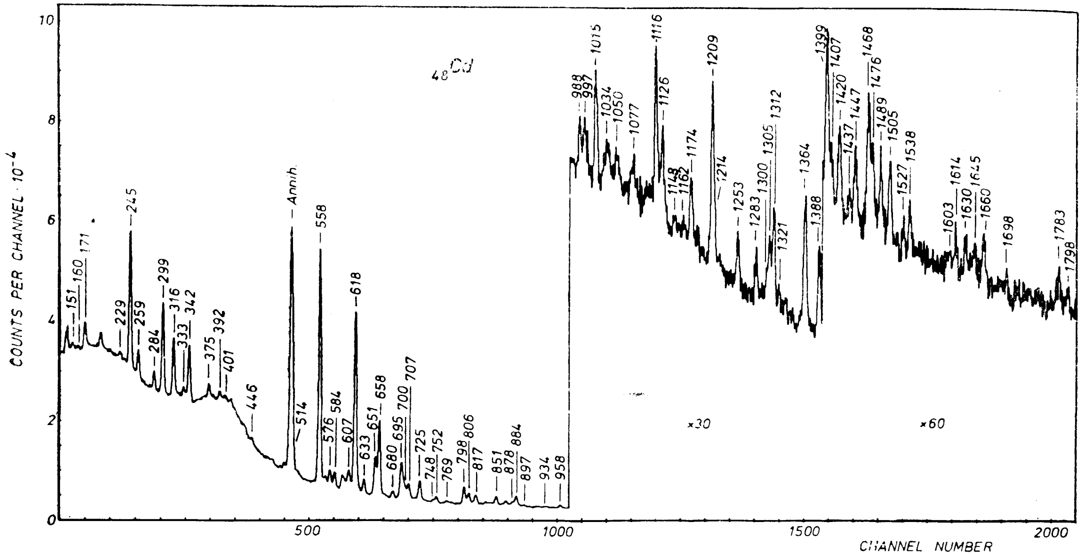
Cadmium $_{48}$Cd

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
150.8(4)	5.1(9)	^{111}Cd	396.2	651.0(2)	18(3)	^{114}Cd	1209.0
159.7(8)	2.0(5)			657.6(2)	37(4)	^{110}Cd	657.7
171.3(3)	11(2)	^{111}Cd	416.7	680.3(2)	3.1(3)	^{113}Cd	680.3
229.0(5)	2.1(4)	^{113}Cd	527.6	694.6(2)	10.0(12)	^{112}Cd	1312.2
245.40 *c*	51(4)	^{111}Cd	245.4	699.6(6)	1.2(2)	^{116}Cd	1213.5
258.72(10)	8.9(12)	(^{113}Cd)		706.9(3)	3.9(4)	^{114}Cd	1841.0
284.32(15)	5:3(8)					^{116}Cd	1219.8
298.62(10)	32(3)	^{113}Cd	298.6	725.1(2)	9.5(9)	^{114}Cd	1283.1
316.33(10)	22(2)	^{113}Cd	316.3	747.5(8)	1.2(2)	^{114}Cd	1305.9
332.77(15)	5.4(5)	(^{113}Cd)		75?.4(3)	2.9(3)	^{112}Cd	2064.1
341.98(10)	22(2)	^{111}Cd	342.0	769.0 *m*	1.3(3)	^{116}Cd	1282.9
374.7(2)	4.2(4)	^{111}Cd	620.1	797.9(2)	9.2(8)	^{112}Cd	1415.2
392.2(3)	2.7(3)	^{113}Cd	690.8	805.9(3)	5.9(8)	^{114}Cd	1363.9
400.7(6)	1.1(3)	(^{112}Cd)				^{110}Cd	1473.2
446.2(4)	1.6(3)					^{110}Cd	1475.8
513.6(10)	16(5)	^{116}Cd	513.6	816.7 *m*	6.0(5)	^{112}Cd	1433.2
558.04 *c*	100	^{114}Cd	558.0	851.0(2)	4.3(4)	^{112}Cd	1468.6
575.70(15)	4.8(4)	^{114}Cd	1133.8	877.8(6)	1.3(3)	^{108}Cd	1510.3
583.76(20)	5.0(4)	^{113}Cd	583.8	884.2(3)	5.6(5)	^{110}Cd	1542.4
607.1(2)	5.0(5)	^{112}Cd	1224.6	897.0(8)	0.75(15)		
617.50(15)	82(6)	^{112}Cd	617.5	934.2 *m*	0.49(10)	^{110}Cd	2480.1
632.6(2)	5.4(4)	^{106}Cd	632.6	957.5(3)	1.3(2)	^{112}Cd	2372.5
		^{108}Cd	632.6	988.1(3)	0.89(15)		

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
996.7 *m*	1.8(3)	^{114}Cd	2203.7	1406.6(8)	0.90(15)		
		^{110}Cd	2539.6	1420.5(4)	1.6(2)	^{110}Cd	2078.4
1015.4(3)	2.7(3)	^{116}Cd		1436.8(8)	0.46(10)		
1034.3 *m*	1.3(3)	^{112}Cd		1446.7(4)	1.4(2)	^{112}Cd	2064.1
1050.5 *m*	1.1(3)			1468.4(3)	2.8(4)	^{112}Cd	1468.6
1077.3 *m*	1.3(3)	^{110}Cd	1731.1	1475.6(4)	1.8(3)	^{110}Cd	1475.8
1115.6(3)	4.2(4)	^{116}Cd	2659.0	1489.4(3)	1.3(2)	^{114}Cd	2047.5
1126.2 *m*	2.4(3)	^{110}Cd	1782.9	1504.6(3)	1.6(2)	^{110}Cd	2162.8
		^{112}Cd	3131.8			^{112}Cd	2121.5
		^{116}Cd	1643.1	1527.1(6)	0.45(10)		
1147.7 *m*	0.61(15)			1537.8(4)	0.92(15)	^{112}Cd	2156.0
1162.1 *m*	0.53(15)	^{110}Cd	1821.0	1603.1 *m*	0.40(15)	^{108}Cd	1603.0
		^{114}Cd	2524.6	1613.7(4)	0.73(15)	^{112}Cd	2230.9
1174.0 *m*	1.6(3)	^{110}Cd	2649.2	1630.3(4)	0.73(15)	^{110}Cd	2287.0
		^{114}Cd	1731.9	1645.2(6)	0.75(15)	^{114}Cd	2203.9
1209.3(2)	4.5(4)	^{114}Cd	1209.0	1660.1(4)	1.2(2)	^{114}Cd	2218.7
1213.7(8)	1.0(2)	^{116}Cd	1213.5	1697.9(5)	0.46(10)	^{116}Cd	2355.3
1252.6(3)	1.4(3)	^{112}Cd	1870.7	1783.2 *m*	1.3(3)	^{110}Cd	1782.9
1283.2(4)	1.2(2)	^{114}Cd	1841.0	1797.8(8)	0.63(15)		
1299.7(8)	0.67(10)	^{114}Cd	1858.6	1825.5(6)	1.0(2)		
1305.0(4)	1.8(2)	^{114}Cd	1863.1	2102.9(10)	0.48(15)	^{114}Cd	2659.9
1311.8(3)	2.8(3)	^{112}Cd	1312.2	2190.8(10)	0.40(15)	^{114}Cd	2749.7
1320.7(6)	0.67(10)			2210.2(12)	0.59(15)	^{110}Cd	2868.0
1363.9 *c*	4.2(3)	^{114}Cd	1363.9			^{112}Cd	2828·9
1387.5(3)	2.7(3)	^{112}Cd	2005.1	2454.8(10)	0.71(20)		
1399.4(3)	3.0(3)	^{114}Cd	1957.0	2505.8(10)	0.82(20)	^{112}Cd	2506.8

Level schemes of ^{111}Cd [75Sh] and ^{113}Cd [71Ra, 70Ma1, Go69, 72An1]

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{111}Cd	245.40	245.40	5/2+	245.40	51	0	1/2+	26*
	341.98(10)	342.13	3/2+	341.98	22	0	1/2+	20*
	396.2(4)	396.21	11/2−	150.8	5.1	245.4	5/2+	12*
	416.7(4)	416.68	7/2+	171.3	11	245.4	5/2+	11
	620.1(3)	620.0	5/2+	374.7	4.2	245.4	5 2+	6.4*
^{113}Cd	—	263.7	11/2−	—	—	—	—	—
	298.62(10)	298.38	3/2+	298.62	32	0	1 2+	27
	316.33(10)	316.2	5/2+	316.33	22	0	1/2+	22
	—	452.2	7/2+	—	—	—	—	—
	527.6(6)	530	7/2+	229.0	2.1	298.6	3/2+	2.1
	583.76(10)	583.7	5/2+	583.76	5.0	0	1/2+	5.0
	—	602.9	(9/2−)	—	—	—	—	—
	680.3(2)	680.8	3/2+	680.3	3.1	0	1/2+	4.4*
	690.8(4)	689.4	—	392.2	2.7	298.6	3/2+	2.7



Cadmium-110

$^{110}_{48}$Cd

E_γ	I_γ	E_i	E_γ	I_γ	E_i
399.5(3)	0.43(4)		1281.7(4)	0.27(5)	
409.8(5)	0.22(4)		1298.9(3)	0.29(5)	
657.72 *c*	100	657.7	1321.2(4)	0.21(3)	
677.7(2)	1.08(8)	2220.1	1340.0(5)	0.15(2)	
687.3(4)	0.92(18)	2162.8	1364.0(4)	0.20(3)	
744.2(3)	0.68(6)	2220.1	1385.0(5)	0.14(2)	2927.4
817.7 *m*	14.8(6)	1473.2	1397.3(5)	0.16(2)	
		1475.8	1420.7(2)	4.1(3)	2078.4
884.67 *c*	10.8(4)	1542.4	1441.8(4)	0.19(3)	2915.5
907.4(6)	0.13(3)		1450.7(7)	0.11(3)	
937.3(3)	0.52(6)	2479.7	1464.8(3)	0.20(5)	
957.6(2)	0.60(8)		1475.77 *c*	4.7(2)	1475.8
997.20 *c*	1.70(14)	2539.6	1505.1(2)	1.97(9)	2162.8
1003.7(3)	0.57(10)		1591.7(4)	0.24(4)	2249.4
1015.4(2)	0.57(10)		1577.3(4)	0.23(3)	
1073.4(2)	1.60(10)	1731.1	1601.8(4)	0.22(3)	
1086.3(3)	0.33(6)	2562.1	1611.6(7)	0.11(3)	
1116.6(2)	0.71(7)	2659.0	1629.3(2)	1.88(8)	2287.0
1125.2(2)	4.5(2)	1782.9	1638.9(6)	0.14(3)	
1163.3(2)	0.82(8)	1821.0	1662.8(6)	0.15(3)	
1176.4(4)	0.24(6)	2649.2	1672.9(4)	0.24(3)	2330.6
1185.2(3)	0.61(7)		1697.6(2)	0.96(6)	2355.3
1206.8(3)	0.42(7)		1775.3(3)	0.24(4)	

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1782.9(2)	1.42(6)	1782.9	2317.5(5)	0.18(3)	2975.3
1823.7(3)	0.62(8)	(2481.4)	2444.3(4)	0.24(4)	3102.1
1901.5(5)	0.17(3)		2477.6(5)	0.19(4)	
1907.7(3)	0.52(4)	(2565.5)	2510.8(4)	0.25(4)	
1975.2(3)	0.49(4)	(2633.0)	2534.0(4)	0.23(5)	3191.8
2004.9(3)	0.30(3)	2662.7	2599.2(4)	0.29(5)	
2130.0(3)	0.36(3)	2787.7	2648.9(3)	0.58(7)	2649.2
2210.3(3)	0.45(4)	2868.0	2682.6(6)	0.17(4)	
2257.8(4)	0.19(3)	2915.5			

Level scheme of ^{110}Cd [71Be, 76De, 72Ka, 72An]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
657.72 *c*	657.72	2+	657.72	100	0	0+	55
—	1473.2	0+	817.7	<14.8	657.7	2+	6
1475.77 *c*	1475.71	2+	1475.77	4.7	0	0+	10*
			817.7	<14.8	657.7	2+	
1542.38	1542.38	4+	884.67	10.8	657.7	2+	6.6
1731.1(3)	1731.5	0+	1073.4	1.60	657.7	2+	1.6
1782.9(2)	1783.3	2+	1782.9	1.42	0	0+	5.9
			1125.2	4.5	657.7	2+	
1821.0(3)	1808.2	—	1163.3	0.82	657.7	2+	0.8
—	2004.24?	(5−)	—	—	—	—	—
2078.4(3)	2078.8	3−	1420.7	4.1	657.7	2+	4.1
—	2124.55?	(5−)	—	—	—	—	—
2162.8(3)	2162.665	3+	1505.1	1.97	657.7	2+	2.9
			687.3	0.92	1475.8	2+	
2220.1(3)	2219.975	4+	744.2	0.68	1475.8	2+	1.8
			677.7	1.08	1542.4	4+	
2249.4(5)	2250.3?	—	1591.7	0.24	657.7	2+	0.24
2287.0(3)	2287.4	[2+]	1629.3	1.88	657.7	2+	1.9
2330.6(5)	2331.8	[0+]	1672.9	0.24	657.7	2+	0.24
2355.3(3)	2355	[2+]	1697.6	0.96	657.7	2+	0.96
—	2464.1	—	—	—	—	—	—
2479.7(4)	2479.82	6+	937.3	0.52	1542.4	4+	0.52
2481.4(4)?	—	—	1823.7	0.62	657.7	2+	0.62
2539.6 *c*	2539.6	5−	997.20	1.70	1542.4	4+	1.7
2562.1(4)	2561.2	(4+)	1086.3	0.33	1475.8	2+	0.33
2565.5(4)?	—	—	1907.7	0.52	657.7	2+	0.52
2633.0(4)?	—	—	1975.2	0.49	657.7	2+	0.49
2649.2(3)	—	[1±, 2+]	2648.9	0.58	0	0+	0.82
			1176.4	0.24	1473.2	0+	
2659.0(3)	2659.58	(5−)	1116.6	0.71	1542.4	4+	0.71

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2662.7(4)	2661.9	0+	2004.9	0.30	657.7	2+	0.30
2787.7(4)	2786.4	(1+, 2+)	2130.0	0.36	657.7	2+	0.36
2868.0(4)	2868	(1+, 2+)	2210.3	0.45	657.7	2+	0.45
2915.5(5)	—	—	2257.8	0.19	657.7	2+	0.38
			1441.8	0.19	1473.2	0+	
2927.4(7)	2926.585	5+	1385.0	0.14	1542.4	4+	0.14
2975.3(5)	2974.4	(1+, 2+)	2317.5	0.18	657.7	2+	0.18
—	3063.9	6(+)	—	—	—	—	—
—	3077	(1−, 2+)	—	—	—	—	—
3102.1(5)	3101	(1−, 2+)	2444.3	0.24	657.7	2+	0.24
—	3121.46	6(+)	—	—	—	—	—
—	3187.2	—	—	—	—	—	—
3191.8(5)	3194	—	2534.0	0.23	657.7	2+	0.23

Cadmium-112 $^{112}_{48}$Cd

E_γ	I_γ	E_i	E_γ	I_γ	E_i
402.5(2)	1.3(2)		1126.5(3)	0.26(6)	
584.0(2)	1.0(2)		1154.7(3)	0.35(7)	
607.0(4)	7.8(8)	1224.5	1175.3(3)	0.38(6)	
617.50(10)	100	617.5	1194.4(5)	0.18(3)	
649.7(3)	0.51(13)	2064.1	1253.2(2)	1.98(8)	1870.7
654.3(4)	0.15(9)		1274.5(6)	0.05(3)	
656.9(4)	0.13(9)		1282.2(6)	0.07(2)	
661.1(2)	0.79(8)		1312.3(2)	4.70(16)	1312.2
680.3(2)	0.48(8)		1322.5(4)	0.25(5)	
694.5(2)	12.1(14)	1312.2	1336.6(10)	0.05(2)	
751.8(2)	2.4(4)	2064.1	1357.1(4)	0.38(3)	2669.3
768.8(4)	0.68(6)		1387.6(3)	4.36(14)	2005.1
797.7(2)	10.7(8)	1415.2	1424.2(5)	0.22(7)	
815.7(3)	1.21(9)	1433.2	1446.8(4)	1.8(3)	2064.1
850.9(2)	7.5(5)	1468.6	1468.8(3)	4.20(14)	1468.6
878.5(5)	0.37(6)		1504.0(4)	1.6(2)	2121.5
883.2(5)	0.26(6)		1538.5(4)	1.8(3)	2156.0
957.3(2)	2.6(2)	2372.5	1555.1(6)	0.26(7)	
987.0(2)	0.58(7)		1613.4(4)	1.6(2)	2230.9
1034.1(3)	0.21(5)		1633.0(7)	0.11(3)	
1064.4(5)	0.13(4)		1638.2(6)	0.10(3)	
1076.7(3)	0.42(5)		1661.0(6)	0.11(3)	
1090.4(3)	0.42(8)		1682.2(6)	0.11(6)	
1103.1(2)	1.01(10)	2415.1	1687.3(6)	0.90(9)	2304.8

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1797.4(5)	0.31(8)	2415.1	2211.8(6)	0.30(5)	
1829.2(8)	0.11(3)		2330.4(8)	0.28(6)	
1850.8(7)	0.16(5)		2506.8(5)	0.72(9)	2506.8
1888.3(7)	0.16(5)	2506.8	2527.0(8)	0.12(4)	
2055.9(5)	0.52(6)	2673.4	2552.0(7)	0.16(5)	
2105.9(5)	0.42(6)	2723.4	2537.6(7)	0.20(6)	
2146.6(7)	0.23(4)	2764.3	2828.9(8)	0.25(8)	2828.9

Level scheme of ^{112}Cd [72Ra, 76De, 72Wa]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
617.50(10)	617.4	2+	617.50	100	0	0+	45
1224.5(3)	1224.2	0+	607.0	7.8	617.5	2+	7.8
1312.2(2)	1312.3	2+	1312.3	4.70	0	0+	13.0
			694.5	12.1	617.5	2+	
1415.2(3)	1415.3	4+	797.7	10.7	617.5	2+	7.6
1433.2(4)	1433.2	0+	815.7	1.21	617.5	2+	1.2
1468.6(3)	1468.8	2+	1468.8	4.20	0	0+	11.7
			850.9	7.5	617.5	2+	
1870.7(3)	1870.8	0+	1253.2	1.98	617.5	2+	2.0
—	1973?	(3−)	—	—	—	—	—
2005.1(4)	2005.1	3−	1387.6	4.36	617.5	2+	4.4
2064.1(3)	2064.6	[3+]	1446.8	1.8	617.5	2+	4.7
			751.8	2.4	1312.2	2+	
			649.7	0.51	1415.2	4+	
—	2087	—	—	—	—	—	—
2121.5(5)	2124.4	[2+]	1504.0	1.6	617.5	2+	1.6
2156.0(5)	2156.4	2(+)	1538.5	1.8	617.5	2+	1.8
2230.9(5)	2231.0	2+	1613.4	1.6	617.5	2+	1.6
2304.8(7)	2300.1	(0+)	1687.3	0.90	617.5	2+	0.9
2372.5(4)	2374	[5−]	957.3	2.6	1415.2	4+	2.6
—	2377	—	—	—	—	—	—
2415.1(4)	2416.0	(2)−	1797.4	0.31	617.5	2+	1.3
			1103.1	1.01	1312.2	2+	
2506.8(5)	2506.7	1±, 2+	2506.8	0.72	0	0+	0.88
			1888.3	0.16	617.5	2+	
—	2573	—	—	—	—	—	—
—	2608.1	—	—	—	—	—	—
—	2637	—	—	—	—	—	—
—	2657	—	—	—	—	—	—
2669.3(6)	2668.8	—	1357.1	0.38	1312.2	2+	0.38
2673.4(6)	2673.6	2+	2055.9	0.52	617.5	2+	0.52
2723.4(6)	2723.6	2+	2105.9	0.42	617.5	2+	0.42
2764.3(8)	2765.5	(2, 3)+	2146.6	0.23	617.5	2+	0.23
2828.9(8)	2829.2	1+	2828.9	0.25	0	0+	0.25

Cadmium-114

$^{114}_{48}$Cd

E_γ	$I_\gamma(110°)$	E_i	E_γ	$I_\gamma(110°)$	E_i
367.7(6)	0.62(6)	1731.9	1364.1(2)	5.9(2)	1363.9
448.3(8)	0.35(9)	1731.9	1371.3(7)	0.45(6)	2580.4
463.4(6)	0.15(5)		1399.0(3)	4.1(2)	1957.0
478.1(7)	0.39(9)	1841.0	1433.5(5)	0.40(5)	
522.3(6)	1.16(12)	1731.9	1448.1(5)	0.27(5)	
558.04 *c*	100	558.0	1472.8(5)	0.22(5)	
575.7(2)	7.7(3)	1133.7	1489.5(3)	2.04(12)	2047.5
651.0(2)	19.4(2)	1209.0	1522.0(8)	0.15(5)	
655.1(8)	1.3(3)	1863.1	1577.4(8)	0.17(5)	2786.4
707.1(3)	2.1(2)	1841.0	1593.3(6)	0.56(5)	2151.3
725.1(2)	12.9(2)	1283.1	1645.9(8)	0.57(6)	2203.7
742.4(8)	0.44(14)	2047.5	1660.7(5)	1.51(27)	2218.7
747.9(2)	7.3(5)	1305.8	1828.8(4)	1.02(4)	2386.8
		1957.0	1842.6(10)	0.57(6)	1841.0
786.8(9)	0.25(12)	2151.3	1878.9(7)	0.33(4)	2436.9
805.6(3)	6.4(3)	1363.9	2022.4(7)	0.17(4)	2580.4
818.7(5)	0.31(6)		2079.4(6)	0.21(3)	2637.4
825.7(5)	0.17(4)		2087.8(8)	0.15(5)	
867.8(7)	0.68(23)	2151.3	2101.9(6)	0.60(10)	2659.9
920.4(8)	0.44(9)	2203.7	2141.3(7)	0.24(4)	2698.8
943.0(8)	0.45(9)	2151.3	2191.7(6)	0.42(4)	2749.7
994.5(6)	0.77(15)	2203.7	2209.5(6)	0.42(9)	2766.9
999.0(8)	0.25(12)		2254.9(6)	0.36(4)	2812.6
1026.1(7)	0.10(3)		2316.1(9)	0.26(8)	2316.3
1100.9(7)	0.22(5)	(2464.8)	2397.6(7)	0.32(3)	2955.6
1107.4(6)	0.83(8)	2316.3	2456.2(4)	0.97(4)	
1161.4(8)	0.15(5)	2524.6	2551.2(6)	0.41(4)	3109.0
1173.9(3)	2.14(26)	1731.9	2650.0(6)	0.42(5)	
1183.7(9)	0.17(8)	2316.3	2698.3(8)	0.21(5)	2698.8
1209.4(8)	5.6(2)	1209.0	2708.6(7)	0.37(5)	
1282.9(2)	1.73(18)	1841·0	2739.1(8)	0.25(5)	
1292.8(3)	<1.6		2766.3(5)	0.38(4)	2766.9
1300.6(4)	0.86(8)	1858.6	2800.7(6)	0.32(4)	2800.7
1305.1(3)	2.18(8)	1863.1	2812.3(6)	0.21(3)	2812.6
1315.1(7)	0.15(7)	2524.6	2986.2(7)	0.18(4)	
1331.7(7)	0.25(12)		2999.1(6)	0.38(4)	2999.1
			3108.8(7)	0.38(8)	3109.0

Level scheme of ^{114}Cd [76De1, 69Gr, 75Ki]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	$P_s(110°)$
558.04 *c*	558.04	2+	558.04	100	0	0+	27
1133.7(3)	1133.78	0+	575.7	7.7	458.0	2+	5.4
1209.0(2)	1209.28	2+	1209.4	5.6	0	0+	18.4
			651.0	19.4	558.0	2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	$P_s(110°)$
1283.1(2)	1283.25	4+	725.1	12.9	558.0	2+	11.4
—	1305.79	0+	747.9	<7.3	558.0	2+	—
1363.9(2)	1363.94	2+	1364.1	5.9	0	0+	10.7
			805.6	6.4	558.0	2+	
1731.9(3)	1731.80	4+	1173.9	2.14	558.0	2+	4.3
			522.3	1.16	1209.0	2+	
			448.3	0.35	1283.1	4+	
			367.7	0.62	1363.9	2+	
1841.0(4)	1841.44	2+	1842.6	0.57	0	0+	4.8
			1282.9	1.73	558.0	2+	
			707.1	2.1	1133.7	0+	
			478.1	0.39	1363.9	2+	
1858.6(5)	1861	[0+]	1300.6	0.86	558.0	2+	0.86
1863.1(4)	1863.3	[3+]	1305.1	2.18	558.0	2+	3.5
			655.1	1.3	1209.0	2+	
1957.0(4)	1957.70	[3−]	1399.0	4.1	558.0	2+	5.4*
			747.9	<7.3	1209.0	2+	
2047.5(4)	2047.46	[2+]	1489.5	2.04	558.0	2+	2.5
			742.4	0.44	1305.9	0+	
2151.3(6)	2151.70	[2+]	1593.3	0.56	558.0	2+	1.9
			943.0	0.45	1209.0	2+	
			867.8	0.68	1283.1	4+	
			786.8	0.25	1363.9	2+	
2203.7(6)	2203.98	[3+]	1645.9	0.57	558.0	2+	1.8
			994.5	0.77	1209.0	2+	
			920.4	0.44	1283.1	4+	
2218.7(6)	2218.2	1+, 2+	1660.7	1.51	558.0	2+	1.5
—	2300.47	—	—	—	—	—	—
2316.3(7)	2317.2	[2+]	2316.1	0.26	0	0+	1.3
			1183.7	0.17	1133.7	0+	
			1107.4	0.83	1209.0	2+	
2386.8(5)	2386.4	[3−]	1828.8	1.02	558.0	2+	1.0
—	2409.9	(2−)	—	—	—	—	—
2436.9(8)	2436.9	—	1878.9	0.33	558.0	2+	0.33
2464.8(9)?	2466.3	3+	1100.9	0.22	1363.9	2+	0.22
—	2482	—	—	—	—	—	—
—	2504.2	—	—	—	—	—	—
2524.6(8)	2524.7	2+	1315.1	0.15	1209.0	2+	0.30
			1161.4	0.15	1363.9	2+	
2580.4(8)	2579.5	1−	2022.4	0.17	558.0	2+	0.62
			1371.3	0.45	1209.0	2+	
2637.4(7)	2636.2	—	2079.4	0.21	558.0	2+	0.21
2659.9(7)	2660.0	[2+]	2101.9	0.60	558.0	2+	0.60
2698.8(8)	2699.5	[1±, 2+]	2698.3	0.21	0	0+	0.45
			2141.3	0.24	558.0	2+	
2749.7(7)	2751.5	—	2191.7	0.42	558.0	2+	0.42
2766.9(6)	2767.0	[1±, 2+]	2766.3	0.38	0	0+	0.80
			2209.5	0.42	558.0	2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	$P_s(110°)$
2786.4(9)	2787.8	—	1577.4	0.17	1209.0	2+	0.17
2800.7(6)	2799.3	—	2800.7	0.32	0	0+	0.32
2812.6(7)	2810.8	—	2812.3	0.21	0	0+	0.57
			2254.9	0.36	558.0	2+	
—	2826.1	—	—	—	—	—	—
2955.6(8)	2956	—	2397.6	0.32	558.0	2+	0.32
2999.1(6)	2999.6	1−	2999.1	0.38	0	0+	0.38
3109.0(7)	3110	1±, 2+	3108.8	0.38	0	0+	0.79
			2551.2	0.41	558.0	2+	

Cadmium-116 $^{116}_{48}$Cd

E_γ	$I_\gamma(110°)$	E_i	E_γ	$I_\gamma(110°)$	E_i
423.2(5)	0.47(5)		1604.5(3)	1.79(9)	2118.1
513.6(4)	100	513.6	1641.8 *m*	2.2(2)	1643.1
553.1(3)	0.80(9)		1780.2(3)	1.21(8)	2293.8
657.0(2)	1.6(3)	2037.8	1805.2(7)	0.17(6)	
666.5 *m*	0.75(8)		1827.9(7)	0.17(6)	
699.9(2)	12.7(11)	1213.5	1845.4(6)	0.24(8)	
706.2(2)	15.6(9)	1219.8	1862.0(4)	0.61(7)	2375.6
725.5(5)	0.64(6)		1877.3(3)	0.96(9)	2390.9
769.3(2)	3.36(16)	1282.9	1950.1(6)	0.28(8)	
797.6(5)	0.28(8)		2058.6(6)	0.22(6)	
807.3(3)	1.19(12)	2027.1	2091.5(3)	0.71(6)	2605.2
867.2(2)	3.5(2)	1380.8	2110.5(6)	0.25(5)	
1029.8(2)	1.89(9)	(2243.3)	2139.1(6)	0.30(10)	
1120(4)	0.61(7)		2208.1(3)	0.91(8)	2721.8
1129.5(2)	3.47(15)	1643.1	2247.4(6)	0.22(7)	
1157.3 *m*	1.18(5)	2375.6	2272.4(4)	0.50(6)	
1213.5(2)	6.1(3)	1213.5	2290.4(6)	0.25(5)	
1304.9(4)	0.73(5)		2350.5(7)	0.21(7)	
1364.7(5)	0.26(4)		2364.0(10)	0.14(6)	
1385.5(5)	0.33(4)	2605.2	2396.9(8)	0.18(6)	
1401.9(3)	2.25(14)	1915.5	2435.8(7)	0.22(5)	
1408.4(3)	3.6(2)	1922.0	2478.7(3)	0.70(7)	2478.7
1415.4(3)	1.06(9)	1929.0	2642.3(8)	0.19(5)	
1422.0(7)	0.17(4)		2661.1(5)	0.45(6)	
1438.0(3)	2.03(9)	1951.6	2702.9(8)	0.16(8)	
1528.2 *m*	1.48(8)	2041.8	2719.3(7)	0.21(8)	

Level scheme of ^{116}Cd [76De, 75Ca]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	$P_s(110°)$
513.6(4)	513.9	2+	513.6	100	0	0+	45
1213.5(2)	1213.6	2+	1213.5	6.1	0	0+	17
			699.9	12.7	513.6	2+	
1219.8(2)	1220.2	4+	706.2	15.6	513.6	2+	13
1282.9(3)	1283.4	0+	769.3	3.36	513.6	2+	3.4
1380.8(3)	1381.3	0+	867.2	3.5	513.6	2+	1.9
1643.1(3)	1644	[2+]	1641.8	⩽2.2	0	0+	⩽5.7
			1129.5	3.47	513.6	2+	
1915.5(5)	1917	[3]	1401.9	2.25	513.6	2+	2.2
1922.0(5)	1923	3−	1408.4	3.6	513.6	2+	3.6
1929.0(5)	1930	[0+ (1±)]	1415.4	1.06	513.6	2+	1.1
1951.6(5)	1953	[3(2+)]	1438.0	2.03	513.6	2+	2.0
2027.1(3)	2027	[5, 6+]	807.3	1.19	1219.8	4+	1.2
2037.8(4)	2037	—	657.0	1.6	1380.8	0+	1.6
2041.8	2044	—	1528.2	⩽1.48	513.6	2+	⩽1.5
2118.1(5)	2115	[3(2+)]	1604.5	1.79	513.6	2+	1.8
2243.3(4)?	2245	[3]	1029.8	1.89	1213.5	2+	1.9
2293.8(5)	2296	[2+, 3]	1780.2	1.21	513.6	2+	1.2
2375.6(6)	2371	[3]	1862.0	0.61	513.6	2+	⩽1.8
			1157.3	⩽1.18	1219.8	4+	
2390.9(5)	2386	[3]	1877.3	0.96	513.6	2+	0.96
—	2434	—	—	—	—	—	—
2478.7(5)	2478	—	2478.7	0.70	0	0+	0.70
—	2509	—	—	—	—	—	—
—	2565	—	—	—	—	—	—
2605.2(5)	2604	[3(2+)]	2091.5	0.71	513.6	2+	1.0
			1385.5	0.33	1219.8	4+	
—	2648	—	—	—	—	—	—
2721.8(5)	2715	—	2208.1	0.91	513.6	2+	0.9

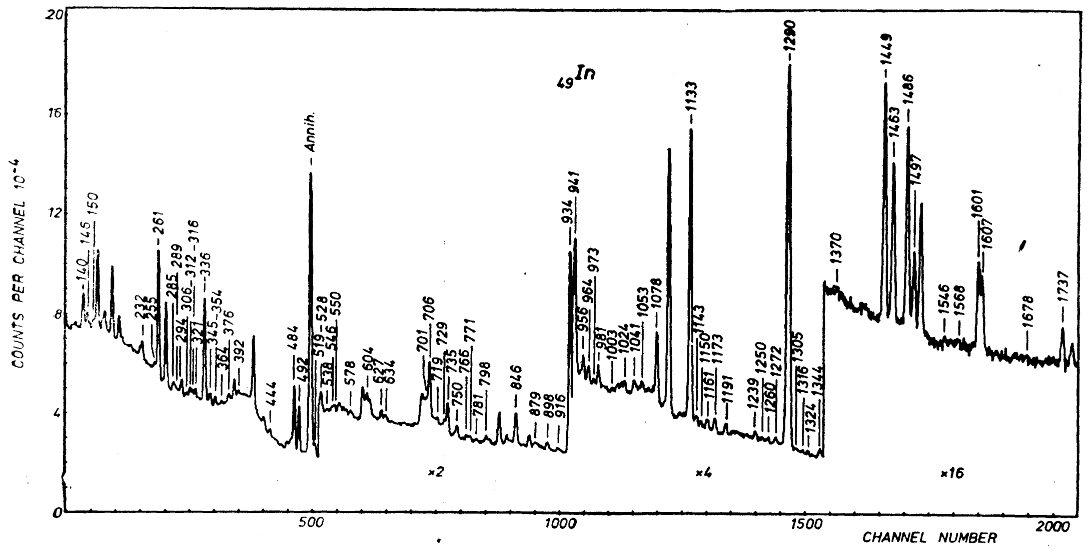
Indium $^{115}_{49}$In

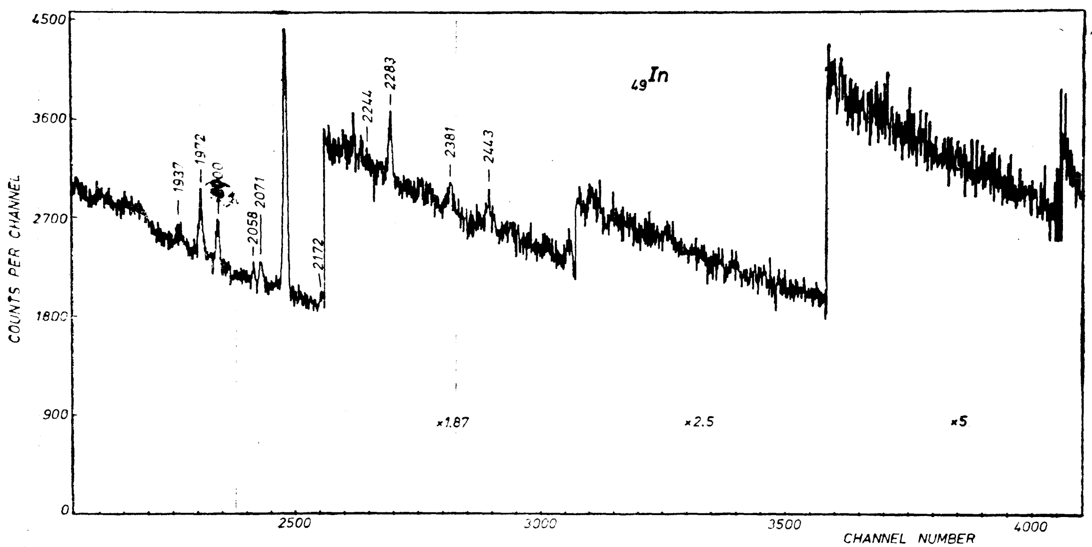
E_γ	I_γ	E_i	E_γ	I_γ	E_i
139.7(3)?	10(2)		293.6(3)	1.6(2)	
146.4(2)	7.2(8)		306.1(3)	1.6(2)	
149.7(3)	2.3(4)		312.1(2)	3.2(3)	
231.6(2)	2.8(4)	828.7	315.9(3)	2.8(3)	1449.0
255.1(3)	1.7(5)	^{113}In	321.2(3)	3.6(3)	
260.84(10)	42(5)	597.1	336.30(10)	35(3)	336.3
284.7(5)	2.7(4)	1418.3	345.4(2)	5.5(7)	
288.7(3)	2.0(3)		354.3(3)	2.4(3)	1486.2

E_γ	I_γ	E_i	E_γ	I_γ	E_i
364.4(4)	1.1(2)		1052.8(2)	1.9(2)	
376.2(3)	2.4(2)	1509.5	1077.5(2)	11(1)	1077.5
392.0(3)	1.5(3)	^{113}In	1132.62(10)	72(5)	1132.6
444.4(2)	2.7(3)		1142.6(3)	1.5(2)	
484.49(10)	26(4)	1418.3	1150.0(6)	0.69(20)	2282.9
492.42(10)	17(3)	828.7	1160.7(2)	2.4(2)	
519.3(3)	7.0(6)	1937.6	1173.1(2)	3.6(3)	
528.0(2)	5.9(4)	864.3	1191.0(2)	2.4(2)	
538.2(5)	0.68(27)		1239.4(2)	1.8(2)	
546.1(4)	1.2(2)	(1678.4)	1250.5(6)	0.82(14)	2382.0
550.4(3)	1.9(3)	1999.6	1259.7(6)	0.97(20)	
577.7(3)	1.9(3)	1509.5	1272.2(3)	1.8(2)	
604.0(2)	3.8(3)	1736.9	1290.4(8)	47(4)	1290.4
627.3(2)	3.1(3)	1917.7	1305.4(6)	0.73(22)	
633.8(6)	0.39(10)		1316.2(7)	0.46(9)	
701.0(3)	3.2(3)		1324.4(6)	1.2(2)	
705.64(10)	19(2)	(1302.8)	1344.4(2)	2.4(2)	2208.7
718.6(3)	1.6(2)		1370.5(7)	0.61(15)	
729.4(2)	3.0(3)		1448.95(20)	18(2)	1449.0
735.14(10)	12(2)		1462.96(20)	12(2)	1463.0
749.8(1)	5.9(3)		1486.24(20)	16(2)	1486.2
765.6(2)	2.7(2)	2057.0	1496.9(2)	6.1(3)	
771.0(2)	2.7(2)	1601.3	1546.1(6)	0.59(12)	
781.3(3)	1.9(2)	2244.4	1568.2(7)	0.58(12)	
797.7(2)	3.0(2)		1601.3(5)	7.4(7)	1601.3
846.1(2)	6.6(3)		1607.0(5)	5.7(7)	1607.7
879.0(2)	3.4(2)		1678.1(7)	0.49(15)	(1678.4)
897.5(2)	1.9(2)		1737.2(3)	3.5(4)	1736.9
915.8(3)	1.2(2)		1937.2(6)	1.4(3)	1937.6
933.8(2)	100	933.8	1971.9(3)	3.8(2)	1971.9
941.28(10)	28(4)	941.3	1999.9(3)	2.4(2)	1999.6
955.7(2)	3.5(3)	(1888.9)	2058.4(16)	0.28(14)	2057.0
964.3(2)	3.4(3)		2070.8(8)	1.9(2)	2070.8
973.0(4)	0.57(15)		2171.7(14)	1.0(3)	2171.7
980.6(2)	4.0(3)	2057.0	2244.5(17)	0.68(23)	2244.4
1002.8(7)	0.43(11)	(1831.5)	2282.9(6)	2.4(2)	2282.9
1024.1(2)	2.3(3)	(1888.9) (^{113}In)	2381.2(13)	2.2(5)	2382.0
			2443.4(10)	1.6(4)	2443.4
1040.9(3)	1.5(2)				

Level scheme of ^{115}In [75Ra, 76Av1, 76Tu]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
336.30(10)	336.23	1/2−	336.30	35	0	9/2+	7*
597.14(10)	597.03	3/2−	260.84	42	336.3	1/2−	22
828.72(15)	828.38	3/2+	231.6	2.8	597.1	3/2−	15
			492.42	17	336.3	1/2−	
864.3(3)	863.95	[1/2+]	528.0	5.9	336.3	1/2−	2.3*
933.8(2)	933.6	7/2+	933.8	100	0	9/2+	69*
941.28(10)	941.2	5/2+	941.28	28	0	9/2+	28
1077.5(2)	1077.8	5/2+	1077.5	11	0	9/2+	7
1132.65(10)	1132.5	11/2+	1132.65	72	0	9/2+	55
1290.4(8)	1290.5	13/2+	1290.4	47	0	9/2+	43*
1302.8(2)?	—	—	705.64	19	597.1	3/2−	19
1418.3(3)	1418.0	9/2+	284.7	2.7	1132.6	11/2+	22
			484.49	26	933.8	7/2+	
1448.95(20)	1448.7	9/2+	315.9	2.8	1132.6	11/2+	19
			1448.95	18	0	9/2+	
1462.96(20)	1462.5	7/2+	1462.96	12	0	9/2+	10
1486.2(2)	1485.8	9/2+	354.3	2.4	1132.6	11/2+	18
			1486.24	16	0	9/2+	
1509.5(4)	1511?	[7/2—11/2]	376.2	2.4	1132.6	11/2+	4.3
			577.7	1.9	933.8	7/2+	
—	1565	—	—	—	—	—	—
1601.3(6)	1603.6	[5/2, 7/2]	771.0	2.7	828.7	3/2+	10
			1601.3	7.4	0	9/2+	
1607.0(5)	1603.6	—	1607.0	5.7	0	9/2+	5.7
—	1620	—	—	—	—	—	—
1678.4(7)?	—	—	546.1	1.2	1132.6	11/2+	1.7
			1678.1	0.49	0	9/2+	
1736.9(3)	1745	—	604.0	3.8	1132.6	11/2+	7.3
			1737.2	3.5	0	9/2+	
1831.5(7)?	1830	—	1002.8	0.43	828.7	3/2+	0.43
1888.9(6)?	1890	—	955.7	3.5	933.8	7/2+	⩽5.8
			1024.1?	2.3	864.3	1/2+	
1917.7(3)	1917	—	627.3	3.1	1290.4	13/2+	3.1
1937.6(5)	1940	[5/2—13/2]	519.3	7.0	1418.3	9/2+	8.4
			1937.2	1.4	0	9/2+	
1971.9(3)	1977	[5/2—13/2]	1971.9	3.8	0	9/2+	3.8
1999.6(3)	1999	[5/2—13/2]	550.4	1.9	1448.9	9/2+	4.3
			1999.9	2.4	0	9/2+	
2057.0(8)	—	—	765.6	2.7	1290.4	13/2+	7.0
			980.6	4.0	1077.5	5/2+	
			2058.4	0.28	0	9/2+	
2070.8(8)	2070	[5/2—13/2]	2070.8	1.9	0	9/2+	1.9
—	2120		—	—	—	—	—
2171.7(14)	—	[5/2—13/2]	2171.7	1.0	0	9/2+	1.0
2208.7(4)	2208	—	1344.4	2.4	864.3	1/2+	2.4
2244.4(4)	—	—	781.3	1.9	1462.9	7/2+	2.5
			2244.5	0.68	0	9/2+	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2282.9(6)	—	—	1150.0	0.69	1132.6	11/2+	3.1
			2282.9	2.4	0	9/2+	
—	2310	—	—	—	—	—	—
2382.0(13)	—	—	1250.5	0.82	1132.6	11/2+	3.0
			2381.2	2.2	0	9/2+	
2443.4(10)	2430	—	2443.4	1.6	0	9/2+	1.6

Tin $_{50}$Sn

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
158.55(10)	64(5)	^{117}Sn	158.6	989.0 *m*	4.2(4)	^{120}Sn	2159.7
209.0(3)	1.2(3)	^{118}Sn	2489.0	999.6(6)	2.0(5)		
268.7(6)	1.3(4)	^{120}Sn		1003.7 *m*	5.4(8)	^{117}Sn	1004.4
331.9 *m*	3.4(4)	^{124}Sn		1013.4(6)	1.1(2)	^{122}Sn	2154.1
446.0(8)	1.4(4)	^{118}Sn	2489.0	1022.7 *m*	21(2)	^{116}Sn	3549.7
449.9(10)	0.95(30)					^{117}Sn	1020.0
452.9(10)	1.2(3)	^{118}Sn	2773.9				1180
463.4(3)	3.4(4)	^{116}Sn	1756.7			^{120}Sn	2194.2
528.82(10)	4.8(4)	^{118}Sn	1758.5	1050.64(10)	12.2(14)	^{118}Sn	2280.3
552.83(10)	5.9(5)	^{117}Sn	711.4	1065.0 *m*	4.6(5)	^{119}Sn	1089.0
650.7(8)	0.80(20)					^{124}Sn	2192.4
657.2(8)	0.75(20)	^{120}Sn		1073.0 *m*	2.8(4)	^{116}Sn	2365.4
682.5(8)	0.75(20)	^{118}Sn	2964.7			^{124}Sn	2204.3
703.6(4)	3.4(7)	^{120}Sn	1875.0	1090.4(6)	1.8(4)	^{124}Sn	2221.4
733.9(3)	1.4(2)	^{116}Sn	2027.1	1096.3 *m*	15(2)	^{116}Sn	2390.4
762.8(5)	5.0(8)	^{119}Sn	787.0			^{118}Sn	2325.6
768.0(5)	4.6(8)						2328.2
813.2(2)	8.4(10)	^{118}Sn	2043.0	1131.72(10)	16.9(15)	^{124}Sn	1131.6
818.5(4)	3.9(8)	^{116}Sn	2111.9	1140.52(15)	13.6(14)	^{122}Sn	1140.7
827.2(3)	1.5(2)	^{118}Sn	2056.9	1171.30(10)	100	^{120}Sn	1171.3
861.4(2)	4.8(6)	^{117}Sn	1020.0	1184.7(3)	2.4(4)	^{120}Sn	2355.3
897.4 *m*	8.3(7)	^{119}Sn	920.5	1216 *m*	1.8(3)	^{119}Sn	1304.4
			921.4	1229.74(10)	82(6)	^{118}Sn	1229.7
920.6 *m*	6.3(8)	^{119}Sn	920.5	1249.6 *m*	3.2(3)	^{119}Sn	1249.7
			921.4			^{120}Sn	2420.9
925.8(3)	10(1)	^{120}Sn	2097.2	1257.15(10)	3.1(3)	^{112}Sn	1257.2
931.9(8)	1.6(3)	^{116}Sn	2224.8	1293.6(3)	46(5)	^{116}Sn	1293.3
944.8(6)	1.3(6)			1299.4(8)	1.6(5)	^{114}Sn	1299.4
958.7(6)	1.2(4)			1354.4 *m*	3.2(6)	^{116}Sn	2649.7
972.2 *m*	12.0(10)	^{116}Sn	2265.8			^{118}Sn	3111.4
		^{118}Sn				^{119}Sn	1354.0
		^{124}Sn	2101.4			^{120}Sn	
						^{122}Sn	2493.2

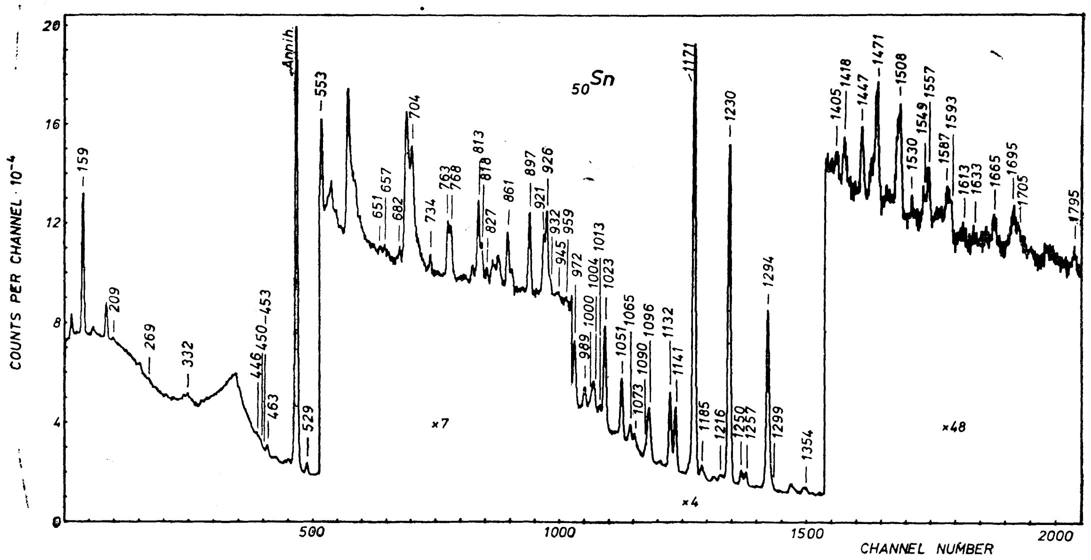
E_γ	I_γ	^AZ	E_i
1405.3(8)	0.46(10)		
1418.3 *m*	0.98(20)	^{118}Sn	
		^{120}Sn	2587.2
1447.3(4)	1.5(15)	^{117}Sn	1447.3
1471.4 *m*	3.3(4)	^{116}Sn	
		^{118}Sn	
		^{120}Sn	2643.3
		^{124}Sn	2602.4
1507.7 *m*	4.4(4)	^{116}Sn	2801.1
		^{118}Sn	2734.5
			2739.9
1529.6(6)	0.60(15)		
1549.4 *m*	0.75(15)	^{116}Sn	2842.9
		^{120}Sn	
1556.8(4)	1.5(2)	^{120}Sn	2728.1
1587.0(8)	1.3(2)		
1593.4(8)	1.0(2)		
1612.7(15)	0.35(10)		
1632.7(15)	0.36(10)		
1664.6 *m*	1.2(2)	^{116}Sn	
		^{120}Sn	2834.9
1695.1 *m*	1.6(3)	^{118}Sn	
1705.3 *m*	1.4(3)	^{118}Sn	
1794.9(8)	0.61(15)		
1810.7(10)	0.60(15)		
1841.8(10)	0.42(10)		
1856.9(10)	0.42(10)	^{124}Sn	2987.3
1866.7(10)	0.41(10)		
1883.9(8)	0.73(20)	^{118}Sn	3112.1

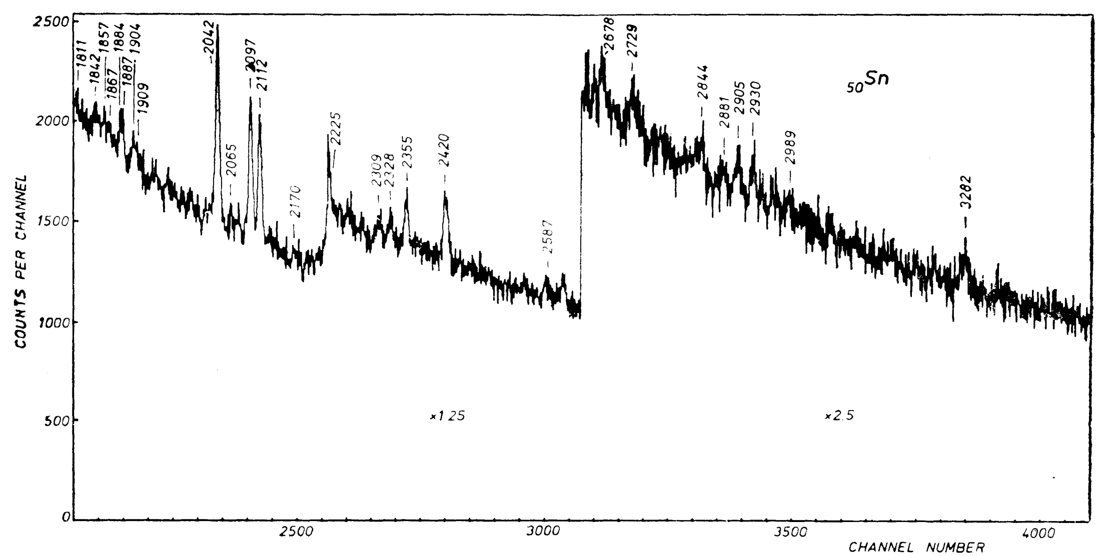
E_γ	I_γ	^AZ	E_i
1887.0(8)	0.93(20)		
1903.8(10)	0.60(15)		
1908.9 *m*	0.41(10)	^{118}Sn	3137.3
		^{120}Sn	3079.3
2042.5(2)	5.2(5)	^{118}Sn	2043.0
2064.9(10)	0.49(15)	^{120}Sn	3237.4
2097.1(2)	4.4(4)	^{120}Sn	2097.2
2112.0(2)	3.5(4)	^{116}Sn	2111.9
2169.7 *m*	0.71(15)	^{116}Sn	3466.7
		(^{118}Sn)	
2224.6(6)	0.80(20)	^{116}Sn	2224.8
2309.2 *m*	0.89(20)	^{116}Sn	
		^{118}Sn	3541.7
2328.5 *m*	0.87(20)	^{116}Sn	3624.3
		^{118}Sn	2328.2
2354.8(8)	1.3(2)	^{120}Sn	2355.3
2420.3 *m*	3.9(6)	^{120}Sn	2420.9
		^{124}Sn	2426.5
2587.1 *m*	0.81(25)	^{116}Sn	2585.1
		^{118}Sn	
2678.0(10)	0.95(30)	^{118}Sn	2677.8
2728.9(12)	0.50(15)	^{120}Sn	2728.1
2844.5(18)	0.51(20)	^{116}Sn	2842.9
2881(2)	0.35(15)		
2905.3(10)	0.70(25)	^{118}Sn	2905.0
2929.5(12)	0.70(25)	^{120}Sn	2930.4
2989(2)	0.50(20)		
3282 *m*	0.80(30)	^{120}Sn	3279.6

The E_i^a data for ^{119}Sn are taken from 72Ja, 73Ra, 72St.

Level scheme of ^{117}Sn [72St, 70Ba]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{117}Sn	158.55(10)	158.6	3/2+	158.55	64	0	1/2+
	—	314.6	11/2−	—	—	—	—
	711.38(15)	711.5	7/2+	552.83	5.9	158.6	3/2+
	—	1004.4	3/2+	1003.7	<5.4	0	3/2+
	1020.0(4)	1020.3	5/2+	861.4	4.8	158.6	3/2+
				1022.7	<21	0	1/2+
	—	1180	5/2+	1022.7	<21	158.6	3/2+
	—	1220	—	—	—	—	—
	—	1325	(7/2−)	—	—	—	—
	1447.3(4)	1447	5/2−	1447.3	1.5	0	1/2+



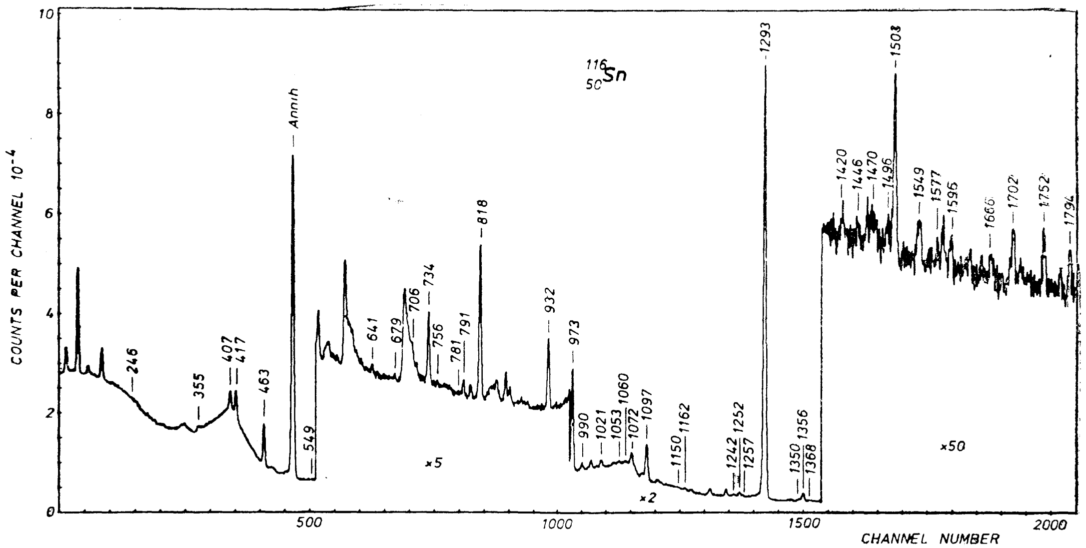


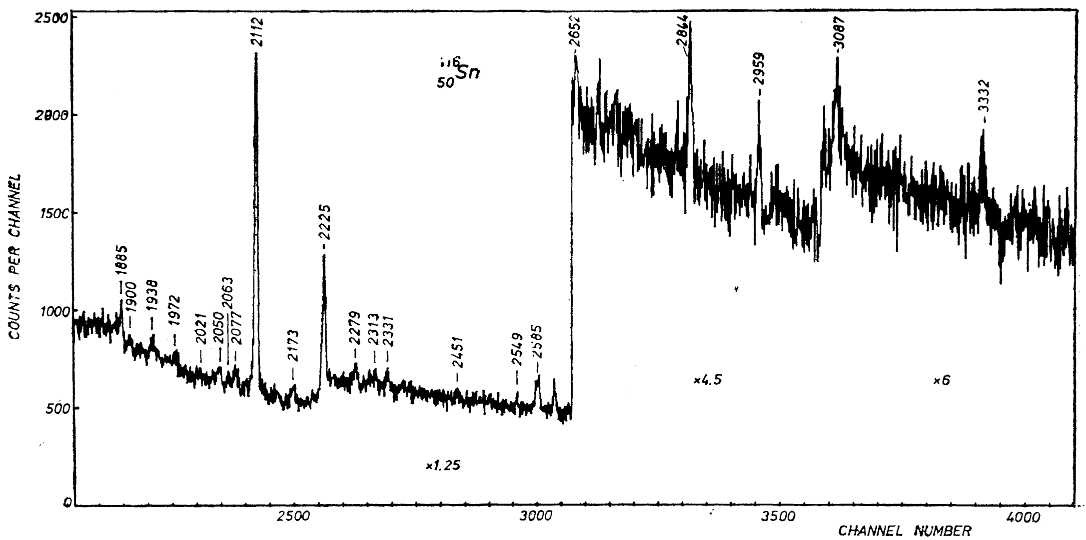
E_γ	I_γ	E_i	E_γ	I_γ	E_i
245.7(11)	0.18(5)	3046.4	1445.9(9)	0.40(10)	
355.2(4)	0.45(10)	2111.9	1470.0(7)	0.54(10)	
407.43(15)	3.5(8)	2772.8	1496.0(10)	0.40(10)	
416.71(15)	4.4(10)	2528.6	1507.8(2)	2.3(5)	2801.1
463.32(15)	6.9(12)	1756.6	1548.9(7)	0.70(15)	2842.9
548.8(4)	0.42(10)		1577.3(14)	0.20(10)	
640.7(6)	0.30(10)		1596.5(7)	0.40(10)	
678.9(6)	0.38(10)		1665.8(8)	0.36(10)	
706.5(6)	0.35(10)	3096.9	1701.5(5)	0.81(15)	
733.82(15)	3.5(7)	2027.1	1752.1(7)	0.70(15)	3046.4
755.5(7)	0.20(8)		1793.6(5)	0.60(15)	3086.9
780.8(6)	0.38(10)	3046.4	1885.2(6)	0.56(15)	3178.5
791.3(2)	0.90(25)		1900.4(7)	0.34(10)	3193.7
818.54(15)	9.0(12)	2111.9	1937.6(18)	0.30(10)	3229.9
931.61(15)	4.3(6)	2224.8	1972.5(20)	0.22(8)	
972.54(15)	15.9(25)	2265.9	2020.8(10)	0.26(10)	
989.9(4)	0.90(20)		2049.9(6)	0.60(15)	3343.2
1020.8(3)	1.2(3)		2063.1(15)	0.38(10)	
1052.7(9)	0.38(10)		2076.6(8)	0.70(15)	3369.9
1060.0(8)	0.44(10)		2111.9(2)	9.0(12)	2111.9
1072.1(3)	1.8(4)	2365.4	2173.4(14)	0.42(10)	3466.7
1097.13(15)	7.3(10)	2390.4	2224.6(2)	2.5(6)	2224.8
1150.2(8)	0.30(10)		2278.8(10)	0.40(10)	3572.1
1161.6(6)	0.42(10)		2313.4(10)	0.30(10)	
1242.1(6)	0.45(10)		2331.3(12)	0.45(10)	3624.7
1251.6(3)	0.70(15)	2544.9	2451.2(13)	0.40(10)	3744.5
1256.8(6)	0.40(10)		2549.2(13)	0.30(10)	3842.5
1293.32(10)	100	1293.3	2585.1(6)	0.85(20)	2585.1
		2585.1	2652.1(15)	0.48(10)	2649.7
1349.5(7)	0.30(10)		2843.5(6)	1.0(3)	2842.9
1356.4(2)	2.0(4)	2649.7	2959.4(8)	0·50(10)	2959.4
1367.6(11)	0.25(10)		3087.2(15)	0.54(10)	3086.9
1420.2(9)	0.22(10)		3332.4(13)	0.50(10)	3332.4

Level scheme of ^{116}Sn [74Ah1, 72Mc, 70Be, 74Ar, 75Ca]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1293.32(10)	1293.54	2+	1293.32	100	0	0+	40
1756.64(18)	1756.78	0+	463.32	6.9	1293.3	2+	6.4
2027.14(18)	2027.3	0+	733.82	3.5	1293.3	2+	3.5
2111.86(18)	2112.15	2+	355.2	0.45	1756.6	0+	14.0
			818.54	9.0	1293.3	2+	
			2111.9	9.0	0	0+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2224.8(2)	2225.33	2+	931.61	4.3	1293.3	2+	6.8
			2224.6	2.5	0	0+	
2265.86(18)	2266.09	3−	972.54	15.9	1293.3	2+	10.2*
2365.4(3)	2365.90	5−	1072.1	1.8	1293.3	2+	3.6*
2390.45(18)	2390.67	4+	1097.1	7.3	1293.3	2+	7.0
2528.6(2)	2529.00	4+	416.71	4.4	2111.9	2+	4.4
2544.9(3)	2545.4	[0+]	1251.6	0.70	1293.3	2+	0.7
2585.1(6)	2586.7	[(1±)2+]	1293.3	<100	1293.3	2+	>0.8
			2585.1	0.85	0	0+	
2649.7(2)	2650.1	[2+]	1356.4	2.0	1293.3	2+	2.5
			2652.1	0.48	0	0+	
—	2701.7	—	—	—	—	—	—
2772.8(4)	2773.25	6−	407.43	3.5	2365.4	5−	3.5
2801.1(2)	2801.2	4+	1507.8	2.3	1293.3	2+	2.1
2842.9(6)	2843.8	[2+]	1548.9	0.70	1293.3	2+	1.7
			2843.5	1.0	0	0+	
—	2908.78	7−	—	—	—	—	—
2959.4(8)	2959.4	[1±]	2959.4	0.50	0	0+	0.5
3046.4(6)	3046.4	4+	245.7	0.18	2801.1	4+	1.3
			780.8	0.38	2265.9	3−	
			1752.1	0.70	1293.3	2+	
3086.9(5)	3089.3	[2+]	1793.6	0.60	1293.3	2+	1.1
			3087.2	0.54	0	0+	
3096.9(6)	3096.56	(4+)	706.5	0.35	2390.4	4+	0.9*
3178.5(6)	3170	—	1885.2	0.56	1293.3	2+	0.6
3193.7(7)	—	—	1900.4	0.34	1293.3	2+	0.3
—	3209.92	7−	—	—	—	—	—
3229.9(18)	3230.0	(2+)	1937.6	0.30	1293.3	2+	0.3
3332.4(13)	3334.2	[(1±)2+]	3332.4	0.50	0	0+	0.5
3343.2(6)	—	—	2049.9	0.60	1293.3	2+	0.6
3369.9(8)	—	—	2076.6	0.70	1293.3	2+	0.7
—	3405.5	—	—	—	—	—	—
—	3436	—	—	—	—	—	—
—	3453.0	—	—	—	—	—	—
3466.7(14)	—	—	2173.4	0.42	1293.3	2+	0.4
—	3504	—	—	—	—	—	—
—	3513	—	—	—	—	—	—
3572.1(10)	3574	—	2278.8	0.40	1293.3	2+	0.4
3624.7(12)	3627	—	2331.3	0.45	1293.3	2+	0.4
—	3658.1	—	—	—	—	—	—
—	3686	—	—	—	—	—	—
3744.5(13)	3733	—	2451.2	0.40	1293.3	2+	0.4
—	3767	—	—	—	—	—	—
—	3802	—	—	—	—	—	—
3842.5(13)	3845	—	2549.2	0.30	1293.3	2+	0.3



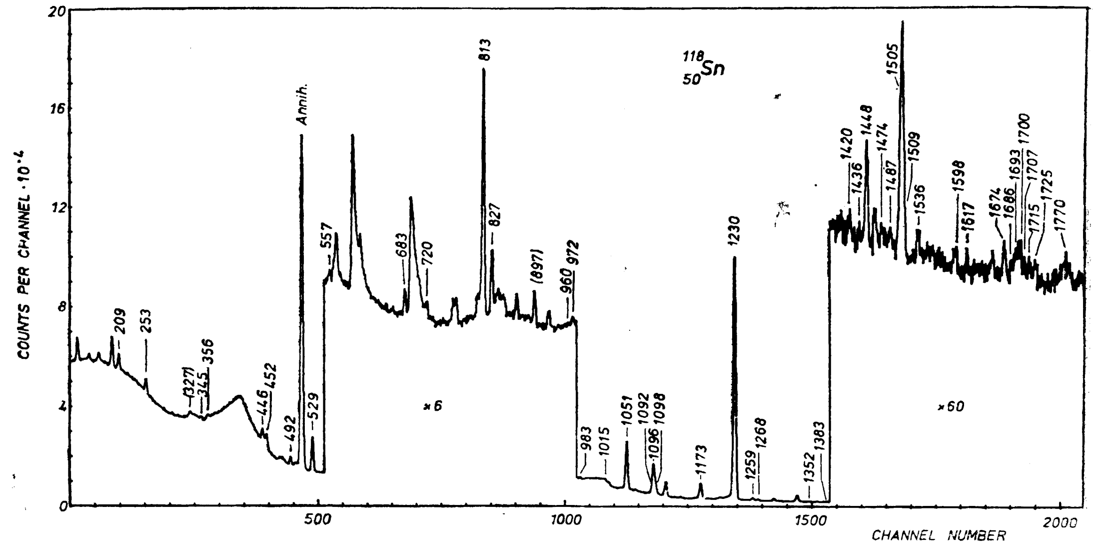


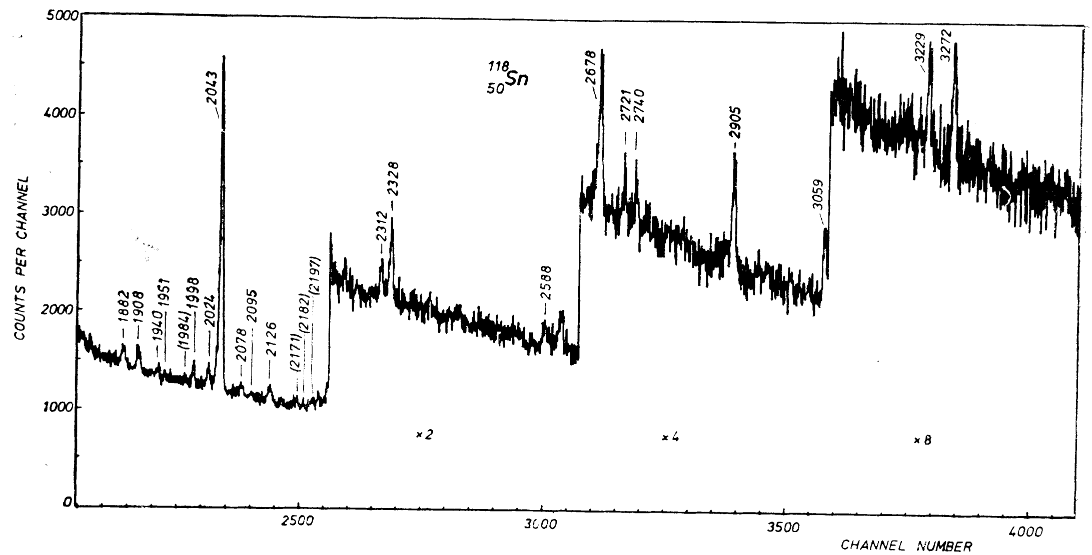
E_γ	I_γ	E_i	E_γ	I_γ	E_i
208.7(2)	1.8(4)	2489.0	1536.4(9)	0.30(10)	
253.1(2)	1.6(4)	2574.6	1597.5(11)	0.13(5)	3355.7
326.7(3)?	0.40(10)		1617.2(9)	0.26(8)	
345.1(6)	0.32(10)		1674.5(6)	0.40(10)	2904.8
355.9(6)	0.42(10)		1685.9(12)	0.18(6)	
446.1(2)	2.2(5)	2489.0	1693.3(7)	0.30(10)	
452.4(2)	2.2(5)	2773.9	1700.0(7)	0.40(10)	2929.7
492.4(2)	1.2(2)		1707.1(12)	0.18(6)	
528.81(15)	6.2(9)	1758.5	1715.4(15)	0.17(6)	
557.2(8)	0.25(10)		1725.0(15)	0.28(10)	2954.7
683.0(2)	1.1(2)	2964.7	1770.4(17)	0.20(8)	
720.3(5)	0.50(10)		1882.4(9)	0.50(10)	(3111.7)
813.03(15)	9.6(16)	2043.0	1907.6(8)	0.47(10)	3137.3
827.2(2)	2.6(4)	2056.9	1939.7(12)	0.24(8)	
897.4(5)?	1.6(4)		1951.4(10)	0.23(8)	
960.4(10)	0.27(8)		1984.0(12)?	0.22(8)	
972.2(6)	0.57(20)		1998.5(6)	0.32(10)	3228.5
982.6(17)	0.14(5)		2023.6(9)	0.24(8)	3253.3
1015.2(5)	0.50(10)		2043.21(15)	6.0(12)	2043.0
1050.62(10)	16.1(24)	2280.3	2078.1(16)	0.26(10)	
1091.8(2)	0.35(15)	2321.5	2094.9(18)	0.13(8)	
1095.92(10)	10.6(22)	2325.6	2125.6(12)	0.45(10)	3355.7
1098.5(2)	3.0(8)	2328.2	2171.1(12)?	0.25(8)	
1173.2(2)	3.2(6)	2402.9	2181.7(13)?	0.22(8)	
1229.71(10)	100	1229.7	2196.7(12)?	0.26(8)	
1259.3(2)	1.1(2)	2489.0	2312.0(9)	0.32(10)	
1267.9(3)	0.43(10)	2497.6	2328.2(4)	0.80(20)	2328.2
1352.1(15)	0.18(6)	(3111.7)	2588.5(21)	0.40(10)	
1383.0(11)	0.18(6)		2677.8(4)	1.0(3)	2677.8
1419.8(9)	0.37(10)		2720.8(10)	0.40(10)	
1436.3(8)	0.20(5)		2739.9(10)	0.36(10)	2739.0
1448.2(3)	0.97(15)	2677.8	2905.0(4)	0.76(20)	2904.8
1474.1(19)	0.22(7)		3058.7(5)	0.63(15)	3058.7
1487.2(17)	0.18(6)		3228.9(8)	0.35(10)	3228.5
1504.8(2)	2.1(6)	2734.5	3272.2(7)	0.46(10)	3272.2
1509.3(2)	1.1(2)	2739.0			

Level scheme of ^{118}Sn [74Ah1, 70Ho, 70Be, 76Ca]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1229.71(10)	1229.64	2+	1229.71	100	0	0+	40
1758.52(18)	1757.8	0+	528.81	6.2	1229.7	2+	5.9
2043.0(3)	2043.1	2+	813.03	9.6	1229.7	2+	13.4
			2043.21	6.0	0	0+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2056.9(2)	2056.5	0+	827.2	2.6	1229.7	2+	2.6
—	2120	—	—	—	—	—	—
2280.33(15)	2280.33	4+	1050.62	16.1	1229.7	2+	7.6*
2321.5(2)	2321.15	5-	1091.8	0.35	1229.7	2+	2.2*
2325.63(15)	2326.5	[3-]	1095.92	10.6	1229.7	2+	10.6
2328.2(2)	2326.5	[2+]	1098.5	3.0	1229.7	2+	3.8
			2328.2	0.80	0	0+	
2402.9(2)	2402.6	(4+, 2+)	1173.2	3.2	1229.7	2+	3.2
2489.0(2)	2488.9	(4+)	208.7	1.8	2280.3	4+	5.1
			446.1	2.2	2043.1	2+	
			1259.3	1.1	1229.7	2+	
2497.6(3)	2496.6	0+	1267.9	0.43	1229.7	2+	0.4
2574.6(3)	2574.83	7-	253.1	1.6	2321.5	5-	1.6
2677.8(3)	2677.4	[2+]	1448.2	0.97	1229.7	2+	2.0
			2677.8	1.0	0	0+	
2734.5(2)	2733.6	(4+)	1504.8	2.1	1229.7	2+	2.1
2739.0(2)	—	[2+]	1509.3	1.1	1229.7	2+	1.5
			2739.9	0.36	0	0+	
2773.9(3)	2769	—	452.4	2.2	2321.5	5-	2.2
—	2810	—	—	—	—	—	—
—	2840	—	—	—	—	—	—
—	2860	—	—	—	—	—	—
—	2892	—	—	—	—	—	—
2904.8(4)	2904	(2+)	1674.5	0.40	1229.7	2+	1.2
			2905.0	0.76	0	0+	
2929.7(7)	2929.3	(2+)	1700.0	0.40	1229.7	2+	0.4
2954.7(15)	—	—	1725.0	0.28	1229.7	2+	0.3
2964.7(3)	2963.5	(4+)	683.0	1.1	2280.3	4+	1.1
—	3055.0	(8+)	—	—	—	—	—
3058.7(5)	3058	(2+)	3058.7	0.63	0	0+	0.6
—	3111.5	(10+)	—	—	—	—	—
3111.7(9)?	—	—	1352.1	0.18	1758.5	0+	0.7
			1882.4	0.50	1229.7	2+	
3137.3(8)	3137.2	(0+)	1907.6	0.47	1229.7	2+	0.5
—	3150	—	—	—	—	—	—
—	3198	—	—	—	—	—	—
3228.5(6)	3228	[(1±) 2+]	1998.5	0.32	1229.7	2+	0.7
			3228.9	0.35	0	0+	
—	3240	—	—	—	—	—	—
3253.3(9)	3254	—	2023.6	0.24	1229.7	2+	0.2
3272.2(7)	3274	[(1±) 2+]	3272.2	0.46	0	0+	0.5
—	3287	(7-)	—	—	—	—	—
—	3320	—	—	—	—	—	—
—	3337	—	—	—	—	—	—
3355.7(11)	—	—	1597.5	0.13	1758.5	0+	0.6
			2125.6	0.45	1229.7	2+	

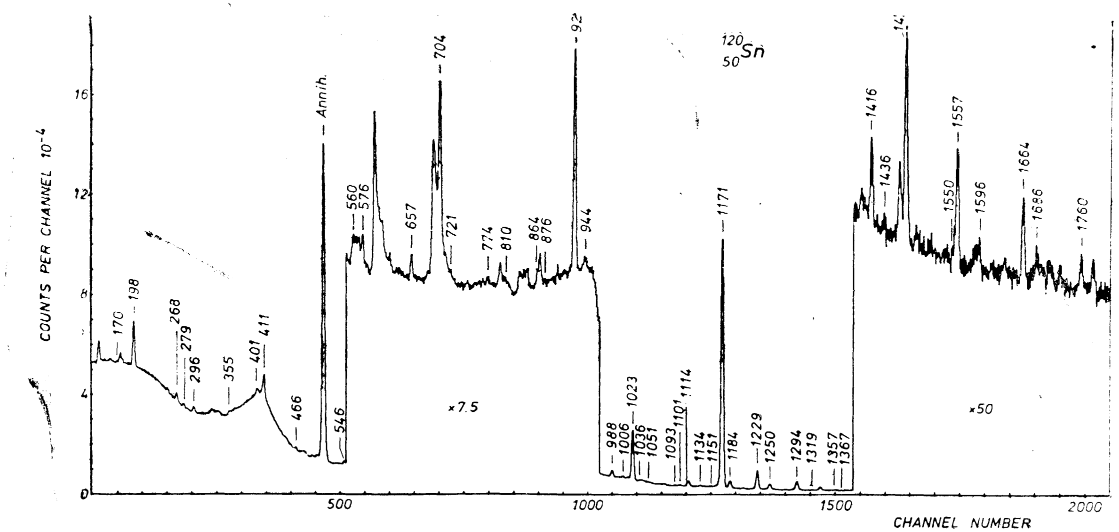


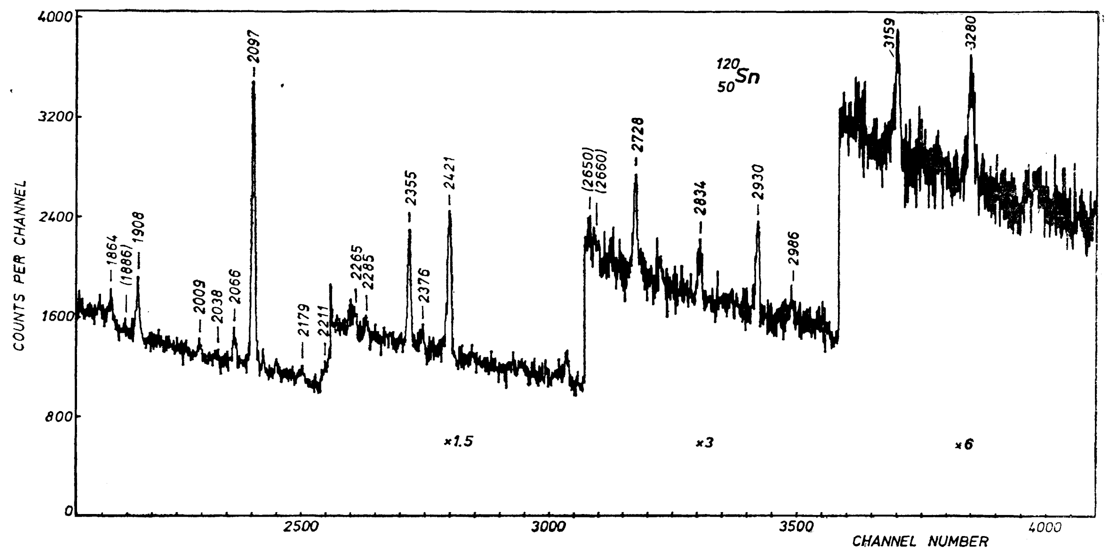


E_γ	I_γ	E_i	E_γ	I_γ	E_i
90.2(8)	9.0(25)	2285.3	1294.2(4)	2.0(7)	2465.5
170.5(10)	0.20(8)		1319.1(11)	0.10(5)	
198.0(8)	2.3(8)	2483.3	1356.9(4)	0.14(6)	
267.8(5)	0.90(20)		1367.0(8)	0.10(5)	
279.3(8)	0.40(10)		1415.9(3)	0.58(10)	2587.2
296.5(2)	0.71(15)	2696.8	1436.4(15)	0.13(5)	
355.1(6)	0.28(10)	2549.3	1472.1(2)	1.7(3)	2643.3
401.2(2)	0.84(15)		1549.6(14)	0.12(5)	
411.44(15)	3.8(6)	2696.8	1556.7(2)	1.2(2)	2728.0
465.5(4)	0.30(10)		1596.2(8)	0.24(8)	
545.8(3)	0.52(10)	2643.3	1664.1(3)	0.74(15)	2835.2
560.3(3)	0.68(15)		1686.0(13)	0.22(8)	
576.1(3)	0.72(15)		1759.5(7)	0.30(10)	2930.5
657.1(4)	0.60(15)		1863.6(9)	0.26(8)	
703.73(15)	4.1(8)	1875.0	1886.1(25)?	0.12(5)	3058.4
721.4(11)	0.12(5)		1908.0(6)	0.70(15)	3079.3
774.5(11)	0.18(6)		2009.2(10)	0.20(8)	
809.9(12)	0.18(6)		2038.0(16)	0.13(5)	
864.2(4)	0.46(10)	3058.4	2066.1(10)	0.40(10)	3237.4
876.1(12)	0.12(5)		2097.2(2)	4.0(7)	2097.2
925.82(15)	8.3(12)	2097.2	2179.0(14)	0.22(7)	
943.5(6)	0.48(10)		2211.4(12)	0.23(7)	
988.4(2)	1.9(3)	2159.7	2265.1(10)	0.35(10)	
1006.0(4)	0.50(10)		2284.7(19)	0.14(5)	
1022.91(15)	16.2(22)	2194.2	2355.2(2)	1.2(2)	2355.3
1035.5(4)	0.62(10)		2375.5(10)	0.32(10)	
1050.7(11)	0.17(8)		2421.0(3)	1.7(3)	2420.9
1093.1(7)	0.22(8)		2650.3(12)?	0.27(9)	
1100.9(4)	0.40(10)		2659.8(14)?	0.20(8)	
1114.2(4)	0.40(10)	2285.3	2728.4(5)	0.72(15)	2728.0
1134.5(5)	0.34(10)		2834.4(7)	0.40(10)	2835.2
1151.4(10)	0.20(10)		2930.4(4)	0.74(15)	2930.5
1171.32(10)	100	1171.3	2985.8(13)	0.26(10)	2985.8
1184.2(2)	3.2(7)	2355.3	3158.6(7)	0.43(10)	3158.6
1229.04(15)	7.5(15)	2400.3	3279.6(9)	0.54(10)	3279.6
1249.6(2)	2.2(4)	2420.9			

Level scheme of ^{120}Sn [74Ah1, 70Be, 71Ha]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1171.32(10)	1171.6	2+	1171.32	100	0	0+	48.
1875.05(18)	1875.6	0+	703.73	4.1	1171.3	2+	4.1
2097.2(2)	2096.9	[2+]	925.82	8.3	1171.3	2+	11.8
			2097.2	4.0	0	0+	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2159.7(2)	2160.7	0+	988.4	1.9	1171.3	2+	1.9
2194.2(2)	2195.0	4+	1022.91	16.2	1171.3	2+	6.5
2285.3(4)	2284.8	5−	90.2	9.0	2194.2	4+	3.3
			1114.2	0.40	1171.3	2+	
2355.3(2)	2355.6	2+	1184.2	3.2	1171.3	2+	4.4
			2355.2	1.2	0	0+	
2400.3(2)	2408	3−	1229.04	7.5	1171.3	2+	6.8
2420.9(2)	2421.2	[2+]	1249.6	2.2	1171.3	2+	3.9
			2421.0	1.7	0	0+	
2465.5(4)	2466.3	4+	1294.2	2.0	1171.3	2+	2.0
2483.3(8)	2486	7−	198.0	2.3	2285.3	5−	<2.3
2549.3(6)	2547	(5−)	355.1	0.28	2194.2	4+	>0.3
2587.2(3)	2587	0+	1415.9	0.58	1171.3	2+	0.6
2643.3(2)	2643.5	4+	545.8	0.52	2097.2	2+	2.2
			1472.1	1.7	1171.3	2+	
2696.8(3)	2693	([4±, 5−])	296.5	0.71	2400.3	3−	4.5
			411.44	3.8	2285.3	4+	
2728.0(2)	2735	2+	1556.7	1.2	1171.3	2+	1.9
			2728.4	0.72	0	0+	
—	2809	(7−, 8+)	—	—	—	—	—
2835.2(3)	2850	[2+]	1664.1	0.74	1171.3	2+	1.1
			2834.4	0.40	0	0+	
2930.5(4)	2938	2+	1759.5	0.30	1171.3	2+	1.0
			2930.4	0.74	0	0+	
2985.8(13)	—	[(1±)]	2985.4	0.26	0	0+	0.3
3058.4(4)	3060	4+	864.2	0.46	2194.2	4+	≤0.6
			(1886.1)	0.12	1171.3	2+	
3079.3(6)	—	[4+]	1908.0	0.70	1171.3	2+	0.7
—	3168	—	—	—	—	—	—
3158.6(7)	—	[2+]	3158.6	0.43	0	0+	0.4
—	3186	4+	—	—	—	—	—
3237.4(10)	—	—	2066.1	0.40	1171.3	2+	0.4
3279.6(9)	3288	2+	3279.6	0.54	0	0+	0.5

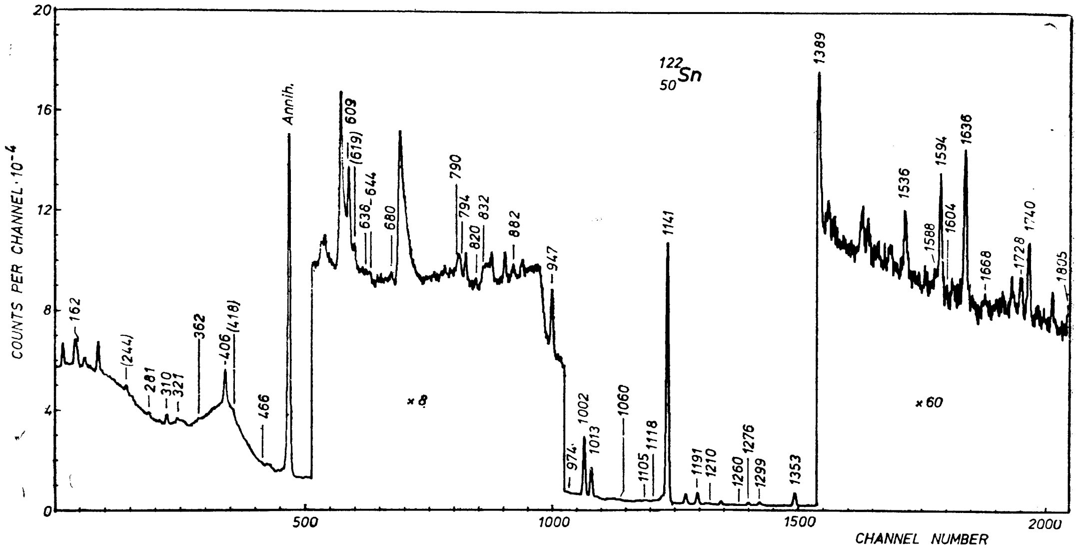
Tin-122 $^{122}_{50}$Sn

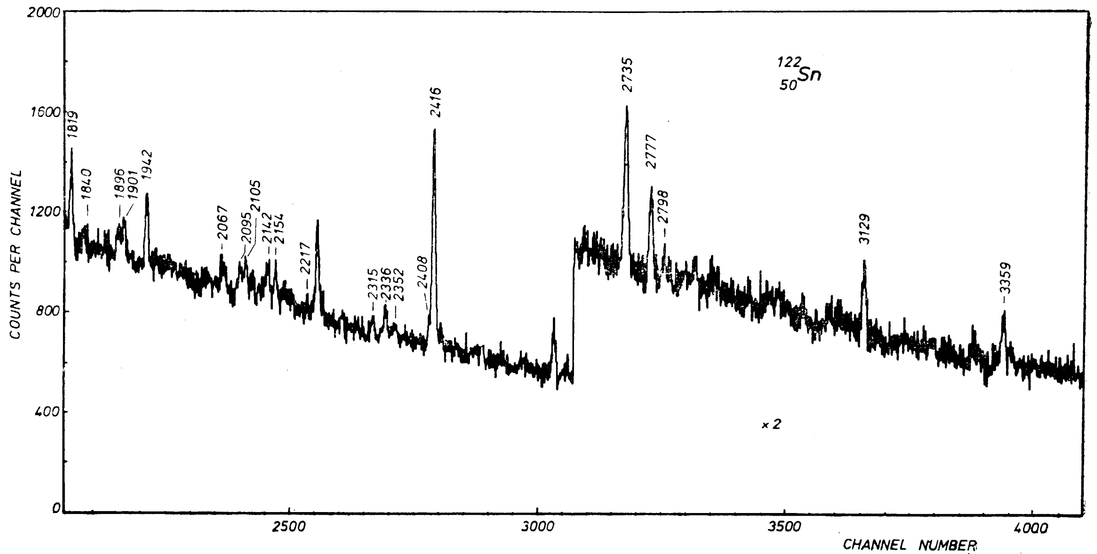
E_γ	I_γ	E_i	E_γ	I_γ	E_i
103.2(8)	10.0(30)	2245.5	309.53(15)	1.5(3)	2555.0
161.7(3)	2.5(5)		320.6(9)	0.30(10)	
244.2(3)?	1.1(3)		362.0(8)	0.38(10)	
280.7(4)	0.46(10)		405.82(15)	6.0(11)	2651.3

E_γ	I_γ	E_i	E_γ	I_γ	E_i
417.6(6)?	0.40(20)		1594.3(2)	1.1(3)	2735.0
465.6(10)	0.22(10)		1603.7(10)	0.12(6)	
609.2(4)	1.5(3)		1635.5(2)	1.3(4)	2776.2
619.0(15)?	0.18(8)		1668.1(12)	0.21(10)	
638.0(10)	0.14(7)		1727.6(6)	0.38(10)	2868.3
644.0(6)	0.28(10)	2974.9	1740.3(4)	0.72(15)	
680.0(10)	0.37(20)		1804.7(13)	0.22(10)	
790.3(5)	0.56(10)		1818.9(4)	0.72(15)	2959.6
794.1(4)	0.66(15)		1840.0(19)	0.20(10)	
819.9(6)	0.40(10)	2974.9	1895.5(10)	0.31(10)	3036.3
832.4(7)	0.51(10)	2974.9	1900.8(8)	0.35(10)	3041.5
882.2(7)	0.56(15)	3036.3	1942.4(4)	0.58(15)	3083.1
947.3(2)	4.1(9)	2088.0	2066.9(10)	0.30(10)	
974.4(11)	0.18(10)	3128.6	2095.1(10)	0.30(10)	3235.8
1001.63(10)	19.3(25)	2142.4	2104.9(9)	0.43(10)	
1013.4(2)	9.7(16)	2154.1	2142.4(9)	0.41(10)	3283.1
1060.1(5)	0.46(10)		2154.2(11)	0.28(10)	2154.1
1104.8(6)	0.44(10)	2245.5	2216.9(14)	0.18(10)	3358.3
1117.5(10)	0.20(8)		2315.3(14)	0.22(10)	3456.0
1140.74(10)	100	1140.7	2336.4(12)	0.30(10)	3477.1
1190.82(15)	4.6(10)	2331.6	2351.6(15)	0.16(8)	
1210.4(4)	0.32(10)	3364.5	2408.1(9)	0.26(10)	
1259.9(9)	0.11(5)	3675.0	2416.3(2)	2.6(8)	2416.3
1275.5(2)	1.2(3)	2416.3	2735.0(4)	1.2(3)	2735.0
1298.8(5)	0.30(10)		2776.6(6)	0.64(15)	2776.2
1352.52(15)	5.9(14)	2493.3	2798.5(17)	0.16(10)	
1389.0(3)	0.90(20)		3128.6(7)	0.48(10)	3128.6
1535.8(5)	0.45(15)		3358.6(10)	0.38(10)	3358.3
1587.7(10)	0.20(10)				

Level scheme of ^{122}Sn [74Ahl, 70Be]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1140.74(10)	1142	2+	1140.74	100	0	0+	49
2088.0(2)	2090	[0+]	947.3	4.1	1140.7	2+	4.1
2142.37(15)	2142	4+	1001.63	19.3	1140.7	2+	8.8
2154.1(2)	—	[2+]	1013.4	9.7	1140.7	2+	8.5
			2154.2	0.28	0	0+	
2245.5(6)	2245	5−	103.2	10.0	2142.4	4+	2.5
			1104.8	0.44	1140.7	2+	
2331.56(18)	2328	4+	1190.82	4.6	1140.7	2+	4.3
—	2390	(7−)	—	—	—	—	—
2416.3(2)	2412	2+	1275.5	1.2	1140.7	2+	3.8
			2416.3	2.6	0	0+	





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2493.26(18)	2492	3−	1352.52	5.9	1140.7	2+	5.9
2555.0(3)	2556	(8+)	309.53	1.5	2245.5	5−	1.5
2651.3(3)	2654	([4±,5−])	405.82	6.0	2245.5	5−	6.0
2735.0(2)	—	[(1±)2+]	1594.3	1.1	1140.7	2+	2.3
			2735.0	1.2	0	0+	
2776.2(2)	—	2+	1635.5	1.3	1140.7	2+	1.9
			2776.6	0.64	0	0+	
2868.3(6)	2870	—	1727.6	0.38	1140.7	2+	0.4
2959.6(4)	—	—	1818.9	0.72	1140.7	2+	0.7
2974.9(5)	2976	—	644.0	0.28	2331.6	4+	1.2
			819.9	0.40	2154.1	2+	
			832.4	0.51	2142.4	4+	
3036.3(7)	3038		882.2	0.56	2154.1	2+	0.9
			1895.5	0.31	1140.7	2+	
3041.5(10)	—	—	1900.8	0.35	1140.7	2+	0.4
3083.1(4)	3084	(5−,4+)	1942.4	0.58	1140.7	2+	0.6
3128.6(7)	3135	2+	974.4	0.18	2154.1	2+	0.7
			3128.6	0.48	0	0+	
3235.8(10)	3237	4+	2095.1	0.30	1140.7	2+	0.3
3283.1(9)	3283	—	2142.4	0.41	1140.7	2+	0.4
—	3313	4+	—	—	—	—	—
3358.3(10)	—	[(1±)2+]	2216.9	0.18	1140.7	2+	0.6
			3358.6	0.38	0	0+	
3364.5(5)	3367	3−	1210.4	0.32	2154.1	2+	0.3
3456.0(14)	3457	(3−)	2315.3	0.22	1140.7	2+	0.2
3477.1(12)	3477	—	2336.4	0.30	1140.7	2+	0.3

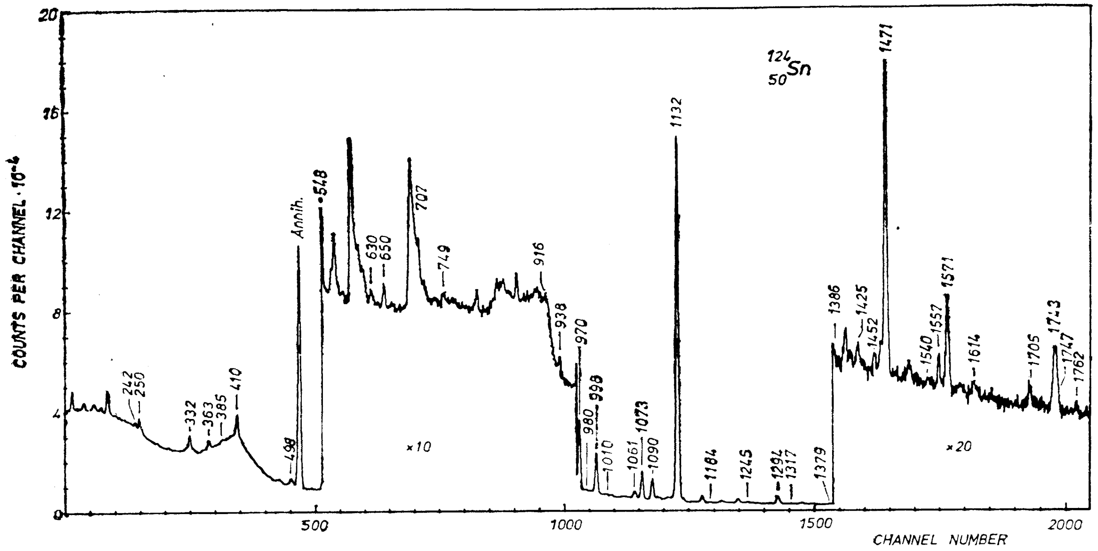
Tin-124 — $^{124}_{50}$Sn

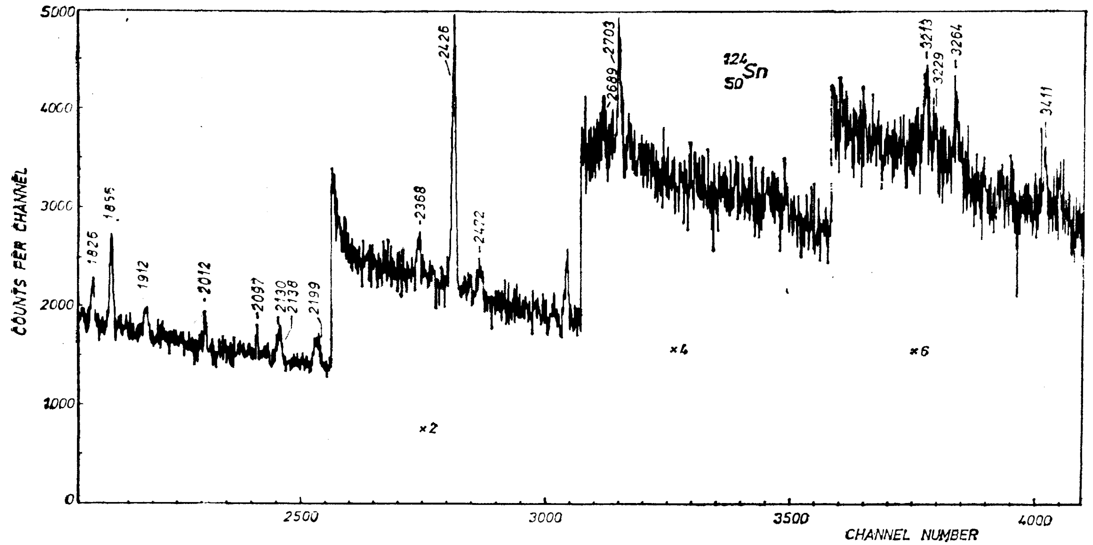
E_γ	I_γ	E_i	E_γ	I_γ	E_i
102.3(5)	8.2(30)	2204.3	706.8(5)	0.36(10)	
119.8(6)	3.4(12)	2324.1	748.6(10)	0.41(10)	2878.8
242.5(4)	1.0(2)	2446.8	915.5(4)	0.84(20)	
249.9(2)	1.5(3)		938.1(4)	0.51(10)	
332.0(3)	4.0(8)		969.82(15)	15.8(22)	2101.4
363.2(4)	1.7(4)		980.4(9)	0.29(10)	
385.1(5)	0.46(10)	2987.8	997.83(15)	9.5(16)	2129.5
409.8(2)	6.0(12)	2614.1	1010.3(10)	0.25(10)	
498.1(2)	2.3(4)		1060.8(2)	2.0(4)	2192.4
548.4(2)	2.7(5)		1072.70(15)	7.2(12)	2204.3
630.0(9)	0.37(10)		1089.81(15)	5.8(11)	2221.4
650.5(4)	0.70(15)		1131.62(10)	100	1131.6

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1183.8(11)	0.23(8)		1826.0(7)	0.52(10)	2957.6
1244.8(9)	0.32(10)		1856.4(4)	1.1(2)	2987.8
1294.4(2)	2.6(6)	2426.3	1912.4(10)	0.38(10)	
1316.7(17)	0.21(8)		2012.0(8)	0.34(10)	3143.6
1379.0(10)	0.31(10)		2096.9(9)	0.30(10)	3228.7
1386.3(11)	0.20(10)		2130.3(9)	0.33(10)	2129.5
1421.7(9)	0.26(10)		2137.7(10)	0.25(10)	3269.3
1451.7(5)	0.28(10)		2199.3(8)	0.40(10)	3330.9
1470.9(2)	4.8(9)	2602.5	2367.7(12)	0.28(10)	3499.3
1539.7(15)	0.15(9)		2426.5(2)	2.4(6)	2426.3
1556.8(5)	0.42(10)	2688.6	2471.8(18)	0.27(10)	3603.4
1571.3(2)	1.7(4)	2702.9	2689.4(11)	0.29(10)	2688.6
1614.4(13)	0.18(8)		2703.1(6)	0.50(10)	2702.9
1705.1(8)	0.30(10)		3212.6(11)	0.31(10)	3212.6
1743.0(5)	0.97(20)	2874.6	3229.1(13)	0.22(10)	3228.7
1747.3(4)	1.0(2)	2878.8	3263.8(9)	0.37(10)	3263.8
1762.3(13)	0.18(8)		3410.7(16)	0.23(10)	3410.7

Level scheme of ^{124}Sn [74Ah1, 70Be]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1131.62(10)	1132	2+	1131.62	100	0	0+	45
2101.44(18)	2107	4+	969.82	15.8	1131.6	2+	7.6
2129.48(18)	2130	[2+]	997.83	9.5	1131.6	2+	9.4
			2130.3	0.33	0	0+	
2192.4(2)	—	[0+]	1060.8	2.0	1131.6	2+	2.0
2204.32(18)	2213	[5−]	102.3	8.2	2101.4	4+	5.0
			1072.70	7.2	1131.6	2+	
2221.43(18)	—	[4+]	1089.81	5.8	1131.6	2+	5.8
2324.1(6)	2335	7−	119.8	3.4	2204.3	5−	3.4
2426.3(2)	2435	2+	1294.4	2.6	1131.6	2+	5.0
			2426.5	2.4	0	0+	
2446.8(4)	2455	(8+)	242.5	1.0	2204.3	5−	1.0
2602.5(2)	2613	3−	1470.9	4.8	1131.6	2+	4.3
2614.1(3)	—	([4±,5−])	409.8	6.0	2204.3	5−	6.0
2688.6(5)	—	[(1±)]	1556.8	0.42	1131.6	2+	0.7
			2689.4	0.29	0	0+	
2702.9(2)	2713	[2+]	1571.3	1.7	1131.6	2+	2.2
			2703.1	0.50	0	0+	
2874.6(5)	2879	—	1743.0	0.97	1131.6	2+	1.0
2878.8(4)	2900	—	748.6	0.41	2129.5	2+	1.4
			1747.3	1.0	1131.6	2+	
2957.6(7)	2952	—	1826.0	0.52	1131.6	2+	0.5





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2987.8(4)	3009	3−	385.1	0.46	2602.5	3−	1.6
			1856.4	1.1	1131.6	2+	
3143.6(8)	3158	4+	2012.0	0.34	1131.6	2+	0.3
3212.6(11)	—	[(1±2)+]	3212.6	0.31	0	0+	0.3
3228.7(9)	3232	2+	2096.9	0.30	1131.6	2+	0.5
			3229.1	0.22	0	0+	
3263.8(9)	—	[(1±)2+]	3263.8	0.37	0	0+	0.4
3269.3(10)	—	—	2137.7	0.25	1131.6	2+	0.2
—	3282	—	—	—	—	—	—
3330.9(8)	—	—	2199.3	0.40	1131.6	2+	0.4
—	3366	4+	—	—	—	—	—
3410.7(16)	—	[(1±)2+]	3410.7	0.23	0	0+	0.2
—	3416	4+	—	—	—	—	—
3499.3(12)	—	—	2367.7	0.28	1131.6	2+	0.3
—	3516	3−	—	—	—	—	—
—	3577	2+	—	—	—	—	—
3603.4(18)	3602	—	2471.8	0.27	1131.6	2+	0.3

Antimony $_{51}$Sb

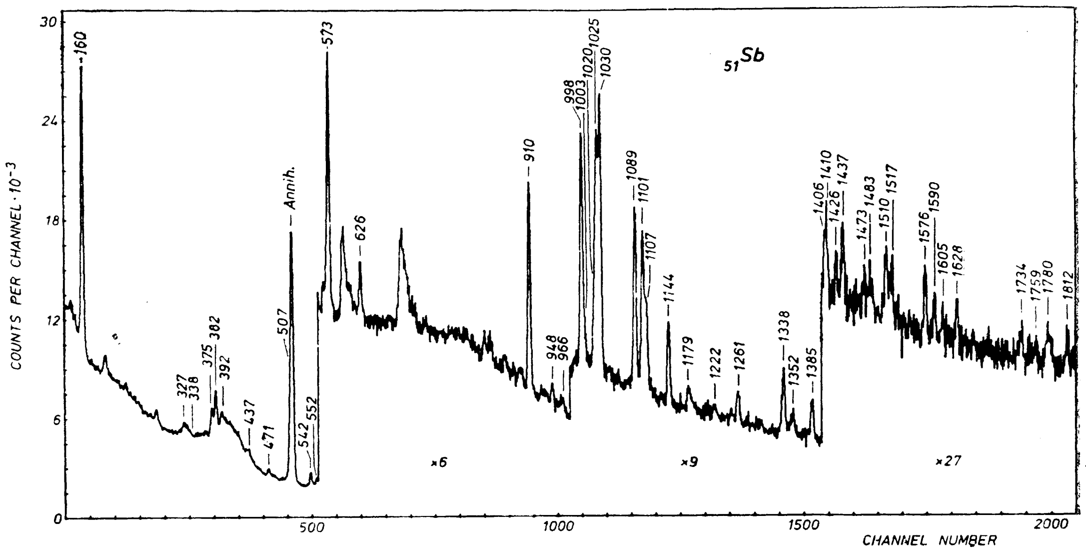
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
160.33 *c*	360(120)	^{123}Sb	160.3	1025.1(5)	84(13)	^{121}Sb	1025.1
327.8(8)	6(2)			1030.1(3)	101(10)	^{123}Sb	1030.1
337.4(8)	5.4(18)			1088.64 *c*	72(5)	^{123}Sb	1088.6
375.1(2)	31(3)	^{121}Sb	1410.6	1101.1(3)	59(8)	^{121}Sb	1139.3
381.78(15)	55(4)	^{123}Sb	542.1			^{123}Sb	1261.0
391.6(4)	13(3)			1106.9 *m*	39(7)	^{121}Sb	1144.5
436.7 *m*	16(4)	^{121}Sb	1472.7	1144.5(3)	31(3)	^{121}Sb	1144.5
			1474.1	1179.0 *m*	12(3)	^{123}Sb	1337.5
470.7(4)	9.9(16)	^{121}Sb	507.6	1221.5(10)	4.2(15)		
507.2(6)	130(30)	^{121}Sb	507.6	1261.0(5)	14(2)	^{123}Sb	1261.0
542.1(2)	26(3)	^{123}Sb	542.1	1337.5(3)	33(3)	^{123}Sb	1337.5
552.0(3)	14(2)	^{123}Sb	712.3	1352.4 *m*	15(3)	^{123}Sb	1509.6
573.08 *c*	73(5)	^{121}Sb	573.1	1385.3(3)	18(2)	^{121}Sb	1385.3
626.4(3)	17(2)			1405.8(12)	5(2)	^{121}Sb	1405.8
909.77(15)	100	^{121}Sb	946.9	1409.9(10)	7(2)	^{121}Sb	1410.6
948.0(5)	8(2)	^{121}Sb	(946.9)	1425.8(8)	4.8(18)	^{121}Sb	1425.8
966.0 *m*	6(2)	^{121}Sb	1472.7	1436.9(5)	14(2)	^{121}Sb	1474.1
			1474.1	1472.7(8)	5(2)	^{121}Sb	1472.7
998.4(3)	77(8)	^{121}Sb	1035.6	1483.1 *m*	7(2)	^{121}Sb	1521
1003.3(8)	10(3)			1509.6(6)	15(3)	^{123}Sb	1509.6
1019.8(8)	34(8)	^{123}Sb	1180.1	1517.4(9)	10(2)		

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1575.5(6)	11(2)	^{123}Sb	1575.4	1734.0(9)	7(2)	^{121}Sb	1734.0
1590.4(9)	6(2)	^{121}Sb	1628.0	1758.9(14)	5(2)		
1604.8(15)	3.6(18)			1779.6 *m*	19(3)		
1628.3(7)	8(2)	^{121}Sb	1628.0	1811.5(9)	7(2)	^{121}Sb	1811.5

Level schemes of ^{121}Sb [73Co, 73Bo, 71Ba2, 71Ho] and ^{123}Sb [74Ra, 73Co, 73Bo, 72Au1, 71Ba2]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{121}Sb	—	37.15	7/2+	—	—	—	—
	507.6(4)	507.54	3/2+	507.2	130	0	5/2+
				470.7	9.9	37.2	7/2+
	573.08 *c*	573.08	1/2+	573.08	73	0	5/2+
	946.92(15)	947.3	(9/2,7/2)+	948.0?	8	0	5/2+
				909.77	100	37.2	7/2+
	1025.1(5)	1024.7	7/2+	1025.1	84	0	5/2+
	1035.6(3)	1035.5	9/2,11/2)+	998.4	77	37.2	7/2+
	—	1139.3	(11/2,9/2)+	1101.1	<59	37.2	7/2+
	1144.5(3)	1145.0	9/2+	1144.5	31	0	5/2+
				1106.9	<39	37.2	7/2+
	1385.3(3)	1385	3/2+	1385.3	18	0	5/2+
	1405.8(10)	1408	(1/2—5/2)	1405.8	5	0	5/2+
	1410.6(4)	1410	—	1409.9	7	0	5/2+
				375.1	31	1035.6	(9/2,11/2)+
	1425.8(8)	1427	5/2+	1425.8	4.8	0	5/2+
	—	1446	(11/2−)	—	—	—	—
	1472.7(8)	1472	5/2+	1472.7	5	0	5/2+
				966.0	<6	507.6	3/2+
				436.7	<16	1035.6	(9/2,11/2)+
	1474.1(5)	1475	5/2+	1436.9	14	37.2	7/2+
				966.0	<6	507.6	3/2+
				436.7	<16	1035.6	(9/2,11/2)+
	—	1514	—	—	—	—	—
	—	1521	—	1483.1	<7	37.2	7/2+
	1628.0(7)	1630	—	1628.3	8	0	5/2+
				1590.4	6	37.2	7/2+
	—	1659	—	—	—	—	—
	1734.0(9)	1735	1/2+	1734.0	7	0	5/2+
	1811.5(10)	1816	(3/2—9/2)	1811.5	7	0	5/2+
^{123}Sb	160.33 *c*	160.33	5/2+	160.33	360	0	7/2+
	542.11(16)	542.1	3/2+	542.1	26	0	7/2+
				381.78	55	160.3	5/2+
	712.3(3)	712.5	1/2+	552.0	14	160.3	5/2+

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{123}Sb	1030.1(3)	1030.23	9/2+	1030.1	101	0	7/2+
	1088.64 *c*	1088.64	11/2+	1088.64	72	0	7/2+
	—	1129	—	—	—	—	—
	1180.1(8)	1181.27	(7/2—11/2)+	1019.8	34	160.3	5/2+
	1261.0(5)	1260.9	—	1261.0	14	0	7/2+
				1101.1	<59	160.3	5/2+
	1337.5(3)	1337.42	—	1337.5	33	0	7/2+
				1179.0	<12	160.3	5/2+
	1509.6(6)	1511	(3/2,5/2)+	1509.6	15	0	7/2+
				1352.4	<15	160.3	5/2+
	1575.4(5)	1577	—	1575.4	11	0	7/2+

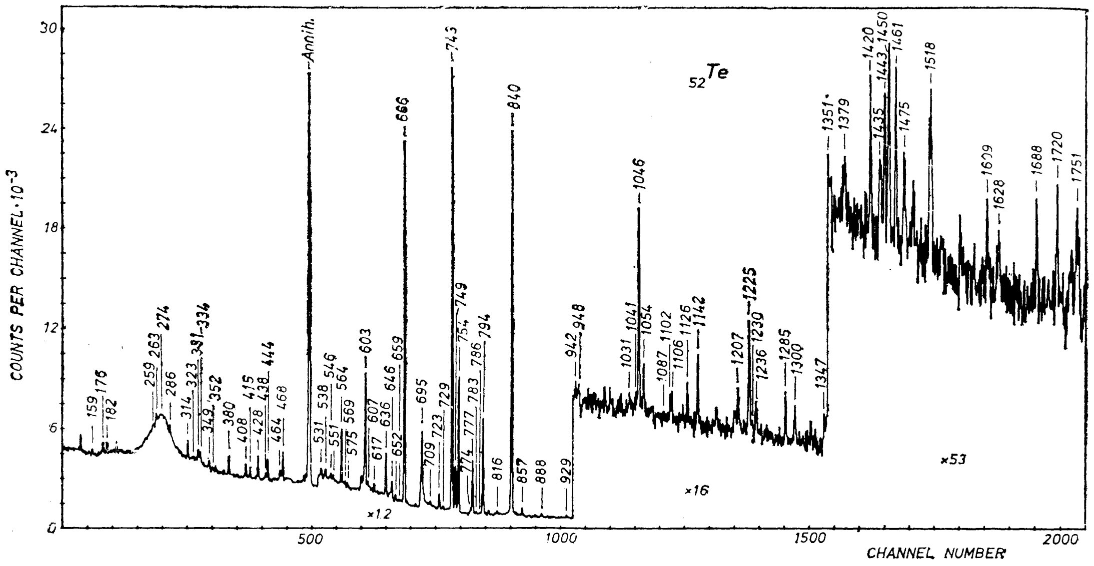


Tellurium

$_{52}$Te

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
159.1(3)	7.7(15)	^{123}Te	159.1	258.6(6)	0.88(24)	^{130}Te	2404.8
176.0(5)	13.4(14)	^{125}Te	321.0	262.7(3)	2.7(4)	^{128}Te	(2396.2)
182.4(4)	5.5(9)	^{130}Te	1815.6	274.0(6)	2.0(4)		

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
285.7(3)	1.8(3)	^{130}Te	2432.4	839.59(7)	91(5)	^{130}Te	839.6
		^{130}Te	(2101.5)	857.0(3)	2.1(2)	^{126}Te	2218.4
314.2(3)	3.0(3)	^{128}Te	1811.3	888.5(8)	0.75(18)		
322.6(8)	0.7(2)	^{128}Te	2133.5	929.2(6)	0.87(14)	^{128}Te	2426.2
331.1(3)	2.5(5)	^{130}Te	2146.7	942.0(8)	0.55(16)		
334.4(3)	2.3(5)	^{130}Te		947.8 *m*	1.0(3)	^{126}Te	(2309.4)
348.6(3)	2.1(3)	^{130}Te	1981.7	1030.8(10)	0.30(12)		
352.2(5)	0.58(14)	^{128}Te	(2487.7)	1041.3(6)	0.61(14)		
380.3(2)	3.8(5)	^{125}Te	525.0	1046.3(2)	4.9(5)	^{130}Te	1885.8
408.0(3)	2.4(4)	^{125}Te	443.5	1053.8(6)	1.02(13)	^{124}Te	1657.4
414.7(3)	1.6(3)	^{126}Te	1776.3			^{128}Te	2573.7
427.8(2)	4.0(4)	^{125}Te	463.3	1086.6(8)	0.62(18)	^{124}Te	2335.2
437.9(4)	0.8(2)	^{128}Te		1101.5(10)	0.58(23)		
443.5(2)	4.4(4)	^{125}Te	443.5	1105.7(10)	0.43(17)		
463.8(8)	2.2(4)	^{125}Te	463.3	1125.6(2)	0.72(10)	^{130}Te	(1964.8)
468.18(17)	6.1(6)	^{130}Te	2101.5	1142.1(2)	2.0(3)	^{130}Te	1981.7
530.9(3)	2.2(3)	^{128}Te	2028.0	1207.4(10)	1.2(3)	^{126}Te	1873.5
537.8(3)	1.7(2)			1225.42(18)	3.2(3)	^{128}Te	1968.7
546.3(8)	1.0(3)			1229.9(8)	0.25(9)		
550.6(8)	0.9(3)	^{130}Te	2138.8	1236.1(5)	1.02(18)	^{128}Te	1979.0
564.11(15)	10.5(9)	^{122}Te	564.1	1284.6(3)	1.14(18)	^{128}Te	2028.0
568.6(8)	2.2(8)			1299.7(10)	1.4(4)	^{130}Te	2138.8
575.1(6)	0.78(20)			1346.8(5)	0.92(16)	^{126}Te	2013.3
602.70(10)	24(3)	^{124}Te	602.8	1351.0(5)	0.99(17)	^{130}Te	2190.7
606.9(2)	1.6(3)	^{125}Te	642.4	1379.0(8)	0.37(14)	^{126}Te	2045.3
617.1(4)	1.4(3)	^{122}Te	1181.2	1420.5(2)	1.31(18)	^{126}Te	1420.3
636.40(18)	9.2(9)	^{128}Te	2133.5			^{128}Te	2163.6
		^{125}Te	671.5	1435.4(5)	1.10(15)	^{124}Te	2039.3
645.9(2)	3.6(5)	^{124}Te	645.9	1443.1(3)	1.7(3)	^{130}Te	2282.7
651.9(3)	1.2(2)	^{126}Te	2013.3	1449.9(3)	2.1(3)	^{128}Te	2193.5
658.7(8)	0.42(15)	^{130}Te	(2246.9)	1461.2(8)	1.5(4)	^{130}Te	(2300.4)
666.44(7)	69(5)	^{126}Te	666.4	1474.6(6)	0.9(2)	^{128}Te	(2218.0)
694.8(2)	12(2)	^{126}Te	1361.5	1517.5 *m*	2.3(7)	^{126}Te	2181.6
708.6(5)	0.93(18)	^{124}Te	1957.9			^{126}Te	2184.4
		^{126}Te	(2128.6)	1608.6(6)	1.0(3)	^{128}Te	2352.1
722.88(18)	2.7(3)	^{124}Te	1325.6	1627.5(4)	0.68(12)	^{130}Te	2467.0
729.4(4)	0.72(10)			1688.3(5)	1.0(2)	^{130}Te	2527.2
743.31(7)	100	^{128}Te	743.3	1719.7(5)	1.0(2)	^{124}Te	2323.0
748.83(15)	9.5(5)	^{130}Te	1588.4			^{126}Te	2386.0
753.92(15)	30.8(15)	^{126}Te	1420.3	1751.4(8)	1.2(3)	^{128}Te	2494.1
		^{128}Te	1497.2	1837.4(10)	0.47(18)	^{126}Te	2503.7
773.6(3)	1.0(4)	^{128}Te	2270.6	1906.1(8)	0.65(22)	^{130}Te	2744.5
776.91(18)	11.1(9)	^{128}Te	1520.1	2006.2(10)	0.26(11)	^{128}Te	2748.8
782.8(8)	0.7(3)			2045.6(8)	0.8(3)	^{126}Te	2045.4
786.1(8)	0.5(2)			2191.1(6)	1.5(4)	^{130}Te	2190.7
793.67(8)	21.2(12)	^{130}Te	1633.2	2283.2(8)	0.46(12)	^{130}Te	2282.7
816.4(5)	0.52(14)	^{130}Te	2449.8	2507.3(10)	0.31(12)	^{128}Te	2508.2



Tellurium-124 $^{124}_{52}Te$

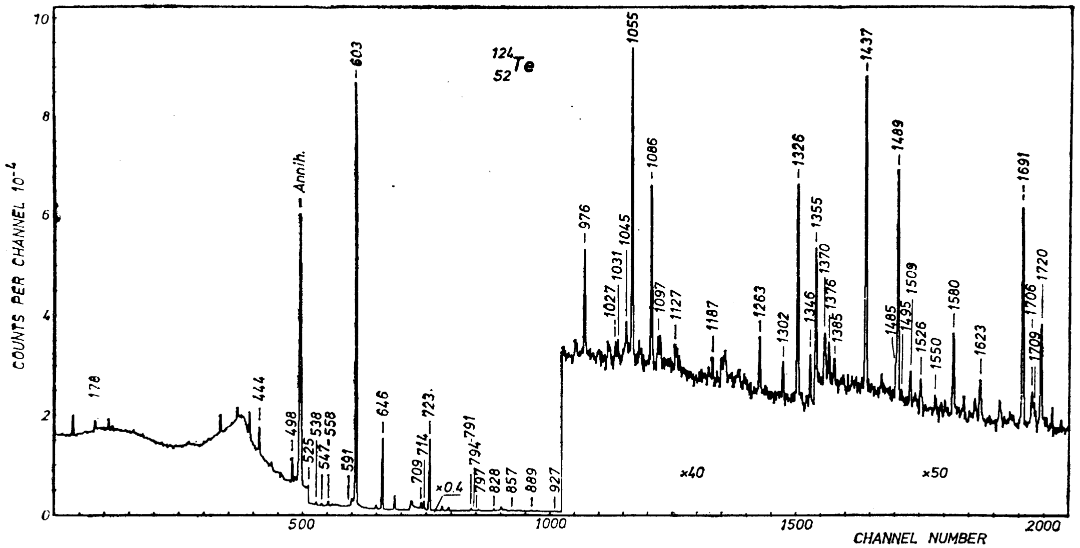
E_γ	I_γ	E_i	E_γ	I_γ	E_i
177.7(3)	1.4(2)	(^{125}Te)	1026.9(6)	0.15(5)	
443.7(3)	2.0(2)	2483.4(+^{125}Te)	1031.0(6)	0.14(5)	
498.37(10)	1.84(10)	1747.0	1044.9(2)	0.15(3)	2293.8
525.4(5)	0.37(9)	2483.4	1054.59(10)	2.04(20)	1657.4
537.8(3)	0.60(6)	(^{123}Te) (2284.8)	1086.49(10)	1.32(13)	2335.2
546.7(2)	0.42(10)		1097.3(5)	0.24(4)	
557.6(2)	0.82(10)	(1883.2)	1126.8(5)	0.33(13)	
591.2(2)	0.47(6)		1186.8(5)	0.11(2)	
602.76(7)	100	602.8	1263.4(2)	0.44(5)	
645.90(7)	15.9(10)	1248.7	1301.5(3)	0.33(4)	
709.3(2)	1.52(15)	1957.9	1325.56(10)	2.0(2)	1325.6
713.85(15)	1.90(19)	2039.4(2039.3)	1346.0(2)	0.36(4)	
722.78(7)	17.6(10)	1325.6	1355.18(15)	0.97(12)	1957.9
790.7(4)	0.47(9)	2039.4(2039.3)	1369.6(3)	0.57(10)	2618.4
793.8(8)	0.34(10)	2540.8	1376.3(3)	0.35(6)	2701.9
797.3(8)	0.22(7)	(2454.3)	1385.1(3)	0.25(4)	2710.7
827.83(15)	0.47(7)	(2153.3)	1436.57(10)	2.63(20)	2039.3
856.9(2)	0.19(6)	2182.6			2039.4
888.6(2)	0.35(10)		1485.3(5)	0.09(3)	
927.0(8)	0.21(10)	(2886.5)	1489.0(2)	1.85(25)	2091.8
976.28(10)	0.56(6)	2224.9	1494.9(8)	0.10(4)	

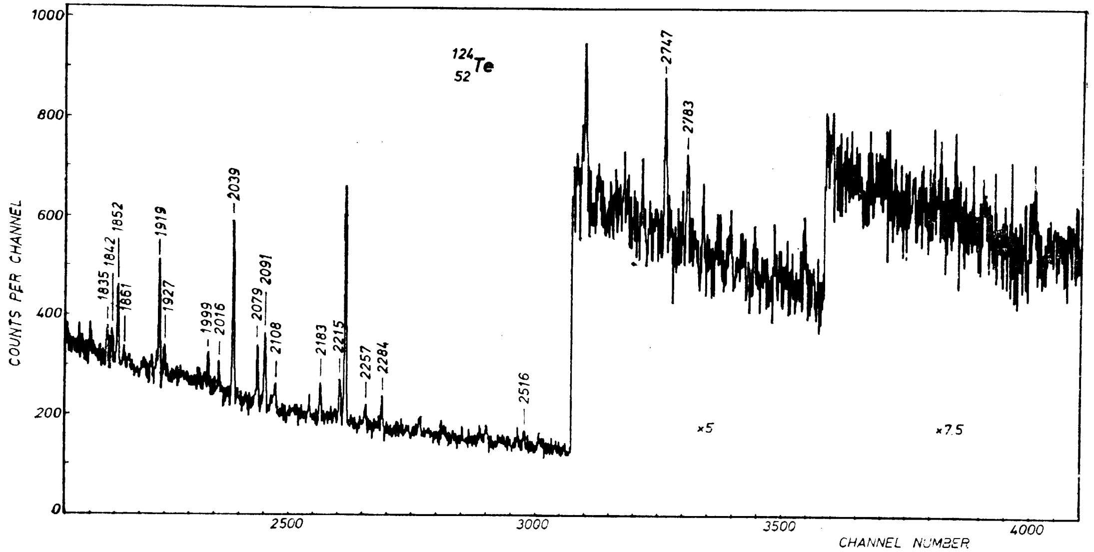
E_γ	I_γ	E_i	E_γ	I_γ	E_i
1509.3(5)	0.29(7)	2834.9	1927.1(3)	0.19(4)	2529.9
1526.4(8)	0.25(8)	2774.1	1998.6(5)	0.18(4)	2600.4
1550.3(8)	0.14(3)	(2153.3)	2016.1(7)	0.11(4)	2618.4
1579.9(3)	0.76(8)	2182.6	2039.27(10)	1.15(12)	2039.3
1622.7(6)	0.46(9)	2224.9			2641.0
1691.05(15)	2.16(20)	2293.8	2079.2(3)	0.39(6)	2682.0
1706.2(7)	0.34(7)		2091.3(2)	0.56(6)	2694.1
1709.2(7)	0.17(4)		2107.9(6)	0.19(6)	2710.7
1720.2(2)	1.13(11)	2323.0	2182.6(5)	0.30(6)	2182.6
1834.7(8)	0.26(5)		2214.6(3)	0.29(4)	2817.4
1842.0(8)	0.24(5)		2256.6(7)	0.17(6)	2859.4
1851.5(3)	0.46(5)	2454.3	2283.7(8)	0.21(4)	2886.5
1861.2(8)	0.07(3)		2516.4(8)	0.16(4)	
1918.7(2)	0.57(9)	2521.5	2746.9(8)	0.39(8)	2746.9
			2783.4(8)	0.29(8)	

Level scheme of ^{124}Te [73Bel, 14Jo]

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
602.76(7)	602.72	2+	2+	602.76	100	0	0+	50
—	1156.5?		(0+)	—	—	—	—	—
1248.66(10)	1248.54	4+	4+	645.90	15.9	602.8	2+	9.2
1325.55(7)	1325.50	2+	2+	1325.56	2.0	0	0+	15
				722.78	17.6	602.8	2+	—
1657.36(12)	1656.7	0+	(0+)	1054.59	2.04	602.8	2+	1.8
1747.03(15)	1747.0	6+	6+	498.37	1.84	1248.7	4+	0.9
1883.2(3)?	1880	0+	(0+)	557.6	0.82	1325.6	2+	0.82
1957.94(15)	1957.85	4+	4+	1355.18	0.97	602.8	2+	1.9
				709.3	1.52	1248.7	4+	
—	2020.0?	—	(0+)	—	—	—	—	—
2039.3(3)	2039.3	2+	2+	2039.27	⩽1.15	0	0+	⩽2.4*
				1436.57	≲2.63	602.8	2+	
				790.7	⩽0.47	1248.7	4+	
				713.85	⩽1.90	1325.6	2+	
2039.40(17)	—	3+	3(2,4)+	1436.57	≲2.63	602.8	2+	⩽3.5*
				790.7	⩽0.47	1248.7	4+	
				713.85	⩽1.90	1325.6	2+	
2091.8(2)	2091.6	2+(3+)	2+	1489.0	1.85	602.8	2+	1.85
2153.34(12)?	2152.3?	—	—	1550.3	0.14	602.8	2+	0.61
				827.83	0.47	1325.6	2+	
—	2171.3?	—	—	—	—	—	—	—
2182.6(3)	2182.6	1+	(1,2)+	2182.6	0.30	0	0+	1.2
				1579.9	0.76	602.8	2+	
				856.9	0.19	1325.6	2+	

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
—	2205?	—	—	—	—	—	—	—
2224.94(15)	2224.6	—	4+	1622.7	0.46	602.8	2+	1.0
				976.28	0.56	1248.7	4+	
—	2264?	—	—	—	—	—	—	—
2284.8(3)?	2283?	—	—	537.8	0.60	1747.0	6+	0.60
2293.8(2)	2293.74	3−	3−	1691.05	2.16	602.8	2+	2.3
				1044.9	0.15	1248.7	4+	
2323.0(2)	2323.0	2+, 3+	2+	1720.2	1.13	602.8	2+	1.1
2335.2(2)	2334.6?	5−	5−	1086.49	1.32	1248.7	4+	1.3
—	2349.6	—	(4,5)+	—	—	—	—	—
—	2411.8	—	—	—	—	—	—	—
2454.3(3)	2454.0	2+, 3+	2+	1851.5	0.46	602.8	2+	⩽0.68
	—			797.3?	0.22	1657.4	0+	—
2483.4(6)	2483.4	—	(2, 3, 4)+	525.4	0.37	1957.9	4+	0.8*
				443.7	<2.0	2039.3	2+	—
2521.5(2)	2521.3	2+, 3+	2(1+)	1918.7	0.57	602.8	2+	0.57
2529.9(3)	2530	—	—	1927.1	0.19	602.8	2+	0.19
2540.8(8)	2540	—	4+	793.8	0.34	1747.0	6+	0.34
—	2571?	—	—	—	—	—	—	—
2600.4(5)	2600.3	—	—	1998.6	0.18	602.8	2+	0.18
2618.4(4)	2617	—	—	2016.1	0.11	602.8	2+	0.68
				1369.6	0.57	1248.7	4+	
—	2641.0	—	1+, (3,4)+	2039.27	⩽1.15	602.8	2+	—
—	2653?	—	—	—	—	—	—	—
—	2664.3	—	8+	—	—	—	—	—
—	2670?	—	—	—	—	—	—	—
—	2673.6	—	7−	—	—	—	—	—
2682.0(3)	2681.6	2+, 3+	2+	2079.2	0.39	602.8	2+	0.39
2694.1(3)	2693.7	2(3)	3−	2091.3	0.56	602.8	2+	0.56
2701.9(3)	2701.8	2−	2−, 3−	1376.3	0.35	1325.6	2+	0.35
2710.7(3)	2710.7	—	4+	2107.9	0.19	602.8	2+	0.44
				1385.1	0.25	1325.6	2+	
2746.9(8)	2746.9	—	1−	2746.9	0.39	0	0+	0.39
—	2760	—	—	—	—	—	—	—
2774.1(8)	2774.8	—	4−	1526.4	0.25	1248.7	4+	0.25
—	2808.3	—	—	—	—	—	—	—
2817.4(3)	2817.8	—	—	2214.6	0.29	602.8	2+	0.29
2834.9(5)	2834.98	—	2,3	1509.3	0.29	1325.6	2+	0.29
2859.4(7)	2858.2	—	2+	2256.6	0.17	602.8	2+	0.17
2886.5(8)	2885.9	—	(2,3)−	2283.7	0.21	602.8	2+	⩽0.42
				927.0?	0.21	1957.9	4+	



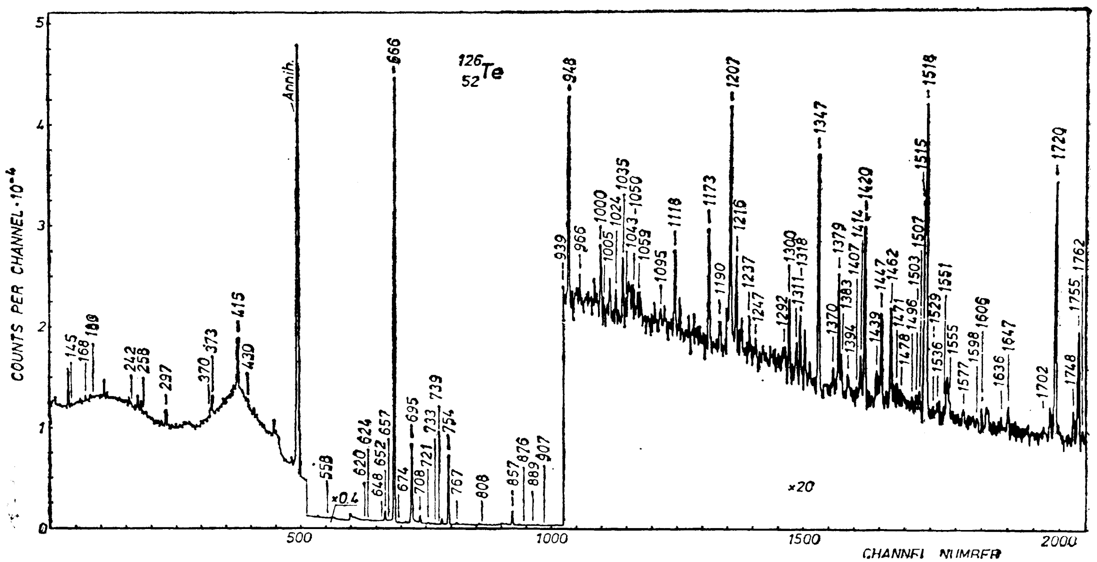


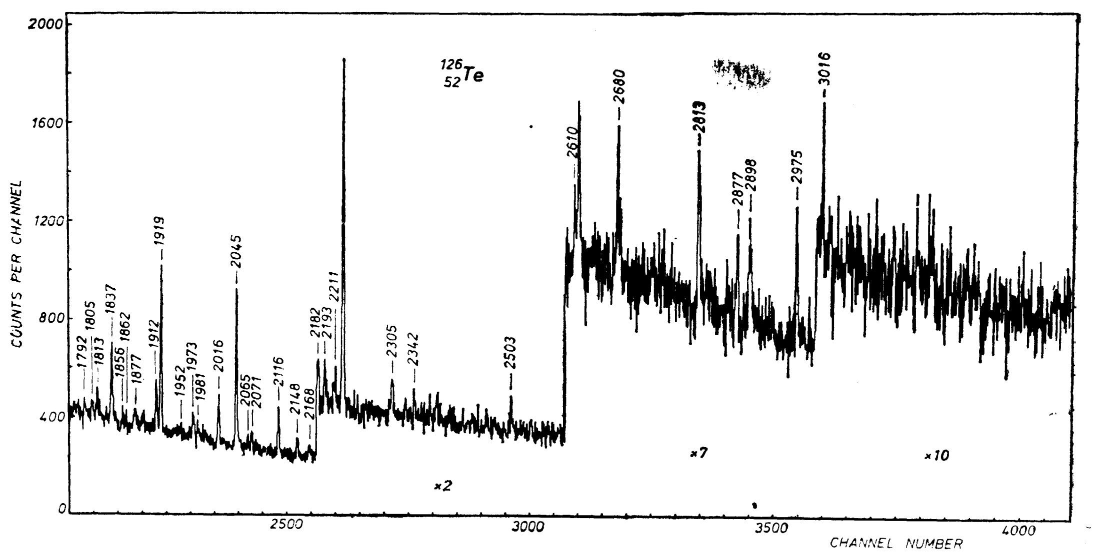
E_γ	I_γ	E_i	E_γ	I_γ	E_i
144.6 (8)	1.1 (4)		1300.32 (15)	0.41 (5)	
168.0 (6)	0.5 (2)		1311.4 (4)	0.15 (3)	2731.5
179.5 (8)	0.32 (11)		1317.5 (3)	0.33 (4)	2679.1
241.7 (8)	0.17 (7)		1346.88 (15)	1.47 (7)	2013.3
257.6 (4)	0.72 (18)		1370.0 (7)	0.11 (2)	2731.5
297.34 (16)	0.62 (9)	2515.7	1378.77 (15)	0.70 (4)	2045.3
370.43 (16)	0.25 (7)		1383.0 (2)	0.20 (2)	
372.76 (15)	0.78 (9)	2386.0	1394.1 *m*	0.16 (2)	
414.82 (12)	2.50 (25)	1776.3	1407.1 (4)	0.05 (2)	
430.0 (6)	0.19 (4)		1413.7 (3)	0.31 (4)	
558.4 (3)	0.14 (2)		1420.32 (11)	1.05 (5)	1420.3
620.1 (3)	0.18 (3)	2396.5	1438.9 (4)	0.19 (3)	
624.1 (3)	0.35 (5)	(2045.3)	1447.15 (18)	0.55 (4)	
648.5 (3)	0.15 (3)		1462.2 (2)	0.61 (4)	(2128.6)
651.81 (10)	2.31 (12)	2013.3	1471.3 (5)	0.11 (4)	
656.9 (3)	0.91 (3)		1477.5 (5)	0.08 (3)	2839.0
666.41 (7)	100	666.4	1495.8 (8)	0.10 (3)	
673.5 (4)	0.20 (3)		1502.7 (8)	0.11 (3)	
695.08 (7)	17.7 (17)	1361.5	1507.1 (4)	0.06 (2)	
708.26 (7)	1.72 (6)	(2128.6)	1515.16 (10)	1.34 (6)	2181.6
721.0 (3)	0.33 (4)	2497.3	1518.00 (10)	2.02 (10)	2184.4
733.3 (3)	0.16 (2)		1528.7 (7)	0.06 (2)	
739.2 (5)	0.07 (2)		1535.8 *m*	0.17 (5)	
753.91 (8)	17.09 (6)	1420.3	1550.6 (6)	0.50 (14)	(2912.1)
767.23 (12)	0.57 (6)	(2128.6)	1555.3 (6)	0.24 (7)	(2974.6)
807.8 (4)	0.08 (2)	2679.1	1576.9 (8)	0.15 (5)	
856.89 (8)	3.93 (12)	2218.4	1598.3 (8)	0.11 (3)	
876.2 (7)	0.07 (2)		1605.5 (7)	0.11 (3)	
889.4 (4)	0.23 (2)		1636.0 (8)	0.08 (3)	
907.2 (7)	0.07 (2)		1646.6 (4)	0.18 (5)	3008.1
938.7 (5)	0.06 (2)		1702.0 (8)	0.13 (4)	
947.88 (15)	0.87 (11)	(2309.4)	1719.64 (12)	2.09 (21)	2386.0
965.9 (4)	0.07 (2)	2386.0	1747.8 (4)	0.28 (3)	
999.9 (2)	0.28 (3)		1754.85 (14)	0.99 (9)	2421.3
1004.6 (8)	0.05 (2)	2780.5	1761.7 (4)	0.17 (4)	
1023.9 (4)	0.11 (2)	(2386.0)	1792.2 (7)	0.12 (4)	
1035.1 (3)	0.26 (4)	2396.5	1804.9 (8)	0.14 (4)	
1043.3 (5)	0.14 (4)		1813.3 (7)	0.20 (4)	
1050.1 (8)	0.14 (6)		1837.4 (3)	0.66 (9)	2503.7
1059.1 (8)	0.10 (4)	2421.3	1855.6 (4)	0.13 (2)	
1095.3 (8)	0.12 (4)		1861.5 (4)	0.09 (2)	
1118.4 (2)	0.32 (4)		1876.7 *m*	0.17 (3)	
1172.59 (15)	0.49 (4)		1911.7 (2)	0.36 (4)	
1190.1 (3)	0.22 (4)		1919.20 (15)	1.14 (11)	2585.6
1207.13 (7)	1.27 (13)	1873.5	1952.5 (8)	0.06 (3)	
1216.5 (3)	0.45 (9)		1973.3 (5)	0.22 (4)	
1237.3 (4)	0.12 (4)		1981.1 (8)	0.08 (3)	
1247.1 (8)	0.11 (4)		2015.7 (3)	0.43 (6)	
1292.5 (8)	0.11 (4)		2045.41 (17)	1.25 (12)	2045.3

E_γ	I_γ	E_i	E_γ	I_γ	E_i
2064.8 (5)	0.09 (2)	2731.5	2341.8 (8)	0.11 (4)	3008.1
2071.2 (5)	0.15 (4)		2503.4 (6)	0.11 (3)	2503.7
2116.5 (3)	0.37 (6)		2609.6 (8)	0.11 (5)	
2148.0 (4)	0.19 (3)		2679.6 (6)	0.19 (6)	2679.1
2167.7 (8)	0.15 (4)		2812.8 (8)	0.41 (6)	2812.8
2182.1 (6)	0.24 (4)	2181.6	2877.3 (6)	0.19 (5)	2877.5
2193.1 (7)	0.20 (3)		2897.9 (8)	0.27 (11)	
2211.4 (8)	0.21 (8)	2877.5	2974.6 (8)	0.18 (6)	2974.6
2305.0 (7)	0.21 (4)		3015.8 (6)	0.10 (3)	

Level scheme of ^{126}Te [73Au1, 71Ke, 74Li, 75Ba1]

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
666.41 (7)	666.2	2+	2+	666.41	100	0	0+	53
1361.49 (10)	1361.3	4+	4+	695.08	17.7	666.4	2+	5.9
—	1396?	—	0+	—	—	—	—	—
1420.32 (10)	1420.1	2+	2+	1420.32	1.05	0	0+	16
				753.91	17.09	666.4	2+	
—	1685.0?	—	0+	—	—	—	—	—
1776.31 (14)	1776.1	6+	6+	414.82	2.50	1361.5	4+	1.9
—	1777?	—	—	—	—	—	—	—
1873.54 (10)	1878	0+	0+	1207.13	1.27	666.4	2+	1.2
2013.30 (12)	2014	4+	—	1346.88	1.47	666.4	2+	3.0
				651.81	2.31	1361.5	4+	
2045.30 (17)	2044.1	2+	—	2045.41	1.25	0	0+	⩽2.3
				1378.77	0.70	666.4	2+	
				624.1?	0.35	1420.3	2+	
—	2051?	—	—	—	—	—	—	—
—	2061?	—	—	—	—	—	—	—
—	2080?	—	—	—	—	—	—	—
2128.63 (12)?	—	3+	—	1462.2	0.61	666.4	2+	2.9
				767.23	0 57	1361.5	4+	
				708.26	1.72	1420.3	2+	
2181.57 (12)	2190	1+, 2+	—	2182.1	0.24	0	0+	1.6
				1515.16	1.34	666.4	2+	
2184.41 (12)	—	2+ (3+)	—	1518.00	2.02	666.4	2+	2.0
2218.38 (11)	2218.0	5−	5−	856.89	3.93	1361.5	4+	3.3
—	2223?	—	—	—	—	—	—	—
2309.37 (17)?	—	(4, 5, 6)	—	947.88	0.87	1361.5	4+	0.87
2386.05 (14)	2391	3−	3−	1719.64	2.09	666.4	2+	3.1
				1023.9?	0.11	1361.5	4+	
				965.9	0.07	1420.3	2+	
				372.76	0.78	2013·3	(3+) 4+	
2396.5 (3)	2396.2	(4+, 5+)	—	1035.1	0.26	1361.5	4+	0.44
				620.1	0.18	1776.3	6+	





E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
2421.26(16)	2422	2+, 3±	—	1754.85	0.99	666.4	2+	1.1
				1059.1	0.10	1361.5	4+	
—	2440	—	—	—	—	—	—	—
2497.3(3)	2496.5	—	7−	721.0	0.33	1776.3	6+	0.33
2503.7(3)	2508	2+	2+	2503.4	0.11	0	0+	0.77
				1837.4	0.66	666.4	2+	
2515.7(2)	2515.3	—	—	297.34	0.62	2218.4	5−	0.62
—	2530?	—	—	—	—	—	—	—
2585.61(17)	2582	(3±)	(0+)	1919.20	1.14	666.4	2+	1.1
—	2643	—	—	—	—	—	—	—
2679.1(3)	2684	2+	2+	2679.6	0.19	0	0+	0.60
				1317.5	0.33	1361.5	4+	
				807.8	0.08	1873.5	0+	
—	2703.6?	—	—	—	—	—	—	—
2731.5(4)	2733	—	—	2064.8	0.09	666.4	2+	0.35
				1370.0	0.11	1361.5	4+	
				1311.4	0.15	1420.3	2+	
—	2765.4	—	8+	—	—	—	—	—
2780.5(8)	2786	—	(5,6)−	1004.6	0.05	1776.3	6+	0.05
2812.8(8)	2811.0	—	—	2812.8	0.41	0	0+	0.41
2839.0(5)	2837.4	—	—	1477.5	0.08	1361.5	4+	0.08
—	2840.0	—	—	—	—	—	—	—
2877.5(6)	—	—	—	2877.3	0.19	0	0+	0.40
				2211.4	0.21	666.4	2+	
2912.1(6)?	2910?	—	—	1550.6	0.50	1361.5	4+	0.50
—	2960?	—	—	—	—	—	—	—
2974.6(8)	2974	—	—	2974.6	0.18	0	0+	0.42
				1555.3?	0.24	1420.3	2+	
—	2975.2	—	10+	—	—	—	—	—
—	2989.2	—	—	—	—	—	—	—
3008.1(4)	3003	—	—	2341.8	0.11	666.4	2+	0.29
				1646.6	0.18	1361.5	4+	

Tellurium-128 $^{128}_{52}Te$

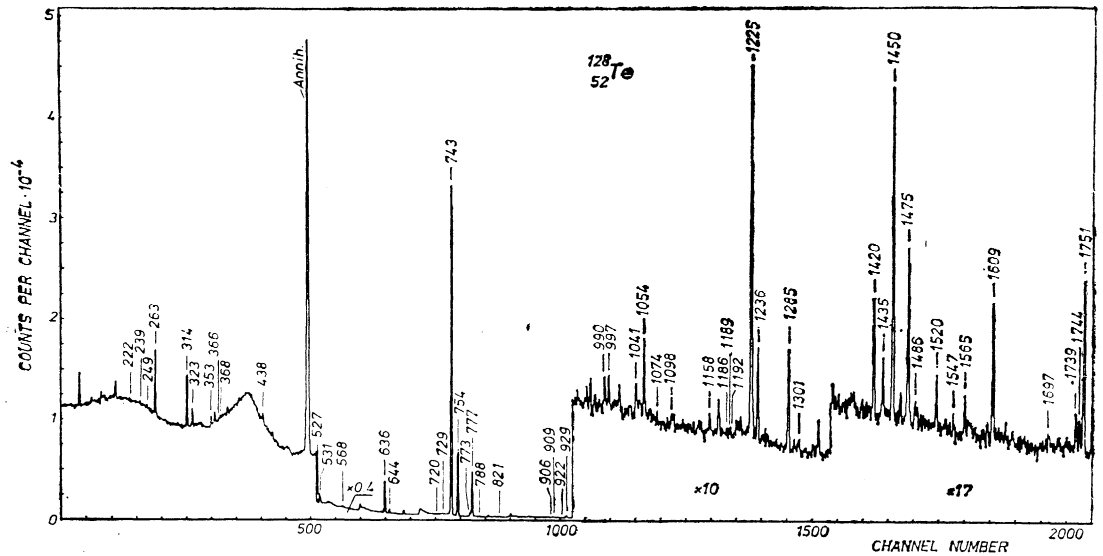
E_γ	I_γ	E_i	E_γ	I_γ	E_i
221.8(8)	0.17(7)		353.3(4)	0.29(4)	(2487.7)
239.0(7)	0.14(4)		366.0(8)	0.09(4)	
249.3(5)	0.16(4)		368.4(8)	0.12(4)	
262.7(2)	3.0(3)	(2396.2)	437.9(2)	0.52(7)	
314.2(2)	2.7(3)	1811.4	526.55(11)	0.66(4)	2338.0
323.0(4)	0.77(15)	2133.5	531.03(10)	2.60(13)	2028.0

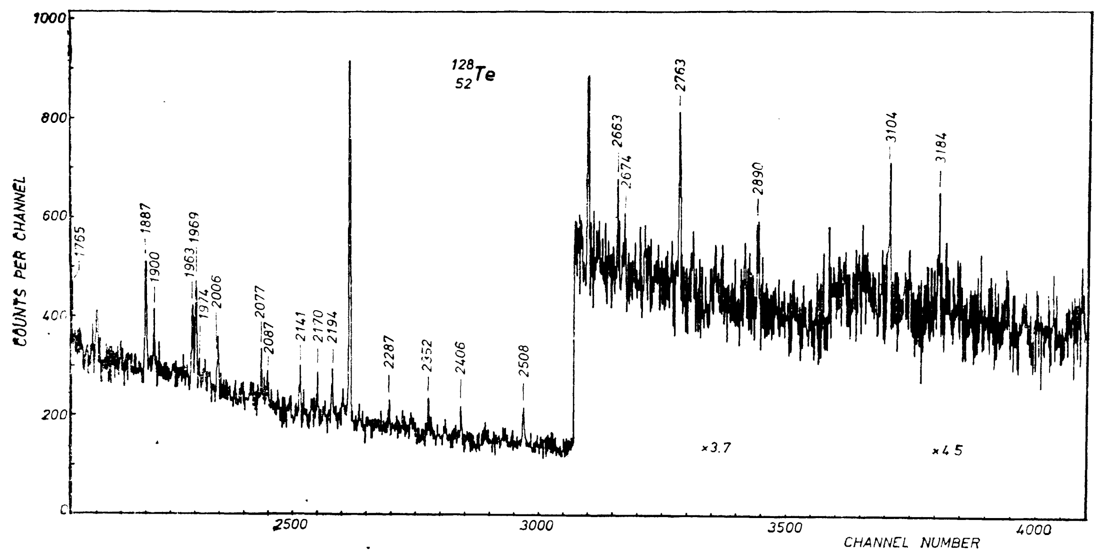
E_γ	I_γ	E_i	E_γ	I_γ	E_i
567.6(8)	0.29(11)		1474.71(10)	1.23(8)	(2218.0)
636.32(7)	8.0(5)	2133.5	1486.2(2)	0.20(3)	
643.61(10)	0.96(7)	2163.6	1520.0(2)	0.37(3)	1520.1
720.4(9)	0.04(2)	2748.8	1547.0(10)	0.11(3)	
728.8(3)	0.34(6)		1565.0(5)	0.24(3)	(2308.3)
743.27(7)	100	743.3	1608.81(10)	1.09(10)	2352.1
753.88(7)	20.5(4)	1497.2	1696.9(8)	0.10(3)	
773.45(9)	1.21(5)	2270.6	1739.2(2)	0.27(3)	
776.79(7)	12.8(3)	1520.1	1744.4(2)	0.26(3)	2487.7
787.9(2)	0.29(2)	(2599.2)	1750.85(16)	1.62(3)	2494.1
820.7(2)	0.13(2)		1764.8(4)	0.52(5)	2508.2
905.6(7)	0.09(2)	2426.2	1887.0(2)	0.56(7)	2630.3
908.7(7)	0.17(4)	2405.9	1900.5(4)	0.17(4)	2643.8
922.0(9)	0.06(2)		1963.4(2)	0.39(5)	2706.7
929.0(2)	0.79(5)	2426.2	1969.1(2)	0.56(6)	(1968.6)
990.4(6)	0.30(5)	2487.7	1974.5(5)	0.07(2)	
996.8(5)	0.27(4)	2494.1	2005.5(6)	0.25(4)	2748.8
1040.8(4)	0.26(4)		2077.3(3)	0.14(2)	2820.6
1053.60(17)	0.54(6)	2573.7	2087.3(7)	0.10(3)	
1074.4(8)	0.05(2)	2573.7	2141.4(6)	0.21(4)	2884.7
1097.8(8)	0.14(4)		2169.9(8)	0.13(4)	2913.2
1158.4(5)	0.15(3)	2655.4	2194.1(5)	0.17(2)	2193.5
1186.0(10)	0.05(2)	2706.7	2287.0(10)	0.07(3)	
1189.0(10)	0.05(2)		2352.4(7)	0.12(2)	2352.1
1192.0(8)	0.07(2)		2405.6(6)	0.14(3)	(2405.6)
1225.32(10)	3.8(3)	1968.6	2508.3(3)	0.20(3)	2508.2
1235.72(10)	0.97(7)	1979.0	2662.6(8)	0.07(3)	
1284.62(10)	1.18(10)	2028.0	2674.3(8)	0.07(2)	
1300.7(8)	0.26(5)		2763.2(5)	0.28(4)	
1420.29(15)	0.81(5)	2163.6	2890.0(10)	0.07(3)	
1434.7(5)	0.32(4)	(2931.9)	3104(2)	0.17(6)	
1450.24(10)	2.29(16)	2193.5	3184.5(8)	0.10(4)	

Level scheme of ^{128}Te [73Au2, 75Ma1]

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
743.27(7)	743.2	2+	2+	743.27	100	0	0+	51
1497.15(10)	1497.1	4+	4+	753.88	20.5	743.3	2+	4.0
1520.06(10)	1523	2+	2+	1520.0	0.37	0	0+	12
				776.79	12.8	743.3	2+	
1811.4(2)	1811.1	6+	6+	314.2	2.7	1497.2	4+	1.0
1968.59(12)	1972	(1±, 3+)2+	—	1969.1?	0.55	0	0+	≤4.3
				1225.32	3.77	743.3	2+	
1978.99(12)	1982	0+	0+	1235.72	0.97	743.3	2+	0.97
2028.01(12)	2030	4+(3+)	—	1284.62	1.18	743.3	2+	3.8
				531.03	2.60	1497.2	4+	
—	2132	—	(1,2)	—	—	—	—	—
2133.47(12)	2133.5	5−	5−	636.32	8.0	1497.2	4+	5.5
				323.0	0.77	1811.4	6+	
2163.63(14)	—	2+, 3+4+	—	1420.29	0.81	743.3	2+	1.8
				643.61	0.96	1520.1	2+	
2193.51(12)	2197	2+	—	2194.1	0.17	0	0+	2.5
				1450.24	2.29	743.3	2+	
2217.98(12)?	—	(0+, 2+)1±	—	1474.71	1.23	743.3	2+	1.2
2270.60(13)	2274	—	—	773.45	≤1.21	1497.2	4+	≤1.2
2308.3(5)?	2312	—	—	1565.0	0.24	743.3	2+	0.24
2338.0(2)	2337.9	—	7−	526.55	0.66	1811.4	6+	0.66
—	2341?	—	—	—	—	—	—	—
2352.08(12)	2354	1±, 2+	1,2	2352.4	0.12	0	0+	1.2
				1608.81	1.09	743.3	2+	
2396.2(2)?	2390	—	—	262.7	3.0	2133.5	5−	3.0
2405.6(6)?	2409?	—	—	2405.6	0.14	0	0+	1.14
2405.9(7)	2405.3	—	6+	908.7	0.17	1497.2	4+	0.17
2426.2(2)	2429	2+, 3+, 4+	—	929.0	0.79	1497.2	4+	0.88
				905.6	0.09	1520.1	2+	
2487.7(2)	2485	3(4)	—	1744.4	0.26	743.3	2+	≤0.85
				990.4	0.30	1497.2	4+	
				353.3?	0.29	2133.5	5−	
2494.12(17)	2496	3−	3−	1750.85	1.62	743.3	2+	1.9
				996.8	0.27	1497.2	4+	
2508.2(3)	2520	(1±)2+	—	2508.3	0.20	0	0+	0.72
				1764.8	0.52	743.3	2+	
2573.7(2)	2573	2,3	—	1074.4	0.05	1497.2	4+	0.59
				1053.60	0.54	1520.1	2+	
—	2588.0	—	—	—	—	—	—	—
2599.3(3)?	2598.8	—	—	787.9?	0.29	1811.4	6+	0.29
—	2602?	—	—	—	—	—	—	—
2630.3(3)?	2633	0—3	—	1887.0	0.56	743.3	2+	0.56
2643.8(4)	2645	—	—	1900.5	0.17	743.3	2+	0.17
2655.4(5)	2655.2	—	6+	1158.4	0.15	1497.2	4+	0.15
—	2655	—	—	—	—	—	—	—
—	2689.4	—	—	—	—	—	—	—
2706.7(2)	2708	2,3	—	1963.4	0.39	743.3	2+	0.44
				1186.0	0.05	1520.1	2+	
—	2736.5	—	—	—	—	—	—	—
2748.8(6)	2754	—	—	2005.5	0.25	743.3	2+	0.25
—	2762.2	—	—	—	—	—	—	—
—	2790	—	—	—	—	—	—	—
—	2817.4	—	—	—	—	—	—	—
2820.6(3)	2820?	—	—	2077.3	0.14	743.3	2+	0.14
—	2852.2	—	—	—	—	—	—	—

Cont'd ($^{128}_{52}$Te)





E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
—	2858.9	—	—	—	—	—	—	—
2884.7(7)	2886	—	—	2141.4	0.21	743.3	2+	0.21
2913.2(8)	2910	—	—	2169.9	0.13	743.3	2+	0.13
—	2924.3	—	—	—	—	—	—	—
2931.9(6)?	2932	(3,4)	—	1434.7?	0.32	1497.2	4+	0.32

Tellurium-130 $^{130}_{52}Te$

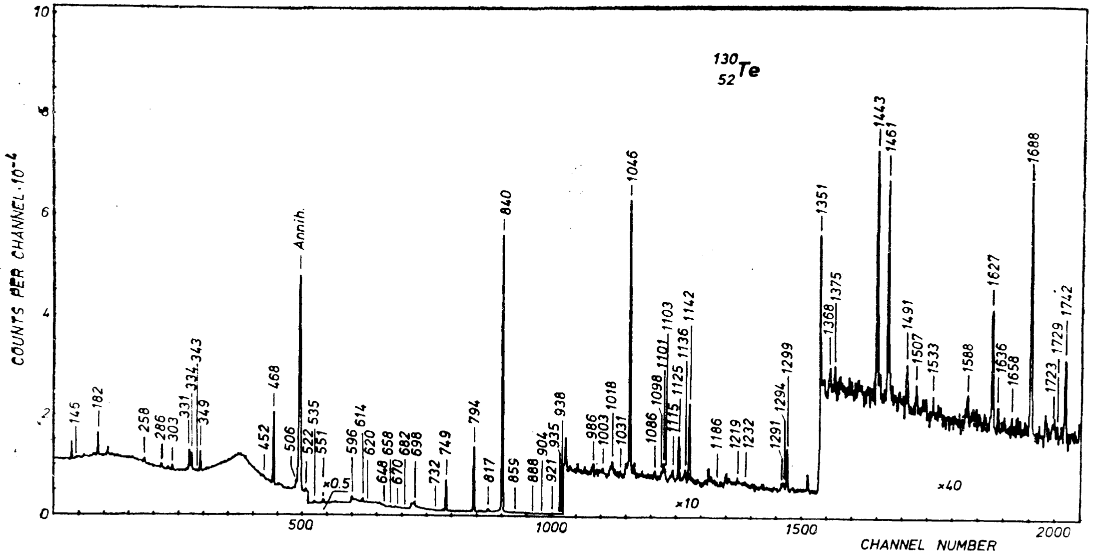
E_γ	I_γ	E_i	E_γ	I_γ	E_i
145.9(5)	1.7(5)		934.9(7)	0.13(4)	
182.4(2)	5.1(8)	1815.6	938.5(8)	0.08(3)	2527.2
258.2(3)	0.75(13)	2404.8	985.7(10)	0.21(8)	
285.7(2)	0.53(5)	2432.4	1002.6(6)	0.11(2)	
		(2101.5)	1018.0(7)	0.36(7)	2833.6
303.3(2)	0.63(6)	2404.8	1031.0(8)	0.08(3)	
331.10(15)	2.5(2)	2146.7	1046.20(18)	6.3(5)	1885.8
334.39(15)	2.0(2)	2435.8	1086.5(5)	0.18(4)	
343.3(5)	0.15(4)		1097.8(7)	0.22(4)	
348.60(17)	2.1(2)	1981.7	1100.8(8)	0.20(10)	2689.0
452.3(8)	0.31(9)		1103.0(8)	0.20(10)	2736.5
468.28(15)	8.6(7)	2101.5	1115.3(8)	0.25(6)	
505.8(8)	1.3(3)	2138.9	1125.26(18)	1.05(8)	(1964.8)
521.6(4)	0.41(7)		1135.6(4)	0.22(3)	
535.4(4)	0.51(7)		1142.08(15)	1.77(14)	1981.7
550.54(15)	1.02(9)	2138.9	1186.1(8)	0.09(4)	
596.4(3)	0.75(12)		1219.4(7)	0.10(3)	
613.7(2)	0.99(9)	(2246.9)	1232.1(8)	0.07(3)	
620.2(8)	0.15(6)		1291.0(7)	0.21(6)	
647.6(5)	0.33(6)		1293.8(7)	0.21(6)	
658.4(6)	0.30(5)	(2246.9)	1299.19(15)	1.16(10)	2138.9
669.7(6)	0.22(4)	2771.2	1351.10(15)	1.23(8)	2190.7
681.5(8)	0.19(5)	2783.0	1367.5(7)	0.26(7)	
697.9(4)	0.90(11)	2331.1	1375.2(6)	0.14(3)	
732.5(8)	0.10(4)		1443.13(15)	1.67(16)	2282.7
748.83(7)	10.7(5)	1588.4	1460.79(17)	1.38(13)	(2300.4)
793.60(7)	22.2(9)	1633.2	1491.3(7)	0.36(11)	2331.1
816.59(15)	0.94(9)	2449.8	1506.7(7)	0.15(4)	
839.58(7)	100	839.6	1533.3(8)	0.07(3)	
859.4(2)	0.47(4)		1588.2(8)	0.19(6)	1588.4
888.0(8)	0.08(3)		1627.4(2)	0.92(9)	2467.0
904.1(5)	0.14(3)		1636.3(4)	0.14(3)	
921.0(5)	0.36(7)	2736.5	1658.1(8)	0.08(2)	

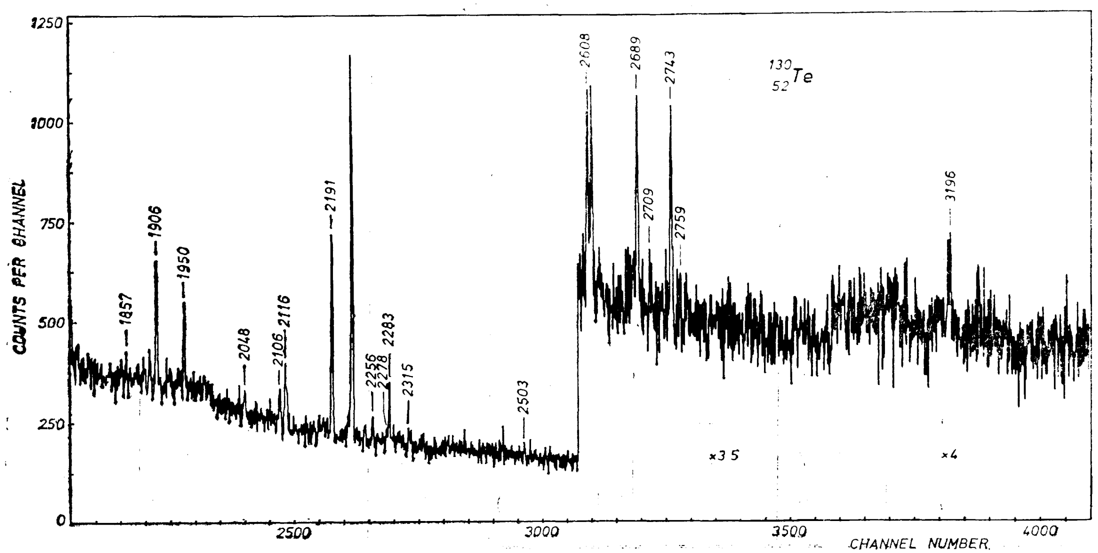
E_γ	I_γ	E_i	E_γ	I_γ	E_i
1687.6(2)	2.1(2)	2527.2	2256.3(6)	0.15(3)	
1723.0(10)	0.09(3)		2278.4(6)	0.10(3)	
1729.0(10)	0.06(2)		2283.0(7)	0.22(6)	2282.7
1741.8(3)	0.65(9)	2581.4	2314.8(15)	0.12(5)	
1856.7(8)	0.07(3)		2503.3(8)	0.08(3)	
1905.5(2)	0.65(9)	2745.1	2607.8(10)	0.37(14)	2607.8
1949.9(7)	0.39(7)		2689.0(6)	0.40(8)	2689.0
2048.1(8)	0.18(3)		2709.3(10)	0.07(3)	
2105.6(10)	0.28(8)		2743.3(7)	0.49(13)	
2115.6(10)	0.47(12)		2758.6(9)	0.07(3)	
2190.8(2)	1.18(12)	2190.7	3195.7(15)	0.19(7)	

Level scheme of ^{130}Te [72Ke, 74Hi]

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
839.58(7)	839.4	2+	2+	839.58	100	0	0+	48
1588.41(10)	1588.0	2+	2+	748.83	10.7	839.6	2+	9.3
				1588.2	0.19	0	0+	
1633.18(10)	1632.8	4+	4+	793.60	22.2	839.6	2+	2.1
1815.6(2)	1815.1	6+	6+	182.4	5.1	1633.2	4+	1.4
1885.78(19)	1885	2+	(0, 1, 2)	1046.20	6.3	839.6	2+	6.3
1964.8(2)?	—	0+	—	1125.26	1.05	839.6	2+	1.0
1981.71(17)	1981.4	4+	4+	1142.08	1.77	839.6	2+	3.9
				348.60	2.1	1633.2	4+	
2101.46(17)	2100.8	5−	5−	468.28	8.6	1633.2	4+	4.3
				285.7?	0.53	1815.6	6+	
2138.86(17)	—	2+, 3+	—	1299.19	1.16	839.6	2+	3.5
				550.54	1.02	1588.4	2+	
				505.8	1.3	1633.2	4+	
2146.7(3)	2146.0	7−	7−	331.10	2.5	1815.6	6+	1.2
—	2184.6?	—	—	—	—	—	—	—

E_i	E_i^a	J_i^π	$J_i^{\pi a}$	E_γ	I_γ	E_f	J_f^π	P_s
2190.73(17)	2191	2+	—	2190.8	1.18	0	0+	2.4
				1351.10	1.23	839.6	2+	
2246.9(2)?	—	—	—	658.4	0.30	1588.4	2+	1.3
				613.7	0.99	1633.2	4+	
2282.71(17)	2290	1±, 2+	—	2283.0	0.22	0	0+	1.9
				1443.13	1.67	839.6	2+	
2300.4(2)?	—	0—3	—	1460.79	1.38	839.6	2+	1.4
2331.1(4)	2330.2	—	—	1491.3	0.36	839.6	2+	1.3
				697.9	0.90	1633.2	4+	
—	2335?	—	—	—	—	—	—	—
2404.8(3)	2404.1	(6−)	(6−)7−	303.3	0.63	2101.5	5−	1.4
				258.2	0.75	2146.7	7−	
—	2418?	—	—	—	—	—	—	—
2432.4(3)	2431.3	—	(7, 8, 9)−	285.7	0.53	2146.7	7−	0.53
2435.8(2)	—	—	—	334.39	2.0	2101.5	5−	2.0
2449.77(17)	2449.4	(3+, 4−)	—	816.59	0.94	1633.2	4+	0.94
2467.0(2)	2470	(0+, 1, 3+)2+	—	1627.4	0.92	839.6	2+	0.92
2527.2(2)	2526	(2+)3±	—	1687.6	2.1	839.6	2+	2.2
				938.5	0.08	1588.4	2+	
2581.4(3)	2580	2+, 3+	—	1741.8	0.65	839.6	2+	0.65
2607.8(10)	2611	1±, 2+	—	2607.8	0.37	0	0+	0.37
2689.0(6)	2692	1±, 2+	—	2689.0	0.40	0	0+	0.60
				1100.8	0.20	1588.4	2+	
2736.5(5)	2735.9	—	(4+)	1103.0	0.20	1633.2	4+	0.56
				921.0	0.36	1815.6	6+	
2745.1(2)	2732	—	3−	1905.5	0.65	839.6	2+	0.65
—	2765.1	—	(4)	—	—	—	—	—
2771.2(6)	2770.0	—	—	669.7	0.22	2101.5	5−	0.22
2783.0(8)	2781.7	—	—	681.5	0.19	2101.5	5−	0.19
2833.6(7)	2832.6	—	(4+, 5+, 6+)	1018.0	0.36	1815.6	6+	0.36





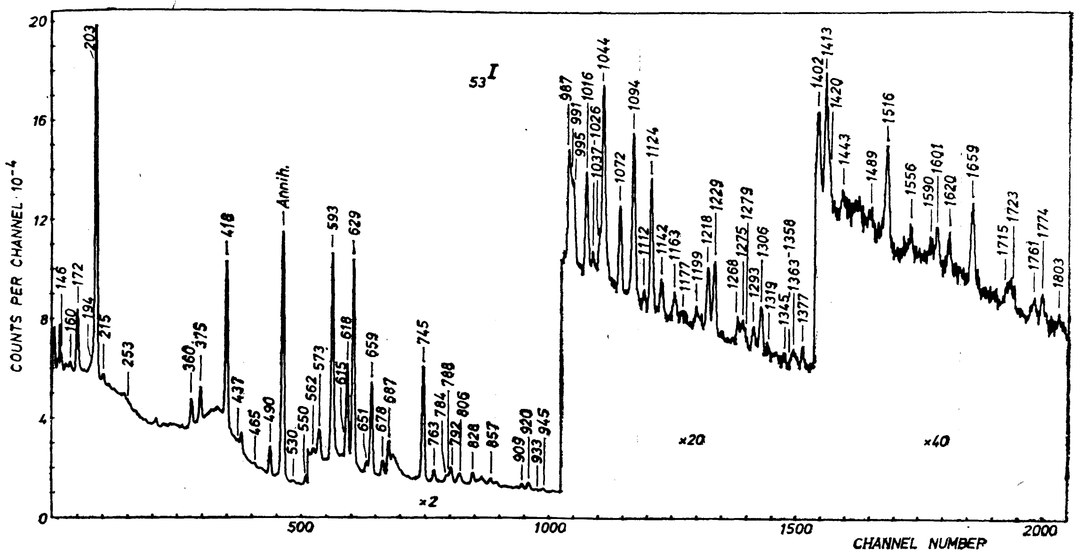
Iodine

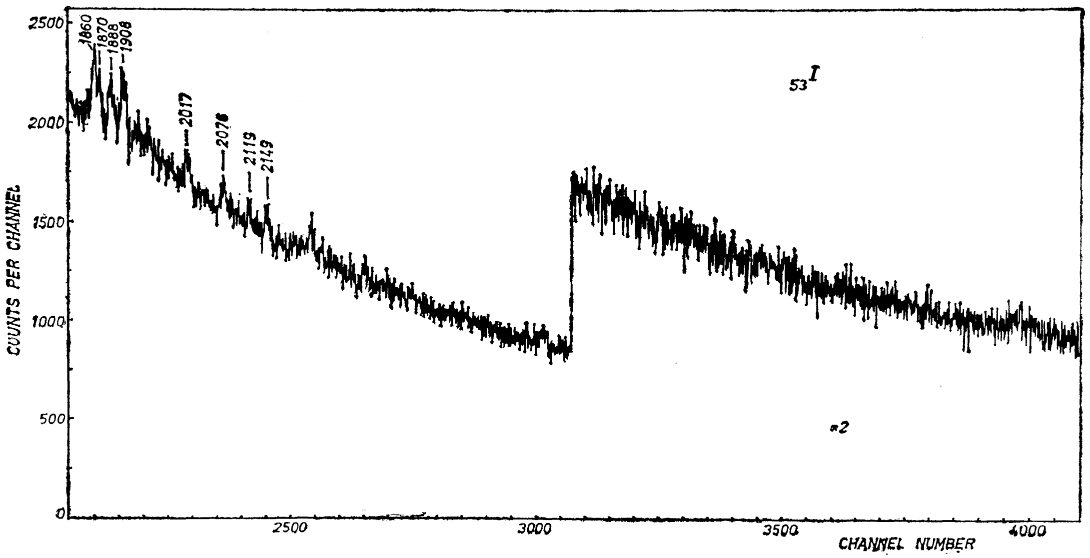
$^{127}_{53}I$

E_γ	I_γ	E_i	E_γ	I_γ	E_i
145.6(4)	7.4(6)	202.9	1071.95(12)	5.9(5)	1275.0
160.5(4)	1.7(4)		1094.40(12)	11(3)	1094.4
172.1(2)	31(3)	375.0	1112.5(6)	0.73(26)	
193.7(3)	2.6(3)		1124.0(2)	9.4(8)	1181.4
202.94(10)	145(8)	202.9	1142.1(2)	2.2(2)	(1516.2)
215.17(13)	3.3(3)	418.0	1162.9(3)	2.1(4)	
252.8(4)	0.84(30)	^{127}Te	1177.3(9)	0.43(20)	
360.32(10)	14.7(10)	418.0	1198.8(4)	1.0(3)	1401.4
374.96(10)	19.3(10)	375.0	1218.4(2)	5.7(4)	1218.4
417.95(10)	100	418.0	1228.9(2)	6.2(7)	1228.9
436.7(3)	1.6(4)		1267.8(7)	1.6(5)	
465.4(3)	1.8(2)	1094.4	1275.2(2)	1.7(4)	1275.0
490.36(10)	18.5(15)	1235.1	1279.3(9)	1.1(5)	
529.7(7)	1.2(3)	1275.0	1292.6(4)	1.0(3)	(1350.2)
549.70(12)	6.3(7)		1306.4(2)	6.4(5)	1364.0
561.6(2)	1.9(2)		1318.9(5)	1.1(4)	
572.9(2)	8.6(7)	990.9	1345.4(4)	1.3(4)	1401.4
593.3(2)	64(5)	650.8	1358.0(9)	0.40(20)	1775.4
615.3(5)	3.7(4)	990.9	1362.8 *m*	1.4(4)	1364.0
618.5(2)	41(4)	618.5	1377.4(4)	2.3(4)	
628.6(2)	85(7)	628.6	1401.6(2)	3.7(6)	1401.4
650.8(2)	4.8(3)	650.8	1413.4(2)	4.4(6)	1413.2
658.90(11)	41(4)	716.5	1420.4(6)	0.96(50)	
677.8(3)	6.2(6)		1442.9(12)	0.9(5)	1442.9
687.2(2)	16(2)	744.7	1488.6(15)	1.4(7)	
744.70(10)	56(6)	744.7	1516.2(2)	5.4(6)	1516.2
763.2(2)	5.8(4)	1181.4	1555.6(17)	1.2(3)	1555.6
783.7(2)	3.8(4)	(1401.4)	1590.3(16)	2.2(9)	
788.2(2)	2.4(3)	990.9	1601.1(8)	2.8(8)	1658.6
791.7(2)	5.8(6)		1620.5(14)	1.9(6)	(1823.4)
806.1(2)	3.6(4)		1658.6(3)	6.1(4)	1658.6
827.56(15)	6.1(7)		1715.4(14)	1.2(6)	
857.2(2)	2.3(3)	1275.0	1723.2 *m*	1.2(6)	
909.4(2)	2.8(2)	1654.1	1761.2 *m*	0.77(41)	
919.9(2)	3.7(3)	1122.8	1774.3(13)	1.2(5)	1775.4
932.9(6)	0.86(26)	990.9	1802.9(17)	0.7(4)	1860.4
944.9(4)	2.4(4)		1860.4(4)	2.3(3)	1860.4
986.6(2)	6.2(3)	1044.2	1869.5(9)	1.3(6)	1869.5
990.9(2)	3.9(4)	990.9	1887.9(17)	4.1(8)	
995.0(2)	4.1(4)	1413.2	1908.3(15)	3.5(6)	
1015.7(3)	4.2(3)	1218.4	2017 *m*	1.8(7)	2076.5
1025.8(4)	1.4(4)	1401.4	2076.5(12)	1.2(5)	2076.5
1037.0(6)	2.0(4)	1094.4	2119.2(10)	0.52(25)	
1044.2(2)	13(2)	1044.2	2149.2(10)	1.3(6)	2049.2

Level scheme of ^{127}I [73Au2, 72Si2, 73Re, 76Av2]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	57.60	7/2+	—	—	—	—	—
202.94(10)	202.84	3/2+	145.6	7.4	57.6	7/2+	⩽123*
			202.94	145	0	5/2+	
374.96(10)	374.96	1/2+	172.1	31	202.9	3/2+	43
			374.96	19.3	0	5/2+	
417.95(10)	417.90	5/2+	215.17	3.3	202.9	3/2+	98
			306.32	14.7	57.6	7/2+	
			417.95	100	0	5/2+	
618.5(2)	618.4	3/2+	618.5	41	0	5/2+	37
628.6(2)	628.6	7/2+	628.6	85	0	5/2+	83
650.8(2)	651.0	9/2+	593.3	64	57.6	7/2+	69
			650.8	4.8	0	5/2+	
716.50(12)	716.5	11/2+	658.90	41	57.6	7/2+	41
744.70(10)	744.6	9/2+	687.2	16	57.6	7/2+	50
			744.40	56	0	5/2+	
990.9(2)	991.0	3/2+, 5/2+	572.9	8.6	418.0	5/2+	18*
			615.3	3.7	375.0	1/2+	
			788.2	2.4	202.8	3/2+	
			932.9	0.86	57.6	7/2+	
			990.9	3.9	0	5/2+	
1044.2(2)	1044	[3/2, 5/2]	986.6	6.2	57.6	7/2+	19
			1044.2	13	0	5/2+	
1094.40(12)	1094.6	3/2+, 5/2+	465.4	1.8	628.6	7/2+	15
			1037.0	2.0	57.6	7/2+	
			1094.40	11	0	5/2+	
1122.8(2)	1124.0	1/2+	919.9	3.7	202.9	3/2+	3.7
1181.4(2)	1183	[/52—9/2]	763.2	5.8	418.0	5/2+	15
			1124.0	9.4	57.6	7/2+	
1218.4(2)	1218.6	[3/2—7/2]	1015.7	4.2	202.9	3/2+	10
			1218.4	5.7	0	5/2+	
1228.9(2)	1229.5	[3/2, 5/2]	1228.9	6.2	0	5/2+	6.2
1235.1(2)	1235	(11/2−)	490.36	18.5	744.7	9/2+	18
1275.0(2)	1274.6	[7/2, 5/2]	529.7	1.2	744.7	9/2+	11
			857.2	2.3	418.0	5/2+	
			1071.95	5.9	202.9	3/2+	
			1275.2	1.7	0	5/2+	
—	1350.2?	—	1292.6?	1.0	57.6	7/2+	1.0
1364.0(3)	1362.2	[3/2—7/2]	1306.4	6.4	57.6	7/2+	7*
			1362.8	<1.4	0	5/2+	
1401.4(2)	1401	5/2+, 3/2+	783.7?	3.8	618.5	3/2+	⩽10
			1025.8	1.4	375.0	1/2+	
			1198.8	1.0	202.9	3/2+	
			1345.4	1.3	57.6	7/2+	
			1401.6	3.7	0	3/2+	
1413.2(2)	1413	[3/2—9/2]	995.0	4.1	418.0	5/2+	8.5
			1413.4	4.4	0	5/2+	
1442.9(12)	1444.0	1/2+	1442.9	0.9	0	5/2+	0.9





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1516.2(2)	1515	[3/2, 5/2+]	1142.1?	2.2	375.0	1/2+	7.6
			1516.2	5.4	0	5/2+	
1555.6(17)	1554	3/2+, 5/2+	1555.6	1.2	0	5/2+	1.2
1654.1(3)	1653	—	909.4	2.8	744.7	9/2+	2.8
1658.6(3)	1658	[9/2+, 7/2+]	1601.1	2.8	57.6	7/2+	8.9
			1658.6	6.1	0	5/2+	
1775.4(10)	1778	—	1358.0	0.40	418.0	5/2+	1.6
			1774.3	1.2	0	5/2+	
1823.4(14)?	1830	1/2+	1620.5	1.9	202.9	3/2+	1.9
1860.4(4)	1860	[3/2—9/2]	1802.9	0.7	57.6	7/2+	3.0
			1860.4	2.3	0	5/2+	
1869.5(9)	1868	3/2+, 5/2+	1869.5	1.3	0	5/2+	1.3
2076.5(12)?	2065?	—	2017	<1.8	57.6	7/2+	<3
			2076.5	1.2	0	5/2+	
2149.2(10)?	2160	3/2+, 5/2+	2149.2	1.3	0	5/2+	1.3

Cesium $^{133}_{55}Cs$

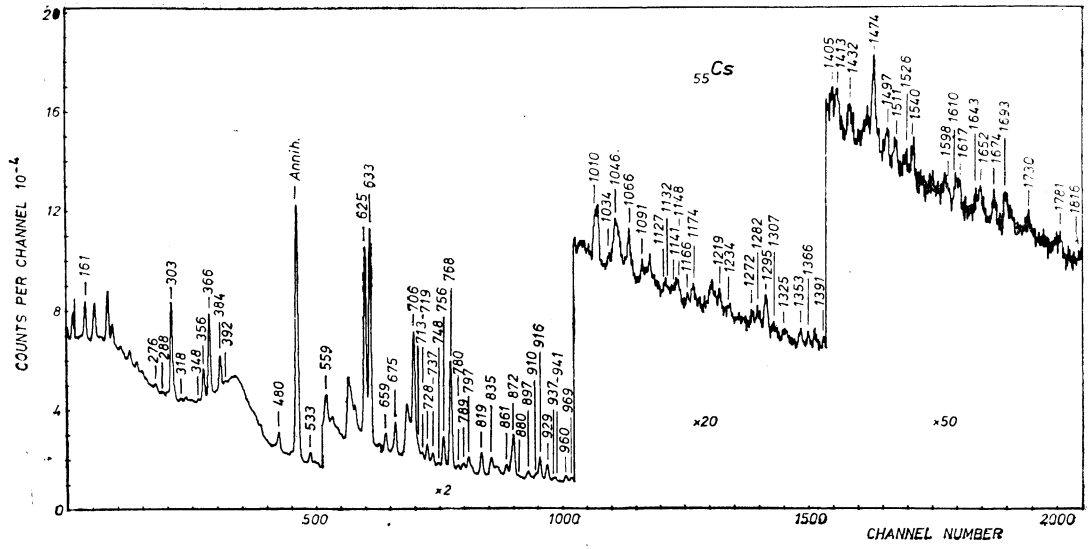
E_γ	I_γ	E_i	E_γ	I_γ	E_i
160.64(10)	36(4)	160.6	712.6(5)	12(3)	
276.40(10)	4.0(5)	437.0	719.2(6)	7.4(8)	
287.8(2)	2.1(3)		728.2(5)	14(3)	728.2
302.85(10)	94(8)	383.8	737.4(6)	10(2)	819.0
318.3(2)	2.6(5)		747.5(8)	2.3(7)	
347.5(2)	3.9(6)	(1219.3)	755.58(10)	26(4)	916.1
355.9(2)	25(3)	437.0	767.68(10)	100	767.7
365.95(10)	87(8)	(998.5)	780.4(2)	4.2(3)	
383.85(10)	36(4)	383.8	788.8(2)	6.8(5)	(787)
391.9(2)	4.5(5)				1172.6
480.03(10) *m*	26(4)	640.1	797.0(5)	14(3)	
		916.1	818.92(10)	23(4)	819.0
532.78(10)	18(2)		834.9(8)	8.6(10)	916.1
559.14(10)	25(3)	640.1	861.1(7)	8.2(10)	941.5
624.58(10)	128(10)	705.6	871.80(10)	50(4)	871.8
		(787)	880.2(8)?	0.4(2)	
632.56(10)	170(10)	632.6	896.8(2)	4.7(5)	
658.61(10)	14(2)	819.0	910.1(8)	3.7(6)	
674.54(10)	25(4)	(1442.2)	916.00(10)	22(4)	916.1
705.56(15)	128(15)	705.6	928.54(10)	14(2)	1089.3
		(787)	937.0(15)	1.0(3)	
		1089.3	940.8(9)	3.1(8)	941.5

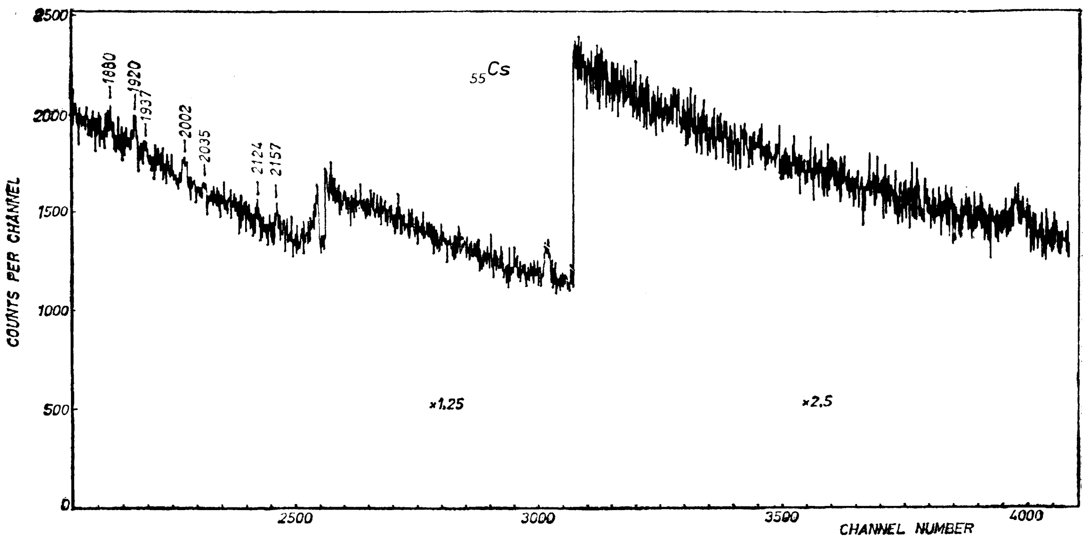
E_γ	I_γ	E_i	E_γ	I_γ	E_i
959.8(2)	4.1(5)		1412.8(15)	1.8(9)	
969.1(2)	6.2(5)	(1674.7)	1432.3(14)	2.2(10)	
1009.6(14)	5.3(12)	1089.3	1474.3(9)	5.3(20)	
1033.5(15)	0.86(45)	(1674.7)	1496.9(3)	3.0(10)	(1880.2)
1046.4(15)	7.5(15)	(1919.5)	1510.6(4)	2.3(8)	
1066.4(14)	4.6(15)		1526.0(20)	1.5(7)	
1090.8(13)	3.9(9)	1089.3	1540.1(5)	3.3(9)	
1127.1(15)	2.2(10)		1598.3(17)	1.5(7)	
1132.2(16)	2.2(10)	(1919.5)	1610.3(16)	1.7(8)	(1692.3)
1140.6(16)	2.3(10)		1617.2(15)	2.8(13)	
1148.4(15)	4.2(20)		1643.1(14)	2.1(11)	
1165.7(16)	2.1(10)		1652.2(17)	2.8(13)	(2035.3)
1174.1(12)	1.4(7)	1172.6	1674.2(13)	3.1(14)	(1674.7)
1218.7(11)	3.4(10)	(1219.3)	1693.4(15)	2.9(12)	(1692.3)
1233.8(15)	2.2(10)		1730.3(17)	1.8(8)	
1272.2(16)	2.4(11)	(2001.5)	1781.3(9)	1.4(7)	
1281.9(15)	2.1(10)		1815.5(11)	1.3(6)	
1295.1(3)	2.0(4)		1879.7(8)	1.7(8)	(1880.2)
1306.6(13)	1.7(8)	(2035.3)	1919.5(5)	2.1(12)	(1919.5)
1324.8(16)	2.1(10)		1937.3(9)	1.1(6)	
1352.7(4)	3.3(12)		2002.3(11)	1.6(8)	(2001.5)
1365.5(5)	3.0(10)		2035.3(12)	0.72(30)	(2035.3)
1391.2(12)	1.6(8)		2124.5(16)	0.9(4)	
1404.6(14)	1.7(8)		2156.9(17)	1.2(6)	

Level scheme of ^{133}Cs [76Av3, 74He]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	80.997	5/2+	—	—	—	—	—
160.64(10)	160.618	5/2+	160.64	36	0	7/2+	—
383.85(10)	383.851	3/2+	302.85	94	81.0	5/2+	102*
			383.85	36	0	7/2+	
437.0(2)	437.002	1/2+	276.40	4.0	160.6	5/2+	20*
			355.9	25	81.0	5/2+	
—	605?	—	—	—	—	—	—
632.56(10)	632.8	11/2+	632.56	170	0	7/2+	83
640.14(10)	641.2	3/2+	480.03	<26	160.6	5/2+	35*
			559.14	25	81.0	5/2+	
705.58(10)	706	7/2+, 9/2+	624.58	≤128	81.0	5/2+	—
			705.56	<128	0	7/2+	
728.2(5)?	728?	—	728.2	14	0	7/2+	10
767.68(10)	768.7	(7/2+, 9/2+)	767.68	100	0	7/2+	75

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
—	787?	(7/2+, 9/2+)	624.58	<128	160.6	5/2+	—
			705.56	<128	81.0	5/2	
			788.8?	⩽6.8	0	7/2+	
818.98(10)	819	(5/2+, 7/2+, 9/2+)	658.61	14	160.6	5/2+	47
			737.4	10	81.0	5/2+	
			818.92	23	0	7/2+	
871.80(10)	871.8	(7/2+, 9/2+)	871.80	50	0	7/2+	39
916.10(15)	917	(5/2+)	480.03	<26	437.0	1/2+	72*
			755.58	26	160.6	5/2+	
			834.9	8.6	81.0	5/2+	
			916.00	22	0	7/2+	
941.5(4)	942?	—	861.1	8.2	81.0	5/2+	11
			940.8	3.1	0	7/2+	
998.5(2)?	—	—	365.95	87	632.6	11/2+	87
1089.3(5)	1090	[5/2—7/2]	705.56	<128	383.8	3/2+	41*
			928.54	14	160.6	5/2+	
			1009.6	5.3	81.0	5/2+	
			1090.8	3.9	0	7/2+	
1172.6(3)	1175	—	788.8	⩽6.8	383.8	3/2+	⩽8.2
			1174.1	1.4	0	7/2+	
1219.3(3)?	—	—	347.5	3.9	871.8	(7/2+, 9/2+)	7.3
			1218.7	3.4	0	7/2+	
1442.2(2)?	—	—	674.54	25	767.7	(7/2+, 9/2+)	25
1674.7(3)?	—	—	969.1	6.2	705.6	7/2+, 9/2+	10
			1033.5	0.86	640.1	3/2+	
			1674.2	3.1	0	7/2+	
1692.3(10)?	—	—	1610.3	1.7	81.0	5/2+	4.6
			1693.4	2.9	0	7/2+	
1880.2(5)?	—	—	1496.9	3.0	383.8	3/2+	4.7
			1879.7	1.7	0	7/2+	
1919.5(5)?	—	—	1046.4	7.5	871.8	(7/2+, 9/2+)	12
			1132.2	2.2	787.	7/2+, 9/2+	
			1919.5	2.1	0	7/2+	
2001.5(10)?	—	—	1272.2	2.4	728.2	[3/2+, 5/2]	4.0
			2002.3	1.6	0	7/2+	
2035.3(10)?	—	—	1306.6	1.7	728.2	[3/2+, 5/2]	5.2
			1652.2	2.8	383.8	3/2+	
			2035.3	0.72	0	7/2+	



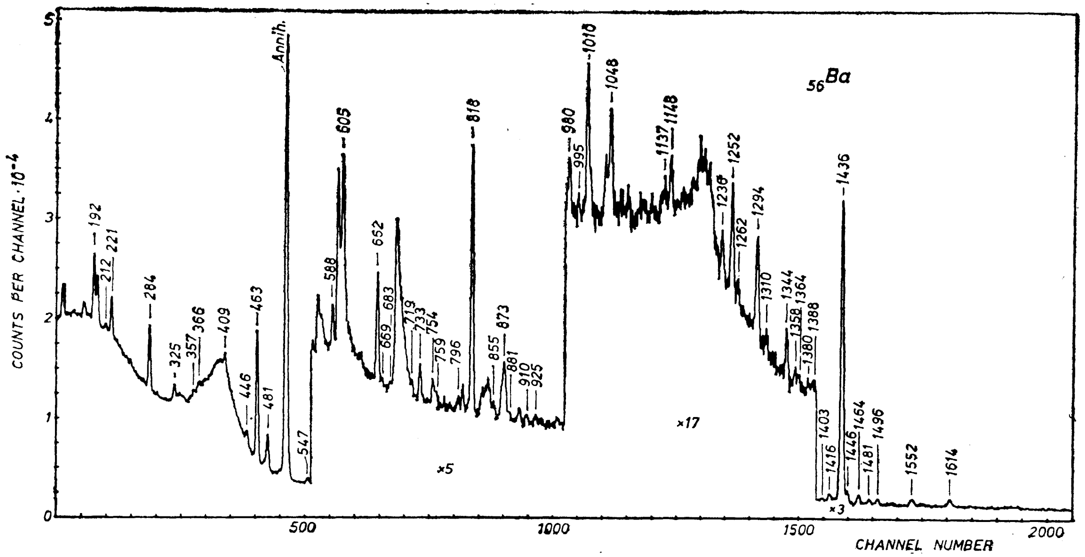


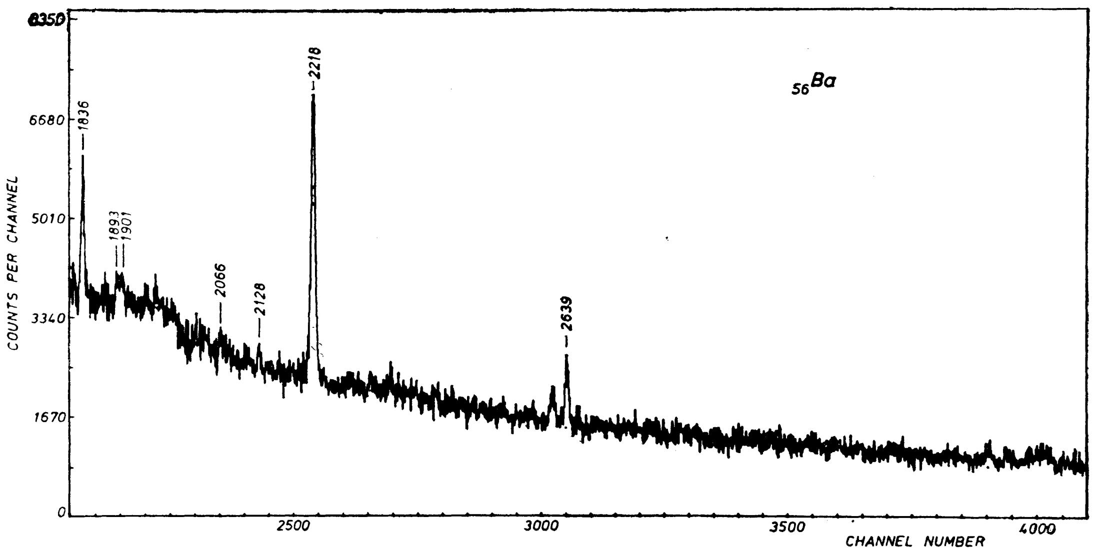
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
191.95(12)	16.3(13)	^{138}Ba	2090.6	994.9(10)	0.6(2)		
212.2(5)	1.7(2)	^{138}Ba	2415.7	1009.7(2)	4.2(4)	^{138}Ba	2445.6
220.98(15)	8.8(6)	^{135}Ba	221.0	1048.1(3)	2.7(3)	^{136}Ba	1866.6
283.65(15)	12.4(7)	^{137}Ba	283.6	1136.9 *m*	1.7(3)	^{137}Ba	(1798)
325.1(2)	2.6(3)	^{138}Ba	2415.7	1147.7(4)	1.8(2)	^{138}Ba	2583.6
357.3(6)	0.75(15)			1235.4(5)	1.6(2)	^{136}Ba	2053.9
365.9(4)	1.7(3)	^{138}Ba	2583.6	1252.1(2)	4.8(4)		
		^{135}Ba	587.6	1261.9(6)	1.0(2)	^{136}Ba	2080.4
408.7(2)	2.5(3)	^{138}Ba	2307.3	1294.0(2)	4.7(4)	^{137}Ba	1294.0
445.9(2)	2.9(3)			1309.6(8)	0.8(2)	^{136}Ba	2128.1
462.75(6)	36(2)	^{138}Ba	1898.6	1343.6(4)	2.0(3)	^{138}Ba	2779.5
480.56(10)	8.4(8)	^{135}Ba	480.6	1357.8(9)	0.7(2)		
546.9(3)	1.7(2)	^{138}Ba	2445.6	1363.9(9)	0.6(2)		
587.6(2)	2.8(3)	^{135}Ba	587.6	1379.7(13)	0.4(2)		
604.6(2)	7.0(7)	^{134}Ba	604.6	1388.2(13)	0.4(2)		
661.62(8)	8.6(4)	^{137}Ba	661.6	1403.3(9)	0.6(2)		
669.0(8)	0.64(15)			1415.8(3)	2.2(3)	^{138}Ba	2851.7
683.1(8)	0.61(15)			1435.86 *c*	100	^{138}Ba	1435.9
719.2(8)	0.8(2)	^{135}Ba	(719.2)	1445.7(4)	4.8(6)	^{138}Ba	2881.6
732.7(2)	2.8(3)	^{136}Ba	1551.2	1463.9(3)	2.9(3)	^{137}Ba	1463.9
754.1(4)	1.7(3)	^{138}Ba		1481.2(4)	1.5(2)		
759.1(6)	0.9(3)	^{135}Ba	979.6	1495.5(4)	1.7(2)	^{138}Ba	2931.4
		^{136}Ba	1579.0	1552.3 *m*	3.0(3)	^{136}Ba	1551.2
795.9(4)	1.5(2)			1614.1(4)	2.8(3)	^{138}Ba	3050.0
818.47(6)	23.8(12)	^{136}Ba	818.5	1836.2(3)	3.0(3)	^{137}Ba	1836.2
855.2(6)	1.7(4)	^{135}Ba	855.2	1892.6(10)	0.7(2)		
872.7 *m*	6.4(8)	^{135}Ba	874.5	1901.0(10)	0.8(2)	^{137}Ba	1901.0
		^{138}Ba	2307.3	2065.6(12)	0.6(2)		
880.8(8)	1.0(2)	^{138}Ba	(2779.5)	2128.2(9)	0.7(2)	^{136}Ba	2128.1
909.6(5)	0.84(15)	^{135}Ba	909.6	2218.03(16)	11.5(8)	^{138}Ba	2218.0
924.7(5)	1.10(15)			2638.9(4)	3.0(3)	^{138}Ba	2638.9
979.6(3)	2.1(3)	^{135}Ba	979.6				

Level schemes of ^{135}Ba [75He], ^{136}Ba [74Bu1], ^{137}Ba [75Bu2] and ^{138}Ba [74La1, 74Ca, 73Ke, 75Ba]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{135}Ba	220.98(15)	220.95	1/2+	220.98	8.8	0	3/2+	5.4*
	—	268.24	11/2−	—	—	—	—	—
	480.56(10)	480.55	5/2+	480.56	8.4	0	3/2+	6.5*
	587.6(2)	587.85	3/2+	587.6	2.8	0	3/2+	3.6*
				365.9	<1.7	221.0	1/2+	
	719.2(8)?	717?	—	719.2	0.8	0	3/2+	0.8
	855.2(6)	854.99	(3/2+)	855.2	1.7	0	3/2+	6*

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{135}Ba	—	874.52	3/2+, 5/2+, 7/2+	872.7	<6.4	0	3/2+	3.5*
	909.6(4)	909	1/2+	909.6	0.84	0	3/2+	0.84
	979.6(4)	979.98	3/2+, 5/2+	979.6	2.1	0	3/2+	2.4*
				759.1	<0.9	221.0	1/2+	
^{136}Ba	818.47(10)	818.50	2+	818.47	23.8	0	0+	14.3
	1551.2(2)	1551.0	(2+)	1552.3	<3.0	0	0+	<5.8
				732.7	2.8	818.5	2+	
	—	1579.01	(0+)	759.1	<0.9	818.5	2+	0.6*
	1866.6(3)	1866.57	4+	1048.1	2.7	818.5	2+	2.7
	—	2030.46	7−	—	—	—	—	—
	2053.9(5)	2053.84	4+	1235.4	1.6	818.5	2+	1.6
	2080.4(6)	2080.60	(1,2)	1261.9	1.0	818.5	2+	2.0*
	2128.1(8)	2128.92	(1,2)	2128.2	0.7	0	0+	1.5
				1309.6	0.8	818.5	2+	
^{137}Ba	283.65(15)	279.2	1/2+	283.65	12.4	0	3/2+	12.4
	661.62(8)	661.640	11/2−	661.62	8.6	0	3/2+	<8.6
	—	907?	—	—	—	—	—	—
	—	1044?	—	—	—	—	—	—
	1294.0(2)	1292	3/2+, 5/2+	1294.0	4.7	0	3/2+	4.7
	1463.9(3)	1462.9	3/2+, 5/2+	1463.9	2.9	0	3/2+	2.9
	—	1794	(7/2−)	1136.9	<1.7	661.6	11/2−	<1.7
	1836.2(3)	1839	1/2+	1836.2	3.0	0	3/2+	3.0
	—	1857?	—	—	—	—	—	—
	1901.0(10)	1903	3/2+, 5/2+	1901.0	0.8	0	3/2+	0.8
^{138}Ba	1435.86 *c*	1435.9	2+	1435.86	100	0	0+	42*
	1898.61(10)	1898.7	4+	462.75	36	1435.9	2+	11*
	2090.56(16)	2090.6	6+	191.95	16.3	1898.6	4+	14
	2203.5(6)	2203.2	(6+)	—	—	—	—	—
	2218.03(16)	2217.9	2+	2218.03	11.5	0	0+	<11.5
	2307.3(2)	2307.6	4+	872.7	<6.4	1435.9	2+	<8.9
				408.7	2.5	1898.6	4+	
	2415.7(3)	2415.5	(5+)	325.1	2.6	2090.6	6+	8.2*
				212.2	1.7	2203.5	(6+)	
	2445.6(2)	2445.7	3+	1009.7	4.2	1435.9	2+	5.9
				546.9	1.7	1898.6	4+	
	2583.6(5)	2583.2	2+ (1+)	1147.7	1.8	1435.9	2+	2.4*
				365.9	<1.7	2218.0	2+	
	—	2584	4+	—	—	—	—	—
	2638.9(4)	2639.6	2+	2638.9	3.0	0	0+	3.0
	2779.5(4)	2779.5	4+	1343.6	2.0	1435.9	2+	≤3.0
				880.8?	1.0	1898.6	4+	
	2851.7(3)	2851.7	—	1415.8	2.2	1435.9	2+	2.2
	2881.6(4)	2881.0	3−	1445.7	4.8	1435.9	2+	4.8
	2931.4(4)	2931.5	2+ (1+)	1495.5	1.7	1435.9	2+	1.7
	—	2991.2	1, 2, 3, 4	—	—	—	—	—
	3050.0(4)	3049.9	2+ (1+)	1614.1	2.8	1435.9	2+	2.8

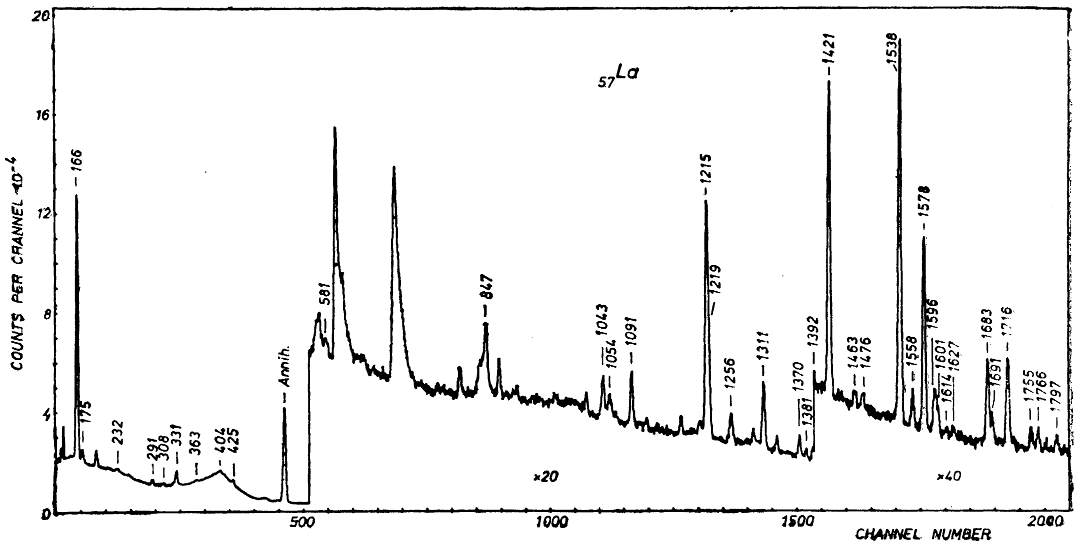


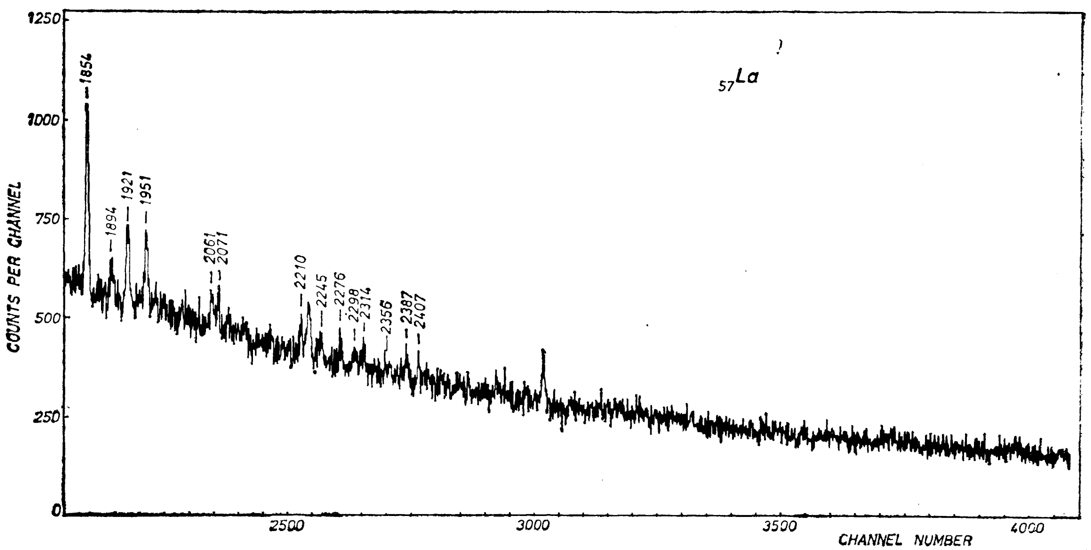


E_γ	I_γ	E_i	E_γ	I_γ	E_i
165.85(10)	930(150)	165.8	1558.5(2)	11.8(12)	1558.4
174.6(2)	20(5)		1578.09(10)	72(7)	1578.1
232.5(6)	9.1(10)		1595.6 *m*	18(3)	1761.1
291.3(2)	16.5(15)		1600.9(6)	10(2)	1766.2
308.3(3)	10.6(15)		1613.6(8)	4.3(6)	
330.70(10)	54(5)		1626.7(8)	3.1(4)	
363.1(2)	8.9(10)		1683.1(2)	35(4)	1683.1
403.8(2)	9.8(15)		1690.6(3)	10.4(15)	1856.3
425.2(2)	20(3)		1716.11(10)	37(4)	1716.1
581.3(5)	7(2)		1755.0(4)	10.4(12)	1920.7
846.8(3)	15(3)		1766.0(4)	10.0(12)	1766.3
1043.1(3)	15(4)	1208.9	1797.1(4)	7.1(8)	1962.9
1054.2(8)	8(3)	1219.1	1853.64(10)	22(2)	
1090.97(10)	33(3)	1256.8	1894.0 *m*	4.7(6)	1894.4
1215.49(10)	137(15)	1381.3			2060.9
1219.10(10)	80(10)	1219.1	1920.7(2)	12.5(15)	1920.7
1256.0 *m*	25(3)	1256.8	1951.4(3)	11.2(15)	
		1420.6	2060.9(5)	6.6(8)	2060.9
1310.64(15)	48(5)	(1310.6)	2071.4(6)	3.7(5)	
		1476.1	2210.5(8)	12(2)	
1370.5(2)	16.6(15)	(1537.7)	2244.6(10)	2.8(5)	
1381.1(2)	6.6(7)	1381.3	2276.2(12)	4.4(10)	
1392.4(2)	8.7(8)	1558.4	2298.0(10)	6.2(15)	
1420.56(10)	100	1420.6	2314.2(12)	6.0(15)	
1462.6 *m*	6.7(7)		2356.1(15)	4.6(15)	
1476.1(4)	6.6(7)	1476.1	2386.8(10)	7.4(20)	
1537.69(10)	144(14)	1537.7	2407.0(12)	6.3(20)	

Level scheme of ^{139}La [74Gr]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
165.85(10)	165.853	5/2+	165.85	930	0	7/2+	⩽610
—	570?	—	—	—	—	—	—
—	830?	—	—	—	—	—	—
—	930?	—	—	—	—	—	—
—	1070	—	—	—	—	—	—
1208.9(4)	1206	[1/2+]	1043.1	15	165.8	5/2+	15
1219.10(10)	1219.1	(5/2, 9/2+)	1054.2	8	165.8	5/2+	88
			1219.10	80	0	7/2+	
1256.82(15)	1256.6	(+)	1090.97	33	165.8	5/2+	45*
			1256.0	<25	0	7/2+	
1310.64(10)?	1310.1?	—	1310.64	48	0	7/2+	48





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1381.3(2)	1381.3	(7/2)	1215.49	137	165.8	5/2+	144
			1381.1	6.6	0	7/2+	
1420.56(10)	1420.5	(7/2+)	1256.0	<25	165.8	5/2+	113*
			1420.56	100	0	7/2+	
—	1439	(9/2, 11/2−)	—	—	—	—	—
1476.1(4)	1476.4	—	1310.64	48	165.8	5/2+	55
			1476.1	6.6	0	7/2+	
1537.69(10)	1536.3	(7/2+)	1370.5?	16.6	165.8	5/2+	≤161
			1537.69	144	0	7/2+	
1558.4(2)	1558.2	(3/2, 5/2)+	1392.4	8.7	165.8	5/2+	20
			1558.5	11.8	0	7/2+	
1578.09(10)	1578.2	(9/2+)	1578.09	72	0	7/2+	72
1683.1(2)	1683.1	(7/2+)	1683.1	35	0	7/2+	35
1716.11(10)	1715	(+)	1716.11	37	0	7/2+	37
—	1761.1	(9/2)	1595.6	<18	165.8	5/2+	<18
1766.2(4)	1767.2	—	1600.9	10	165.8	5/2+	20
			1766.0	10.0	0	7/2+	
—	1780	(+)	—	—	—	—	—
—	1820	(+)	—	—	—	—	—
—	1836	—	—	—	—	—	—
1856.3(4)	1857.0	(3/2, 5/2)+	1690.5	10.4	165.8	5/2+	10
—	1894.4	—	1894.0	<4.7	0	7/2+	1.9*
1920.7(2)	1920.6	(+)	1755.0	10.4	165.8	5/2+	23
			1920.7	12.5	0	7/2+	
—	1943	(+)	—	—	—	—	—
1962.9(4)	1963.2	(3/2, 5/2)+	1797.1	7.1	165.8	5/2+	7.1
—	2035?	—	—	—	—	—	—
2060.9(5)	2060.1	(+)	1894.0	<4.7	165.8	5/2+	9.4*
			2060.9	6.6	0	7/2+	

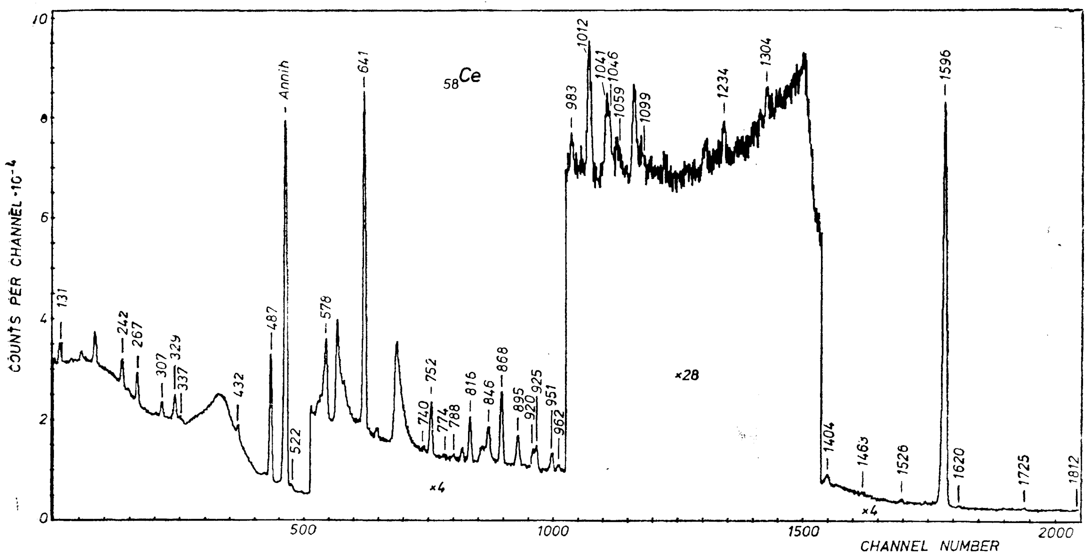
Cerium $_{58}$Ce

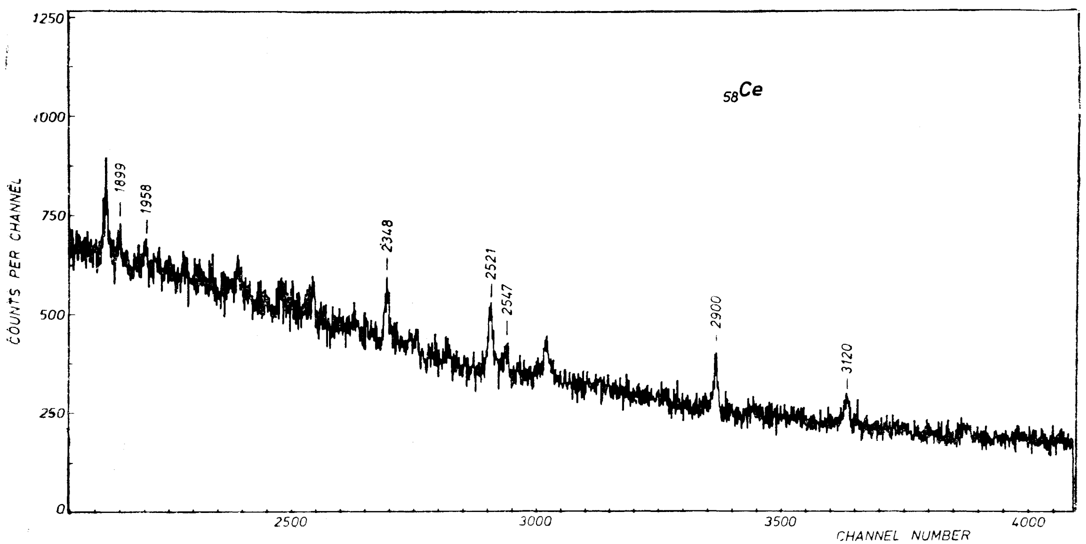
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
131.3(4)	3.3(8)	^{140}Ce	2481.2	641.23(6)	29(3)	^{142}Ce	641.2
241.91(10)	6.5(7)	^{140}Ce	2349.9	740.0(6)	0.38(15)		
266.61(10)	6.2(6)	^{140}Ce	2349.9	751.65(10)	5.1(5)	^{140}Ce	2347.8
306.91(15)	3.3(3)	^{140}Ce	1903.1	774.0(8)	0.30(15)		
328.67(15)	5.9(6)	^{140}Ce	2412.0	788.2(6)	0.43(8)		
337.0 *m*	1.8(3)			815.84(10)	4.6(5)	^{140}Ce	2412.0
432.44(15)	3.0(4)	^{140}Ce	2515.7	846.3(2)?	2.0(3)		
487.06(5)	37(4)	^{140}Ce	2083.3	867.8(2)	6.5(10)	^{146}Ce	2464.0
522.0(3)	0.83(15)	^{142}Ce	1741.3	894.76(15)	4.1(5)	^{142}Ce	1536.0
578.1(2)	6.3(8)	^{142}Ce	1219.3	919.5(2)	2.1(3)	^{140}Ce	2515.7

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
925.1 (2)	2.9 (4)	^{140}Ce	2521.3	1526.4 (5)	0.49 (10)		
950.84 (15)	2.3 (2)	^{140}Ce	2547.0	1596.20 *c*	100	^{140}Ce	1596.2
962.1 (3)	0.76 (10)	^{142}Ce	2181.4	1620.5 (10)	0.23 (8)		
983.1 (4)	0.64 (8)			1724.9 (6)	0.53 (12)		
1011.5 (3)	2.6 (4)	^{142}Ce	1652.7	1812.3 (8)	0.36 (8)		
1041.1 (4)	0.73 (15)			1899.3 (8)	0.34 (10)		
1045.5 (6)	0.50 (15)			1958.5 (10)	0.29 (8)		
1059.0 *m*	0.63 (15)			2347.5 (6)	1.2 (2)	^{140}Ce	2347.8
1098.8 (6)	0.8 (3)			2521.3 (5)	1.4 (2)	^{140}Ce	2521.3
1233.6 (4)	0.7 (2)			2547.4 (8)	0.57 (18)	^{140}Ce	2547.0
1304.0 (8)	0.8 (2)	^{140}Ce	(2900.1)	2900.1 (7)	1.1 (2)	^{140}Ce	2900.1
1404.3 (3)	1.9 (2)	^{142}Ce	(2045.5)	3120.4 (12)	0.56 (12)	^{140}Ce	3120.4
1463.3 (7)	0.38 (10)						

Level schemes of ^{140}Ce [68Gu, 74Pe] and ^{142}Ce [73Le, 75Ba]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{140}Ce	1596.20 *c*	1596.45	2+	1596.20	100	0	0+	35
	1903.11 (16)	1903.30	0+	306.91	3.3	1596.2	2+	5.4*
	2083.26 (7)	2083.50	4+	487.06	37	1596.2	2+	⩽13*
	2107.96 (16)	2108.10	6+	—	—	—	—	—
	—	2174?	(8+)	—	—	—	—	—
	2347.85 (11)	2348.19	2+	2347.5	1.2	0	0+	6.3
				751.65	5.1	1596.2	2+	
	2349.87 (12)	2350.05	5+, 4+	266.61	6.2	2083.3	4+	7.9*
				241.91	6.5	2108.0	6+	
	2412.01 (11)	2412.28	3+	815.84	4.6	1596.2	2+	9.0*
				328.67	5.9	2083.3	4+	
	2464.0 (2)	2464.32	3−	867.8	6.5	1596.2	2+	6.5
	2481.2 (4)	2481.19	4+	131.3	3.3	2349.9	4+, 5+	8.5*
	2515.70 (17)	2516.10	4+, 3+	919.5	2.1	1596.2	2+	5.1
				432.44	3.0	2083.3	4+	
	2521.3 (2)	2521.72	2+	2521.3	1.4	0	0+	4.3
				925.1	2.9	1596.2	2+	
	2547.04 (16)	2547.5	2+, 1+	2547.4	0.57	0	0+	2.9
				950.84	2.3	1596.2	2+	
	—	2630	—	—	—	—	—	—
	2900.1 (7)	2899.7	2+	2900.1	1.1	0	0+	1.9
				1304.0?	0.8	1596.2	2+	
	—	3016.9	0+	—	—	—	—	—
	—	3040	3−	—	—	—	—	—
	3120.4 (12)	3119.0	2+	3120.4	0.56	0	0+	0.56





^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{142}Ce	641.23 (6)	641.2	2+	641.23	29	0	0+	13*
	1219.3 (2)	1219.3	4+	578.1	6.3	641.2	2+	4.7
	1535.99 (16)	1536.1	3+	894.76	4.1	641.2	2+	4.1
	1652.7 (3)	1652.6	3−	1011.5	2.6	641.2	2+	2.6
	1741.3 (4)	1742	—	522.0	0.83	1219.3	4+	0.83
	—	2004.2	2+	—	—	—	—	—
	—	2030.0	0+	—	—	—	—	—
	2045.5 (3)?	2043	—	1404.3?	1.9	641.2	2+	1.9
	—	2114	—	—	—	—	—	—
	—	2125	—	—	—	—	—	—
	2181.4 (3)	2181.4	3+ (2+)	962.1	0.76	1219.3	4+	1.6*

Praseodyium $^{141}_{59}$Pr

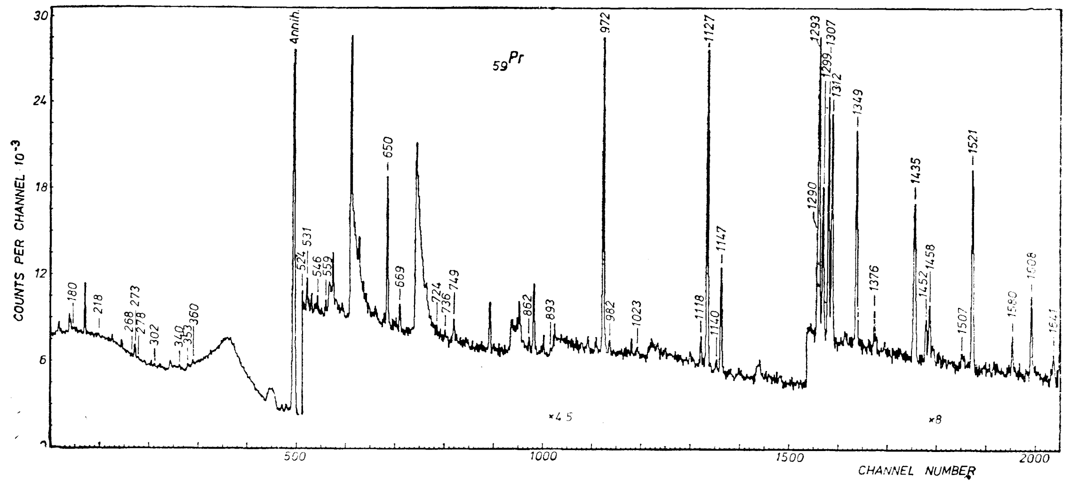
E_γ	I_γ	E_i	E_γ	I_γ	E_i
145.45 (5)	1200 (200)	145.4	1023.1 (2)	3.7 (6)	
179.6 (2)	5.5 (8)		1117.65 (10)	7.6 (7)	1117.7
218.3 (5)	3.2 (9)		1126.90 (10)	100	1127.0
268.3 (3)	4.4 (8)		1140.3 (2)	3.0 (4)	2258.0
273.3 (2)	18 (4)		1147.24 (10)	34 (4)	1292.7
277.5 (3)	2.9 (8)		1290.0 (4)	27 (10)	1435.4
302.1 (2)	2.2 (6)	1796.2	1292.6 (2)	51 (10)	1292.7
339.9 (4)	2.3 (5)		1298.74 (10)	33 (4)	1298.7
352.7 (3)	4.0 (9)	1651.5	1306.85 (10)	50 (5)	1452.2
		2003.9	1312.13 (10)	51 (5)	1457.5
359.8 (6)	4.1 (8)	1657.9	1348.70 (10)	47 (4)	1494.1
		1812.7	1375.7 (3)	12 (3)	1521.1
		1854.2	1435.34 *m*	50 (5)	1435.4
523.6 (2)	1.8 (2)	1975.8			1580.2
530.88 (10)	2.4 (7)	1657.9	1452.21 (10)	13 (2)	1452.2
546.4 (3)	2.0 (4)	2003.9	1457.52 (10)	17 (2)	1457.5
558.6 (2)	2.3 (5)		1506.9 (5)	6.1 (2)	1651.5
650.34 (10)	35 (8)	1768.0	1521.13 (10)	51 (5)	1521.1
668.88 (10)	6.0 (10)	1786.4	1580.2 (10)	6.3 (7)	1580.2
		1796.2	1608.30 (10)	20 (2)	1608.3
723.6 (2)	3.1 (5)		1641.2 (2)	7.2 (8)	1786.4
736.0 (3)	2.8 (4)	1854.2	1651.48 (10)	33 (3)	1651.5
749.21 (10)	5.8 (6)		1658.0 (2)	3.3 (5)	1657.9
861.5 (2)	2.1 (4)		1667.28 (10)	13 (3)	1812.7
893.0 (4)	1.3 (4)	2018.8	1696.8 (2)	8.3 (9)	1842.2
972.24 (10)	83 (8)	1117.7	1708.75 (10)	14 (3)	1854.2
981.74 (10)	2.8 (6)	1127.0	1786.45 (10)	16 (2)	1786.4

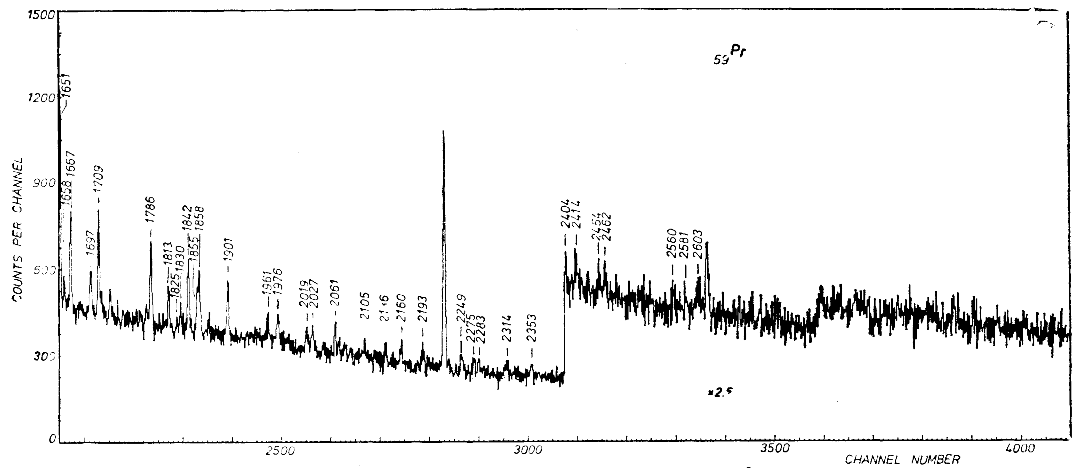
E_γ	I_γ	E_i	E_γ	I_γ	E_i
1812.9 (2)	5.8 (6)	1812.7	2159.7 (5)	4.3 (8)	
1825.2 (3)	2.0 (5)		2192.7 (15)	3.3 (7)	2338.1
1830.5 (3)	3.4 (4)	1975.8	2248.8 (5)	5.3 (8)	2394.2
1842.22 (10)	12 (2)	1842.2	2274.6 (5)	1.9 (6)	2274.6
1854.9 (6)	7 (2)	1854.2	2282.9 (5)	2.1 (7)	
1858.4 (5)	9 (2)	2003.9	2313.8 (10)	1.8 (6)	2313.8
1900.90 (10)	11 (2)	1900.9	2352.8 (5)	2.0 (9)	
1961.1 (4)	4.1 (5)	2106.5	2403.9 (5)	3.0 (9)	
1975.7 (3)	5.2 (6)	1975.8	2414.4 (10)	2.4 (8)	2559.7
2018.8 (5)	4.4 (6)	2018.8	2453.6 (10)	4 (2)	
2027.1 *m*	11 (3)		2462.4 (10)	4 (2)	
2061.4 (3)	3.7 (6)		2559.6 (10)	3.1 (9)	2559.7
2105.3 (10)	2.2 (6)	2106.5	2581.2 (15)	3.1 (9)	
2136.2 (7)	3.0 (9)		2603.1 (10)	4 (2)	

Level scheme of ^{141}Pr [73Au, 73Bu]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_i	J_f^π	P_s
145.45 (5)	145.440	7/?+	145.45	1200	0	5/2+	1400*
1117.67 (10)	1117.6	11/2−	1117.65	7.6	0	5/2+	44
			972.24	83	145.4	7/2+	
1127.00 (10)	1126.91	3/2+	1126.90	100	0	5/2+	93
			981.74	2.8	145.4	7/2+	
1292.68 (10)	1292.64	5/2+	1292.6	51	0	5/2+	82*
			1147.24	34	145.4	7/2+	
1298.74 (10)	1298.60	1/2+	1298.74	33	0	5/2+	25
1435.4 (4)	1434.7	3/2+	1435.34	<50	0	5/2+	39*
			1290.0	27	145.4	7/2+	
1452.25 (10)	1450.2	7/2+	1452.21	13	0	5/2+	57
			1306.85	50	145.4	7/2+	
1457.52 (10)	1456.1	5/2+	1457.52	17	0	5/2+	66
			1312.13	51	145.4	7/2+	
1494.14 (10)	1493.2	[11/2—3/2]	1348.70	47	145.4	7/2+	41
1521.13 (10)	1519.9	[9/2—5/2]	1521.13	51	0	5/2+	63
			1375.7	12	145.4	7/2+	
—	1570?	—	—	—	—	—	—
—	1577.6	—	—	—	—	—	—
1580.2 (2)	1580.2	(5/2+)	1580.2	6.3	0	5/2+	41*
			1435.34	<50	145.4	7/2+	
1608.30 (10)	1608.35	3/2+	1608.30	20	0	5/2+	20
1651.48 (10)	1649.0	[9/2—5/2]	1651.48	33	0	5/2+	≤39
			1506.9	6	145.4	7/2+	
			352.7	<4.0	1298.7	1/2+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1657.88(10)	1657.0	1/2+	1658.0	3.3	0	5/2+	⩽9.8
			530.88	2.4	1127.0	3/2+	
			359.8	<4.1	1298.7	1/2+	
—	1764	—	—	—	—	—	—
1768.0(2)	1767	11/2—7/2	650.34	35	1117.7	11/2−	35
1786.45(10)	1783	[9/2—5/2]	1786.45	16	0	5/2+	⩽29
			1641.2	7.2	145.4	7/2+	
			668.88	<6.0	1117.7	11/2−	
1796.2(2)	1792	[7/2—3/2]	668.88	<6.0	1127.0	3/2+	⩽8.2
			302.1	2.2	1494.1	[11/2—3/2]	
1812.72(10)	1809.7	[9/2—5/2]	1812.9	5.8	0	5/2+	⩽23
			1667.28	13	145.4	7/2+	
			359.8	<4.1	1452.2	7/2+	
1842.22(10)	1841	[9/2—5/2]	1842.22	12	0	5/2+	20
			1696.8	8.3	145.4	7/2+	
1854.19(10)	1856	[9/2—5/2]	1854.9	7	0	5/2+	⩽26
			1708.75	14	145.4	7/2+	
			736.0	2.8	1117.7	11/2−	
			359.8	<4.1	1494.1	[11/2—3/2]	
1900.90(10)	1900?	[9/2—3/2]	1900.90	11	0	5/2+	11
—	1946?	—	—	—	—	—	—
1975.8(3)	1974	[9/2—3/2]	1975.7	5.2	0	5/2+	10
			1830.5	3.4	145.4	7/2+	
			523.6	1.8	1452.2	7/2+	
2003.9(3)	2006	[9/2—5/2]	1858.4	9	145.4	7/2+	⩽15
			546.4	2.0	1457.5	5/2+	
			352.7	<4.0	1651.5	[9/2—5/2]	
2018.8(5)	2017	[1/2—7/2]	2018.8	4.4	0	5/2+	5.7
			893.0	1.3	1127.0	3/2+	
—	2038?	—	—	—	—	—	—
—	2078	—	—	—	—	—	—
2106.5(4)	2104	[9/2—3/2]	2105.3	2.2	0	5/2+	6.3
			1961.1	4.1	145.4	7/2+	
—	2235	(3/2)	—	—	—	—	—
2258.0(2)	2256	11/2−	1140.3	3.0	1117.7	11/2−	3.0
2274.6(5)	2272	—	2274.6	1.9	0	5/2+	1.9
—	2309.3	—	—	—	—	—	—
2313.8(10)	2320	—	2313.8	1.8	0	5/2+	1.8
2338.1(15)	2340	—	2192.7	3.3	145.4	7/2+	3.3
—	2368	—	—	—	—	—	—
2394.2(5)	2388	—	2248.8	5.3	145.4	7/2+	6.3
—	2480?	—	—	—	—	—	—
—	2524	—	—	—	—	—	—
2559.7(10)	2566	[9/2—3/2]	2559.6	3.1	0	5/2+	5.5
			2414.4	2.4	145.4	7/2+	

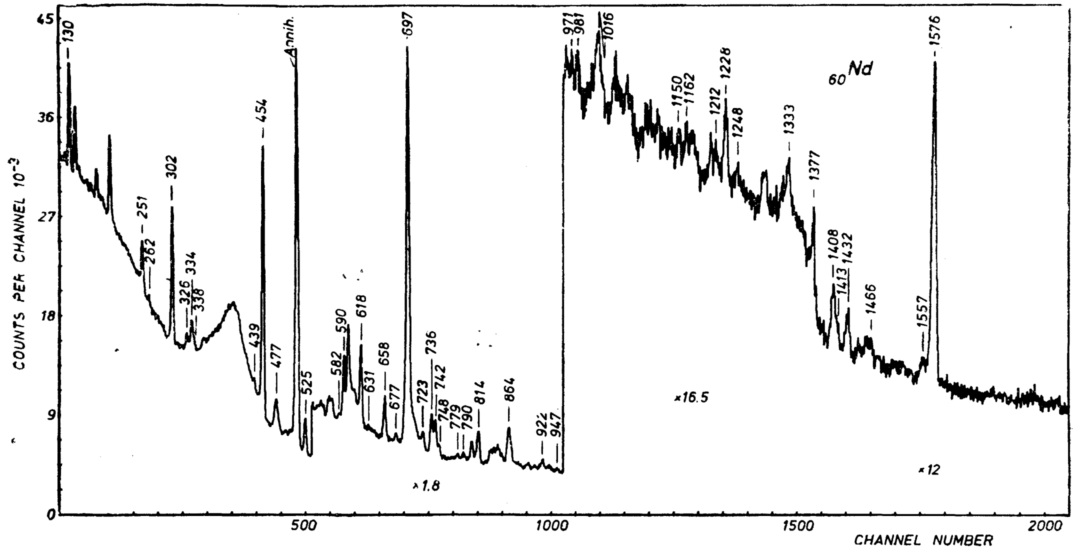




E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
129.97(10)	42(5)	^{150}Nd	130.0	778.6(6)	1.6(2)	^{144}Nd	2093.2
251.12(10)	10.1(11)	^{150}Nd	381.1	789.8(6)	1.8(2)		
262.3(6)	1.3(2)			814.2(2)	6.4(7)	^{144}Nd	1510.8
301.71(10)	37(4)	^{148}Nd	301.7	864.5(2)	8(2)	^{144}Nd	1561.1
326.4(3)	3.8(4)	bg?		921.7(4)	3.9(5)		
334.2(3)	8.1(10)			946.6(8)	1.5(4)		
338.4(6)	2.2(5)	^{150}Nd	719.5	971.0(7)	2.1(5)		
439.1(6)	1.4(2)			980.7(5)	2.8(6)	^{144}Nd	2295.3
453.94(10)	90(9)	^{146}Nd	453.9	1015.9 *m*	5.8(10)	^{146}Nd	1471.4
476.6 *m*	3.0(10)	^{144}Nd	1791.3	1149.8(12)	1.4(5)		
525.49(10)	14.5(15)	^{142}Nd	2101.3	1162.0(12)	1.6(5)		
582.5(6)	1.6(3)			1212.0(10)	2.5(6)		
589.69(15)	16(2)	^{146}Nd	1043.6	1228.1(4)	5.8(8)	^{143}Nd	1228.1
618.04(12)	20(3)	^{144}Nd	1314.6	1247.5(15)	1.5(6)		
630.8(8)	1.2(3)			1333.1(7)	3.1(6)		
657.9(2)	12.3(13)			1377.2(6)	4.0(6)	^{144}Nd	2073.8
676.6(4)	2.3(3)			1408.0(8)	6.0(15)	^{143}Nd	1408.0
696.60(15)	100	^{144}Nd	696.6	1413.3(10)	2.4(8)	^{144}Nd	2109.9
722.7(4)	4.1(5)	^{150}Nd	852.7	1431.8(6)	4.9(8)	^{143}Nd	1431.8
736.0(3)	12(2)	^{146}Nd	1189.9	1466 *m*	7(2)		
742.3(3)	10(2)	^{143}Nd	742.3	1557.0(12)	2.0(5)	^{143}Nd	1557.0
748.0(5)	3.1(4)			1575.85(15)	41(4)	^{142}Nd	1575.8

Level schemes of ^{142}Nd [73Le], ^{143}Nd [74Le], ^{144}Nd [75Bu3], ^{146}Nd [75Bu4, 76Bu], ^{148}Nd [72Ch] and ^{150}Nd [72Ch]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{142}Nd	1575.85(15)	1575.7	2+	1575.85	41	0	0+	<27
	—	2084.4	(3−)	—	—	—	—	—
	2101.34(18)	2101	(4+)	525.49	14.5	1575.8	2+	14.5
^{143}Nd	742.3(3)	741.98	3/2−	742.3	10	0	7/2−	10
	1228.1(4)	1229	(9/2−)	1228.1	5.8	0	7/2−	5.8
	—	1303	(1/2, 3/2)−	—	—	—	—	—
	1408.0(8)	1407	—	1408.0	6.0	0	7/2−	6.0
	1431.8(6)	1432	—	1431.8	4.9	0	7/2−	4.9
	—	1506	—	—	—	—	—	—
	—	1545	—	—	—	—	—	—
	1557.0(12)	1558	—	1557.0	2.0	0	7/2−	2.0
^{144}Nd	696.60(15)	696.49	2+	696.60	100	0	0+	59
	1314.64(19)	1314.50	4+	618.04	20	696.6	2+	13
	1510.8(2)	1510.64	3−	814.2	6.4	696.6	2+	6.2*
	1561.1(2)	1561.02	2+	864.5	8	696.6	2+	9*
	—	1791.28	6+	476.6	<3.0	1314.6	4+	<3.0

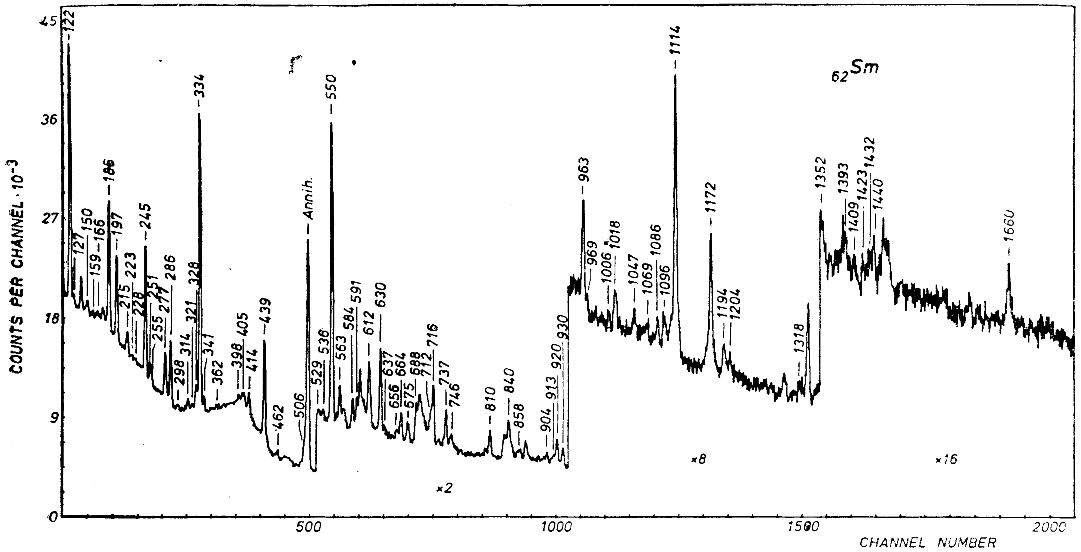


Cont'd ($_{60}$Nd)

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{144}Nd	2073.8(6)	2072.7	(2+)	1377.2	4.0	696.6	2+	4.0
	—	2075	0+	—	—	—	—	—
	—	2084.49	—	—	—	—	—	—
	2093.2(6)	2093.07	(5−)	778.6	1.6	1314.6	4+	2.0*
	2109.9(10)	2109.6	—	1413.3	2.4	696.6	2+	2.4
	—	2178.5	—	—	—	—	—	—
	—	2185.68	1−	—	—	—	—	—
	—	2204.6	(4)	—	—	—	—	—
	—	2218.0	—	—	—	—	—	—
	2295.3(6)	2295.1	4(+)	980.7	2.8	1314.6	4+	2.8
^{146}Nd	453.94(10)	453.77	2+	453.94	90	0	0+	≤62
	—	999.2?	—	—	—	—	—	—
	1043.63(18)	1043.4	4+	589.69	16	453.9	2+	16
	—	1049.1?	—	—	—	—	—	—
	1189.9(3)	1189.6	3−	736.0	12	453.9	2+	12
	—	1218.6?	—	—	—	—	—	—
	—	1372.8	—	—	—	—	—	—
	—	1471.4	(2+)	1015.9	<5.8	453.9	2+	<5.8
^{148}Nd	301.71(10)	302	2+	301.71	37	0	0+	<37
^{150}Nd	129.97(10)	130	2+	129.97	42	0	0+	28
	381.09(14)	382	4+	251.12	10.1	130.0	2+	7.9
	—	677	0+	—	—	—	—	—
	719.5(6)	721	6+	338.4	2.2	381.1	4+	2.2
	852.7(4)	851	2+	722.7	4.1	130.0	2+	4.1

E_γ	I_γ	^{A}Z	E_i
121.6 *m*	198(25)	^{147}Sm	121.3
		^{152}Sm	121.8
127.3(4)	4.6(10)		
149.8(4)	6.2(8)	^{144}Sm	1809.8
158.7(4)	2.0(3)		
166.5(6)	2.7(4)		
185.06(6)	46(5)	^{154}Sm	267.0
197.4(8)	16(4)	^{147}Sm	197.4
215.11(10)	10.2(12)		
222.8(6)	2.1(4)		
228.5(8)	1.6(3)		
244.66(10)	46(5)	^{152}Sm	
251.4(6)	2.5(6)	^{150}Sm	(1417.4)
254.6(6)	3.8(8)	^{149}Sm	277.2
277.2 *m*	19.4(20)	^{149}Sm	277.2
		^{154}Sm	544.4
285.84(10)	26(3)	^{149}Sm	285.8
297.7(6)	1.8(3)	^{150}Sm	1071.5
314.4(4)	3.7(4)	^{149}Sm?	591.0
320.6(6)	1.6(3)		
327.8(4)	10.9(15)	^{149}Sm	350.3
333.92(7)	151(15)	^{150}Sm	333.9
340.6(3)	4.8(7)	^{152}Sm	706.8
361.6(10)	1.7(3)		
397.7(4)	1.9(3)	^{149}Sm	397.7
405.4 *m*	4.2(6)	^{150}Sm	740.4
414.2 *m*	8.5(10)	^{148}Sm	1594.4
439.4 *m*	66(8)	^{150}Sm	773.3
		^{152}Sm	810.4
461.5(6)	3.5(5)		
505.6(6)	3.4(8)	^{150}Sm	1278.9
		^{149}Sm	528.7
528.7(8)	1.9(3)	^{149}Sm	528.7
535.8(4)	2.6(4)	^{149}Sm	558.3
550.23(10)	100	^{148}Sm	550.2
563.24(10)	9.8(12)	^{152}Sm	685.0
584.3 *m*	6.3(7)	^{150}Sm	1357.6
591.0(3)	3.5(5)	^{149}Sm?	591.0
611.9 *m*	22(3)	^{147}Sm	809.3
		^{148}Sm	1161.3
629.87(10)	25(3)	^{148}Sm	1180.1
637.0(6)	0.85(15)	^{154}Sm	1181.7
656.5(4)	3.7(4)	^{152}Sm	1023.0
664.05(10)	10.8(12)	^{149}Sm?	664.0
675.44	9.0(10)	^{150}Sm	1449.2
		^{152}Sm	1757.0
			1041.2

E_γ	I_γ	^{A}Z	E_i
688.3(4)	6.1(12)	^{152}Sm	810.4
712.5(6)	8.4(12)	^{150}Sm	1046.2
716.5(3)	23(3)		
737.45(8)	11.4(12)	^{150}Sm	1071.5
745.8 *m*	6.3(8)	^{154}Sm	1012.5
810.5 *m*	11.3(12)	^{152}Sm	810.4
840.5 *m*	10(2)	^{152}Sm	963.3
		^{154}Sm	921.7
857.6 *m*	6.0(12)	^{150}Sm	1193.9
		^{152}Sm	1221.3
903.5 *m*	3.4(6)	^{148}Sm	1454.3
		^{152}Sm	1023.0
913.0 *m*	5.1(10)	^{148}Sm	1465.2
		^{154}Sm	1177.9
			1181.7
920.1 *m*	15(2)	^{150}Sm	1255.2
		^{152}Sm	1041.2
		^{154}Sm	921.7
930.0 *m*	9.1(12)	^{154}Sm	1012.5
963.30(10)	16(2)	^{152}Sm	963.3
969.4(4)	0.51(10)		
1005.5(16)	1.7(3)	^{152}Sm	1371.7
1017.6 *m*	4.8(8)	^{154}Sm	1099.9
1047.4(8)	1.4(4)	^{150}Sm	1046.2
			1820.3
1069.2 *m*	1.6(4)	^{154}Sm	1338.1
1085.8(3)	2.1(3)	^{152}Sm	1085.7
1096.5(8)	2.6(5)	^{154}Sm	1177.9
1114 *m*	37(4)	^{148}Sm	1663.8
		^{152}Sm	1233.8
1172 *m*	19(2)	^{150}Sm	1166.0
			1504.9
1194 *m*	5.7(8)	^{150}Sm	1193.9
		^{152}Sm	(1559.6)
1204 *m*	3.0(6)		
1318.0(6)	1.7(4)	^{154}Sm	1584.6
1352 *m*	8.5(20)	^{148}Sm	1903.9
		^{154}Sm	1440.1
1392.6 *m*	6.1(10)	^{154}Sm	1476.6
			1661.6
1408.9(12)	2.3(6)		
1422.9(12)	1.8(4)	^{148}Sm	1972.0
1432.2(16)	2.7(6)	^{154}Sm	1514.9
1440.4(6)	2.4(5)	^{154}Sm	1440.1
1659.8(2)	6.6(9)	^{144}Sm	1659.8
1842 *m*	2.4(5)	^{152}Sm	1964.6
		^{154}Sm	1923.5

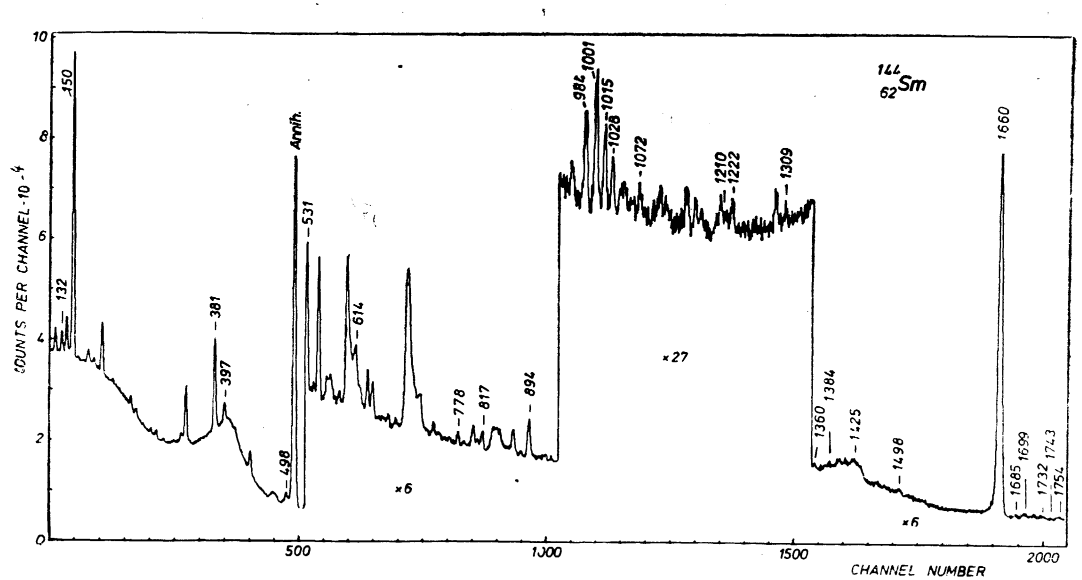


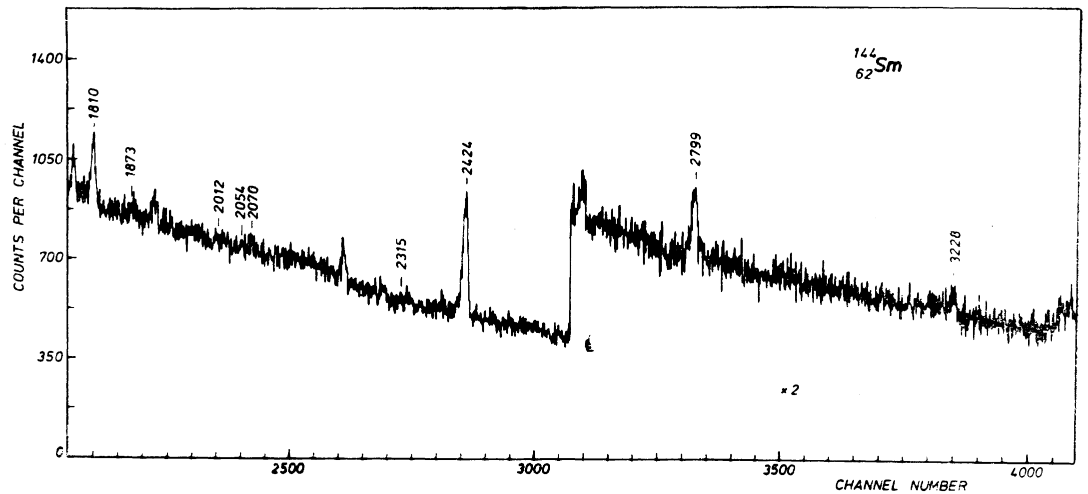
Samarium-144 $^{144}_{62}$Sm

E_γ	I_γ	E_i	E_γ	I_γ	E_i
132.3(2)	4.0(8)	2323.0	1359.5(7)	0.8(2)	3019.6
150.05(10)	58(10)	1809.8	1383.5(8)	0.40(12)	(3193.3)
380.97(10)	22(5)	2190.7	1425.2(8)	0.40(12)	
397.1(2)	4.1(4)	2588.6	1497.9(5)	0.82(19)	(3307.7)
498.0(3)	1.00(15)	2687.8	1659.77(10)	100	1659.8
530.80(10)	9.1(5)	2190.7	1684.7(6)	0.52(15)	
613.5(3)	1.10(15)	2423.6	1699.0(6)	0.70(16)	3358.8
777.5(3)	0.84(10)	2588.6	1731.9(8)	0.52(15)	3391.7
817.2(3)	1.8(2)	2477.0	1743.2(8)	0.40(13)	3403.0
893.7(2)	4.6(4)	2703.5	1754.3(7)	0.65(17)	3564.1
		(^{145}Sm)	1809.9(3)	2.2(2)	1809.8
984.1(2)	2.7(3)	2643.9	1873.3(10)	0.40(13)	3533.1
1000.7(2)	3.2(4)	2660.5	2011.5(14)	0.15(9)	3821.3
1015.2(2)	1.50(15)	2825.0	2054.0(12)	0.40(15)	
1028.0(3)	1.39(15)	2687.8	2069.9(17)	0.30(12)	
1072.5(5)	0.65(15)	2882.1	2315.3(16)	0.30(13)	
1210.1(6)	0.60(15)	3019.6	2423.8(2)	6.9(4)	2423.6
1222.2(4)	1.10(17)	2882.1	2798.8(4)	2.36(24)	2798.8
1308.7(6)	0.61(15)	3732.3	3227.5(12)	0.7(2)	3227.5

Level scheme of ^{144}Sm [75Ra]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1659.78(10)	1660.01	2+	1659.77	100	0	0+	20
1809.83(15)	1810.11	3−	1809.9	2.2	0	0+	27
			150.05	58	1659.8	2+	
2190.70(20)	2190.61	4+	530.80	9.1	1659.8	2+	20
			380.97	22	1809.8	3−	
2323.0(3)	2323.3	6+	132.3	4.0	2190.7	4+	4.0
2423.6(3)	2423.3	2+	2423.8	6.9	0	0+	7.4
			613.5	1.10	1809.8	3−	
2477.0(3)	2478.9	0+	817.2	1.8	1659.8	2+	1.8
2588.6(4)	2588.0	(4+)	777.5	0.84	1809.8	3−	4.9
			397.1	4.1	2190.7	4+	
2643.9(3)	2645.0	—	984.1	2.7	1659.8	2+	2.7
2660.5(3)	2661.0	—	1000.7	3.2	1659.8	2+	3.2
2687.8(4)	2687.0	—	1028.0	1.39	1659.8	2+	2.4
			498.0	1.00	2190.7	4+	
2703.5(3)	2704.0	—	893.7	⩽4.6	1809.8	3−	⩽4.6
2798.8(4)	2800	(2+)	2798.8	2.36	0	0+	2.4
2825.0(4)	2825.1	—	1015.2	1.50	1809.8	3−	1.5
2882.1(5)	2883.5	(4+)	1222.2	1.10	1659.8	2+	1.8
			1072.5	0.65	1809.8	3−	
3019.6(7)	3020.5	(4+)	1359.5	0.8	1659.8	2+	1.4
			1210.1	0.60	1809.8	3−	
—	3080.0	—	—	—	—	—	—
—	3123.8	(7)	—	—	—	—	—
—	3136.0	—	—	—	—	—	—
3193.3(9)?	3196.9	(3−, 4−)	1383.5	0.40	1809.8	3−	0.4
3227.5(12)	3227.5	[(1−)]	3227.5	0.7	0	0+	0.7
—	3266.0	—	—	—	—	—	—
3307.7(7)?	—	—	1497.9	0.82	1809.8	3−	0.8
—	3309.0	(6+)	—	—	—	—	—
3358.8(7)	3362.0	(3−, 4−)	1699.0	0.70	1659.8	2+	0.7
—	3376.3	(8)	—	—	—	—	—
3391.7(8)	3393.0	(2−, 3−)	1731.9	0.52	1659.8	2+	0.5
3403.0(8)	3405.0	(3−)	1743.2	0.40	1659.8	2+	0.4
—	3460.5	(9)	—	—	—	—	—
—	3518.4	—	—	—	—	—	—
3533.1(10)	3530.0	—	1873.3	0.40	1659.8	2+	0.4
3564.1(8)	3564.0	—	1754.3	0.65	1809.8	3−	0.6
—	3629.0	—	—	—	—	—	—
—	3650.2	—	—	—	—	—	—
—	3724.0	(8)	—	—	—	—	—
3732.3(7)	3733.9	(3−)	1308.7	0.61	2423.6	2+	0.6
—	3750.0	—	—	—	—	—	—
—	3781.0	—	—	—	—	—	—
3821.3(14)	3822.0	—	2011.5	0.15	1809.8	3−	0.15





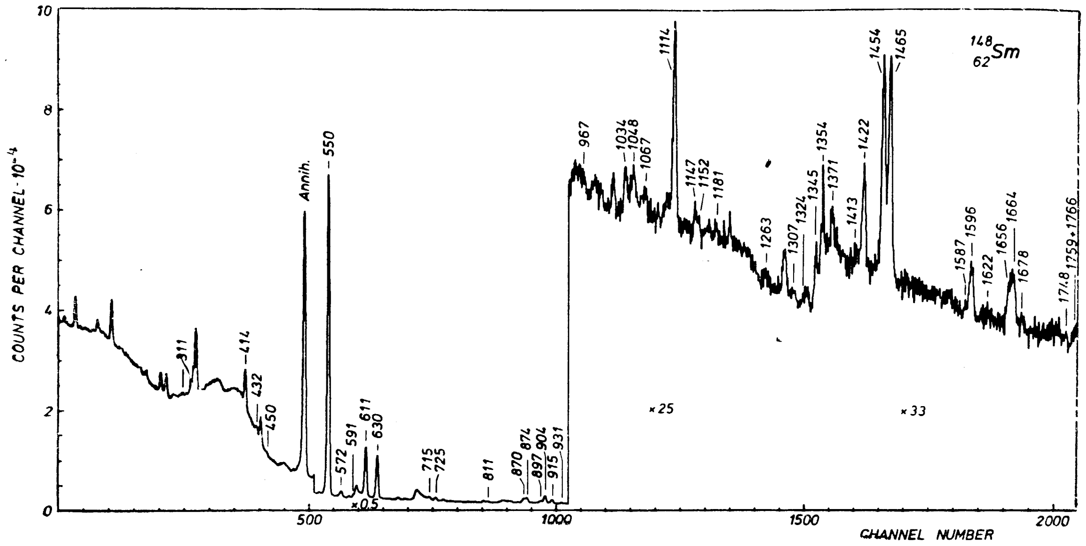
Samarium-148 $^{148}_{62}Sm$

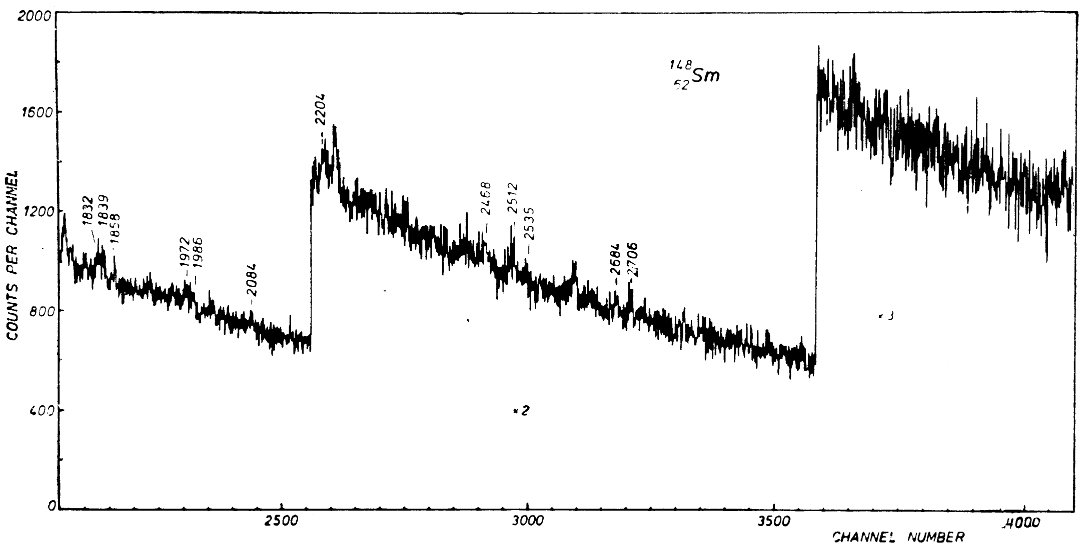
E_γ	I_γ	E_i	E_γ	I_γ	E_i
311.2(3)	0.17(2)	1905.3	1344.6(3)	1.10(10)	1894.7
414.23(10)	4.2(3)	1594.4	1353.65(20)	1.50(15)	1903.9
432.3(2)	0.70(10)	1594.4	1371.1(4)	0.38(10)	
449.7(4)	0.17(4)	1903.9	1413.0(8)	0.16(5)	2574.3
550.23(10)	100	550.2	1422.0(2)	1.40(15)	1972.0
571.6(3)	1.80(10)	1732.9	1454.5(2)	3.5(3)	1454.3
590.9(3)	0.50(10)		1465.2(2)	3.4(3)	1465.2
611.06(10)	16.4(9)	1161.3	1586.7(10)	0.13(5)	
629.87(10)	14.2(7)	1180.1	1596.4(3)	0.80(10)	2146.6
714.6(2)	0.60(10)	1894.7	1622.0(9)	0.15(5)	(2802.1)
725.1(2)	0.80(10)	1905.3	1656.3(4)	0.64(12)	2206.5
810.5(3)	0.40(10)	1972.0	1663.6(4)	1.12(15)	1663.8
870.0(2)	1.4(2)	2031.3	1677.7(7)	0.18(6)	2228.1
874.0(2)	1.7(2)	1424.2	1747.6(9)	0.17(6)	2927.6
896.9(3)	1.1(2)	2077.0	1759.0(8)	0.20(10)	2920.3
903.9(2)	3.6(2)	1454.3	1766.3(8)	0.20(10)	2927.6
915.00(10)	2.04(15)	1465.2	1831.7(10)	0.30(10)	2381.9
930.8(3)	0.60(10)	2110.9	1839.0(10)	0.30(10)	2389.2
966.8(8)	0.17(6)	2146.9	1857.8(8)	0.20(10)	3017.9
1034.2(3)	0.6(10)	2214.3	1971.7(8)	0.22(10)	1972.0
1048.2(6)	0.28(6)	2228.1	1985.9(9)	0.20(10)	2535.8
1066.6(7)	0.20(6)	2228.1	2083.9(10)	0.15(7)	2634.1
1113.70(10)	2.6(2)	1663.8	2204.1(10)	0.24(10)	2204.1
1147.1(5)	0.40(10)	2327.1	2467.7(10)	0.20(10)	3017.9
1152.5(7)	0.20(5)	2313.8	2512.1(9)	0.22(10)	3062.3
1181.1(7)	0.32(11)	1732.8	2535.3(13)	0.14(6)	2535.8
1262.7(11)	0.20(11)	2442.8	2683.5(12)	0.15(7)	2683.5
1307.0(10)	0.21(8)	2487.1	2706.2(11)	0.21(10)	2706.2
1324.0(7)	0.10(4)				

Level scheme of ^{148}Sm [67Ma, 73To, 72De, 75Oe, 70Sm, 74Ne, 68Ha, 72Ge, 71Gr]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
550.23(10)	550.3	2+	550.23	100	0	0+	52
1161.29(15)	1161.7	3−	611.06	16.4	550.2	2+	11
1180.10(15)	1180.3	4+	629.87	14.2	550.2	2+	4.7
1424.2(3)	1427	0+	874.0	1.7	550.2	2+	1.7
1454.3(3)	1453.0	2+	1454.5	3.5	0	0+	7.1
			903.9	3.6	550.2	2+	
1465.2(2)	1465	1−	1465.2	3.4	0	0+	5.4
			915.00	2.04	550.2	2+	
1594.4(2)	1594.0	5−	432.3	0.70	1161.3	3−	4.7
			414.23	4.2	1180.1	4+	

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
1663.8(2)	1663.7	2+	1663.6	1.12	0	0+	3.7
			1113.70	2.6	550.2	2+	
1732.9(4)	1732.3	4+	1181.1	0.32	550.2	2+	<2.1
			571.6	1.80	1161.3	3−	
1894.7(3)	1894.6	4+	1344.6	1.10	550.2	2+	1.7
			714.6	0.60	1180.1	4+	
1903.9(3)	1903.0	3+, 4+	1353.65	1.50	550.2	2+	1.7
			449.7?	0.17	1465.2		
1905.3(3)	1906.5	6+	725.1	0.80	1180.1	4+	1.0
			311.2	0.17	1594.4	5−	
—	1923	0+	—	—	—	—	—
1972.0(3)	1971.9	2+	1971.7	0.22	0	0+	2.0
			1422.0	1.40	550.2	2+	
			810.5	0.40	1161.3	3−	
2031.3(3)	2032.3	4−	870.0	1.4	1161.3	3−	1.4
2077.0(4)	2080 ?	2+, 5+	896.9	1.1	1180.1	4+	1.1
—	2095.3	6+	—	—	—	—	—
2110.9(4)	2110.3	3+, 4+	930.8	0.60	1180.1	4+	0.6
2146.6(4)	2146.6	(3+)4+	1596.4	0.80	550.2	2+	0.8
2146.9(8)	2148.1	5+	966.8	0.17	1180.1	3−	>0.17
			414.23	<4.2	1732.9	4+	
—	2193.7	6+	—	—	—	—	—
2204.1(10)	2208.4	2+	2204.1	0.24	0	0+	0.24
2206.5(5)	2206	(0+)	1656.3	0.64	550.2	2+	0.64
2214.3(4)	2213.2	5+	1034.2	0.60	1180.1	4+	0.60
2228.1(7)	2227.4	4+(3+)	1677.7	0.18	550.2	2+	0.66
			1066.6	0.20	1161.3	3−	
			1048.2	0.28	1180.1	4+	
—	2277	0—7	—	—	—	—	—
2313.8(8)	2314.5	2+	1152.5	0.20	1161.3	3−	0.20
2327.1(6)	2327.1	4+	1147.1	0.40	1180.1	4+	0.40
—	2338.8	3−, 4−	—	—	—	—	—
2381.9(10)	2381.2	2+(3+, 4+)	1831.7	0.30	550.2	2+	0.30
2389.2(10)	2390.0	3+(4+)	1839.0	0.30	550.2	2+	0.30
2442.8(12)	2440.5	3−, 4−	1262.7	0.20	1180.1	4+	0.20
2487.1(11)	2488.1	3+(4+)	1307.0	0.21	1180.1	4+	0.21
—	2524.8	4+(3+)	—	—	—	—	—
2535.8(10)	2538.7	2+	2535.3	0.14	0	0+	0.34
			1985.9	0.20	550.2	2+	
—	2569.3	3−, 4−	—	—	—	—	—
2574.3(9)	2570.3	(3−, 4−)	1413.0	0.16	1161.3	3−	0.16
—	2608	2−, 3−, 4−	—	—	—	—	—
2634.1(11)	2633.0	2+	2083.9	0.15	550.2	2+	0.15
—	2640.5	5+	—	—	—	—	—
—	2646.4	3+, 4+	—	—	—	—	—
—	2672.7	3+, 4+	—	—	—	—	—
2683.5(12)	2682.2	2+	2683.5	0.15	0	0+	0.15
—	2698.2	3+, 4+	—	—	—	—	—





E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
2706.2(11)	2705	1⊕, 2+	2706.2	0.21	0	0+	0.21
—	2712.9	3+, 4+	—	—	—	—	—
—	2723.5	3+, 4+	—	—	—	—	—
—	2752.7	5+ (3+)	—	—	—	—	—
2802.1(10)?	2802	—	1622.0	0.15	1180.1	4+	0.15
—	2806.4	3+, 4+	—	—	—	—	—
—	2814.2	5+ (3+)	—	—	—	—	—
—	2828.0	—	—	—	—	—	—
—	2835.2	2+ (3+, 4+)	—	—	—	—	—
—	2844.7	2−, 3−, 4−	—	—	—	—	—
—	2861.2	3+, 4+	—	—	—	—	—
—	2866.2	2+	—	—	—	—	—
—	2906	3, 4	—	—	—	—	—
2920.3(9)	2918.2	3+, 4+	1759.0	0.20	1161.3	3−	0.20
2927.6(8)	2927.5	3+, 4+	1766.3	0.20	1161.3	3−	0.37
			1747.6	0.17	1180.1	4+	
—	2936	2+, 5	—	—	—	—	—
—	2952	—	—	—	—	—	—
—	2978.8	5+	—	—	—	—	—
—	2994.3	3+, 4+	—	—	—	—	—
—	3006	—	—	—	—	—	—
3017.9(10)	3017	—	2467.7	0.20	550.2	2+	0.40
			1857.8	0.20	1161.3	3−	
—	3044	—	—	—	—	—	—
—	3055	—	—	—	—	—	—
3062.3(10)?	—	—	2512.1	0.22	550.2	2+	0.22

Samarium-150 $^{150}_{62}$Sm

E_γ	I_γ	E_i	E_γ	I_γ	E_i
152.9(5)	0.06(2)	1795.1	406.46(8)	7.7(4)	740.4
237.0(4)	0.17(5)		420.6(6)	0.040(10)	1193.9
251.6(2)	0.70(15)	(1417.4)	425.2(5)	0.08(2)	1166.0
297.8(2)	0.50(5)	1071.5	439.40(4)	15.8(9)	773.3
305.8(4)	0.21(4)	1046.2	453.4(6)	0.07(2)	1193.9
333.92(7)	100	333.9	459.0(9)	0.043(11)	1504.8
346.00(10)	0.80(8)	1417.4	462.7(4)	0.20(4)	1820.3
371.5(3)	0.25(4)	1417.4	505.60(10)	2.27(20)	1278.9
		1820.3	542.1(8)	0.06(2)	1820.3
390.7(5)	0.11(2)		545.4(7)	0.08(2)	
393.0(7)	0.05(2)		558.4(7)	0.067(21)	2063.2
403.1(2)	0.50(6)	1449.2	584.30(10)	1.70(12)	1357.6

E_γ	I_γ	E_i
612.4(4)	0.10(2)	1658.4
620.5(7)	0.08(2)	1786.4
629.2(3)	0.33(4)	1795.1
638.4(6)	0.08(2)	1684.6
668.0(6)	0.30(6)	2025.6
675.90(10)	1.02(11)	1449.2
712.23(8)	7.4(5)	1046.2
731.4(2)	0.40(7)	1504.8
737.45(8)	7.5(5)	1071.5
748.8(2)	0.42(5)	1820.3
761.4(3)	0.21(3)	1833.2
		1927.1
810.8(5)	0.09(2)	2004.7
817.1(7)	0.06(2)	
820.3(7)	0.06(2)	
832.00(10)	1.69(13)	1166.0
855.9(5)	0.23(5)	1927.1
859.90(10)	1.62(13)	1193.9
868.9(3)	0.60(7)	1642.2
876.6(6)	0.07(2)	2070.8
899.0(4)	0.38(4)	1970.4
911.4(4)	0.49(6)	1684.6
921.3(2)	1.10(10)	1255.2
938.3(5)	0.11(3)	
945.4(5)	0.11(3)	
972.0(8)	0.036(12)	1713.7
997.7(6)	0.13(3)	2043.6
1003.6(8)	0.08(2)	2259.5
1024.5(5)	0.13(4)	2070.8
1047.2(2)	1.47(17)	1046.2
		1820.3
1083.3(2)	0.47(6)	1417.4
1123.2(5)	0.11(3)	2194.7
1166.00(10)	2.9(3)	1166.0
1171.0(3)	1.3(3)	1504.8
1178.0(4)	0.34(5)	1951.3
1194.00(10)	2.13(20)	1193.9
1214.0(8)	0.11(3)	2259.5
1218.9(8)	0.06(2)	2289.9
1223.4(5)	0.16(3)	1963.9
1247.7(6)	0.10(3)	2021.0
1258.9(7)	0.080(24)	
1264.3(3)	0.22(5)	2004.7
1270.1(3)	0.22(5)	2043.6
1289.0(5)	0.11(3)	2360.5
1297.8(5)	0.13(4)	(2070.8)

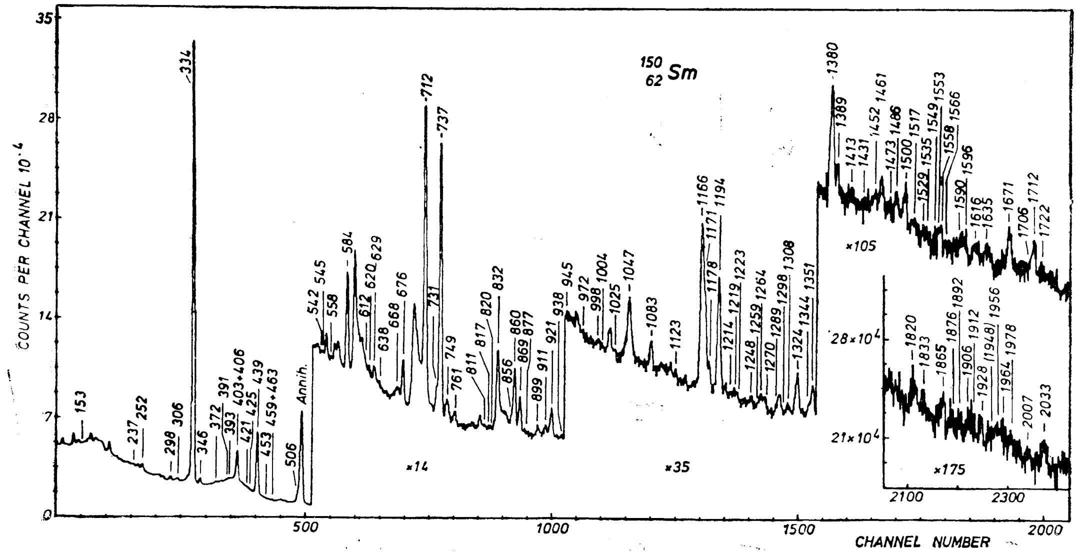
E_γ	I_γ	E_i
1308.5(4)	0.30(5)	1642.2
1324.5(2)	0.96(11)	1658.4
1343.5(3)	0.22(4)	2116.8
1350.7(2)	0.63(9)	1684.6
1379.8(2)	0.86(10)	1713.7
1389.1(4)	0.15(3)	
1412.6(8)	0.06(2)	
1431.0(8)	0.06(2)	
1452.4(7)	0.11(3)	1786.4
1461.3(4)	0.22(4)	1795.1
1472.6(8)	0.06(2)	
1486.5(6)	0.17(4)	1820.3
1500.2(5)	0.23(4)	1833.2
1516.6(7)	0.08(3)	2289.9
1528.7(10)	0.04(2)	
1535.0(10)	0.04(2)	
1548.8(9)	0.06(3)	
1553.0(10)	0.06(3)	
1558.5(8)	0.08(3)	
1566.3(7)	0.04(2)	
1590.5(11)	0.05(2)	
1596.5(11)	0.05(2)	2369.8
1616.3(8)	0.05(2)	(1951.3)
1634.7(9)	0.06(3)	
1670.8(4)	0.30(6)	2004.7
1706.5(9)	0.05(2)	2479.8
1711.6(5)	0.15(4)	
1721.8(8)	0.05(2)	2495.1
1820.0(8)	0.07(2)	
1832.9(9)	0.04(2)	1833.2
1865.5(7)	0.08(3)	2199.4
1875.7(9)	0.04(2)	
1891.8(10)	0.04(2)	
1906.3(10)	0.04(2)	
1912.0(10)	0.06(3)	
1927.6(9)	0.06(3)	1927.1
1948.1(10)?	0.05(3)	
1956.0(11)	0.06(3)	2289.9
1964.0(11)	0.09(3)	1963.9
1977.8(10)	0.05(3)	
2007.4(10)	0.04(3)	
2032.6(7)	0.08(3)	2366.5
2272.1(11)?	0.038(18)	2272.1
2352.4(11)?	0.030(16)	

Level scheme of ^{150}Sm [74Be1, 73Pr, 74Oe, 75Ka, 76Ba]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
333.92(7)	333.95	2+0	333.92	100	0	0+0	51
740.38(10)	740.42	0+0	406.46	7.7	333.9	2+0	6.9
773.32(8)	773.35	4+0	439.40	15.8	333.9	2+0	≲6.5
1046.15(11)	1046.14	2+0	1047.2	⩽1.47	0	0+0	⩽8.0
			712.23	7.4	333.9	2+0	
			305.8	0.21	740.4	0+0	
1071.47(11)	1071.40	3-0	737.45	7.5	333.9	2+0	6.5
			297.8	0.50	773.3	4+0	
1165.96(12)	1165.75	1-0	1166.00	2.9	0	0+0	<4.2
			832.00	1.69	333.9	2+0	
			425.2	0.08	740.4	0+0	
1193.90(12)	1193.805	2+2	1194.00	2.13	0	0+0	3.7
			859.90	1.62	333.9	2+0	
			453.4	0.07	740.4	0+0	
			420.6	0.040	773.3	4+0	
1255.2(3)	1255.50	0+0	921.3	1.10	333.9	2+0	1.0
1278.9(2)	1278.85	6+0	505.60	2.27	773.3	4+0	2.2
1357.6(2)	1357.61	5-0	584.30	1.70	773.3	4+0	1.2
1417.37(15)	1417.33	2+0	1083.3	0.47	333.9	2+0	⩽2.2
			371.5	⩽0.25	740.4	0+0	
			346.00	0.80	773.3	4+0	
			251.6?	0.70	1166.0	1-0	
1449.2(2)	1449.17	4+0	675.90	1.02	773.3	4+0	<1.5
			403.1	0.50	1046.2	2+0	
1504.8(2)	1504.53	3+2	1171.0	1.3	333.9	2+0	1.7
			731.4	0.40	773.3	4+0	
			459.0	0.043	1046.2	2+0	
—	1603?	—	—	—	—	—	—
1642.2(4)	1642.60	4+2	1308.5	0.30	333.9	2+0	0.8
			868.9	0.60	773.3	4+0	
1658.4(3)	1658.41	2-1	1324.5	0.96	333.9	2+0	1.1
			612.4	0.10	1046.2	2+0	
—	1672.6?	—	—	—	—	—	—
1684.6(3)	1684.21	3-	1350.7	0.68	333.9	2+0	1.2
			911.4	0.49	773.3	4+0	
			638.4	0.08	1046.2	2+0	
1713.7(3)	1713.27	1-	1379.8	0.86	333.9	2+0	0.9
			972.0	0.036	740.4	0+0	
—	1759.6	4-(3-)	—	—	—	—	—
—	1764.77?	(7-)	—	—	—	—	—
—	1773.0?	(2—5)-	—	—	—	—	—
1786.4(7)	1786.2	1-1	1452.4	0.11	333.9	2+0	0.19
			620.5	0.08	1166.0	1-0	
1795.1(4)	1794.1	2+2	1461.3	0.22	333.9	2+0	0.6
			629.2	0.33	1166.0	1-0	
1820.3(3)	1819.40	4+0	152.9	0.06	1642.2	4+2	
			1486.5	0.17	333.9	2+0	>0.8
			1047.2	<1.47	773.3	4+0	

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
			748.8	0.42	1071.5	3-0	
			542.1	0.06	1278.9	6+0	
			462.7	0.20	1357.6	5-0	
			371.5	<0.25	1449.2	4+0	
—	1821.85	(4+)	—	—	—	—	—
—	1833.26	(2)+	—	—	—	—	—
1833.2(6)	1833.8	2+	1832.9	0.04	0	0+0	≤0.5
			1500.2	0.23	333.9	2+0	
			761.4	≤0.21	1071.5	3-0	
—	1837.1	(8+)	—	—	—	—	—
—	1845.5?	—	—	—	—	—	—
—	1856.5	—	—	—	—	—	—
—	1883.3	—	—	—	—	—	—
1927.1(6)	1927.3	2+	1927.6	0.06	0	0+0	≤0.5
			855.9	0.23	1071.5	3-0	
			761.4	≤0.21	1166.0	1-0	
1951.3(5)	1951.24	3-	1616.3?	0.05	333.9	2+0	0.4
			1178.0	0.34	773.3	4+0	
1963.9(5)	1963.72	1-	1964.0	0.09	0	0+0	0.25
			1223.4	0.16	740.4	0+0	
—	1969.0	0+	—	—	—	—	—
1970.4(6)	1970.44	4+	899.0	0.38	1071.5	3-0	0.4
—	1979.0	(3-, 4-)	—	—	—	—	—
2004.7(4)	2004.6	2+	1670.8	0.30	333.9	2+0	0.6
			1264.3	0.22	773.3	4+0	
			810.8	0.09	1193.9	2+2	
2021.0(7)	2020.30	5+	1247.7	0.10	773.3	4+0	0.10
2025.6(8)	2024.60	4+	668.0	0.30	1357.6	5-0	0.30
—	2035.30	5-	—	—	—	—	—
2043.6(8)	2044.0	3+, 4+	1270.1	0.22	773.3	4+0	0.35
			997.7	0.13	1046.2	2+0	
2063.2(9)	2062.73	3+(4+)	558.4	0.067	1504.8	3+2	0.07
2070.8(7)	2070.23	2-(2)	1297.8?	0.13	773.3	4+0	≤0.34
			1024.5	0.13	1046.2	2+0	
			876.6	0.07	1193.9	2+2	
—	2095.23	3+(5+)	—	—	—	—	—
—	2107.38	(6)+	—	—	—	—	—
2116.8(5)	2117.11	4+	1343.5	0.22	773.3	4+0	0.22
—	2119.65	(3)-	—	—	—	—	—
—	2151.4?	(1+)	—	—	—	—	—
—	2152.36	4+	—	—	—	—	—
—	2174?	—	—	—	—	—	—
2194.7(7)	2194.21	4+	123.2	0.11	1071.5	3-0	0.11
2199.4(8)	2199.7	(2, 3)	1865.5	0.08	333.9	2+0	0.08
—	2224.0	—	—	—	—	—	—
—	2232	(9)-	—	—	—	—	—
—	2233.5	—	—	—	—	—	—
—	2250.4	3±, 4+	—	—	—	—	—

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
2259.5(10)	2259.92	(1-)	1214.0	0.11	1046.2	2+0	0.19
			1003.6	0.08	1255.2	0+0	
—	2261.2	4+	—	—	—	—	—
2272.1(11)	2271	(1±, 2+)	2272.1?	0.038	0	0+0	0.04
—	2280.85	(3-)	—	—	—	—	—
2289.9(9)	2289.6	3+, 4+	1956.0	0.06	333.9	2+0	0.20
			1516.6	0.08	773.3	4+0	
			1218.9	0.06	1071.5	3-0	
—	2292.2	3+4+	—	—	—	—	—
—	2331.5	(3-, 4-)	—	—	—	—	—
—	2342.0	(2—4)	—	—	—	—	—
2360.5(6)	2360.0	4+(3+)	1289.0	0.11	1071.5	3-0	0.11
2366.5(8)	2367.4	3+	2032.6	0.08	333.9	2+0	0.08
2369.8(12)	2371.0	3+(4+)	1596.5	0.05	773.3	4+0	0.05
—	2395.9	3+, 4+	—	—	—	—	—
—	2417?	—	—	—	—	—	—
—	2432.8	(10+)	—	—	—	—	—
—	2465.3	3+, 4+	—	—	—	—	—
—	2472.4	3+, 4+	—	—	—	—	—
2479.8(10)	2480.5	3+, 4+	1706.5	0.05	773.3	4+0	0.05
2495.1(9)	2495.6	3+(4+)	1721.8	0.05	773.3	4+0	0.05



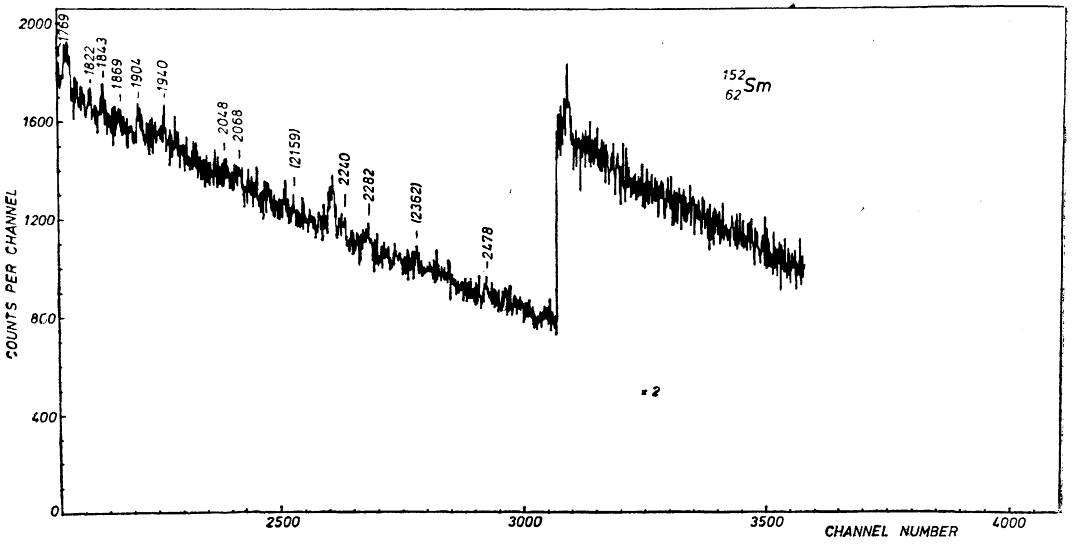
Samarium-152

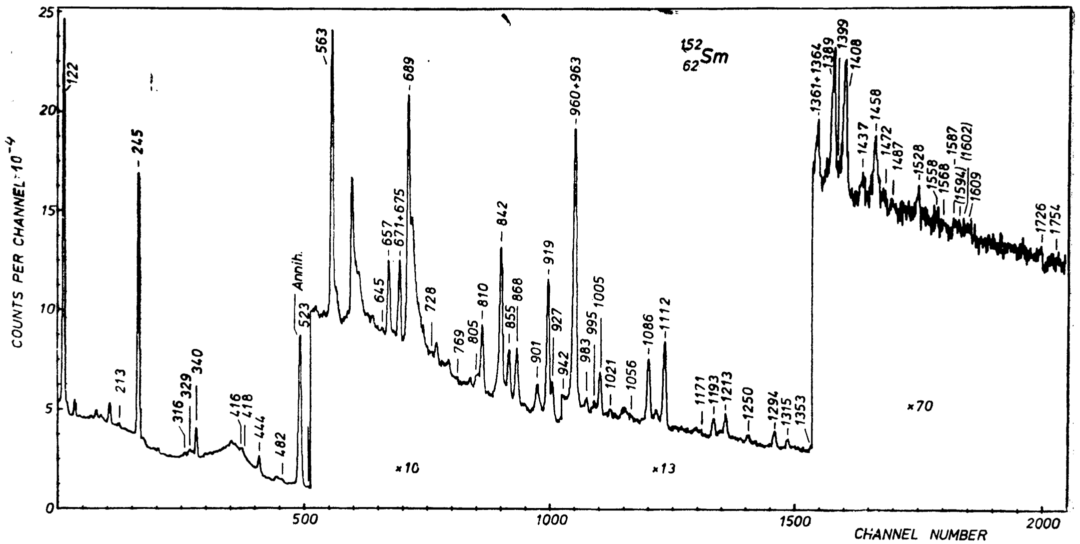
$^{152}_{62}Sm$

E_γ	I_γ	E_i	E_γ	I_γ	E_i
121.77(3)	2147(200)	121.8	1171.3(5)	2.8(6)	1292.8
212.6(2)	8.5(11)	1023.0	1193.20(20)	12.4(17)	(1559.6)
244.66(3)	452(60)	366.4	1213.20(10)	14.7(17)	1579.6
316.0(2)	4.0(6)	1023.0	1250.1(3)	4.5(8)	1371.7
329.39(6)	21.5(14)	1292.8	1293.7(5)	7.9(17)	1292.8
340.33(4)	75(4)	706.8	1315.1(2)	5.6(11)	1681.5
415.5(6)	1.6(5)	1649.6	1353.3(6)	2.8(6)	
417.8(2)	5.1(11)	1124.6	1360.7(6)	2.8(6)	1727.5
443.97(6)	46(2)	810.4	1363.8(4)	4.8(11)	1730.4
481.8(5)	2.2(6)	1292.8	1389.0(2)	22(2)	1510.8
523.3(3)	3.8(6)	1757.0	1398.7(6)	2.3(6)	2361.6
563.18(8)	100	685.0	1407.9(2)	21(2)	1529.7
		1649.6	1437.1(6)	5.1(11)	(1559.6)
645.0(5)	1.9(4)	1730.4	1457.7(3)	7.9(11)	1579.6
656.52(9)	34(2)	1023.0	1471.7(8)	1.7(6)	2282.1
671.3(3)	5.6(7)	1757.0	1486.8(9)	1.7(6)	
674.80(10)	25(2)	1041.2	1528.0(4)	4.0(6)	1649.7
688.60(10)	96(5)	810.4	1558.0(10)	1.4(4)	1680.0
727.7(8)	1.1(3)	1768.6	1567.5(10)	1.1(4)	
769.2(6)	1.1(3)	1579.6	1587.3(10)	1.7(6)	
805.3(5)	2.8(8)	1768.6	1594.0(10)?	1.1(6)	
810.50(10)	37(4)	810.4	1601.7(10)?	1.1(6)	
841.6(2)	67(7)	963.3	1608.7(10)	1.7(6)	1730.4
854.9(2)	28(3)	1221.3	1725.5(8)	2.3(7)	
867.9(3)	14(2)	1233.8	1753.8(7)	1.7(6)	
901.1(2)	18(2)	1023.0	1769.2(6)	2.3(6)	1768.9
919.30(10)	85(8)	1041.2	1821.8(8)	1.7(6)	(2188.9)
926.6(2)	19(2)	1292.8	1842.8(6)	2.3(7)	1964.6
941.6(5)	3.4(11)	1964.6	1869.4(8)	1.7(6)	2235.8
960.2(2)	34(3)	1082.0	1903.7(8)	4.0(11)	1903.7
963.30(10)	130(11)	963.3	1940.0(10)	2.3(7)	
		1085.7	2048.0(10)	1.7(6)	2048.0
982.6(3)	6.2(11)	$^{152}Sm + ^{153}Sm$?	2067.8(8)	1.7(6)	(2188.9)
995.2(4)	4.0(8)	1680.0	2158.9(7)?	1.1(4)	2282.1
1005.1(2)	22(2)	1371.7	2239.5(8)	1.4(6)	2361.6
1020.9(3)	2.8(6)	1727.5	2282.0(12)	2.3(10)	2282.1
1056.2(5)	2.3(6)		2361.6(6)?	1.2(6)	2361.6
1085.70(10)	38(4)	1085.7	2478.0(7)?	1.7(11)	
1112.03(6)	45(4)	1233.8			

Level scheme of ^{152}Sm [71Ba3, 72Ba2, 71Da1, 72Wa, 70Gr, 72De, 74Gu, 71Ba4]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
121.77(3)	121.78	2+0	121.77	2147	0	0+0	3670*
366.43(5)	366.44	4+0	244.66	452	121.8	2+0	200*
684.95(10)	684.77	0+0	563.18	100	121.8	2+0	89*
706.76(7)	706.9	6+0	340.33	75	366.4	4+0	66*
810.40(10)	810.44	2+0	810.50	37	0	0+	166
			688.60	96	121.8	2+0	
			443.97	46	366.4	4+0	
963.3(2)	363.36	1-0	963.30	<130	0	0+	95*
			841.6	67	121.8	2+0	
1022.95(11)	1022.97	4+0	901.1	18	121.8	2+0	65*
			656.52	34	366.4	4+0	
			316.0	4.0	706.8	6+0	
			212.6	8.5	810.4	2+0	
1041.15(12)	1041.1	3-0	919.30	85	121.8	2+0	109
			674.80	25	366.4	4+0	
1082.0(2)	1082.8	0+0	960.2	34	121.8	2+0	34
1085.70(10)	1085.8	2+2	1085.70	38	0	0+0	100*
			963.30	<130	121.8	2+0	
1124.6(3)	1125.6	8+0	417.8	5.1	706.8	6+0	5.1
1221.3(2)	1222	5-0	854.9	28	366.4	4+0	28
1233.80(7)	1233.8	3+2	1112.03	45	121.8	2+0	54
			867.9	14	366.4	4+0	
1292.8(3)	1292.75	2+0	1293.7	7.9	0	0+0	60*
			1171.3	2.8	121.8	2+0	
			926.6	19	366.4	4+0	
			481.8	2.2	810.4	2+0	
			329.39	21.5	963.3	1-0	
—	1311	6+0	—	—	—	—	—
1371.7(3)	1371.65	4+2	1250.1	4.5	121.8	2+0	26
			1005.1	22	366.4	4+0	
—	1443?	—	—	—	—	—	—
1510.8(2)	1510.8	1-(1)	1389.0	22	121.8	2+0	22
1529.7(2)	1529.8	2-(1)	1407.9	21	121.8	2+0	21
1559.6(3)?	—	(3, 4+)	1437.1	5.1	121.8	2+0	≤17
			1193.20?	12.4	366.4	4+0	
1579.63(15)	1579.4	3-(1)	1457.7	7.9	121.8	2+0	24
			1213.20	14.7	366.4	4+0	
			769.2	1.1	810.4	2+0	
—	1609	10+	—	—	—	—	—
1649.7(4)	1649.9	2-2	1528.0	4.0	121.8	2+0	11*
			563.18	≤100	1085.7	2+2	
			415.5	1.6	1233.8	3+2	
—	1666	8+0	—	—	—	—	—
1680.0(5)	1680.58	(1-)	1558.0	1.4	121.8	2+0	5.4
			995.2	4.0	685.0	0+0	
1681.5(3)	1681.4	(4-)	1315.1	5.6	366.4	4+0	5.6
—	1701	2—4	—	—	—	—	—
1727.5(4)	1726	5-	1360.7	2.8	366.4	4+0	5.6
			1020.9	2.8	706.8	6+0	





E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
1730.4(4)	1730.3	3−	1608.7	1.7	121.8	2+0	8.4
			1363.8	4.8	366.4	4+0	
			645.0	1.9	1085.7	2+2	
1757.0(4)	1757.0	3−2	671.3	5.6	1085.7	2+2	9.4
			523.3	3.8	1233.8	3+2	
1768.6(6)	1769.1	2+	1769.2	2.3	0	0+0	6.2
			805.3	2.8	963.3	1−0	
			727.7	1.1	1041.2	3−0	
—	1804	5±5	—	—	—	—	—
1903.7(8)	1904	(2+)	1903.7	4.0	0	0+0	4.0
—	1930	—	—	—	—	—	—
1964.6(6)	1962	—	1842.8	2.3	121.8	2+0	5.7
			941.6	3.4	1023.0	4+0	
2048.0(10)	2052	(2+)	2048.0	1.7	0	0+0	1.7
—	2103	10+0	—	—	—	—	—
—	2160	12+0	—	—	—	—	—
2188.9(8)?	2194	—	2067.8	1.7	121.8	2+0	3.4
			1821.8	1.7	366.4	4+0	
2235.8(8)	2235	—	1869.4	1.7	366.4	4+0	1.7
—	2260	—	—	—	—	—	—
2282.1(8)	—	[1±, 2+]	2282.0	2.3	0	0+0	⩽5.1
			2158.9?	1.1	121.8	2+0	
			1471.7	1.7	810.4	2+0	
—	2330	—	—	—	—	—	—
2361.6(6)	2375	(2+)	2361.6?	1.2	0	0+0	⩽4.9
			2239.5	1.4	121.8	2+0	
			1398.7	2.3	963.3	1−0	

Samarium-154

$^{154}_{62}$Sm

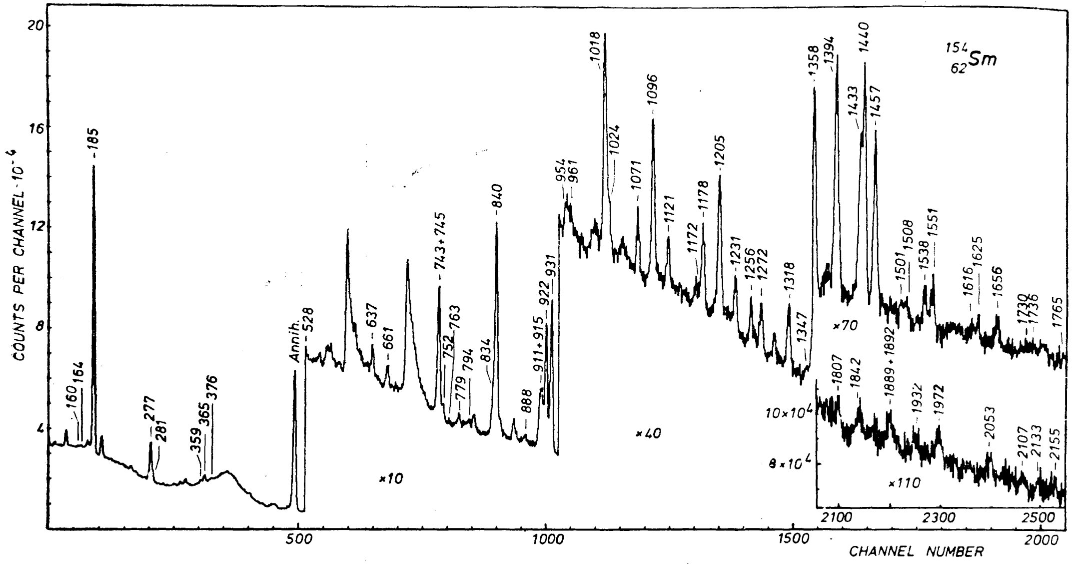
E_γ	I_γ	E_i	E_γ	I_γ	E_i
81.91(10)	—	81.9	661.4(4)	8.6(7)	1674.0
159.6(4)	2.7(7)	1338.1	742.8(4)	8.1(20)	1755.6
164.1(3)	4.0(8)		745.39(8)	60(4)	1012.5
185.06(6)	537(60)	267.0	752.5(2)	7.8(7)	1674.0
277.38(7)	80(5)	544.3	763.4(5)	2.7(5)	
281.00(10)	14(2)	1202.7	778.7(5)	4.7(10)	
359.1(2)	6.5(7)	(1371.6)	794.3(3)	4.0(6)	1338.1
364.85(9)	16.7(10)	1286.6	834.2(4)	11(3)	1755.6
375.8(3)	3.9(6)	1476.4	839.83(8)	100	921.8
527.6(5)	2.4(5)	1539.3	888.3(4)	4.0(5)	
637.20(10)	10.2(7)	1181.6	911.0(4)	23.5(13)	1177.8

E_γ	I_γ	E_i	E_γ	I_γ	E_i
914.7(4)	40(2)	1181.6	1457.40(10)	27(2)	1539.3
921.80(6)	76(4)	921.8	1501.4(9)	2.5(7)	1584.6
930.57(6)	91(5)	1012.5	1508.4(9)	2.5(7)	1775.4
953.8(3)	4.8(5)		1538.2(4)	6.0(8)	
961.1(4)	3.7(5)		1550.8(4)	7.4(13)	1817.8
1018.00(8)	42(2)	1099.9	1615.8(10)	2.1(10)	
1024.1(2)	9.1(7)		1624.9(6)	3.0(7)	1706.8
1071.1(2)	9.8(7)	1338.1	1656.5(5)	5.4(13)	1923.5
1096.01(8)	32(2)	1177.8	1730.0(10)	1.7(7)	
1120.7(2)	8.2(7)	1202.7	1735.7(11)	1.7(7)	1817.8
1172.3(5)	3.4(7)	1440.1	1765.1(10)	1.7(7)	
1177.80(10)	16.8(10)	1177.8	1807.3(8)	2.1(7)	1889.2
1204.67(10)	28(2)	1286.6	1841.7(8)	3.0(7)	1923.5
1230.6(2)	9.9(7)	1775.4	1889.0(11)	2.0(10)	1889.2
1256.2(2)	9.1(7)	1338.1	1892.2(11)	2.3(10)	(1974.1)
1272.5(2)	11.3(8)	1539.3	1932.2(15)	2.7(10)	2014.1
1317.60(10)	14.8(10)	1584.6	1972.0(25) *m*	5.4(13)	(1974.1)
1347.3(5)	3.0(5)	(1614.3)	2053(2) *m*	4.0(13)	2132.8
1358.17(10)	31(2)	1440.1	2106.6(12)	2.0(10)	
1394.46(7)	43(2)	1476.4	2132.8(11)	1.7(7)	2132.8
1433.0(4)	23(2)	1514.9	2155(2) *m*	2.7(13)	
1440.08(10)	36(2)	1440.1			
		1706.8			

Level scheme of ^{154}Sm [74Gr1]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
81.91(10)	82.05	2+0	81.91	—	0	0+0	—
266.96(15)	266.9	4+0	185.06	537	81.9	2+0	385*
544.34(20)	547	6+0	277.38	80	267.0	4+0	62*
—	903.4	8+0	—	—	—	—	
921.79(6)	921.7	1−0	921.80	76	0	0+0	126
			839.83	100	81.9	2+0	
1012.48(13)	1012.5	3−0	930.57	91	81.9	2+0	125
			745.39	60	267.0	4+0	
1099.91(14)	1099.8	0+0	1018.00	42	81.9	2+0	38
1177.84(10)	1177.6	2+0	1177.80	16.8	0	0+0	70
			1096.01	32	81.9	2+0	
			911.0	23.5	267.0	4+0	
1181.6(2)	1181.5	5−0	914.7	40	267.0	4+0	50
			637.20	10.2	544.3	6+0	
1202.7(2)	1202	(1±)0+	1120.7	8.2	81.9	2+0	22
			281.00	14	921.8	1−0	
1286.60(15)	1286	(2±, 3−)	1204.67	28	81.9	2+0	45
			364.85	16.7	921.8	1−0	

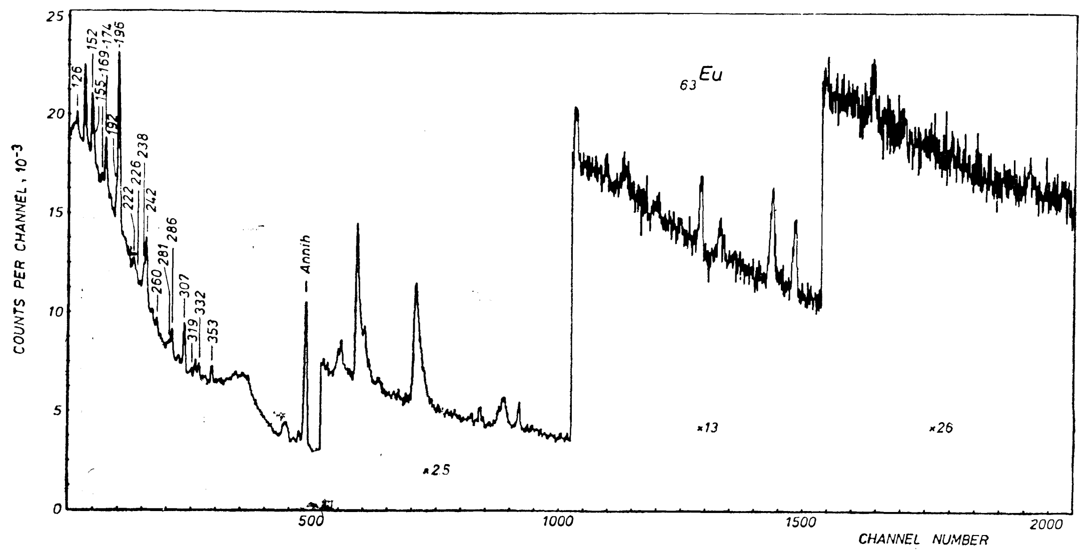
E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
—	1297	—	—	—	—	—	—
1338.1(2)	1338	4+0	1256.2	9.1	81.9	2+0	26
			1071.1	9.8	267.0	4+0	
			794.3	4.0	544.3	6+0	
			159.6	2.7	1177.9	2+0	
1371.6(3)?	1371.5	(4+0)	359.1	6.5	1012.5	3−0	6.5
1440.08(10)	1440.0	2+2	1440.08	36	0	0+0	70
			1358.17	31	81.9	2+0	
			1172.3	3.4	267.0	4+0	
1476.37(15)	1475	1−(1)	1394.46	⩽43	81.9	2+0	⩽47
			375.8	3.9	1099.9	0+0	
—	1487	—	—	—	—	—	—
1514.9(4)	1515	(3+)	1433.0	23	81.9	2+0	23
1539.3(2)	1540.0	3+2	1457.40	27	81.9	2+0	41
			1272.5	11.3	267.0	4+0	
			527.6	2.4	1012.5	3−0	
—	1549	—	—	—	—	—	—
1584.6(2)	1584	3−(1)	1501.4	2.5	81.9	2+0	17
			1317.60	14.8	267.0	4+0	
1614.3(6)?	—	6+0	1347.3	3.0	267.0	4+0	3
—	1660.3	4+2	—	—	—	—	—
1674.0(3)	1674	—	752.5	7.8	921.8	1−0	16
			661.4	8.6	1012.5	3−0	
1706.8(6)	1707.3	3−(4+)	1624.9	3.0	81.9	2+0	39
			1440.08	36	267.0	4+0	
1755.6(5)	1755.8	1—3	834.2	11	921.8	1−0	19
			742.8	8.1	1012.5	3−0	
1775.4(10)	1773	(5−)0, 1	1508.4	2.5	267.0	4+0	12
			1230.6	9.9	544.3	6+0	
1817.8(5)	1811	3+, 4+	1735.7	1.7	81.9	2+0	9
			1550.8	7.4	267.0	4+0	
1889.2(9)	1891	[1±, 2+]	1889.0	2.0	0	0+0	4
			1807.0	2.1	81.9	2+0	
1923.5(6)	1923	2+, 3±, 4+	1841.7	3.0	81.9	2+0	8
			1656.5	5.4	267.0	4+0	
1974.1(12)?	1978	—	1972.0?	5.4	0	0+0	⩽8
			1892.2	2.3	81.9	2+0	
—	1987	2—4	—	—	—	—	—
2014.1(15)	2012	—	1932.2	2.7	81.9	2+0	2.7
—	2069.4	1−	—	—	—	—	—
2132.8(11)	—	[1±, 2+]	2132.8	1.7	0	0+0	<5.7
			2053	<4.0	81.9	2+0	



Europium $_{63}$Eu

E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
126.5(5)	23(5)	^{153}Eu	321.8 396.4	221.6 *m* 226.2(8)	27(6) 17(5)	^{153}Eu	396.4
151.8(4)	76(15)	^{153}Eu	151.6 235.3	238.2 *m*	48(12)	^{151}Eu	260.4
154.7(8)	30(9)	^{151}Eu	349.8	242.5 *m*	106(18)	^{151}Eu ^{153}Eu	243.1 325.1 396.4
168.7 *m*	18(4)	^{153}Eu	321.8 269.7	260.4(6)	18(5)	^{151}Eu	260.4
174.4 *m*	45(12)	^{153}Eu	172.9 269.7	281.3(7) 285.9(4)	18(6) 52(8)		
192.0 *m*	35(9)	^{151}Eu ^{153}Eu ^{151}Eu	196.2 193.1 499.6	307.2(3)	100	^{151}Eu	307.0 307.5
196.0 *m*	111(38)	^{151}Eu	196.5 503.3	318.9(8) 331.7(5) 353.4(4)	11(4) 36(6) 42(6)	^{151}Eu	353.6

The E_i^a data are taken from ref. [72Th, 71Le3 and 70Fo] for ^{151}Eu and [73Kr] for ^{153}Eu.

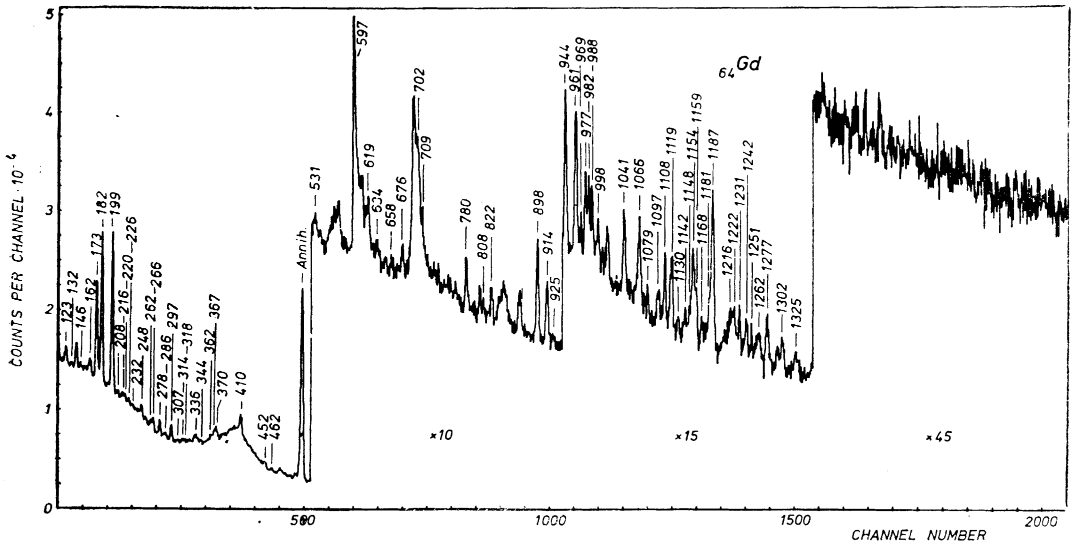


Gadolinium $_{64}$Gd

E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
122.6(3)	118(15)	^{154}Gd ^{155}Gd	123.1 230.3	232.5(9)	7(3)		
				247.6(4)	32(6)	^{154}Gd	371.1
132.2 *m*	20(8)	^{158}Gd ^{157}Gd	1159.5 132	262.1(6)	20(5)	^{155}Gd	321.5 367.7
146.4(4)	23(7)	^{155}Gd	146.1 235.2	266.5(4)	54(7)	^{160}Gd	515.2
162.5 *m*	60(8)	^{155}Gd	268.6 266.8	277.8(3)	59(6)	^{158}Gd	539.0
				286.5 *m*	31(6)	^{155}Gd	286.9 326.0
173.41(10)	390(30)	^{160}Gd	248.7				
181.94 *c*	561(45)	^{158}Gd	261.4	296.8(3)	54(9)	^{156}Gd	584.7
199.1(2)	417(40)	^{156}Gd	288.2	307.2 *m*	15(5)		
208.5(5)	14(4)	^{155}Gd	326.0	314.5(6)	17(5)		
216.1(6)	17(5)	^{157}Gd	346	318.5(8)	10(4)	^{157}Gd	436.6
220.5(6)	16(5)	^{155}Gd	326.0	336.3 *m*	48(7)	^{157}Gd	517
226.2(10)	6(3)	^{155}Gd	286.9	344.3(10)	11(4)	(^{152}Gd)	(344.3)

E_γ	I_γ	^{A}Z	E_i^a	E_γ	I_γ	^{A}Z	E_i^a
362.4(6)	17(6)	^{155}Gd	362.5	1040.8(4)	40(7)	^{160}Gd ^{156}Gd	1290 1129.4
367.2(4)	36(8)	^{155}Gd	427.2	1065.5 *m*	78(18)	^{156}Gd	1154.1
370.4(4)	48(9)	^{157}Gd	436.6	1079.4(5)	16(5)	^{156}Gd	1168.1
410.2(3)	78(10)			1097.3 *m*	39(7)	^{158}Gd	1358.4
451.7(6)	28(6)	^{157}Gd	517	1108.0(3)	42(6)	^{158}Gd	1187.1
462.3(6)	24(5)	^{157}Gd	527	1118.8 *m*	71(8)	^{158}Gd	1196.1
531.4 *m*	17(6)	^{155}Gd	582.4	1130.1(8)	14(5)	^{156}Gd	1129.4
596.6(8)	51(15)			1141.5(6)	20(5)		
618.8(5)	32(8)			1147.8(7)	22(6)	^{160}Gd	1223.1
633.5(10)	13(5)	^{160}Gd	1148.7	1154.0 *m*	86(10)	^{156}Gd	1154.1
657.5(14)	9(5)			1159.4(5)	53(8)	^{156}Gd	1248.0
675.5(6)	17(5)			1168.4(7)	16(5)	^{156}Gd	1258.0
701.5(8)	32(6)			1180.9(7)	20(6)	^{158}Gd	1259.8
708.6(6)	13(5)			1187.0 *m*	139(12)	^{158}Gd	1187.1 1263.5 1265.4
780.2(3)	45(6)	^{158}Gd	1041.6			^{156}Gd	1276.0
808.2(6)	14(5)	^{160}Gd	1057.3	1215.8 *m*	31(8)	^{160}Gd	1289.5
821.5(4)	34(6)	^{160}Gd	1070.2	1222.1 *m*	32(8)	^{160}Gd	1223.1
897.9(3)	98(10)	^{158}Gd	977.1	1231.0(4)	30(5)	^{156}Gd	1319.6
913.8 *m*	80(8)	^{160}Gd	989	1242.2(5)	30(6)	^{156}Gd	1242.4
924.6(11)	10(5)			1251.1(10)	16(5)		
944.2(2)	100	^{158}Gd	1023.7	1262.5 *m*	36(7)	^{158}Gd	1259.8 1263.5
961.3 *m*	110(9)	^{158}Gd ^{156}Gd	1041.6 1049.6	1277.0(4)	49(7)	^{158}Gd ^{160}Gd	1358.4 1351
969.2(5)	14(5)	^{156}Gd	1258.0	1302.1(5)	37(7)	^{160}Gd	1377.4
977.1(3)	48(6)	^{158}Gd	977.1	1325.2 *m*	34(8)	^{158}Gd	1402.9
982.3(5)	37(7)	^{160}Gd	1057.3				
987.8(4)	42(7)	^{156}Gd ^{160}Gd	1276.0 989				
997.9(6)	18(6)	^{158}Gd	1259.8				

The E_i^a data are taken from [74Gr1] for ^{156}Gd, [75Kr] for ^{155}Gd, [73Tu1] for ^{157}Gd, [74Tu] for ^{158}Gd, [74Tu1, 74E1] and our data for ^{160}Gd.



Terbium

$^{159}_{65}$Tb

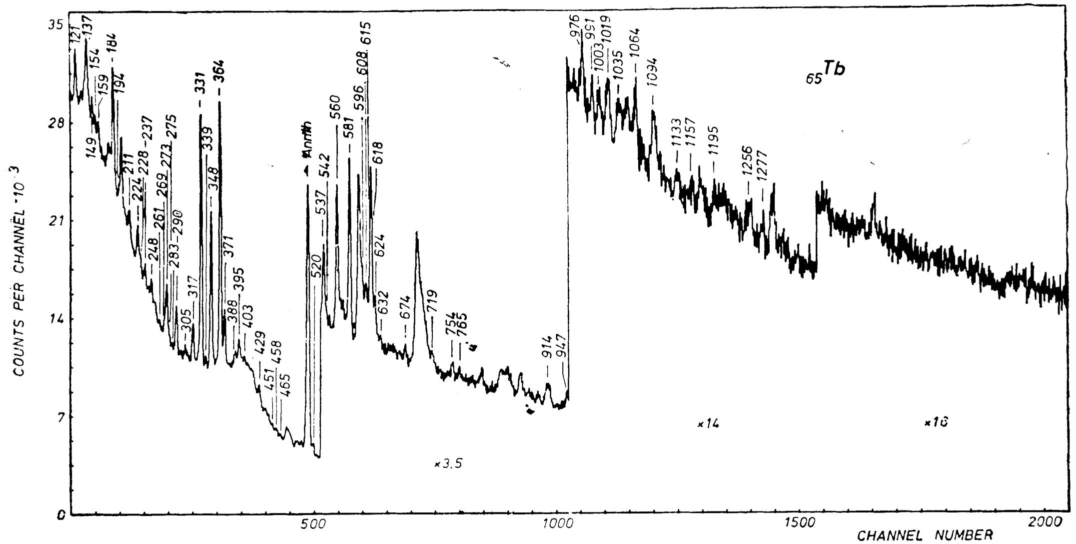
E_γ	I_γ	E_i	E_γ	I_γ	E_i
121.3(4)	16(5)	363.5	317.4(3)	13.1(15)	454.5
137.1(6)	6.0(15)	137.1	331.4(3)	100	389.4
149.0 *m*	6.0(10)	389.4	339.2(4)	4.6(6)	(n, γ)
		511.3	348.3(3)	65(5)	348.3
154.0(4)	4.0(8)		363.5(3)	100(7)	363.5
159.0(4)	7.6(10)	670.3	370.7(3)	21(2)	428.8
184.2(3)	30(3)	242.2	388.3(6)	6.3(8)	
194.1(6)	2.6(8)		395.1(4)	13(2)	
210.7(6)	4.5(7)	348.3	402.6(6)	6.4(12)	
224.5(6)	7.2(20)	363.5	429.1(6)	6.9(10)	428.8
228.2(8)	2.5(12)		451.3(10)	1.5(6)	(n, γ)
237.2(4)	2.7(5)	855.0	457.7(7)	3.1(7)	
247.6(4)	3.2(5)		464.6(8)	2.0(5)	
260.9(6)	1.6(5)		520.1(6)	5.8(8)	
269.1(8)	1.8(7)	511.3	536.8(3)	15(2)	673.8
272.9(6)	13(3)		541.7(8)	3.0(6)	890.4
274.8(10)	2.3(8)	855.0	559.6(3)	28(4)	617.6
282.7(6)	1.8(5)		580.9(2)	34(4)	580.9
289.6 *m*	16(2)	348.3	596.4(6)	4.2(8)	(n, γ)
305.2(6)	6.3(10)	547.4	608.2(8)	3.4(8)	

E_γ	I_γ	E_i	E_γ	I_γ	E_i
615.4(6)	14(3)	673.8	1003.0 *m*	4.4(6)	
617.5(6)	20(4)	617.6	1019.0(8)	6(2)	1019.0
623.5(6)	5.5(8)		1035.2(15)	6(2)	
674.5(7)	3.8(8)	673.8	1063.7(8)	5.9(15)	
718.7(9)	2.1(7)		1094.1(8)	6(2)	
753.8(7)	3.2(6)	890.4	1133.4(15)	2.8(10)	
765.3(9)	1.7(6)		1156.9(15)	2.3(9)	
914.4 *m*	13(2)		1195.1(10)	4.1(8)	
947.0(6)	5.3(8)	947.0	1255.9(10)	4.7(10)	
975.8(10)	4.5(10)	975.8	1276.7(10)	3.4(9)	
991.4(8)	4.1(8)				

Level scheme of $^{159}_{65}$Tb [73Tu, 73Fe]

E_i	E_i^a	$I_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
—	58.00	5/2+3/2	—	—	—	—
137.1(6)	137.5	7/2+3/2	137.1	6.0	0	3/2+3/2
242.2(3)	241.4	9/2+3/2	184.2	30	58.0	5/2+3/2
348.3(3)	348.1	5/2+5/2	210.7	4.5	137.1	7/2+3/2
			289.6	<16	58.0	5/2+3/2
			348.3	65	0	3/2+3/2
363.5(5)	362.6	11/2+3/2	121.3	16	242.2	9/2+3/2
			224.5	≲7.2	137.1	7/2+3/2
363.5(3)	363.3	5/2−5/2	224.5	≲7.2	137.1	7/2+3/2
			363.5	100	0	3/2+3/2
389.4(3)	388	7/2−5/2	149.0	≲6.0	242.2	9/2+3/2
			331.4	100	58.0	5/2+3/2
428.8(3)	429	(7/2+5/2)	370.7	21	58.0	5/2+3/2
			429.1	6.9	0	3/2+3/2
454.5(7)	455	(9/2−5/2)	317.4	13.1	137.1	7/2+3/2
511.3(10)	510.6	13/2+3/2	149.0	≲6.0	363.5	11/2+3/2
			269.1	1.8	242.2	9/2+3/2
—	535	(9/2+5/2)	—	—	—	—
547.4(8)	546	(11/2−5/2)	305.2	6.3	242.2	9/2+3/2
580.9(2)	580.8	1/2+1/2	580.9	34	0	3/2+3/2
617.6(3)	617.7	3/2+1/2	559.6	28	58.0	5/2+3/2
			617.5	20	0	3/2+3/2
670.3(11)	669	15/2+3/2	159.0	7.6	511.3	13/2+3/2
673.8(6)	674.3	5/2+1/2	536.8	15	137.1	7/2+3/2
			615.4	14	58.0	5/2+3/2
			674.5	3.8	0	3/2+3/2
—	777	(7/2+)	—	—	—	—
—	816	(11/2−7/2)	—	—	—	—
855.0(5)	854.9	(1/2−1/2)	237.2	2.7	617.6	3/2+1/2
			274.8	2.3	580.9	1/2+1/2

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
—	862	17/2+3/2	—	—	—	—
890.4(9)	892	(5/2−)	541.7	3.0	348.3	5/2+5/2
			753.8	3.2	137.1	7/2+3/2
947.0(6)	945		947.0	5.3	0	3/2+3/2
—	971	(1/2+)	—	—	—	—
975.8(10)	979	(3/2+)	975.8	4.5	0	3/2+3/2
1019.0(8)	1020	(5/2+)	1019.0	6	0	3/2+3/2

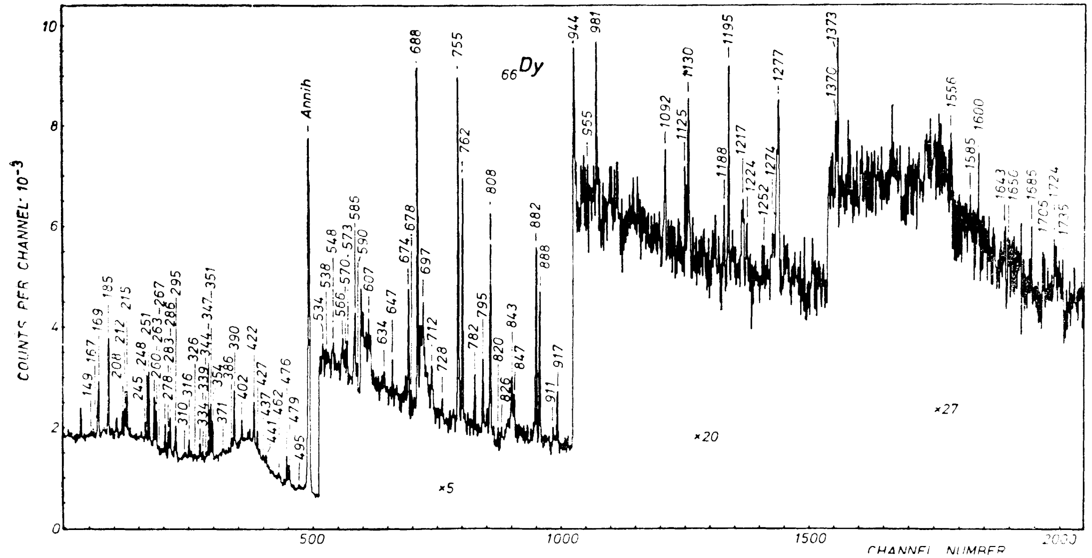


Dysprosium $_{66}$Dy

E_γ	I_γ	A_Z	E_i^a	E_γ	I_γ	A_Z	E_i^a
148.7(3)	26(8)	^{164}Dy	976.9	215.23(10)	140(25)	^{164}Dy	976.9
167.3(2)	150(40)	^{163}Dy	167.3	245.3(2)	34(6)		
		^{161}Dy	267.4	247.9(2)	23(4)		
169.0(2)	400(80)	^{154}Dy	242.2	250.94(10)	161(35)	^{163}Dy	250.9
185.07(10)	400(80)	^{162}Dy	265.7	260.00 *m*	145(30)	^{162}Dy	1148.3
208.15(10)	94(20)	^{163}Dy	281.6			^{163}Dy	427.7
212.06(10)	119(23)	^{163}Dy	285.5			^{164}Dy	501.3
		^{164}Dy	1039.3				

E_γ	I_γ	^{A}Z	E_i^a
263.20(10)	82(15)		
267.1(3)	9.4(16)		
277.6(2)	50(10)	^{164}Dy	1039.3
282.9(2)	45(8)	^{162}Dy	548.5
285.8(2)	71(15)	^{163}Dy	285.5
		^{161}Dy	418.1
294.7(2)	51(10)	^{164}Dy	1122.8
310.0(3)	9.0(4)	^{164}Dy	1225.1
316.2(3)	23(4)	^{163}Dy	389.7
326.0	7.1(15)	^{162}Dy	
		^{164}Dy	
334.2(3)	24(4)	^{162}Dy	1297.1
338.6(3)	12(4)	^{163}Dy	766.2
344.0(4)	16(4)	^{163}Dy	766.2
		^{161}Dy	418.1
347.4(3)	20(4)	^{163}Dy.	514.5
			737.6
351.22(10)	84(11)	^{163}Dy	351.2
354.29(10)	52(6)	^{163}Dy	427.7
371.3(3)	4.1(9)	^{163}Dy	
385.8(3)	16.(4)	^{163}Dy	737.6
389.82(10)	72(7)	^{163}Dy	389.4
402.1(2)	31(4)	^{163}Dy	475.4
421.90(10)	64(6)	^{163}Dy	421.8
427.4(2)	23(2)	^{163}Dy	427.7
436.8(3)	9.7(9)		
441.3(3)	16(2)	^{163}Dy	514.5
462.2(4)	8.3(11)	^{163}Dy	
475.5(2)	24(3)	^{163}Dy	475.4
479.4(2)	22(3)	^{163}Dy	553.0
495.1(4)	5.4(8)	^{163}Dy	884.3
533.7(2)	6.6(10)	^{163}Dy	884.3
538.5(6)	4.4(15)		
548.5(5)	9.0(20)		
565.6(2)	16(2)		
569.7(3)	10(3)		
572.8(3)	15(2)		
585.63(10)	31(3)	^{163}Dy	935.1
		^{164}Dy	828.2
589.8(2)	8.5(15)		
606.8(5)	41(5)		
633.6(2)	7.5(20)		
647.2(2)	6.3(9)	^{162}Dy	1535.9
673.66(10)	38(4)	^{164}Dy	916.0
678.0(2)	11(2)		
688.46(10)	94(10)	^{164}Dy	761.8
696.9(4)	28(3)	^{162}Dy	963.0
711.57(10)	15(2)	^{163}Dy	
728.5(2)	6.2(9)		
754.86(10)	100	^{164}Dy	828.2
761.87(10)	75(8)	^{164}Dy	761.8
782.31(10)	18(2)	^{164}Dy	1024.7
795.40(10)	22(3)	^{162}Dy	1061.0
807.54(10)	80(8)	^{162}Dy	888.2
820.4(2)	5.4(9)	^{163}Dy	820.0
825.9(2)	4.3(8)		
842.7(2)	27(3)		
846.6(2)	14(2)		
882.34(10)	72(8)	^{162}Dy	963.0
888.18(10)	53(6)	^{162}Dy	888.2
911.4(2)	12(2)	^{164}Dy	1155.8
917.10(15)	22(2)	^{162}Dy	1182.8
944.4 *m*	20(2)	^{162}Dy	1210.2
965.1 *m*	10(2)	^{164}Dy	1039.3
980.6(2)	12(2)	^{162}Dy	1061.0
		^{164}Dy	1225.1
1092.0 *m*	11.3(22)	^{162}Dy	1357.9
1124.8(2)	7.8(16)	^{162}Dy	1390.3
1129.7(2)	17(3)	^{162}Dy	1210.2
1187.7(2)	9.7(19)	^{162}Dy	1453.6
1195.20(10)	20(4)	^{162}Dy	
1217.4(5)	10(3)	^{162}Dy	1485.7
1224.0(3)	8(3)	^{164}Dy	
1251.9 *m*	2.0(10)		
1273.6(4)	14(3)	^{162}Dy	
1276.6(2)	26(5)	^{162}Dy	1276.6
			1357.9
1369.8(5)	4.8(12)		
1372.7(5)	9.4(24)	^{162}Dy	1453.6
1556.4(8)	8.6(22)	^{162}Dy	1634.6
1585.1(12)	17(3)		
1599.8(8)	7.8(23)	^{164}Dy	1673.2
1642.8(8)	5.4(16)	^{164}Dy	1716.1
1649.8(8)	7.4(22)	^{164}Dy	1892.0
1685.8 *m*	3.8(11)		
1705.6(8)	4.0(15)		
1724.0(8)	5.0(15)		
1735.4(8)	8.4(17)	^{164}Dy	

The E_i^a data are taken from [74Tu2] for ^{161}Dy and [72Bu] for ^{163}Dy.



Dysprosium-162

$^{162}_{66}$Dy

E_γ	I_γ	E_i	E_γ	I_γ	E_i
185.0(2)	100	265.7	882.3(2)	28(3)	963.0
		1148.2	888.2(2)	17(2)	888.2
228.2(4)	0.6(2)		917.0(2)	4.4(5)	1182.8
234.1(3)	0.8(3)		937.0(10)	0.5(3)	1485.5
238.2(4)	0.08(4)	(1297.1)	944.3(3)	3.4(5)	1210.0
246.2(5)	1.1(5)	1210.0	976.3(5)	1.0(3)	
260.0(2)	15(2)	1148.2	980.3(5)	2.7(4)	1061.2
282.8(2)	12(1)	548.5	1092.1(10)	4.0(8)	1357.8
322.1(5)	0.07(5)	1210.0	1125.5(5)	2.6(4)	1391.2
327.0(2)	1.2(2)		1129.8(5)	5.4(7)	1210.0
334.1(2)	4.3(5)	1297.1	1187.6(2)	1.8(4)	1453.3
347.6(5)	2.7(9)		1195.0(3)	7.9(9)	1275.7
372.7(2)	1.9(5)	921.2	1219.8(5)	1.9(4)	1485.5
631.6(5)	0.6(2)		1252.5(5)	1.1(3)	1518.2
634.5(5)	1.1(3)	1182.8	1273(1)	0.8(4)	
647.7(2)	1.2(4)	1535.9	1276.9(3)	8(1)	1275.7
698.4(10)	4(2)	963.0			1357.8
727.4(5)	0.4(2)		1309.3(4)	1.2(4)	
747.5(5)	0.4(1)		1319.5(2)	1.8(5)	1400.2
776.0(10)	0.3(1)	1324.5	1373.1(3)	2.1(9)	1453.3
795.5(2)	9(2)	1061.2	1556.4(10)	1.3(5)	
807.6(2)	27(3)	888.2	1585.2(4)	0.6(3)	1665.2

E_γ	I_γ	E_i	E_γ	I_γ	E_i
1611.4(4)	0.5(2)		1988.0(10)	0.08(4)	1988.8
1647.4(4)	0.6(2)		1999.3(5)	0.3(2)	1999.5
1664.8(4)	0.6(2)	1665.2			2079.3
1774.0(5)	0.7(2)		2045.5(10)	0.5(3)	
1806.8(5)	0.8(3)		2066.0(10)	0.5(3)	
1901.0(10)	0.5(2)	1981.4	2079.3(10)	0.4(?)	2079.3
1909.0(10)	0.06(3)	1988.8	2100.5(10)	0.2(1)	
1918.8(5)	0.5(2)	1999.5	2108.5(10)	0.5(3)	
1981.0(10)	0.5(2)	1981.4			

Level scheme of ^{162}Dy [76Bu1, 76Ba]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
—	80.660	2+0	—	—	—	—	—
265.7(2)	265.665	4+0	185.0	100	80.7	2+0	87*
548.5(2)	548.529	6+0	282.8	12	265.7	4+0	8*
888.2(2)	888.22	2+2	888.2	17	0	0+0	28
			807.6	27	80.7	2+0	
921.2(2)	921.3	8+0	372.7	1.9	548.5	6+0	1.9
963.0(2)	963.00	3+2	882.3	28	80.7	2+0	25*
			698.4	4	265.7	4+0	
1061.2(4)	1061.05	4+2	980.3	2.7	80.7	2+0	11*
			795.5	9	265.7	4+0	
—	1131?	—	—	—	—	—	—
1148.2(4)	1148.29	(2-)2	260.0	15	888.2	2+2	17*
			185.0	⩽100	963.0	3+2	
1182.8(3)	1182.82	5+2	917.0	4.4	265.7	4+0	5.5
			634.5	1.1	548.5	6+0	
—	1205.6?	—	—	—	—	—	—
1210.0(3)	1210.15	3-2	1129.8	5.4	80.7	2+0	10*
			944.3	3.4	265.7	4+0	
			322.1	0.07	888.2	2+2	
			246.2	1.1	963.0	3+2	
1275.7(3)	1276.6	1-(0, 1)	1276.9	<8	0	0+0	15*
			1195.0	7.9	80.7	2+0	
1297.1(3)	1297.07	(4)-2	334.1	4.3	963.0	3+2	4.4*
			238.2?	0.08	1061.2	4+2	
1324.5(10)	1324.55	6+2	776.0	0.3	548.5	6+0	0.3
1357.8(2)	1357.9	3-(0, 1)	1276.9	<8	80.7	2+0	5*
			1092.1	4.0	265.7	4+0	
—	1375.1	10+0	—	—	—	—	—
1391.2(5)	1390.3	(5-)2	1125.5	2.6	265.7	4+0	3.4*
—	1397	—	—	—	—	—	—

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
1400.2(2)	1400.3	(0)+(0)	1319.5	1.8	80.7	2+0	1.8
1453.3(3)	1453.5	(2+0)	1373.1	<2.1	80.7	2+0	4.0*
			1187.6	1.8	265.7	4+0	
1485.5(5)	1485.74	5-	1219.8	1.9	265.7	4+0	2.4
			937.0	0.5	548.5	6+0	
—	1488.72?	7+	—	—	—	—	—
1518.2(5)	1518.9	(5)-	1252.5	1.1	265.7	4+0	2.0*
1535.9(3)	1535.89	(4+)	647.7	1.2	888.2	2+2	2.0*
—	1574?	—	—	—	—	—	—
—	1576	—	—	—	—	—	—
—	1634.64	(5+)	—	—	—	—	—
—	1644	—	—	—	—	—	—
1665.2(4)	1669	([1, 2])	1664.8	0.6	0	0+0	1.2
			1585.2	0.6	80.7	2+0	
—	1670	0+	—	—	—	—	—
—	1689	—	—	—	—	—	—
—	1690?	—	—	—	—	—	—
—	1723	—	—	—	—	—	—
—	1732	—	—	—	—	—	—
—	1737	(3-)	—	—	—	—	—
—	1745	(1+)	—	—	—	—	—
—	1752.11	(6+)	—	—	—	—	—
—	1770	(3-)	—	—	—	—	—
—	1778	(2+)	—	—	—	—	—
—	1832	(4-)	—	—	—	—	—
—	1835	(3+)	—	—	—	—	—
—	1866	(2-)	—	—	—	—	—
—	1868?	—	—	—	—	—	—
—	1886	—	—	—	—	—	—
—	1887.84?	(7+)	—	—	—	—	—
—	1901	12+	—	—	—	—	—
—	1906	(4+)	—	—	—	—	—
—	1913	(5-)	—	—	—	—	—
—	1957	—	—	—	—	—	—
1981.4(10)	1981	([1, 2])	1981.0	0.5	0	0+0	1.0
			1901.0	0.5	80.7	2+0	
1988.8(10)	1996	([1, 2])	1988.0	0.08	0	0+0	0.14
			1909.0	0.06	80.7	2+0	
1999.5(5)	1998	—	1999.3	<0.3	0	0+0	<0.8
			1918.8	0.5	80.7	2+0	
—	2006	(6-)	—	—	—	—	—
—	2031?	—	—	—	—	—	—
—	2047	—	—	—	—	—	—
—	2057	(5-)	—	—	—	—	—
2079.3(10)	2076	—	2079.3	0.4	0	0+0	<0.7
			1999.3	<0.3	80.7	2+0	—

E_γ	I_γ	E_i	E_γ	I_γ	E_i
148.7(2)	7.1(17)	976.8	911.1(4)	1.1(2)	1155.8
168.8(2)	100	242.2			1674.0
206.3(5)	2.6(3)	1122.9	966.2(10)	1.7(7)	1039.4
211.0(5)	8.8(17)	1039.4	982.1(10)	1.3(3)	1225.2
214.9(2)	34(8)	976.8	1000.2(10)	0.5(2)	
259.3(2)	7.5(20)	501.5	1217.4(5)	0.6(2)	1979.0
277.7(2)	12.5(26)	1039.4	1224.0(5)	1.1(3)	
294.7(2)	7.8(13)	1122.9	1431.0(10)	0.3(1)	1674.0
309.3(2)	4.1(13)	1225.2	1436.1(10)	0.3(1)	
326.3(4)	4.4(13)		1515.6(5)	1.2(2)	
353.1(4)	3.4(10)		1543.2(6)	0.4(1)	
387.0(5)	1.7(3)		1555.5(10)	0.5(2)	1797.7
391.0(5)	1.7(3)		1582.0(5)	0.6(1)	
523.2(10)	0.4(2)	1024.5	1601.3(2)	1.5(3)	1674.0
538.3(2)	1.5(2)		1642.6(10)	2.0(7)	1716.3
548.5(2)	1.2(2)	1587.9	1650.0(10)	0.5(2)	1892.2
569.1(10)	1.0(3)		1668.1(10)	0.7(3)	1910.3
585.5(5)	6.1(7)	828.2	1683.0(5)	0.9(2)	
611.0(10)	1.0(7)	1587.7	1735.0(5)	2.4(7)	1738
673.7(2)	12.5(20)	915.9			1808
688.4(4)	51(7)	761.7	1838.5(10)	1.0(3)	1841
754.8(2)	49(7)	828.2			1910.3
761.7(2)	37(6)	761.7	1845.5(10)	1.2(3)	1918.9
782.3(2)	6.5(13)	1024.5	1858.7(5)	0.7(2)	1932.1
843.3(10)	2.0(7)	915.9	1906.2(10)	0.8(3)	1979.0
		1607.2	1979.0(5)	1.1(3)	1979.0
888.1(4)	0.20(7)	1716.3	2050.0(10)	0.7(2)	2050.0
903.0(10)	0.13(7)	976.8	2353.0(10)	0.6(3)	
			2366.4(10)	0.4(2)	

Level scheme of ^{164}Dy [74Bu3, 76Ba1]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
—	73.392	2+0	—	—	—	—	—
242.2(2)	242.230	4+0	168.8	100	73.4	2+0	91*
501.5(4)	501.32	6+0	259.3	7.5	242.2	4+0	6.6*
761.7(2)	761.78	2+2	761.7	37	0	0+0	39*
			688.4	51	73.4	2+0	
828.2(2)	828.17	3+2	754.8	49	73.4	2+0	30*
			585.5	6.1	242.2	4+0	
—	839	—	—	—	—	—	—
—	843.67	8+0	—	—	—	—	—
915.9(2)	915.96	4+2	843.3	≤2.0	73.4	2+0	≤7.8
			673.7	12.5	242.2	4+0	

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
976.8(3)	976.86	(2−)2	903.0	0.13	73.4	2+0	42*
			214.9	34	761.7	2+2	
			148.7	7.1	828.2	3+2	
1024.5(2)	1024.74	5+2	782.3	6.5	242.2	4+0	6 9
			523.2	0.4	501.5	6+0	
1039.4(3)	1039.28	(3−)2	966.2	1.7	73.4	2+0	22*
			277.7	12.5	761.7	2+2	
			211.0	8.8	828.2	3+2	
1122.9(3)	1122.75	(4−)2	294.7	7.8	828.2	3+2	11*
			206.3	2.6	915.9	4+2	
—	1155.8	6+2	911.1	≤1.1	242.2	4+0	—
—	1166		—	—	—	—	—
1225.2(3)	1225.14	(5−)2	982.1	1.3	242.2	4+0	7.0*
			309.3	4.1	915.9	4+2	
—	1261.3	10+0	—	—	—	—	—
—	1394.4	(2+0)	—	—	—	—	—
1587.9(4)	1587.80	(4−4)	611.0	1.0	976.8	(2−)2	2.2
			548.5	1.2	1039.4	(3−)2	
—	1607.2	(4+)	843.3	≤2.0	761.7	2+2	—
1674.0(10)	1668	[2—4]	1601.3	1.5	73.4	2+0	≤2.9
			1431.0	0.3	242.2	4+0	
			911.1	≤1.1	761.7	2+2	
—	1686.5	(5−)	—	—	—	—	—
1716.3(5)	1715	[1—4]	1642.6	2.0	73.4	2+0	2.2
			888.1	0.20	828.2	3+2	
—	1725.8	(3+, 4+)	—	—	—	—	—
—	1738	—	1735.0	<2.4	0	0+0	<2.4
—	1745.5	(12+)0	—	—	—	—	—
—	1753	(3−)	—	—	—	—	—
—	1769.5	—	—	—	—	—	—
—	1776	(+)	—	—	—	—	—
1797.7(10)	1796	—	1555.5	0.5	242.2	4+0	0.5
—	1808	—	1735.0	<2.4	73.4	2+0	<2.4
—	1841	—	1838.5	<1.0	0	0+0	<1
—	1851	—	—	—	—	—	—
1892.2(10)	1892	(+)	1650.0	0.5	242.2	4+0	0.5
1910.3(10)	1906	—	1838.5	<1.0	73.4	2+0	<1.7
			1668.1	0.7	242.2	4+0	
1918.9(10)	1920	—	1845.5	1.2	73.4	2+0	1.2
1932.1(5)	1932.5	(4+)	1858.7	0.7	73.4	2+0	0.7
—	1951.5	—	—	—	—	—	—
1979.0(5)	1976	([2+])	1979.0	1.1	0	0+0	2.5
			1906.2	0.8	73.4	2+0	
			1217.4	0.6	761.7	2+2	
—	1983	(3+3)	—	—	—	—	—
—	1984	—	—	—	—	—	—
—	1998.14	(4±)	—	—	—	—	—
2050.0(10)	2055	(2+2)	2050.0	0.7	0	0+0	0.7

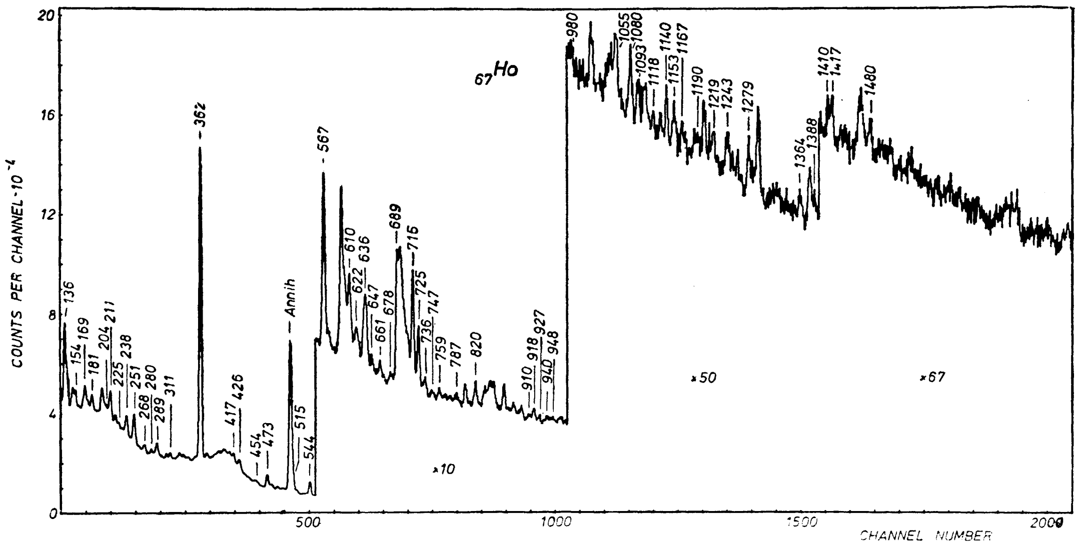
E_γ	I_γ	E_i	E_γ	I_γ	E_i
136.0(3)	11(3)	345.8	660.7(5)	0.75(16)	1079.9
		(n, γ)	677.8 *m*	0.81(17)	
154.1(3)	2.2(3)	499.9	688.7(4)	6.8(12)	688.7
169.3 *m*	4.2(6)	589.8	715.5(3)	5.9(5)	715.5
		672.7	725.2(3)	3.2(3)	819.9
181.3(2)	2.9(3)	(n, γ)	735.5 *m*	1.1(2)	945.8
204 *m*	4.3(8)	567.1	747.3 *m*	0.54(15)	
211.4 *m*	4.8(5)	209.8	759.4(6)	0.62(15)	
225.4(4)	1.0(2)		786.9(10)	0.48(15)	
238.4(2)	4.5(5)	(n, γ)	820.3 *m*	1.6(2)	819.9
251.10(15)	6.9(5)	345.8	910.4(8)	0.36(15)	
268.5(3)	1.4(2)		918.3(4)	1.0(2)	
279.5(6)	0.64(16)	995.0	926.8(12)	0.27(13)	
289.0 *m*	3.9(7)	499.9	940.2(8)	0.36(15)	
		(n, γ)	948.1 *m*	0 35(15)	
311.3(3)	1.3(2)		979.7 *m*	0.7(2)	1187.3
361.671 *c*	100	361.7	1055.3 *m*	1.4(3)	1055.8
416.8(4)	2.4(3)	955.8			1140.5
		(n, γ)	1079.8(5)	1.3(2)	1079.9
426.4 *m*	3.5(5)	638.3	1092.6(6)	0.82(15)	1187.3
		(n, γ)	1117.9(8)	0.36(15)	
454 *m*	1.5(3)	(n, γ)	1140.5(4)	0.93(15)	1140.5
472.5(3)	5.8(8)	567.1	1153.2 *m*	0.85(15)	1247.7
515.1(6)	13(4)	515.1	1167.0 *m*	0.8(2)	
543.6(2)	6.2(4)	638.3	1190 *m*	0.8(2)	1187.3
		(n, γ)	1219.3(10)	0.7(2)	1314.0
567.0(3)	8.8(9)	567.1	1243.2 *m*	1.3(3)	1247.7
609.5 *m*	2.3(5)	819.9			1338.3
621.7 *m*	1.4(3)	715.5	1278.6(6)	0.9(2)	
635.6 *m*	6.7(6)	638.3	1364.1(10)	0.57(15)	
		730.0	1388.0(10)	0 6(2)	
		840.8	1409.8(8)	0.76(15)	1409.8
		995.0	1416.7(8)	0.89(15)	1416.7
647.0(6)	0.65(16)		1479.7(8)	0.59(15)	

Level scheme of ^{165}Ho [74Bu, 74Ar1, 75Ar]

E_i	E_i^a	$J_i^\pi K$	E_γ	I_γ	E_f	$J_f^\pi K$
—	94.700	9/2−7/2	—	—	—	—
—	209.804	11/2−7/2	211.4	<4.8	0	(7/2−7/2)
345.80(10)	345.9	13/2−7/2	136.0	11	209.8	11/2−7/2
			251.10	6.9	94.7	9/2−7/2
361.671 *c*	361.671	3/2+3/2	361.671	100	0	7/2−7/2
—	419.539	5/2+3/2	—	—	—	—

E_i	E_i^a	$J_i^\pi K$	E_γ	I_γ	E_f	$J_f^\pi K$
—	429.384	1/2+1/2	—	—	—	—
—	449.255	3/2+1/2	—	—	—	—
—	491.044	7/2+3/2	—	—	—	—
499.9(3)	499.2	(15/2−7/2)	154.1	2.2	345.8	13/2−7/2
			289.0	<3.9	209.8	11/2−7/2
515.1(6)	515.472	3/2−3/2	515.1	13	0	7/2−7/2
—	539.009	5/2+1/2	—	—	—	—
567.1(3)	566.83	5/2−3/2	204	<4.3	361.7	3/2+3/2
			472.5	5.8	94.7	9/2−7/2
			567.0	8.8	0	7/2−7/2
—	589.798	7/2+1/2	169.3	<4.2	419.5	5/2+3/2
—	600	—	—	—	—	—
638.3(2)	637.6	7/2−3/2	426.4	<3.5	209.8	11/2−7/2
			543.6	6.2	94.7	9/2−7/2
			635.6	<6.7	0	7/2−7/2
—	672.7	(17/2−7/2)	169.3	<4.2	499.9	(15/2−7/2)
688.7(4)	688.5	(11/2−11/2)	688.7	6.8	0	7/2−7/2
—	702.9	9/2−	—	—	—	—
715.5(3)	715.330	(7/2+7/2)	621.7	<1.4	94.7	9/2−7/2
			715.5	5.9	0	7/2−7/2
—	730.0	—	—	—	—	—
—	790.74?	—	—	—	—	—
—	820?	(13/2−11/2)	—	—	—	—
819.9(3)	820.108	(9/2+7/2)	609.5	<2.3	209.8	11/2−7/2
			725.2	3.2	94.7	9/2−7/2
			820.3	<1.6	0	7/2−7/2
—	840.8	—	635.6	<6.7	209.8	11/2−7/2
—	863	(19/2−7/2)	—	—	—	—
—	945.8	(11/2+7/2)	735.5	<1.1	209.8	11/2−7/2
955.8(4)	956	(5/2+)	416.8	2.4	539.0	5/2+1/2
995.0(5)	995.092	5/2+5/2	279.5	0.64	715.5	(7/2+7/2)
			635.6	<6.7	361.7	3/2+3/2
—	1037.7?	—	—	—	—	—
—	1055.761	(5/2−5/2)	1055.3	<1.4	0	7/2−7/2
—	1069	(21/2−7/2)	—	—	—	—
1079.9(5)	1079.625	(7/2+5/2)	660.7	0.75	419.4	5/2+3/2
			1079.8	1.3	0	7/2−7/2
—	1094.3	—	—	—	—	—
1140.5(4)	1140.36	(7/2−5/2)	1055.3	<1.4	94.7	9/2−7/2
			1140.5	0.93	0	7/2−7/2
1187.3(6)	1186.60	(9/2+5/2)	979.7	<0.71	209.8	11/2−7/2
			1092.6	0.82	94.7	9/2−7/2
			1190	<0.8	0	7/2−7/2
—	1247.7	(9/2−5/2)	1153.2	<0.85	94.7	9/2−7/2
			1243.2	<1.3	0	7/2−7/2
1278.6(6)	1278	—	1278.6	0.9	0	7/2−7/2
—	1291	(23/2−7/2)	—	—	—	—

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K$
1314.0(10)	1314	(11/2+5/2)	1219.3	0.7	94.7	9/2−7/2
—	1338.3	—	1243.2	<1.3	94.7	9/2−7/2
—	1380	—	—	—	—	—
1409.8(8)	1409	—	1409.8	0.76	0	7/2−7/2
1416.7(8)	1417	—	1416.7	0.89	0	7/2−7/2



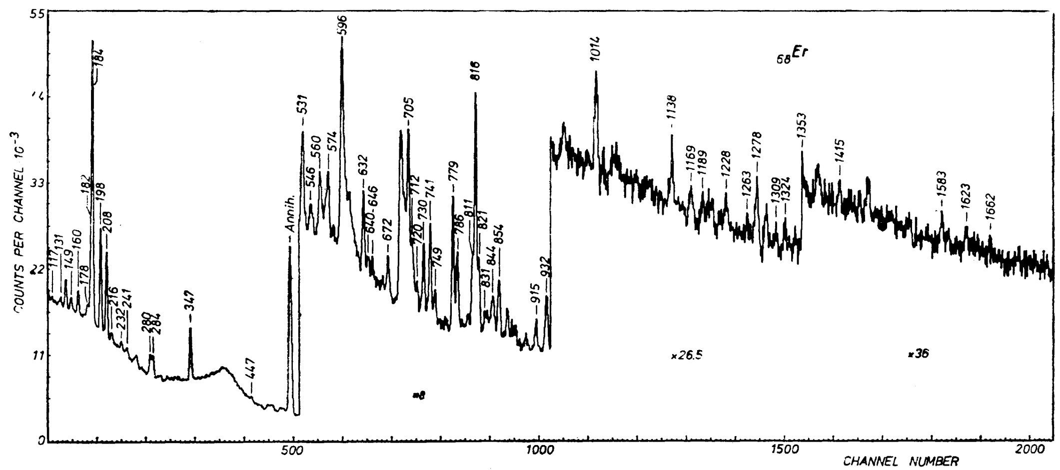
Erbium

$_{68}$Er

E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
117.0(5)	11(4)			198.0(2)	83(12)	^{168}Er	1093.9
131.3(4)	20(4)	^{167}Er	413.3	207.77(10)	113(9)	^{167}Er	207.8
148.6(2)	21(3)	^{167}Er	413.3	216.4(3)	11.8(17)		
160.32(15)	36(4)	^{167}Er	442.0	232.5(3)	11.7(17)		
177.8(6)	9(3)	^{167}Er	178.0	241.4(4)	12.1(17)		
181.5(6)	78(20)	^{170}Er	260.1	280.4(3)	32(4)	^{166}Er	545.4
184.3(2)	300(40)	^{166}Er	265.0			^{170}Er	541.1
		^{168}Er	264.1				

E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
284.4(3)	32(4)	^{168}Er	548.8	821.1(3)	29(4)	^{168}Er	821.1
346.51(10)	90(6)	^{167}Er	346.6	831.2(6)	7.4(20)		
447.0(5)	7.0(16)	^{168}Er	994.6	844.0 *m*	16(4)	^{170}Er	1103.5
531.48(13)	35(3)	^{167}Er	531.5	854.4 *m*	27(3)	^{170}Er	932
545.5 *m*	16(2)	^{167}Er	752.8			^{168}Er	1117.6
560.0(3)	23(4)	^{167}Er	641	915.2(4)	14(2)	^{168}Er	994.6
573.5(4)	26(4)	^{167}Er	573.8	932.4 *m*	36(3)	^{170}Er	932
595.6(8)	14(5)	^{166}Er	859.4				1010.0
631.65(13)	27(3)	^{168}Er	895.7			^{168}Er	1193.9
639.5(6)	5.2(15)	^{167}Er	641	1013.6 *m*	17(4)		
646.2(4)	5.0(15)			1138.3(5)	11.3(17)		
672.1 *m*	18(2)	^{166}Er	1458.0	1169.3 *m*	9(2)		
705.29(16)	37(4)	^{166}Er	785.9	1188.9(7)	8(2)		
711.5(6)	7(2)	^{167}Er	711	1227.5 *m*	9(2)		
720.0(7)	6(2)			1262.9(10)	5.7(18)		
730.4(2)	30(3)	^{168}Er	994.6	1278.3 *m*	17(2)		
		^{166}Er	1515.3	1324.3(12)	4.5(16)		
741.24(15)	40(4)	^{168}Er	821.1	1352.9(12)	3.4(16)		
749.0(3)	10.2(16)			1414.7(10)	4.0(18)		
778.78(10)	55(4)	^{166}Er	859.4	1582.6(8)	7(2)		
785.86(15)	34(3)	^{166}Er	785.9	1623.0(12)	4.5(18)		
810.6(4)	29(5)	^{166}Er	1075.3	1661.8(17)	3.3(16)		
815.88(15)	100	^{168}Er	895.7				

The E_i^a data are taken from [76Bu] for ^{166}Er, [76Ha] for ^{167}Er, [74Gr1, 69Gr] for ^{168}Er and [75Sc] for ^{170}Er.

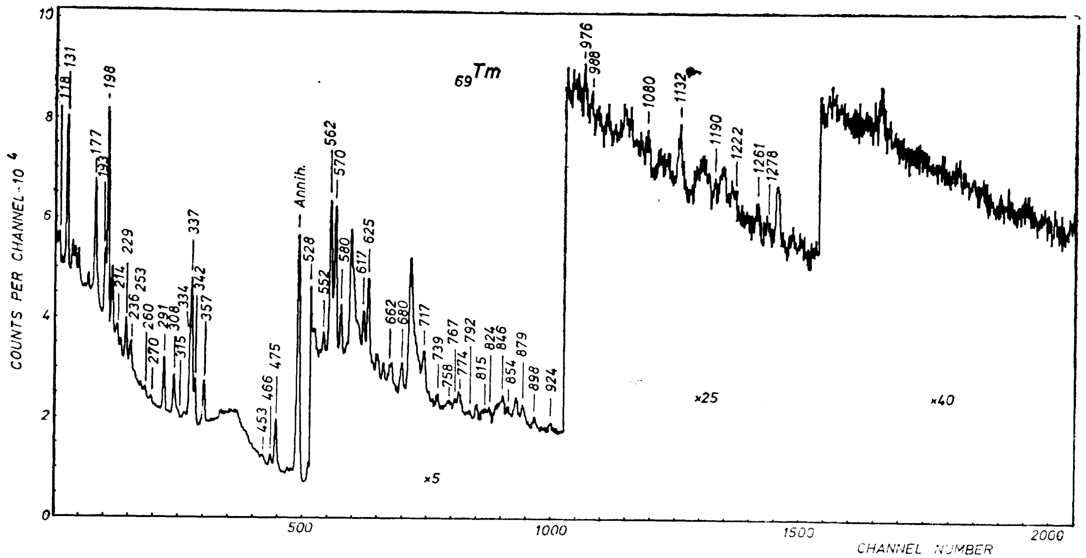


E_γ	I_γ	E_i	E_γ	I_γ	E_i
117.9 *m*	76(15)	118.2			(*n*,γ)
		433.4	579.6(3)	23(3)	718.5
130.51 *c*	309(35)	138.9	617.2(3)	23(3)	
177.2(2)	145(18)	316.1	624.6(8)	47(5)	633.0
193.4(3)	71(10)	332.2	662.1 *m*	19(3)	(*n*,γ)
198.0(3)	203(30)	316.1	679.8 *m*	18(2)	(*n*,γ)
213.8(3)	20(3)	332.2	716.6 *m*	19(3)	(*n*,γ)
228.6(3)	45(5)	367.5	739.3(5)	8.9(12)	
236.4(3)	30(4)	(603.9)	758.1 *m*	11(3)	
		(*n*,γ)	767.1(7)	8(2)	
259.9(5)	7.5(12)	379.2	774.3 *m*	18(3)	
		575.3	791.6(10)	4.5(14)	
269.8(5)	5.8(12)	637.3	815.3 *m*	21(4)	
291.2(2)	71(5)	430.1	824.0 *m*	11(3)	
307.5(4)	50(8)	316.1	846.1(8)	7(2)	
315.0(6)	12(3)	646.6	854.2(8)	13(3)	
333.6(4)	112(22)	342.0	879.3 *m*	19(3)	
336.6(3)	187(30)	345.0	898.5(7)	7.1(15)	
342.0(2)	59(5)	342.0	924.1(8)	5.7(12)	
356.6(2)	67(6)	474.8	976.3(8)	5.9(15)	
453.4 *m*	10(2)		987.6(12)	4.4(14)	
465.8(3)	19(2)	(474.8)	1080.0(12)	8(2)	
474.7(2)	100	474.8	1132.4 *m*	18(3)	
528.3(3)	46(8)	646.6	1190.3(12)	4.5(15)	
551.6(4)	13(2)	(*n*,γ)	1222 *m*	11(3)	
562.3(4)	82(10)	571.1	1260.9(10)	7(2)	
		(*n*,γ)	1277.8(15)	4.4(18)	
570.3(4)	64(8)	571.1			

Level scheme of ^{169}Tm [73Ha, 74Ba1]

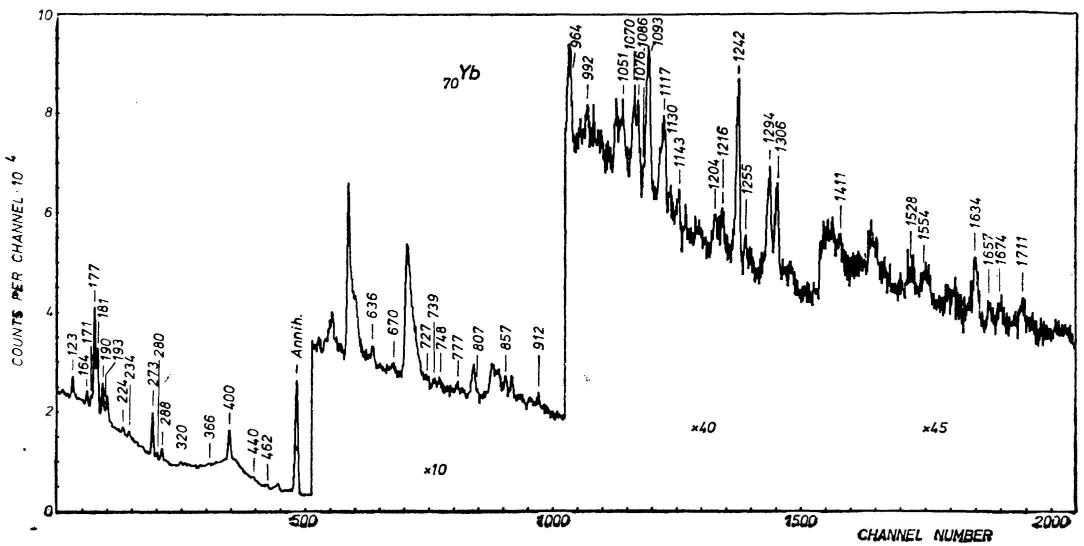
E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
—	8.401	3/2+1/2	—	—	—	—
—	118.17	5/2+1/2	117.9	<76	0	1/2+1/2
138.91 *c*	138.91	7/2+1/2	130.51	309	8.4	3/2+1/2
316.1(2)	316.10	7/2+7/2	307.5	50	8.4	3/2+1/2
			198.0	203	118.2	5/2+1/2
			177.2	145	138.9	7/2+1/2
332.2(3)	332.1	9/2+1/2	213.8	20	118.2	5/2+1/2
			193.4	71	138.9	7/2+1/2

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
342.0(2)	342.0	1/2−1/2	342.0	59	0	1/2+1/2
			333.6	112	8.4	3/2+1/2
345.0(3)	345.1	5/2−1/2	336.6	187	8.4	3/2+1/2
367.5(3)	367.2	11/2+1/2	228.6	45	138.9	7/2+1/2
—	379.22	7/2−7/2	259.9	<7.5	118.2	5/2+1/2
430.1(2)	430.1	9/2−1/2	291.2	71	138.9	7/2+1/2
—	433.35	9/2+7/2	117.9	<76	316.1	7/2+7/2
—	472.83	9/2−7/2	—	—	—	—
474.8(2)	475.1	3/2−1/2	474.7	100	0	1/2+1/2
			465.8?	19	8.4	3/2+1/2
			356.6	67	118.2	5/2+1/2
—	571.1	3/2+3/2	570.3	<64	0	1/2+1/2
			562.3	<82	8.4	3/2+1/2
—	575.3	11/2+7/2	259.9	<7.5	316.1	7/2+7/2
—	588.0	11/2−7/2	—	—	—	—
603.9(5)?	602.7	13/2−1/2	236.4	30	367.5	11/2+1/2
633.0(2)	633.03	5/2+3/2	624.6	47	8.4	3/2+1/2
637.3(5)	637.3	13/2+1/2	269.8	5.8	367.5	11/2+1/2
646.6(3)	646.9	7/2−1/2	528.3	46	118.2	5/2+1/2
			315.0	12	332.2	9/2+1/2
—	691.0	15/2+1/2	—	—	—	—
718.5(3)	718.5	7/2+3/2	579.6	23	138.9	7/2+7/2



E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
122.6(4)	26(6)	^{173}Yb	301.7	992.5(8)	6(2)	^{174}Yb	1518.1
163.8(3)	32(5)	^{171}Yb	230.6	1051.4 *m*	8(3)	^{174}Yb	1571.9
171.2(3)	24(5)	^{173}Yb	350.7	1069.6 *m*	22(4)	^{172}Yb	1330.9
176.643 *c*	284(30)	^{174}Yb	253.1	1076.2(4)	17(3)	^{172}Yb	1155.0
181.4(2)	237(30)	^{172}Yb	260.3	1086.3(12)	6(2)		
190.0(2)	112(10)	^{176}Yb	211.7	1092.9 *m*	42(4)	^{172}Yb	1172.3
193.3(8)	19(7)	^{170}Yb	277.3	1116.7 *m*	29(4)	^{172}Yb	1117.8
223.8(5)	17(3)	^{174}Yb	1606.2				1198.5
233.7(5)	12(2)			1129.7(14)	2.3(11)	^{174}Yb	1381.9
272.6(2)	103(7)	^{173}Yb	350.7	1143.0(10)	6(2)	^{172}Yb	1221.8
		^{174}Yb	526.0	1204.2(10)?	13(3)		
280.0(3)	14(2)	^{172}Yb	539.8	1215.9(10)	12(3)	^{174}Yb	1468.1
288.0(2)	26(3)	^{174}Yb	1606.2	1241.7(3)	49(5)	^{174}Yb	1318.3
319.7(4)	11(2)			1255.0(12)	7(2)	^{176}Yb	(1336.6)
365.9 *m*	9(2)	^{174}Yb	1884.6	1293.5 *m*	38(5)		
399.9(2)	100	^{173}Yb	398.9	1306.1(5)	26(3)	^{174}Yb	1381.9
440.1(5)	7.6(14)			1410.6(15)	5(2)	^{174}Yb	1487.4
462.3(5)	8.0(14)	^{173}Yb	461.5			^{176}Yb	1492.0
636.4(6)	7.2(16)	^{173}Yb	636.0	1528 *m*	14(3)	^{174}Yb	1785.8
670.5(12)	4.0(14)			1554 *m*	16(3)	^{174}Yb	1634.1
727.4(12)	5(2)						1805.2
739.0(10)	6(2)	^{171}Yb	834.9	1633.7(7)	28(4)	^{174}Yb	1634.1
748.0(10)	6(2)	^{172}Yb	1286.5				1709.2
777.3(10)	6(2)			1657.0(10)	9(2)	^{174}Yb	1733.8
806.7(10)	8(3)			1673.8(12)	11(2)	^{174}Yb	1674.8
857.4(4)	15(2)	^{172}Yb	1117.8	1710.8(12)	8(2)	^{174}Yb	1710.9
912.2(8)	8(2)	^{172}Yb	1172.3				1785.8
963.9(10)	12(3)	^{172}Yb	1042.9				

The E_i^a data are taken from [70Sc] for ^{170}Yb, [74Ho] for ^{171}Yb, [75Gr] for ^{172}Yb, [75Ha] or ^{173}Yb, [73Mi] for ^{174}Yb and [74Gr1] for ^{176}Yb.



E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
113.9(4)	30(15)	^{175}Lu	113.8	335.78(7)	4.5(3)	^{176}Lu	638.8
			546.6	343.45(4)	62(4)	^{175}Lu	343.4
132.7(3)	15(5)	^{175}Lu	529.0	353.58(4)	100	^{175}Lu	353.6
137.8(3)	21(3)	^{175}Lu	251.5	359.6(2)	0.94(20)	^{176}Lu	599.3
		^{175}Lu	684.4	368.3 *m*	1.2(2)	^{175}Lu	1167.6
144.5(4)	6.6(17)	^{175}Lu	396.3	387.5(3)	0.92(18)	^{175}Lu	799.7
		^{175}Lu	514.8	396.33(4)	25(2)	^{175}Lu	396.3
147.6(2)	9(2)	^{175}Lu	562.6	403.1 *m*	0.50(19)	^{175}Lu	757.4
156.1(3)	4.9(15)	^{175}Lu	685.1	414.4 *m*	0.69(20)		
161.09(14)	13(2)	^{175}Lu	412.2	419.92(14)	0.99(17)	^{175}Lu	773.5
		^{175}Lu	514.8	425.10(14)	1.13(17)	^{176}Lu	662.1
178.5(3)	3.3(10)	^{175}Lu	863.6	429.4(3)	0.62(15)		
184.0 *m*	12.7(15)	^{175}Lu		432.85(5)	6.8(3)	^{175}Lu	432.8
		^{176}Lu		444.0 *m*	0.58(16)		
188.27(18)	3.6(7)	^{176}Lu	188.3	457.9(2)	0.73(12)		
192.26(10)	6.9(9)	^{176}Lu	390.3	461.5(3)	0.67(13)	^{175}Lu	1218.9
201.60(15)	4.2(6)	^{176}Lu	441.0	471.19(5)	3.0(2)	^{175}Lu	886.2
213.9(4)	0.9(3)	^{176}Lu		484.1(4)	0.38(10)	^{175}Lu	998.9
216.81(10)	3.8(5)	^{175}Lu	989.9	517.8(4)	0.40(10)	^{175}Lu	1150.6
		^{176}Lu	453.6	524.2(3)	0.61(12)	^{175}Lu	1150.6
219.2(3)	1.1(3)	^{176}Lu	(595.4)			^{176}Lu	
225.38(6)	6.8(7)	^{176}Lu	662.1	527.5(3)	0.86(12)		
227.8 *m*	3.7(5)	^{176}Lu	467.9	538.1(2)	0.89(14)		
233.3(2)	3.1(5)	^{175}Lu	989.9	548.0 *m*	1.7(2)	^{175}Lu	1063.2
		^{176}Lu	536.7	554.2(4)	0.70(12)		
235.8(3)	1.4(3)	^{175}Lu	798.5	556.9(4)	0.60(12)		
238.7(4)	1.2(3)	^{176}Lu	436.7	564.06(10)	2.4(3)		
240.6(4)	2.0(4)	^{175}Lu		578.3(2)	0.82(12)		
246.11(7)	3.2(4)	^{175}Lu	1019.6	583.02(15)	1.46(16)		
251.47(10)	11.6(7)	^{175}Lu	251.5	586.1(2)	0.72(11)	^{175}Lu	1218.9
		^{175}Lu	684.4	604.9(2)	0.77(12)	^{175}Lu	1167.6
255.70(5)	13.2(9)	^{175}Lu	626.6	608.78(14)	2.27(25)		
257.79(10)	3.9(4)	^{175}Lu	672.8	618.6(6)	0.18(9)		
264.3 *m*	6.3(5)	(^{176}Lu)	(390.2)	624.8(6)	0.22(9)		
271.9(3)	1.4(3)	^{176}Lu	662.1	628.0(2)	0.61(12)	^{175}Lu	998.9
279.16(15)	3.7(2)	^{175}Lu	632.8	631.4 *m*	0.50(15)		
282.52(6)	14.2(9)	^{175}Lu	396.3	645.4 *m*	0.55(10)		
284.61(12)	3.0(3)	^{176}Lu		657.4(6)	0.25(10)		
289.39(5)	8.2(5)	^{175}Lu	632.8	660.6(2)	0.76(10)		
298.45(5)	7.0(4)	^{175}Lu	412.2	667.3(4)	0.36(9)		
301.2(3)	0.62(15)	^{176}Lu		671.9 *m*	0.65(13)		
306.1(3)	0.82(20)	^{175}Lu		709.60(16)	1.91(18)	^{175}Lu	1063.2
310.14(6)	6.4(4)	^{176}Lu	436.7	713.2(5)	0.24(10)		
319.20(7)	5.6(4)	^{175}Lu	672.8	715.9(5)	0.24(10)		
323.84(10)	2.0(2)	^{175}Lu	886.2	722.0(3)	0.49(11)		
327.4(3)	0.42(15)			726.4 *m*	0.39(12)		
330.5(3)	0.8(2)	^{176}Lu	776.9	740.3(3)	0.67(10)		

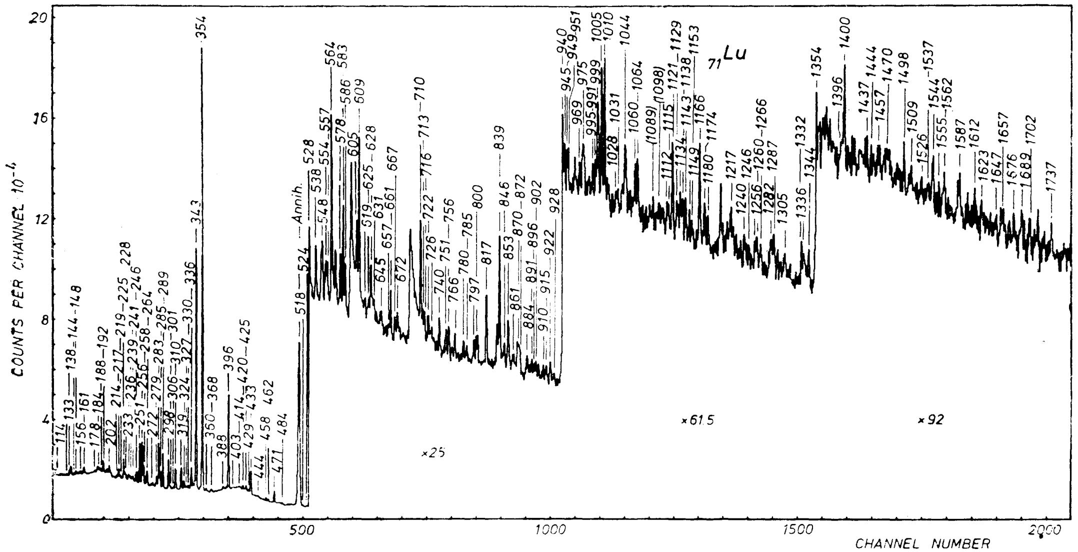
E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
751.1(4)	0.46(10)			1134.0(4)	0.56(12)		
755.8(3)	0.52(9)			1137.9(4)	0.52(12)		
765.5(3)	0.43(10)			1142.6(4)	0.54(12)		
779.7(3)	0.39(10)			1149.1(5)	0.42(12)		
785.3(5)	0.28(9)			1166.0(2)	1.16(15)		
797.0(3)	0.40(9)			1174.4(4)	0.44(11)		
800.5(3)	0.42(10)	^{175}Lu	(1315.3)	1179.5(6)	0.26(9)		
817.32(16)	1.50(15)	^{175}Lu	(1332.1)	1217.0(5)	0.35(12)		
838.7(2)	1.4(2)			1239.5 *m*	0.31(12)		
852.8(2)	1.10(14)			1246.3(8)	0.14(9)		
861.3 *m*	0.60(12)			1256.2(6)	0.35(12)		
870.0(6)	0.62(15)			1259.6(5)	0.45(12)		
872.3(6)	0.62(15)			1265.6(5)	0.37(12)		
883.8(4)	0.60(11)			1282.3 *m*	0.86(17)		
890.9(6)	0.41(11)			1287.3(5)	0.54(15)		
895.8(6)	0.23(9)			1305.0 *m*	0.33(13)		
902.5(6)	0.23(9)			1331.9(4)	0.54(12)		
910.4(6)	0.25(9)			1335.7 *m*	0.37(12)		
915.0 *m*	0.30(9)			1343.6(4)	0.58(13)		
921.9(4)	0.35(9)			1354.2(3)	0.67(12)		
928.3(8)	0.15(9)			1396.1(10)	0.22(13)		
940.5 *m*	0.86(12)			1400.3(3)	0.91(14)		
944.6(6)	0.30(11)			1437.4(6)	0.18(9)		
948.6(6)	0.25(12)			1444.2(8)	0.14(9)		
950.6(6)	0.25(12)			1457.2 *m*	0.41(15)		
968.9(6)	0.23(10)			1469.7 *m*	1.1(3)		
975.0 *m*	1.0(2)			1497.8(4)	0.33(11)		
990.6(7)	0.20(10)			1509.3(8)	0.23(12)		
995.1(4)	0.30(9)			1525.9(8)	0.23(12)		
999.0 *m*	1.35(15)			1537.1 *m*	0.26(14)		
1005.3(2)	1.25(15)			1544.3 *m*	0.66(14)		
1009.9(2)	1.32(15)			1554.8(6)	0.27(12)		
1028.4(8)	0.16(9)			1562.4 *m*	0.47(15)		
1031.4(8)	0.14(9)			1586.9 *m*	0.74(17)		
1043.8 *m*	0.70(14)			1612.2(6)	0.31(12)		
1060.2(4)	0.50(11)			1623.3(7)	0.29(12)		
1064.1(4)	0.62(11)			1647.2(10)	0.20(11)		
1089.1(6)?	0.23(10)			1656.6 *m*	0.75(20)		
1098.5(7)?	0.22(10)			1676.1(6)	0.30(11)		
1111.7(6)	0.34(11)			1688.6 *m*	0.60(16)		
1114.6(6)	0.31(11)			1701.8(6)	0.44(13)		
1121.2(2)	1.16(15)			1736.9(7)	0.30(13)		
1129.1 *m*	0.57(14)						

The E_i data for ^{175}Lu are taken from [73Pr]. There is a large contribution from ^{175}Lu (n,γ) ^{176}Lu reaction in the intensities of ^{176}Lu γ-rays.

Level scheme of Lu [74Wi, 74Fo, 76Mi]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
—	113.804	9/2+7/2	113.9	⩽30	0	7/2+7/2
—	251.460	11/2+7/2	251.47	⩽11.6	0	7/2+7/2
			137.8	⩽21	113.8	9/2+7/2
343.45(4)	343.40	5/2+5/2	343.45	62	0	7/2+7/2
353.58(4)	353.57	5/2−1/2	353.58	100	0	7/2+7/2
—	358.2?	—	—	—	—	—
—	370.88	1/2−1/2	—	—	—	—
396.33(4)	396.322	9/2−9/2	396.33	25	0	7/2+7/2
			282.52	14.2	113.8	9/2+7/2
			144.5	<6.6	251.5	11/2+7/2
412.25(5)	412.2	13/2+7/2	298.45	7.0	113.8	9/2+7/2
			161.09	<13	251.5	11/2+7/2
414.99(13)	415.1	9/2−1/2	—	—	—	—
432.85(5)	432.76	7/2+5/2	432.85	6.8	0	7/2+7/2
—	514.77	3/2−1/2	161.09	<13	353.6	5/2−1/2
			144.5	<6.6	370.9	1/2−1/2
529.0(3)	529.1	11/2−9/2	132.7	15	396.3	9/2−9/2
—	546.6	9/2+5/2	113.9	<30	432.8	7/2+5/2
562.6(4)	562.5	13/2−1/2	147.6	9	415.0	9/2−1/2
—	595.7	15/2+7/2	—	—	—	—
626.58(7)	626.60	(1/2+1/2)	255.70	13.2	370.9	1/2−1/2
632.83(7)	632.85	(3/2+1/2)	289.39	8.2	343.4	5/2+5/2
			279.16	3.7	353.6	5/2−1/2
672.78(8)	672.9	7/2−1/2	319.20	5.6	353.6	5/2−1/2
			257.79	3.9	415.0	9/2−1/2
—	684.4	11/2+5/2	251.47	⩽11.6	432.8	7/2+5/2
			137.8	⩽21	546.6	9/2+5/2
685.1(4)	685.0	13/2−9/2	156.1	4.9	529.0	11/2−9/2
—	757.41	(5/2+1/2)	403.1	<0.5	353.6	5/2−1/2
773.50(15)	773.58	(7/2+1/2)	419.92	0.99	353.6	5/2−1/2
798.5(5)	797.7	17/2−1/2	235.8	1.4	562.6	13/2−1/2
799.7(3)	799.3	17/2+7/2	387.5	0.92	412.2	13/2+7/2
—	845.2?	(13/2+5/2)	161.09?	—	—	—
863.6(5)	863.5	15/2−9/2	178.5	3.3	685.1	13/2−9/2
886.20(15)	886.4	11/2−1/2	471.19	3.0	415.0	9/2−1/2
			323.84	2.0	562.6	13/2−1/2
—	989.9	(9/2+1/2)	233.3	⩽3.1	757.4	5/2+1/2
			216.81	⩽3.8	773.5	7/2+1/2
998.9(3)	999.0	3/2−3/2	628.0	0.61	370.9	1/2−1/2
			484.1	0.38	514.8	3/2−1/2
1019.61(17)	1019.7	(11/2+1/2)	246.11	3.2	773.5	7/2+1/2
—	1024.7	19/2+7/2	—	—	—	—
1063.18(17)	1063.4	5/2−3/2	709.60	1.91	353.6	5/2−1/2
			548.0	<1.7	514.8	3/2−1/2
—	1063.9	17/2−9/2−	—	—	—	—
—	1121.4?	(21/2−1/2)	—	—	—	—
1150.6(3)	1150.8	(3/2+3/2)	524.2	0.61	626.6	1/2+1/2
			517.8	0.40	632.8	3/2+1/2

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
1167.6(5)	1166.8	(15/2−1/2)	604.9	0.77	562.6	13/2−1/2
			368.3	<1.2	798.5	17/2−1/2
1218.9(3)	1219.1	(5/2+3/2)	586.1	0.72	632.8	3/2+1/2
—	1284.7	19/2−9/2	—	—	—	—
1315.3(3)	1315.5?	(3/2−1/2)	800.5	0.42	514.8	3/2−1/2
1332.1(2)	1332.5?	(1/2−1/2)	817.3?	1.50	514.8	3/2−1/2



Hafnium

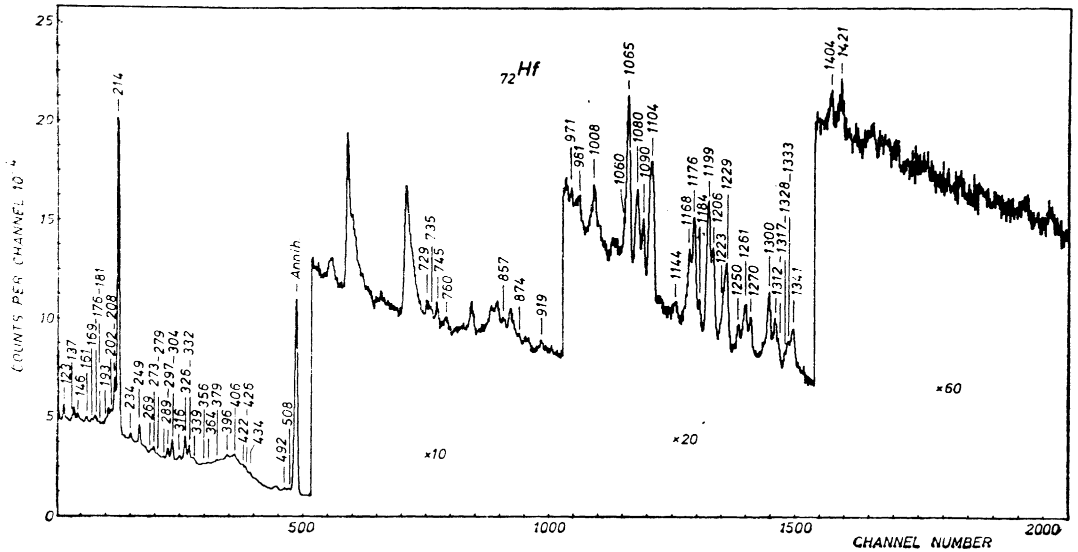
$_{72}$Hf

E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
122.7(2)	11(2)	^{179}Hf	122.7	202.0(3)	5.5(15)	^{179}Hf	720.7
136.8(5)	4.0(15)	^{177}Hf	249.7	208.0(6)	12(3)	^{177}Hf	321.3
146.0(2)	3.1(8)	^{179}Hf	268	214.2 *m*	100	^{178}Hf	306.6
160.8(3)	2.3(4)	^{179}Hf	375.1			^{179}Hf	214.4
169.4(4)	1.4(3)					^{180}Hf	308.6
175.5 *m*	4.0(8)	^{177}Hf	426.7	234.5(3)	2.0(3)	^{177}Hf	555.2
180.6(5)	1.5(4)			249.2(3)	5.4(5)	^{177}Hf	249.7
193.2(6)	2.6(6)	^{179}Hf	614.3	268.8(4)	1.9(3)	^{179}Hf	268

E_γ	I_γ	^AZ	E_i^a
272.9(4)	1.8(3)		
278.7(6)	0.67(15)	^{179}Hf	700.8
289.3(8)	0.34(8)		
296.6(2)	3.7(4)		
303.9(3)	7.3(7)	^{179}Hf	518.1
316.4(3)	1.7(2)		
325.6(2)	9.4(10)	^{178}Hf	632.2
332.0(3)	5.8(6)	^{180}Hf	640.8
339.0 *m*	3.6(4)	^{179}Hf	336.5
355.6(10)	0.26(6)		
363.6(10)	0.29(7)	^{179}Hf	700.8
379.0(5)	0.93(13)		
395.5(4)	1.2(2)	^{177}Hf	508.1
406.5(4)	1.3(2)		
421.7(7)	0.41(8)		
426.1(5)	1.1(2)	^{178}Hf	1058.5
433.9(5)	1.0(2)		
492.0(4)	1.1(3)	^{177}Hf	604.4
508.2(5)	15(5)	^{177}Hf	508.1
729.2(6)	0.91(15)	^{180}Hf	1369.6
735.1(8)	0.60(15)	^{177}Hf	847.4
745.3(5)	1.1(2)	^{177}Hf	745.9
759.6 *m*	1.0(2)	^{177}Hf	873.0
856.6(6)	1.1(2)		
874.5(7)	0.61(10)		
919.3(8)	0.55(10)		
970.8(7)	0.68(12)		
981.4(8)	1.4(2)	^{180}Hf	1291.2

E_γ	I_γ	^AZ	E_i^a
1008.4 *m*	2.1(3)		
1060.4(8)	1.2(3)	^{180}Hf	1369.6
1065.4(4)	6.2(8)	^{180}Hf	1374.7
1080.2(4)	3.6(4)	^{178}Hf	1174.6
1090.0(5)	1.4(2)	^{180}Hf	1183.2
1104.1 *m*	9.8(10)	^{178}Hf	1199.2
		^{180}Hf	1199.6
1143.6 *m*	0.94(16)		
1167.7(4)	3.4(4)	^{178}Hf	1260.6
		^{180}Hf	1260.8
1175.5(4)	4.5(5)		
1183.9(7)	0.67(10)	^{178}Hf	1276.5
1199.1(3)	7.0(8)	^{180}Hf	1199.6
1206.3(5)	4.2(5)	^{180}Hf	1300.0
1223.0(6)	1.4(2)		
1229.1(5)	3.9(5)	^{178}Hf	1323.2
1249.6(6)	1.2(2)		
1260.8(5)	2.5(3)	^{180}Hf	1260.8
1269.9(5)	1.5(2)		
1300.3(5)	3.1(4)	^{180}Hf	1300.0
1311.6(6)	1.8(2)		
1317.1(8)	0.80(10)		
1328.1(8)	0.75(15)		
1332.7(6)	1.5(2)		
1340.8(6)	1.8(10)		
1403.7(9)	0.58(15)		
1420.9(7)	1.0(2)		

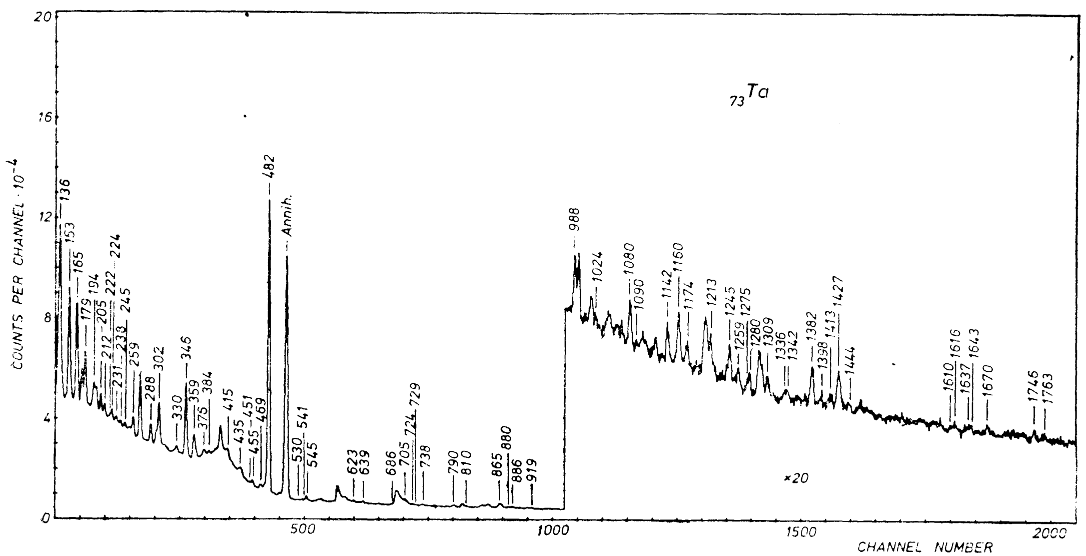
The E_i^a data were taken from [75Mo, 74Je] for ^{177}Hf, [74Gr3] for ^{178}Hf, [74An2, 73Ca, 73Pr' 73Be2] for ^{179}Hf, [75Gr1] for ^{180}Hf.



E_γ	I_γ	E_i	E_γ	I_γ	E_i
136.25 *c*	242(50)	136.2	738.3(4)	0.50(15)	
152.52(10)	56(12)	158.7	789.7(2)	0.8(2)	(926.0)
165.14(10)	42(9)	301.4	809.9(10)	1.0(3)	
179.2(2)	19(4)	337.9	865.0(8)	1.0(3)	
193.8(3)	8(2)	495.2	880.5(4)	0.50(15)	
205.19(10)	5.4(9)	543.0	886.2(3)	0.8(2)	
211.6(2)	2.4(4)		918.7(3)	0.43(9)	
221.6(6)	0.8(3)	716.5	988.4(2)	2.0(6)	
224.0(5)	2.0(4)		1023.6(5)	0.53(16)	
230.8(3)	1.7(3)	773.6	1079.9(3)	1.9(4)	
237.9(3)	1.5(3)		1090.5(4)	0.32(9)	
245.4(3)	1.6(3)		1141.5(3)	1.7(3)	
259.1(2)	4.6(9)		1159.8(3)	2.1(4)	
288.48(10)	5.5(9)		1173.6(4)	1.1(2)	
301.6(2)	14(3)	301.4	1213.0(3)	1.7(3)	
330.3(3)	2.4(5)		1244.8(2)	1.8(3)	1403.5
345.85(10)	20(4)	482.1	1259.4(2)	1.1(2)	
359.1(4)	6.5(12)	495.2	1274.8(10)	0.38(9)	
375.6(2)	0.9(4)		1279.8(8)	0.6(2)	
383.8(8)	0.10(5)	543.0	1308.6(4)	0.9(3)	
415.1(4)	1.1(3)	716.5	1336.3(10)	0.47(14)	
435.4(4)	3.2(6)	773.6	1342.0(10)	0.44(13)	
450.9(6)	0.6(2)		1382.5(2)	1.9(4)	
455.3(5)	1.8(4)		1397.6(8)	0.42(13)	1403.5
468.8(4)	1.1(2)	964.0	1413.2(5)	0.8(2)	
482.09(10)	100	482.1	1426.7(3)	2.6(6)	
530.3(5)	0.19(4)		1444.2(10)	0.6(2)	
541.4(8)	0.22(5)		1609.9(6)	0.46(14)	
545.1(4)	1.6(3)		1616.5(6)	0.41(12)	
623.3(4)	0.42(8)		1636.7(10)	0.47(14)	
638.9(4)	0.58(9)		1643.3(10)	0.50(15)	
686.4(6)	0.20(4)		1670.2(5)	0.43(13)	
704.8(10)	2.7(4)		1746.3(5)	0.49(15)	
724.3(5)	0.6(2)		1763.2(10)	0.39(12)	
728.7(5)	0.30(9)		1864.6(10)	0.26(9)	

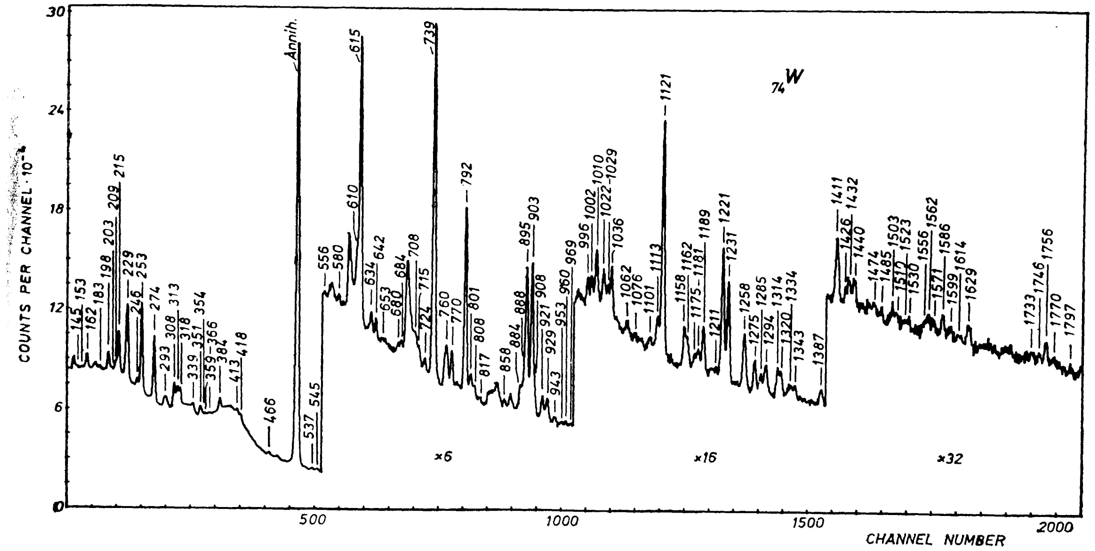
Level scheme of ^{181}Ta [73E1]

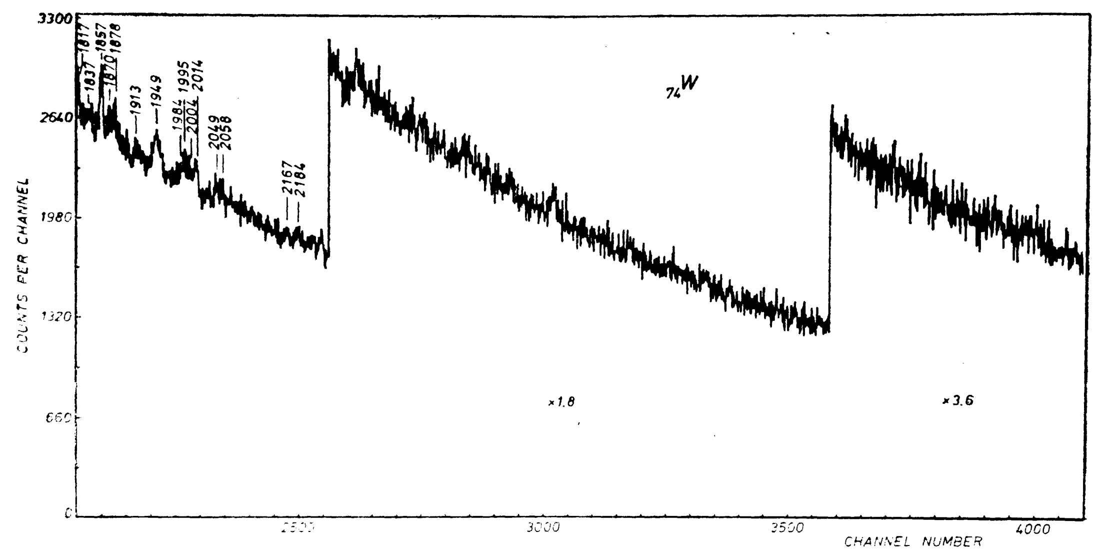
E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
—	6.21	9/2−9/2	—	—	—	—
136.25 *c*	136.25	9/2+7/2	136.25	242	0	7/2+7/2
158.73(10)	158.53	(11/2−)9/2	152.52	56	6.2	9/2−9/2
301.39(20)	301.4	11/2+7/2	301.6	14	0	7/2+7/2
			165.14	42	136.2	9/2+7/2
337.9(2)	339	(13/2−)9/2	179.2	19	158.7	(11/2−)9/2
482.10(10)	482.18	5/2+5/2	482.09	100	0	7/2+7/2
			345.85	20	136.2	9/2+7/2
495.2(4)	495.11	13/2+7/2	359.1	6.5	136.2	9/2+7/2
			193.8	8	301.4	11/2+7/2
543.0(3)	542.50	15/2−9/2	383.8	0.10	158.7	11/2−9/2
			205.19	5.4	337.9	13/2−9/2
—	615.1	1/2+1/2	—	—	—	—
—	619.0	(3/2+)1/2	—	—	—	—
716.5(4)	716.59	15/2+7/2	415.1	1.1	301.4	11/2+7/2
			221.6	0.8	495.2	13/2+7/2
773.6(5)	772.97	17/2−9/2	435.4	3.2	337.9	13/2−9/2
			230.8	1.7	543.0	15/2−9/2
926.0(2)?	930	—	789.7	0.8	136.2	9/2+7/2
964.0(5)	965	17/2+7/2	468.8	1.1	495.2	13/2+7/2
—	1028.04	19/2−9/2	—	—	—	—
—	1232.4	—	—	—	—	—
—	1239.34	19/2+7/2	—	—	—	—
—	1307.1	21/2−9/2	—	—	—	—
1403.5(2)	1403.39	—	1397.6	0.42	6.2	9/2−9/2
			1244.8	1.8	158.7	11/2−9/2



E_γ	I_γ	^AZ	E_i^a
145.2(4)	8(3)		
152.6(3)	4.7(9)	^{182}W	1373.9
161.6(2)	34(8)	^{183}W	208.8
		^{184}W	1446.4
183.0(3)	7(2)	^{186}W	1045.0
197.5(5)	3.6(9)	^{186}W	1661.0
203.3(4)	6(2)	^{184}W	1425.0
209.2(5)	14(3)	^{183}W	208.8
214.9(2)	64(10)	^{184}W	1221.3
			1345.4
		^{186}W	952.4
228.8 *m*	126(20)	^{182}W	329.4
		^{184}W	1130.0
245.8(3)	13(4)	^{183}W	453.1
252.85 *c*	110(15)	^{184}W	364.1
273.89(10)	78(10)	^{186}W	396.2
293.2 *m*	18(3)	^{183}W	291.7
		^{184}W	1424.8
307.6 *m*	28(5)	^{186}W	1045.1
313.2(3)	27(5)	^{183}W	412.1
318.0(4)	19(4)	^{184}W	1221.4
339.1(5)	6(2)	^{184}W	1345.4
351.2(3)	9(3)	^{182}W	680.5
354.5(6)	2.2(6)	^{183}W	453.1
359.4(4)	1.8(4)	^{184}W	
365.7(3)	1.6(4)	^{183}W	412.1
384.0(2)	12(3)	^{184}W	748.3
412.6(5)	7(2)	^{186}W	808.5
418.4(3)	7.3(15)	^{184}W	1322.1
		^{186}W	1463.0
465.5(3)	2.7(5)	^{186}W	861.8
537.0(3)	3.5(7)	^{184}W	1285.0
545.3(4)	5.0(10)	^{182}W	(1765.4)
		^{186}W	(1284.0)
556.1(3)	0.9(3)		
579.9(2)	1.6(3)	^{186}W	
609.7(8)	9(3)	^{186}W	1006.3
615.20(15)	61(5)	^{186}W	737.5
633.8(2)	4.6(15)	^{186}W	1031.5
641.9(2)	3.3(3)	^{184}W	1006.0
652.9(5)	1.1(4)		
679.6(5)	2.0(4)	^{186}W	
684.3(5)	2.3(4)	^{186}W	
708.5(6)	2.1(8)		
714.8(5)	1.8(5)	^{186}W	
724.4(3)	2.8(6)	^{182}W	1981.8
		^{184}W	1627.7

E_γ	I_γ	^AZ	E_i^a
738.7 *m*	100	^{186}W	737.5
			861.8
760.0 *m*	15(2)	^{184}W	1121.4
		^{186}W	882.0
769.5(2)	8.6(7)	^{184}W	1133.8
792.07 *c*	47(4)	^{184}W	903.3
801.2(2)	3.3(7)		
807.5(4)	3.2(6)	^{186}W	
816.8(2)	1.2(4)	^{182}W	2148.0
858.1(2)	2.1(4)		
883.9(5)	5.6(18)	^{186}W	1006.3
888.0 *m*	10(3)	^{184}W	1003.0
894.6(2)	48(5)	^{184}W	1006.0
903.2(2)	45(4)	^{184}W	903.3
907.5(5)	9(3)	^{186}W	1031.5
921.3(2)	6.0(7)	^{184}W	1285.0
929.2 *m*	7.4(8)	^{182}W	1257.4
		^{184}W	1294.1
942.6(4)	2.1(4)	^{182}W	1623.6
953.2(4)	1.3(3)		
960.3(4)	1.3(3)	^{182}W	
968.9(4)	1.0(3)	^{186}W	
996.0(3)	2.9(5)	^{184}W	
1002.4(4)	3.3(5)	^{182}W	1331.2
1010.4(2)	7.5(9)	^{184}W	1121.4
1022.4(2)	5.9(9)	^{184}W	1133.8
1029.3(5)	3.9(6)	^{186}W	1150.0
1035.5(2)	6.8(8)	^{182}W	1135.6
1061.8 *m*	2.6(5)	^{186}W	1456.8
1076.2(4)	0.9(3)	^{182}W	1756.8
1100.7(8)	0.7(3)	^{182}W	1331.2
1112.7 *m*	5.4(15)	^{182}W	1442.9
		^{184}W	1221.3
1121.4(2)	30(3)	^{182}W	1121.4
1157.6(4)	5.5(8)	^{182}W	1257.4
1162.5 *m*	4.1(6)	^{184}W	
		^{186}W	1284.0
1174.8(5)	2.0(6)	^{184}W	1285.0
		^{186}W	1298.2
1180.8(3)	2.8(7)	^{182}W	1510.3
1189.2(2)	6.8(7)	^{182}W	1289.2
1210.8(4)	1.5(5)		
1221.45(15)	22(3)	^{182}W	1221.4
1230.90(15)	17(2)	^{182}W	1331.2
1257.8 *m*	10.5(12)	^{182}W	1257.4
		^{184}W	
1275.3(2)	5.3(6)	^{184}W	1386.3





E_γ	I_γ	^AZ	E_i^a	E_γ	I_γ	^AZ	E_i^a
1285.4(4)	3.4(8)	^{186}W	1284.0	1614.1(7)	0.9(3)	^{182}W	
1293.9 *m*	4.0(8)	^{182}W	1623.6	1629.4(5)	3.0(6)	^{182}W	1959.3
1313.8(5)	4.3(10)	^{184}W	1425.0	1733.3(6)	1.2(3)	^{182}W	(1833.1)
			1676.5	1745.6(6)	1.2(2)	^{182}W	
1319.6(4)	3.7(10)	^{184}W	1431.0	1756.2(4)	2.8(3)	^{182}W	1856.1
			1682.7	1769.5(8)	0.7(3)		
1334.1 *m*	2.8(9)	^{186}W	1456.8	1797.2(8)	1.1(3)		
1342.6(5)	2.3(8)	^{182}W	1442.9	1817.3(8)	2.6(6)	^{182}W	1918.5
1386.6(4)	3.0(6)	^{184}W	1386.3	1836.8(8)	0.9(4)		
1411.4 *m*	6.3(7)	^{182}W, ^{184}W,		1856.7(4)	3.7(8)	^{182}W	1856.7
		^{186}W		1869.9(6)	1.7(4)	^{182}W	1870.9
1426.4(4)	1.4(3)	^{182}W	1756.8	1878.0 *m*	1.8(4)	^{182}W	2206.7
1432.1(4)	2.1(3)	^{184}W	1431.0				2209.2
1440.1(4)	2.7(4)	^{182}W, ^{186}W		1912.6(10)	0.7(3)		
1473.6(8)	0.7(3)			1948.9 *m*	3.8(8)	^{184}W	2062.8
1485.3(5)	0.8(3)			1983.8(8)	0.8(4)	^{186}W	
1503.2 *m*	1.8(6)	^{182}W		1995.2(8)	2.0(6)	^{184}W	1996.3
		^{184}W	1614.9	2004.4 *m*	1.2(6)	^{184}W	
1509.7 *m*	1.5(6)	^{182}W		2014.5(8)	2.0(5)	^{184}W	2126.7
1523.1 *m*	0.9(3)			2048.8(8)	0.9(4)	^{182}W	2148.0
1530.2(5)	1.0(3)			2057.7(8)	0.9(4)	^{182}W	2057.4
1555.8(6)	0.8(4)					^{184}W	2056.5
1562.5(6)	1.8(7)						2168.2
1570.9(6)	1.5(5)	^{184}W	1682.7	2166.6(8)	1.0(4)		
1586.5(4)	2.3(4)	^{186}W		2184.0(8)	1.2(4)		
1599.2(7)	1.4(5)	^{186}W	1721.2				

The E_i^a data are taken from [75Bu3] for ^{183}W.

Tungsten-182 $^{182}_{74}$W

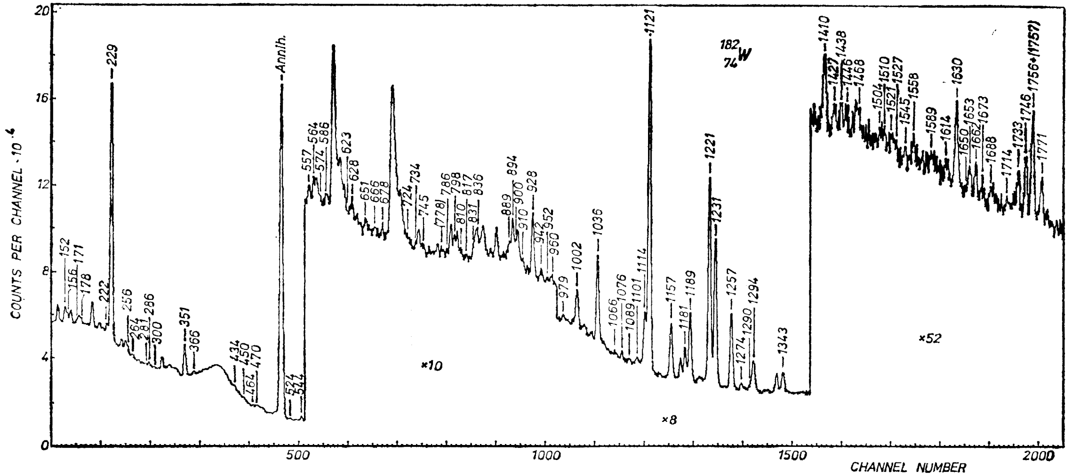
E_γ	I_γ	E_i	E_γ	I_γ	E_i
67.8(5)	—	1289.2	286.3(2)	1.2(4)	1660.2
100.0(3)	1857(360)	100.1	300.4(3)	0.98(36)	
152.4(2)	41(9)	1373.9	351.04 *c*	38(5)	680.5
156.5(4)	17(5)	1487.6	365.6(2)	2.9(7)	
170.6(8)	2.5(7)		434.3(2)	2.9(7)	(1765.5)
178.2(5)	11(4)	1621.4	449.8(3)	1.6(7)	1959.3
		1553.2	463.9(4)	2.5(7)	1144.4
221.7(3)	8.0(27)	1553.2	470.4(5)	2.7(9)	2023.6
229.20(15)	296(30)	329.3	524.2(3)	2.9(5)	
256.2(3)	4.8(14)		544.20(15)	5.9(9)	(1765.5)
264.0(2)	3.0(5)	1553.2	556.7(3)	1.8(5)	1887.8
280.6(3)	2.0(7)	1768.2	564.0(8)	3.8(9)	

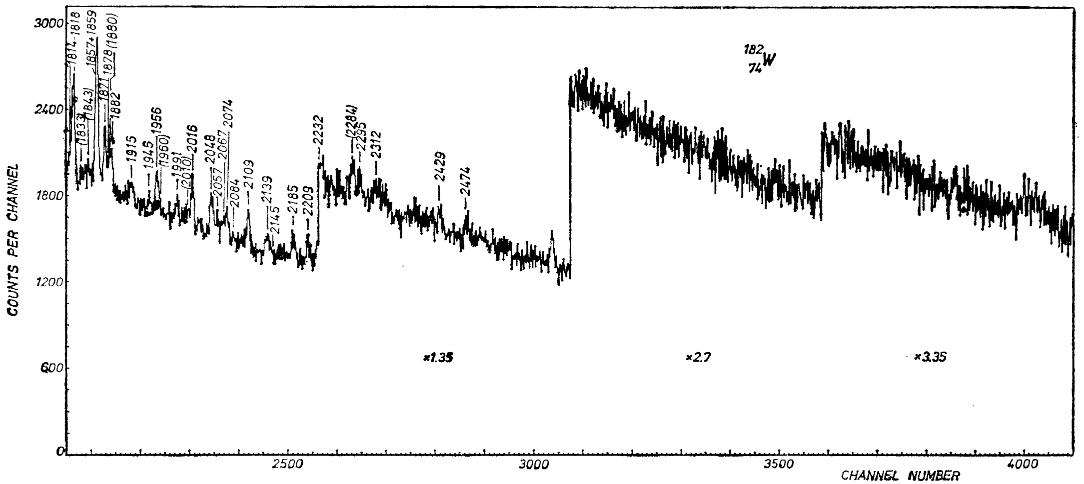
E_γ	I_γ	E_i	E_γ	I_γ	E_i
573.8(8)	1.2(4)		1468.0(10)	1.8(5)	
586.0(8)	0.71(27)		1503.8(10)	1.1(5)	
622.8(8)	1.1(4)		1510.4(10)	1.1(5)	
627.5(4)	3.8(7)	1959.3	1521.0(10)	1.1(4)	
650.7(3)	1.8(5)	1981.8	1527.0(10)	0.54(27)	1856.2
666.4(4)	0.98(36)	1887.8	1544.8(8)	1.2(4)	
678.2(6)	1.6(4)		1558.5(4)	2.1(5)	1887.8
723.8(7)	0.79(27)	1981.8	1588.7(10)	1.2(5)	
733.5(8)	0.71(36)	2023.6	1614.0(10)	1.6(5)	
744.6(8)	2.0(5)		1629.8(2)	7.5(11)	1959.3
777.6(10)?	0.78(36)		1649.7(10)	1.1(4)	
786.5(10)	0.54(27)	2274.3	1653.1(8)	2.5(7)	1981.8
798.2(4)	3.2(7)		1662.2(5)	3.2(7)	
809.5(8)	0.71(36)	2184.3	1672.6(10)	1.5(5)	
817.0(10)	0.98(36)	2148.1	1688.3(10)	1.6(5)	
831.0(10)	2.9(7)	(1510.2)	1714.0(10)	0.9(4)	
835.9(6)	1.1(4)	2209.2	1733.0(6)	2.3(5)	
888.8(5)	2.3(5)		1745.6(4)	4.6(9)	
894.3(8)	4.3(21)	2184.3	1756.1(3)	8.9(21)	1856.2
900.5(8)	3.6(7)	2274.3	1757.0(6)?	2.7(7)	1856.7
909.7(6)	1.6(7)	2283.6	1771.1(4)	3.6(7)	1871.1
927.9(2)	16(2)	1257.5	1813.6(10)	2.6(7)	
942.5(5)	4.1(5)	1623.4	1818.5(4)	8.4(12)	1918.6
952.3(6)	0.98(27)	2173.9	1833.0(20)?	0.54(36)	
959.6(3)	2.3(5)		1843.0(20)?	0.71(27)	
979.1(4)	1.6(4)		1856.7(6)	7.7(18)	1856.7
1001.6(2)	12.7(13)	1331.1	1859.1(8)	5.4(18)	1959.3
1035.60(12)	28(3)	1135.7	1871.1(5)	3.8(7)	1871.1
1066.0(10)	0.54(27)		1877.5(8)	1.5(5)	2206.9
1075.8(5)	2.3(5)	1756.3	1879.6(10)?	1.1(11)	2209.2
1088.6(4)	0.89(27)		1881.8(8)	3.0(5)	1981.8
1101.1(3)	1.8(4)		1915.3(12)	1.6(5)	
1113.5(3)	17(2)	1442.9	1944.6(8)	1.1(5)	
1121.32 *c*	100	1221.4	1956.4(8)	3.2(9)	
1157.42(12)	19.1(14)	1257.5	1960.2(10)?	1.0(4)	1959.3
1180.7(2)	13.4(9)	1510.2	1990.7(8)	1.6(5)	
1189.08(10)	26(2)	1289.2	2010.2(8)	0.64(36)	2110.3
1221.45(10)	79(4)	1221.4	2016.0(6)	4.1(9)	2016.0
1231.03(10)	59(3)	1331.1	2048.0(8)	3.8(7)	2148.1
1257.45(15)	30(2)	1257.5	2057.4(10)	1.4(5)	2057.4
1273.8(3)	2.3(4)	1373.9	2067.0(10)	2.0(7)	
1289.5(8)	2.7(7)	1289.2	2074.0(8)	2.3(5)	2173.9
1294.0(3)	11.8(12)	1623.4	2084.2(10)	0.36(18)	2184.3
1342.8(2)	8.9(9)	1442.9	2109.1(4)	3.2(5)	2209.2
1410.4(3)	6.6(7)	1510.2	2139.4(10)	2.0(5)	2239.5
1426.9(5)	2.1(5)	1756.3	2145.4(12)	1.3(5)	
1438.1(4)	2.7(5)		2185.4(10)	2.1(5)	
1446.1(8)	2.0(5)		2208.8(6)	2.5(5)	2209.2

E_γ	I_γ	E_i	E_γ	I_γ	E_i
2231.7(12)	1.2(4)		2312.0(20)	1.2(5)	
2283.5(10)	2.5(7)	2283.6	2428.6(10)	2.1(7)	
2294.7(12)	1.6(5)		2474.0(20)	1.2(5)	

Level scheme of ^{182}W [75De5, 75Sc1]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
100.0(3)	100.1064	2+0	100.0	1857	0	0+0
329.31(15)	329.423	4+0	229.20	296	100.1	2+0
680.46(10)	680.50	6+0	351.04	38	329.3	2+0
1135.71(12)	1138	0+0	1035.60	28	100.1	0+0
1144.4(4)	1144.5	(8+)0	463.9	2.5	680.5	6+0
1221.44(10)	1221.43	2+2	1221.45	79	0	0+0
			1121.32	100	100.1	2+0
1257.49(15)	1257.43	2+0	1257.45	30	0	0+0
			1157.42	19.1	100.1	2+0
			927.9	16	329.3	4+0
1289.19(10)	1289.18	2−2	1289.5	2.7	0	0+0
			1189.08	26	100.1	2+0
			67.8	—	1221.4	2+2
1331.13(10)	1331.16	3+2	1231.03	59	100.1	2+0
			1001.6	12.7	329.3	4+0
1373.9(2)	1373.86	3−2	1273.8	2.3	100.1	2+0
			152.4	41	1221.4	2+2
1442.9(2)	1442.89	4+2	1342.8	8.9	100.1	2+2
			1113.5	17	329.3	4+0
1487.6(4)	1487.54	4−2	156.5	17	1331.1	3+2
1510.2(2)	1510.26	4+0	1410.4	6.6	100.1	2+0
			1180.7	13.4	329.3	4+0
			831.0?	2.9	680.5	6+0
1553.2(2)	1553.26	4−4	264.0	3.0	1289.2	2−2
			221.7	8.0	1331.1	3+2
			178.2	11	1373.9	3−2
—	1621.37	(5−)2	178.2	11	1442.9	4+2
1623.4(3)	1623.64	(5+)2	1294.0	11.8	329.3	4+0
			942.5	4.1	680.5	6+0
1660.2(3)	1660.46	(5−)4	286.3	1.2	1373.9	3−2
—	1712.1	(10+)	—	—	—	—
1756.3(5)	1756.84	6+6	1426.9	2.1	329.3	4+0
			1075.8	2.3	680.5	6+0
1765.5(3)?	—	[3−3]?	544.20	5.9	1221.4	2+2
			434.3	2.9	1331.1	3+2
—	1768.71	(6+)	—	—	—	—
1768.2(5)	1769.03	(6−)4	280.6	2.0	1487.6	4−2
—	1809.77	(5)−	—	—	—	—
—	1811.00	(6−)	—	—	—	—
—	1829.61	(6)−	—	—	—	—
1856.2(3)	1856.0	[1+, 2+, 3+]	1756.1	8.9	100.1	2+0
			1527.0	0.54	329.3	4+0
1856.7(6)	1857.0	[2+2]	1856.7	7.7	0	0+0
			(1757.0)	2.7	100.1	2+0
1871.1(5)	1870.9	1−[1]	1871.1	3.8	0	0+0
			1771.1	3.6	100.1	2+0
1887.8(4)	1889	[3−1]?	1558.5	2.1	329.3	4+0
			666.4	0.98	1221.4	2+2
			556.7	1.8	1331.1	3+2
—	1916.0	(7−)	—	—	—	—
1918.6(5)	—	[2−1]?	1818.5	8.4	100.1	2+0
1959 *m*	1961	3+2 and 2+0	(1960.2)	1.0	0	0+0
			1859.1	5.4	100.1	2+0
			1629.8	7.5	329.3	4+0
			627.5	3.8	1331.1	3+2
			449.8	1.6	1510.2	4+0
—	1960.43	5, 6, 7−	—	—	—	—
—	1960.92	(5, 6) −7−	—	—	—	—
—	1978.46	—	—	—	—	—
1981.8(5)	1985	[3+2]?	1881.8	3.0	100.1	2+0
			1653.1	2.5	329.3	4+0
			723.8	0.79	1257.5	2+0
			650.7	1.8	1331.1	3+2
—	1983.01	5, 6, 7+	—	—	—	—
2016.0(6)	2016	—	2016.0	4.1	0	0+0
2023.6(6)	2023.6	3−3	733.5	0.71	1289.2	2−2
			470.4	2.7	1553.2	4−4
2057.4(10)	2057.4	(2−)	2057.4	1.4	0	0+0
2110.3(8)	2109.5	—	(2010)	0.64	100.1	2+0
—	2131	(7−)	—	—	—	—
2148.1(8)	2147.5	—	2048.0	3.8	100.1	2+0
			817.0	0.98	1331.1	3+2
2173.9(6)	2171	—	2074.0	2.3	100.1	2+0
			952.3	0.98	1221.4	2+2
2184.3(8)	2184.1	(2, 3) −	2084.2	0.36	100.1	2+0
			894.3	4.3	1289.2	2−2
			809.5	0.71	1373.9	3−2
2206.9(8)	2207	(3) −	1877.5	1.5	329.3	4+0
2209.2(4)	2208.9?	(2+)	2208.8	2.5	0	0+0
			2109.1	3.2	100.1	2+0
			(1879.6)	1.1	329.3	4+0
			835.9	1.1	1373.9	3−2
—	2230.6	(9, 10) +	—	—	—	—
2239.5(10)	2240.7	(2+)	2139.4	2.0	100.1	2+0
2274.3(9)	2274.5	(3−)	900.5	3.6	1373.9	3−2
			786.5	0.54	1487.6	4−2
2283.6(7)	2284	—	2283.5	2.5	0	0+0
			909.7	1.6	1373.9	3−2





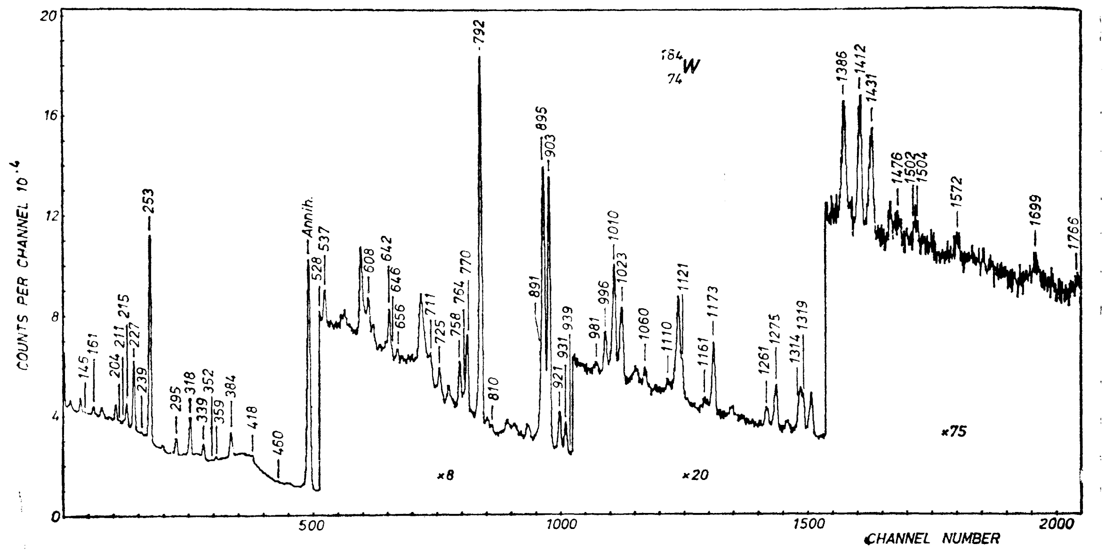
E_γ	I_γ	E_i
111.21(10)	859(150)	111.2
146.0(4)	1.8(7)	
161.27(10)	6(3)	1446.4
203.5(5)	3.2(8)	1424.8
210.7(5)	7(2)	
215.21(10)	35(9)	1221.3
		1345.4
226.74(10)	104(15)	1130.0
238.8(6)	1.8(5)	1360.4
252.850 *c*	280(50)	364.0
295.35(10)	21(7)	1424.8
		1580.4
318.04(10)	57(9)	1221.3
339.45(10)	19(6)	1345.4
352.0(5)	1.7(5)	
359.4(3)	4.8(9)	
384.27(10)	35(4)	748.3
418.4(6)	4(2)	1321.7
460.2(5)	2.0(8)	1745.3
527.8(4)	1.3(4)	1661.6
536.85(10)	6.4(14)	1285.1
607.9(4)	3.7(9)	1613.9
641.915 *c*	11(2)	1006.0
646.4(6)	1.8(8)	
655.5(3)	3.0(9)	1661.6
		1876.8
711.0(5)	7(3)	1613.9
		1615.2
724.7(2)	8.4(17)	1628.0
757.6(3)	12(2)	1121.6
		1661.6
763.6(6)	3.8(15)	(1894.0)
769.7(2)	23(5)	1133.8
		1774.8
792.08(10)	118(12)	903.3
810.4(3)	1.5(4)	1713.7
891.4(15)	18(6)	1002.6
894.77(10)	102(20)	1006.0
903.282 *c*	100	903.3
921.00(10)	13(2)	1285.1
930.87(10)	9.7(19)	1294.9
938.9(8)	0.9(3)	

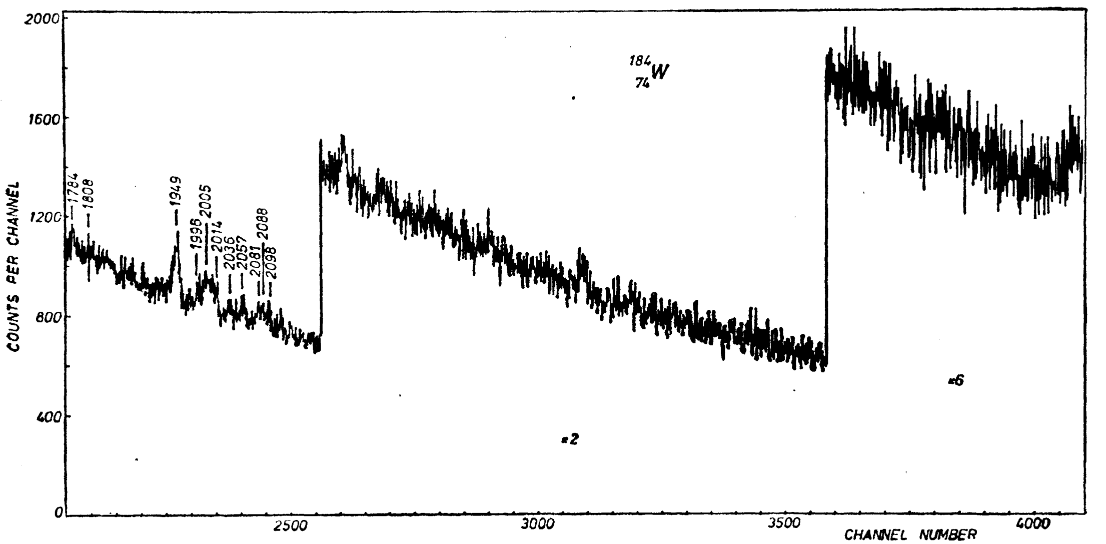
E_γ	I_γ	E_i
981.1(5)	2.3(9)	1345.4
996.3(2)	7.5(15)	1360.4
		1225.2
1010.4(3)	23(5)	1121.8
1022.6(2)	16(4)	1133.8
1060.5(10)	2.0(8)	1424.8
1110.4(3)	6(2)	1221.3
1121.4(10)	5(2)	1121.8
1160.6(6)	5(2)	
1173.4(10)	4.0(15)	1285.1
		(1536.9)
1211.0(10)	$\leqslant$0.3	1321.7
1260.6(5)	4.4(7)	
1275.2(2)	9.7(9)	1386.4
1313.6(5)	9(3)	1424.8
		1677.6
1319.3(5)	9(3)	1431.0
		(1682.7)
1386.4(2)	6.8(7)	1386.4
1412.4(2)	8.5(8)	1523.6
		1774.8
1431.0(4)	8(3)	1431.0
1475.7(8)	1.5(8)	
1501.8(9)	0.9(4)	1613.9
1504.0(9)	0.9(4)	1615.2
1530.5(8)	0.6(3)	(1894.0)
1571.5(8)	1.8(9)	(1682.7)
1699.1 *m*	1.0(6)	1809.3
1766.5(15)	0.9(6)	1877.7
1783.6(6)	1.4(4)	(1894.0)
1808.4(10)	1.0(5)	1809.3
1949.1 *m*	4.2(15)	2062.8
1995.9(15)	2.3(9)	1995.9
2004.6 *m*	3.5(9)	
2014.0(10)	1.2(4)	2125.2
2035.7(12)	1.2(5)	2035.7
2056.6(14)	1.8(7)	2056.5
		2168.2
2080.6(16)	1.1(6)	
2087.5(16)	1.6(8)	
2097.7(16)	1.8(9)	2097.7

Level scheme of ^{184}W [75Bu1, 74Gr2, 74Mc2, 73Ya, 75Ca1]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
111.21(10)	111.207	2+0	111.21	859	0	0+0	2400*
364.06c	364.055	4+0	252.850c	280	111.2	2+0	200*
748.33(10)	748.309	6+0	384.27	35	364.0	4+0	30*
903.29(10)	903.283	2+2	903.282c	100	0	0+0	28*
			792.08	118	111.2	2+0	
1002.6(15)	1002.49	0+0	891.4	18	111.2	2+0	18*
1005.98(10)	1005.968	3+2	894.77	102	111.2	2+0	41*
			641.915c	11	364.0	4+0	
1121.6(2)	1121.438	2+0	1121.4	5	0	0+0	35*
			1010.4	23	111.2	2+0	
			757.6	12	364.0	4+0	
1130.03(10)	1130.029	2−2	226.74	104	903.3	2+2	90
1133.8(2)	1133.840	4+2	1022.6	16	111.2	2+0	32
			769.7	<23	364.0	4+0	
1221.27(10)	1221.292	3−2	1110.4	6	111.2	2+0	74*
			318.04	57	903.3	2+2	
			215.21	<35	1006.0	3+2	
—	1283.6	0−, 1−, 2−	161.27?	<6	1121.6	2+0	<6
1285.10(10)	1284.991	5−5	1173.4	<4.0	111.2	2+0	<39*
			921.00	13	364.0	4+0	
			536.85	6.4	748.3	6+0	
1294.93(10)	1294.06	5+2	930.87	9.7	364.0	4+0	9.7
—	1319.96	—	—	—	—	—	
1321.7(6)	1322.13	0+0	1211.0	≤0.3	111.2	2+0	4
			418.4	4	903.3	2+2	
1345.43(10)	1345.35	4−2	981.1	2.3	364.0	4+0	31*
			339.45	19	1006.0	3+2	
			215.2	<35	1130.0	2−2	
1360.4(6)	1359	([4+0])	996.3	≤7.5	364.0	4+0	<9*
			238.8	1.8	1121.6	2+0	
—	1381	1+	—	—	—	—	
1386.4(2)	1386.327	2+2	1386.4	6.8	0	0+0	18*
			1275.2	9.7	111.2	2+0	
1424.8(6)	1425.011	3+3	1313.6	<9	111.2	2+0	29*
			1060.5	2.0	364.0	4+0	
			295.35	<21	1130.0	2−2	
			203.5	3.2	1221.3	3−2	
1431.0(4)	1431.02	2+0	1431.0	8	0	0+0	17
			1319.3	<9	111.2	2+0	
1446.4(2)	1446.260	6−5	161.27	≤6	1285.1	5−5	≤6
—	1501.538	7−7	—	—	—	—	—
1523.6	1523.26	3+2	1412.4	<8.5	111.2	2+0	7*
—	1536.88	4+3	1173.4?	<4.0	364.0	4+0	<6*
—	1581.44	6−	295.35	≤21	1285.1	5−5	—
1613.9(9)	1613.40	1+1	1501.8	0.9	111.2	2+0	<12*
			711.0	<7	903.3	2+2	
			607.9	3.7	1006.0	3+2	

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
1615.2(9)	1614.90	0+0	1504.0	0.9	111.2	2+0	<7.9*
			711.0	<7	903.3	2+2	
1628.0(2)	1627.69	2+1	724.7	8.4	903.3	2+2	8.4
—	1635	7−	—	—	—	—	—
1661.6(3)	—	([4+0])	1550.4	≤0.5	111.2	2+0	5.2*
			757.6	<12	903.3	2+2	
			655.3	<3.0	1006.0	3+2	
			527.8	1.3	1133.8	4+2	
1677.6	1676.51	5+3	1313.6	<9	364.0	4+0	<9
1682.7(9)?	—	([4+2])	1571.5	1.8	111.2	2+0	<11
			1319.3	<9	364.0	4+0	
—	1696	4+	—	—	—	—	—
—	1698.99	(5+, 4+)	—	—	—	—	—
1713.7(3)	1713.42	1+1	810.4	1.5	903.3	2+2	1.5
1745.3(5)	1746.02	5− (6±)	460.2	2.0	1285.1	5−5	2.0
—	1754	4+	—	—	—	—	—
—	1772	—	—	—	—	—	—
—	1774.82	2+2	1412.4	<8.5	364.0	4+0	<11*
			769.7	<23	1006.0	3+2	
—	1796	7−	—	—	—	—	—
1808.4(10)	1808.50	2+0	1808.4	1.0	0	0+0	≤2.0*
			1699.1	<1.0	111.2	2+0	
—	1846.6?	—	—	—	—	—	—
—	1860	>0	—	—	—	—	—
1877.7(15)	1877.0	2+2	1766.5	0.9	111.2	2+0	1.2*
			655.5	<3.0	1221.3	3−2	
1894.0(6)?	—	([3+2])	1783.6	1.4	111.2	2+0	5.8
			1530.5	0.6	364.0	4+0	
			763.6	3.8	1130.0	2−2	
—	1901	—	—	—	—	—	—
—	1909	—	—	—	—	—	—
—	1921	—	—	—	—	—	—
1995.9(15)	1996.3	(1−)	1995.9	2.3	0	0+0	2.3
—	2013.2	0+, 2+	—	—	—	—	—
	2031.0	0+, 2+					
2035.7(12)	2036.0	1+, 2+	2035.7	1.2	0	0+0	1.2
—	2056.5	1−	2056.6	<1.8	0	0+0	<1.8
—	2062.8	0+, 2+	1949.1	<4.2	111.2	2+0	<4.2
—	2074.0	0−, 2−	—	—	—	—	—
—	2084.8	0−, 2−	—	—	—	—	—
—	2090.0	1−	—	—	—	—	—
2097.7(16)	2098.0	1+	2097.7	1.8	0	0+0	1.8
—	2104.8	(0+, 1+, 2+)	—	—	—	—	—
—	2111.2	0+, 2+	—	—	—	—	—
2125.2(10)	2126.7	0+, 2+	2014.0	1.2	111.2	2+2	2.4*
			996.3	<7.5	1130.0	2−2	
—	2168.2	1+	2056.6	<1.8	111.2	2+0	<1.8





Tungsten-186

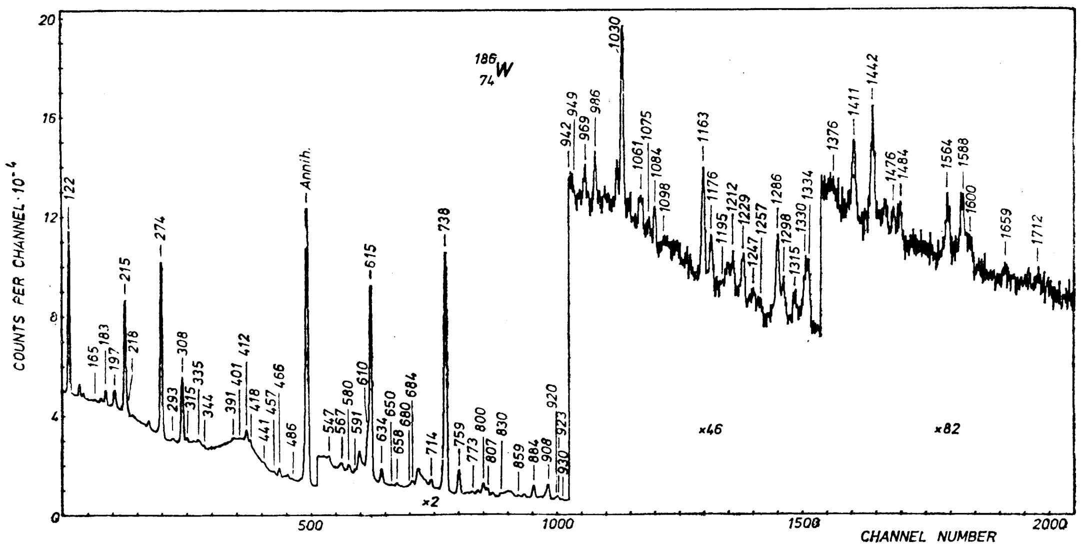
$^{186}_{74}$W

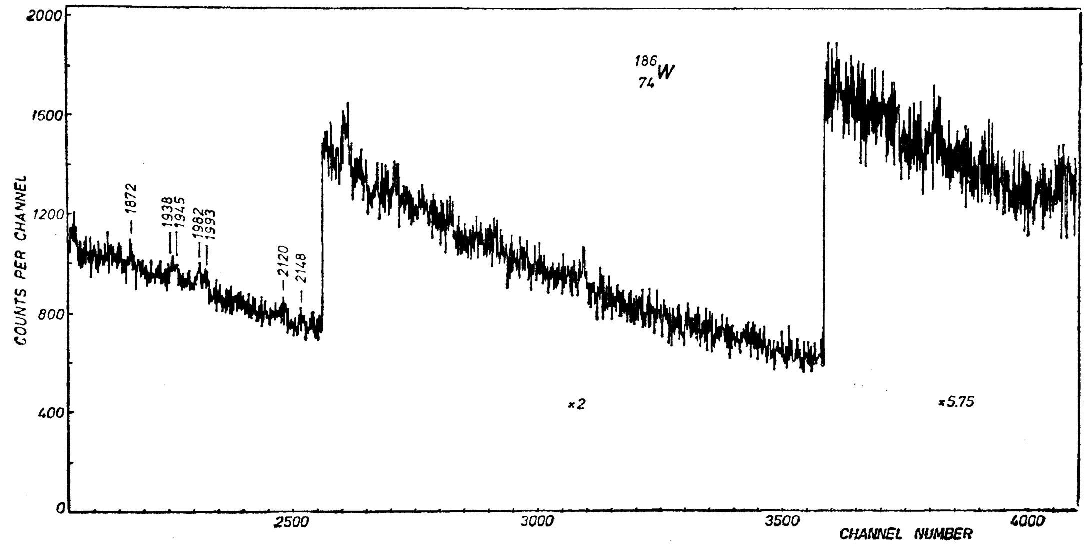
E_γ	I_γ	E_i
122.30(10)	168(45)	122.3
164.8(3)	2.6(5)	
183.0(3)	9(2)	1044.9
197.4(5)	1.6(7)	1660.8
214.6(3)	54(15)	952.2
218.0(5)	4.0(12)	(1169.5)
273.94(10)	76(15)	396.2
292.6(3)	1.2(2)	1030.0
		(1298.6)
308.0 *m*	31(3)	1044.9
		(1169.5)
		(1607.7)
315.4(3)	2.2(4)	1321.8
335.0(3)	1.1(3)	
343.6(4)	0.8(3)	
391.3(4)	1.2(4)	
401.2(4)	0.67(27)	
412.2(3)	4.0(8)	808.4
418.4(5)	1.8(4)	1463.4
440.9 *m*	0.9(3)	1321.8
456.9(4)	1.3(4)	1463.4
465.56(10)	3.9(6)	861.8
486.5(4)	0.5(2)	
547.3(3)	1.6(3)	(1285.8)
567.0(8)	2.7(9)	1519.7)
579.7(2)	2.2(7)	(1317.3)
590.6(9)	0.7(3)	1399.0
610.1(5)	9(3)	1006.4
615.30(10)	59(7)	737.6
633.7(4)	4.8(8)	1030.0
649.6(10)	0.21(8)	1044.9
658.4(3)	0.3(2)	1519.7
679.5(10)	0.9(4)	
683.8(10)	2.2(9)	(1545.2)
714.4(2)	2.4(4)	
738.4 *m*	100	737.5
		861.8
759.40(10)	9.1(9)	881.7
773.3(5)	1.5(8)	(1169.5)
799.8(4)	3.3(7)	1660.8
807.1(15)	3.1(8)	(1545.2)
830.0(4)	1.3(4)	952.2
858.9(10)	0.6(3)	1721.3
884.11(10)	5.8(6)	1006.4
907.7(2)	7(2)	1030.0

E_γ	I_γ	E_i
919.9(15)	1.0(4)	(1317.3)
922.8(6)	2.4(8)	1044.9
930.4(8)	0.64(28)	
941.7(5)	0.53(24)	
948.6(5)	0.36(14)	
968.8(6)	0.7(3)	
985.8(5)	0.9(4)	
1030.4(2)	4.6(5)	1152.7
1060.8 *m*	1.1(4)	(1456.6)
1074.6(8)	0.4(2)	
1083.8(4)	0.9(4)	
1098.4(15)	0.4(2)	
1163.3(2)	3.2(4)	1285.8
1176.3(2)	1.5(3)	1298.6
1194.9(15)	0.30(12)	(1317.3)
1212.0(5)	1.2(4)	1607.7
1228.9(3)	1.5(3)	(1625.1)
1246.8(6)	0.6(2)	
1257.2(7)	0.4(2)	
1286.1(3)	2.6(5)	1285.8
1298.0(15)	0.4(2)	1298.6
1314.8(5)	0.8(4)	
1329.6(15)	1.1(4)	
1334.3(10)	2.3(9)	(1456.6)
1376.0 *m*	0.4(2)	
1411.1(3)	1.7(4)	
1441.5(2)	2.3(5)	
1475.8(8)	0.6(3)	
1483.8(8)	0.8(4)	1607.7
1564.1(10)	1.4(4)	
1587.9 *m*	2.0(6)	
1599.6(16)	1.0(5)	1721.3
1658.7(19)	0.4(2)	
1711.9(8)	0.4(2)	
1871.8(10)	0.4(2)	
1937.9(10)	0.5(2)	
1945.1(17)	0.5(2)	
1982.0(15)	0.6(2)	
1992.7(17)	0.6(3)	1992.7
2120.1(10)	0.5(2)	
2148.1(15)	0.4(2)	

Level scheme o ^{18}W [74Sc]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
122.30(10)	122.30	2+0	122.30	168	0	0+0	460*
396.24(10)	396.47	4+0	273.94	76	122.3	2+0	57*
737.60(10)	737.54	2+2	738.4	<100	0	0+0	>43*
			615.30	59	122.3	2+0	
808.4(3)	808.47	6+0	412.2	4.0	396.2	4+0	3.3
861.80(10)	861.78	(3+)2	738.4	<100	122.3	2+0	16*
			465.56	3.9	396.2	4+0	
881.70(10)	882.0	[0+0]	759.40	9.1	122.3	2+0	8.2
952.2(3)	952.42	[2-2]	214.6	54	737.6	2+2	44*
			830.0	1.3	122.3	2+0	
1006.4(2)	1006.30	2+0	884.11	5.8	122.3	2+0	12*
			610.1	9	396.2	4+0	
—	1014.65	—	—	—	—	—	—
1030.0(2)	1031.5	4+2	292.8	⩽1.2	737.6	2+2	⩽13*
			633.7	4.8	396.2	4+0	
			907.7	7	122.3	2+0	
1044.9(2)	1045.06	3-2	183.0	9	861.8	3+2	35*
			308.0	<31	737.6	2+2	
			649.6	0.21	396.2	4+0	
			922.8	2.4	122.3	2+0	
1152.7(2)	1150	[0+0]	1030.4	4.6	122.3	2+0	4.6
1169.5(5)?	—	([4-2])	773.3	1.5	396.2	4+0	19*
			308.0?	<31	861.8	3+2	
			218.0	4	952.2	2-2	
—	1279.0	—	—	—	—	—	—
1285.8(4)	1284.0	2+(0)	547.3?	1.6	737.6	2+2	⩾5.8
			1163.3	3.2	122.3	2+0	
			1286.1	2.6	0	0+0	
1298.6(4)	1298.2	(2+)	292.6?	<1.2	1006.4	2+0	3*
			1176.3	1.5	122.3	2+0	
			1298.0	0.4	0	0+0	
1317.3(3)?	—	([4+0])	579.7	2.2	737.6	2+2	3.5
			·919.9	1.0	396.2	4+0	
			1194.9	0.30	122.3	2+0	
1321.8(3)	1321.9	(2+)	315.4	2.2	1006.4	2+0	5.2*
			440.9	0.9	881.7	0+0	
1399.0(9)	1396	—	590.6	0.7	808.4	6+0	0.7
1456.6(15)?	—	[2+, 3±, 4+]	1060.8	<1.1	396.2	4+0	<3.4
			1334.3	2.3	122.3	2+0	
1463.4(3)	1463.0	3,4-	418.4	1.8	1045.0	3-2	8.5*
			456.9	<1.3	1006.4	2+0	
1519.7(8)	1519.8	(2+)	567.0	2.7	952.2	[2-2]	4.1
			658.4	0.3	861.8	(3+)2	
1545.2(10)?	—	—	683.8	2.2	861.8	(3+)2	5.3
			807.1	3.1	737.6	2+2	
1607.7(6)	1607.4	(3, 4)	308.0	⩽31	1298.6	(2+)	⩾2.0
			1212.0	1.2	396.2	4+0	
			1483.8	0.8	122.3	2+0	





E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$	P_s
1625.1(4)?	1628.3	—	1228.9	1.5	396.2	4+0	1.5
—	1640	—	—	—	—	—	—
1660.8(5)	1661.0	(3+)	197.4	1.6	1463.4	3,4−	1.7*
			799.8	⩽3.3	861.8	3+2	
—	1678	—	—	—	—	—	—
1721.3(9)	1721	—	858.9	0.6	861.8	(3+)2	1.6
			1599.6	1.0	122.3	2+0	
—	1829.0	(2+)	—	—	—	—	—
1992.7(7)	1992	—	1992.7	0.6	0	0+0	0.6

Rhenium $_{75}$Re

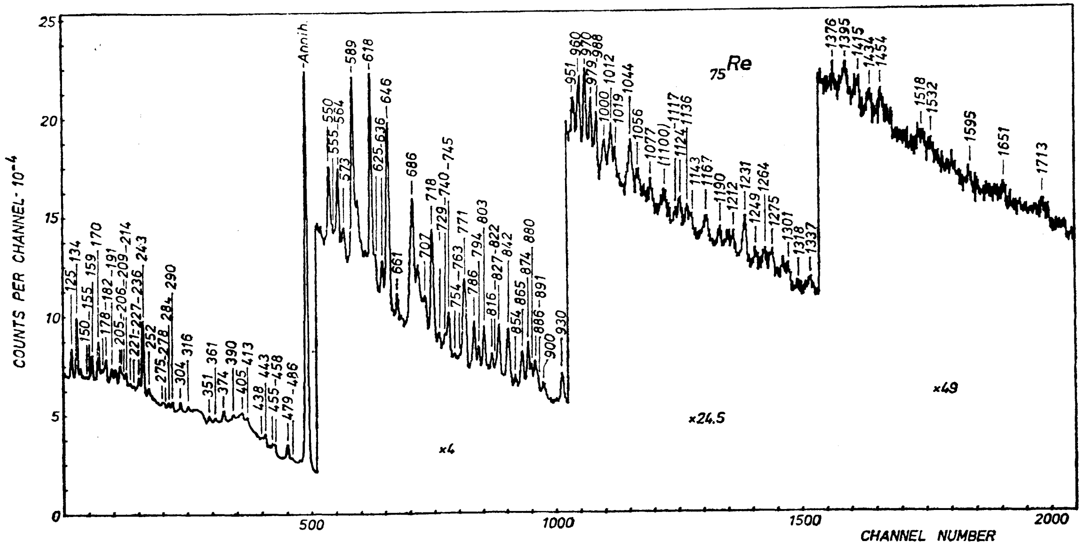
E_γ	I_γ	^AZ	E_i
125.40(15)	331(40)	^{185}Re	125.4
134.247*c*	484(60)	^{187}Re	134.2
149.5(6)	8(3)	(*n*, γ)	
154.8(8)	16(5)	^{187}Re	772.9
159.0(2)	105(12)	^{185}Re	284.3
169.7(2)	149(18)	^{187}Re	303.9
177.7(10)	38(12)	^{185}Re	546.0
182.1(3)	80(10)	^{187}Re	388.3
191.3(3)	35(4)	^{185}Re	475.5
205.0(6)	22(5)	^{187}Re	508.7
206.3(6)	18(6)	^{187}Re	206.2
209.4(8)	16(5)	(*n*, γ)	
214.5(3)	24(4)	(*n*, γ)	
221.4(6)	5.3(18)	^{185}Re	697.2
227.3(7)	3.3(16)		
236.4(3)	36(4)	^{187}Re	745.1
242.9(2)	183(14)	^{185}Re	368.3
252.0(3)	20(3)	(*n*, γ)	
274.7(8)	11(3)	(*n*, γ)	
277.9(8)	5(2)		
284.2(4)	8.6(12)	^{185}Re	284.3
290.3(3)	18(2)	(*n*, γ)	
303.9(3)	18(2)	^{187}Re	303.9
316.3(4)	10(2)	(*n*, γ)	
351.0(4)	10(2)	^{185}Re	(475.5)
361.1(4)	6.0(12)		
374.5(3)	25(3)	^{187}Re	508.7
390.1(4)	7.2(10)	(*n*, γ)	
405.0(8)	11(4)		
413.2(6)	12(3)	^{185}Re	697.2
437.8(8)	6.3(15)		
442.7(3)	21(3)		
454.8(8)	12(3)	^{187}Re	589.0
458.1(8)	14(3)		
479.3(3)	40(4)	^{187}Re	685.5
485.6(6)	6.7(10)		
549.6 *m*	32(4)	^{185}Re	917
		^{187}Re	685.5
554.7(8)	4.8(15)		
564.1(3)	31(4)		
573.2 *m*	13(2)	^{187}Re	1220.8
588.9 *m*	62(6)	^{187}Re	589.0
618.37 *c*	78(8)	^{187}Re	618.4
625.2(6)	7(2)		
636.1(3)	16(2)	^{187}Re	(842.2)
646.0 *m*	100	^{185}Re	646.1
		^{187}Re	647.3
660.8(6)	6.8(8)		
685.6 *m*	69(8)	^{187}Re	685.5
707.0(6)	7.7(15)		
718.4 *m*	56(5)	^{185}Re	717.4
729.4(4)	4.5(8)		
739.6(5)	6.6(12)		
745.1(3)	20(3)	^{187}Re	879.4
754.3(12)	2.6(8)		
762.8(6)	4.5(9)		
770.7 *m*	83(7)	^{187}Re	772.9
786.4(3)	22(3)		

E_γ	I_γ	^AZ	E_i
793.7(4)	8.8(14)		
802.8(3)	18(2)		
815.6(5)	7.5(13)	^{187}Re	(815.6)
822.2(12)	3.8(10)		
826.9(3)	26(3)	^{185}Re	826
		^{187}Re	826.6
842.0(3)	31(3)	^{187}Re	(842.2)
853.5(10)	4.1(10)		
864.8(4)	23(3)	^{187}Re	864.8
874.3(4)	26(4)	^{185}Re	874.3
879.6(5)	13(3)	^{187}Re	879.4
886.0(5)	16(3)		
890.7(8)	5(2)		
900.1(5)	8.9(13)		
930.3(3)	18(2)	^{185}Re	930.3
951.0(4)	8.1(9)		
960.17 *c*	12.4(14)	^{187}Re	960.2
970.1(3)	15.2(17)		
979.2(4)	10.1(12)		
987.9(5)	6.8(9)		
1000.5(6)	5.5(9)		
1011.7(5)	9.8(11)		
1018.7(7)	4.3(8)		
1044.0 *m*	8(2)		
1056.0 *m*	5.7(10)	^{187}Re	1189.8
1077.3(8)	4.3(9)		
1099.8 *m*?	4(2)		
1117.4(15)	1.8(9)		
1124.3(7)	4.5(9)		
1136.3(8)	4.3(9)		
1143.1(9)	3.6(9)		
1167.4 *m*	7.1(11)		
1189.8(10)	4.4(9)	^{187}Re	1189.8
1212.2(10)	3.9(9)		
1231.0(7)	10.3(12)		
1249.2(10)	3.9(10)		
1263.6 *m*	6.0(12)		
1275.1 *m*	5.9(10)		
1301.4(10)	4.3(10)		
1317.9(17)	1.5(8)		
1337.3 *m*	6.2(12)		
1375.9(14)	2.4(9)		
1395.1 *m*	8.8(13)		
1415.0 *m*	7.8(12)		
1434.5 *m*	7.0(12)		
1453.5 *m*	7.6(12)		
1518 *m*	4.2(15)		
1532.5(20)	1.7(9)		
1595.1(20)	1.8(8)		
1651.0(18)	2.3(8)		
1713.0(20)	2.9(10)		

Level schemes of ^{185}Re [74El] and ^{187}Re [75El, 76Br]

^AZ	E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
^{185}Re	125.40(15)	125.358	7/2+5/2	125.40	331	0	5/2+5/2
	284.3(3)	284.8	9/2+5/2	284.2	8.6	0	5/2+5/2
				159.0	105	125.4	7/2+5/2
	368.3(3)	368.1	(9/2−)9/2	242.9	183	125.4	7/2+5/2
	475.5(4)	475.6	11/2+5/2	351.0?	10	125.4	7/2+5/2
				191.2	35	284.3	9/2+5/2
	546.0(10)	546.8	(11/2−)9/2	177.7	38	368.3	(9/2−)9/2
	—	646.111	1/2+1/2	646.0	<100	0	5/2+5/2
	697.2(6)	697.0	13/2+5/2	413.2	12	284.3	9/2+5/2
				221.4	5.3	475.5	11/2+5/2
	—	717.424	3/2+1/2	718.4	<56	0	5/2+5/2
	—	757.3	(13/2−)9/2	—	—	—	—
	—	767.3	5/2+1/2	—	—	—	—

^{A}Z	E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
^{185}Re	—	826	—	826.9	⩽26	0	5/2+5/2
	—	836	—	—	—	—	—
	874.3(4)	874.814	(3/2+)	874.3	26	0	5/2+5/2
	—	880.272	(1/2+)	—	—	—	—
	—	917	(5/2−, 9/2−)	549.6	<32	368.3	(9/2−)9/2
	930.3(3)	930.9	(3/2)+3/2	930.3	18	0	5/2+5/2
^{187}Re	—	134.247	7/2+5/2	134.247	484	0	5/2+5/2
	—	206.249	9/2−9/2	206.3	18	0	5/2+5/2
	303.9(2)	302.9	9/2+5/2	303.9	18	0	5/2+5/2
				169.7	149	134.2	7/2+5/2
	388.3(3)	390	(11/2−9/2)	182.1	80	206.2	9/2−9/2
	508.7(3)	509	11/2+5/2	374.5	25	134.2	7/2+5/2
				205.0	22	303.9	9/2+5/2
	—	511.65	1/2+1/2	—	—	—	—
	589.0(8)	588.96	3/2+1/2	588.9	<62	0	5/2+5/2
				454.8	12	134.2	7/2+5/2
	—	618.37	3/2+1/2	618.37	78	0	5/2+5/2
	625.2(6)	625.40	1/2+1/2	625.2	7	0	5/2+5/2
	—	647.3	5/2+5/2	646.0	<100	0	5/2+5/2
	685.5(3)	685.79	5/2−5/2	685.6	<69	0	5/2+5/2
				549.6	<32	134.2	7/2+5/2
				479.3	40	206.2	9/2−9/2
	745.1(4)	743	13/2+5/2	236.4	36	508.7	11/2+5/2
	—	772.91	3/2+3/2	770.7	<83	0	5/2+5/2
	815.6(5)?	816.56	5/2+	815.6	7.5	0	5/2+5/2
	—	826.6	7/2+	826.9	⩽26	0	5/2+5/2
	842.2(3)?	844.7	(7/2+)	842.0	31	0	5/2+5/2
				636.1	16	206.2	9/2−9/2
	864.8(4)	864.55	3/2+3/2	864.8	23	0	5/2+5/2
	879.4(3)	879.54	5/2+3/2	879.6	13	0	5/2+5/2
				745.1	20	134.2	7/2+5/2
	960.17 *c*	960.17	5/2+	960.17	12.4	0	5/2+5/2
	1189.8(10)	1190.38	—	1189.8	4.4	0	5/2+5/2
				1056.0	<5.7	134.2	7/2+5/2
	—	1220.8	—	573.2	<13	647.3	5/2+5/2



Osmium $_{76}$Os

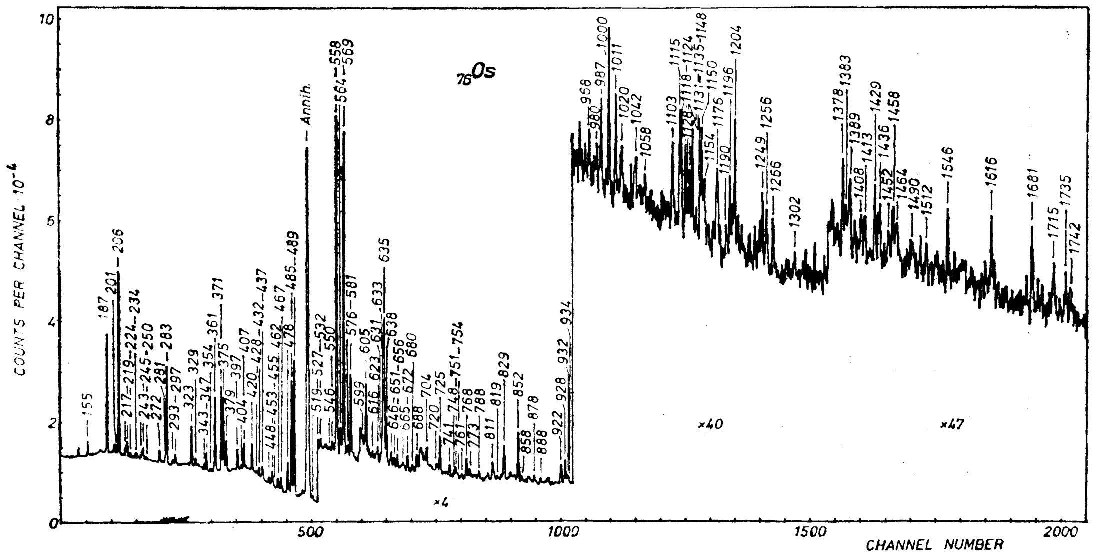
E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
155.02(6)	183(30)	^{188}Os	155.0	353.7(2)	4.2(9)		
186.71(5)	451(50)	^{190}Os	186.7	361.12(5)	71(5)	^{190}Os	547.8
201.33(13)	19(3)	^{192}Os	690.4	371.26(5)	77(6)	^{190}Os	558.0
205.78(5)	501(50)	^{192}Os	205.8	374.53(5)	71(6)	^{192}Os	580.3
216.62(10)	22(3)	^{189}Os	216.6	379.18(6)	27(2)	^{192}Os	1069.6
219.39(8)	29(3)	^{189}Os	219.4	397.26(6)	19.7(15)	^{190}Os	955.2
223.8(2)	8(2)	^{190}Os	1387.2	403.8(2)	3.0(6)		
233.7(2)	8(2)	^{189}Os	233.7	407.31(6)	24(2)	^{190}Os	955.2
242.9(2)	11(2)						1163.2
244.83(10)	22(3)	^{189}Os	275.6	420.49(6)	26.3(15)	^{192}Os	909.5
250.5(4)	3.5(12)			427.7(3)	2.6(8)		
271.51(8)	18(2)			431.64(8)	7.5(8)	^{190}Os	(1387.2)
280.9(2)	12(3)			437.2 *m*	14.7(11)		
283.24(5)	116(10)	^{192}Os	489.0	447.85(9)	6.7(8)	^{190}Os	1203.9
292.59(15)	9(2)	^{192}Os	1362.2	453.00(8)	14(2)	^{192}Os	1143.4
296.53(10)	14(2)	^{186}Os	434.1	454.9(2)	3.8(10)		
322.91(5)	45(3)	^{188}Os	477.9	462.38(7)	11.3(8)	^{188}Os	940.3
329.27(9)	6.9(9)	^{192}Os	909.5	467.46(8)	13.0(9)	^{192}Os	956.5
343.47(14)	5.4(9)	^{189}Os	438.7	477.99(5)	29(2)	^{188}Os	633.1
346.89(8)	15.3(15)			484.59(3)	112(6)	^{192}Os	690.4

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
489.05(3)	155(8)	^{192}Os	489.0	933.8(4)	1.9(5)	^{186}Os	1070.5
518.68(14)	4.2(7)			967.6(3)	1.9(5)		
527.3(2)	2.1(6)			980.5(4)	1.3(4)		
531.6(2)	2.0(6)			987.3(2)	4.2(6)		
545.6(5)	0.8(4)			999.96(15)	6.8(6)		
550.3(2)	2.5(5)			1011.1(2)	3.9(5)		
557.97(4)	100	^{190}Os	558.0	1020.1 *m*	2.5(5)		
563.7 *m*	8.0(7)	^{192}Os	1143.4	1042.5 *m*	2.6(6)		
569.34(4)	92(4)	^{190}Os	756.0	1058.3(5)	1.4(5)		
575.5(2)	3.2(6)			1103.0(2)	4.1(6)		
580.54(5)	22.7(15)	^{192}Os	1069.6	1115.0(2)	5.5(7)	^{190}Os	1115.0
599.4(4)	1.5(6)			1117.9(3)	3.0(5)		
605.24(10)	18(2)	^{190}Os	1163.2	1124.0(2)	4.4(6)	^{188}Os	1279.1
615.8(3)	2.5(6)			1127.5(4)	1.4(4)		
623.4 *m*	4.1(7)	^{188}Os	1414.2	1131.1(3)	2.9(5)		
630.9(2)	6.5(16)	^{190}Os	1387.2	1135.2(2)	4.9(5)		
633.14(12)	33(4)	^{188}Os	633.1	1147.5(4)	2.6(5)		
635.00(12)	38(4)	^{188}Os	790.0	1150.3(3)	4.2(6)	^{188}Os	1305.3
638.46(8)	12.5(9)			1154.4(3)	2.6(5)		
646.0(2)	4.1(6)	^{188}Os	1279.1	1175.5 *m*	5.9(7)		
650.9(2)	2.7(5)			1189.9(4)	1.0(4)		
656.0(2)	3.4(5)	^{190}Os	1203.9	1196.1(2)	2.5(5)	^{190}Os	1382.9
665.0 *m*	2.0(5)			1204.1(2)	3.6(7)		
672.3(2)	5.2(6)	^{188}Os	1462.3	1249.4(2)	2.9(5)	^{190}Os	1436.0
679.8(3)	2.2(5)	^{190}Os	1436.0	1255.9 *m*	3.8(6)		
687.6(2)	6.2(7)			1265.8(2)	2.4(5)		
703.6(2)	5.6(6)	^{192}Os	909.5	1301.6(6)	1.1(4)	^{188}Os	1458.0
720.3 *m*	3.8(7)			1378.0(2)	3.9(5)		
725.30(10)	12.4(8)	^{190}Os	912.0	1383.2(4)	1.5(5)	^{190}Os	1382.9
740.8(2)	3.6(6)			1389.1 *m*	5.2(6)		
748.1(4)	1.9(6)			1407.9(4)	2.0(5)		
750.8(4)	2.5(6)	^{192}Os	956.5	1413.3(3)	2.3(5)		
753.6 *m*	1.8(6)			1429.4(2)	3.2(5)		
760.8(4)	1.3(5)			1436.4 *m*	3.3(6)	^{190}Os	1436.0
768.3 *m*	9.0(7)	(^{190}Os)	955.2	1451.8(6)	1.6(5)		
773.4(2)	4.3(6)	^{186}Os	910.5	1458.2(5)	2.6(5)	^{188}Os	1458.0
788.4(2)	2.4(6)			1464.4(6)	1.7(5)		
811.0 *m*	8.0(8)	^{188}Os	965.4	1489.6 *m*	2.3(6)		
818.9 *m*	1.5(5)			1512.0(5)	1.6(5)		
829.23(10)	13.1(12)	^{190}Os	1387.2	1546.2(2)	3.5(5)	^{190}Os	1546.2
852.24(10)	16.9(10)			1616.0(3)	3.5(5)		
857.6(4)	1.7(6)			1681.0(2)	4.5(5)		
878.0(2)	2.0(5)	^{190}Os	1436.0	1715.1(5)	2.0(5)		
888.3(3)	1.9(5)	^{190}Os	1436.0	1734.9(5)	2.6(5)		
921.6 *m*	8.5(8)			1742.0(5)	1.9(5)		
928.22(15)	9.1(9)	^{190}Os	1115.0	1826.6(6)	1.5(5)		
931.5(3)	3.3(7)	^{188}Os	1086.5	1839.1(6)	2.7(6)		

Level schemes of ^{188}Os [73Sc, 74Be2, 75Sv, 75Th, 75Th1, 73Sh1], ^{189}Os [74Le1], ^{190}Os [73Sc1, 75Th, 74Ya' 73Sh1] and ^{192}Os [73Sc2, 73Ge]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{188}Os	155.02(6)	155.04	2+	155.02	183	0	0+	180*
	477.93(8)	478.00	4+	322.91	45	155.0	2+	⩽34
	633.05(8)	633.00	2+	633.14	33	0	0+	58*
				477.99	29	155.0	2+	
	790.02(13)	790.17	3+	635.00	38	155.0	2+	⩽32*
	940.31(10)	939.8	6+	462.38	11.3	477.9	4+	11.3
	—	965.4	4+	811.0	<8.0	155.0	2+	<20*
	1086.5(3)	1086.36	0+	931.5	3.3	155.0	2+	3.7*
	1279.06(15)	1279	—	1124.0	4.4	155.0	2+	8.5
				646.0	4.1	633.0	2+	
	1305.3(3)	1304.75	2+	1150.3	4.2	155.0	2+	6.8*
	—	1414.2	3−	623.4	<4.1	790.0	3+	<4.1
	1458.0(4)	1457.79	2+	1458.2	2.6	0	0+	3.7
				1301.6	1.1	155.0	2+	
	1462.3(2)	1462.53	2−	672.3	5.2	790.0	3+	5.2
^{189}Os	—	30.80	9/2−	—	—	—	—	—
	—	36.17	(1/2)−	—	—	—	—	—
	—	69.52	5/2−	—	—	—	—	—
	—	95.23	3/2−	—	—	—	—	—
	216.62(10)	216.8	7/2−	216.62	22	0	3/2−	37*
	219.39(8)	219.4	7/2−	219.39	29	0	3/2−	39*
	233.7(2)	233.5	(3/2)−	233.7	8	0	3/2−	8
	275.63(10)	275.8	5/2−	244.83	22	30.8	9/2−	25*
	—	314.7?	(5/2)	—	—	—	—	—
	438.70(14)	438.5	—	343.47	5.4	95.2	3/2−	6.5*
^{190}Os	186.71(5)	186.8	2+	186.71	451	0	0+	340*
	547.83(7)	548.1	4+	361.12	71	186.7	2+	50*
	557.97(4)	557.9	2+	557.97	100	0	0+	124
				371.26	77	186.7	2+	
	756.05(6)	756.5	3+	569.34	92	186.7	2+	69*
	912.01(11)	912.0	0(+)	725.30	12.4	186.7	2+	12.4
	955.23(7)	955.4	4+	768.3	<9.0	186.7	2+	43*
				407.31	<24	547.8	4+	
				397.26	19.7	558.0	2+	
	—	1050.4	(6+)	—	—	—	—	—
	1114.96(15)	1115.2	1,2	1115.0	5.5	0	0+	13*
				928.22	9.1	186.7	2+	
	1163.21(11)	1163.2	4+	605.24	18	558.0	2+	26*
				407.31	<24	756.0	3+	
	1203.88(11)	1203.5	(5+)	656.0	3.4	547.8	4+	14
				447.85	6.7	756.0	3+	
	1382.9(2)	1383.3	1,2	1383.2	1.5	0	0+	4.0
				1196.1	2.5	186.7	2+	
	1387.20(10)	1387.2	3−	829.23	13.1	558.0	2+	⩽35
				630.9	6.5	756.0	3+	
				431.64?	7.5	955.2	4+	
				223.8	8	1163.2	4+	

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{190}Os	1436.0(2)	1436.2	(2+)	1436.4	<3.3	0	0+	<12.3
				1249.4	2.9	186.7	2+	
				888.3	1.9	547.8	4+	
				878.0	2.0	558.0	2+	
				679.8	2.2	756.0	3+	
	—	1446.0	(4)+	—	—	—	—	—
	1546.2(2)	1546.1	—	1546.2	3.5	0	0+	6.4*
^{192}Os	205.78(5)	205.790	2+	205.78	501	0	0+	330*
	489.05(3)	489.047	2+	489.05	155	0	0+	190
				283.24	116	205.8	2+	
	580.31(7)	580.27	4+	374.53	71	205.8	2+	61
	690.37(6)	690.36	3+	484.59	112	205.8	2+	90
				201.33	19	489.0	2+	
	909.54(7)	909.556	4+	703.6	5.6	205.8	2+	39
				420.49	26.3	489.0	2+	
				329.27	6.9	580.3	4+	
	956.51(9)	956.3	(0+)	750.8	2.5	205.8	2+	16
				467.46	13.0	489.0	2+	
	1069.58(6)	1069.3	(4+)	580.54	22.7	489.0	2+	51
				379.18	27	690.4	3+	
	—	1088.6	6+	—	—	—	—	—
	1143.37(9)	1143.4	(5+)	563.7	<8.0	580.3	4+	16*
				453.00	14	690.4	3+	
	1362.17(16)	1361.7	(6+)	292.59	9	1069.6	(4+)	9

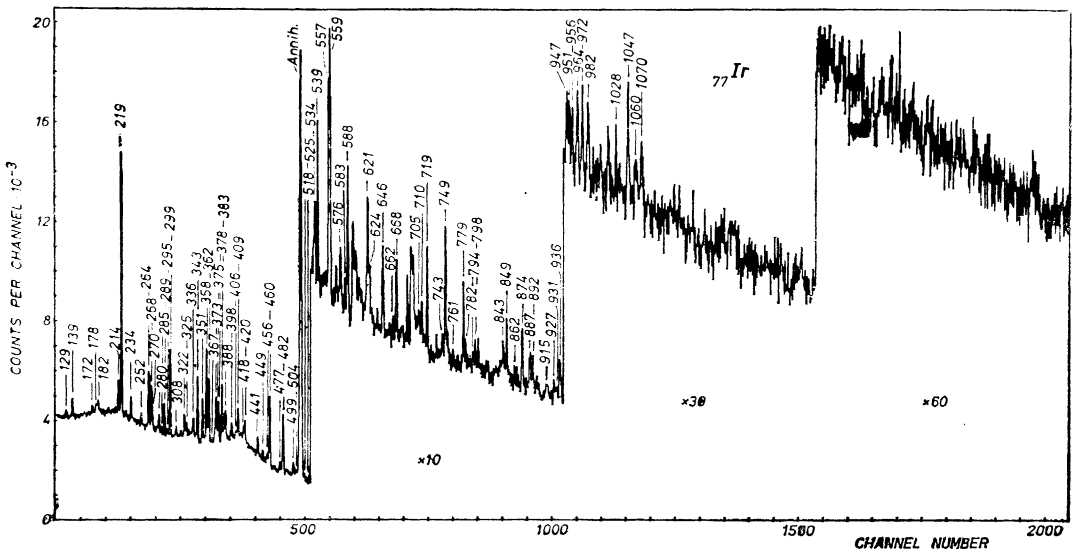


Iridium

E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
129.4 *m*	1400(400)	^{191}Ir	129.4	499.30(15)	31(4)		
139.3 *m*	825(100)	^{193}Ir	138.8	503.7(5)	10(3)	^{193}Ir	964.4
			740.4	517.8(4)	15(4)		
171.9(2)	63(20)	^{191}Ir	350.8	525.4(2)	16(3)	^{193}Ir	598.3
178.3 *m*	89(20)	^{191}Ir	178.9	534.5(2)	28(4)		
		^{193}Ir	357.8	538.92(7)	49(4)	^{191}Ir	538.9
181.5 *m*	103(20)	^{193}Ir	180.1	557.03(8)	90(6)	^{193}Ir	557.0
			361.9	559.30(8)	100	^{193}Ir	559.3
213.79(10)	90(12)	^{191}Ir	343.2	575.9 *m*	24(4)	^{191}Ir	658.9
219.24(5)	996(80)	^{191}Ir	391.0	583.4(3)	17(3)	^{191}Ir	762.3
		^{193}Ir	299.4	588.07(9)	71(5)	^{191}Ir	588.1
234.49(12)	61(8)	^{193}Ir	695.0	621.06(15)	62(7)	^{193}Ir	621.1
251.5(2)	35(6)	^{193}Ir	712.0	624.0(3)	17(4)	^{191}Ir	624.0
263.7 *m*	178(14)	^{191}Ir	614	645.66(12)	43(3)		
		^{193}Ir	621.1	662.4(4)	8(2)		
267.95(12)	97(10)	^{191}Ir	658.9	668.04(12)	38(3)		
269.5 *m*	34(6)	^{191}Ir	350.8	686.28(15)	24(3)	^{191}Ir	686.3
280.40(12)	30(5)	^{193}Ir	460.5	705.2(4)	9(2)		
284.6(4)	8(3)			710.0(2)	16(3)	^{193}Ir	849.0
288.95(11)	67(6)	^{193}Ir	361.9	718.66(12)	38(3)		
294.6 *m*	32(4)	(*n*, γ)		743.4(4)	7(2)		
298.84(5)	204(12)	^{193}Ir	598.3	748.63(12)	58(5)	^{191}Ir	748.6
308.2(2)	20(4)			761.2(4)	6(2)		
321.69(12)	50(5)	^{193}Ir	460.5	778.58(12)	34(3)	^{193}Ir	1078.0
325.1(2)	32(4)			782.0(3)	9(2)		
336.27(14)	50(4)			794.1(5)	6(2)		
343.18(7)	118(8)	^{191}Ir	343.2	797.7(3)	12(3)		
351.40(8)	87(7)	^{191}Ir+*n*, γ	350.8	843.4(3)	11(2)		
357.79(6)	178(11)	^{193}Ir	357.8	849.05(15)	23(3)	^{193}Ir	849.0
361.86(10)	127(10)	^{193}Ir	361.9	862.0(5)	8(2)		
373.0 *m*	70(10)	^{191}Ir	503	874.31(15)	33(3)	^{193}Ir	874.3
374.8(3)	70(10)			887.1 *m*	23(3)		
377.54(8)	70(6)			891.5(3)	16(3)	^{193}Ir	964.4
383.01(7)	98(8)	^{193}Ir	521.8	915.0 *m*	21(5)		
388.5 *m*	109(10)	^{193}Ir	460.5	926.8(3)	12(3)		
			849.0	930.9(4)	8(3)		
398.4 *m*	48(5)			936.3 *m*	37(4)		
406.0 *m*	20(5)			947.1(3)	16(3)		
409.20(8)	60(6)	^{191}Ir	538.9	951.2(3)	14(3)		
418.2(2)	21(5)	(*n*, γ)		956.0(4)	10(2)		
420.19(12)	41(5)	^{193}Ir	(559.3)	964.5(3)	16(3)	^{193}Ir	964.4
441.02(10)	41(4)	^{193}Ir	740.4	972.4(3)	18(3)		
449.4(2)	24(4)	(*n*, γ)		981.9 *m*	31(3)		
456.0 *m*	25(6)	^{191}Ir	538.9	1027.5(4)	10(2)		
			588.1	1047.2(2)	29(3)		
460.49(5)	181(11)	^{193}Ir	460.5	1060.0 *m*	30(6)		
477.1(2)	18(4)			1070.0 *m*	20(4)		
482.25(5) *m*	170(11)	^{193}Ir	621.1				

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{191}Ir	—	82.398	1/2+	—	—	—	—
	129.39(12)	129.400	5/2+	129.4	<1400	0	3/2+
	—	171.33	11/2−	—	—	—	—
	—	178.93	3/2+	178.3	<89	0	3/2+
	343.18(7)	343.2	7/2+	343.18	118	0	3/2+
				213.79	90	129.4	5/2+
	350.8(2)	351.15	(5/2)+	351.40	<87	0	3/2+
				269.5	<34	82.4	1/2+
				171.9	63	178.9	3/2+
	—	390.97	(7/2)−	219.24	<996	171.3	11/2−
	—	503	—	373.0	<70	129.4	5/2+
	538.92(7)	538.85	3/2+	538.92	49	0	3/2+
				456.0	<25	82.4	1/2+
				409.20	<60	129.4	5/2+
	588.07(9)	587.95	(5/2)+	588.07	71	0	3/2+
				456.0	<25	129.4	5/2+
	—	614	—	263.7	<178	350.8	(5/2)+
	624.0(3)	624.06	(1/2)	624.0	17	0	3/2+
	658.92(14)	658.87	(3/2)−	575.9	<24	82.4	1/2+
				267.95	97	391.0	(7/2)−
	686.28(15)	686.3	(7/2)+	686.28	24	0	3/2+
	748.63(12)	747.74	(5/2)	748.63	58	0	3/2+
	762.3(3)	762.56	(3/2)	583.4	17	178.9	3/2+
^{193}Ir	72.91(14)	73.01	1/2+	—	—	—	—
	—	80.27	11/2−	—	—	—	—
	138.80(13)	138.89	5/2+	139.3	<825	0	3/2+
	180.09(13)	180.03	3/2+	181.5	<103	0	3/2+
	299.4(2)	299.40	(7/2)−	219.24	<996	80.3	11/2−
	357.79(6)	357.7	7/2+	357.79	178	0	3/2+
				178.3	<89	180.1	3/2+
	361.86(10)	361.81	(3/2)+	361.86	127	0	3/2+
				288.95	67	72.9	1/2+
				181.5	<103	180.1	3/2+
	460.49(5)	460.48	3/2+	460.49	181	0	3/2+
				388.5	<109	72.9	1/2+

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
^{193}Ir				321.69	50	138.8	5/2+
				280.40	30	180.1	3/2+
	521.81(14)	521.8	—	383.01	98	138.8	5/2+
	557.03(8)	557.30	1/2+	557.03	90	0	3/2+
	559.30(8)	559.21	3/2,5/2+	559.30	100	0	3/2+
				420.19?	<41	138.8	5/2+
	598.3(2)	598.04	(3/2)−	525.4	16	72.9	1/2+
				298.84	204	299.4	(7/2)−
	621.06(15)	621.0	7/2+	621.06	62	0	3/2+
				482.25	<170	138.8	5/2+
				263.7	<178	357.8	7/2+
	694.98(13)	695.06	(5/2+)	234.49	61	460.5	3/2+
	712.0(2)	712.07	(3/2+)	251.5	35	460.5	3/2+
	740.4(2)	740.2	(5/2−)	441.02	41	299.4	(7/2)−
				139.3	<825	598.3	(3/2)−
	848.97(15)	848.8	—	849.05	23	0	3/2+
				710.0	16	138.8	5/2+
				388.5	<109	460.5	3/2+
	874.31(15)	874.4	—	874.31	33	0	3/2+
	964.4(2)	964.3	(1/2,3/2)	964.5	16	0	3/2+
				891.5	16	72.9	1/2+
				503.7	10	460.5	3/2+
	1078.0(2)	1077.8	—	778.58	34	299.4	(7/2)−

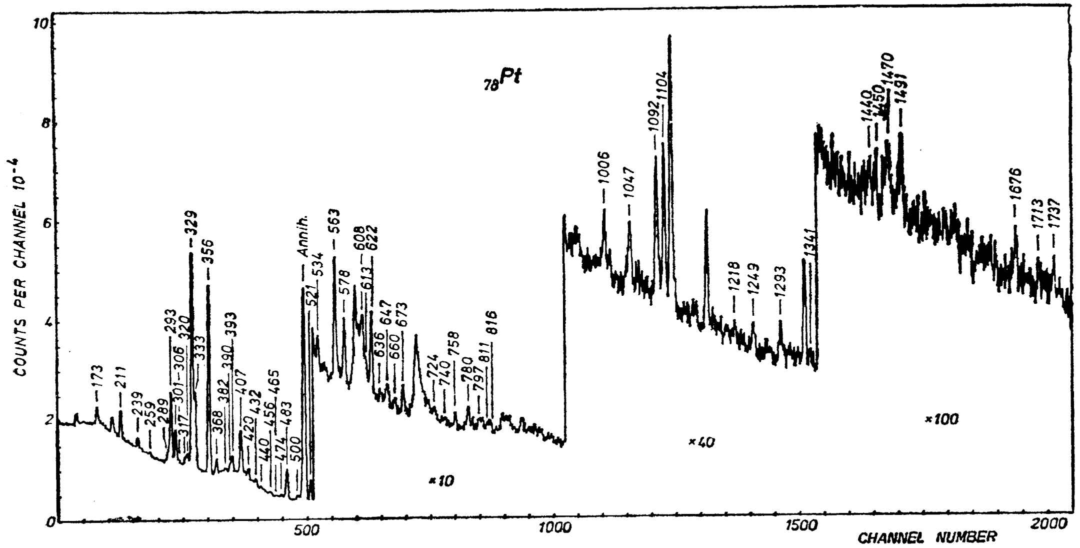


E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
173.1(2)	9.6(10)	¹⁹⁵Pt	432.3	612.9(6)	0.5(2)		
211.28 c	13.8(10)	¹⁹⁵Pt	211.3	621.90(15)	3.9(3)	¹⁹⁴Pt	621.9
239.27(17)	4.4(4)	¹⁹⁵Pt	239.3	636.1(7)	0.50(15)		
259.1(5)	1.7(3)	¹⁹⁵Pt	388.8	647.0 *m*	1.6(2)	¹⁹⁴Pt	1267.4
289.0 *m*	5.0(8)	¹⁹⁵Pt	388.8	659.6 *m*	0.8(2)	¹⁹⁶Pt	(1015.2)
293.42(12)	30(2)	¹⁹⁴Pt	621.9	673.1(2)	1.25(15)	¹⁹⁶Pt	1361.9
300.78(12)	11.8(6)	¹⁹⁴Pt	922.7	724.5(7)	0.69(16)		
305.6(6)	1.7(4)			740.5 *m*	0.68(17)		
316.7(6)	1.5(5)			758.4(4)	0.72(14)	¹⁹⁶Pt	1447.2
320.1(3)	3.6(7)	¹⁹⁵Pt	449.8	779.8(3)	1.3(2)	¹⁹⁶Pt	1135.5
328.51(10)	100	¹⁹⁴Pt	328.5	797.0(5)	0.9(2)	¹⁹⁸Pt	797.1
333.10(15)	29(3)	¹⁹⁶Pt	688.8	810.6(8)	0.6(2)		
355.72(10)	72(4)	¹⁹⁶Pt	355.7	816.1(8)	0.8(2)		
367.58(16)	4.7(4)			1006.2(3)	1.3(2)	¹⁹⁶Pt	1361.9
382.3(5)	1.3(3)			1047.3(3)	1.3(2)	¹⁹⁶Pt	1403.0
389.8(4)	2.6(5)	¹⁹⁸Pt	797.1	1091.8 *m*	3.2(3)	¹⁹⁶Pt	1447.2
393.3(2)	6.7(8)	¹⁹⁶Pt	1270.4	1104.0(2)	3.1(3)	¹⁹⁴Pt	1432.5
407.42(10)	16.2(8)	¹⁹⁸Pt	407.4	1218.3(15)	0.26(11)		
419.6(2)	2.4(3)			1248.6(6)	0.75(15)		
432.4(3)	2.0(3)	¹⁹⁵Pt	562.1	1293.2(5)	1.0(17)		
440.1(4)	0.9(2)			1341.0(12)	0.35(11)		
455.6 *m*	1.7(3)			1439.6(11)	0.39(12)		
464.9(9)	0.5(2)			1449.8(8)	0.57(15)		
473.8(4)	0.98(16)			1470.0 *m*	0.8(2)		
482.79(10)	13.2(7)	¹⁹⁴Pt	811.3	1490.7(5)	1.1(2)	¹⁹⁶Pt	
499.8(3)	1.4(3)			1676.3(8)	0.53(14)	¹⁹⁶Pt	
521.38(10)	9.4(6)	¹⁹⁶Pt	877.1	1713.0(15)	0.27(10)	¹⁹⁶Pt	
534.0(3)	1.0(2)			1737.0(12)	0.37(12)	¹⁹⁶Pt	
562.75(10)	5.8(6)	¹⁹⁴Pt	1374.0	1803.5 *m*	0.9(2)	¹⁹⁶Pt	
577.60(13)	2.7(3)			1824.5 *m*	0.7(2)		
607.6 *m*	2.2(6)	¹⁹⁴Pt	1229.4	1969.3(10)	0.47(14)		

Level schemes of ¹⁹⁴Pt [73Si1, 72Au3], ¹⁹⁵Pt [72Ma], ¹⁹⁶Pt [72Sc] and ¹⁹⁸Pt [71Au2]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
¹⁹⁴Pt	328.51(10)	328.5	2+	328.51	100	0	0+	62*
	621.91(12)	622.1	2+	621.90	3.9	0	0+	<20
				293.42	30	328.5	2+	
	811.30(14)	811.0	(4)+	482.79	13.2	328.5	2+	7.4
	922.69(17)	922.8	3+	300.78	11.8	621.9	2+	14*
	—	1229.4	(2, 3, 4)+	607.6	<2.2	621.9	2+	<2.3*

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
¹⁹⁴Pt	—	1267.4	0+	647.0	<1.6	621.9	2+	<2.4*
	1374.05(17)	1373.4	(5−)	562.75	5.8	811.3	(4)+	5.8
	—	1411.7	(6)+	—	—	—	—	—
	1432.5(2)	1432.4	(3)−	1104.0	3.1	328.5	2+	3.9*
¹⁹⁵Pt	—	98.857	3/2−	—	—	—	—	—
	—	129.734	5/2−	—	—	—	—	—
	—	199.46	(3/2)−	—	—	—	—	—
	211.28 *c*	211.28	3/2−	211.28	13.8	0	1/2−	—
	239.27(17)	239.28	5/2−	239.27	4.4	0	1/2−	—
	—	259.2	13/2+	—	—	—	—	—
	388.8(5)	389.18	3/2, 5/2−	289.0	⩽5.0	98.9	3/2−	—
				259.1	1.7	129.7	5/2−	—
	432.3(3)	432.0	(11/2, 13/2)+	173.1	9.6	259.2	13/2+	—
	449.8(3)	449.67	(5/2, 7/2)−	320.1	3.6	129.7	5/2−	—
	—	455.24	(5/2)−	—	—	—	—	—
	—	507.91	(5/2, 7/2)−	—	—	—	—	—
	—	547.0	(11/2)+	—	—	—	—	—
	562.1(3)	562.56	9/2−	432.4	2.0	129.7	5/2−	—
¹⁹⁶Pt	355.72(10)	355.73	2+	355.72	72	0	0+	⩾30*
	688.82(18)	688.76	2+	333.10	29	355.7	2+	26
	877.10(14)	877.1	(4)+	521.38	9.4	355.7	2+	2.7
	—	1015.2	—	659.6?	<0.8	355.7	2+	<0.8
	1135.5(3)	1135.2	(0)+	779.8	1.3	355.7	2+	1.9*
	1270.4(2)	1270.5	(4, 5)−	393.3	6.7	877.1	(4)+	6.7
	1361.9(2)	1361.5	(1, 2)	1006.2	1.3	355.7	2+	2.6
				673.1	1.25	688.8	2+	
	—	1373.9	(6, 7)−	—	—	—	—	—
	1403.0(3)	1402.7	0, 1, **2**	1047.3	1.3	355.7	2+	1.3
	—	1430.1?	(6+)	—	—	—	—	—
	1447.2(4)	1447.2	(3)−	1091.8	⩽3.2	355.7	2+	⩽3.9
				758.4	0.72	688.8	2+	
¹⁹⁸Pt	407.42(10)	408	2+	407.42	16.2	0	0+	<14
	797.1(4)	780	[(2+)]	797.0	0.9	0	0+	3.5
				389.8	2.6	407.4	2+	



Gold $^{197}_{79}Au$

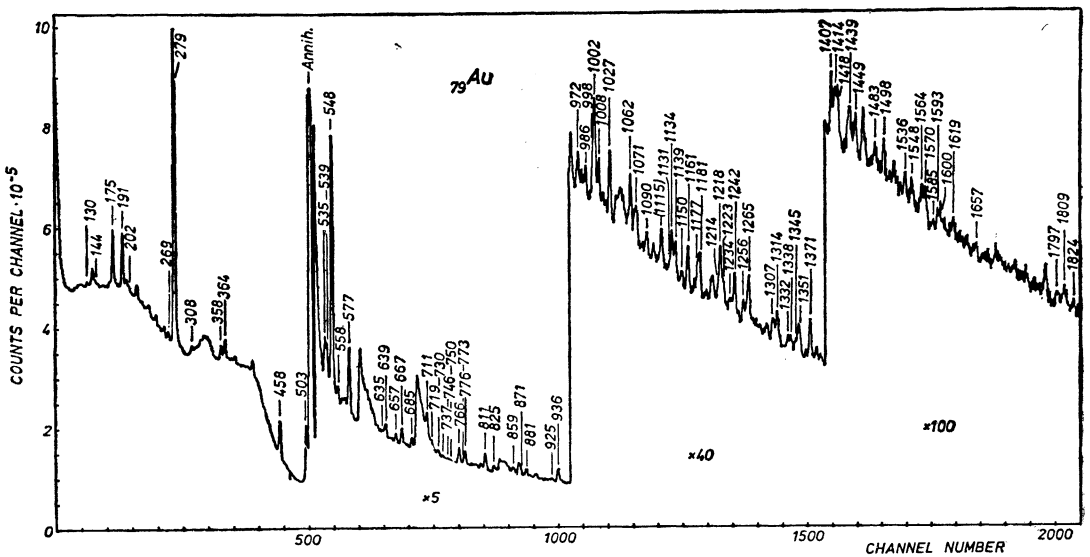
E_γ	I_γ	E_i	E_γ	I_γ	E_i
130.2(4)	2.1(6)	409.2	667.00(15)	1.09(11)	935.8
144 *m*	≈2		684.6(2)	0.66(9)	
174.72(15)	27(4)		711.0(2)	1.20(12)	1120.2
191.31(15)	25(4)	268.7	718.7(4)	0.22(6)	
202.0(4)	2.2(5)		729.9(3)	0.30(6)	
268.7(2)	2.1(3)	268.7	737.4(6)	0.10(3)	
278.95 *c*	100	279.0	745.7(7)	0.07(3)	
308.1(3)	1.2(2)	855.7	749.8(7)	0.07(3)	
357.90(12)	4.2(4)		765.90(15)	1.38(14)	1044.8
364.07(12)	4.8(4)		772.9(6)	0.25(6)	
457.94(10)	9.9(5)	736.9	775.98(15)	1.23(12)	1044.8
502.7(4)	17(5)	502.7	810.74(13)	1.35(12)	888.1
535.4(2)	2.0(2)	944.6	825.3(3)	0.52(8)	
538.8(2)	1.6(2)	948.0	858.7 *m*	0.49(10)	935.8
547.62(10)	17.2(9)	547.6	871.3(4)	0.40(12)	1150.4
557.9(3)	0.85(15)		881.0(3)	0.57(8)	
576.78(13)	4.4(3)	855.7	925.2(4)	0.28(6)	
635.0(6)	0.14(5)		935.93(16)	1.41(12)	935.8
638.8(2)	0.74(12)		972.4(4)	0.52(8)	1241.5
656.7(2)	0.55(8)	935.8	986.0(5)	0.29(6)	

E_γ	I_γ	E_i	E_γ	I_γ	E_i
998.4(6)	0.68(16)		1337.6(7)	0.22(6)	
1001.7(3)	1.5(2)		1345.4(8)	0.22(6)	
1008.1(3)	0.54(9)		1351.2 *m*	0.80(12)	
1027.0(2)	0.83(10)		1370.6(2)	0.73(8)	
1062.2(3)	0.65(8)	1062.2	1407.4(4)	0.38(7)	
1071.0 *m*	0.93(13)	1150.4	1413.5(6)	0.37(10)	
1089.8(4)	0.30(5)		1418.5(7)	0.37(10)	
1115.3(3)?	0.50(7)		1438.7 *m*	0.71(8)	
1130.8(8)	0.19(9)		1449.4(4)	0.39(6)	
1133.7(3)	0.61(10)		1483.0(8)	0.19(5)	
1139.3(3)	0.50(8)		1498.2(4)	0.24(5)	
1150.5(5)	0.22(5)	1150.4	1535.6(5)	0.18(4)	
1160.8(3)	0.69(8)		1547.5 *m*	0.23(6)	
1177.2(5)	0.46(13)		1564.0(6)	0.31(7)	
1181.0(4)	0.59(13)		1570.4(6)	0.31(7)	
1214.0(6)	0.41(12)		1584.6(11)	0.11(4)	
1217.6(3)	0.91(17)		1592.7(7)	0.17(5)	
1222.6(5)	0.36(10)		1599.8 *m*	0.21(6)	
1234.4 *m*	0.30(8)		1619.1(7)	0.19(5)	
1241.7(3)	0.74(9)	1241.5	1657.3 *m*	0.19(6)	
1256.4(4)	0.34(7)		1797.2(9)	0.22(6)	
1265.2(2)	0.84(10)		1808.9 *m*	0.38(7)	
1307.0(4)	0.48(8)		1824.2(9)	0.10(4)	
1313.8(3)	0.58(8)		2048.5(8)	0.11(4)	
1332.3(7)	0.22(6)				

Level scheme of ^{197}Au [72Le1, 71Ne, 71Ba5]

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
77.35 *c*	77.35	1/2+	—	—	—	—
268.66(15)	268.8	(1/2+, 3/2+)	268.7	2.1	0	3/2+
			191.31	25	77.4	1/2+
278.95 *c*	278.95	5/2+	278.95	100	0	3/2+
409.2(4)	409.2	11/2−	130.2	2.3	279.0	5/2+
502.7(4)	502.7	(1/2+, 3/2+)	502.7	17	0	3/2+
547.62(10)	547.5	7/2+	547.62	17.2	0	3/2+
—	583?		—	—	—	—
736.89(10)	736.5	(3/2—7/2)	457.94	9.9	279.0	5/2+
855.73(13)	855.8	—	576.78	4.4	279.0	5/2+
			308.1	1.2	547.6	7/2+
888.09(13)	888.1	—	810.74	1.35	77.4	1/2+

E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π
935.84(16)	936.0	—	935.93	1.41	0	3/2+
			858.7	<0.49	77.4	1/2+
			667.00	1.09	268.7	(1/2+, 3/2+)
			656.7	0.55	279.0	5/2+
944.6(5)	945.3	(−)	535.4	2.0	409.2	11/2−
948.0(5)	948.5	—	538.8	1.6	409.2	11/2−
—	960.3?	—	—	—	—	—
—	966.2?	—	—	—	—	—
—	1037.9	—	—	—	—	—
1044.78(15)	1045.0	—	775.98	1.23	268.7	(1/2+, 3/2+)
			765.90	1.38	279.0	5/2+
1062.2(3)	1063.2	—	1062.2	0.65	0	3/2+
1120.2(5)	1121.3	(−)	711.0	1.20	409.2	11/2−
—	1147.9?	—	—	—	—	—
1150.4(3)	1150.5	—	1150.5	0.22	0	3/2+
			1071.0	<0.95	77.4	1/2+
			871.3	0.40	279.0	5/2+
1217.6(3)	1217.7	—	1217.6	0.91	0	3/2+
—	1231	—	—	—	—	—
1241.5(3)	1242.1	—	1241.7	0.74	0	3/2+
			972.4	0.52	268.7	(1/2 +, 3/2+)



E_γ	I_γ	A_Z	E_i
158.39(10)	31(9)	^{199}Hg	158.4
208.196 *c*	16(2)	^{199}Hg	208.2
222.2(2)	6.8(8)	^{202}Hg	1181.7
247.1(6)	1.5(6)	^{199}Hg	455.2
254.2(5)	1.5(6)		
284.2(5)	2.6(4)	^{199}Hg	492.4
334.0(5)	2.6(4)	^{199}Hg	492.4
351.8(2)	6.1(6)	^{202}Hg	1311.3
367.95(10)	100	^{200}Hg	368.0
383.5(4)	4.3(6)		
388.4(4)	4.5(6)	^{202}Hg	1347.6
403.49(12)	8.4(8)	^{199}Hg	403.5
412.0 *m*	55(6)	^{198}Hg	411.8
439.24(10)	145(14)	^{202}Hg	439.2
455.2(3)	3.0(4)	^{199}Hg	455.2
463.9(4)	1.8(3)		
489.4(5)	4.1(5)		
492.3(5)	3.7(5)	^{199}Hg	492.4
520.30(6)	45(7)	^{202}Hg	959.5
543.00(10)	6.1(6)	^{201}Hg	543.0
550.2(3)	2.3(3)	^{202}Hg	1861.5
554.7(6)	0.76(15)		
565.3(4)	2.1(3)	^{202}Hg	1524.8
579.28(10)	23(3)	^{200}Hg	947.2
587.8(2)	5.6(6)		
612.9(3)	2.8(4)		
636.59(15)	7.5(8)	^{198}Hg	1048.4
640.6(4)	1.7(3)		
653.88(12)	3.8(4)		
661.41(12)	4.6(5)	^{200}Hg	1029.4
675.6(4)	3.6(6)	^{198}Hg	1087.6
680.0(2)	10.5(12)	^{202}Hg	1119.2
733.0(4)	1.43(16)		
742.5(2)	3.1(3)	^{202}Hg	1181.7
749.9(2)	2.5(3)	^{199}Hg	749.9
759.1(2)	3.2(3)		
774.8(4)	1.41(15)		
786.6(4)	0.97(13)	^{202}Hg	1745.9
799.8(6)	0.81(10)		
810.6(8)	0.44(10)		
827.9 *m*	2.6(3)	^{200}Hg	1775.6
871.8(4)	3.1(6)	^{202}Hg	1311.3
886.20(12)	6.4(8)	^{200}Hg	1254.2
903.6(3)	4.2(6)		
908.2(3)	4.2(6)	^{202}Hg	1347.6
941.1(8)	0.76(15)		
949.9(3) *m*?	3.8(4)	^{202}Hg	1388.5

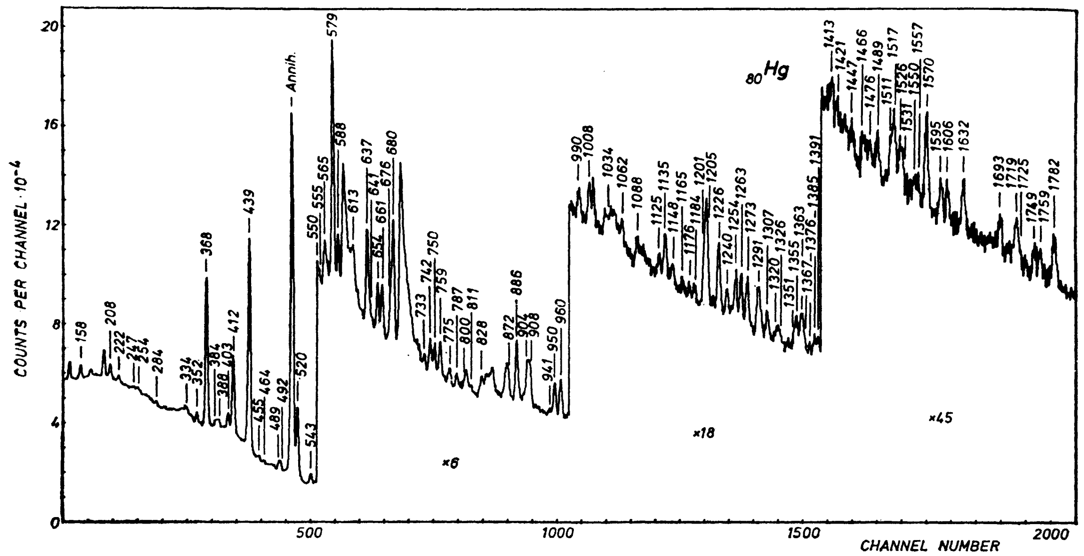
E_γ	I_γ	A_Z	E_i
960.0(3) *m*?	4.2(4)	^{202}Hg	959.5
990.2(5)	0.91(15)	^{198}Hg	1402.0
1007.7(3)	1.53(18)	^{198}Hg	1419.5
1034.4(4)	1.0(2)		
1062.5(5)	0.56(10)		
1087.8(5)	1.1(2)	^{198}Hg	1087.6
1124.8(5)	0.78(12)	^{202}Hg	1564.0
1135.1(3)	2.1(2)	^{202}Hg	1574.3
1147.5(5)	1.00(15)	^{200}Hg	1515.5
1164.6(8)	0.56(10)		
1175.9(10)	0.35(8)		
1184.5(6)	0.63(10)		
1200.7(6)	1.7(3)	^{198}Hg	1612.5
1205.2(4)	4.4(6)	^{200}Hg	1573.7
		^{202}Hg	1641.4
1225.5(2)	2.4(3)	^{200}Hg	1593.5
1239.6(4)	0.92(12)	^{202}Hg	1678.8
1254.2(2)	1.34(15)	^{200}Hg	1254.2
1263.1(2)	1.52(15)	^{200}Hg	1631.1
1273.4(2)	1.75(17)	^{200}Hg	1641.4
1291.1(3)	2.0(3)	^{200}Hg	1659.1
1306.6(3)	1.13(15)	^{202}Hg	1745.9
1320.1(7)	1.49(15)		
1326.2(6)	0.60(15)		
1350.8(7)	0.44(15)	^{200}Hg	1718.9
1355.2(6)	1.2(3)	^{202}Hg	1794.4
1362.9(5)	1.4(3)	^{200}Hg	1730.9
1366.8(8)	0.50(15)	^{200}Hg	1734.8
1376.2(9)	0.41(15)		
1384.8(6)	0.68(18)	^{202}Hg	1824.0
1391.3(6)	0.66(18)		
1412.7(6)	0.55(18)	^{202}Hg	1851.9
1421.1(11)	0.26(8)		
1446.6(9)	0.53(18)		
1465.8(8)	0.65(20)		
1476.0(7)	0.84(18)		
1488.8(4)	1.07(16)	^{200}Hg	1856.8
1510.8(7)	0.91(18)		
1517.2(5)	1.5(2)		
1526.2(5)	0.85(15)	^{202}Hg	1965.4
1531.0(8)	0.59(15)		
1550.2(6)	0.64(15)		
1556.6(8)	0.50(15)		
1570.30 *c*	2.4(3)	^{200}Hg	1570.3
1595.1(6)	0.76(15)		
1605.5(6)	0.76(15)	^{200}Hg	1973.5
1632.2(4)	1.1(15)		

E_γ	I_γ	A_Z	E_i	E_γ	I_γ	A_Z	E_i
1693.3(6)	0.68(10)	^{200}Hg	2061.3	1903 *m*	1.0(2)		
1719.2(7)	0.93(20)	^{200}Hg	1718.9	1917.8(8)	0.68(15)		
1724.8(8)	0.51(15)			1961.4(10)	0.51(13)		
1749.1(7)	0.71(15)			2003.0(10)	0.45(12)		
1758.8(7)	0.48(10)			2008.1(10)	0.37(12)		
1782.4(4)	1.45(18)			2144.2(9)	0.59(15)		
1883.1(8)	0.63(15)						

Level schemes of ^{198}Hg [71Au2, 71Be1], ^{199}Hg [71Le2, 75Ma, 74Pr], ^{200}Hg [71Ma2, 74Br1] and ^{202}Hg [71Au3, 75Br, 75Lo]

A_Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{198}Hg	—	411.795	2+	412.0	<55	0	0+	<37*
	1048.39(15)	1048.4	4+	636.59	7.5	411.8	2+	7.5
	1087.6(9)	1087.69	2+	1087.8	1.1	0	0+	4.3*
				675.6	3.6	411.8	2+	
	1402.0(5)	1401.5	0+	990.2	0.91	411.8	2+	0.91
	1419.5(3)	1419.4	2, 3+	1007.7	1.53	411.8	2+	1.9*
	—	1548.5		—	—	—	—	—
	1612.5(6)	1612.7	2+	1200.7	1.7	411.8	2+	1.9*
^{199}Hg	158.39(10)	158.37	5/2−	158.39	31	0	1/2−	28
	208.20 *c*	208.196	3/2−	208.20	16	0	1/2−	12
	403.49(12)	403.4	3/2−	403.49	8.4	0	1/2−	9.4*
	—	413.5	5/2−	—	—	—	—	—
	455.2(3)	455.5	1/2−	455.2	3.0	0	1/2−	4.5
				247.1	1.5	208.2	3/2−	
	492.4(3)	492.1	3/2−	492.3	3.7	0	1/2−	8.9
				334.0	2.6	158.4	5/2−	
				284.2	2.6	208.2	3/2−	
	—	532.5	13/2+	—	—	—	—	—
	—	638	—	—	—	—	—	—
	—	668	(5/2)−	—	—	—	—	—
	—	700	(5/2)−	—	—	—	—	—
	749.9(2)	750.4	3/2−	749.9	2.5	0	1/2−	4.3*
^{200}Hg	367.95(10)	367.94	2+	367.95	100	0	0+	≤57*
	947.23(14)	947.24	4+	579.28	23.2	368.0	2+	≤22*
	1029.36(14)	1029.33	0+	661.41	4.6	368.0	2+	3.2*
	1254.15(15)	1254.13	2+	1254.2	1.34	0	0+	7.7
				886.20	6.4	368.0	2+	
	1515.5(5)	1515.20	0+	1147.5	1.0	368.0	2+	1.0
	—	1570.30	1+	1570.30	2.4	0	0+	3.7*

A_Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{200}Hg	—	1573.68	2+	1205.2	<4.4	368.0	2+	<4.4
	1593.5(2)	1593.45	2+	1225.5	2.4	368.0	2+	2.4
	1631.1(2)	1630.90	1+	1263.1	1.52	368.0	2+	1.7*
	1641.4(2)	1641.47	2+	1273.4	1.75	368.0	2+	1.8
	1659.1(4)	1659.02	3+	1291.1	2.0	368.0	2+	2.5*
	1718.9(5)	1718.32	1+	1719.2	0.93	0	0+	1.7*
				1350.8	0.44	368.0	2+	
	1730.9(5)	1730.95	2+	1362.9	1.4	368.0	2+	2.3*
	1734.8(8)	1734.35	3+	1366.8	0.50	368.0	2+	1.5*
	—	1775.56	3+	827.9	<2.6	947.2	4+	<2.6
	—	1845.80	3+	—	—	—	—	—
	1856.8(4)	1856.80	0+	1488.8	1.07	368.0	2+	1.07
	—	1882.89	(2+)	—	—	—	—	—
	—	1972.30	2+	—	—	—	—	—
	1973.5(6)	1974.36	3+	1605.5	0.76	368.0	2+	0.76
	2061.3(6)	2061.27	1+	1693.3	0.68	368.0	2+	0.68
^{202}Hg	439.24(10)	439.4	2+	439.24	145	0	0+	<72*
	959.54(12)	959.7	2+	960.0	≤4.2	0	0+	≤25*
				520.30	45	439.2	2+	
	1119.2(2)	1119.8	(4+)	680.0	10.5	439.2	2+	10.2
	1181.7(2)	1182.1	1+, 2+	742.5	3.1	439.2	2+	8.2*
				222.2	6.8	959.5	2+	
	—	(1296.0)	—	—	—	—	—	—
	1311.3(2)	1311.5	(4+, 3−)	871.8	3.1	439.2	2+	6.2*
				351.8	6.1	959.5	2+	
	1347.6(3)	1348.0	1+, 2+	908.2	4.2	439.2	2+	7.7*
				388.4	4.5	959.5	2+	
	—	1388.5	1+, 2+	949.9	≤3.8	439.2	2+	≤2.3*
	—	1457.0	—	—	—	—	—	—
	—	1506.6	—	—	—	—	—	—
	1524.8(4)	1523.8	—	565.3	2.1	959.5	2+	2.1
	—	1562.1	(3)+	—	—	—	—	—
	1564.0(5)	1564.7	(0+)	1124.8	0.78	439.2	2+	0.78
	1574.3(3)	1575.6	0+, 1, 2	1135.1	2.1	439.2	2+	6.6*
	—	1641.4	—	1205.2	<4.4	439.2	2+	<4.4
	1678.8(4)	1678.3	1+, 2+	1239.6	0.92	439.2	2+	2.6*
	1745.9(3)	1746.5	1, 2	1306.6	1.13	439.2	2+	2.1
				786.6	0.97	959.5	2+	
	—	1788.5	(2)+	—	—	—	—	—
	1794.4(6)	1794.3	1+, 2+	1355.2	1.2	439.2	2+	1.2
	1824.0(6)	1823.3	1+, 2+	1384.8	0.68	439.2	2+	1.0*
	1851.9(6)	1852.0	(2)+	1412.7	0.55	439.2	2+	0.90*
	1861.5(4)	1861.8	(2)+	550.2	2.3	1311.3	(4+, 3−)	3.2*
	—	1959.4	1+, 2+	—	—	—	—	—
	1965.4(5)	1965.9	(2)+	1526.2	0.85	439.2	2+	0.85



Thallium $_{81}$Tl

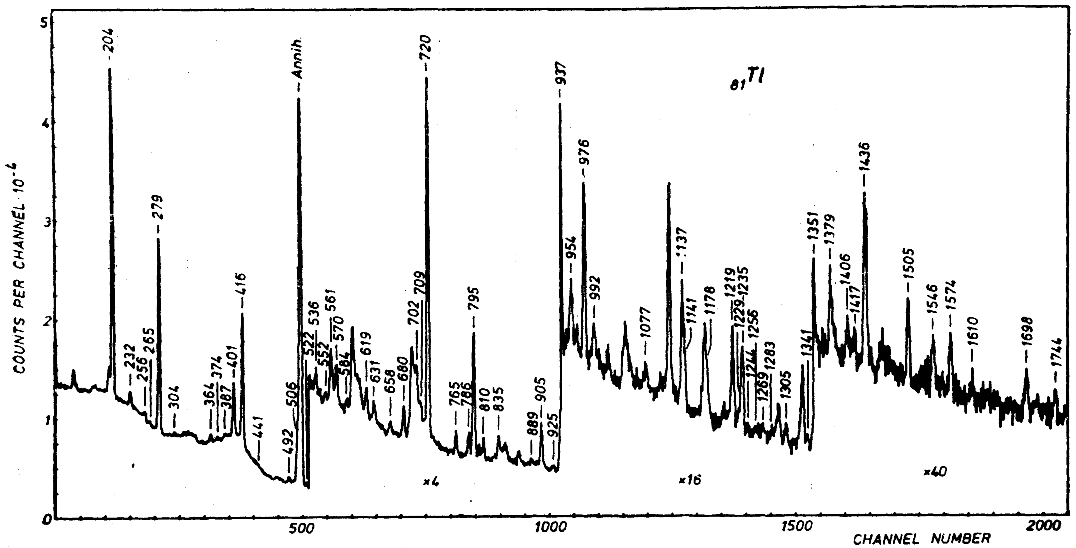
E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
203.60(10)	441(40)	^{205}Tl	203.6	619.2(2)	6.4(7)	^{205}Tl	619.2
231.95(15)	18.6(20)			631.4(3)	5.3(6)	^{205}Tl	1554.6
255.6(3)	9.2(16)	^{205}Tl		658.4(4)	3.3(5)	^{205}Tl	1582.5
264.7(6)	3.8(12)			680.45(18)	7.5(7)	^{203}Tl	680.5
279.19 *c*	196(12)	^{203}Tl	279.2	701.7(4)	6.2(12)		
304.4(4)	2.5(8)	^{205}Tl	923.6	708.6(6)	2.5(9)		
363.6(2)	7.0(9)	^{203}Tl	1044.2	719.96(8)	100	^{205}Tl	923.6
374.5(6)	1.8(5)	^{205}Tl	1554.6	765.1(2)	6.9(7)	^{203}Tl	1044.2
386.8(4)	3.9(8)			786.3(2)	6.7(7)	^{203}Tl	1065.5
401.33(6)	56(3)	^{203}Tl	680.5	794.56(10)	40(2)	^{203}Tl	1073.8
415.65(6)	133(7)	^{205}Tl	619.2	810.4(2)	4.4(5)	^{205}Tl	1429.6
441.3(6)	1.3(4)			835.4(7)	1.6(6)	^{203}Tl	1114.6
492.0(2)	5.7(7)			888.9(6)	2.1(5)		
505.7(5)	38(11)	^{205}Tl	1429.6	905.33(15)	15.1(12)	^{203}Tl	1184.5
521.6(2)	5.7(6)	^{205}Tl	1140.9	924.6(8)	2.1(5)	^{205}Tl	923.6
536.1(2)	5.5(6)	^{203}Tl	1216.6	936.91(10)	23.6(13)	^{203}Tl	1216.6
552.1(5)	2.0(4)					^{205}Tl	1140.9
561.2(2)	16.0(16)	^{205}Tl	1180.0	954.5(2)	8.0(8)	^{203}Tl	1233.7
570.3(3)	7.8(10)			976.28(13)	16.5(10)	^{205}Tl	1180.0
583.6(6)	2.0(4)			991.9(3)	4.5(6)		

E_γ	I_γ	^AZ	E_i	E_γ	I_γ	^AZ	E_i
1076.9(6)	2.8(5)			1350.8(3)	3.9(5)	^{205}Tl	1554.6
1136.9(3)	13(2)	^{205}Tl	1340.5	1379.1(3)	3.9(5)	^{205}Tl	1582.5
1141.2(6)	4.0(15)	^{205}Tl	1140.9	1406.4(4)	2.4(4)	^{203}Tl	1406.4
1178.0(5)	7(2)			1417.4(6)	1.7(3)		
1219.2(2)	11.0(9)	^{205}Tl	1219.2	1435.6(2)	11.0(8)	^{205}Tl	1435.6
1228.9(8)	1.5(3)			1505.4(3)	4.9(5)		
1235.0(2)	10.1(10)	^{205}Tl	1438.6	1546.5(4)	2.7(4)		
1243.6(8)	1.2(3)			1574.5(3)	3.6(4)	^{205}Tl	1574.5
1255.6(10)	0.9(3)			1609.9(8)	1.2(4)		
1268.7(8)	1.4(4)			1698.1(7)	1.8(4)		
1283.0(8)	1.4(4)			1744.1(6)	1.8(4)		
1305.4(4)	2.8(4)			1772.1(8)	1.9(5)		
1340.6(7)	1.0(3)	^{205}Tl	1340.5	1895.2(8)	2.8(6)		

Level schemes of ^{203}Tl [71Fe, 75Ah1, 71Au1, 71He1] and ^{205}Tl [74Ol, 75Ah1, 71Fe, 71Hi]

^AZ	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{203}Tl	279.19 *c*	279.18	3/2+	279.19	196	0	1/2+	≈46*
	680.52(6)	680.49	5/2+	680.45	7.5	0	1/2+	44*
				401.33	56	279.2	3/2+	
	1044.2(2)	1045.0	—	765.1	6.9	279.2	3/2+	22*
				363.6	7.0	680.5	5/2+	
	1065.5(2)	1066	—	786.3	6.7	279.2	3/2+	6.7
	1073.75(10)	1074.3	7/2+	794.56	40	279.2	3/2+	43*
	1114.6(7)	1114.2	—	835.4	1.6	279.2	3/2+	2.4*
	1184.52(15)	1184.9	—	905.33	15.1	279.2	3/2+	18*
	1216.6(2)	1216	—	936.91	<23.6	279.2	3/2+	21*
				536.1	5.5	680.5	5/2+	
	1233.7(2)	1233.4	—	954.5	8.0	279.2	3/2+	8.0
	—	1340?	—					—
	1406.4(4)	1408.5	—	1406.4	2.4	0	1/2+	2.4
^{205}Tl	203.60(10)	204.0	3/2+	203.60	441	0	1/2+	≈145*
	619.25(12)	619.3	5/2+	619.2	6.4	0	1/2+	95
				415.65	133	203.6	3/2+	
	923.56(13)	924.1	7/2+	924.6	2.1	0	1/2+	58
				719.96	100	203.6	3/2+	
				304.4	2.5	619.2	7/2+	

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{205}Tl	1140.9(2)	1141.0	3/2+	1141.2	4.0	0	1/2+	18*
				936.91	<23.6	203.6	3/2+	
				521.6	5.7	619.2	5/2+	
	1180.05(16)	1180.9	(5/2+)	976.28	16.5	203.6	3/2+	31
				561.2	16.0	619.2	5/2+	
	1219.2(2)	1219.2	1/2+, 3/2+	1219.2	11.0	0	1/2+	14*
	1340.5(3)	1340.1	(3/2+)	1340.6	1.0	0	1/2+	14
				1136.9	13	203.6	3/2+	
	1429.6(3)	1431	—	810.4	4.4	619.2	5/2+	42
				505.7	38	923.6	7/2+	
	1435.6(2)	1434.5	—	1435.6	11.0	0	1/2+	11
	1438.6(2)	1435	—	1235.0	10.1	203.6	3/2+	10
	1554.6(3)	1555.3	(1/2+)3/2+	1350.8	3.9	203.6	3/2+	11
				631.4	5.3	923.6	7/2+	
				374.5	1.8	1180.0	5/2+	
	1574.5(3)	1574.7	(1/2+, 3/2+)	1574.5	3.6	0	1/2+	3.6
	1582.5(3)	1582.5?	—	1379.1	3.9	203.6	3/2+	7.2
				658.4	3.3	923.6	7/2+	



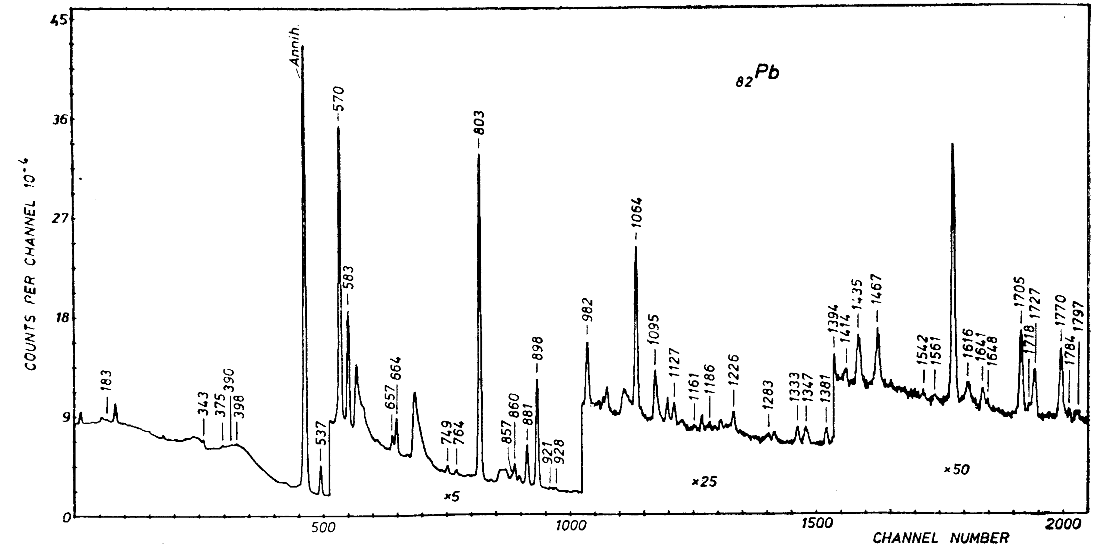
Lead

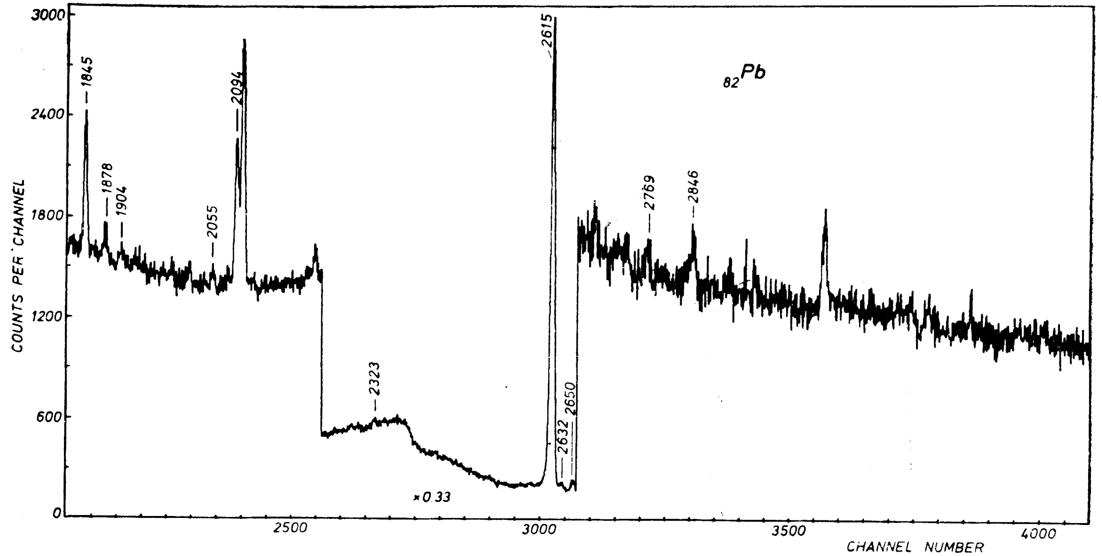
E_γ	I_γ	^{A}Z	E_i	E_γ	I_γ	^{A}Z	E_i
182.9 *m*	9.6(12)	^{206}Pb	2383.9	1381.1(2)	1.95(20)		
343.4(3)	4.9(6)	^{206}Pb	1684.0	1393.6(2)	1.26(15)		
374.8(4)	1.7(2)	^{204}Pb	1273.9	1413.5(4)	0.66(8)		
389.7(5)	1.5(3)			1435.17(12)	3.8(4)	^{208}Pb	4049.8
397.7(4)	1.8(3)	^{206}Pb	2781.6	1466.69(7)	3.8(4)	^{206}Pb	1466.7
537.41(5)	32(3)	^{206}Pb	1340.4	1542.4(6)	0.46(8)	^{208}Pb	4157.1
569.64(5)	76(7)	^{207}Pb	569.6	1561.1(6)	0.55(10)	^{209}Pb?	
583.14(5)	29(3)	^{208}Pb	3197.8	1616.3(3)	1.8(2)	^{208}Pb	4231.0
657.07(10)	4.1(4)	^{206}Pb	1997.5	1641.0(3)	1.4(2)	^{208}Pb	4255.7
663.68(6)	9.1(9)	^{206}Pb	1466.7	1648.5(6)	0.47(10)		
748.77(12)	2.1(2)	^{208}Pb	3946.6	1704.68(15)	6.3(6)	^{206}Pb	1704.7
763.55(16)	1.39(15)	^{208}Pb	3961.4	1718.3(6)	0.6(2)		
803.01(5)	100	^{206}Pb	803.0	1726.55(16)	4.1(5)	^{207}Pb	2624.6
856.7(4)	1.2(2)			1770.2(2)	6.0(6)	^{207}Pb	2339.8
860.5(2)	5.2(6)	^{208}Pb	3475.2	1784.2(7)	0.88(12)	^{206}Pb	1784.7
881.04(6)	13.8(14)	^{206}Pb	1684.0	1796.9(6)	0.92(15)		
898.01(5)	37(4)	^{207}Pb	898.0	1845.00(15)	4.0(4)	^{206}Pb	2648.0
921.2(5)	0.52(8)			1878.0(7)	0.75(20)		
927.8(4)	0.82(10)	^{208}Pb	4125.6	1904.3 *m*	0.73(20)		
981.73(8)	4.9(5)	^{208}Pb	4179.6	2055.3(8)	0.79(20)	^{207}Pb	2624.6
1063.71(5)	12.2(12)	^{207}Pb	1633.4	2093.72(15)	6.2(7)	^{207}Pb	2663.4
1095.04(12)	3.8(4)	^{207}Pb	2728.4	2322.6(7)	0.92(25)		
1126.54(17)	1.75(18)			2614.68(10)	66(7)	^{208}Pb	2614.7
1160.9(6)	0.43(10)			2631.7(8)	0.68(15)		
1185.7(6)	0.51(10)			2649.9(6)	1.4(2)		
1225.7(2)	1.62(18)			2769.4(10)	0.87(20)		
1283.1 *m*	1.06(15)			2846.1(10)	0.91(20)		
1333.0(4)	1.0(2)			4086.2(8)	1.6(3)	^{208}Pb	4086.2
1347.3 *m*	2.4(3)	^{206}Pb	2150.3				
		^{208}Pb	3961.4				

Level schemes of ^{206}Pb [72Ka1, 72Ka2, 74Fl1], ^{207}Pb [71Sc, 75Wa] and ^{208}Pb [71Le1, 73He, 74Ne1]

^{A}Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{206}Pb	803.01(5)	803.00	2+	803.01	100	0	0+	33*
	—	1165	0+	362	<0.5	803.0	2+	<0.5
	1340.42(7)	1340.38	3+	537.41	32	803.0	2+	24*
	1466.69(7)	1459.9	2+	1466.69	3.8	0	0+	12.9
				663.68	9.1	803.0	2+	
	1684.05(8)	1683.81	4+	881.04	13.8	803.0	2+	16*
				343.4	4.9	1340.4	3+	
	1704.68(15)	1704	1+	1704.68	6.3	0	0+	6.3

A_Z	E_i	E_i^a	J_i^π	E_γ	I_γ	E_f	J_f^π	P_s
^{206}Pb	1784.74(10)	1784	2+	1784.2	0.88	0	0+	5.8
				981.73	4.9	803.0	2+	
	1997.49(12)	1997.48	4+	657.07	4.1	1340.4	3+	6.6*
	2150.3	2149	(2+)	1347.3	<2.4	803.0	2+	<2.4
	—	2199.93	7−	—	—	—	—	—
	—	2314	(0+)	—	—	—	—	—
	—	2383.91	6−	182.9	<9.6	2199.9	7−	—
	—	2428	2+	—	—	—	—	—
	2648.01(16)	2647.50	3−	1845.00	4.0	803.0	2+	4.3*
	—	2658.5	(9−)	—	—	—	—	—
	2781.6(4)	2781.88	5−	397.7	1.8	2383.9	6−	4.1*
^{207}Pb	569.64(5)	569.67	5/2−	569.64	76	0	1/2−	51
	898.01(5)	897.6	3/2−	898.01	37	0	1/2−	33
	1633.35(7)	1633.29	13/2+	1063.71	12.2	569.6	5/2−	8.4
	2339.8(2)	2339.89	7/2−	1770.2	6.0	569.6	5/2−	6.0
	—	2368?	—	—	—	—	—	—
	—	2563?	—	—	—	—	—	—
	2624.56(17)	2624.1	5/2+	2055.3	0.79	569.6	5/2−	4.9
				1726.55	4.1	898.0	3/2−	
	2663.36(16)	2662.6	7/2+	2093.72	6.2	569.6	5/2−	6.2
	—	2702	—	—	—	—	—	—
	2728.39(14)	2727.6	9/2+	1095.04	3.8	1633.4	13/2+	3.8
^{208}Pb	2614.68(10)	2614.6	3−	2614.68	66	0	0+	23*
	3197.82(11)	3197.7	5−	583.14	29	2614.7	3−	16*
	3475.2(2)	3475.0	4−	860.5	5.2	2614.7	3−	8.7*
	—	3708.5	5−	—	—	—	—	—
	—	3920.2	(6−)	—	—	—	—	—
	3946.59(16)	3946	—	748.77	2.1	3197.8	5−	2.1
	3961.37(17)	3960.9	4−	1347.3	<2.4	2614.7	3−	2.8*
				763.55	1.39	3197.8	5−	
	—	3998.5	—	—	—	—	—	—
	—	4038	(7−)	—	—	—	—	—
	4049.85(16)	4050	(4)	1435.17	3.8	2614.7	3−	3.8
	4086.2(8)	4086	2+	4086.2	1.6	0	0+	1.6
	4125.6(4)	4125.4	4−, 5−	927.8	0.82	3197.8	5−	0.82
	4157.1(6)	4155?	—	1542.4	0.46	2614.7	3−	0.46
	4179.55(14)	4180.5	5−	981.73	4.9	3197.8	5−	4.9
	—	4204	5−, 6−	—	—	—	—	—
	4231.0(3)	4231	3−	1616.3	1.8	2614.7	3−	1.8
	4255.7(3)	4253	(2—4−)	1641.0	1.4	2614.7	3−	1.4



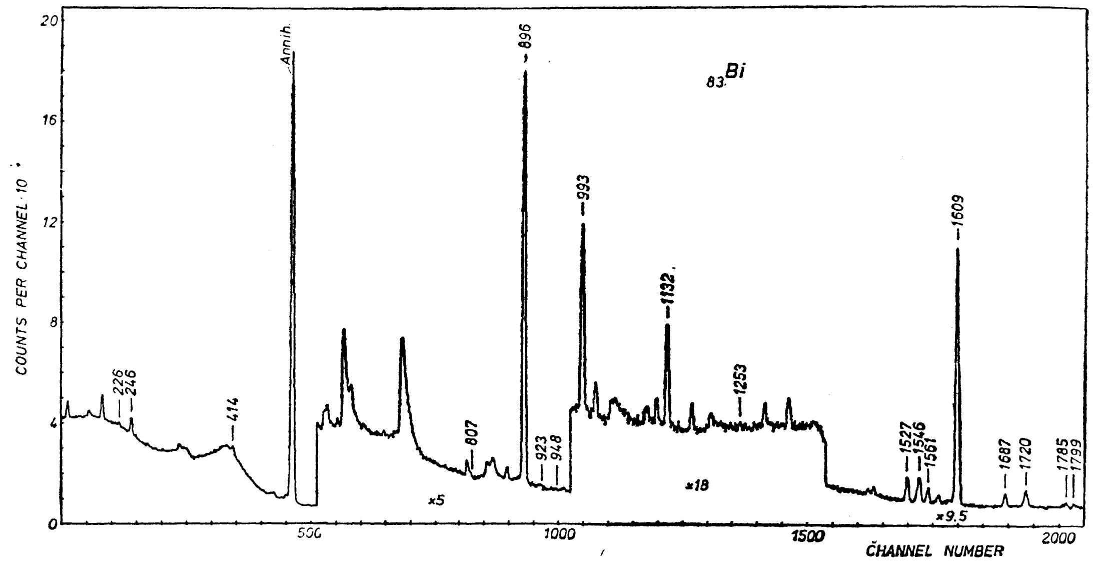


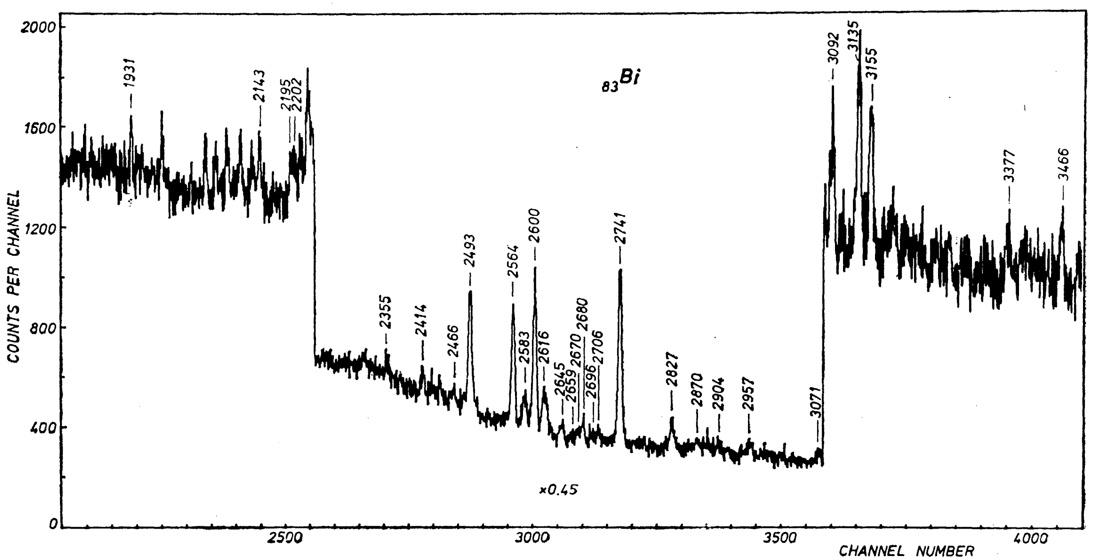
E_γ	I_γ	E_i	E_γ	I_γ	E_i
225.8(2)	2.6(7)	3213.4	2414.5(10)	1.3(5)	3310.7
		3362.1	2465.9(10)	0.9(4)	3362.1
246.19(10)	19(5)	(2987.6)	2493.4(2)	6.7(7)	2493.4
413.5(5)	4.0(10)	3155.2	2564.5(2)	6.4(7)	2564.5
807.2(8)	1.0(4)	3407.9	2583.4(10)	1.9(4)	2583.2
896.20(10)	100	896.2	2600.1(2)	8.3(9)	2600.1
922.6(5)	1.0(5)	3505.8	2616.0(10)	1.0(5)	2616.6
948.3(10)	0.4(2)	3441.7	2644.6(5)	0.5(2)	
992.58(10)	14(3)	(2600.1)	2659.4(10)	0.33(17)	
		2601.6	2670.4(10)	0.8(4)	
1132.44(10)	8.2(8)	2741.4	2679.6(10)	1.2(5)	3575.8
1252.8(5)	0.25(9)		2695.8(10)	0.7(4)	
1527.14(10)	5.5(7)	3136.1	2705.7(10)	0.7(4)	3601.9
1546.4(4)	6.0(9)	3155.2	2741.4(2)	10.5(9)	2741.4
1560.77(10)	2.4(5)	3169.8	2827.4(5)	1.9(4)	2827.1
1608.97(10)	66(7)	1609.0	2869.5(10)	0.8(4)	
1687.0(2)	3.5(6)	2583.2	2904.5(10)	0.8(4)	2904.5
1720.4(2)	1.5(5)	2616.6	2957.4(10)	1.0(3)	2957.4
1785.1(5)	1.2(3)	3394.1	3070.8(10)	0.7(3)	
1798.9(8)	1.0(4)	3407.9	3091.5(10)	1.8(7)	3091.4
1930.6(3)	0.7(3)	2827.1	3135.0(5)	3.2(4)	3136.1
2142.9(5)	1.4(6)	3039.1	3155.0(10)	2.6(4)	3155.2
2195.2(6)	1.0(4)	3091.4	3377.4(15)	0.6(3)	3377.4
2201.9(8)	1.1(5)		3465.6(15)	1.0(3)	3465.6
2355.3(10)	0.8(3)				

Level scheme of ^{209}Bi [75Wa, 71Ma1]

E_i	E_i^a	J^π	E_γ	I_γ	E_f	J^π	P_s
896.20(10)	895.9	7/2−	896.20	100	0	9/2−	88
1608.97(10)	1608.1	13/2+	1608.97	66	0	9/2−	28
2493.4(2)	2492	(3/2+)	2493.4	6.7	0	9/2−	6.3
2564.5(2)	2564	(9/2+)	2564.5	6.4	0	9/2−	6.4
2583.2(2)	2581	(7/2+)	2583.4	1.9	0	9/2−	4.4
			1687.0	3.5	896.2	7/2−	
2600.1(2)	2599	(11/2+)	2600.1	8.3	0	9/2−	≥7.3
			992.58?	<14	1609.0	13/2+	
2601.6(2)	2601	(13/2+)	992.58	≤14	1609.0	13/2+	≤14
2616.6(2)	2617	(5/2+)	2616.0	1.0	0	9/2−	2.5
			1720.4	1.5	896.2	1/2−	
2741.41(15)	2740.4	(15/2+)	2741.4	10.5	0	9/2−	—
			1132.44	8.2	1609.0	13/2+	

E_i	E_i^a	J^π	E_γ	I_γ	E_f	J^π	P_s
—	2766	—	—	—	—	—	—
—	2822	(5/2−)	—	—	—	—	—
2827.1(4)	2825.1	—	2827.4	1.9	0	9/2−	2.6
			1930.6	0.7	896.2	7/2−	
2904.5(10)	2910	—	2904.5	0.8	0	9/2−	0.8
2957.4(10)	2956	—	2957.4	1.0	0	9/2−	1.0
2987.6(2)?	2986	(13/2+)	246.19?	19	2741.4	15/2+	<19
3039.1(5)	3038	(3/2+)	2142.9	1.4	896.2	7/2−	1.4
3091.4(6)	3091	(5/2+)	3091.5	1.8	0	9/2−	2.8
			2195.2	1.0	896.2	7/2−	
—	3118	(3/2−)	—	—	—	—	—
3136.11(10)	3133.9 *m*	(11/2—19/2+)	3135.0	3.2	0	9/2−	<8.7
			1527.14	5.5	1609.0	13/2+	
3155.2(4)	3153.4 *m*	(17/2+—7/2+) or (17/2+—9/2+)	3155.0	2.6	0	9/2−	12.6
			1546.4	6.0	1609.0	13/2+	
			413.5	4.0	2741.4	15/2+	
3169.8(2)	3168	(15/2+)	1560.77	2.4	1609.0	13/2+	2.4
—	3197	—	—	—	—	—	—
3213.4(5)	3211	(9/2+) or (1/2+—7/2+)	225.8	<2.6	2987.6	13/2+	<2.6
—	3222	—	—	—	—	—	—
3310.7(10)	3309	—	2414.5	1.3	896.2	7/2−	1.3
—	3358	—	—	—	—	—	—
3362.1(10)	3363	—	2465.9	0.9	896.2	7/2−	<3.5
			225.8	<2.6	3136.1		
3377.4(15)	3379	—	3377.4	0.6	0	9/2−	0.6
3394.1(5)	3393	—	1785.1	1.2	1609.0	13/2+	1.2
3407.9(8)	3406	—	1798.9	1.0	1609.0	13/2+	2.0
			807.2	1.0	2600.1	11/2+	
—	3433?	—	—	—	—	—	—
3441.7(10)	3450	—	948.3	0.4	2493.4	3/2+	0.4
3465.6(15)	3466	—	3465.6	1.0	0	9/2−	1.0
—	3476	—	—	—	—	—	—
—	3489	—	—	—	—	—	—
3505.8(5)	3501	—	922.6	1.0	2583.2	7/2+	1.0
3575.8(10)	3579	—	2679.6	1.2	896.2	7/2−	1.2
3601.9(10)	3597	—	2705.7	0.7	896.2	7/2−	0.7





Thorium

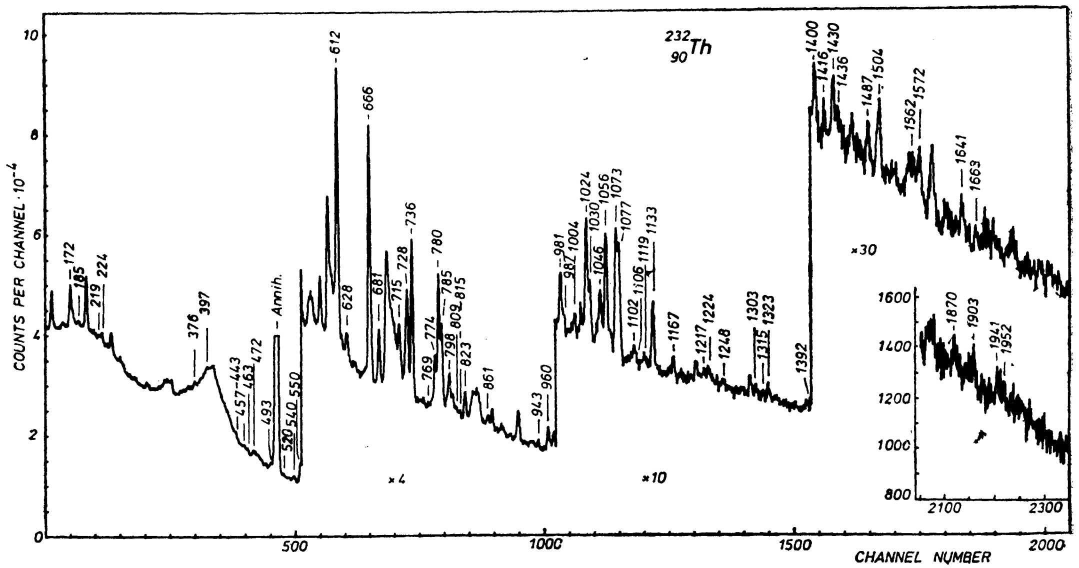
$^{232}_{90}Th$

E_γ	I_γ	E_i	E_γ	I_γ	E_i
171.6(2)	100	334.1	1003.9(5)	4.0(10)	1053.2
185.4(6)	9(3)		1023.9(2)	22(4)	1073.2
218.6(6)	7(2)		1029.5(3)	9(2)	1078.8
223.5(3)	15(3)	557.6	1046.3 *m*	9(2)	1094.7
376.5(6)	5.5(15)		1056.10(15)	22(3)	1105.4
396.8(5)	6.0(15)		1072.7(2)	23(3)	1122.2
443.3(7)	4.0(10)		1077.4(2)	22(3)	1077.4
457.1(7)	4.2(10)		1102.0(8)	3.4(10)	
463.4(7)	4.6(12)	1293.7	1105.5(10)	1.9(6)	
472.1(6)	3.5(13)		1119.2 *m*	1.7(6)	
492.6(6)	4.3(11)		1133.24(16)	17(2)	1182.5
519.5(7)	3.0(8)	1293.7	1166.9(5)	3.2(10)	1329.4
539.8(3)	6.7(15)		1217.3(15)	0.8(4)	
550.43(15)	26(3)	(884.5)	1224.4(12)	1.3(4)	1386.9
612.25(10)	84(7)	774.8	1248.4(12)	1.3(4)	
627.7(3)	7.6(18)		1302.8(6)	3.2(8)	1352.1
665.54(10)	98(8)	714.8	1314.6(10)	2.0(6)	
681.07(15)	19(3)	730.4	1322.9(4)	4.8(12)	1485.4
714.7(3)	14(2)	714.8	1391.9(11)	1.6(6)	
727.9 *m*	45(10)	774.2	1400.3(4)	5.0(12)	
736.14(10)	55(10)	785.4	1415.7(12)	1.3(5)	
768.6(6)	3.2(8)		1429.9(5)	4.4(10)	1479.2
774.17(15)	20(3)	774.2	1436.5(12)	1.4(5)	(1486.6)
780.42(15)	54(6)	829.7	1486.8(6)	3.4(10)	(1486.6)
785.43(15)	33(4)	785.4	1504.4 *m*	8(2)	1554.4
798.1(4)	16(3)	960.6	1561.6(7)	4.0(8)	
808.6 *m*	6(2)		1571.6 *m*	5.0(12)	
815.2(6)	3.4(10)		1640.6(6)	3.3(8)	
823.4(2)	12(2)	872.7	1662.6(10)	2.0(6)	
861.3(10)	2.0(8)	1023.8	1870.5(15)	1.2(6)	
943.4(8)	2.2(6)	1105.4	1902.8(15)	1.8(6)	
959.9(3)	10(2)	1122.2	1941.2(15)	1.3(6)	
981.4(2)	11(2)	1143.9	1952.5(15)	1.3(6)	
986.6(11)	1.9(6)				

Level scheme of ^{232}Th [70Sc, 72Mc, 72El]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
49.29(16)	49.75	2+0	—	—	—	—
162.5 *c*	162.5	4+0	—	—	—	—
334.1(4)	334.0	6+0	171.6	100	162.5	4+0
557.6(5)	557.8	8+0	223.5	15	334.1	6+0

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
714.8(2)	714.6	1-0	714.7	14	0	0+0
			665.54	98	49.3	2+0
730.4(2)	730.7	0+0	681.07	19	49.3	2+0
774.17(15)	774.1	2+0	774.17	20	0	0+0
			727.9	<45	49.3	2+0
774.8(2)	774.5	3-0	612.25	84	162.5	4+0
785.43(15)	785.2	2+2	785.43	33	0	0+0
			736.14	55	49.3	2+0
—	828.1	(10+)	—	—	—	—
829.7(2)	829.9	—	780.42	54	49.3	2+0
872.7(3)	873.2	(4+)0	823.4	12	49.3	2+0
884.5(4)?	—	—	550.43	26	334.1	6+0
—	890.8	5-	—	—	—	—
960.6(5)	960.4	—	798.1	16	162.5	4+0
1023.8(10)	1023	(6+)0	861.3	2.4	162.5	4+0
1053.2(5)	1053.7	—	1003.9	4.0	49.3	2+0
1073.2(3)	1073.3	—	1023.9	22	49.3	2+0
1077.4(2)	1077.7	[1±,2+]	1077.4	22	0	0+0
1078.8(4)	1078.6	—	1029.5	9	49.3	2+0
—	1094.7	—	1046.3	<9	49.3	2+0
1105.4(2)	1105.8	—	1056.10	22	49.3	2+0
			943.4	2.2	162.5	4+0
1122.2(3)	1122.0	—	1072.7	23	49.3	2+0
			959.9	10	162.5	4+0
—	1138.8	(12+)	—	—	—	—
1143.9(3)	1143.4	—	981.4	11	162.5	4+0
1182.5(3)	1182.6	—	1133.24	17	49.3	2+0
—	1208	—	—	—	—	—
1293.7(7)	1294	—	519.5	3.0	774.8	3-0
			463.4	4.6	829.7	—
1329.4(5)	1329	—	1166.9	3.2	162.5	4+0
1352.1(6)	1352.8	—	1302.8	3.2	49.3	2+0
1386.9(12)	1386.2	—	1224.4	1.3	162.5	4+0
1479.2(5)	1479.9	—	1429.9	4.4	49.3	2+0
1485.4(4)	1484.9	—	1322.9	4.8	162.5	4+0
1486.6(6)?	—	—	1486.8	3.4	0	0+0
			1436.5	1.4	49.3	2+0
—	1489.0	—	—	—	—	—
—	1554.4	—	1504.4	<8.2	49.3	2+0



Uranium $^{238}_{92}$U

E_γ	I_γ	E_i	E_γ	I_γ	E_i
158.9(2)	70(20)	306.9	468.7(8)	3.3(8)	(1465.7)
173.6(8)	36(9)	1170.7	535.9(4)	11(2)	(1465.7)
191.9(4)	43(15)		540.5(6)	4.6(12)	
203.6(4)	15(4)		546.4(4)	9(2)	
211.2(3)	25(5)	518.1	553.6(4)	10(2)	
218.1(4)	16(4)	949.9	583.61(12)	59(7)	731.6
258.9(7)	4.6(10)		589.4(5)	18(5)	
269.6 *m*	15(3)	949.9	621.1(5)	5.1(14)	
295.5(2)	20(3)		635.24(12)	100	679.9
306.6(7)	4.1(9)		641.3(4)	18(4)	
317.0(7)	3.6(8)		679.87(16)	86(10)	679.9
325.5(3)	17(3)	1057.1			827
331.6 *m*	15(4)		687.0(2)	80(10)	731.6
352.0(2)	20(2)		724.1(4)	18(2)	
357.9(2)	17(2)		749.3(6)	3.5(9)	
370.0(10)	2.7(7)		768.1(3)	15(2)	
376.5(4)	11(2)	(1204)	775.1(6)	5.0(15)	
381.1(8)	3.0(7)	1208	799.5(6)	7(2)	
448.2(4)	12(2)	1128.4	808.8(6)	18(14)	
457.0 *m*	6.0(15)		817.0(3)	26(4)	965.3

E_γ	I_γ	E_i	E_γ	I_γ	E_i
848.9(4)	31(7)	997.1	1216.4(8)	12(3)	1216.4
885.23(12)	78(5)	929.8	1223.4(6)	14(3)	1223.4
905.4(4)	20(3)	949.9	1233.6(7)	5.8(12)	(1279.1)
911.2(4)	22(3)	1059.5	1248.5(7)	2.4(8)	
921.1(5)	8(2)	965.3	1263.6(9)	2.0(10)	(1412.6)
932.5(5)	5.9(16)		1279.1(3)	11.0(15)	(1279.1)
952.6(4)	35(6)	997.1	1311.8 *m*	12(2)	
958.1 *m*	20(5)	1105.6	1335.7(8)	4.0(10)	
967.9(5)	8(2)	1274.8	1360.8(10)	2.7(8)	
975.7(5)	12(2)	1123.7	1367.8(4)	8.6(14)	(1412.6)
991.9(4)	6.8(12)	1036.5			(1515.8)
1015.1(3)	92(5)	1059.5	1383.4(4)	8.6(14)	(1428.0)
1020.4(5)	23(4)	1168.4	1413.3(8)	2.9(7)	(1412.6)
1038.0 *m*	4.2(10)	1036.5	1428.0(5)	7.0(14)	(1428.0)
1060.94(13)	48(4)	1060.9	1436.0(4)	11(2)	
1084.2(4)	11(2)	1128.4	1456.5(8)	2.8(12)	
1091.2 *m*	6.9(13)		1471.2(7)	4.4(11)	(1515.8)
1103.6(8)	1.6(4)	(1251.6)	1524.5(12)	1.6(6)	
1113.6(8)	2.2(5)	(1159.7)	1549.1(12)	1.4(6)	
1121.7 *m*	7.2(14)	1168.4	1584.9 *m*	3.0(7)	
1132.2(6)	4.4(8)		1613.6(8)	2.4(6)	
1159.7(5)	3.4(7)	1159.7	1676.2(11)	2.2(6)	
1179.6(3)	13(2)	1179.6	1718.1(10)	2.2(6)	
		(1223.4)	1780.5(12)	2.4(6)	
1198.6(6)	5.5(16)		1905.8(9)	2.8(7)	

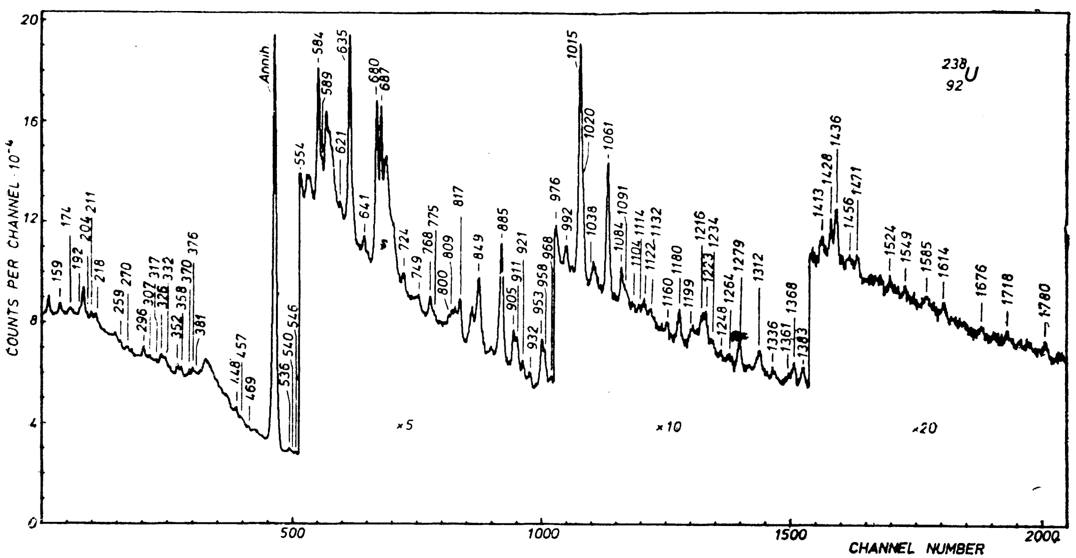
Level scheme of ^{238}U [70El, 72Mc, 72El]

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
44.63(20)	45.0	2+0	—	—	—	—
148.0(3)	148.4	4+0	—	—	—	—
306.9(4)	307.8	6+0	158.9	70	148.0	4+0
518.1(5)	518.9	8+0	211.2	25	306.9	6+0
679.87(16)	680.2	1-0	679.87	86	0	0+0
			635.24	100	44.6	2+0
731.6(3)	732.0	3-0	687.0	80	44.6	2+0
			583.61	59	148.0	4+0
—	777	10+0	—	—	—	—
—	827	5-0	679.87	≤86	148.0	4+0
—	927.2	(0+)	—	—	—	—
929.8(3)	930.9	1-1	885.23	78	44.6	2+0
—	939	—	—	—	—	—

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
949.9(4)	950.2	(2-1)	905.4	20	44.6	2+0
			269.6	<15	679.9	1-0
			218.1	16	731.6	3-0
965.3(4)	965	2+0	921.1	8	44.6	2+0
			817.0	26	148.0	4+0
997.1(4)	997.4	2+, 3-	952.6	35	44.6	2+0
			848.9	31	148.0	4+0
—	1006	—	—	—	—	—
1036.5(4)	1037.3	2+0	1038.0	<4.2	0	0+0
			991.9	6.8	44.6	2+0
—	1047	—	—	—	—	—
1057.1(4)	1055	4+0	325.5	17	731.6	3-0
1059.5(3)	1060	3+3	1015.1	92	44.6	2+0
			911.2	22	148.0	4+0
1060.94(13)	1061	2+2	1060.94	48	0	0+0
—	1076	—	—	—	—	—
—	1078	12+0	—	—	—	—
—	1100	—	—	—	—	—
—	1105	(1-)1	—	—	—	—
—	1105.6	3+2	958.1	<20	148.0	4+0
1123.7(6)	1123	—	975.7	12	148.0	4+0
—	1127	(4+)0	—	—	—	—
1128.4(4)	1128.7	(2-)1	1084.2	11	44.6	2+0
			448.2	11	679.9	1-0
—	1150	—	—	—	—	—
1159.7(5)	1160.1	2+2	1159.7	3.4	0	0+0
			1113.6?	2.2	44.6	2+0
1168.4(6)	1169.0	4+2	1121.7	<7.2	44.6	2+0
			1020.4	5.0	148.0	4+0
1170.7(8)	1169.4	3-2	173.6	36	997.1	2+, 3-
1179.6(3)	1179.0?	[1±, 2+]	1179.6	13	0	0+0
1204?	1202.0?	—	376.5	11	827	5-0
1208	1209	4-1	381.1	3.0	827	5-0
—	1210	—	—	—	—	—
1216.4(8)	1215.6	[1±, 2+]	1216.4	12	0	0+0
1223.4(6)	1221	[1±, 2+]	1223.4	14	0	0+0
			1179.6?	13	44.6	2+0
1251.6(9)?	1246	—	1103.6	1.6	148.0	4+0
—	1270	—	—	—	—	—
1274.8(6)?	1272	—	967.9	8	306.9	6+0
1279.1(3)?	—	[1±, 2+]	1279.1	11.0	0	0+0
			1233.6?	5.8	44.6	2+0
—	1290	(5-)	—	—	—	—
—	1313	—	—	—	—	—
—	1361	—	—	—	—	—
—	1401	—	—	—	—	—

Cont'd ($^{238}_{92}U$)

E_i	E_i^a	$J_i^\pi K_i$	E_γ	I_γ	E_f	$J_f^\pi K_f$
1412.6(5)?	—	—	1413.3	2.9	0	0+0
			1367.8?	8.6	44.6	2+0
			1263.6?	2.0	148.0	4+0
—	1417	14+0	—	—	—	—
1428.0(5)?	—	[1±, 2+]	1428.0	7.0	0	0+0
			1383 4	8.6	44.6	2+0
—	1437	—	—	—	—	—
1465.7(5)?	1470	—	535.9	11	929.8	1−1
			468.7	3.3	997.1	2+, 3−
1515.8(7)?	—	—	1471.2	4.4	44.6	2+0
			1376.8?	8.6	148.0	4+0



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СОДЕРЖАНИЕ

CONTENTS

ATLAS OF GAMMA-RAY SPECTRA FROM THE INELASTIC SCATTERING OF REACTOR FAST NEUTRONS

АТЛАС СПЕКТРОВ ГАММА-ИЗЛУЧЕНИЯ ОТ НЕУПРУГОГО РАССЕЯНИЯ БЫСТРЫХ НЕЙТРОНОВ РЕАКТОРА

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