KIT SCIENTIFIC REPORTS 7628

Evaluated activation cross section data for proton induced nuclear reactions on W up to 3 GeV incidence energy

A. Yu Konobeyev, U. Fischer, P. E. Pereslavtsev, D. Ene

KIT Scientific Publishing

A. Yu Konobeyev, U. Fischer, P. E. Pereslavtsev, D. Ene

Evaluated activation cross section data for proton induced nuclear reactions on W up to 3 GeV incidence energy

Karlsruhe Institute of Technology
KIT SCIENTIFIC REPORTS 7628

Evaluated activation cross section data for proton induced nuclear reactions on W up to 3 GeV incidence energy

by
A. Yu Konobeyev
U. Fischer
P. E. Pereslavtsev
D. Ene*

*ESS AB, Tunavägen 24, P.O.Box 176, SE-221 00 Lund, Sweden

KIT Scientific Publishing

Report-Nr. KIT-SR 7628

Impressum

Karlsruher Institut für Technologie (KIT)
KIT Scientific Publishing
Straße am Forum 2
D-76131 Karlsruhe
www.ksp.kit.edu

KIT – Universität des Landes Baden-Württemberg und
nationales Forschungszentrum in der Helmholtz-Gemeinschaft

KIT Scientific Publishing 2012
Print on Demand

ISSN 1869-9669
ISBN 978-3-86644-924-4

Abstract

Evaluated cross-section data files were prepared for the stable tungsten isotopes with the objective to provide reliable and sound nuclear data for activation and inventory calculations of the European Spallation Source (ESS) which utilizes a tungsten target irradiated by 2.5 GeV protons. The data files contain yields of radionuclides produced by proton induced reactions with incident energies up to 3 GeV. The data were obtained from the analysis of calculations using advanced nuclear models, available experimental data and systematics.

The calculations of cross-sections were performed using the intranuclear cascade model, the pre-equilibrium exciton model, and the Hauser-Feshbach model. The available experimental information, results of calculations and systematics were applied for the evaluation of yields of residual nuclei using statistical methods implemented in the computer code package BEKED developed at KIT.

CONTENTS

page

1. Introduction

The improvement of activation and inventory calculations for materials irradiated with intermediate and high energy particles requires the use of evaluated yields of radionuclides obtained using results of advanced model calculations and available experimental data. The use of nuclide yields obtained exclusively from model calculations, for example using MCNPX models, meet a number of difficulties: various models have different predictions, their results seem complement each other, and the extensive experimental information about cross-sections, used as a rule for the choice of the "best" model approximately describing experiments, is explicitly left outside the activation calculations.

The positive experience of the use of evaluated nuclear data, obtained as a proper statistical combination of results of model calculations and measurements employing the covariance information, for reactor and fusion applications makes the preparation and the use of such data an integral part of any reliable activation and inventory calculations.

To improve activation calculations at intermediate and high energies, especially for ESS applications [1,2], new evaluated data files were prepared for stable tungsten isotopes irradiated with protons at energies up to 3 GeV. The evaluation comprises the analysis of existing experimental data, calculations using advanced nuclear model, the critical comparison of the content of ENDF/B-VII [3], PADF-2007 [4], and JENDL-HE [5], calculations using systematics, and the statistical combination of measured and calculated values.

In the present work, calculations of cross-sections were performed using the pre-equilibrium exciton model and the Hauser-Feshbach model implemented in the TALYS code [6] at relative low energies and the intranuclear cascade model implemented in the CASCADE code [7-9] and Hauser-Feshbach model from TALYS [6] at higher energies. The combination of TALYS and CASCADE-TALYS calculations is discussed below.

The evaluated yields of nuclides were obtained for tungsten isotopes ^{180}W,

^{182}W, ^{183}W, ^{184}W, and ^{186}W at primary proton energies from reaction thresholds up to 3 GeV.

The data obtained were stored in data files using the ENDF/B format.

2. Description of methods of cross-section calculations

The yields of residual nuclei were calculated using advanced nuclear models successful and well justified at intermediate and high energies of primary particles. At proton energies from 20 MeV to 3 GeV the intranuclear cascade model implemented in the CASCADE code [9] combined with the Hauser-Feshbach model (HF) from the TALYS code [6] has been applied for calculations. To increase the quality of predicted cross-sections at relatively low energies the calculations in the energy range from several keV to 200 MeV were performed using the pre-equilibrium exciton model and the HF evaporation model from TALYS. The transition between CASCADE-TALYS and TALYS simulations follows so called "hybrid" approach applied for example in the LAHET code [11]. The specific features of models used are briefly described below.

2.1 CASCADE-TALYS

The simulation of non-equilibrium nuclear processes is performed using the intranuclear cascade model (INC) developed by Barashenkov and coauthors [7-9] and based on the Monet Carlo method. The specific features of the model are the explicit consideration of the time coordinate in the modelling of nucleon dynamics, the simulation of realistic nucleon density distribution in nuclei and the depletion of nuclear density due to the fast particle emission. The Woods-Saxon function describes the nuclear density

$$\rho(r) = \frac{\rho_0}{1 + \exp[(r - c)/a_d]}\ , \qquad (1)$$

where $c=1.07\ A^{1/3}$ fm, $a_d=0.545$ fm, $\rho_0 = 0.17$ fm^{-3}.

The experimental and evaluated nucleon-nucleon and π-nucleon cross-sections

[11] are used for the modeling of intranuclear interactions. The Pauli exclusion principle provides the correction of such cross-sections due to the nuclear matter.

The non-equilibrium emission of light clusters (d, t, ^{3}He, α) is simulated using the coalescence model [12-14]:

$$\frac{d^2\sigma_x^{pre}}{d\varepsilon_x d\Omega} = \frac{1}{16}\left(\frac{Z_t+1}{N_t}\right)^2\left(\frac{(4\pi/3)P_0^3}{\sigma_{non}(2m^3)^{1/2}}\right)^3\frac{(\varepsilon_n - E_C)^{1/2}}{\varepsilon_n^2}\left(\frac{d^2\sigma_n^{pre}}{d\varepsilon_n d\Omega}\right)^4 , \qquad (2)$$

where Z_t and N_t are the number of protons and neutrons in the target nucleus, σ_{non} is the cross-section of nonelastic interactions for protons and the target, m is the nucelon mass, E_C is the Coulomb potential for outgoing x-particle, $d^2\sigma^{pre}_n/d\varepsilon_n d\Omega$ is the double differential cross-section of non-equilibrium neutrons, P_0 is the "coalescence" radius obtained from the comparison with the measured data.

The difference with Refs.[12-14] consists in the two step modeling of intranuclear interactions to get an improved energy balance for the non-equilibrium stage of nuclear reactions. The emission of heavy clusters (A > 4) is described using the phenomenological "nuclear forces break down" model [15] discussed e.g. in Ref.[16].

Final results of simulations are normalized to the experimental and evaluated cross-sections of nonelastic proton interactions with nuclei σ_{non} from Ref.[11].

The evaporation particle emission was modeled using the Hauser-Feshbach model implemented in the TALYS code [6]. The computation proceeds in several steps. The characteristics of residual nuclei formed after the non-equilibrium emission of nucleons and light clusters simulated by INC model are sorted and processed to get N number of TALYS input files, where N is the total number of residuals produced before the equilibrium de-excitation. Each input file contains the TALYS instruction "projectile 0" [6] and the set of excitation energies for a given residual. After N number of performed TALYS calculations the results are properly normalized and unified.

The successful use of the Monte Carlo based INC model from CASCADE in the combination with deterministic evaporation algorithm was demonstrated using

the CASCADEX code [17] and the CASCADE-ASF code [18,19].

One of advantages of discussed calculations is the possibility to predict the yields of nuclei in isomeric states in nuclear reactions induced by intermediate and high energy particles.

2.2 TALYS

To decrease the possible influence of the uncertainty of simulations with the "high energy" INC model at energies below 100- 200 MeV on predicted cross-sections the calculations at lower proton energies were performed using the TALYS code [6]. Brief description of nuclear models implemented in the code is given below.

The pre-equilibrium particle emission is described using the two-component exciton model discussed in Ref.[20]. The model implements expressions for internal transition rates and parameterization of the average squared matrix element for the residual interaction obtained using the optical model potential from Ref.[21]. The particle-hole density is calculated taking into account the Pauli correction, the pairing correction and the finite depth of nuclear potential well. The special parameterization is applied for the depth of the potential well as a function of the projectile energy and the mass of the target separately for incident neutrons and protons, reflecting the influence of surface effects on the first stage of interaction. The multiple pre-equilibrium emission is considered up to arbitrary order of the particle escape.

The phenomenological model from Ref.[22] is used for the description of the pre-equilibrium complex particle emission from nuclei. The contribution of direct processes in inelastic scattering is calculated using the ECIS-97 code integrated in the TALYS code. The coupled channel model or DWBA are selected by TALYS using an available information about nuclear level schemes [6].

The equilibrium particle emission is simulated using the Hauser-Feshbach model [6,23]. The code utilizes different approaches for the calculation of nuclear level density: i) the Fermi gas model with the energy dependent level density

parameter [24] combined with the "constant temperature" model [6,25] (GC-IST), ii) the back-shifted Fermi gas model [26] (BSFM), iii) the generalized superfluid model [27,28] (GSM), iv) microscopic approach of Goriely [6,29], and v) of Hilaire [6,29]. All these models were applied for cross-section calculations. The principles of their use are briefly discussed below.

Each set of calculations with TALYS assumes the use a quite large number of model parameters, as well nuclear level density parameters (*a*) known with a certain accuracy. The uncertainty of *a*-parameters ranges from several to tens of percent, depending on the method of their production [30] implying the use of experimental data or systematics. Just the use of systematics of nuclear level density parameters results to the largest scattering of calculated reaction cross-sections [31]. The uncertainty of values of *a*-parameters and the application of different models for the calculation of nuclear level density lead to statistically different results of cross-section calculations performed using different methods (Fig. 1).

To reduce the uncertainty of predicted cross-sections the calculations were performed as recommended in Ref.[31]

$$\sigma(E) = \sum_{i=1}^{M} w_i \sigma_i(E) \left(\sum_{i=1}^{M} w_i \right)^{-1}, \qquad (3)$$

where σ_i is the cross-sections calculated using "i"-th nuclear models, w_i is the statistical weight of the model, M (=5) is the total number of different models for the description of the nuclear level density applied for the calculation of investigated cross-section.

The weight w_i reflects the "quality" of the corresponding nuclear model in describing experimental data pertaining to the kind of investigated reactions. The values of w_i defined as an inverse value of S –deviation factor (see Sect.3.5) were discussed in Ref.[32].

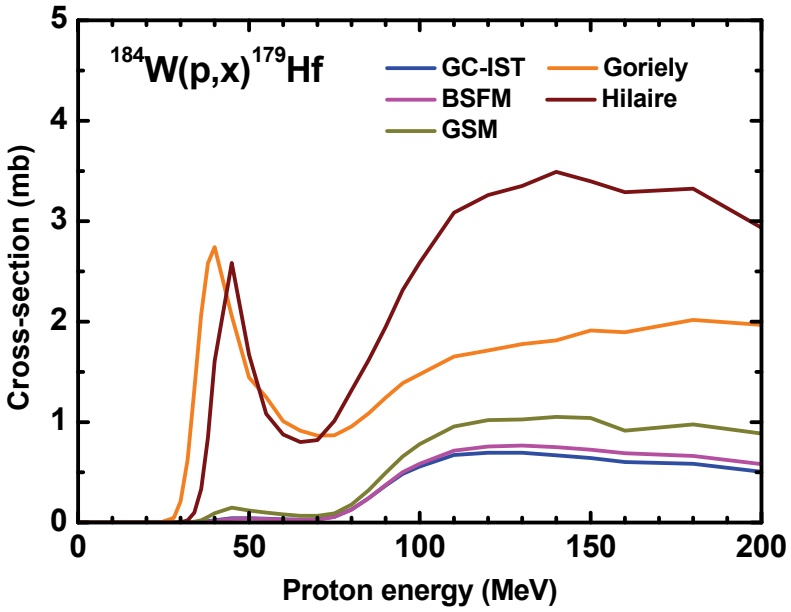


Fig.1 Example of cross-section calculated with the TALYS code using various models for the description of nuclear level density. See explanations in the text.

2.3 Transition between TALYS and CASCADE-TALYS modeling

The transition between two different methods of simulation was made for appropriate reactions according to the "hybrid" approach similar to the one described in Ref.[10]. The transition energies concerned the range from 150 MeV and several hundreds MeVs.

As a result, at relatively low energies cross-sections were obtained mainly using the TALYS code. The energy trend of TALYS cross-sections made an influence on calculated values up to hundreds MeVs.

3. Data evaluation

The cross-section evaluation procedure includes the selection and analysis of experimental data, cross-section calculations using nuclear models, the computation of covariance matrices resulting from model calculations, the estimation of cross-sections and covariances using available experimental

information and calculated cross-sections and covariance matrices.

Numerical calculations were performed using the BEKED code package [30] developed at KIT/INR.

Covariance matrices for cross-sections predicted by nuclear models were obtained using the Monte Carlo method described in Ref.[33]. The generation of covariances proceeded several steps: i) the definition of the "best" set of parameters for nuclear models adopted for cross-section calculations, ii) the definition of uncertainties of model parameters, iii) the Monte Carlo sampling of N number of input data sets for the code implementing selected models, iv) the execution of calculations for obtained input data files, and v) the calculation of covariance matrices for particular reactions

$$V_{ij} = N^{-1} \sum_{k=1}^{N} (\sigma_{ik} - \sigma_{i0})(\sigma_{jk} - \sigma_{j0}) , \quad (4)$$

where σ_{ik} is the cross-section corresponding to the "*i*"-th primary neutron energy in the "*k*"-th Monte Carlo history, σ_{i0} is the cross-section obtained using the "best" set of model parameters as described below. The corresponding correlation matrix is equal to

$$C_{ij} = V_{ij} (V_{ii} \times V_{jj})^{-1/2} \quad (5)$$

Details of the choice of model parameters the for Monte Carlo sampling are discussed below.

The evaluation of cross-sections using available experimental data and model calculations was performed applying the generalized least-squares method [34].

3.1 Selection and analysis of experimental data

Experimental data were taken from EXFOR [35]. The available measured data for natural tungsten, ^{182}W, ^{183}W, ^{184}W, and ^{186}W from Refs.[36-85] including the measurements of independent and cumulative yields of residual nuclei were used for present evaluations.

The EXFOR data were translated using the C5 format [35] and analyzed with

the help of the special code from the BEKED package [30]. The additional check has been made using the information from original publications and other sources. The goal of the analysis was

- to eliminate the cases of obviously incorrectly presented or measured data
- to exclude the data recognized as inconsistent by other authors and the data containing an incomplete information, if the correction seems not possible
- to correct and clarify the data presented with incomplete details. Typical examples concern the presentation of the identifier “SIG” in the “REACTION” line without an indication on independent or cumulative yield of the residual nucleus and the absence of detailed information about contributions of various isomers in the measured cross-section.

The detected cases with obviously incorrect or doubtful information were reported to IAEA Nuclear data Section.

The further use of selected and approved experimental data along with results of model calculations concerned

- the evaluation of nuclide production cross-sections using measured independent yields of residual nuclei for separate tungsten isotopes
- the evaluation of cumulative yields for separate tungsten isotopes using the experimental information and the correction of calculated cross-sections for individual nuclei from the cumulative “chain”
- the evaluation of independent yield of nuclides in reactions with the natural mixture of tungsten isotopes using corresponding experimental information and the correction of calculated cross-sections for separate isotopes, if possible
- the additional use of measured cumulative production cross-sections for natural tungsten to check and improve obtained yields of nuclides considered as hazardous [86].

3.2 Calculation of yields of residual nuclei

Before the main calculations, the preliminary work was done to obtain optimal

model parameters. It mainly concerns parameters of non-equilibrium models responsible for the modeling of the light (d, t, ^{3}He, α-particle) and heavy (Z > 4) cluster emission in nuclear reactions with tungsten isotopes, and parameters of fission and evaporation models.

Calculations of production cross-sections for residual nuclei were performed for proton induced reactions with tungsten isotopes with the mass number 180, 182, 183, 184, and 186 at proton energies up to 3 GeV using TALYS and CASCADE-TALYS codes, as described in Section 2.

For the estimation of covariance matrices corresponding to calculated yields of residuals the Monte Carlo sampling was made for a number of model parameters including nuclear level density parameters and parameters describing free nucleon-nucleon and π-nucleon cross-sections applied for the modeling of intranuclear interactions. The calculations of covariances requiring an enormous computer power were performed using the parallel computing in the Jülich Supercomputing Centre. The example of calculated matrices is given in Fig.2.

The energy dependence of obtained cross-sections was checked, obvious inconsistencies resulting from the Monte Carlo sampling and from the numerical integration were eliminated, where possible, as discussed in the next Section.

3.3 Smoothing and other corrections of calculated excitation functions

Special efforts were made avoiding the inconsistent energy dependence, as discontinuous derivatives, of calculated excitation functions.

The smoothing of curves was made using a special code from the BEKED package [30] applying also for the preparation of PADF-2007 files [4] and the routine from the IMSL library [87] depending on their success for individual reactions. In particularly problematic cases and for relatively small cross-sections, lower than one millibarn, the excitation functions were obtained as a weighted sum of calculated values and ones from the JENDL-HE evaluation [5]. To use JENDL-HE data also for the estimation of production of residual nuclei in isomeric states

the sums of isomer yields ("g"+"m") available in JENDL-HE were transformed to yields of individual isomers using the information from TALYS and CASCADE-TALYS calculations.

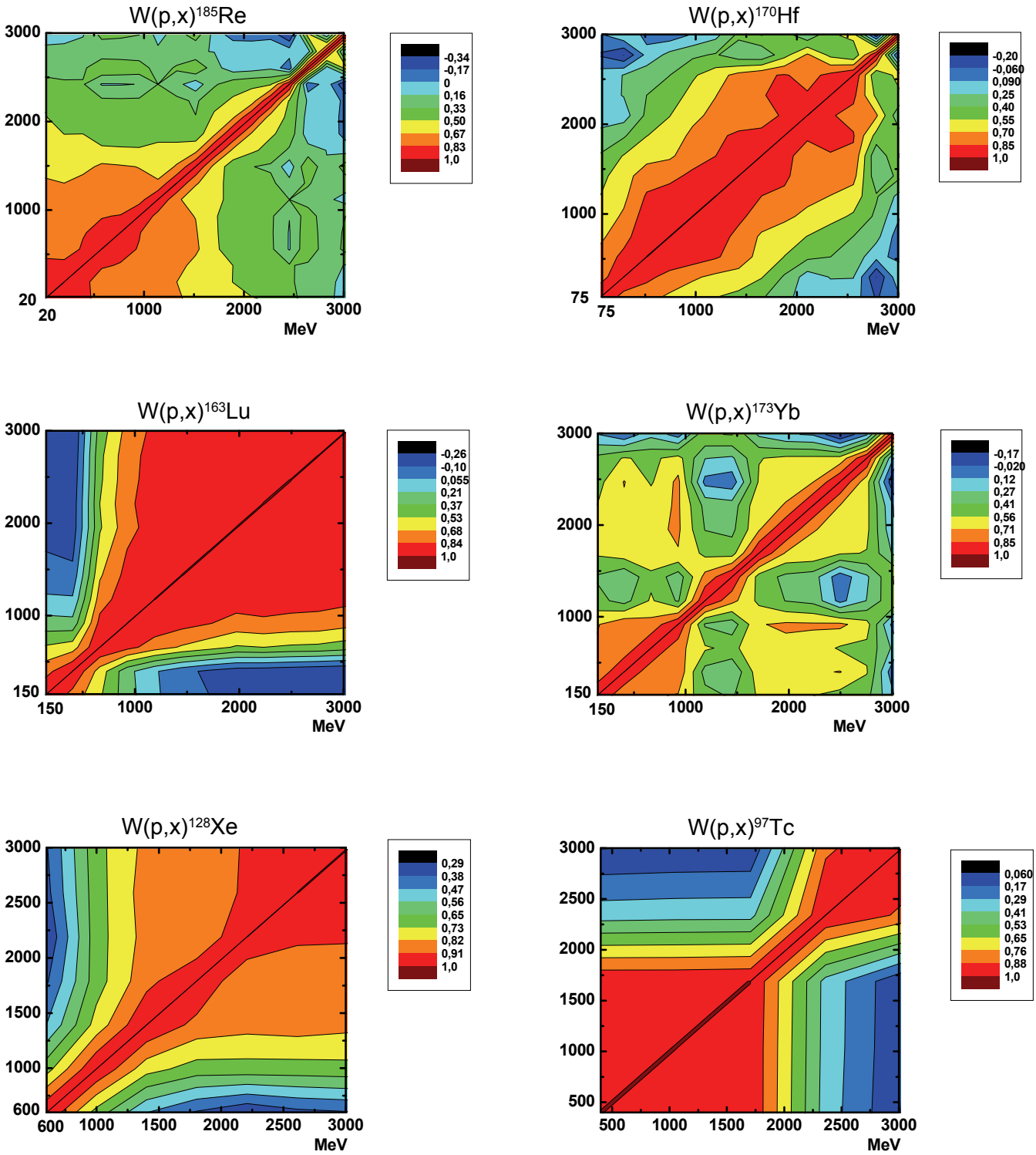


Fig.2 Examples of calculated correlation matrices for proton induced reactions with natural tungsten showing different types of correlations.

Corrected excitation functions were used along with available experimental data for the evaluation of nuclei yields in proton reactions with tungsten isotopes and natural tungsten. The evaluation procedure proceeded the steps briefly described in the next Sections.

3.4 Evaluation of fission cross-section and correction of fission product yields

Measured fission cross-sections for proton induced reactions (p,f) for tungsten isotopes [66,67,81] and for the natural mixture of tungsten isotopes [60,61,63-65,81,85], and calculated cross-sections were used to get evaluated values of (p,f) reaction cross-sections.

Figures 3-6 shows the evaluated and calculated fission cross-sections for ^{182}W, ^{183}W, ^{184}W, and ^{186}W. Fig.7 shows the values obtained for natural mixture of tungsten isotopes. For the comparison the results of calculations using the TALYS code with default, unmodified parameters and JENDL-HE data are shown.

Evaluated fission cross-sections (p,f) were used for the correction of calculated yields of fission products. On the next step of the evaluation these cross-sections and cross-section calculated for other reactions were applied along with measured independent yields of radionuclides to get evaluated production cross-sections for a number of residual nuclei.

3.5 Use of measured independent yields of radionuclides and results of calculations for data evaluation

Measured yields of radionuclides in proton induced reactions available for individual tungsten isotopes ^{182}W, ^{183}W, ^{184}W, and ^{186}W were used to get evaluated values of nuclear reaction cross-sections. The correction of calculated curves were made using codes from the BEKED package [30].

Figure 8 shows examples of the calculated and evaluated cross-sections for ^{184}W. For the comparison the JENDL-HE data are also shown.

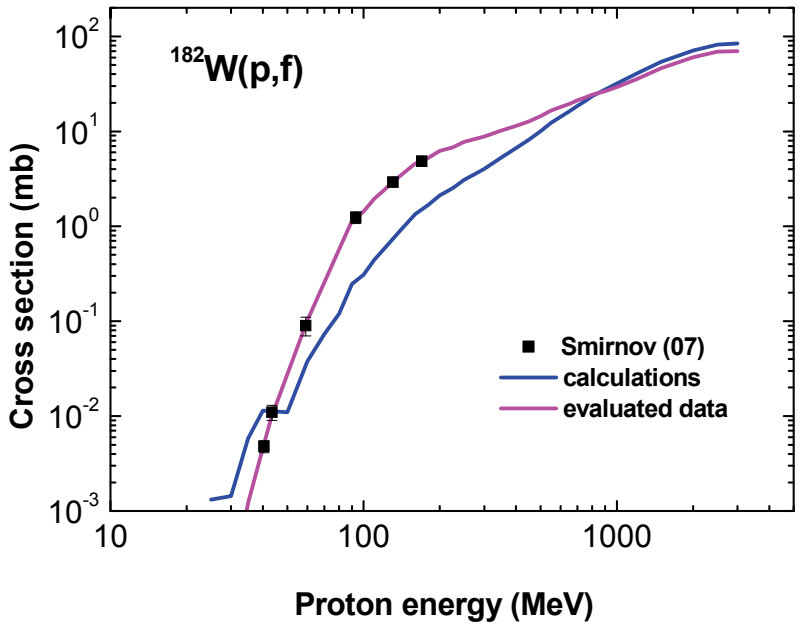


Fig.3 The fission cross-section for proton induced reactions with ^{182}W calculated and evaluated in the present work and measured in Ref.[81].

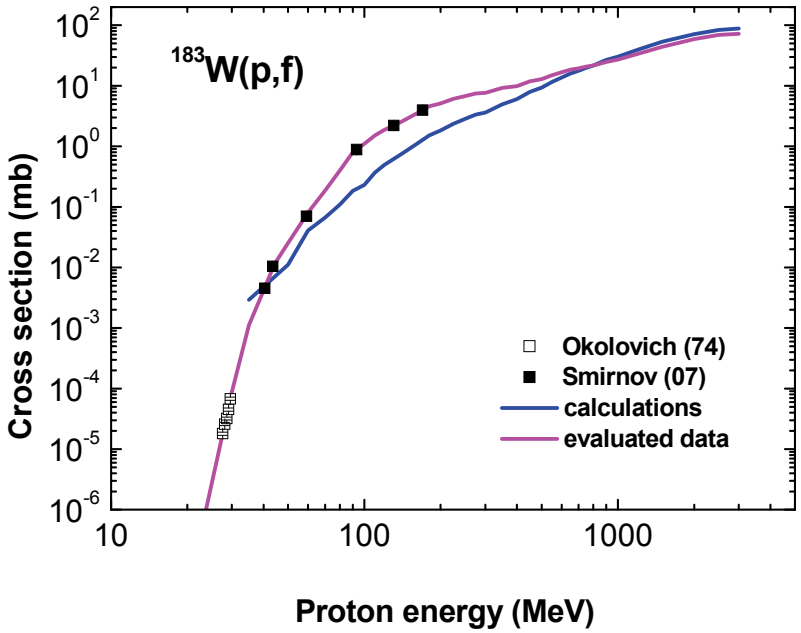


Fig.4 The fission cross-section for proton induced reactions with ^{183}W calculated and evaluated in the present work and measured in Refs.[67,81].

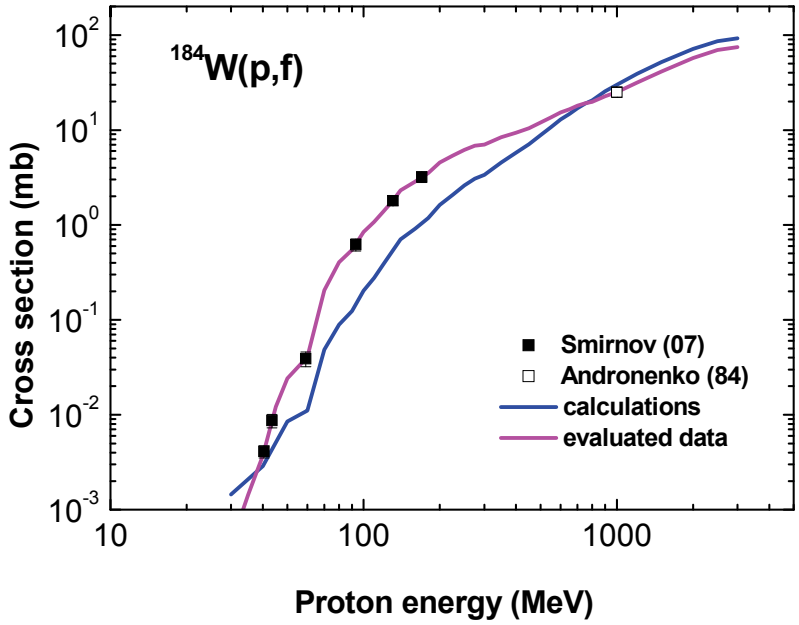


Fig.5 The fission cross-section for proton induced reactions with ^{184}W calculated and evaluated in the present work and measured in Refs.[66,81].

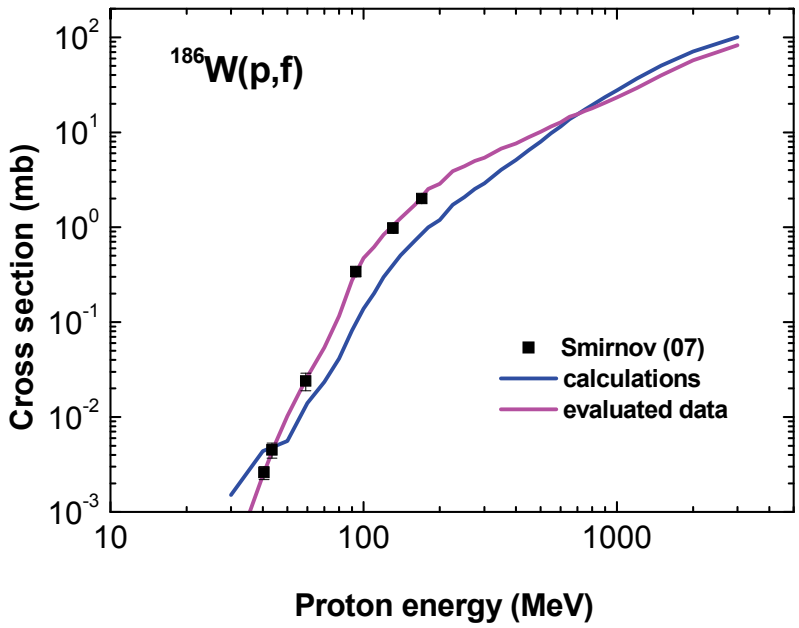


Fig.6 The fission cross-section for proton induced reactions with ^{186}W calculated and evaluated in the present work and measured in Ref.[81].

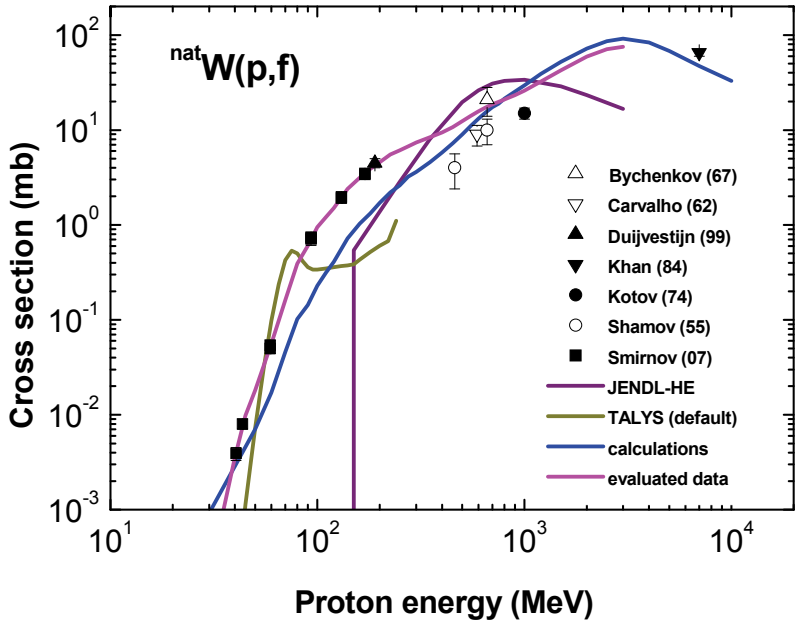


Fig.7 The fission cross-section for proton induced reactions with natural mixture of tungsten isotopes measured in Refs.[60,61,63-65,81,85], taken from JENDL-HE and calculated and evaluated in the present work.

Measured and evaluated independent radionuclide production cross-sections for different reactions are shown in Appendix A.

A number of deviation factors has been applied for the quantification of the gain in accuracy of evaluated cross-sections. The factors are usually used to estimate deviations of measured data and results of calculations [32,88-91]:

$$H = \left(\frac{1}{N} \sum_{i=1}^{N} \left(\frac{\sigma_i^{exp} - \sigma_i}{\Delta\sigma_i^{exp}} \right)^2 \right)^{1/2} \tag{6}$$

$$R^{CE} = \frac{1}{N} \sum_{i=1}^{N} \frac{\sigma_i}{\sigma_i^{exp}} \tag{7}$$

$$R^{EC} = \frac{1}{N} \sum_{i=1}^{N} \frac{\sigma_i^{exp}}{\sigma_i} \tag{8}$$

$$< F > = 10^{\left(\frac{1}{N} \sum_{i=1}^{N} \left[\lg(\sigma_i^{exp}) - \lg(\sigma_i) \right]^2 \right)^{1/2}} \tag{9}$$

$$S = 10^{\left\{ \left(\sum_{i=1}^{N} \left[\frac{\lg(\sigma_i^{exp}) - \lg(\sigma_i)}{(\Delta\sigma_i^{exp}/\sigma_i^{exp})} \right]^2 \right) \left(\sum_{i=1}^{N} \left[\frac{\sigma_i^{exp}}{(\Delta\sigma_i^{exp})} \right]^2 \right)^{-1} \right\}^{1/2}} \tag{10}$$

$$P_{1.3} = N_{1.3} / N \quad (11)$$

$$P_{2.0} = N_{2.0} / N \quad (12)$$

where σ_i^{exp} and $\Delta\sigma_i^{exp}$ are the measured cross-section and its uncertainty, σ_i is the calculated or evaluated cross-section, and N is the total number of experimental points selected for each type of the comparison with the non-zero values of σ_i, $N_{1.3}$ is the number of points with the ratio $0.77 < \sigma_i/\sigma_i^{exp} < 1.3$, and $N_{2.0}$ is the number of points with the ratio $0.5 < \sigma_i/\sigma_i^{exp} < 2.0$.

The meaning of the factors is discussed in Ref.[32].

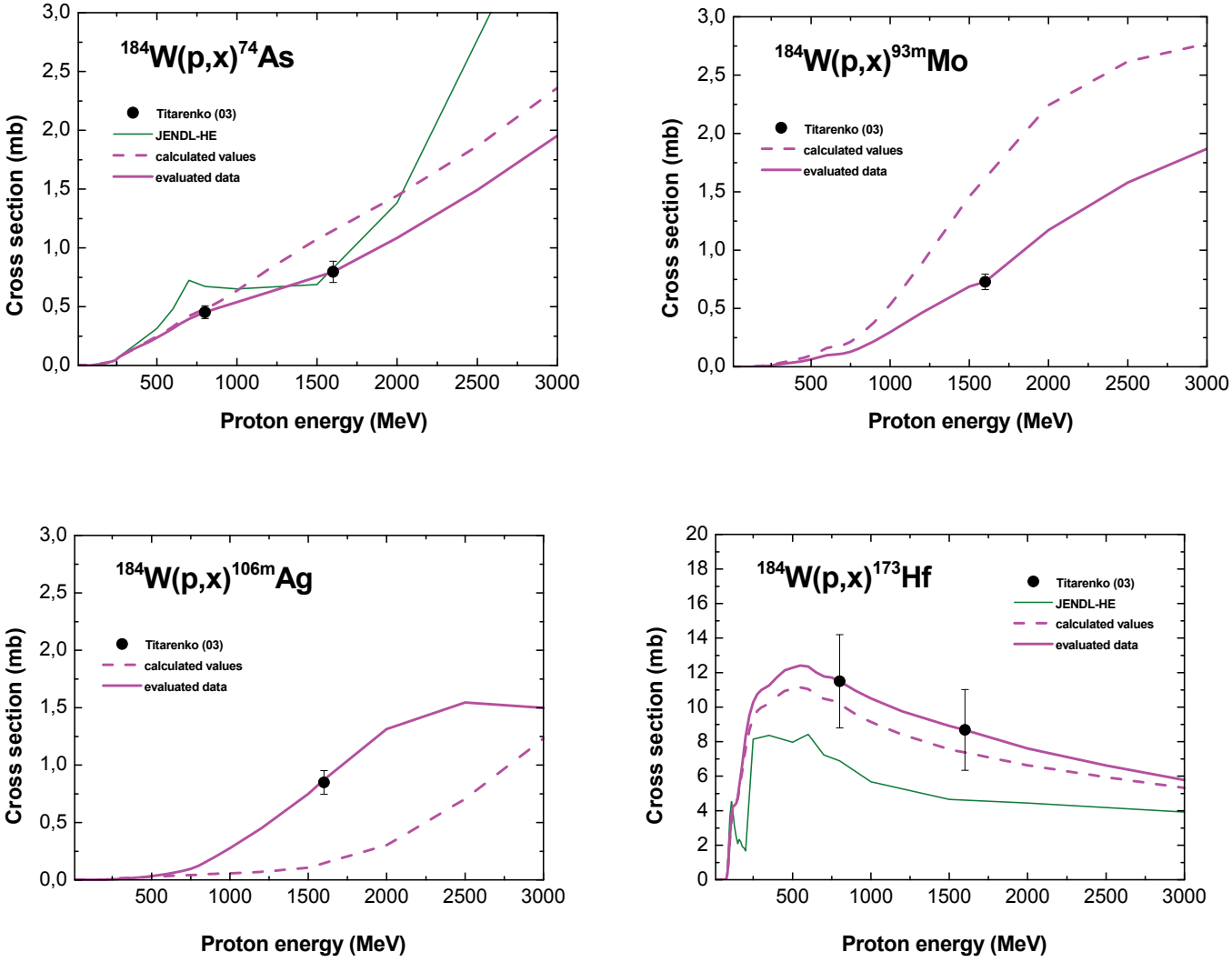


Fig.8. Examples of calculated and evaluated independent radionuclide production cross-sections for ^{184}W.

Tables 1-4 shows values of different deviation factors calculated using measured independent yields of radionuclides with the atomic number Z > 3 for isotopes ^{182}W, ^{183}W, ^{184}W, and ^{186}W.

Table 1. Values of deviation factors, Eq.(6)-(12) for the target ^{182}W obtained using measured independent radionuclide production cross-sections and calculated, and evaluated cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	5.5	0.25
R^{CE}	0.88	1.00
R^{EC}	3.6	1.01
<F>	2.9	1.1
S	2.24	1.03
$P_{1.3}$	0.33	0.95
$P_{2.0}$	0.61	1.0

Table 2. Values of deviation factors, Eq.(6)-(12) for the target ^{183}W obtained using measured independent radionuclide production cross-sections and calculated, and evaluated cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	5.7	0.03
R^{CE}	0.77	1.00
R^{EC}	52.0	1.01
<F>	4.2	1.0
S	5.37	1.00
$P_{1.3}$	0.21	1.0
$P_{2.0}$	0.56	1.0

Table 3. Values of deviation factors, Eq.(6)-(12) for the target ^{184}W obtained using measured independent radionuclide production cross-sections and calculated, and evaluated cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	5.8	0.21
R^{CE}	0.85	1.00
R^{EC}	2.0	1.01
<F>	2.3	1.1
S	2.19	1.02
$P_{1.3}$	0.32	0.98
$P_{2.0}$	0.59	1.0

Table 4. Values of deviation factors, Eq.(6)-(12) for the target ^{186}W obtained using measured independent radionuclide production cross-sections and calculated, and evaluated cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	7.2	1.4
R^{CE}	1.1	1.0
R^{EC}	4.4	1.1
<F>	3.2	1.4
S	2.16	1.21
$P_{1.3}$	0.28	0.91
$P_{2.0}$	0.58	0.98

Figures 9-12 illustrate the statistical distribution of the ratios σ_j/σ_j^{exp} for calculated and evaluated values σ_j. Data from Tables 1-4 and Figs.9-12 show noticeably better agreement of measured and evaluated cross-sections comparing with calculated values.

3.6 Use of measured cumulative yields of radionuclides for correction of calculated values

Available measured cumulative production cross-sections for proton induced reactions with tungsten isotopes ^{182}W, ^{183}W, ^{184}W, and ^{186}W were used for the correction of calculated excitation functions. The evaluation included the computation of cumulative cross-sections using calculated individual cross-sections, the evaluation of cumulative cross-sections with the help of available experimental data, and the correction of cross-sections for reactions contributing to cumulative production cross-sections. The reaction cross-sections evaluated before using measured independent yields of residuals were not changed in the described evaluation procedure. In the case, if such cross-section contributes to the considered cumulative chain, any other components of cumulative cross-sections were properly normalized to get the value of evaluated cumulative cross-section.

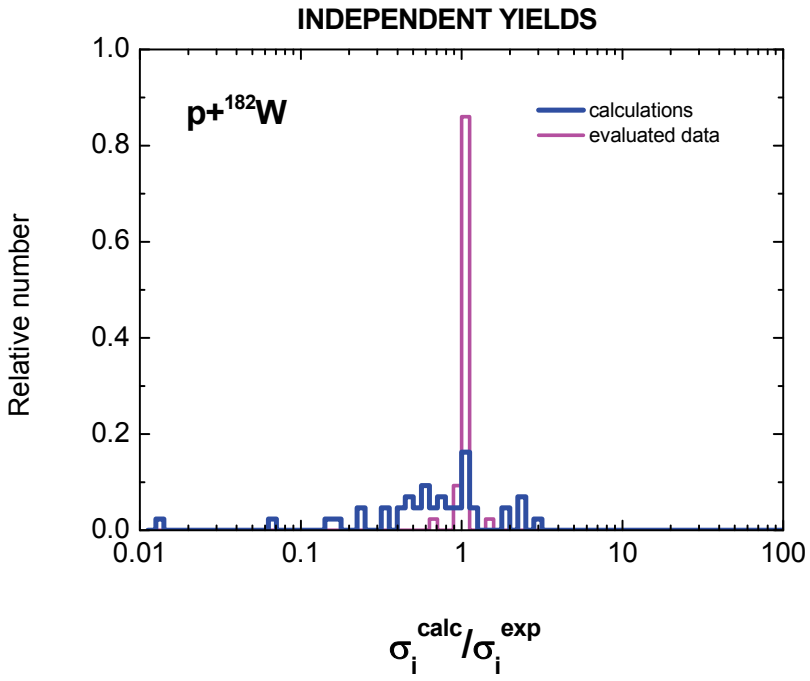


Fig.9. Ratio of calculated and evaluated independent production cross-sections for radionuclides to measured cross-sections for the target ^{182}W. Points are combined by histograms for the best view. See details in the text.

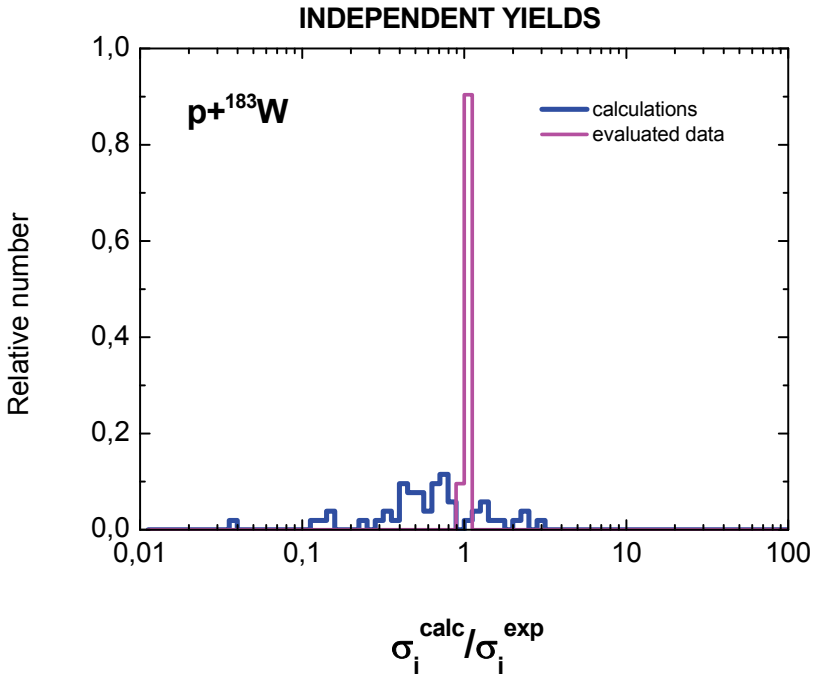


Fig.10. Ratio of calculated and evaluated independent production cross-sections for radionuclides to measured cross-sections for the target ^{183}W. See comments to Fig.9.

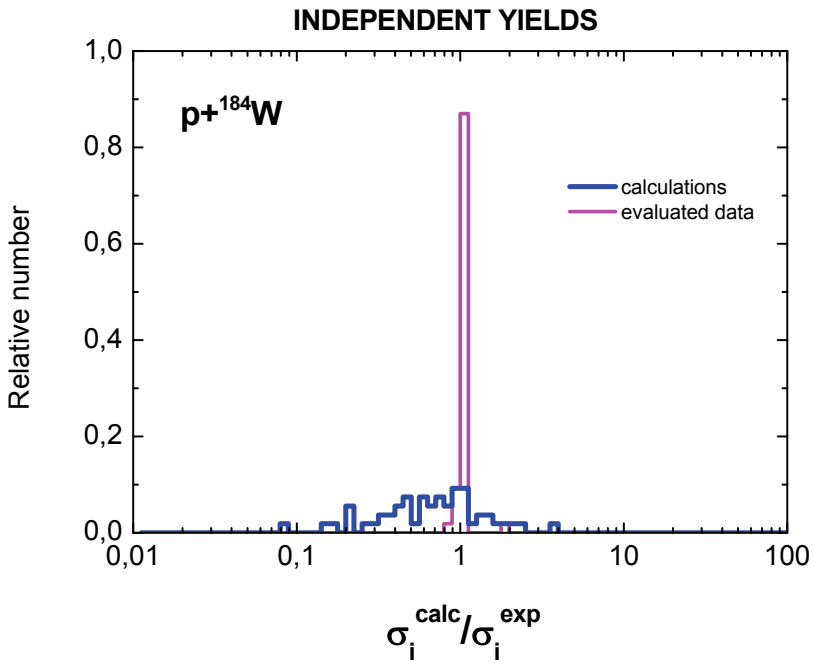


Fig.11. Ratio of calculated and evaluated independent production cross-sections for radionuclides to measured cross-sections for the target ^{184}W. See comments to Fig.9.

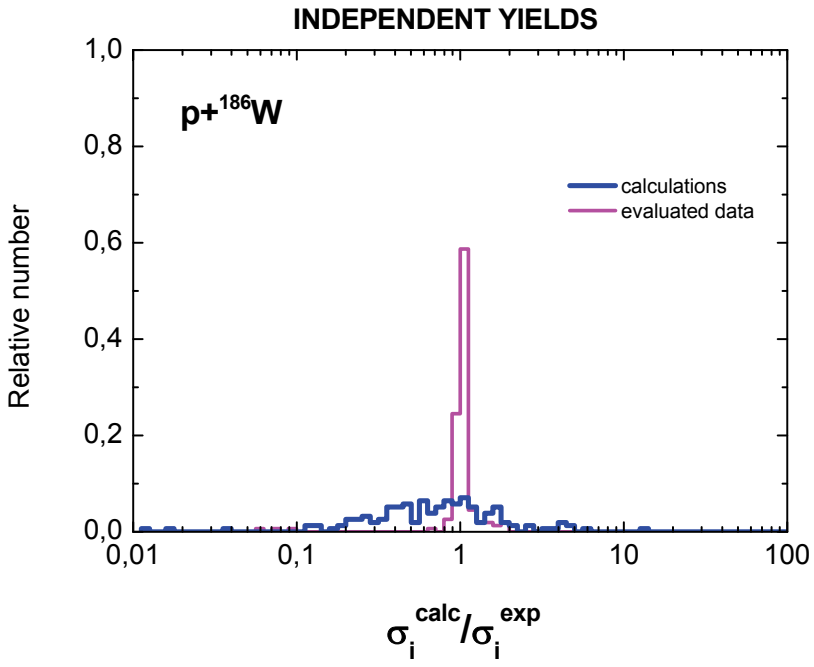


Fig.12. Ratio of calculated and evaluated independent production cross-sections for radionuclides to measured cross-sections for the target ^{186}W. See comments to Fig.9.

Figure 13 shows examples of the calculated and evaluated cumulative cross-sections for ^{184}W. For the comparison the JENDL-HE data are also shown.

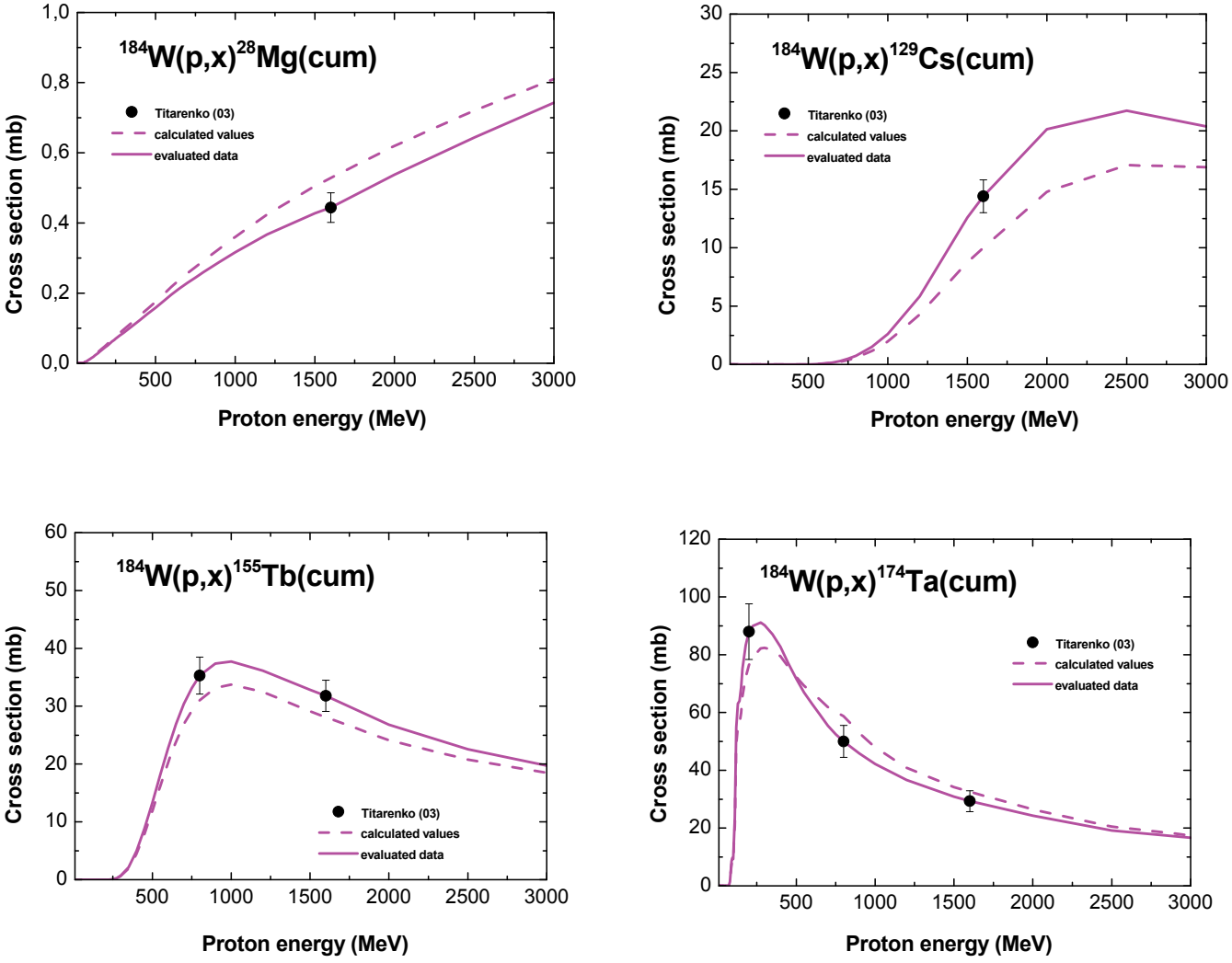


Fig.13. Examples of calculated and evaluated cumulative radionuclide production cross-sections for ^{184}W.

Evaluated and measured cumulative radionuclide production cross-sections for different reactions are shown in Appendix B.

Tables 5-8 show values of deviation factors calculated using measured cumulative yields of radionuclides for various tungsten isotopes. Figs. 14-17 show the statistical distribution of the ratios $\sigma_j^{cum} / \sigma_j^{exp}$ for calculated and evaluated values of cumulative production cross-sections. Data presented illustrate the improvement of the agreement between experimental and evaluated cross-sections comparing with results of calculations.

Table 5. Values of deviation factors, Eq.(6)-(12) for the target ^{182}W obtained using measured cumulative radionuclide production cross-sections and calculated, and evaluated cumulative cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	4.8	3.7
R^{CE}	1.0	1.05
R^{EC}	1.3	1.0
<F>	1.6	1.3
S	1.52	1.22
$P_{1.3}$	0.70	0.92
$P_{2.0}$	0.91	0.96

Table 6. Values of deviation factors, Eq.(6)-(12) for the target ^{183}W obtained using measured cumulative radionuclide production cross-sections and calculated, and evaluated cumulative cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	5.0	3.8
R^{CE}	1.0	1.06
R^{EC}	1.3	1.0
<F>	1.6	1.3
S	1.49	1.21
$P_{1.3}$	0.59	0.94
$P_{2.0}$	0.92	0.97

Table 7. Values of deviation factors, Eq.(6)-(12) for the target ^{184}W obtained using measured cumulative radionuclide production cross-sections and calculated, and evaluated cumulative cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	6.1	4.2
R^{CE}	1.0	1.06
R^{EC}	1.8	1.0
<F>	1.75	1.3
S	1.56	1.23
$P_{1.3}$	0.68	0.93
$P_{2.0}$	0.89	0.97

Table 8. Values of deviation factors, Eq.(6)-(12) for the target ^{186}W obtained using measured cumulative radionuclide production cross-sections and calculated, and evaluated cumulative cross-sections. See details in the text.

Factors	Calculations	Evaluated data
H	5.9	4.2
R^{CE}	1.1	1.1
R^{EC}	21.	0.99
<F>	3.3	1.3
S	1.71	1.28
$P_{1.3}$	0.57	0.90
$P_{2.0}$	0.82	0.98

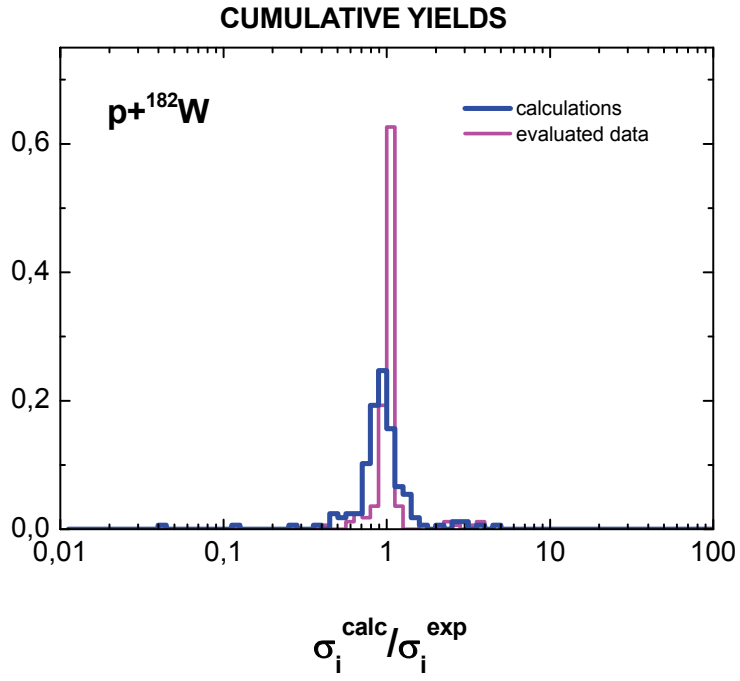


Fig.14. Ratio of calculated and evaluated cumulative radionuclide production cross-sections to measured cross-sections for the target ^{182}W. Points are combined by histograms for the best view. See details in the text.

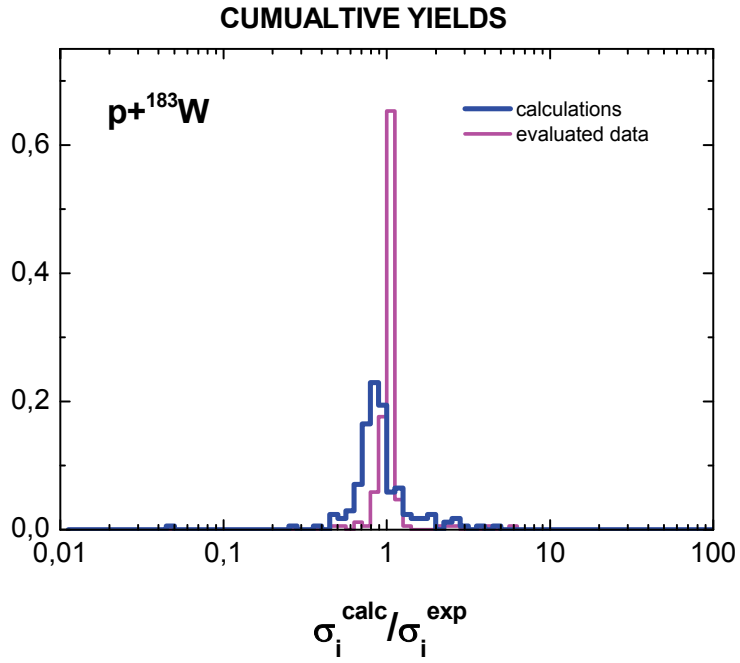


Fig.15. Ratio of calculated and evaluated cumulative radionuclide production cross-sections to measured cross-sections for the target ^{183}W. See comments to Fig.14.

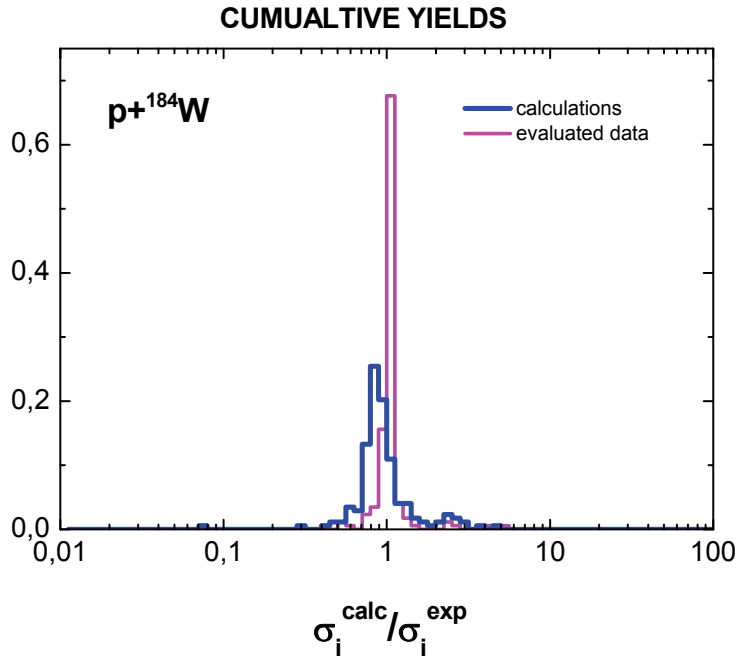


Fig.16. Ratio of calculated and evaluated cumulative radionuclide production cross-sections to measured cross-sections for the target ^{184}W. See comments to Fig.14.

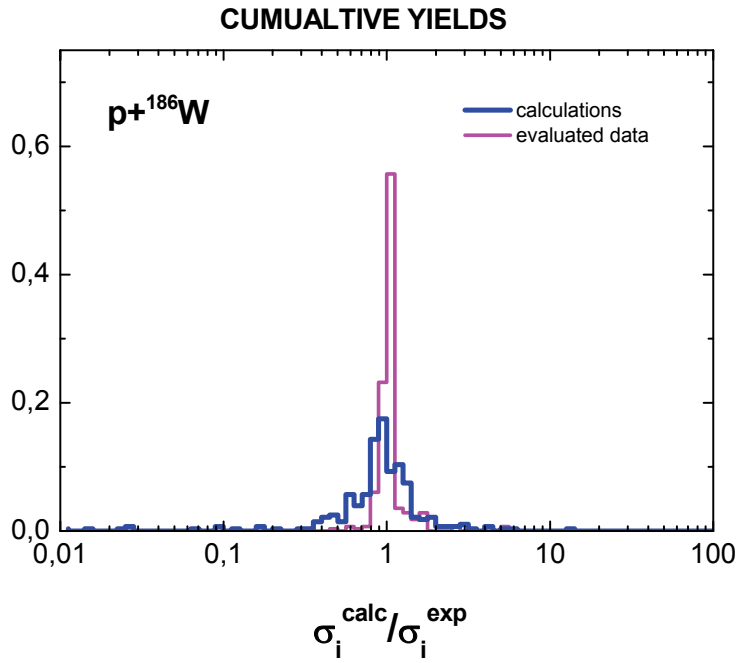


Fig.17. Ratio of calculated and evaluated cumulative radionuclide production cross-sections to measured cross-sections for the target ^{186}W. See comments to Fig.14.

3.7 Use of measured independent radionuclide production cross-sections for natural tungsten for evaluation of cross-sections

Experimental data for independent yields of nuclides in (p,x) reactions with natural mixture of tungsten isotopes were used for the correction of calculated reaction cross-sections for individual tungsten isotopes.

3.7.1 The yields of radionuclides with Z > 3

The correction of calculated radionuclide production cross-sections implied the evaluation of (p,x) reaction cross-section for natural tungsten using measured and calculated independent nuclide production cross-sections with the subsequent improvement of cross-sections for individual target isotopes. Reaction cross-sections evaluated before using experimental data for separate tungsten isotopes were not changed in the procedure because of its definite uncertainty. If such

reaction contributes to the yield of definite residual by the irradiation of natural tungsten the values evaluated before were fixed and the contribution for the rest of isotopes was properly changed. In the most cases only measured independent production cross-sections for natural tungsten were used for the preparation of the present version of evaluated data files. The cumulative measured yields for ^{nat}W were applied as an additional information for the improvement of data for the hazardous nuclides, Sect.3.7.3

Figure 18 shows ratios of cross-sections for natural tungsten $\sigma_j / \sigma_j^{exp}$ corresponding to i) calculated σ_j values, ii) the cross-sections evaluated using data for individual tungsten isotopes with the mass number 182, 183, 184, and 186, and iii) the final results for σ_j obtained using all kind of experimental data including data for natural tungsten. Data in Fig.A1 show the gradual improvement of agreement between experimental data for natural tungsten and data obtained in the present work.

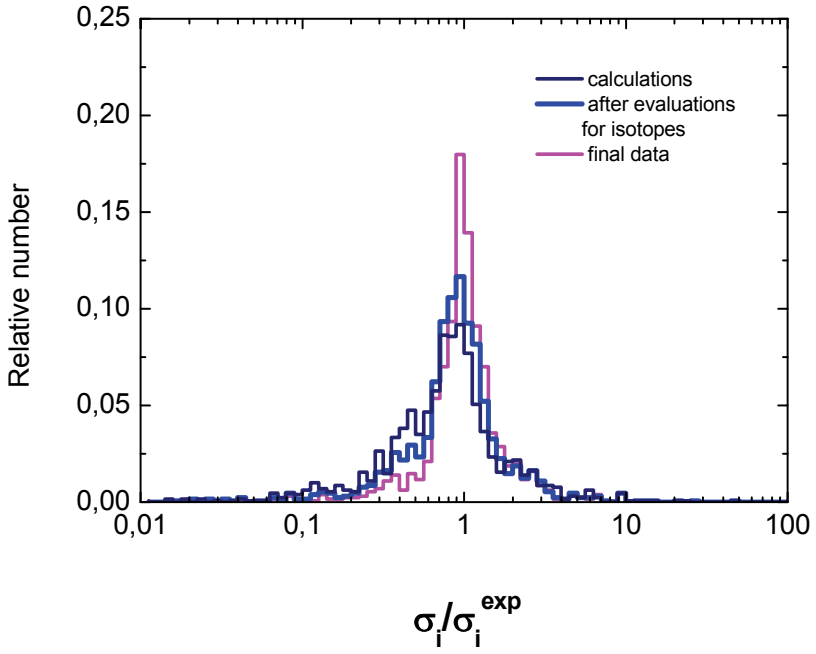


Fig.18. Ratio of calculated and evaluated independent radionuclide production cross-sections to cross-sections measured for the natural tungsten. Points are combined by histograms for the best view. See details in the text.

3.7.2 Gas production cross-sections

The evaluation of gas production cross-sections was performed using available experimental data for natural tungsten and systematics predictions [92]. The values obtained were applied to correct corresponding cross-sections for individual tungsten isotopes. If the measurement at a certain incident proton energy did not cover the full energy range of emitted particles, the experimental data were corrected using results of model calculations. These data are marked as "corr" in Figures below.

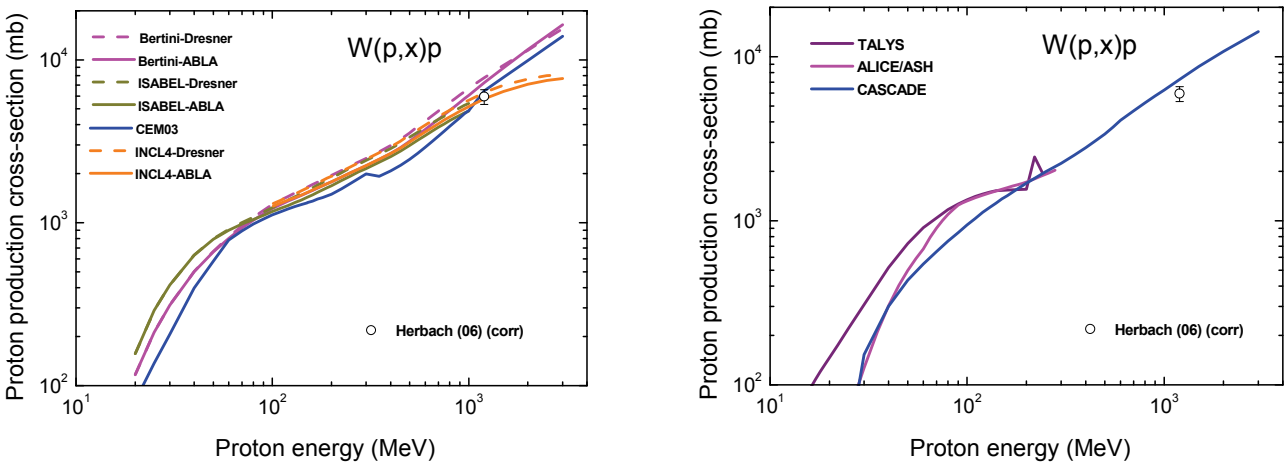


Fig.19. Proton production cross-section for natural tungsten calculated using different codes.

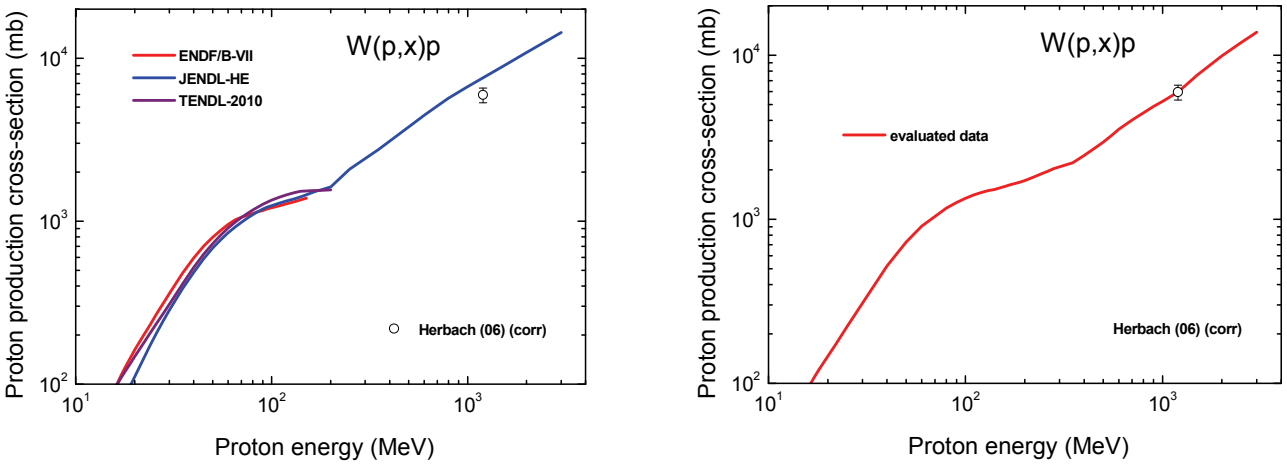


Fig.20. Proton production cross-section for natural tungsten taken from various data libraries and evaluated in the present work.

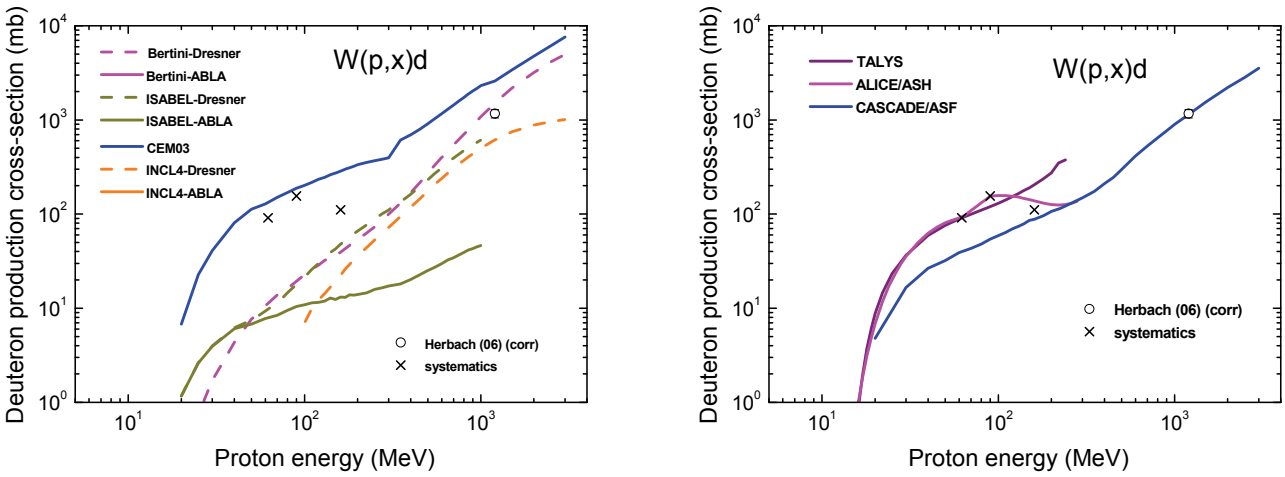


Fig.21. Deuteron production cross-section for natural tungsten calculated using different codes.

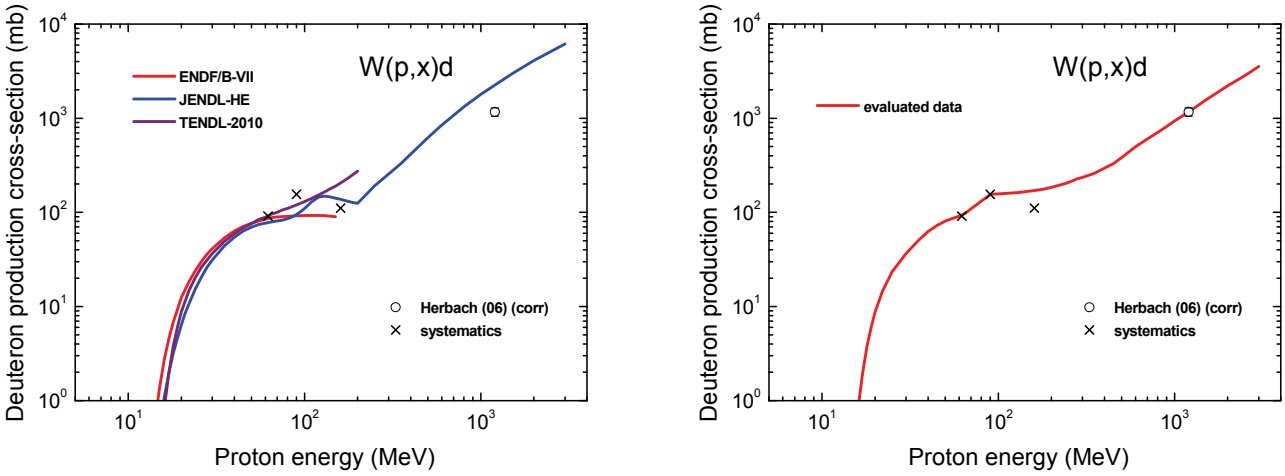


Fig.22. Deuteron production cross-section for natural tungsten taken from various data libraries and evaluated in the present work.

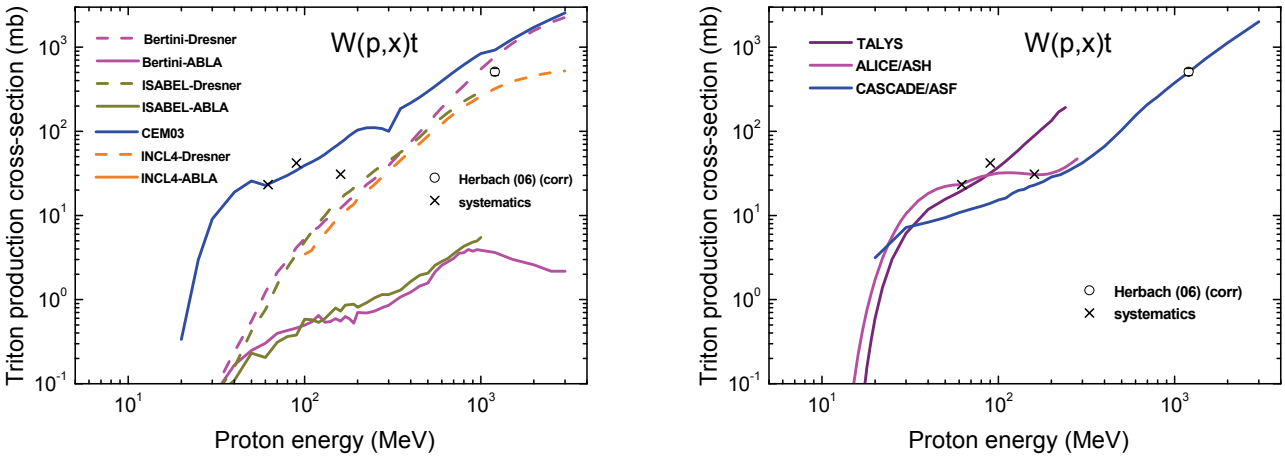


Fig.23. Triton production cross-section for natural tungsten calculated using different codes.

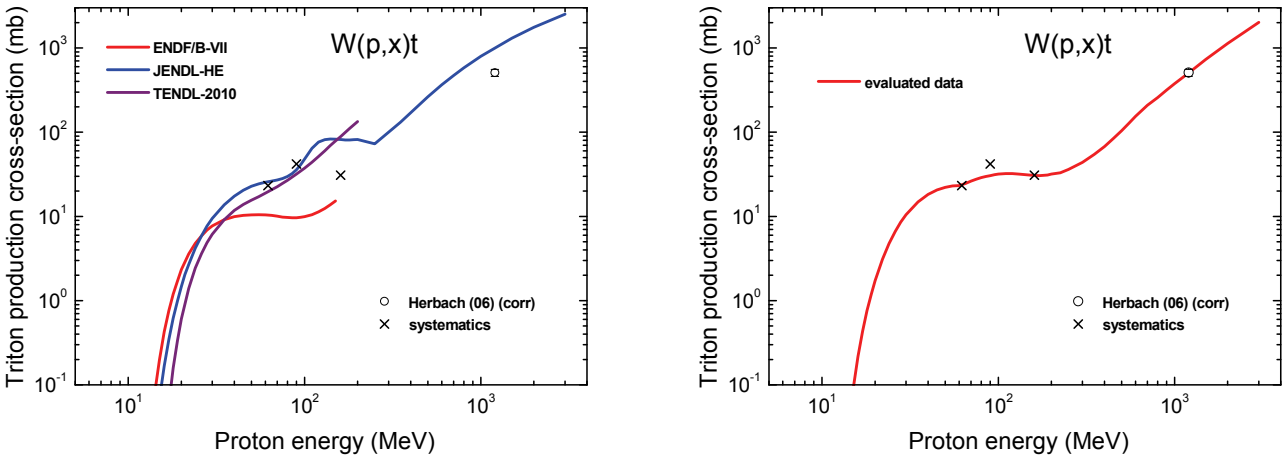


Fig.24. Triton production cross-section for natural tungsten taken from various data libraries and evaluated in the present work.

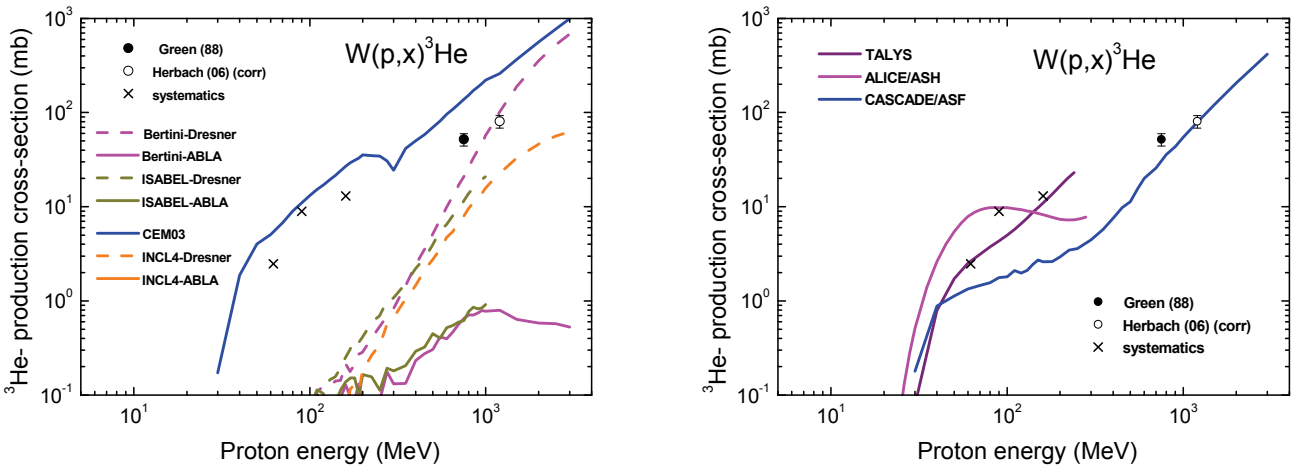


Fig.25. ^{3}He- production cross-section for natural tungsten calculated using different codes.

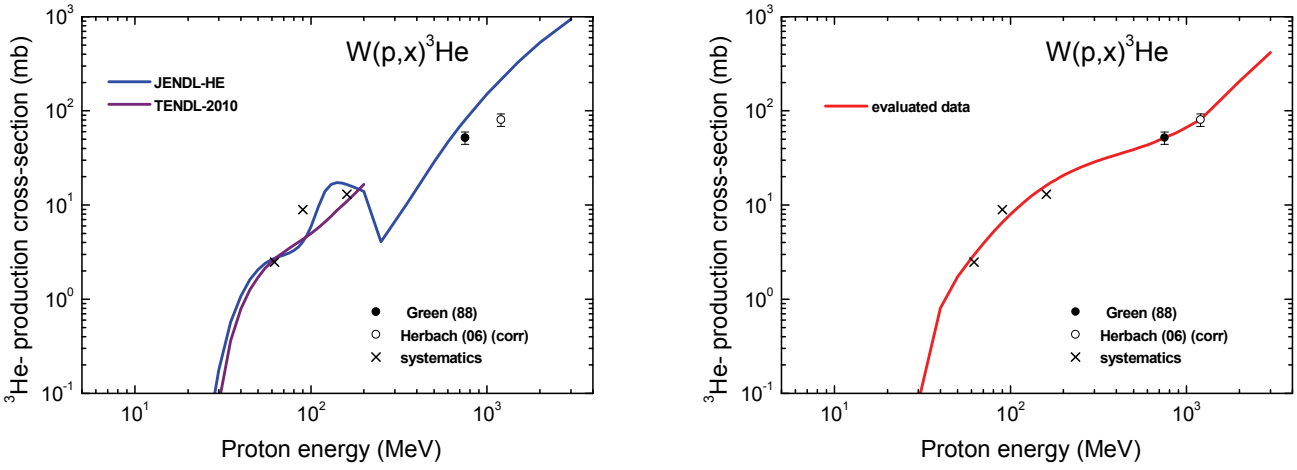


Fig.26. ^{3}He- production cross-section for natural tungsten from various data libraries and evaluated data.

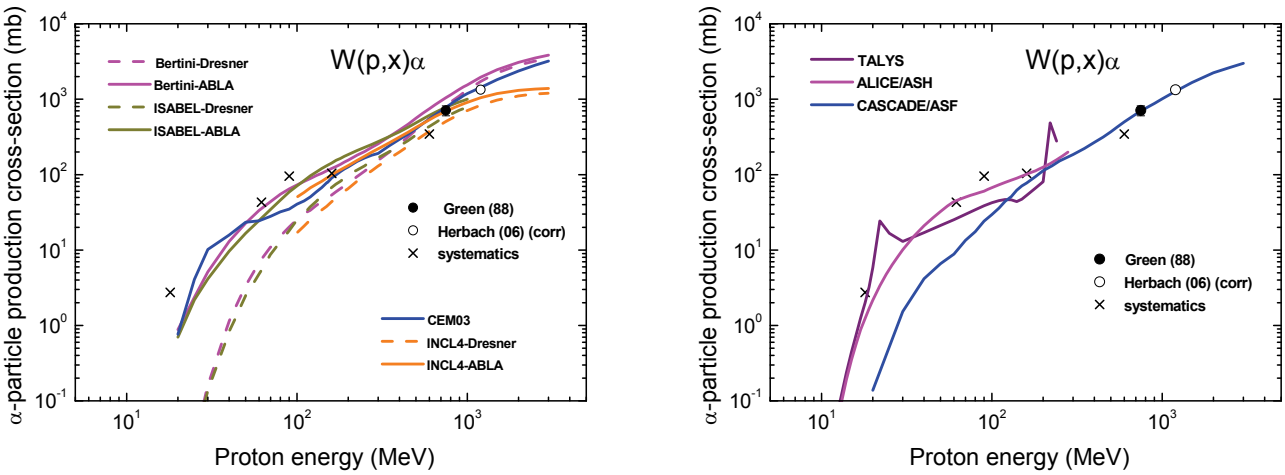


Fig.27. α-particle production cross-section for natural tungsten calculated using different codes.

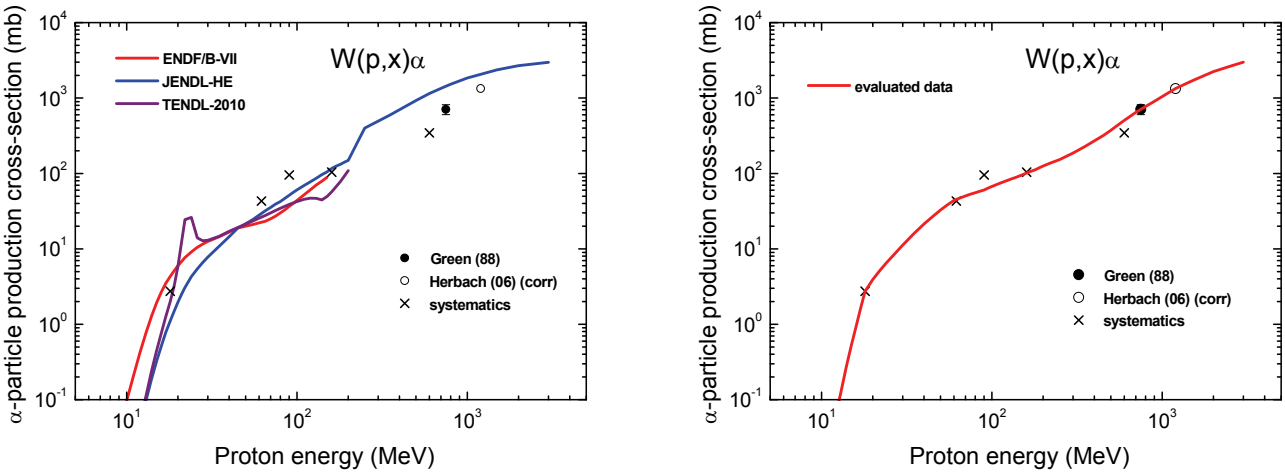


Fig.28. α-particle production cross-section for natural tungsten taken from various data libraries and evaluated in the present work.

Figures 19-28 show the proton-, deuteron, triton-, ^{3}He-, and α-particle production cross-sections for natural tungsten irradiated with protons taken from different data libraries, cross-sections calculated using nuclear models implemented in MCNPX, TALYS, ALICE/ASH [93], and CASCADE codes and evaluated cross-sections. In all cases the evaluated data show the best agreement with available measurements and systematics predictions comparing with the data of other origin.

3.7.3 Yield of hazardous nuclides

All types of available experimental data including independent and cumulative measurements for individual tungsten isotopes and natural tungsten were used for the evaluation of production cross-sections for hazardous nuclides. The list of such nuclides was taken from Ref.[86]

Illustrations are given below.

Gadolinium-148. Figure 29 shows the calculated independent production cross-section of ^{148}Gd in p+^{nat}W reactions and the correlation matrix corresponding to the calculated cross-sections. The calculated curve is shown with error bars resulting from the calculations of covariances using the Monte Carlo method [33]. Strong correlations are observed for calculated errors of presented cross-sections. The cumulative production cross-section of ^{148}Gd and the corresponding correlation matrix are shown in Fig.30. Correlations here are weaker because of contributions of various nuclides in the cumulative cross-section (Table 9). The final evaluated cumulative cross-section and the correlation matrix obtained using measured and calculated cross-sections with the help of BEKED programs are presented in Fig.31. Fig.32 shows production cross-sections for radionuclides making main contributions to the cumulative yield of ^{148}Gd.

Rhenium-186g. Figures 33,34 show available experimental data for ^{nat}W(p,n)^{186g}Re reaction, data from ENDF/B-VII, JENDL-HE, results of calculations using different codes and evaluated data. Fig.33 presents cross-sections at the energy range corresponding to available experimental data. An evident spread of experimental cross-sections is observed at proton energies up to 40 MeV. Fig.34 shows data at the whole energies from several MeV to 3 GeV. After the analysis of measured data the experiments raising a doubts, also by other authors, were removed from the consideration. The final evaluated curve follows at relative low energies mainly TALYS results and reflects at higher energies the general energy trend of the considered cross-section.

Table 9. Nuclides making main contributions to the calculated cumulative production cross-section of ^{148}Gd in proton induced reactions on natural tungsten.

Nuclide	Average contribution to cumulative yield (%)
^{148}Gd	21
^{148g}Tb	14
^{148m}Tb	14
^{148}Dy	26
^{148g}Ho	0.52
^{148m}Ho	0.52
^{148m2}Ho	0.52
^{152g}Ho	2.3
^{152m}Ho	2.01
^{152}Er	16.
^{156}Yb	1.9
^{160}Lu	2.0

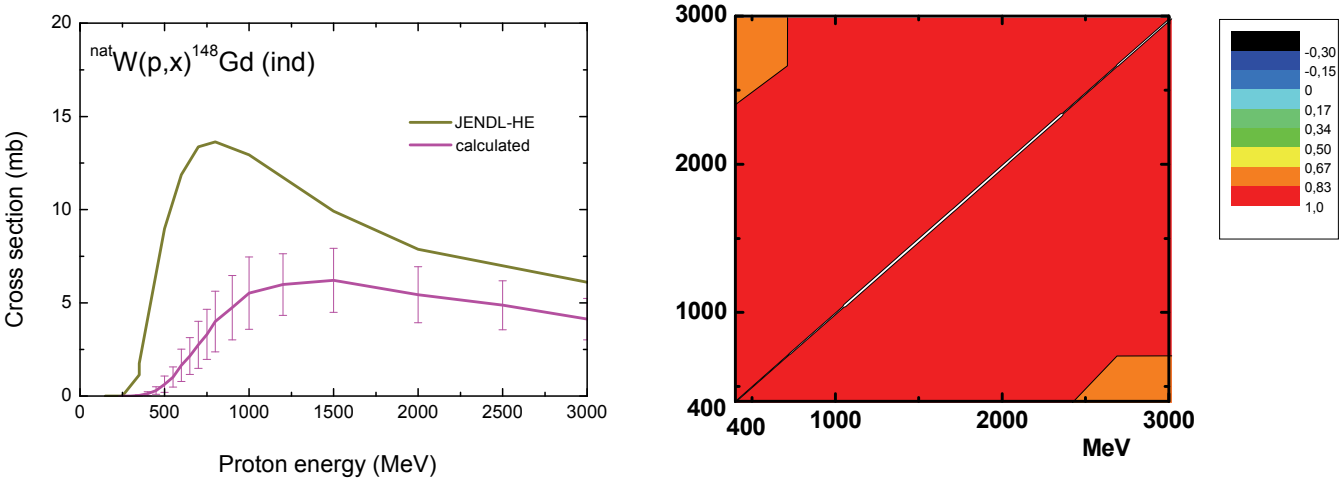


Fig.29. Calculated independent production cross-section of ^{148}Gd in proton induced reactions with natural tungsten (left) and correlation matrix corresponding to calculations (right). Data from JENDL-HE are shown for the comparison. See explanations in the text.

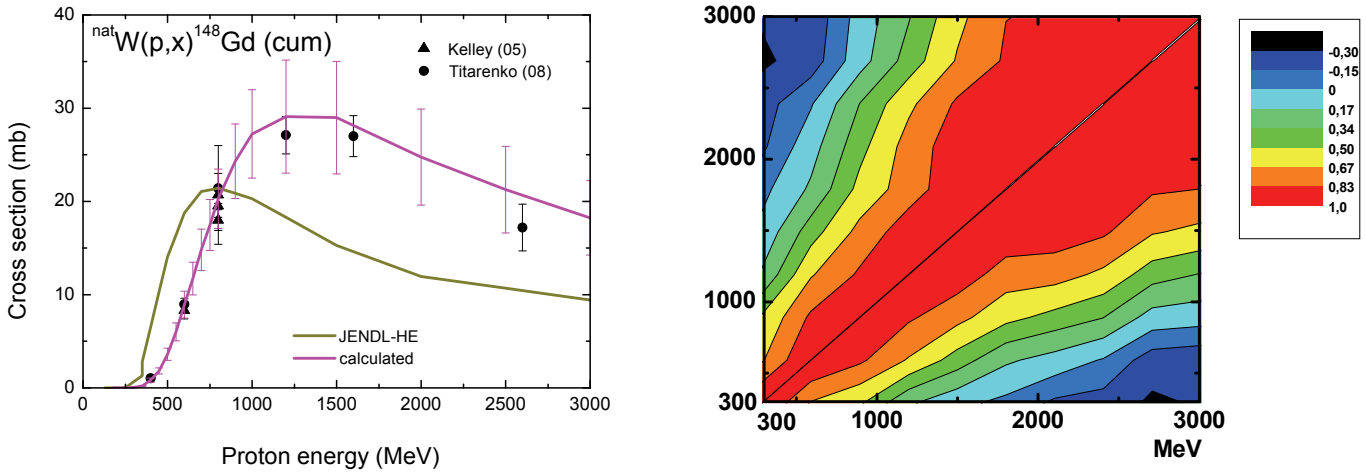


Fig.30. Calculated cumulative production cross-section of ^{148}Gd in proton induced reactions with natural tungsten (left) and correlation matrix corresponding to calculations (right). See explanations in the text.

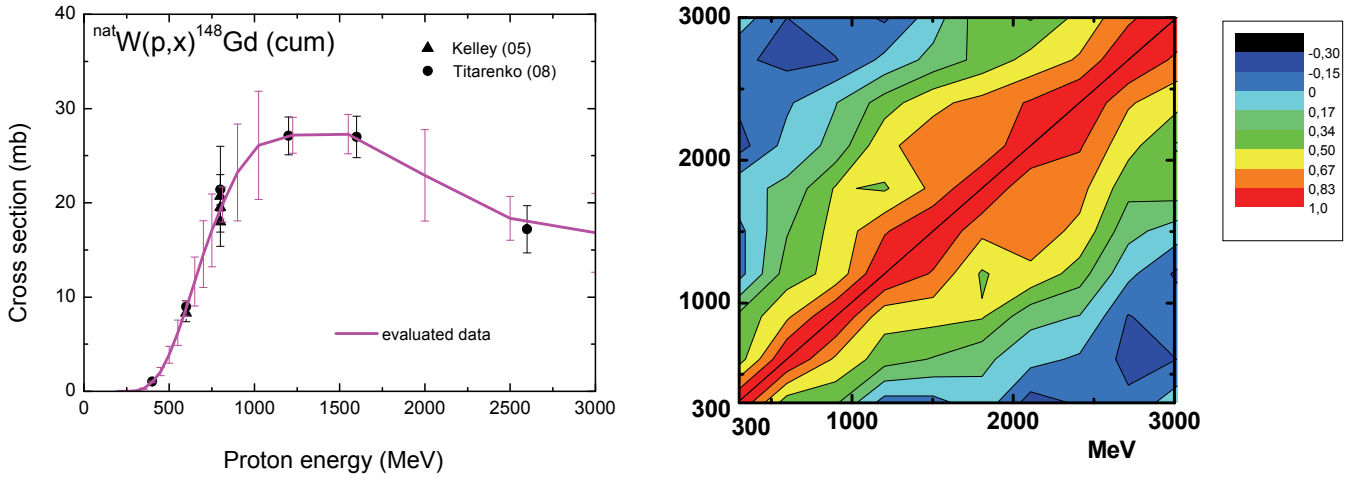


Fig.31. Evaluated cumulative production cross-section of ^{148}Gd in proton induced reactions with natural tungsten (left) and final correlation matrix. See explanations in the text.

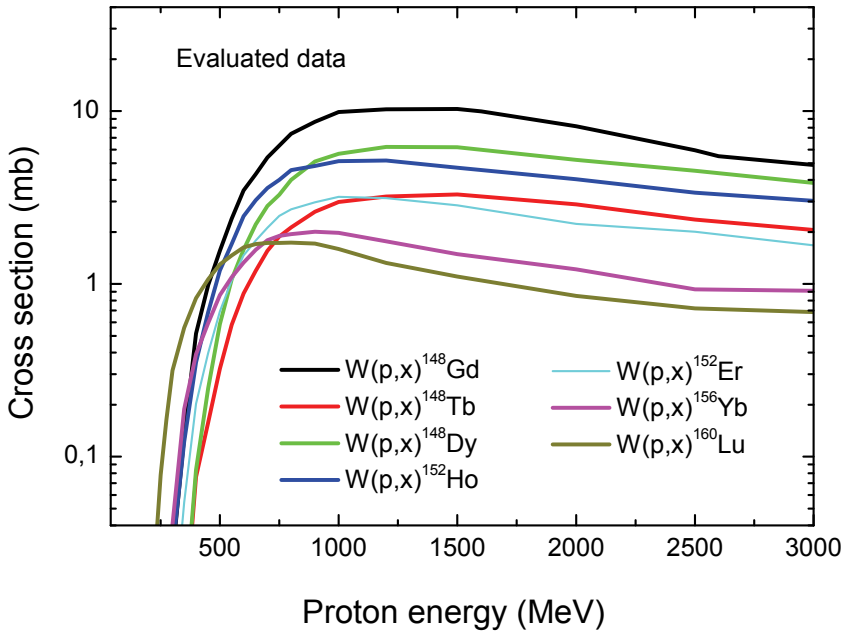


Fig.32. Evaluated cross-sections for reactions contributing to the cumulative yield of ^{148}Gd in p+^{nat}W reactions.

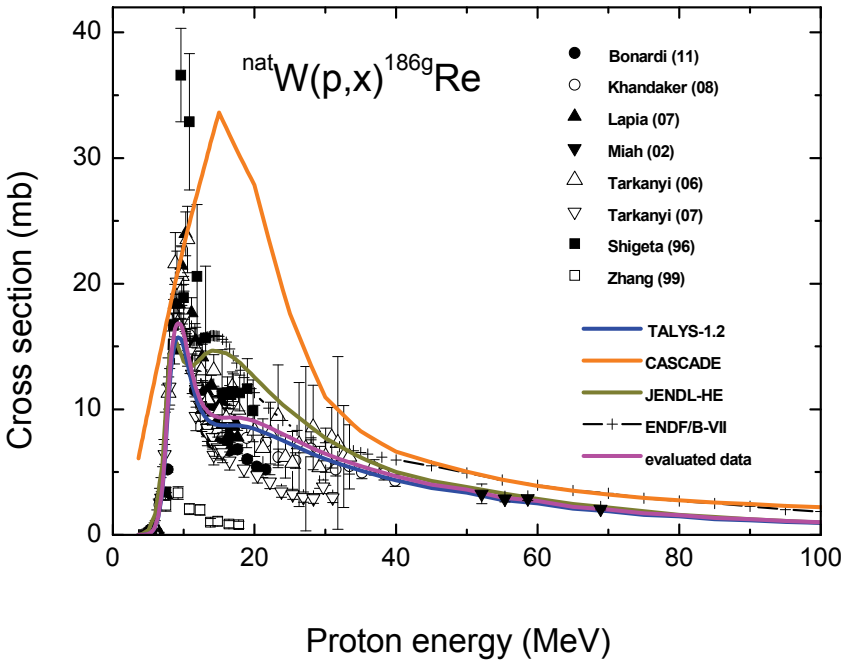


Fig.33. Cross-sections for production of ^{186g}Re in p+^{nat}W reactions at energies up to 100 MeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and the final evaluated data.

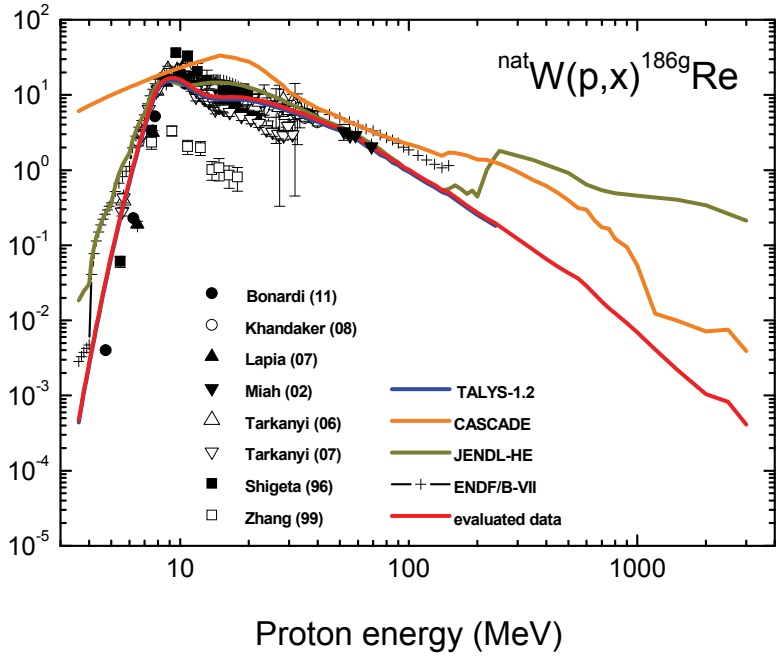


Fig.34. Cross-sections for production of ^{186g}Re in p+^{nat}W reactions at the energy range up to 3 GeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and final evaluated data.

Tantalum-182g. Figures 35,36 show the cumulative production cross-section for ^{182g}Ta calculated and evaluated in the present work, measured data, and data taken from ENDF/B-VII and JENDL-HE. Fig.35 presents details of the cross-section at the proton energy below 200 MeV, and Fig.36 at higher energies. A rather large deviations are observed for TALYS calculations and JENDL-HE data. Data from ENDF/B-VII show a general agreement with measurements of Michel et al [77] at energies above 80 MeV. The comparison of data presented in Figs.35,36 demonstrates the relevance of new evaluated data, primarily due to the spread of model predictions and deviations between calculated and measured data.

Hafnium-172. The cumulative production cross-section for ^{172}Hf is shown in Figs.37, 38. The evaluated curve presents the most adequate description of experimental data keeping the energy trend of cross-section obtained using nuclear models.

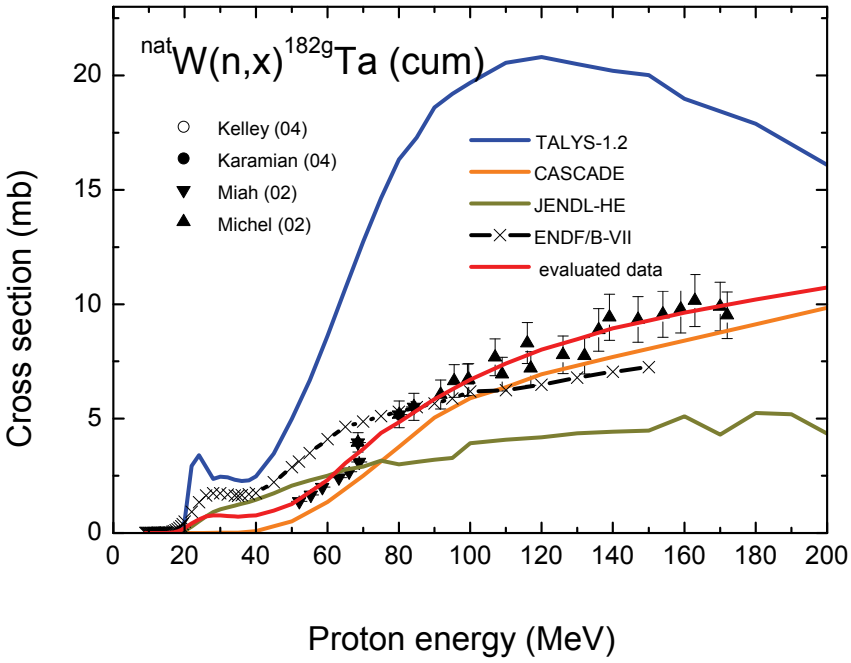


Fig.35. Cross-sections for cumulative production of ^{182g}Ta in p+^{nat}W reactions at energies up to 200 MeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and the final evaluated data.

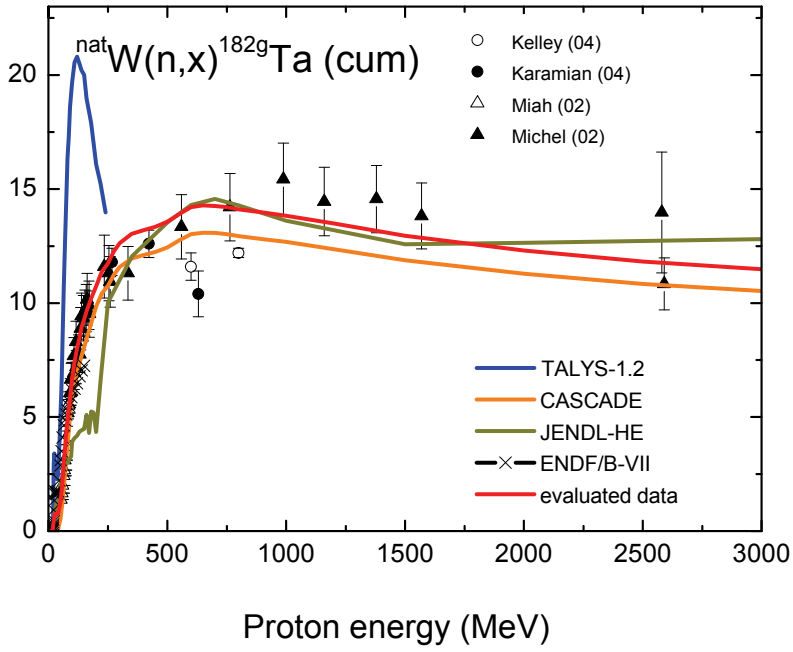


Fig.36. Cross-sections for cumulative production of ^{182g}Ta in p+^{nat}W reactions at the energy range up to 3 GeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and final evaluated data.

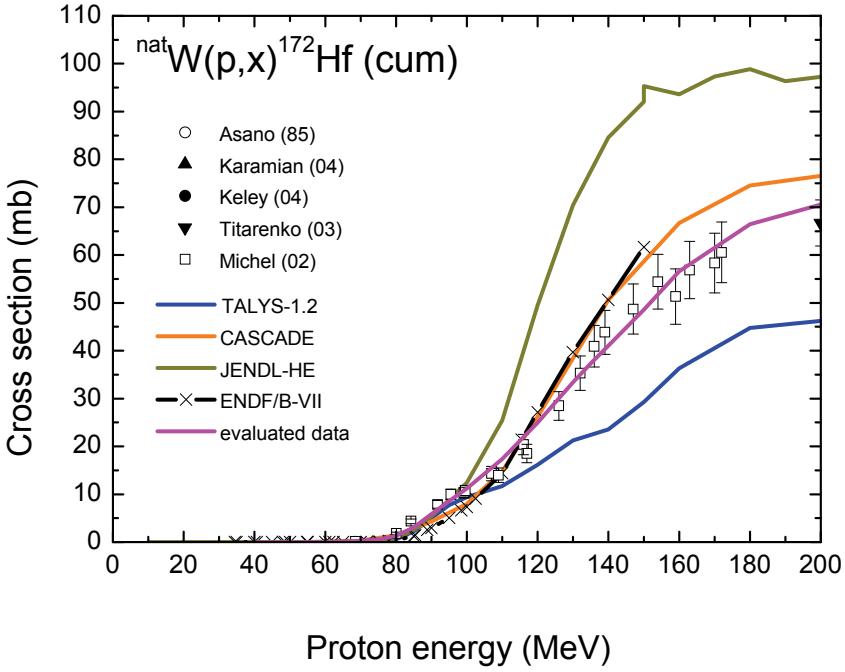


Fig.37. Cross-sections for cumulative production of ^{172}Hf in p+^{nat}W reactions at energies up to 200 MeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and the final evaluated data.

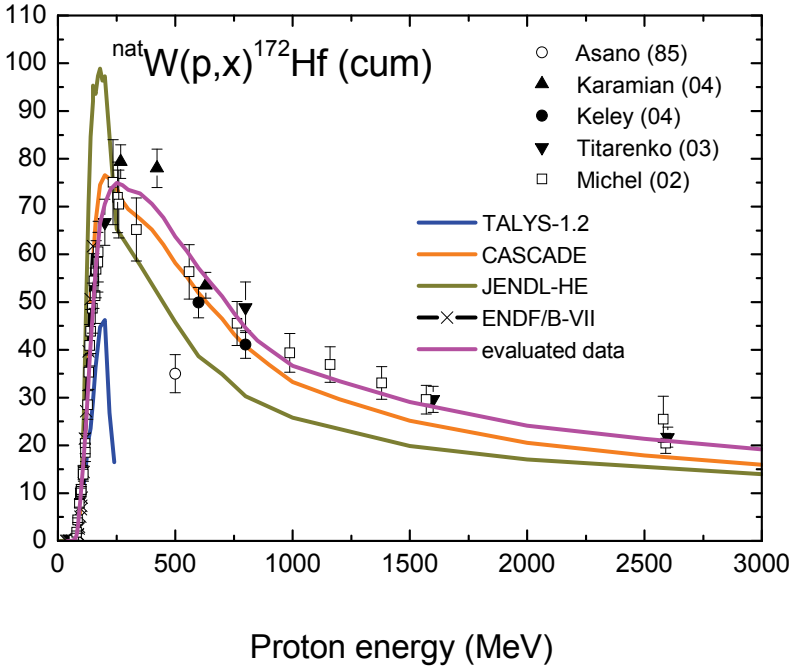


Fig.38. Cross-sections for cumulative production of ^{172}Hf in p+^{nat}W reactions at the energy range up to 3 GeV calculated using different codes, data taken from ENDF/B-VII and JENDL-HE, and final evaluated data.

Tungsten-185g. Only the limited experimental information [40] is available for the yield of ^{185g}W and its precursors. The measured data [40] presenting apparently the sum of production cross-sections for ^{185g}W and ^{185m}W were transformed to separate yields of isomers ^{185g}W and ^{185m}W. The corrections were performed using the ratio of yields of individual isomers calculated with TALYS and CASCADE-TALYS codes. Obtained data were applied for the evaluation of the cross-section along with results of model calculations. Fig.39 shows the evaluated production cross-section for ^{185g}W and its precursors, and experimental data corrected as discussed above.

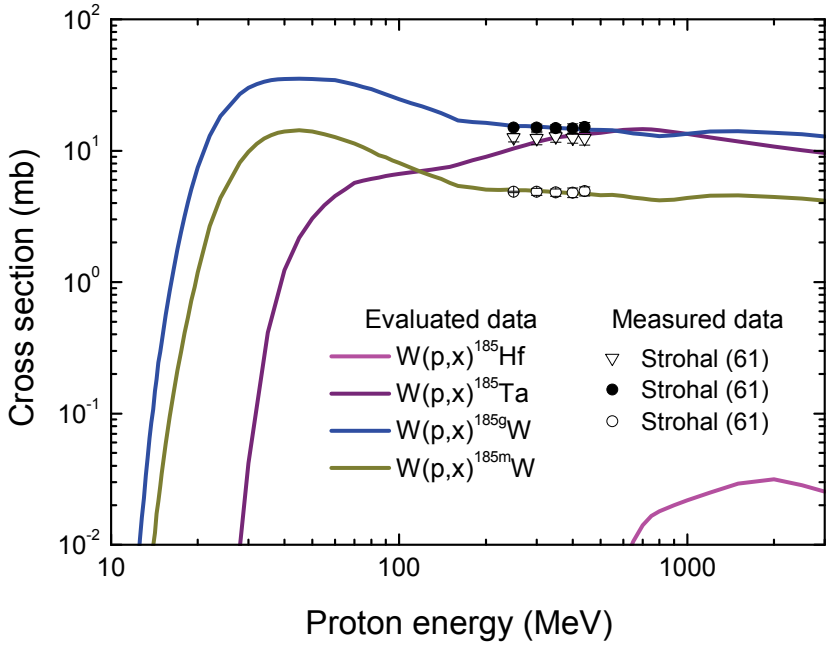


Fig.39. Evaluated cross-sections for reactions contributing to the cumulative yield of ^{185g}W in p+^{nat}W reactions. Experimental data [40] were corrected to get yields of ^{185g}W and ^{185m}W.

4. Content and format of data

Prepared evaluated data files contain the information about 8283 reaction cross-sections for stable tungsten isotopes at the proton energies from 0 to 3 GeV. Files consist of the data for 1586 reactions for ^{180}W, 1631 for ^{182}W, 1668 for ^{183}W, 1680 for ^{184}W, and 1718 reactions for ^{186}W. Data concerns the range of residual nuclei

with atomic numbers from 1 to 75. The index of available reactions is given in Appendix C.

Data are distributed in a “two-column” format and ENDF/B format. In the last case the file MF=10 and the section MT=5 are used for data presentation. An illustration is given in Appendix D.

5. Conclusion

New data files have been prepared containing cross-sections for the nuclide production by proton induced reactions on the tungsten isotopes ^{180}W, ^{182}W, ^{183}W, ^{184}W, and ^{186}W at primary proton energies from 0 to 3 GeV. The data were obtained from the analysis of calculations using advanced nuclear models, available experimental data and systematics.

The calculations of cross-sections were performed using the intranuclear cascade model, the pre-equilibrium exciton model, and the Hauser-Feshbach model. The available experimental information, results of calculations and systematics were applied for the evaluation of yields of residual nuclei using statistical methods implemented in computer code package BEKED.

The prepared evaluated data files contain information about 8283 reaction cross-sections for the production of residual nuclei with atomic numbers from 1 to 75 in proton induced reaction with stable tungsten isotopes.

The data are distributed in the ENDF/B format and a “two-column” format.

References

1. European Spallation Source, http://ess-scandinavia.eu/

2. D.Ene, Activation Studies for the ESS Target Station, 12th Int. Conf. on Radiation Shielding (ICRS-12), Sept. 2nd-7th, 2012. Nara Prefectural New Public Hall, Nara, Japan.

3. ENDF/B-VII.1 Evaluated Nuclear Data Library, http://www.nndc.bnl.gov /exfor/endfb7.1.jsp

4. A.Yu. Konobeyev, C.H.M. Broeders, U. Fischer, L. Mercatali, I. Schmuck, S.P. Simakov, The proton Activation Data File PADF-2007 in ENDF-6 format, http://www-nds.iaea.org/padf/

5. JENDL High Energy File 2007, http://wwwndc.jaea.go.jp/ftpnd/jendl/jendl-he-2007.html

6. A.J. Koning, S. Hilaire, M.C. Duijvestijn, .TALYS-1.0., Proc．Int． Conf．on Nuclear Data for Science and Technology, April 22-27, 2007, Nice, France, EDP Sciences, 2008, p. 211-214.

7. V.S. Barashenkov, V.D. Toneev, Interaction of High Energy Particles and Nuclei with Atomic Nuclei, Atomizdat, Moscow, 1972.

8. V.S.Barashenkov, B.F.Kostenko, A.M.Zadorogny, Time-dependent intranuclear cascade model*, Nucl. Phys.* A338 (1980) 413.

9. V.S. Barashenkov, Monte Carlo simulation of ionization and nuclear processes initiated by hadron and ion beams in media*, Comp. Phys. Comm.* 126 (2000) 28.

10. R.E. Prael, A review of physics models in the LAHET code, Intermediate Energy Nuclear Data: Models and Codes, Proceedings of a Specialists Meeting, Issy-Les-Moulineaux, France, 30 May-1 June 1994, http://www.oecd-nea.org/science/iend.hide/iend.html

11. V.S. Barashenkov, A. Polanski, Electronic Guide for Nuclear Cross Sections, Report JINR E2-94-417, Dubna, 1994

12. T.C. Awes, G. Poggi, C.K. Gelbke, B.B. Back, B.G. Glagola, H. Breuer, V.J. Viola, Jr., Precompound emission of light particles in the reaction $^{16}O+^{238}U$ at 20 MeV/nucleon, *Phys. Rev.* C24 (1981) 89.

13. T.C. Awes, S. Saini, G. Poggi, C.K. Gelbke, D. Cha, R. Legrain, G.D. Westfall, Light particle emission in ^{16}O-induced reactions at 140, 215, and 310 MeV, *Phys. Rev.* C25 (1982) 2361.

14. M. Kozłowski, H.H. Müller, R. Wagner, Analyzing power and cross section of the ^{58}Ni, ^{90}Zr, ^{209}Bi($\vec{p}$,^{3,4}He X) reactions in the continuum described by the coalescence model, *Nucl. Phys.* A420 (1984) 1.

15. F.P. Denisov, V.N. Mekhedov, Nuclear Reactions at High Energies, Moscow, Atomizdat, 1972.

16. A.Yu.Konobeyev, M.Vecchi, Nuclide Composition of Pb-Bi Heat Transfer Irradiated in 80 MW Sub-Critical Reactor, In Proc. Workshop on Spallation Module, October 18th,1999, ENEA, Bologna, Report ENEA GRX-TM-00001, p.70.

17. A.Yu.Stankovskiy, A.Yu. Konobeyev, CASCADEX-A combination of intranuclear cascade model from CASCADE/INPE with the Hauser–Feshbach evaporation/fission calculations from TALYS, *Nucl. Instr. Meth. Phys. Res.* A594 (2008) 420

18. C.H.M. Broeders, A.Yu.Konobeyev, Improvement in simulation of equilibrium particle emission using intranuclear cascade evaporation model, *Nucl. Instr. Meth. Phys. Res.* A550 (2005) 241.

19. S. Leray,J. C. David, M. Khandaker, G. Mank, A. Mengoni, N. Otsuka, D. Filges, F. Gallmeier, A. Konobeyev, R. Michel, Results from the IAEA Benchmark of Spallation Models, *J. Kor. Phys. Soc.* 59 (2011) 791.

20. A.J. Koning, M.C. Duijvestijn, A global pre-equilibrium analysis from 7 to 200 MeV based on the optical model potential, *Nucl. Phys.* A744 (2004) 15

21. A.J. Koning, J.P. Delaroche, Local and global nucleon optical models from 1 keV to 200 MeV, *Nucl. Phys.* A713 (2003) 231.

22. C. Kalbach, Preequilibrium reactions with complex particle channels, *Phys. Rev.* C71 (2005) 034606.

23. W. Hauser, H. Feshbach, The inelastic scattering of neutrons, *Phys. Rev.* 87 (1952) 366.

24. A.V. Ignatyuk, G.N. Smirenkin, A.S. Tishin, Phenomenological description of the energy dependence of the level density parameter, *Sov. J. Nucl. Phys.* 21 (1975) 255.

25. A. Gilbert, A.G.W. Cameron, A composite nuclear-level density formula with shell corrections, *Can. J. Phys.* 43 (1965) 1446.

26. W. Dilg, W. Schantl, H. Vonach, M. Uhl, Level density parameters for the back-shifted fermi gas model in the mass range $40 < A < 250$, *Nucl. Phys.* A217 (1973) 269.

27. A.V. Ignatyuk, K.K. Istekov, G.N. Smirenkin, The role of collective effects for nuclear level density systematics, *Yadernaya Fizika* 29 (1979) 875; *Sov. J. Nucl. Phys.* 29 (1979) 450.

28. R. Capote, M. Herman, P. Obložinský, P.G. Young, S. Goriely, T. Belgya, A.V. Ignatyuk, A.J. Koning, S. Hilaire, V.A. Plujko, M. Avrigeanu, O. Bersillon, M.B. Chadwick, T. Fukahori, Zhigang Ge, Yinlu Han, S. Kailas, J. Kopecky, V.M. Maslov, G. Reffo, M. Sin, E.Sh. Soukhovitskii, P. Talou, RIPL – Reference Input Parameter Library for Calculation of Nuclear Reactions and Nuclear Data Evaluations, *Nuclear Data Sheets* 110 (2009) 3107.

29. S. Hilaire, S. Goriely, Global microscopic nuclear level densities within the HFB plus combinatorial method for practical applications, *Nucl.Phys.* A779 (2006) 63.

30. A.Yu. Konobeyev, U. Fischer, P.E. Pereslavtsev, Computational Approach for Evaluation of Nuclear Data Including Covariance Information, *J. Kor. Phys. Soc.* 59 (2011) 923.

31. A.Yu. Konobeyev, U. Fischer, P.E. Pereslavtsev, R.Capote, Improved Data Evaluation Methodology for Energy Ranges with Missing Experimental Data, Second Int. Workshop on Accelerator Radiation Induced Activation, Ma'ale Hachamisha, Judean Hills, Israel, May 15-19, 2011.

32. A.Yu. Konobeyev, U. Fischer, A.J. Koning, H. Leeb, S. Leray, Y. Yariv, What Can We Expect from the Use of Nuclear Models Implemented in MCNPX at Projectile Energies below 150 MeV? Detailed Comparison with Experimental Data, *J. Kor. Phys. Soc.* 59 (2011) 927.

33. D.L. Smith, Covariance Matrices for Nuclear Cross Sections Derived from Nuclear Model Calculations, ANL/NDM-159, Argonne National Laboratory, 2004.

34. D.L. Smith, A Least-Squares Computational Tool Kit, ANL/NDM-128, Argonne National Laboratory, 1993.

35. Experimental Nuclear Reaction Data, http://www-nds.iaea.org/exfor/exfor.htm

36. Yu.E.Titarenko, O.V.Shvedov, V.F.Batyaev, V.M.Zhivun, E.I.Karpikhin, R.D.Mulambetov, D.V.Fischenko, S.V.Kvasova, S.G.Mashnik, R.E.Prael, A.J.Sierk, H.Yasuda, Study of residual product nuclide yields in 1-GeV proton irradiated Pb-208 and 2.6-GeV proton irradiated W-natural thin target, LA-UR-00-3597, 2000.

37. Yu.E.Titarenko, V.F.Batyaev, A.Yu.Titarenko, M.A.Butko, K.V.Pavlov, S.N.Florya, R.S.Tikhonov, V.M.Zhivun, A.V.Ignatyuk, S.G.Mashnik, S.Leray, A.Boudard, J.Cugnon, D.Mancusi, Y.Yariv, K.Nishihara, N.Matsuda,

H.Kumawat, G.Mank, W.Gudowski, Measurement and simulation of the cross sections for nuclide production in W-nat and Ta-181 targets irradiated with 0.04- to 2.6-GeV protons, *Physics of Atomic Nuclei* 74 (2011) 551.

38. Yu.E.Titarenko, V.F.Batyaev, A.Yu.Titarenko, M.A.Butko, K.V.Pavlov, S.N.Florya, R.S.Tikhonov, V.M.Zhivun, A.V.Ignatyuk, S.G.Mashnik, S.Leray, A.Boudard, J.Cugnon, D.Mancusi, Y.Yariv, K.Nishihara, N.Matsuda, H.Kumawat, G.Mank, W.Gudowski, Measurement and simulation of the cross sections for nuclide production of Gd-148 in thin W-nat and Ta-181 targets irradiated with 0.4- to 2.6-GeV protons, *Physics of Atomic Nuclei* 74 (2011) 573.

39. I.Dostrovsky, R.Davis, Jr., A.M.Poskanzer, P.L.Reeder, Cross Sections for the Production of Li9,C16, and N17 in Irradiations with GeV-Energy Protons, *Phys. Rev.* B139 (1965) 1513.

40. P.P.Strohal, A.A.Caretto, Excitation Functions of (p,2nucleon) Reactions, *Phys. Rev.* 121 (1961) 1815.

41. W.J.Treytl, A.A.Caretto, Study of (p,n) Reactions between 100 and 400 MeV, *Phys. Rev.* 146 (1966) 836.

42. R.G.Thomas, W.Bartolini, Excitation functions for (p,n) and (p,2n) interactions in Sc, Cr, Mo, Cd and W between 8 and 14 MeV, *Nucl. Phys.* A106 (1968) 323.

43. D.L.Morrison, A.A.Caretto, Excitation Functions of (p,xp) Reactions, *Phys. Rev.* 127 (1962) 1731.

44. K.C.Kelley, N.E.Hertel, E.J.Pitcher, M.Devlin, S.G.Mashnik, ^{148}Gd production cross section measurements for 600- and 800-MeV protons on tantalum, tungsten, and gold, *Nucl. Phys.* A760 (2005) 225.

45. K.C.Kelley, PhD thesis, Georgia Institute of Technology, 2004, http://etd.gatech.edu/theses/available/etd-03292004-191344/

46. F.S.Dietrich, E.P.Hartouni, S.C.Johnson, G.J.Schmid, R.Soltz, W.P.Abfalterer, R.C.Haight, L.S.Waters, A.L.Hanson, R.W.Finlay, G.S.Blanpied, Proton reaction cross sections measured in the BNL/AGS E943 experiment, *J. Nucl. Sci. Technol.* Suppl. Vol.2 (2002) 269.

47. S.Lapi, W.J.Mills, J.Wilson, S.Mcquarrie, J.Publicover, M.Schueller, D.Schyler, J.J.Ressler, T.J.Ruth, Production cross-sections of 181-186Re isotopes from proton bombardment of natural tungsten, *Appl. Rad. Isot.* 65 (2007) 345.

48. M.U.Khandaker, M.S.Uddin, K.Kim, M.W.Lee, K.S.Kim, Y.S.Lee, G.N.Kim, Y.S.Cho, Y.O.Lee, Excitation functions of proton induced nuclear reactions

on ^{nat}W up to 40 MeV, *Nucl. Instr. Meth. Phys. Res.* B266 (2008) 1021; *J. Nucl. Sci. Technol.* Suppl. Vol.5 (2008) 139.

49. X.Zhang, W.Li, K.Fang, W.He, R.Sheng, D.Ying, W.Hu, Excitation Functions for ^{nat}W(p,xn)$^{181-186}$Re Reactions and Production of No-Carrier-Added ^{186}Re via ^{186}W(p,n)^{186}Re, *Radiochimica Acta* 86 (1999) 11.

50. E.Menapace, M.L.Bonardi, F.Groppi, E.Persico, Z.B.Alfassi Experimental and calculated nuclear reaction data relevant to innovative production of medical radioisotopes, Conf. on Nucl. Data for Sci. and Technology, Nice 2007, Vol.2, p.1403, 2007.

51. F.Szelecsenyi, S.Takacs, F.Tarkanyi, M.Sonck, A.Hermanne, Study of production possibility of no-carrier-added ^{186}Re via proton induced reaction on tungsten for use in radiotherapy, Symp. Synth. Isot. Labelled Comp., Philadelphia, PA 1997, p.701, 1997.

52. F.Tarkanyi, S.Takacs, F.Szelecsenyi, F.Ditroi, A.Hermanne, M.Sonck Excitation functions of proton induced nuclear reactions on natural tungsten up to 34 MeV, *Nucl. Instrum. Meth. Phys. Res.* B252 (2006) 160; Symp. Synth. Isot. Labelled Comp., Philadelphia, PA 1997, p.701.

53. F.Tarkanyi, A.Hermanne, S.Takacs, F.Ditroi, F.Kovalev, A.V.Ignatyuk New measurement and evaluation of the excitation function of the ^{186}W(p,n) nuclear reaction for production of the therapeutic radioisotope 186Re, *Nucl. Instr. Meth. Phys. Res.* B264 (2007) 389.

54. Y.Asano, S.Mori, M.Noguchi, M.Sakano, K.Katoh, K.Kondo Spallation and Fission Yields in the Interactions of Tantalum,Tugsten, and Gold with 500-MeV Protons, *J. of the Physical Society of Japan* 54 (1985) 3734.

55. N.Shigeta, H.Matsuoka, A.Osa, M.Koizumi, M.Izumo, K.Kobayashi, K.Hashimoto, T.Sekine, R.M.Lambrecht Production Method of No-Carrier-Added ^{186}Re, *J. of Radioanalytical and Nuclear Chemistry* 205 (1996) 85; N.Shigeta Ishioka, T.Sekine, R.M.Lambrecht, Comments on the Cross Sections of ^{186}Re in the ^{186}W(p,n) and ^{186}W(d,2n) Reactions in Connection to the Paper Given by Z.H.Zhu et al. and Correction of the Calculated Yield of ^{186}Re in the ^{186}W(p,n) Reaction, *J. of Radioanalytical and Nuclear Chemistry* 241 (1999) 383.

56. S.I.Green, W.V.Green, F.H.Hegedus, M.Victoria, W.F.Sommer, B.M.Oliver Production of Helium by Medium Energy (600 and 800 MeV) Protons, *J. Nucl. Mater.* 155/157 (1988) 1350.

57. V.Yu.Denisov, V.A.Zheltonozhsky, S.V.Reshitko, Study of Isomer Ratio in Threshold Region in Reactions, with Light Charged Particles, *Yadernaya Fizika* 56 (1993) 99.

58. Y.Asano, S.Mori, M.Noguchi, M.Sakano, K.Katoh, K.Kondo, Spallation and Fission Yields in the Interactions of Tantalum,Tugsten, and Gold with 500-MeV Protons , *J. of the Physical Society of Japan* 54 (1985) 3734.

59. P.Kirkby, W.T.Link Faraday-Cup Measurement of Proton Total Reaction Cross Sections at 100 MeV. *Canadian J. of Physics* 44 (1966) 1847.

60. A.A.Kotov, G.G.Semenchuk, L.N.Andronenko, M.N.Andronenko, B.L.Gorshkov, G.G.Kovshevnyi, V.R.Reznik, G.E.Solyakin, Energy and Mass Distributions of Fragments from Fission of ^{209}Bi, ^{197}Au, ^{nat}W, and ^{nat}Yb by 1-GeV Protons, *Yadernaya Fizika* 20 (1974) 467; *Soviet J. of Nucl. Phys.* 20 (1974) 251.

61. A.A.Kotov, G.G.Semenchuk, L.N.Andronenko, M.N.Andronenko, B.L.Gorshkov, G.G.Kovshevnyi, V.R.Reznik, G.E.Solyakin, Angular Correlations of Fragment Pairs in Fission of Nuclei by 1-GeV Protons, *Yadernaya Fizika* 19 (1974) 756; *Soviet J. of Nucl. Phys.* 19 (1974) 385.

62. K.L.Scholz, V.J.Sodd, J.W.Blue, Production of Thulium-167 for Medical Use by Irradiation of Lutetium, Hafnium, Tantalum and Tungsten with 590-MeV Protons, *Appl. Rad. Isot.* 27 (1976) 263.

63. M.C.Duijvestijn, A.J.Koning, J.P.M.Beijers, A.Ferrari, M.Gastal, J.van Klinken, R.W.Ostendorf, Proton-Induced Fission at 190 MeV of ^{nat}W, ^{197}Au, ^{nat}Pb, ^{208}Pb, and ^{232}Th, *Phys. Rev.* C59 (1999) 776.

64. H.G.De Carvalho, G.Potenza, R.Rinzivillo, E.Sassi, G.Vanderhaeghe, Experimental Results on the Nuclear Fission Produced by 600 MeV Protons *Nuovo Cimento* 25 (1962) 776.

65. V.S.Bychenkov, N.A.Perfilov, Fission of Tungsten Nuclei by 660-MeV Protons, *Yadernaya Fizika* 5 (1967) 264; *Soviet J. of Nucl. Phys.* 5 (1967) 186.

66. L.N.Andronenko, A.A.Kotov, M.M.Nesterov, V.F.Petrov, N.A.Tarasov, L.A.Vaishnene, W.Neubert, Fission Studies of Highly Excited Nuclei, *Zeitschrift fuer Physik* A318 (1984) 97; Report Leningrad Inst. Nucl. Phys. Reports No.882, 1983.

67. V.N.Okolovich, O.A.Zhukova, M.G.Itkis, S.I.Mul`gin, Fission of Some Subactinide Nuclei in the (p,f) Reaction, Report Inst. Nucl. Phys., Alma-Ata, preprints No.112, 1974.

68. V.P.Shamov, The Mechanism of Heavy Nuclei Fission at High Excitation Energies, *Doklady Akademii Nauk* 103 (1955) 593.

69. M.Enke, C.-M.Herbach, D.Hilscher, U.Jahnke, O.Schapiro, A.Letourneau, J.Galin, F.Goldenbaum, B.Lott, A.Peghaire, D.Filges, R.-D.Neef, K.Nunighoff, N.Paul, H.Schaal, G.Sterzenbach, A.Tietze, L.Pienkowski

Evolution of a Spallation Reaction: Experiment and Monte Carlo Simulation, *Nucl. Phys.* A657 (1999) 317.

70. E.Porras, F.Sanchez, V.Reglero, B.Cordier, A.J.Dean, F.Lei, J.M.Perez, B.M.Swinyard, Production Rate of Proton-Induced Isotopes in Different Materials, *Nucl. Instr. Meth. Phys. Res.* B160 (2000) 73.

71. Yu.E.Titarenko, Experimental yields for W-nat irradiated with 2.6-GeV protons. USSR report to the I.N.D.C. No.434, p.69, 2003.

72. S.A.Karamian, J.Adam, P.Chaloun, D.V.Filossofov, V.Henzl, D.Henzlova, V.G.Kalinnikov, N.A.Korolev, N.A.Lebedev, A.F.Novgorodov, C.B.Collins, I.I.Popescu, C.A.Ur, Yield of radionuclides and isomers produced in the fragmentation on ^{nat}W and ^{186}W (97%) targets with protons at 630, 420 and 270 MeV, *Nucl. Instr. Meth. Phys. Res.* A527 (2004) 609.

73. Yu.E.Titarenko, Experimental yields for W-182 irradiated with 0.2,0.8, 1.6-GeV protons, USSR report to the I.N.D.C. No.434, p.53, 2003; Internat. Science and Technology Center, Reports No.839B, 99, p.52, 2001.

74. Yu.E.Titarenko, Experimental yields for W-183 irradiated with 0.2, 0.8, 1.6-GeV protons, USSR report to the I.N.D.C. No.434, p.57, 2003; Internat. Science and Technology Center, Reports No.839B, 99, p.56, 2001.

75. Yu.E.Titarenko, Experimental yields for W-184 irradiated with 0.2, 0.8, 1.6-GeV protons, USSR report to the I.N.D.C. No.434, p.61, 2003; Internat. Science and Technology Center, Reports No.839B, 99, p.60, 2001.

76. Yu.E.Titarenko, Experimental yields for W-186 irradiated with 0.2, 0.8, 1.6-GeV protons, USSR report to the I.N.D.C. No.434, p.65, 2003; Internat. Science and Technology Center, Reports No.839B, 99, p.64, 1999.

77. R.Michel, M.Gloris, J.Protoschill, U.Herpers, J.Kuhnhenn, F.Sudbrock, P.Malmborg, P.Kubik, Cross sections for the production of radionuclides by proton-induced reactions on W, Ta, Pb and Bi from thresholds up to 2.6 GeV, *J. Nucl. Sci. Technol. Suppl.* Vol.2 (2002) 242.

78. M.H.Miah, J.Kuhnhenn, U.Herpers, R.Michel, P.Kubik, Production of residual nuclides by proton-induced reactions oh target W at an energy of 72 MeV, *J. Nucl. Sci. Technol.* Suppl. Vol.2 (2002) 369.

79. C.-M.Herbach, D.Hilscher, U.Jahnke, V.G.Tishchenko, J.Galin, A.Letourneau, A.Peghaire, D.Filges, F.Goldenbaum, L.Pienkowski, W.U.Schroder, J.Toke Charged-particle evaporation and pre-equilibrium emission in 1.2 GeV proton-induced spallation reactions, *Nucl. Phys.* A765 (2006) 426.

80. C.-M.Herbach, D.Hilscher, U.Jahnke, V.G.Tishchenko, J.Galin, A.

Letourneau, A.Peghaire, D.Filges, F.Goldenbaum, L.Pienkowski, W.U. Schroder, J.Toke Systematic investigation of 1.2-GeV proton-induced spallation reactions on targets between Al and U, *Nucl. Instr. Meth. Phys. Res.* A562 (2006) 729.

81. A.N.Smirnov, O.I.Batenkov, V.P.Eismont, N.P.Filatov, J.Blomgren, H.Conde, A.V.Prokofiev, S.G.Mashnik, Nucleon-induced fission cross sections of tantalum and separated tungsten isotopes and "compound nucleus" effect in intermediate energy region, Conf. on Nucl. Data for Sci. and Technology, Nice 2007, Vol.2, p.1095, 2007; Report Int. Sem. on Interactions of Neutrons with Nuclei No.13, p.309, 2006.

82. Yu.E.Titarenko, V.F.Batyaev, A.Yu.Titarenko, M.A.Butko, K.V.Pavlov, R.S.Tikhonov, S.N.Florya, S.G.Mashnik, W.Gudowski Gd-148 formation in thin W-nat and Ta-181 targets induced with 0.4-2.6 GeV protons, 1 Int. Worksh. on Acc. Radiat. Ind. Activ., Villigen, 2008 p.68, 2008.

83. M.Bonardi, F.Groppi, E.Persico, S.Manenti, K.Abbas, U.Holzwarth, F.Simonelli, Z.B.Alfassi, Excitation functions and yields for cyclotron production of radiorhenium via $^{nat}W(p,xn)^{181\text{-}186g}Re$ nuclear reactions and tests on the production of ^{186g}Re using enriched ^{186}W, *Radiochimica Acta* 99 (2011) 1; *Appl. Rad. Isot.* 68 (2010) 1595.

84. N.C.Schoen, G.Orlov, R.J.McDonald, Excitation Functions for Radioactive Isotopes Produced by Proton Bombardment of Fe, Co, and W in the Energy Range from 10 to 60 MeV, *Phys. Rev.* C20 (1979) 88.

85. H.A. Khan, N.A. Khan, Fission and Spallation Induced by 7-GeV Protons on U, Bi, Pb, Au, W, Ho and Ag, *Phys.Rev.* C29 (1984) 2199.

86. D.Ene, private communication, Juni 6, 2011

87. IMSL (International Mathematics and Statistics Library), http://www.roguewave.com/products/imsl-numerical-libraries.aspx

88. R. Michel, R. Bodemann, H. Busemann, R. Daunke, M. Gloris, H.-J. Lange, B. Klug, A. Krins, I. Leya, M. Lüpke, S. Neumann, H. Reinhardt, M. Schnatz-Büttgen, U. Herpers, Th. Schiekel, F. Sudbrock, B. Holmqvist, H. Condé, P. Malmborg, M. Suter, B. Dittrich-Hannen, P.-W. Kubik, H.-A. Synal, D. Filges, Cross sections for the production of residual nuclides by low- and medium-energy protons from the target elements C, N, O, Mg, Al, Si, Ca, Ti, V, Mn, Fe, Co, Ni, Cu, Sr, Y, Zr, Nb, Ba and Au, *Nucl. Instr. Meth. Phys. Res.* B129 (1997) 153.

89. H. Leeb, M.T. Pigni, I. Raskinyte, Covariances for Evaluations based on Extensive Modelling, Proc. Int. Conf. on Nuclear Data for Science and Technology (ND2004), Santa Fe, USA, Sep. 26 – Oct. 1, 2004, p.161.

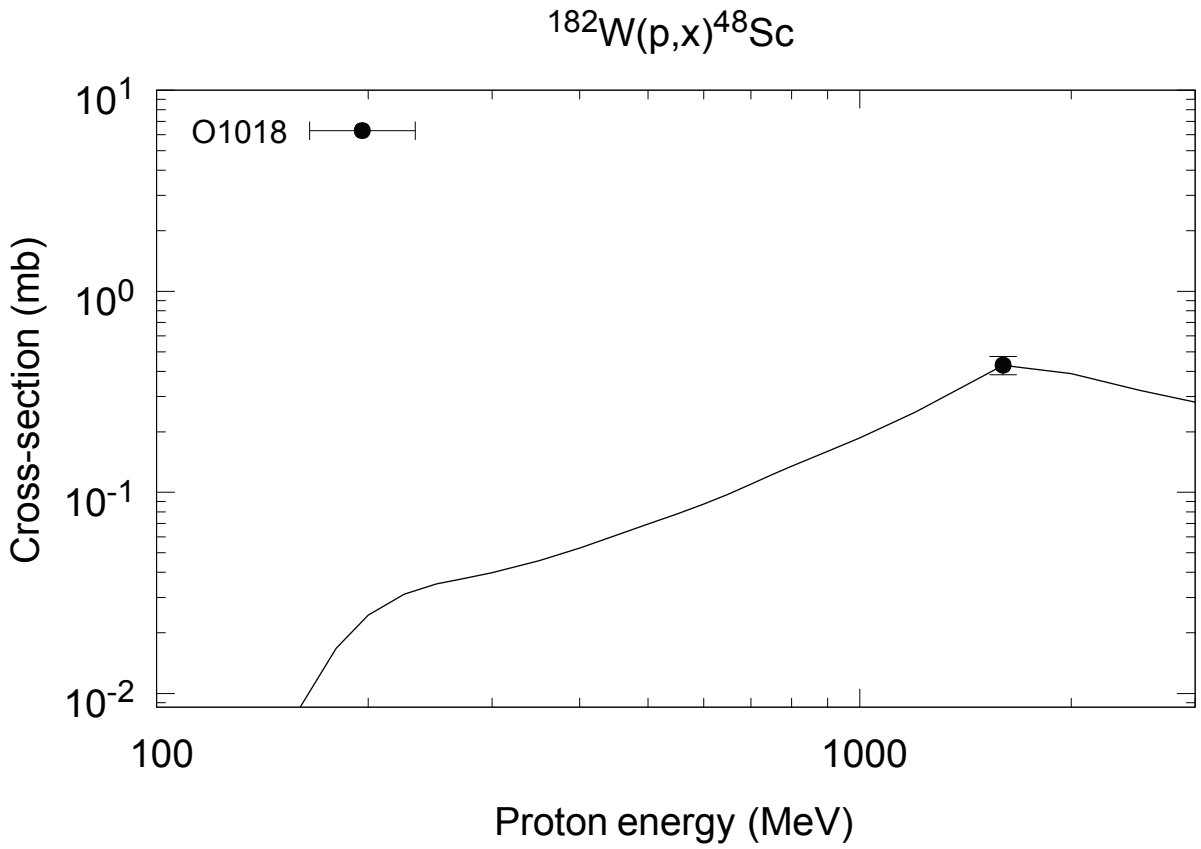
90. C.H.M. Broeders, A.Yu. Konobeyev, L. Mercatali, Uncertainty in Cross-Section Calculations for Reactions Induced by Neutrons with Energy above 0.1 MeV, *Kerntechnik,* 71 (2006) 174.

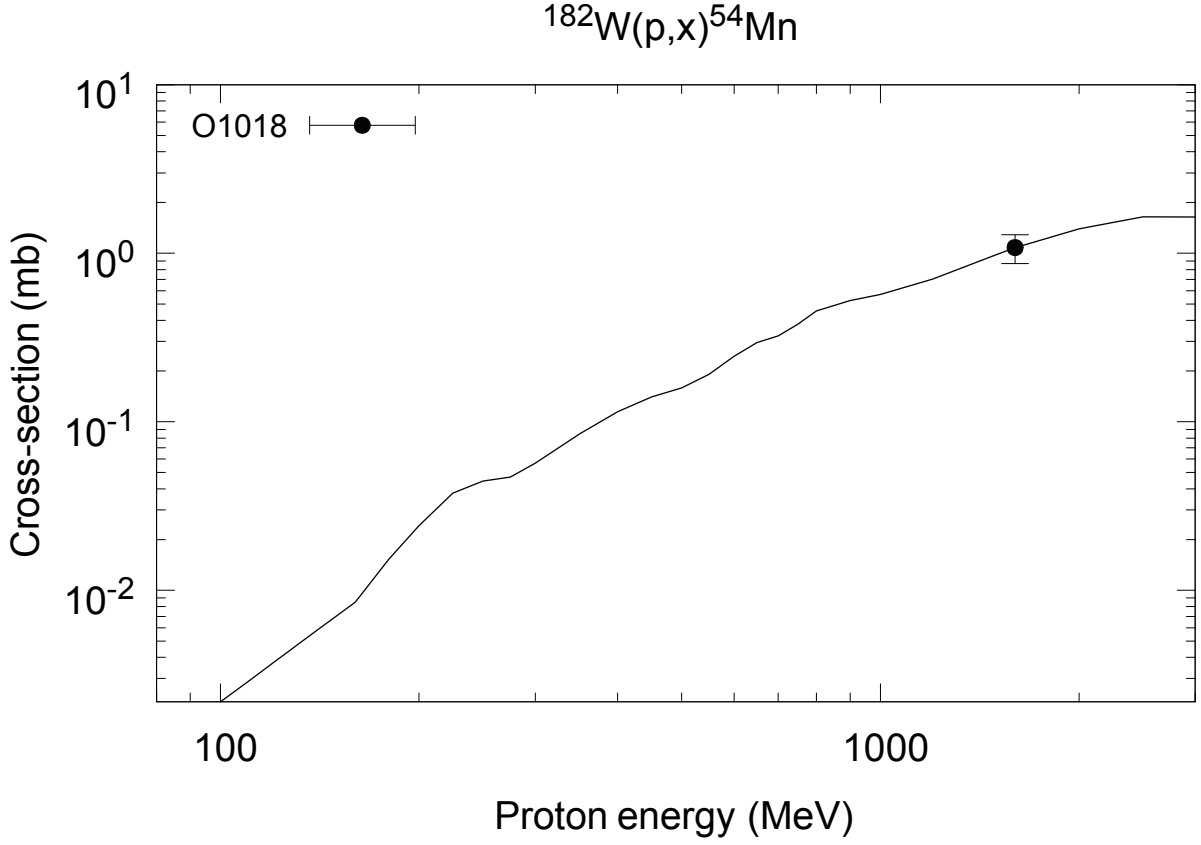
91. A.Yu. Konobeyev, C.H.M. Broeders, U. Fischer, L. Mercatali, Uncertainty in Activation Cross-Section Calculations at Intermediate Proton Energies, *Kerntechnik*, 73, (2008) 49.

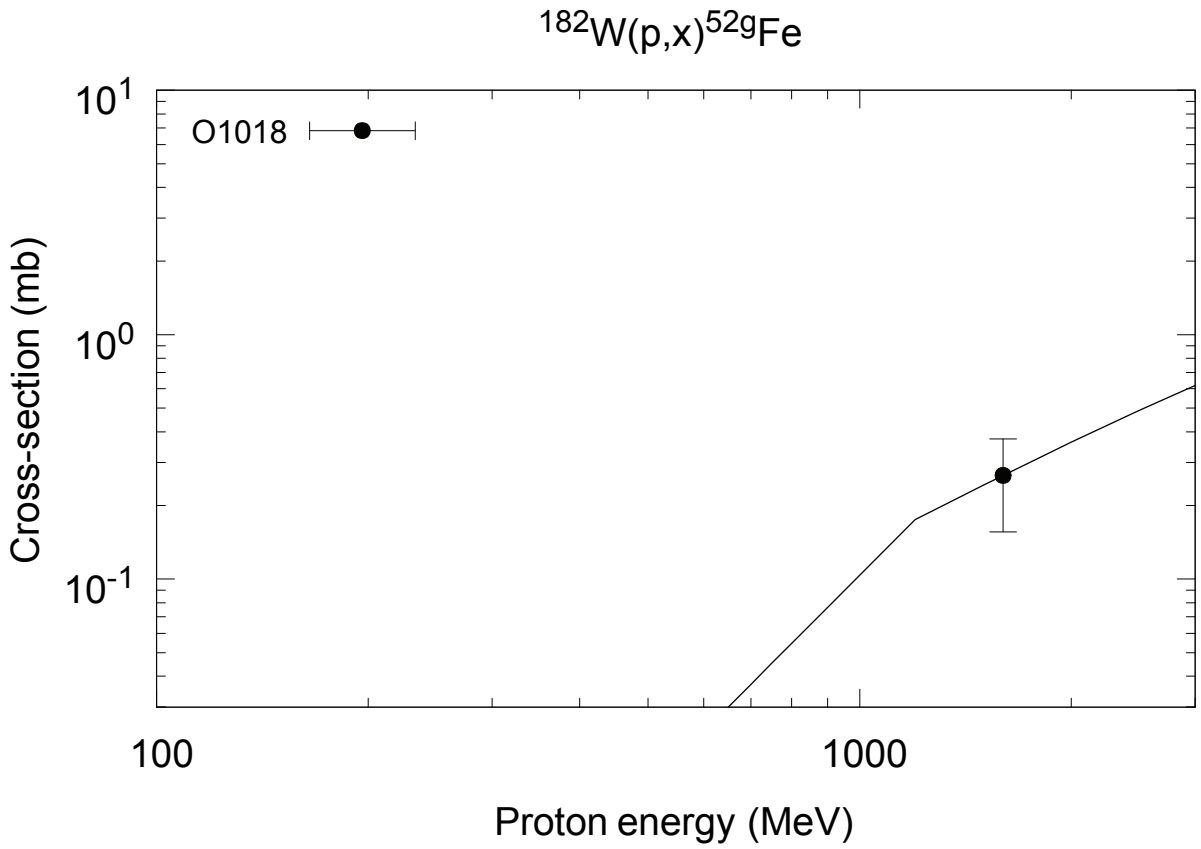
92. C.H.M. Broeders, A.Yu. Konobeyev, Evaluation of ^{4}He Production Cross-Section for Tantalum, Tungsten and Gold Irradiated with Neutrons and Protons at the Energies up to 1 GeV, *Nucl. Instr. Meth. Phys. Res.* B234 (2005) 387.

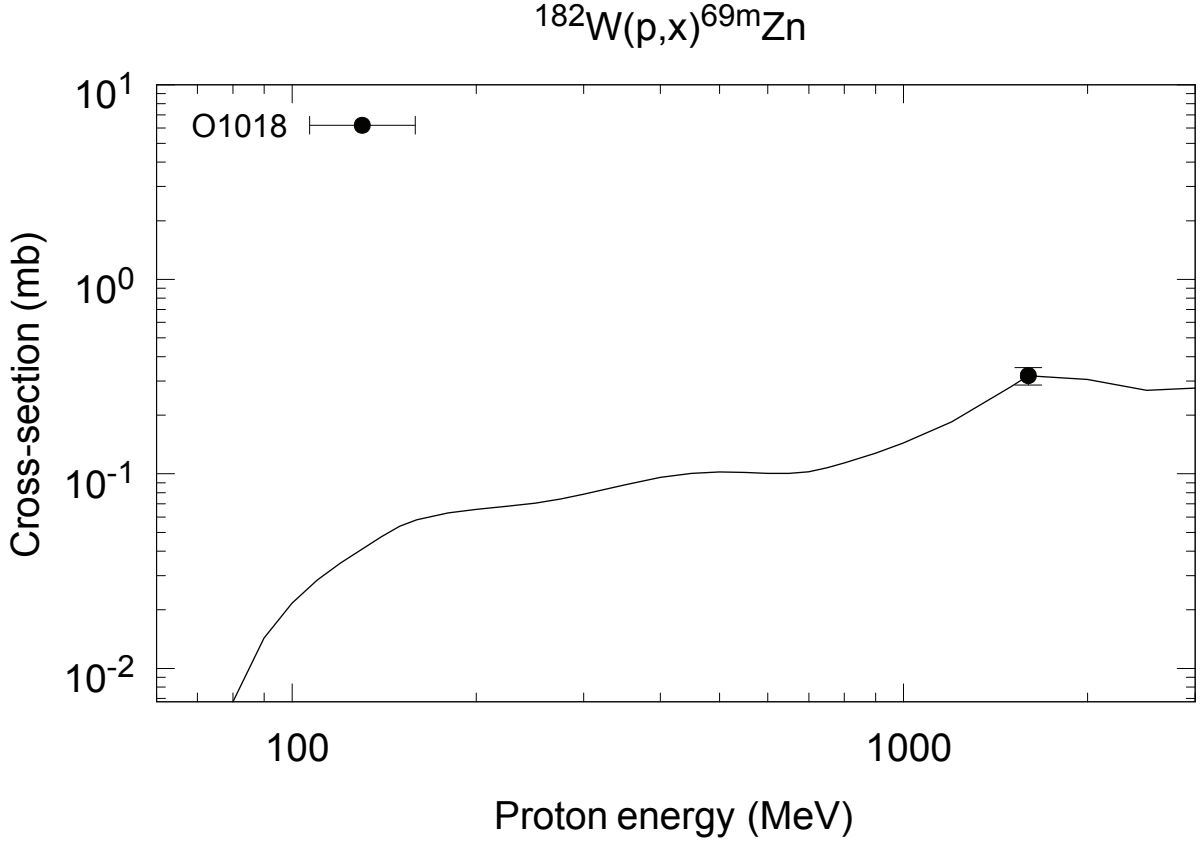
93. C.H.M. Broeders, A.Yu. Konobeyev, A.Yu. Korovin, V.P. Lunev, M. Blann, ALICE/ASH - Pre-Compound and Evaporation Model Code System for Calculation of Excitation Functions, Energy and Angular Distributions of Emitted Particles in Nuclear Reactions at Intermediate Energies, Report FZKA 7183 May, 2006, http://bibliothek.fzk.de/zb/berichte/FZKA7183.pdf

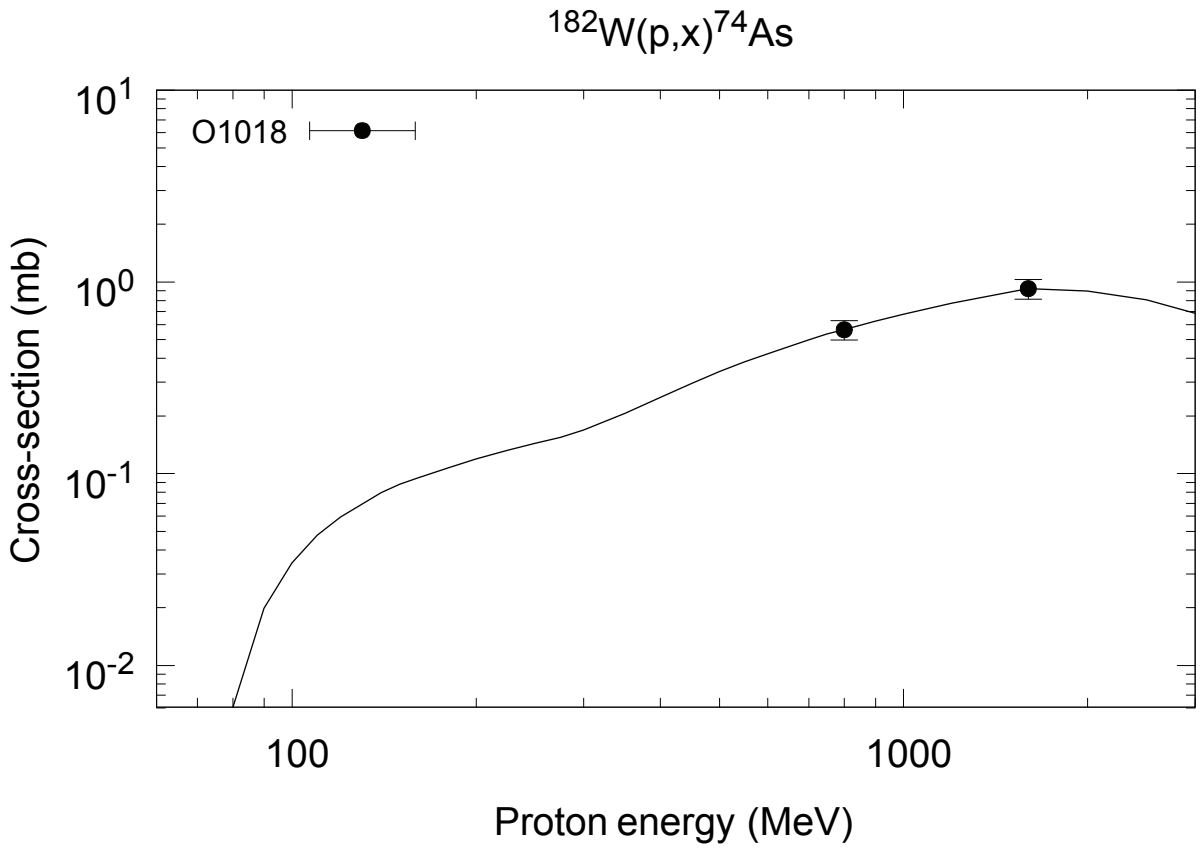
Appendix A: Independent radionuclide production cross-sections in proton induced reactions with stable tungsten isotopes evaluated using experimental data

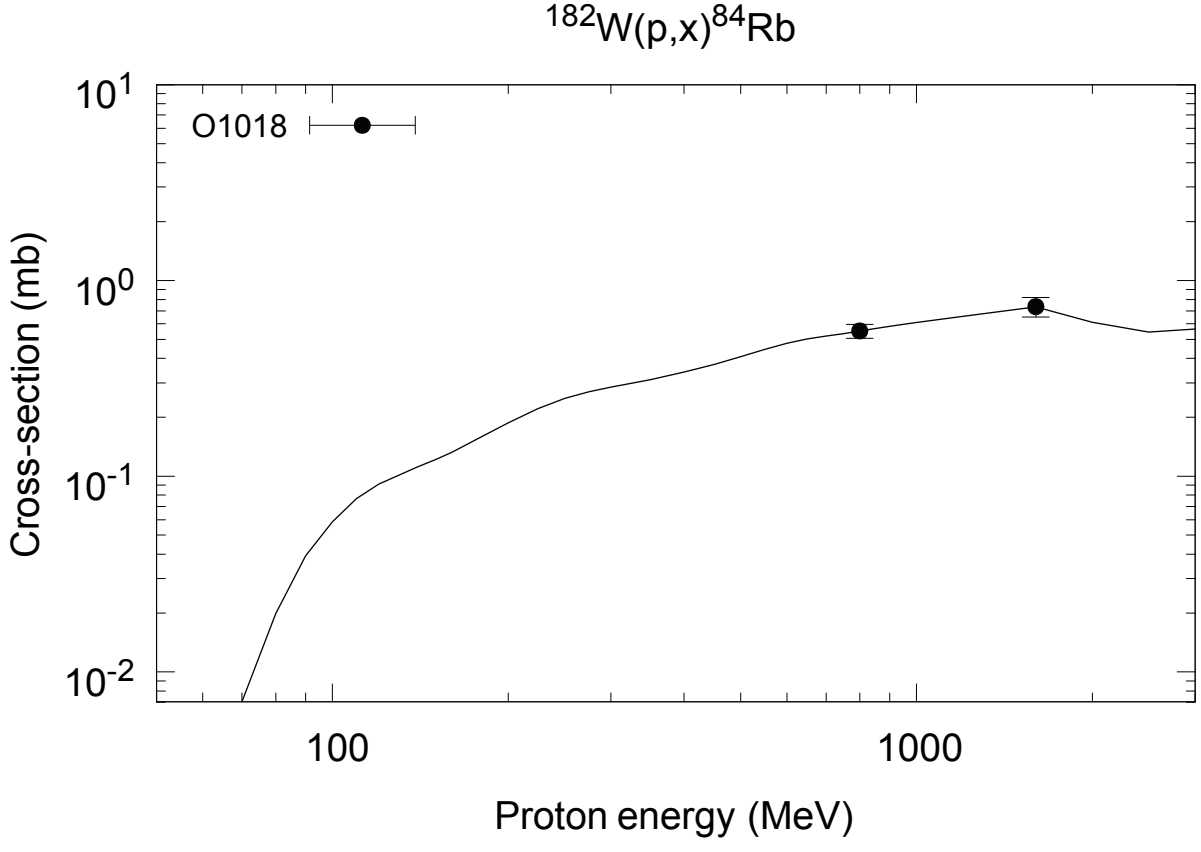

^{182}W(p,x)^{48}Sc
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

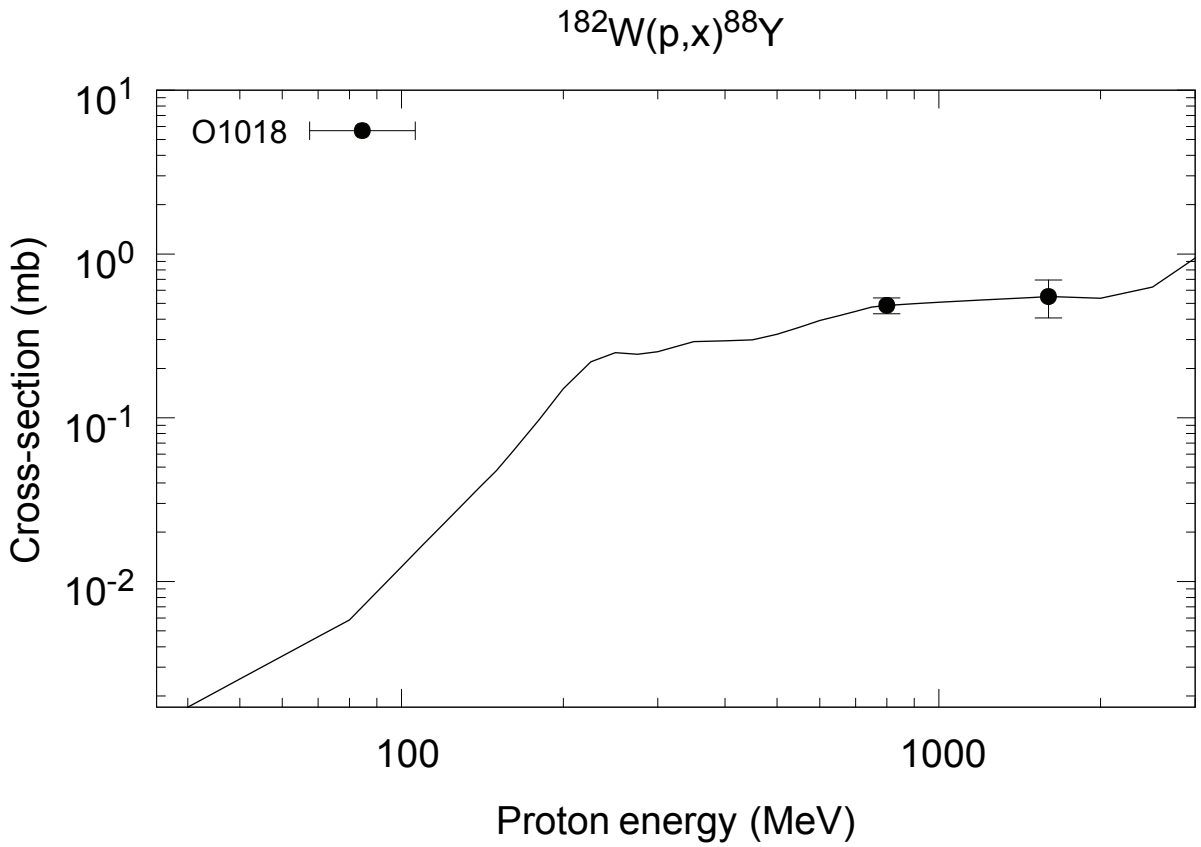

^{182}W(p,x)^{54}Mn
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

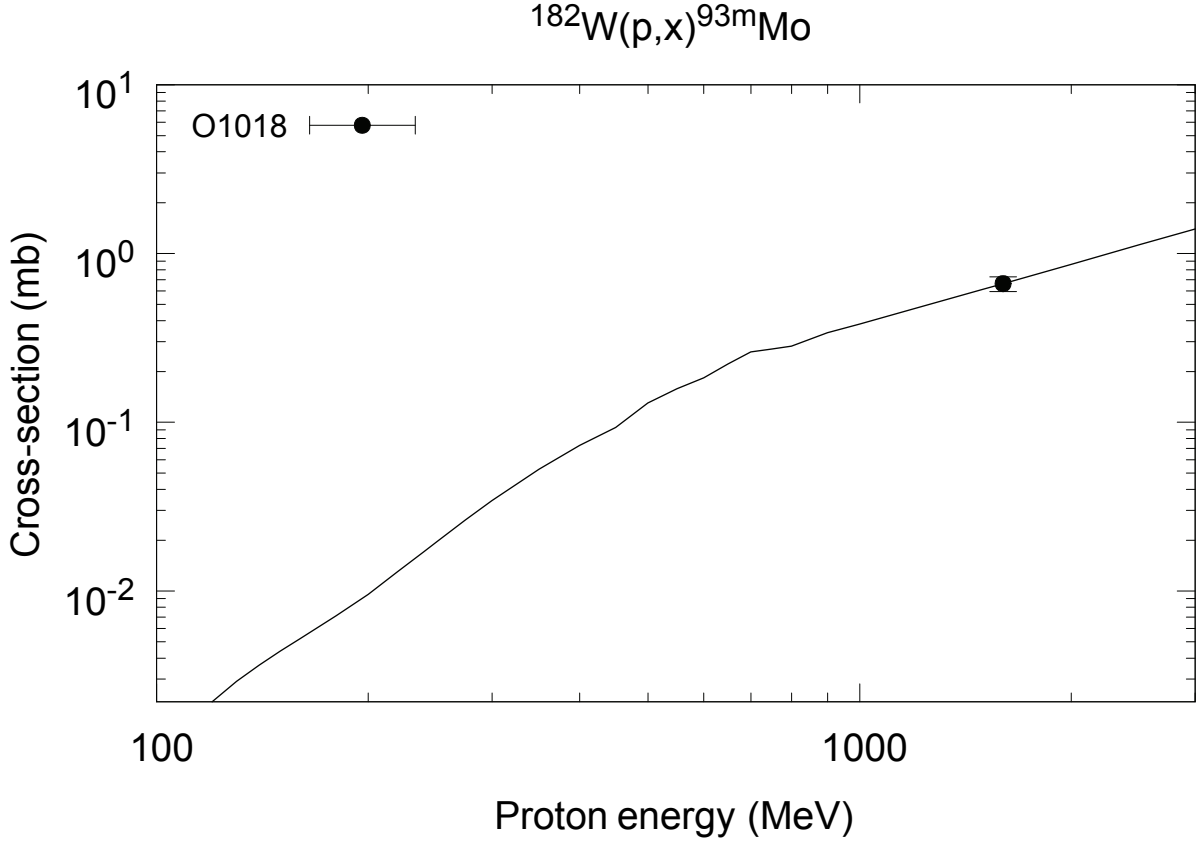

^{182}W(p,x)^{52g}Fe
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

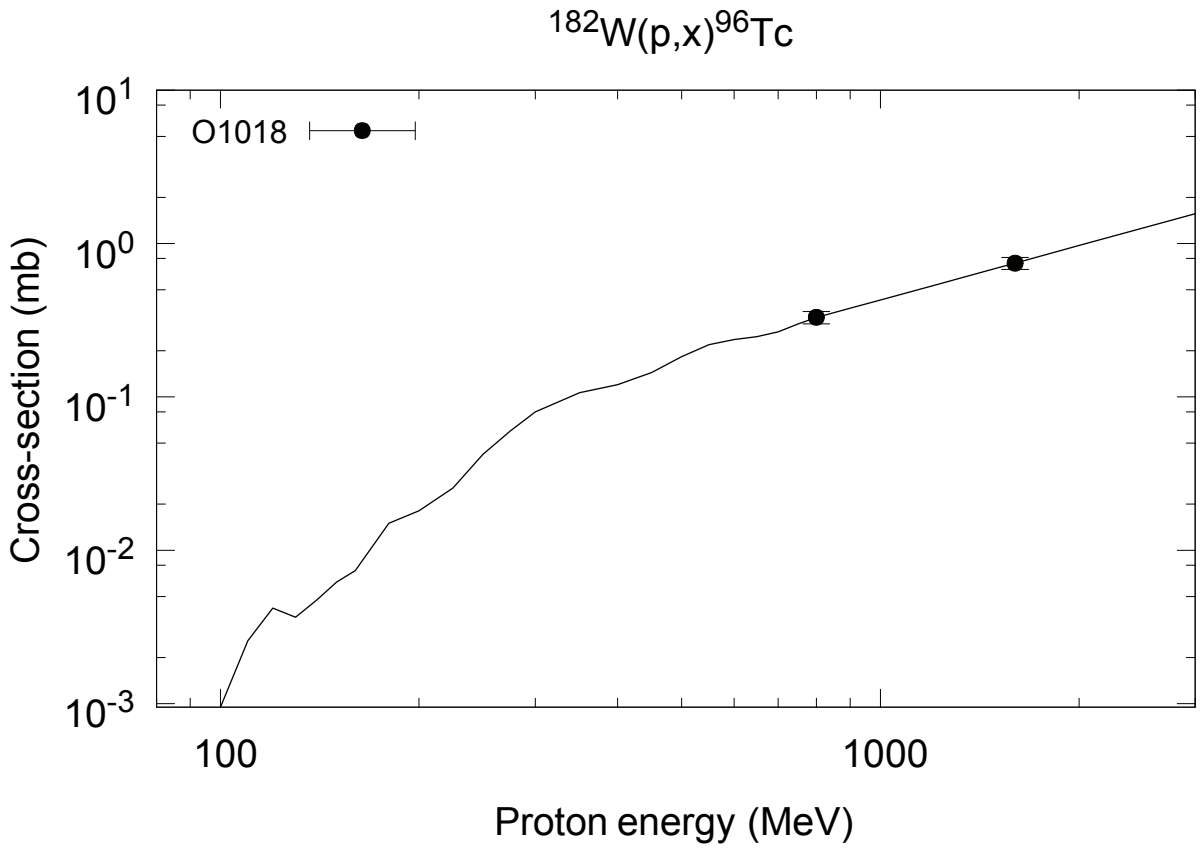

^{182}W(p,x)^{69m}Zn
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

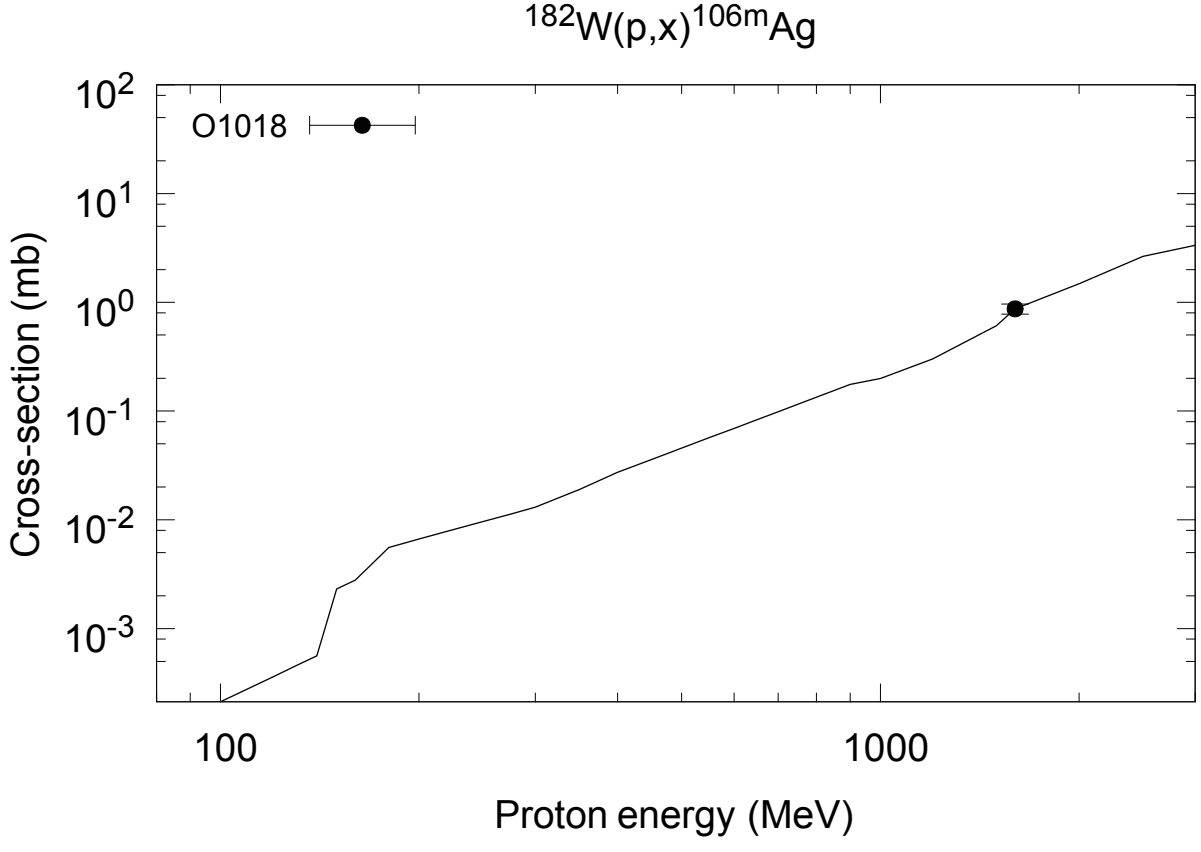

^{182}W(p,x)^{74}As
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

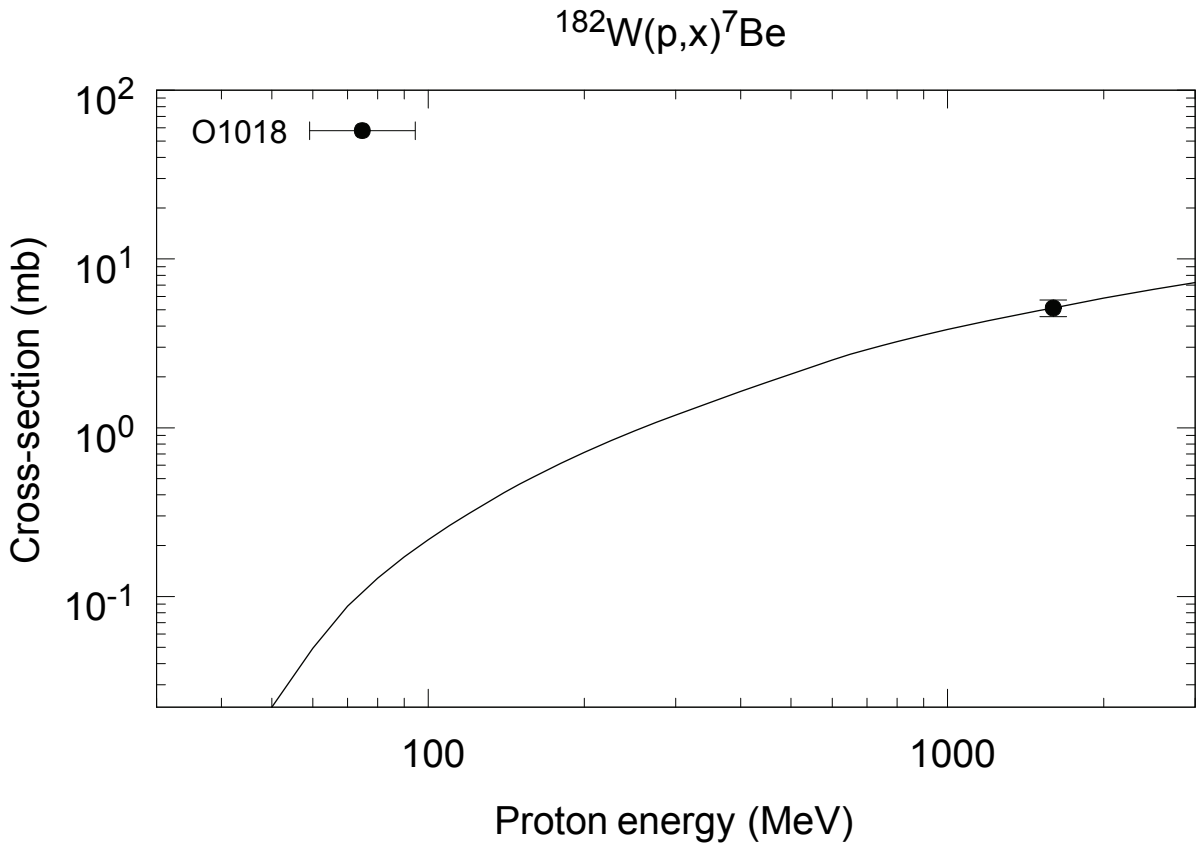

^{182}W(p,x)^{84}Rb
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

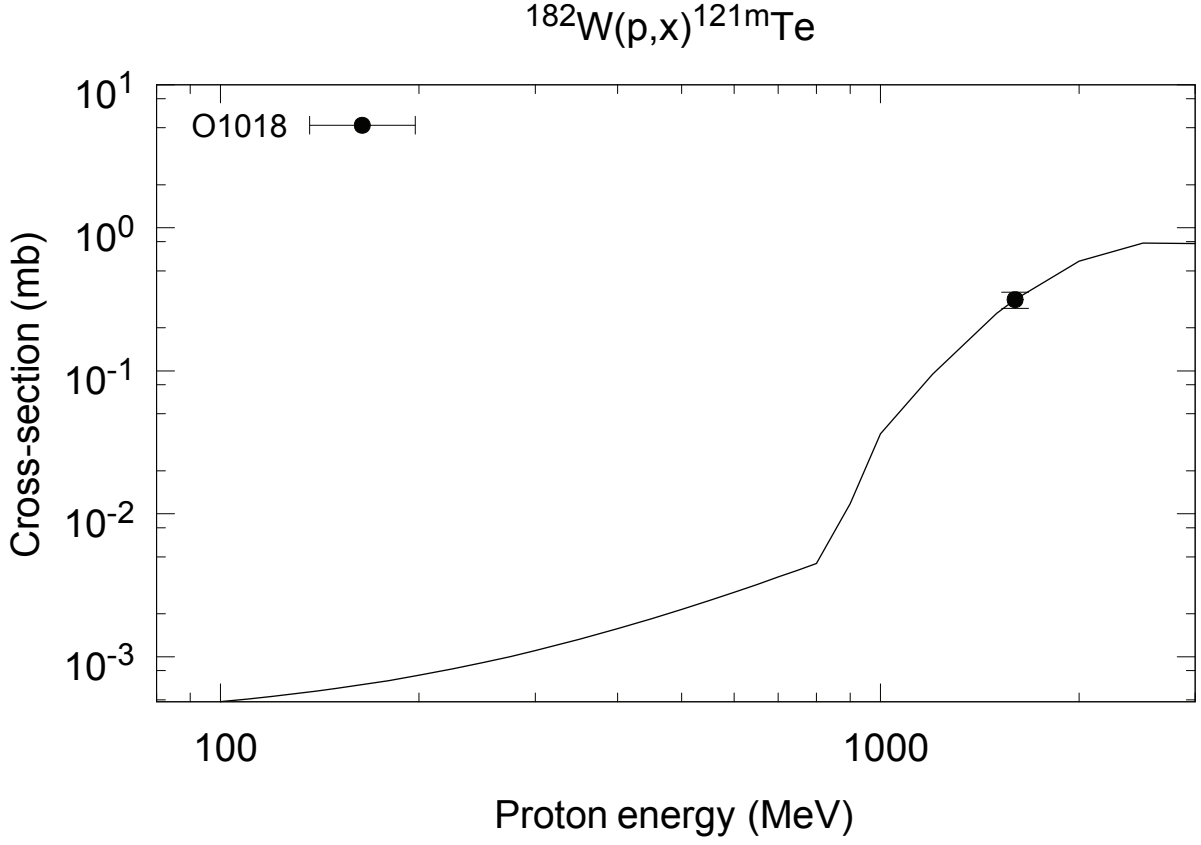

$^{182}W(p,x)^{88}Y$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

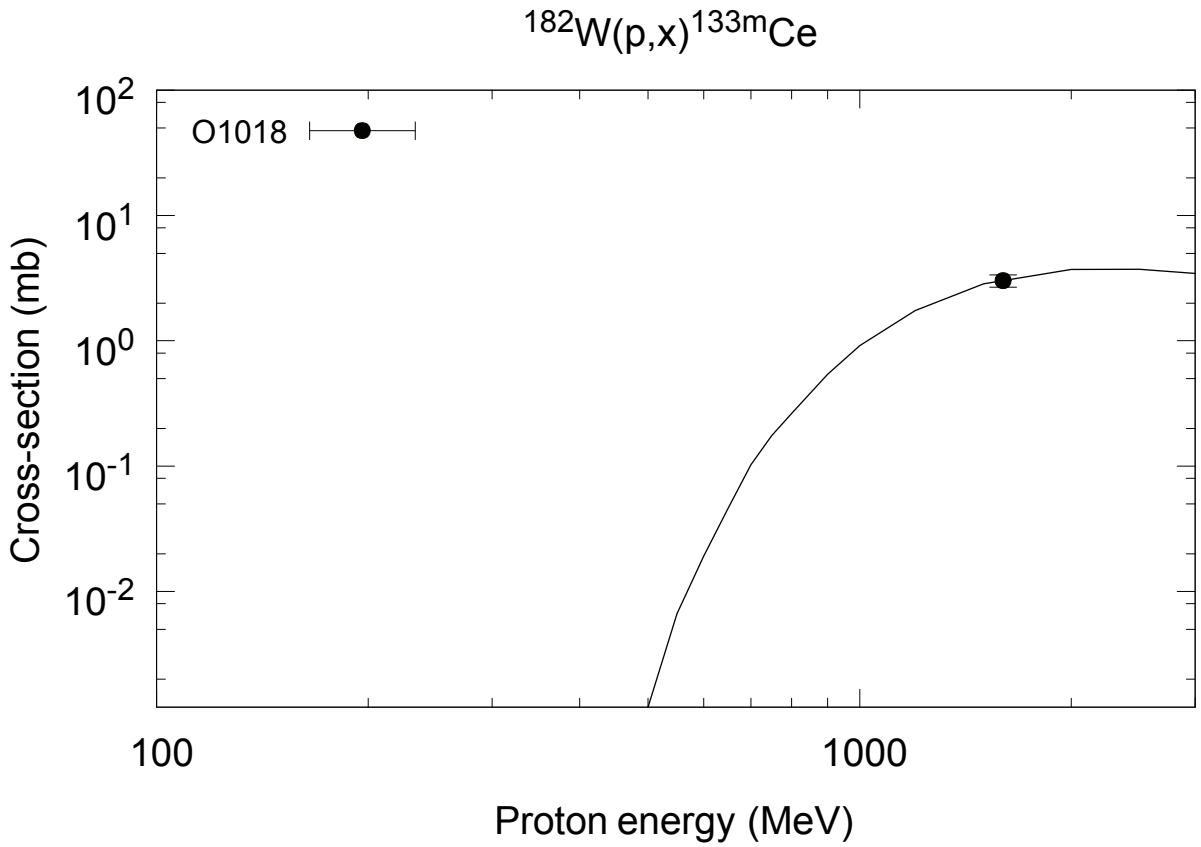

$^{182}W(p,x)^{93m}Mo$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

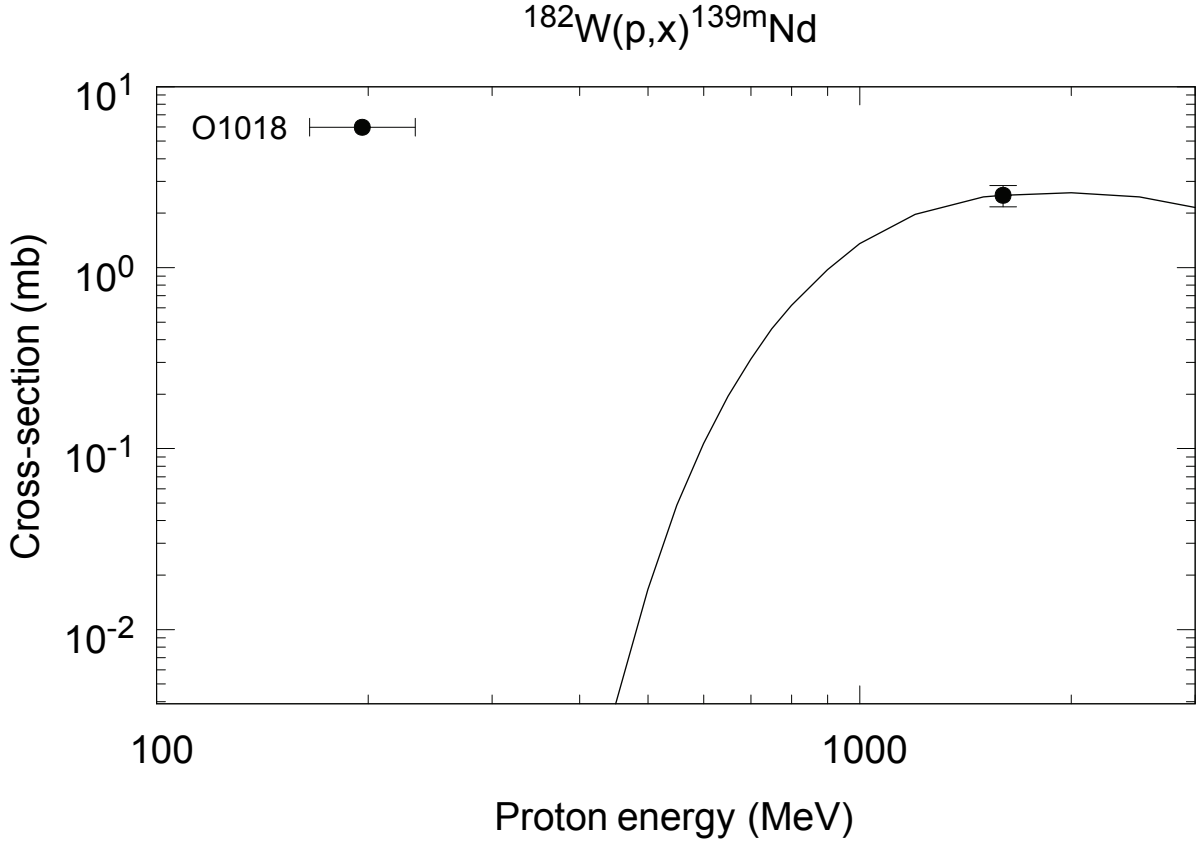

$^{182}W(p,x)^{96}Tc$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

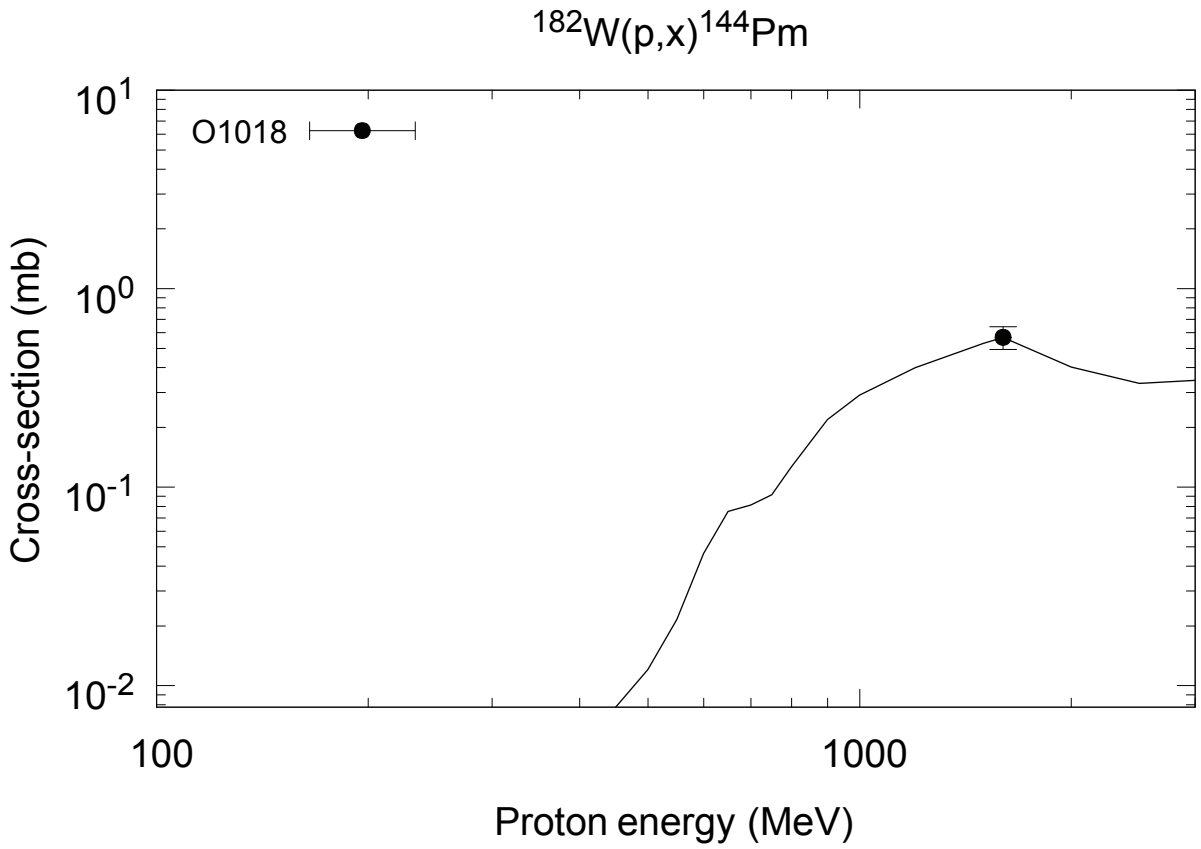

$^{182}W(p,x)^{106m}Ag$
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

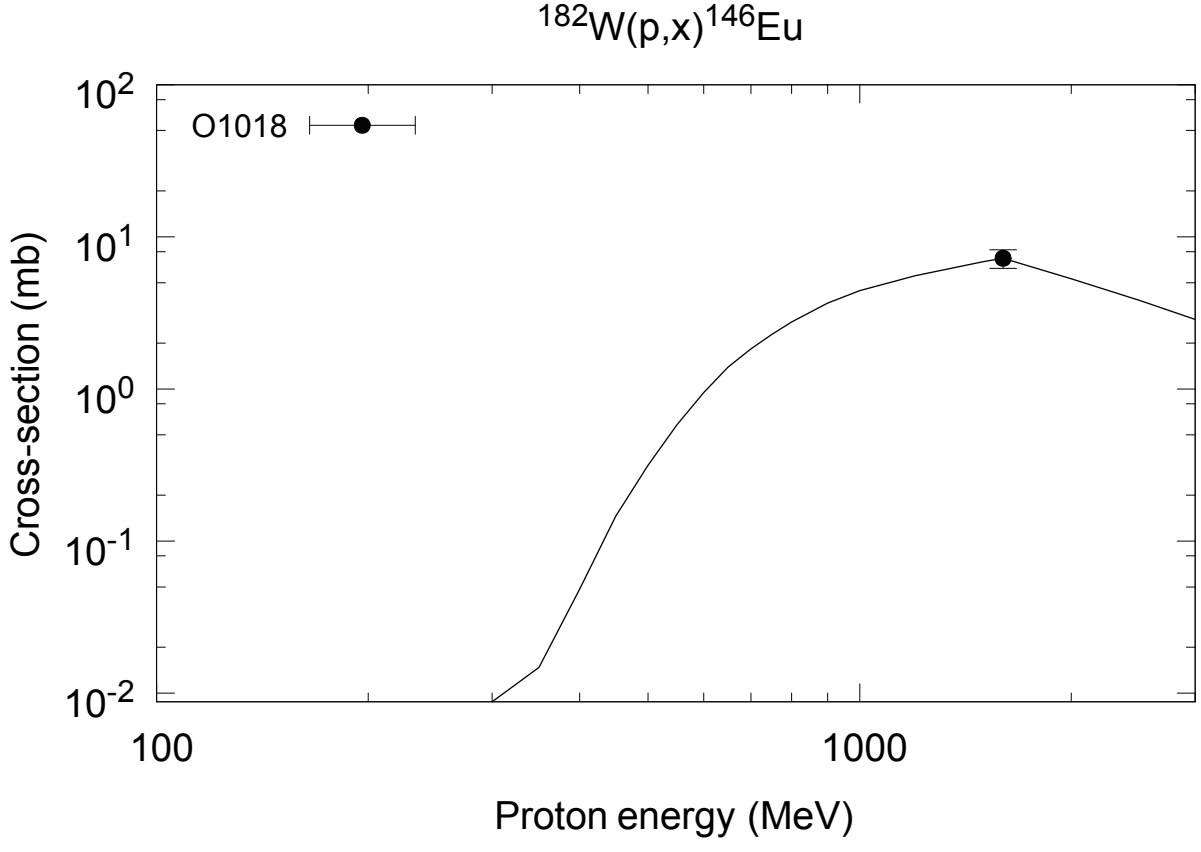

$^{182}W(p,x)^{7}Be$
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

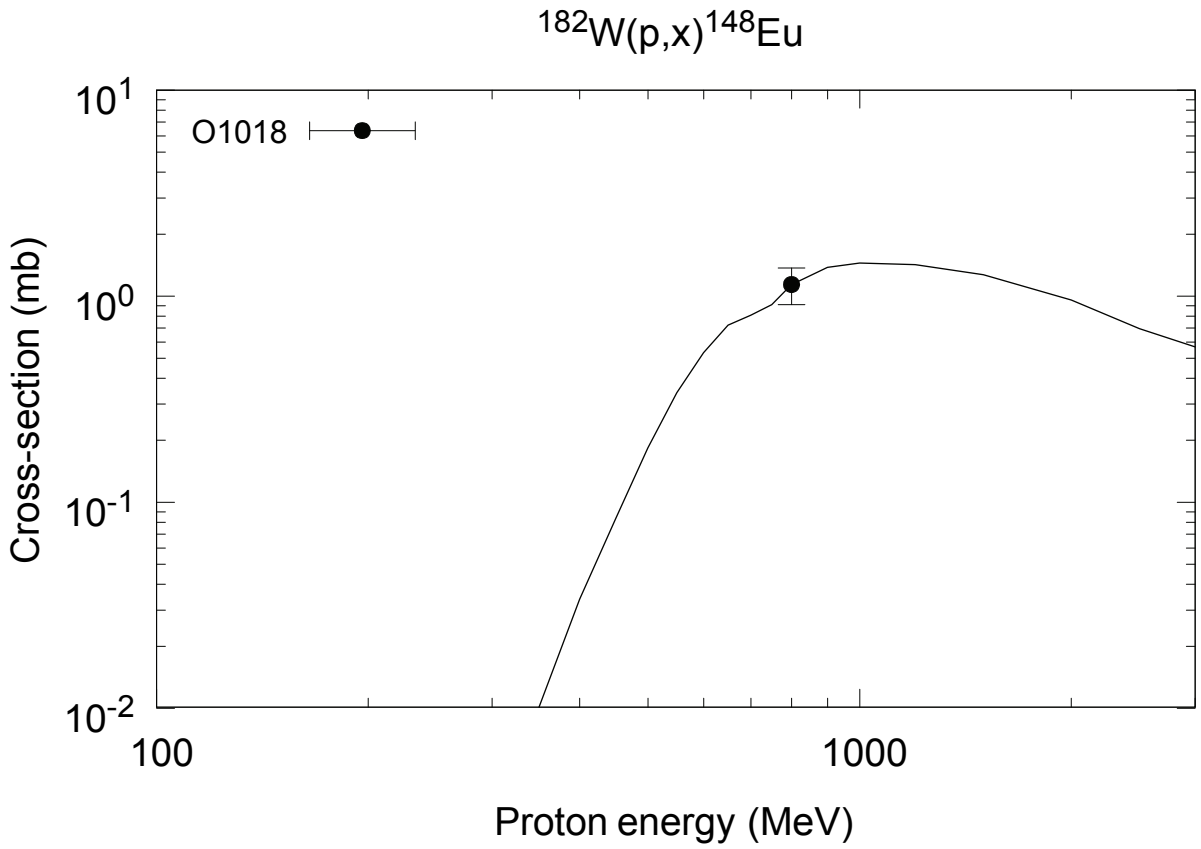

$^{182}W(p,x)^{121m}Te$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

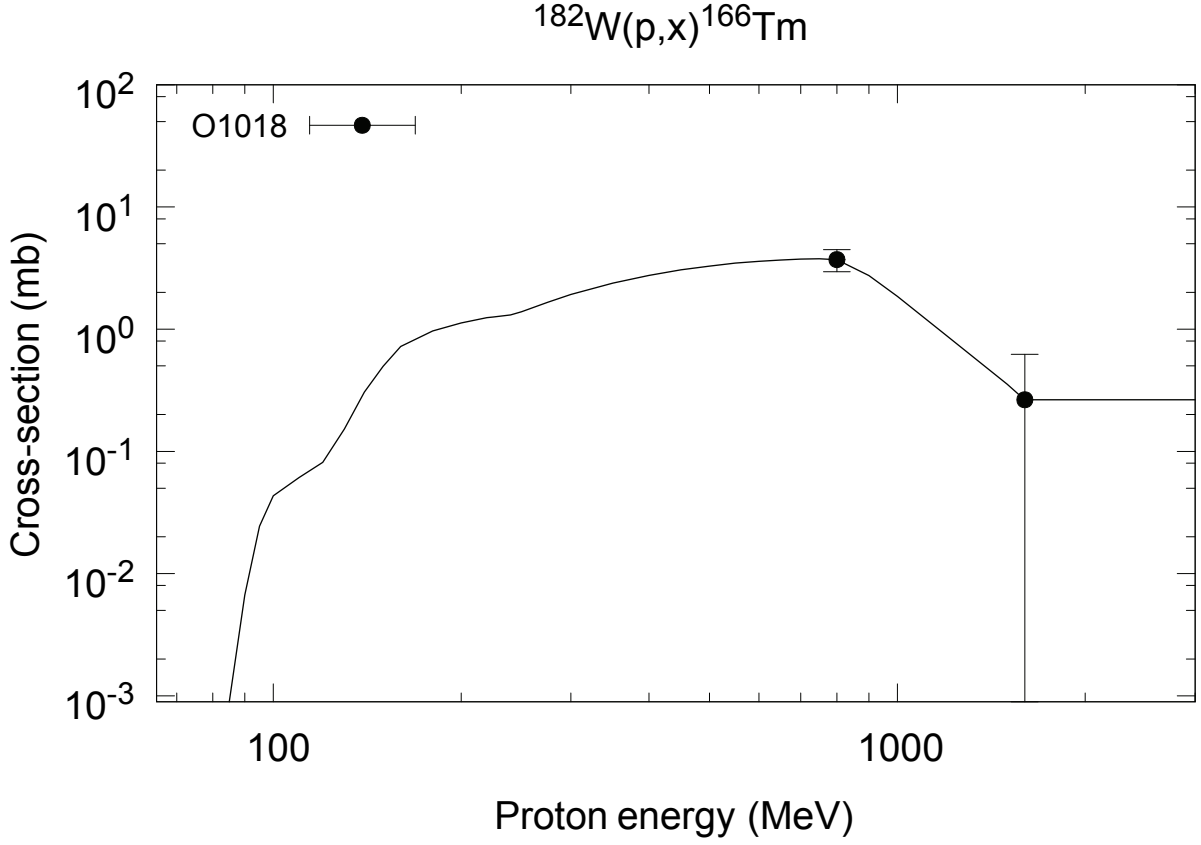

$^{182}W(p,x)^{133m}Ce$
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

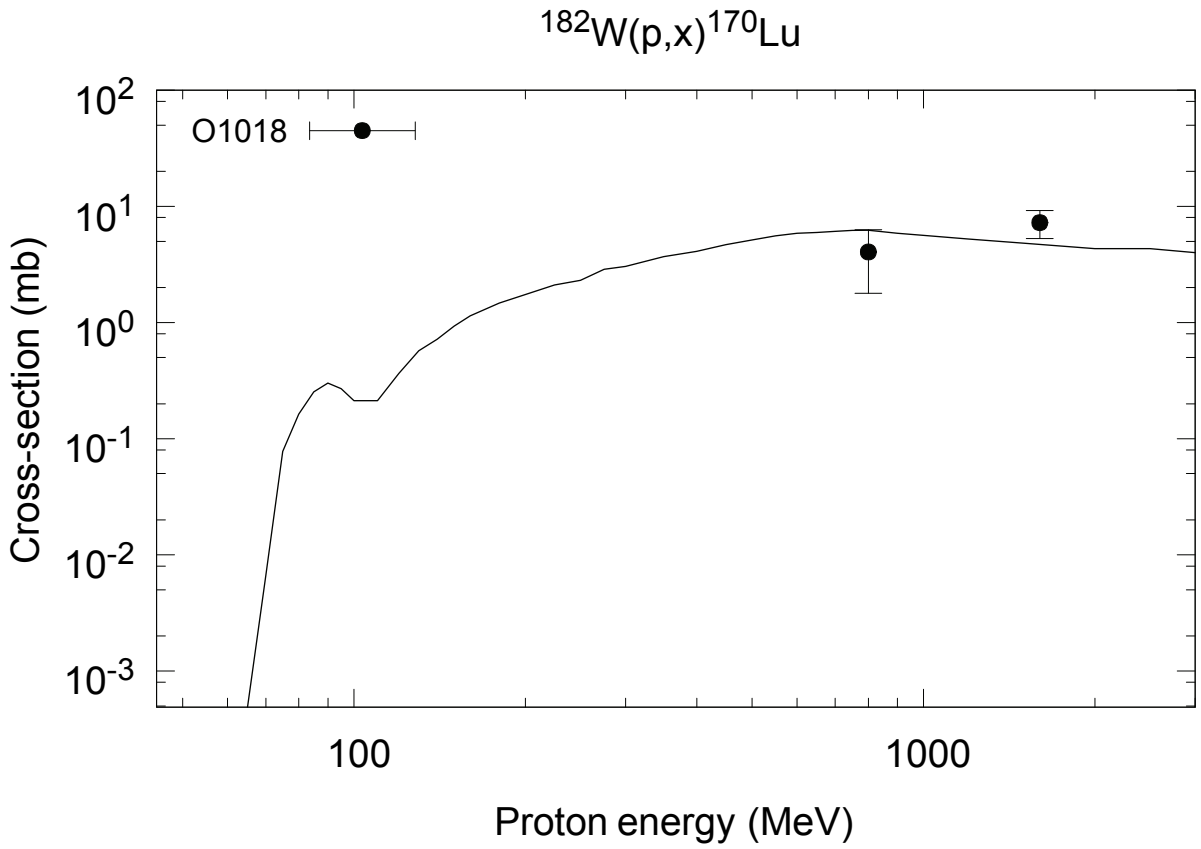

$^{182}W(p,x)^{139m}Nd$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

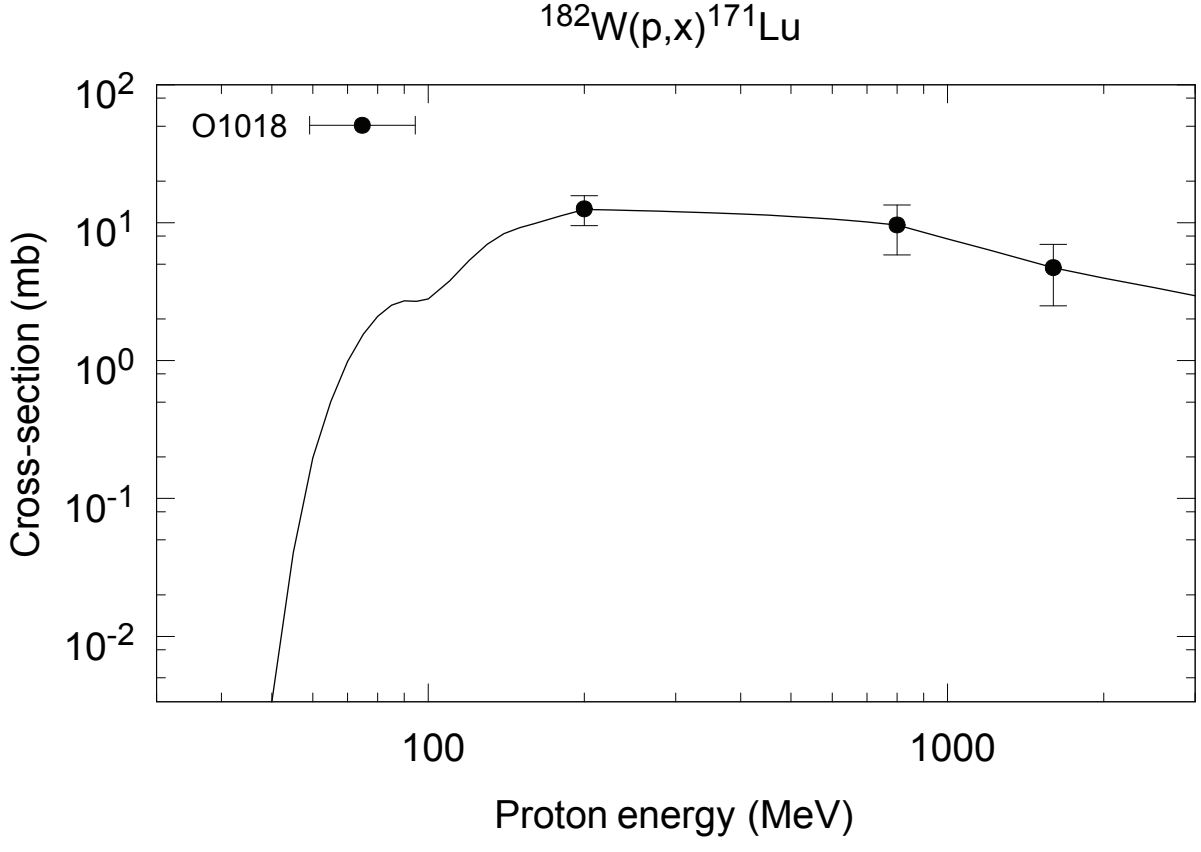

^{182}W(p,x)^{144}Pm
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

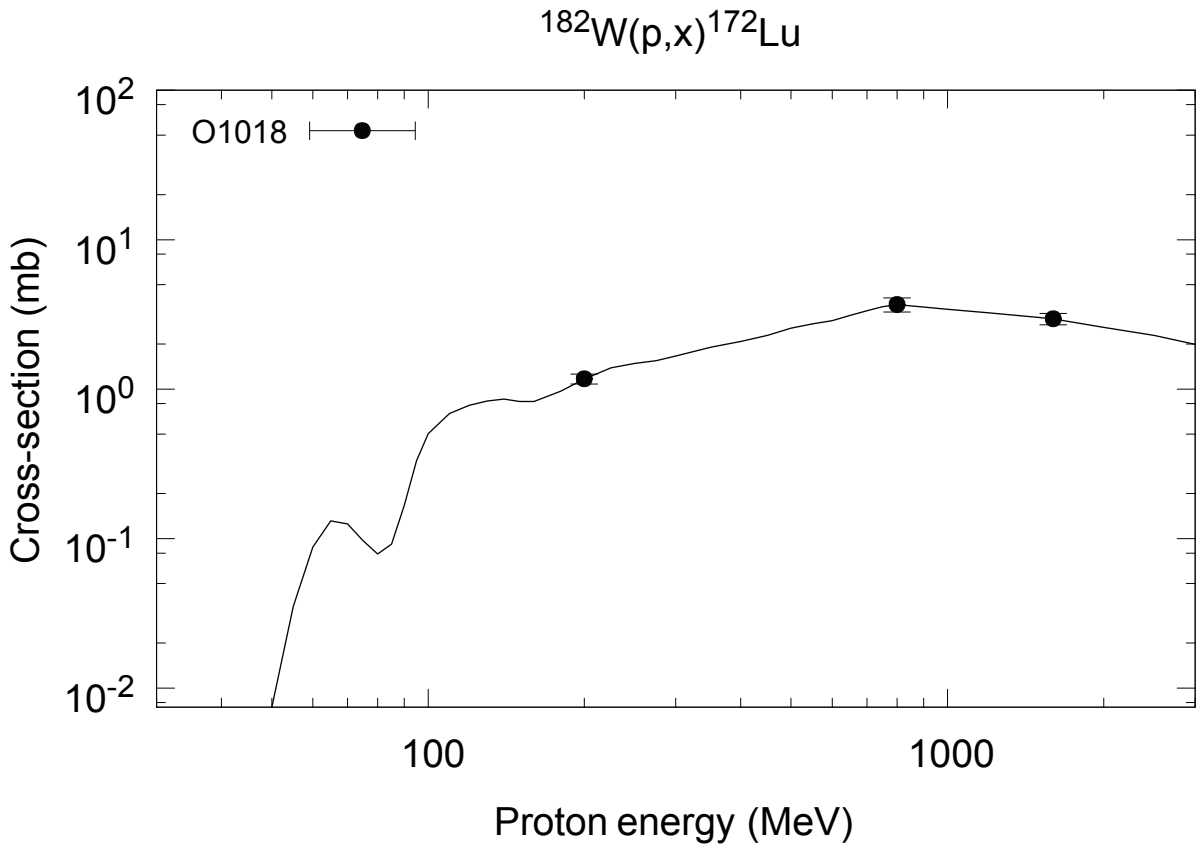

^{182}W(p,x)^{146}Eu
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

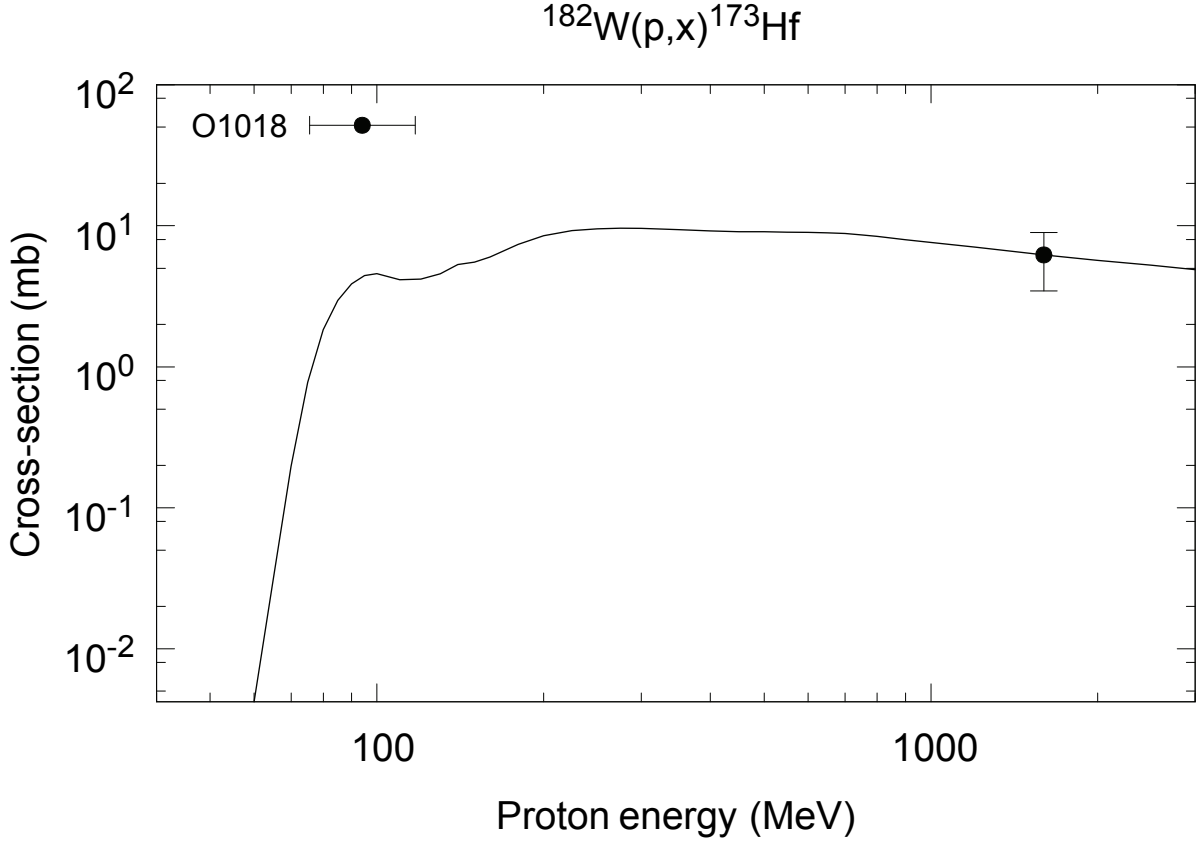

^{182}W(p,x)^{148}Eu
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

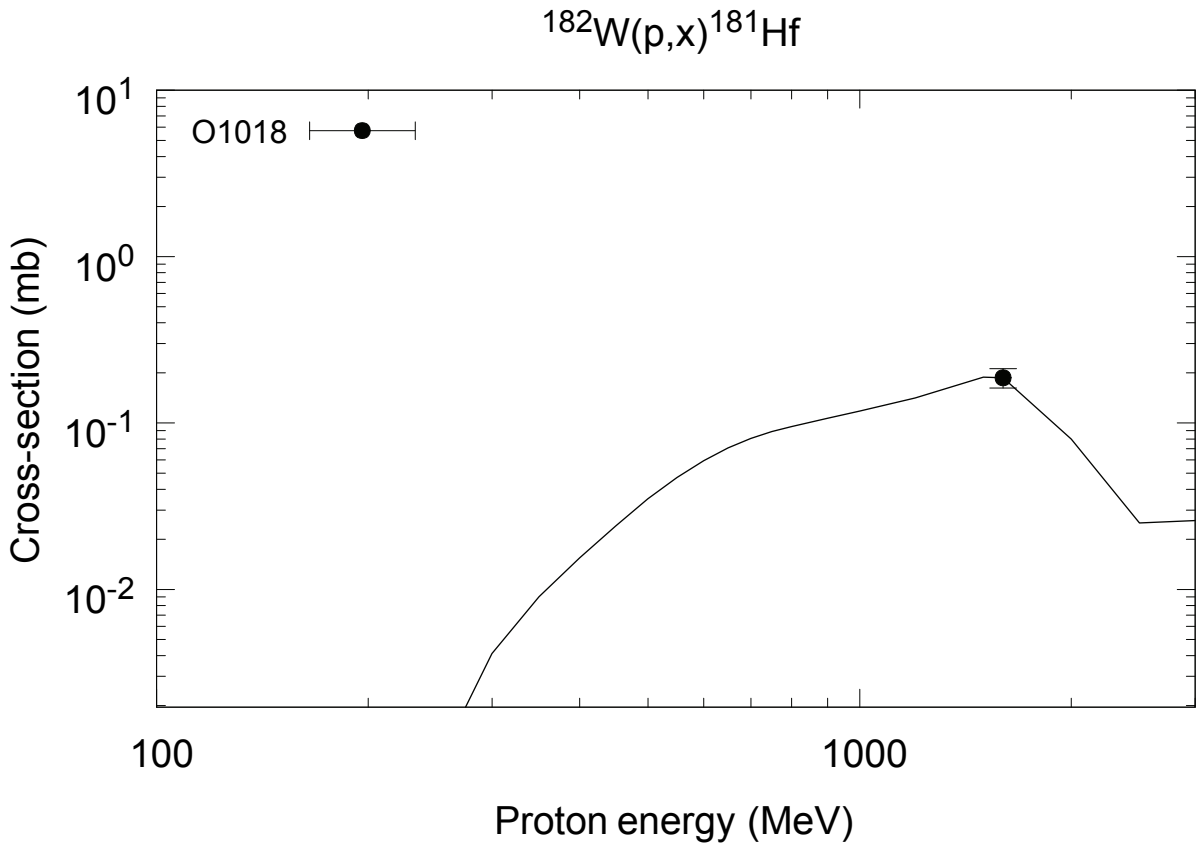

^{182}W(p,x)^{166}Tm
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

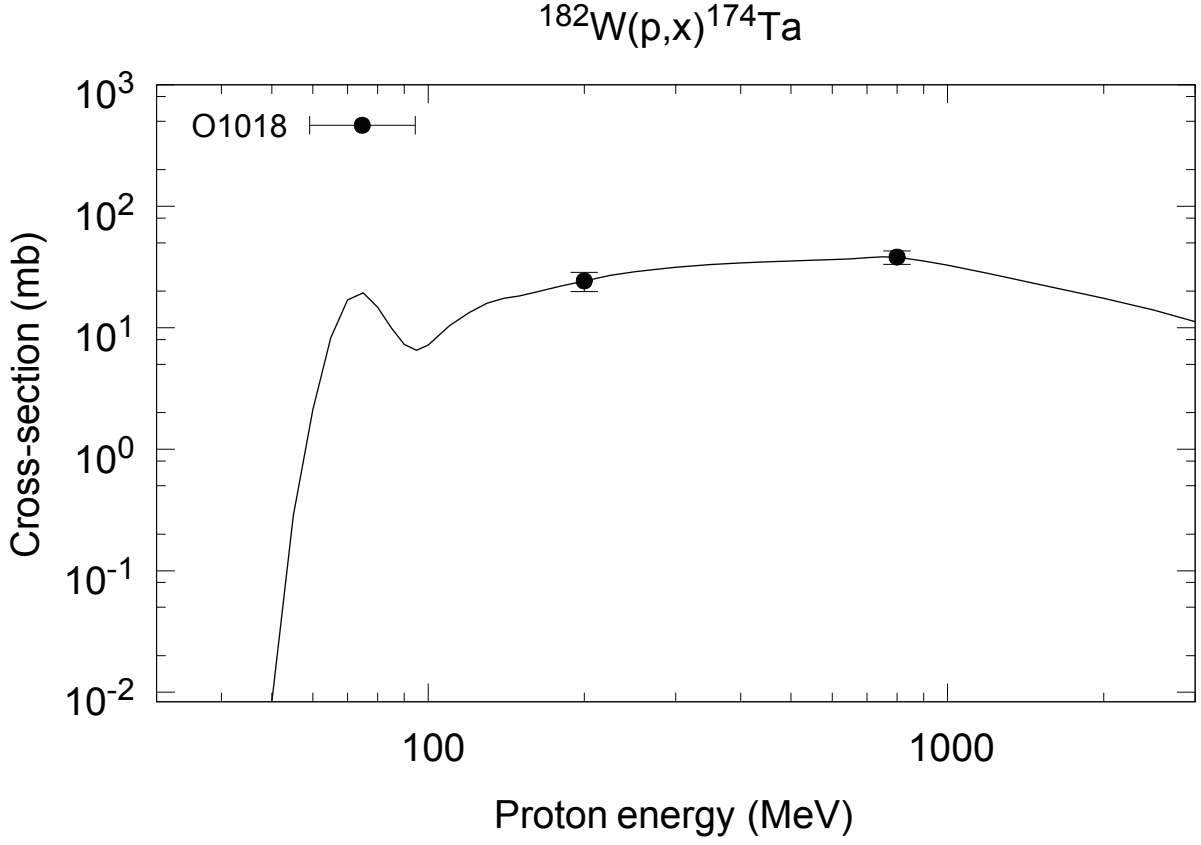

^{182}W(p,x)^{170}Lu
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

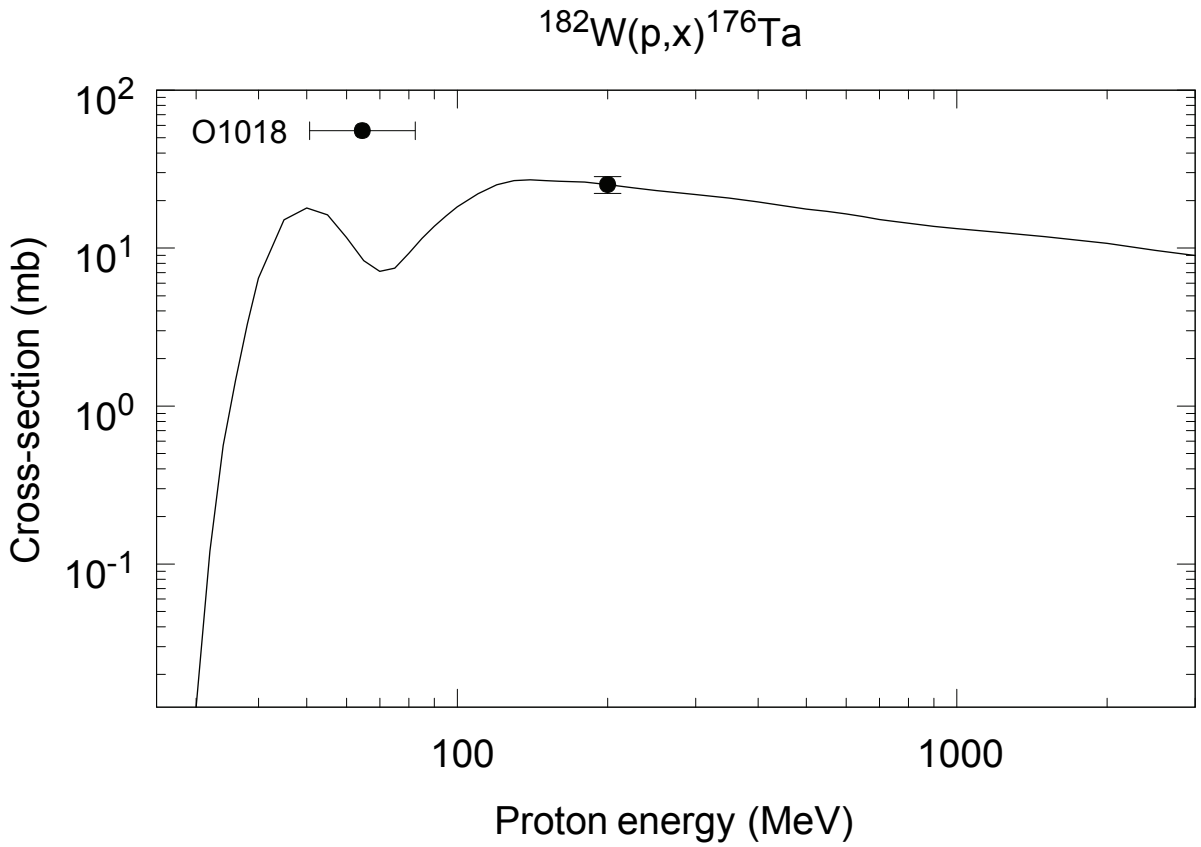

^{182}W(p,x)^{171}Lu
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

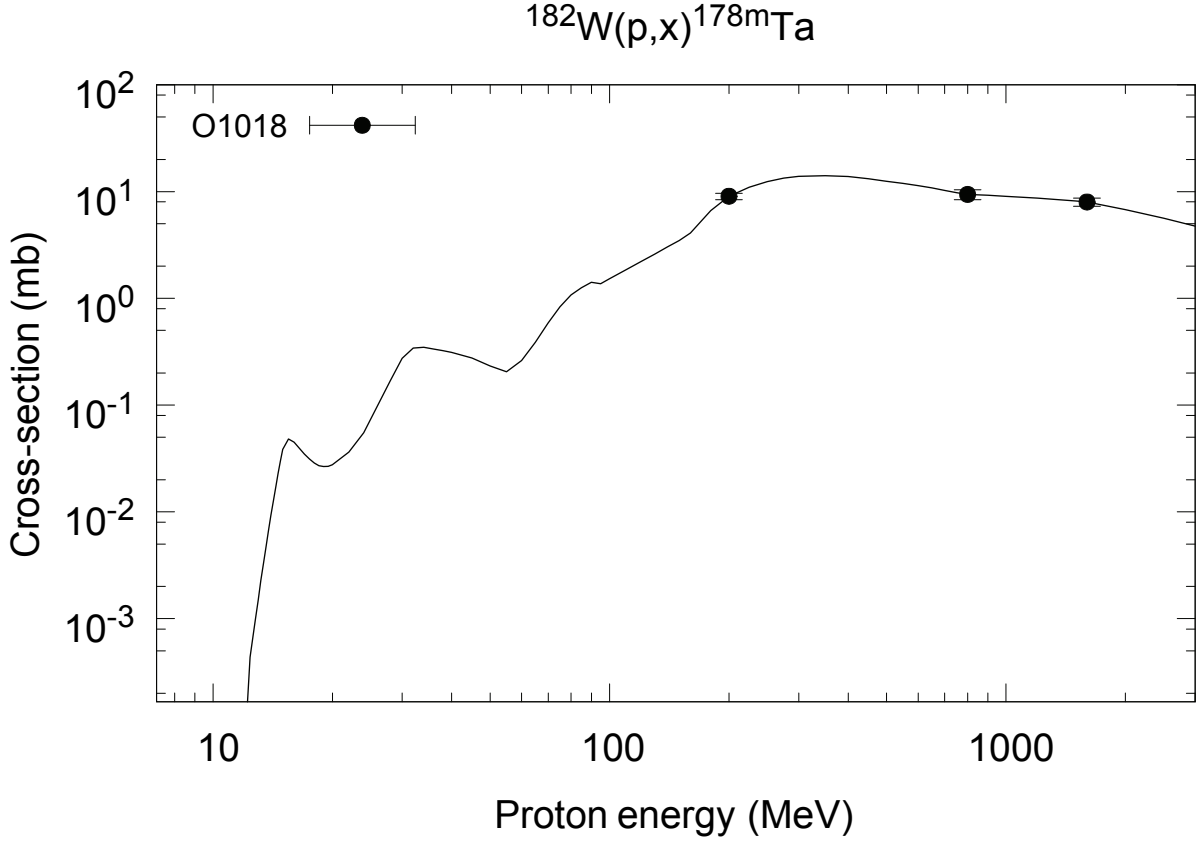

^{182}W(p,x)^{172}Lu
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

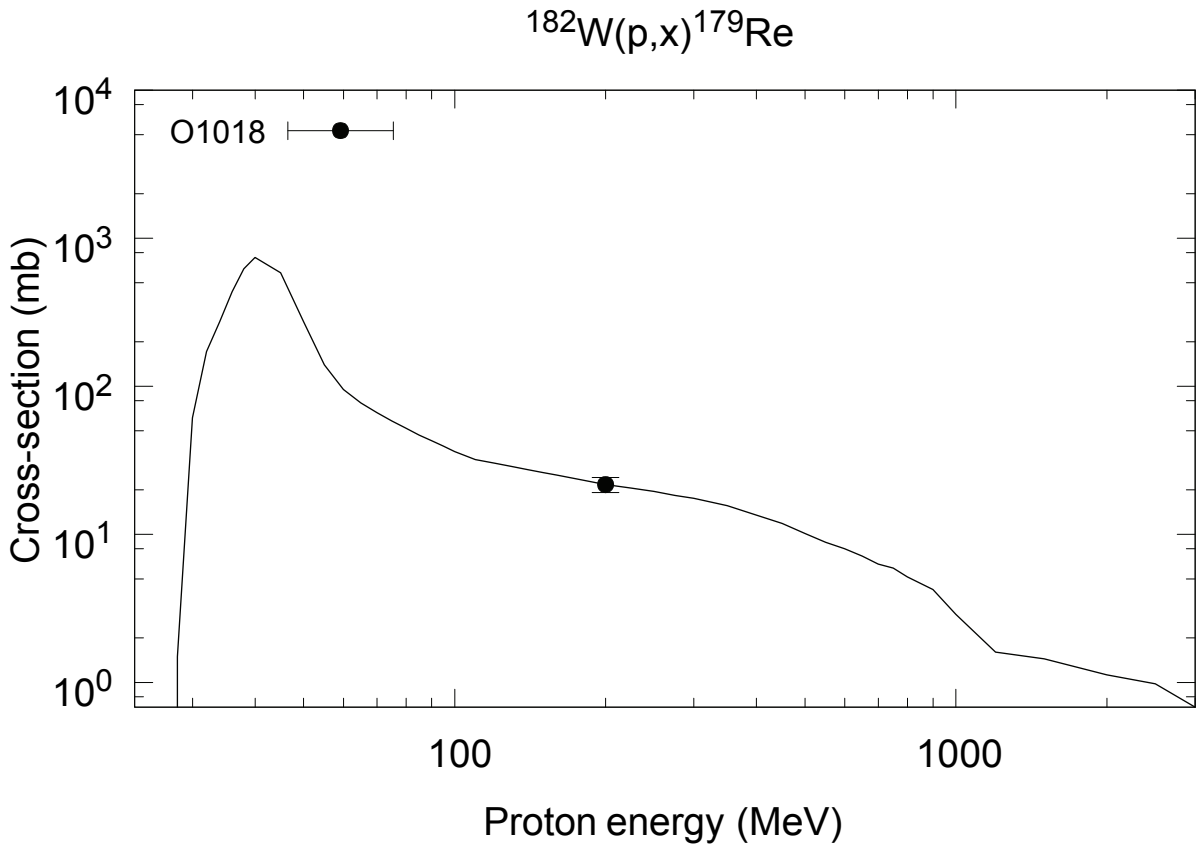

^{182}W(p,x)^{173}Hf
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

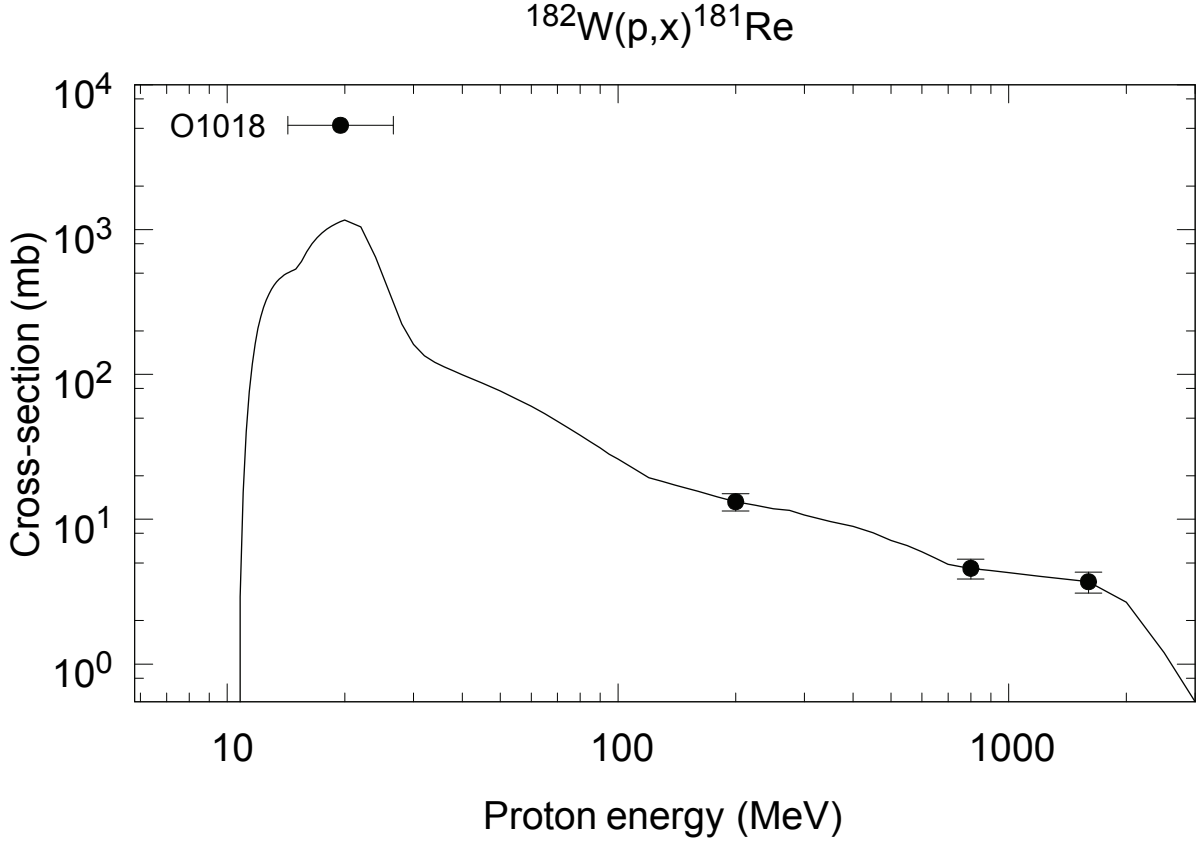

$^{182}W(p,x)^{181}Hf$
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

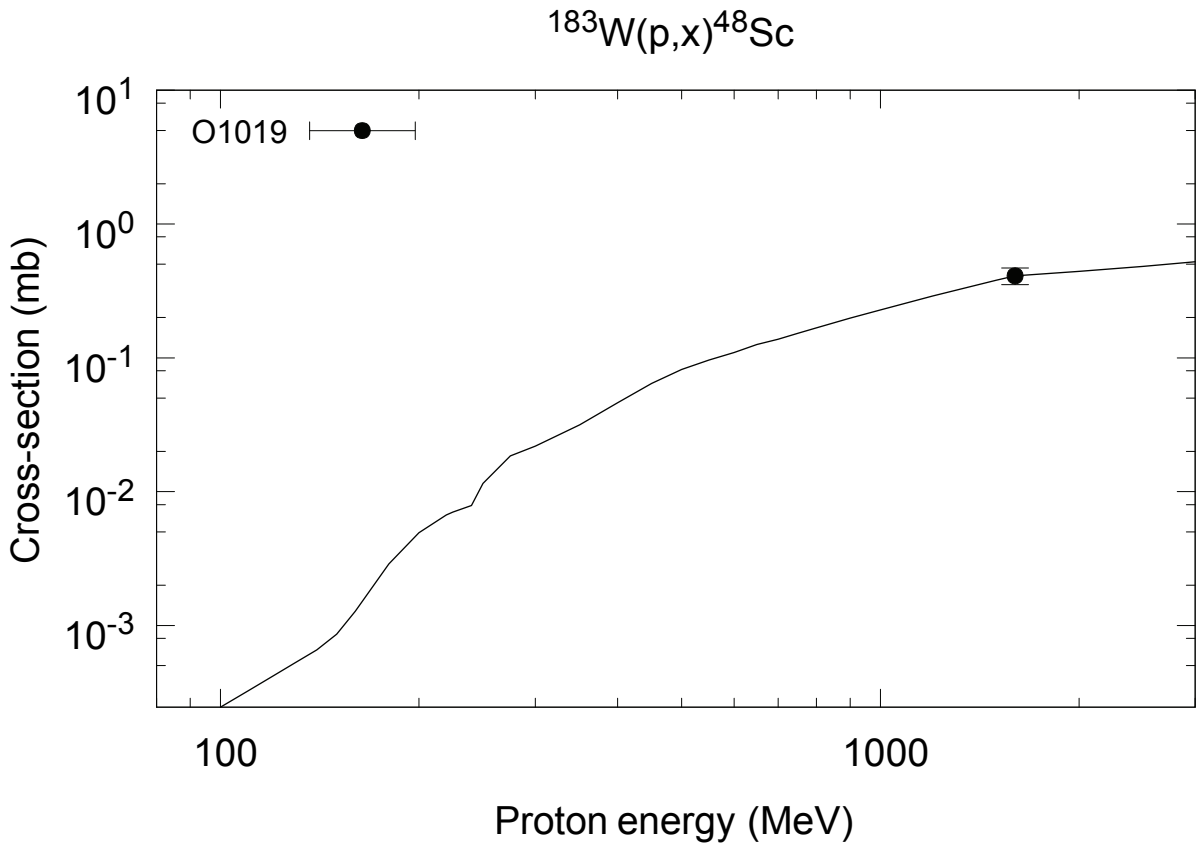

$^{182}W(p,x)^{174}Ta$
O1018
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

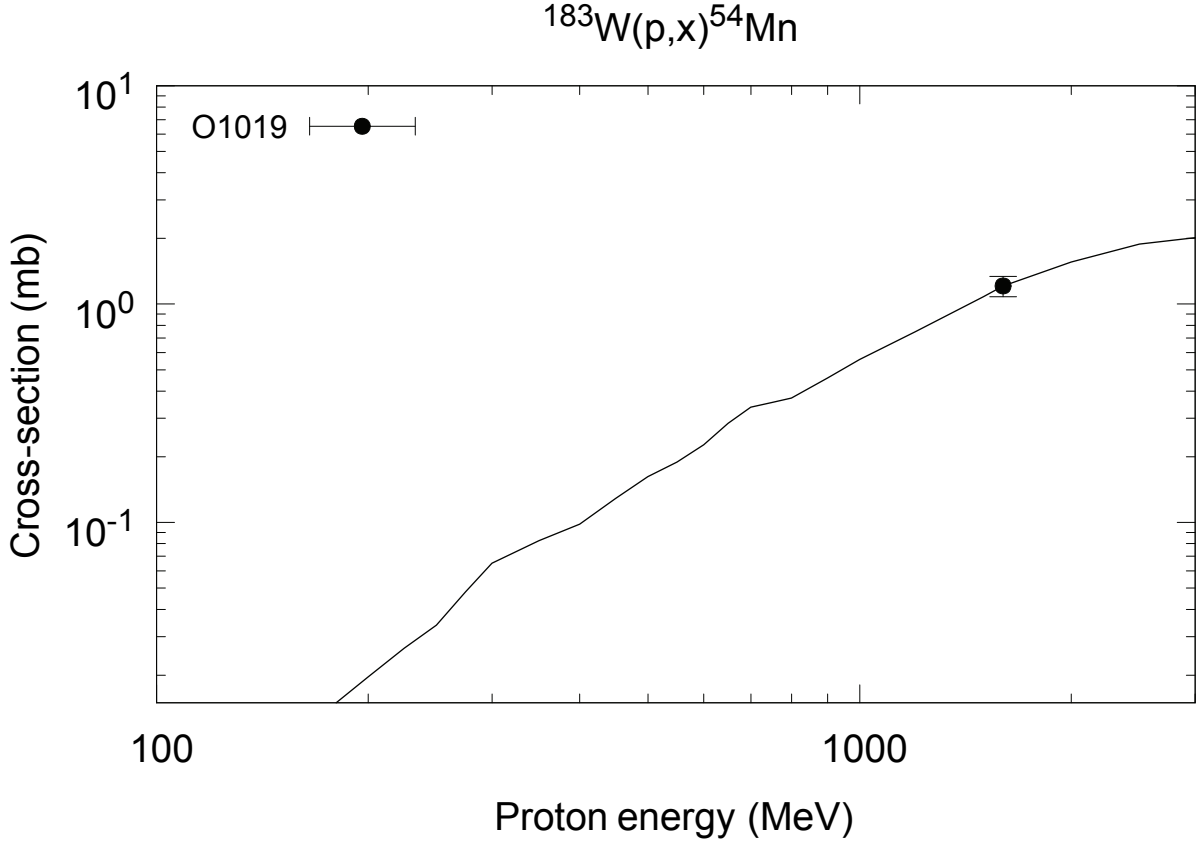

$^{182}W(p,x)^{176}Ta$
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

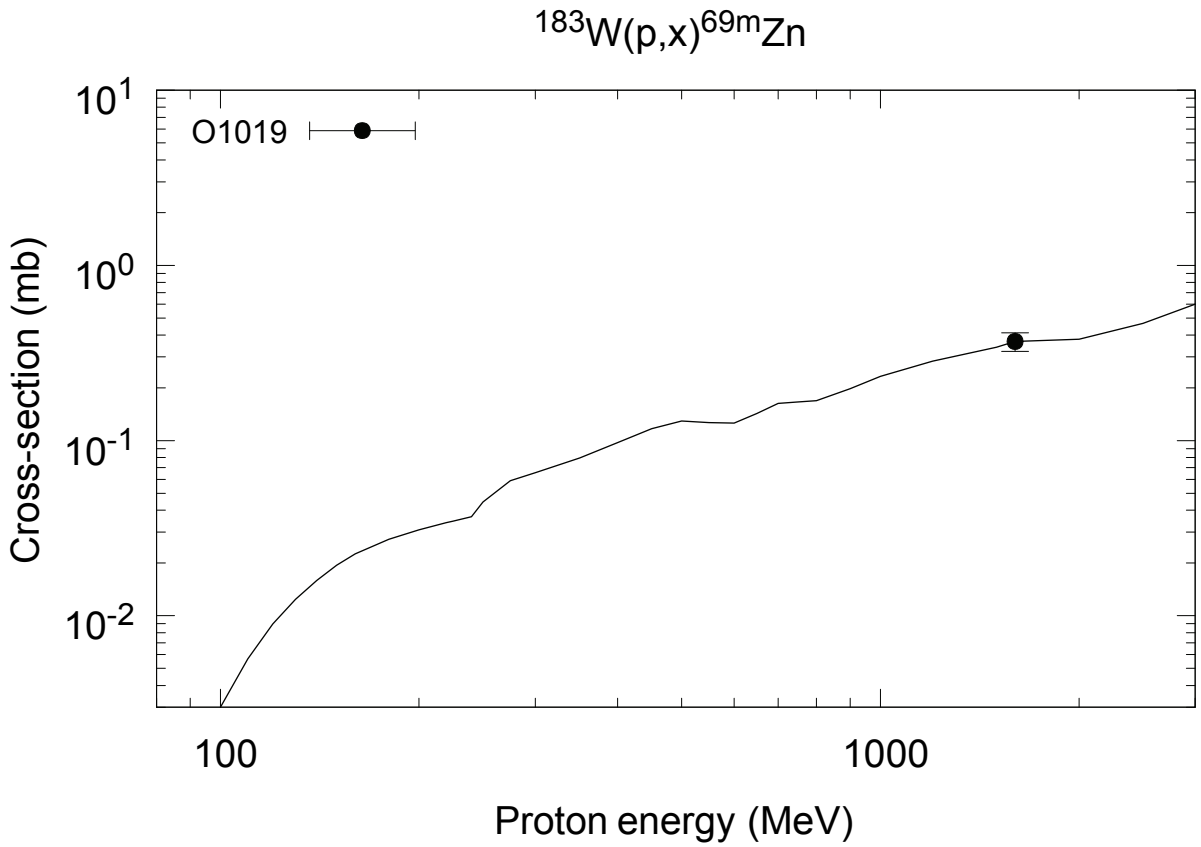

$^{182}W(p,x)^{178m}Ta$
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
10
100
1000
Proton energy (MeV)

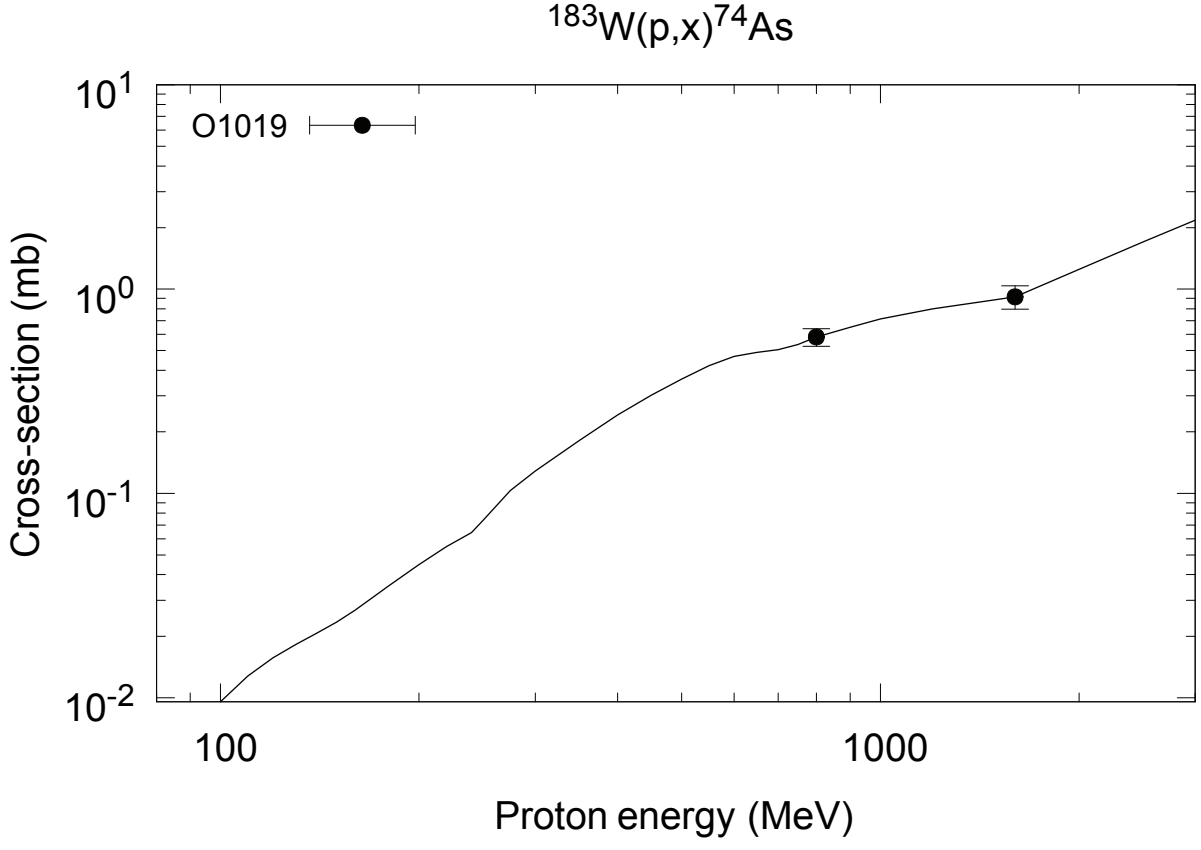

$^{182}W(p,x)^{179}Re$
O1018
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
100
1000
Proton energy (MeV)

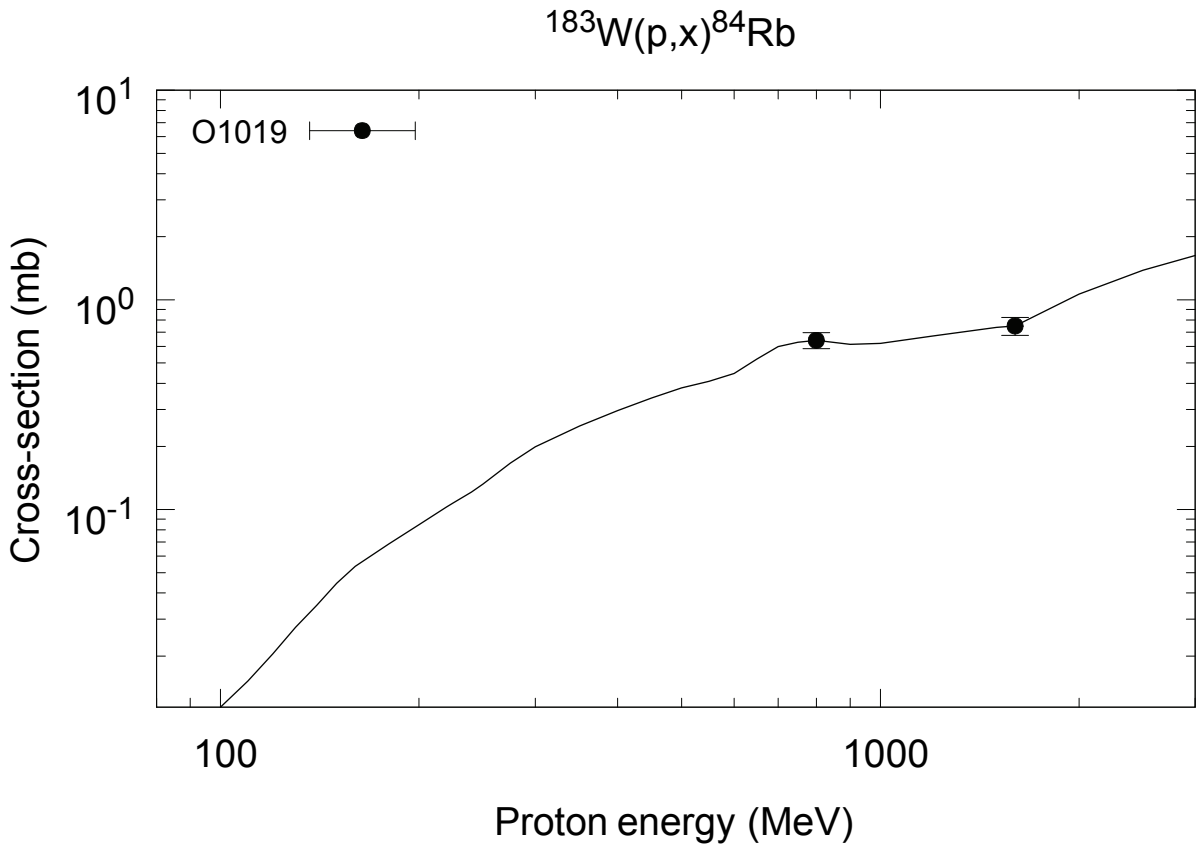

$^{182}W(p,x)^{181}Re$
O1018
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10
100
1000
Proton energy (MeV)

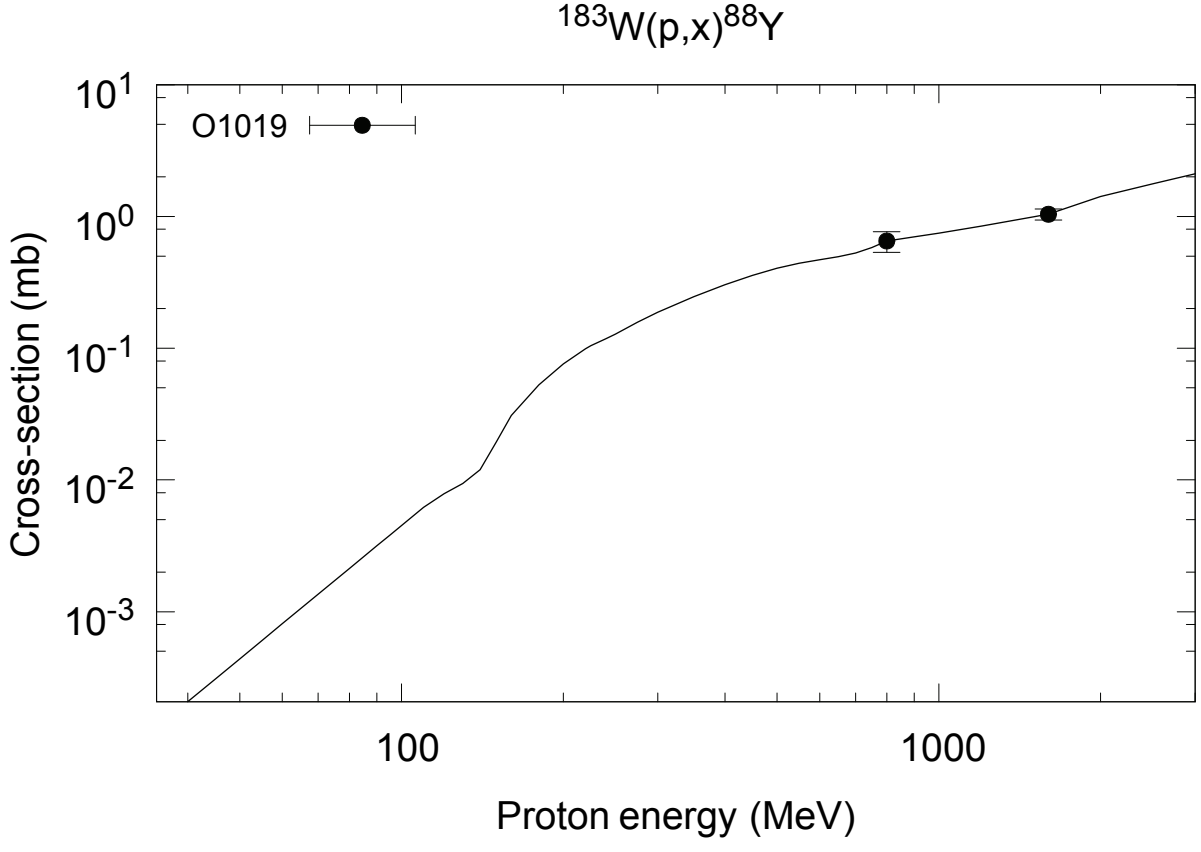

^{183}W(p,x)^{48}Sc
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

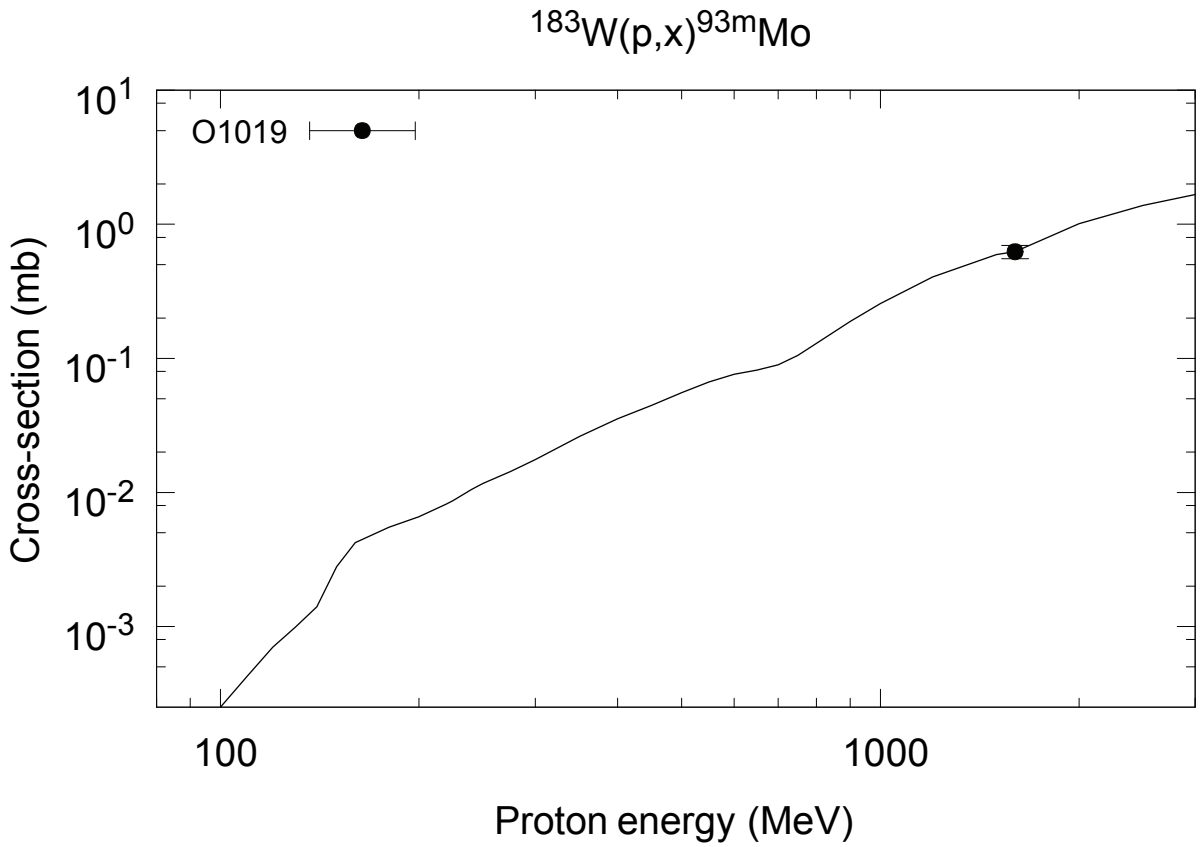

^{183}W(p,x)^{54}Mn
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

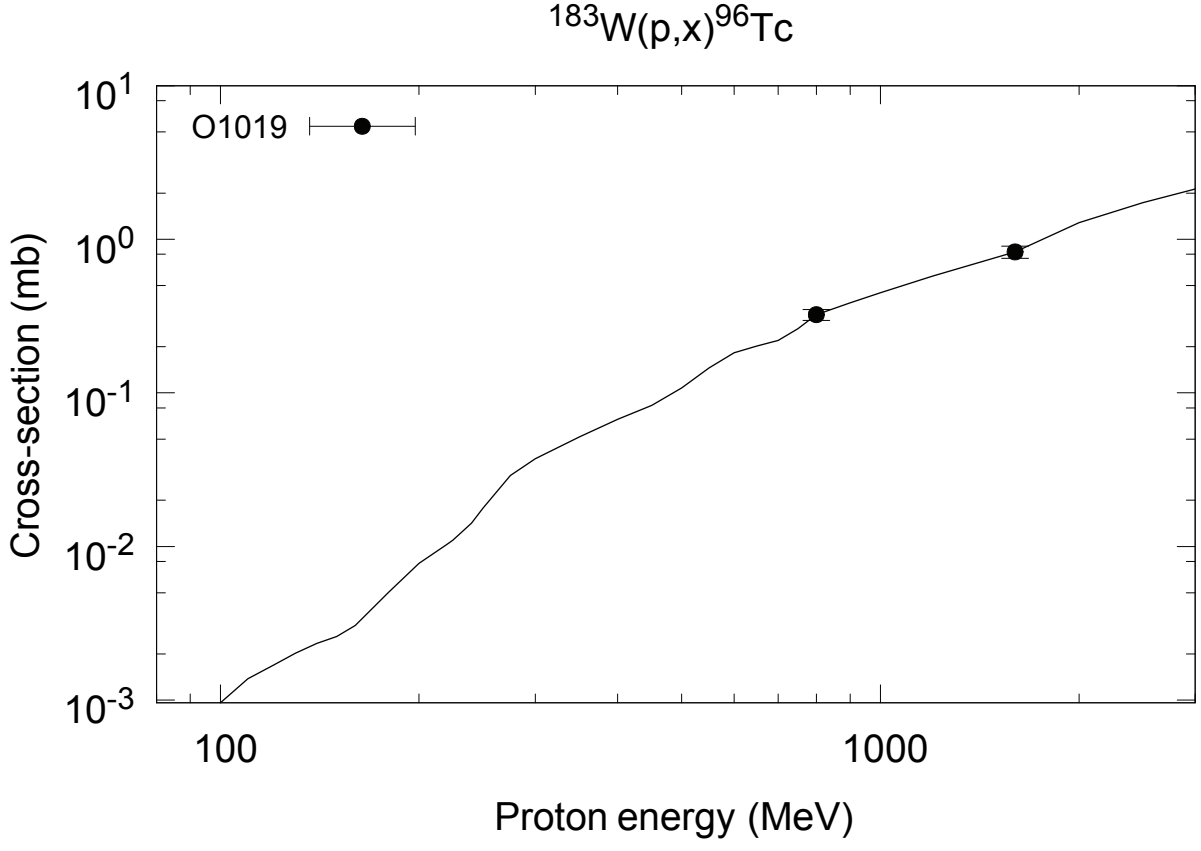

$^{183}W(p,x)^{69m}Zn$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

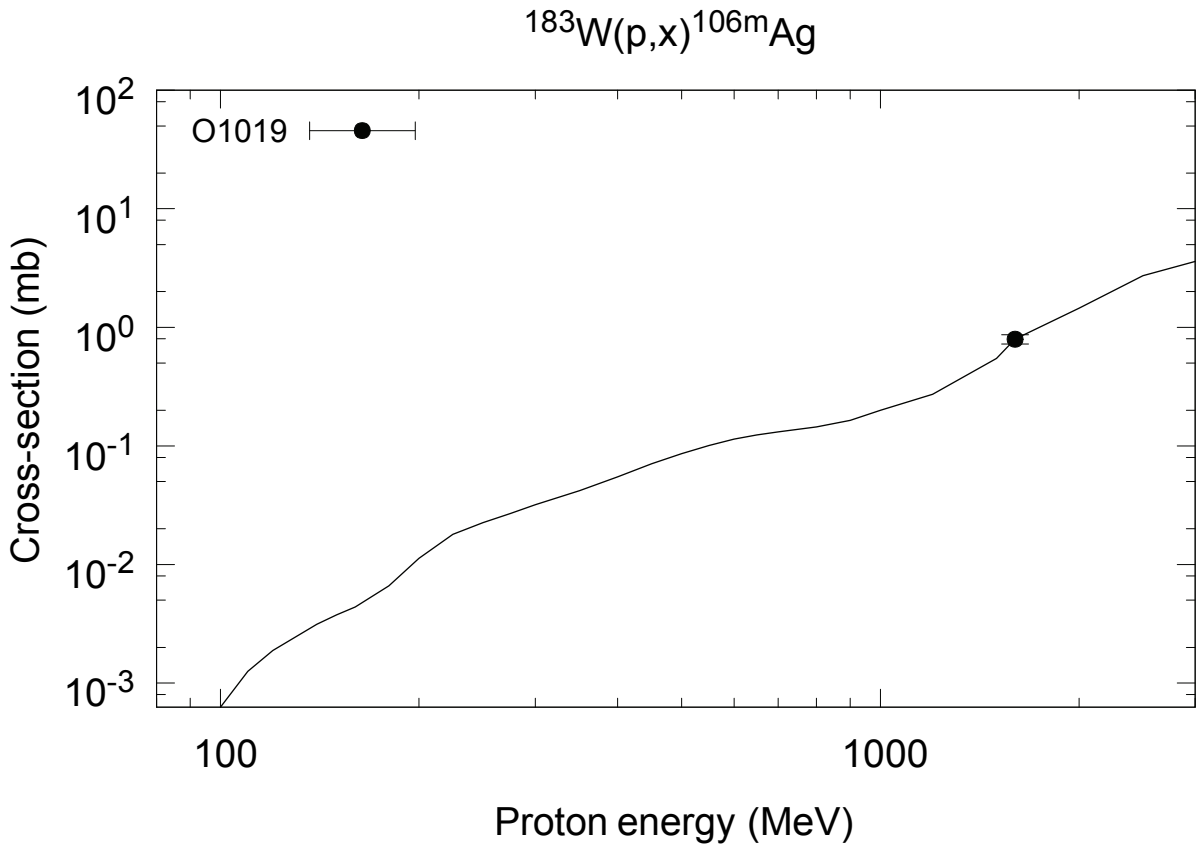

$^{183}W(p,x)^{74}As$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

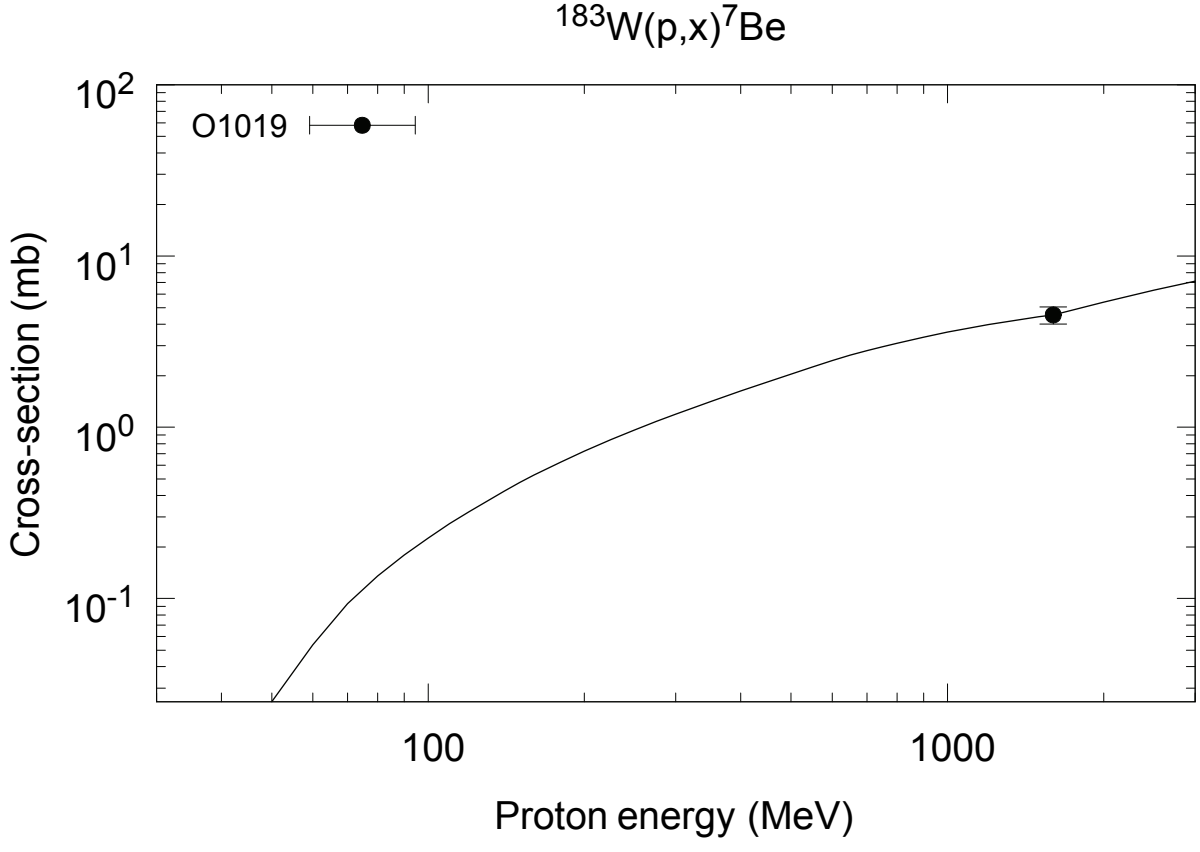

$^{183}W(p,x)^{84}Rb$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

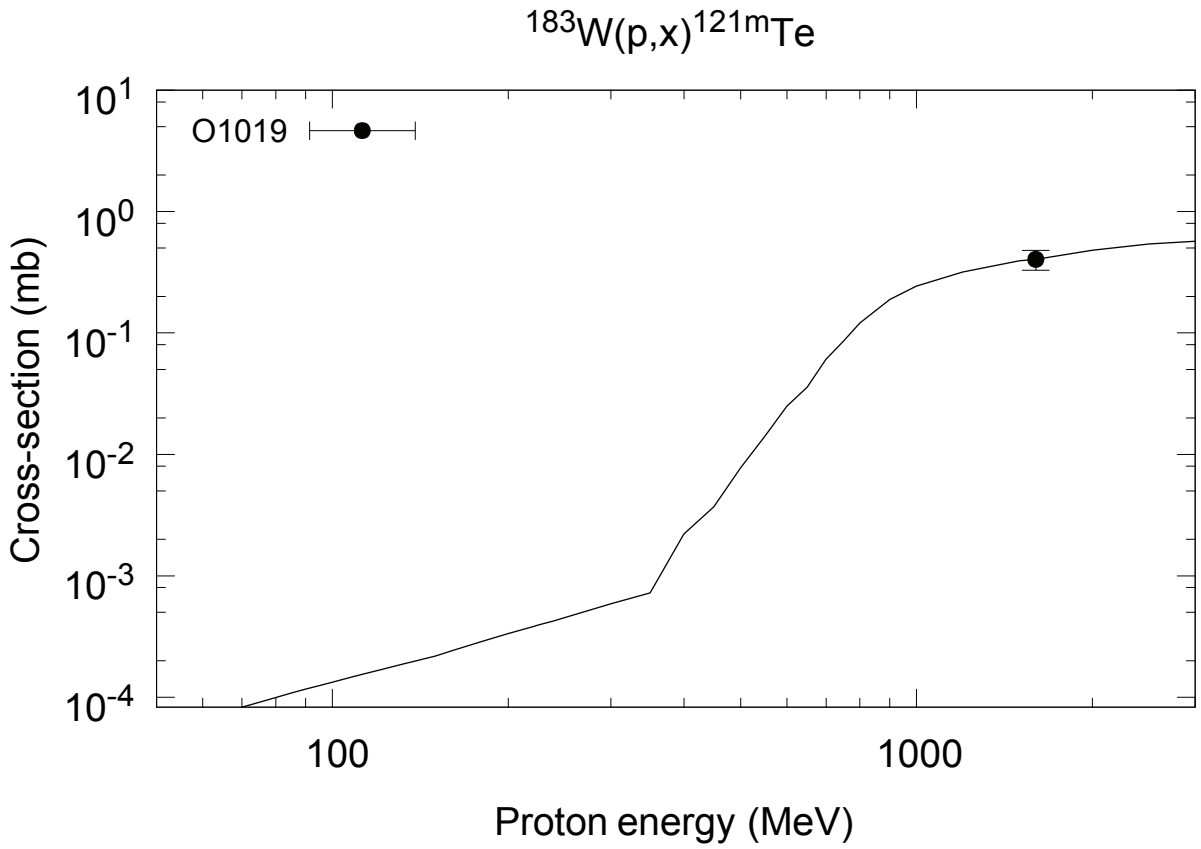

$^{183}W(p,x)^{88}Y$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

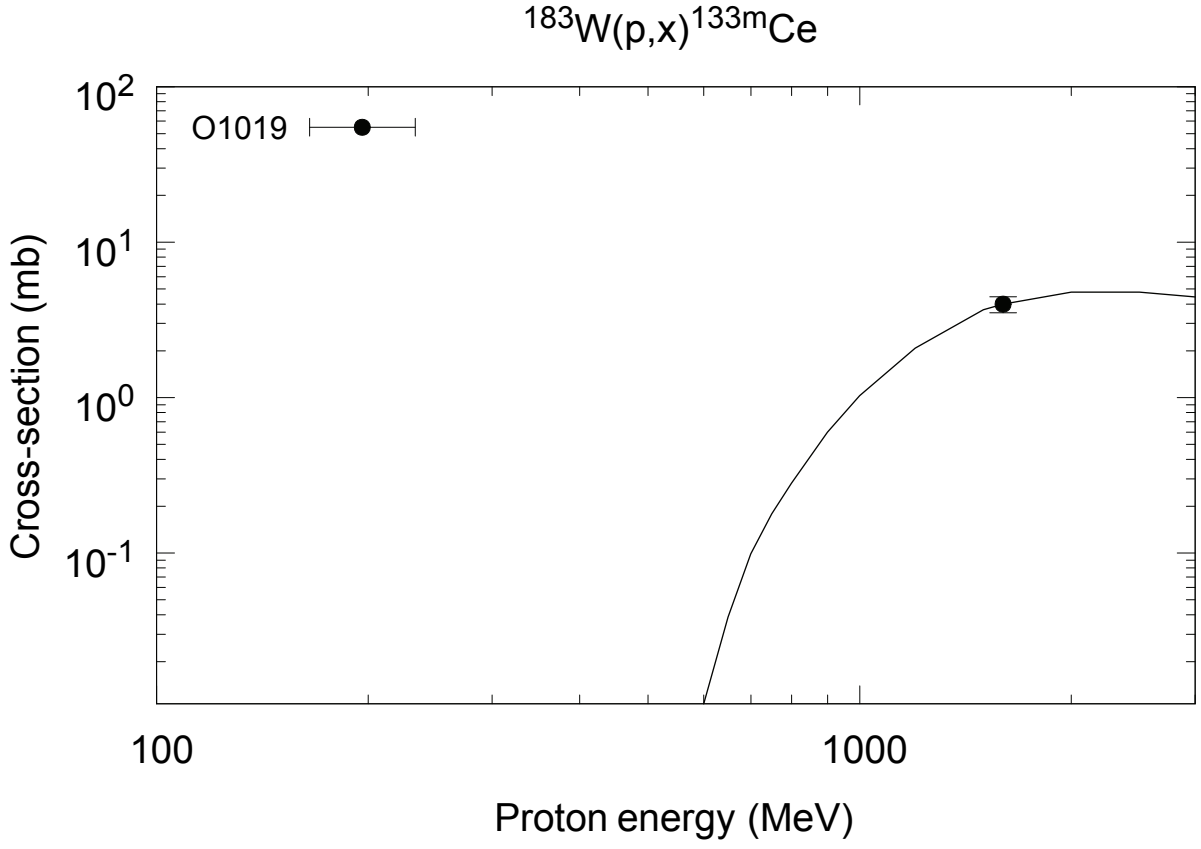

$^{183}W(p,x)^{93m}Mo$
O1019
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

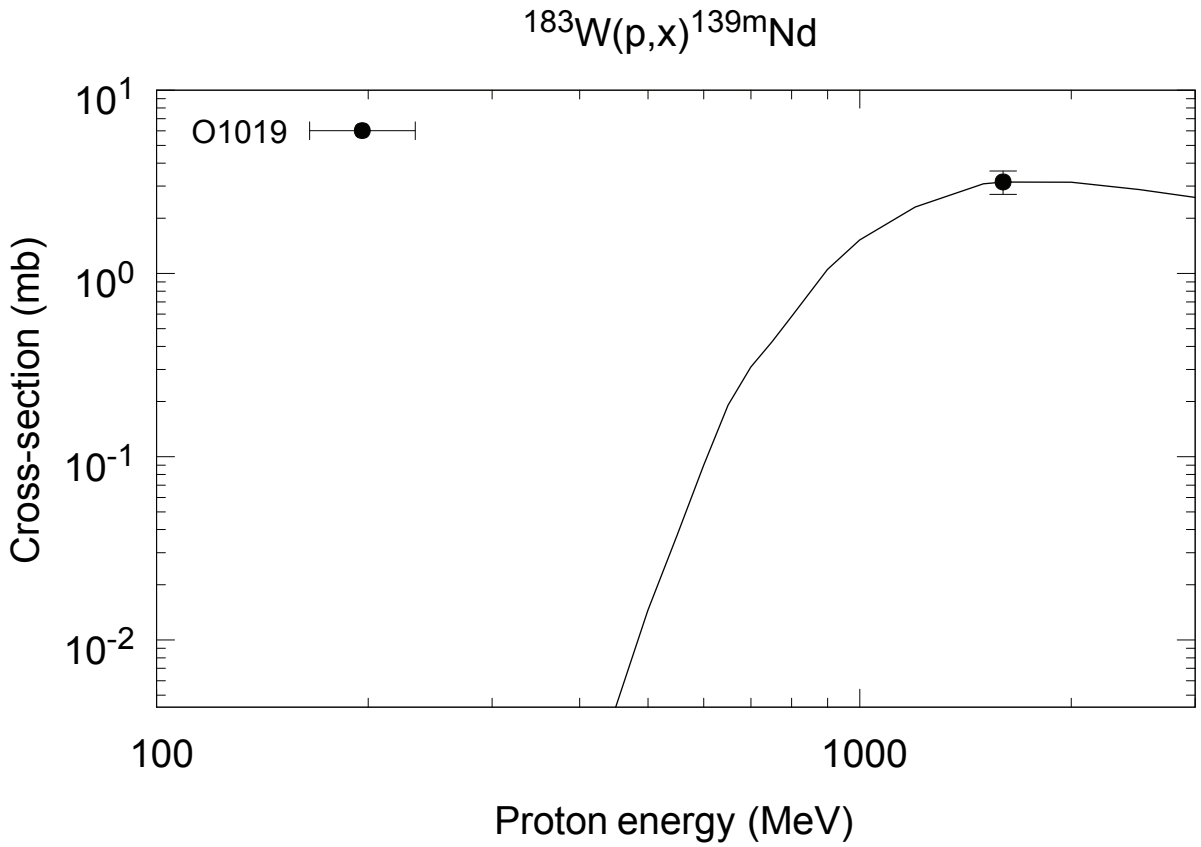

$^{183}W(p,x)^{96}Tc$
O1019
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

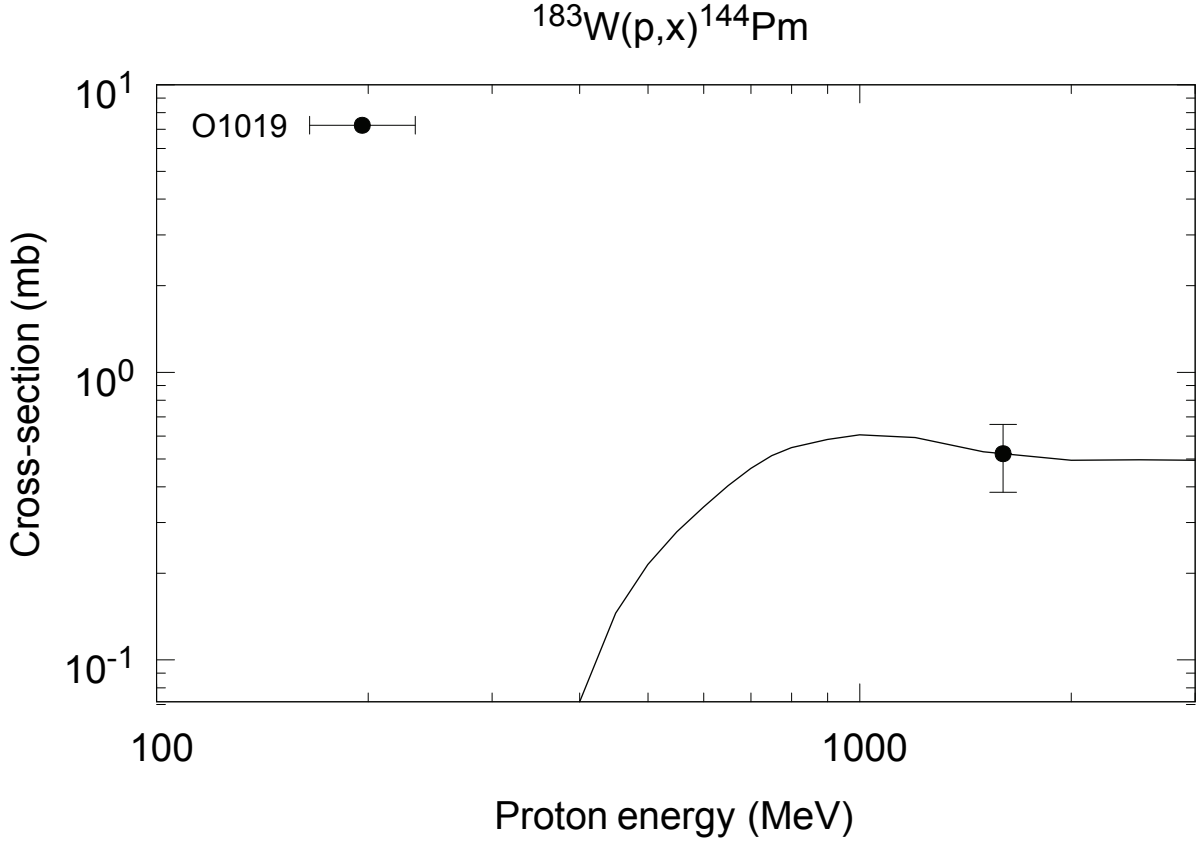

$^{183}W(p,x)^{106m}Ag$
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

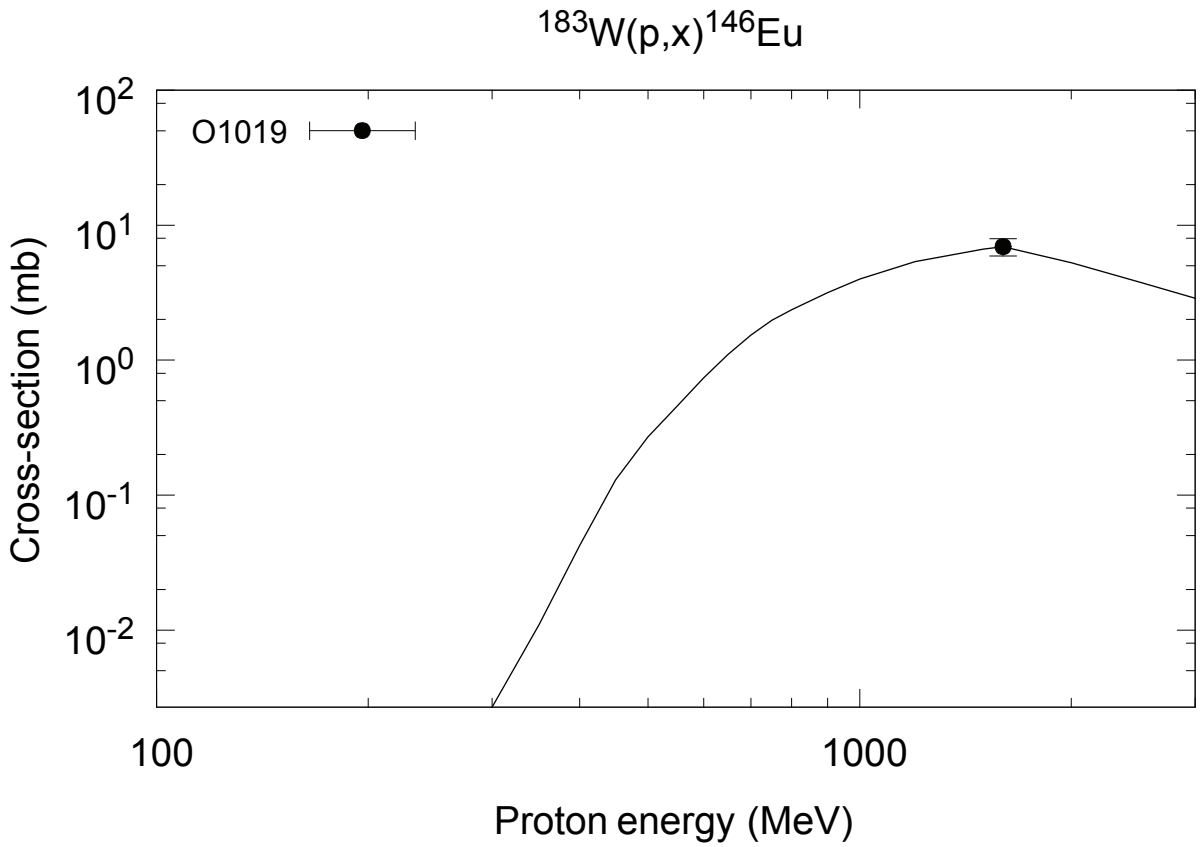

$^{183}W(p,x)^{7}Be$
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

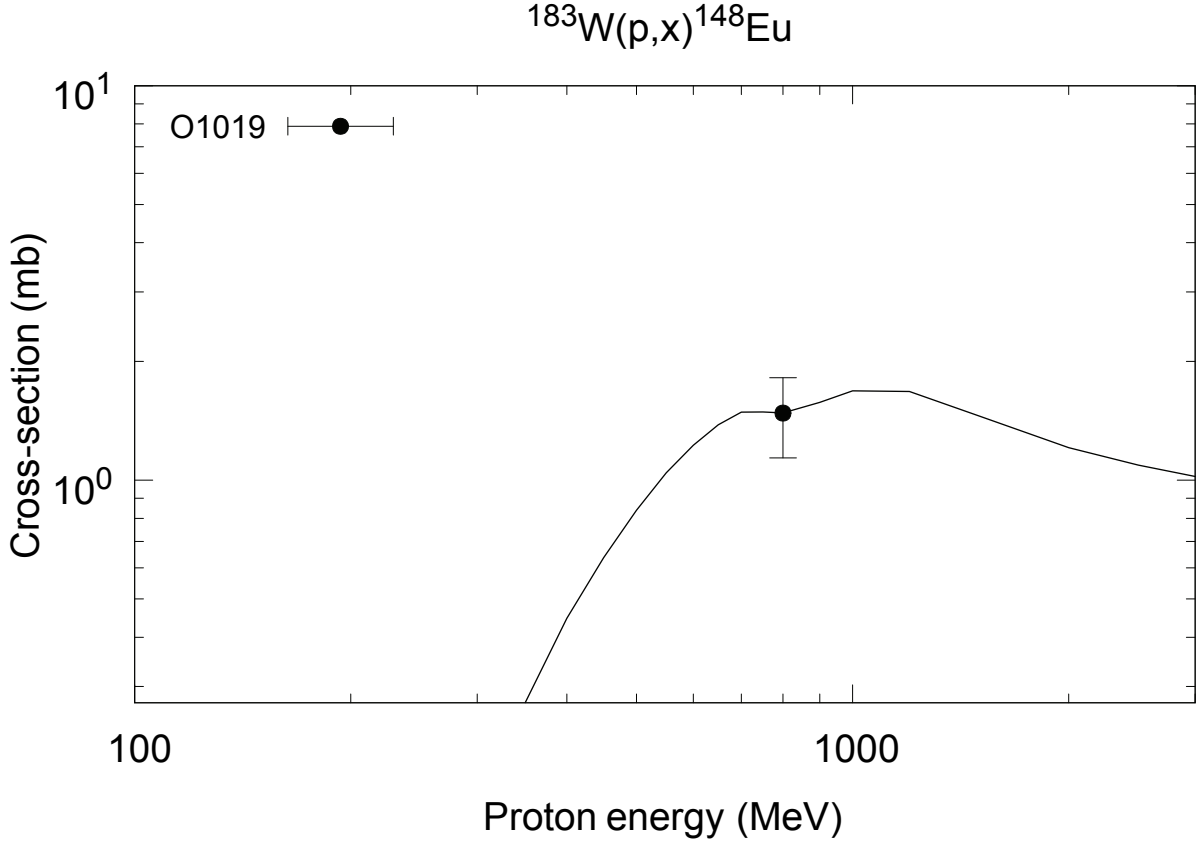

$^{183}W(p,x)^{121m}Te$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

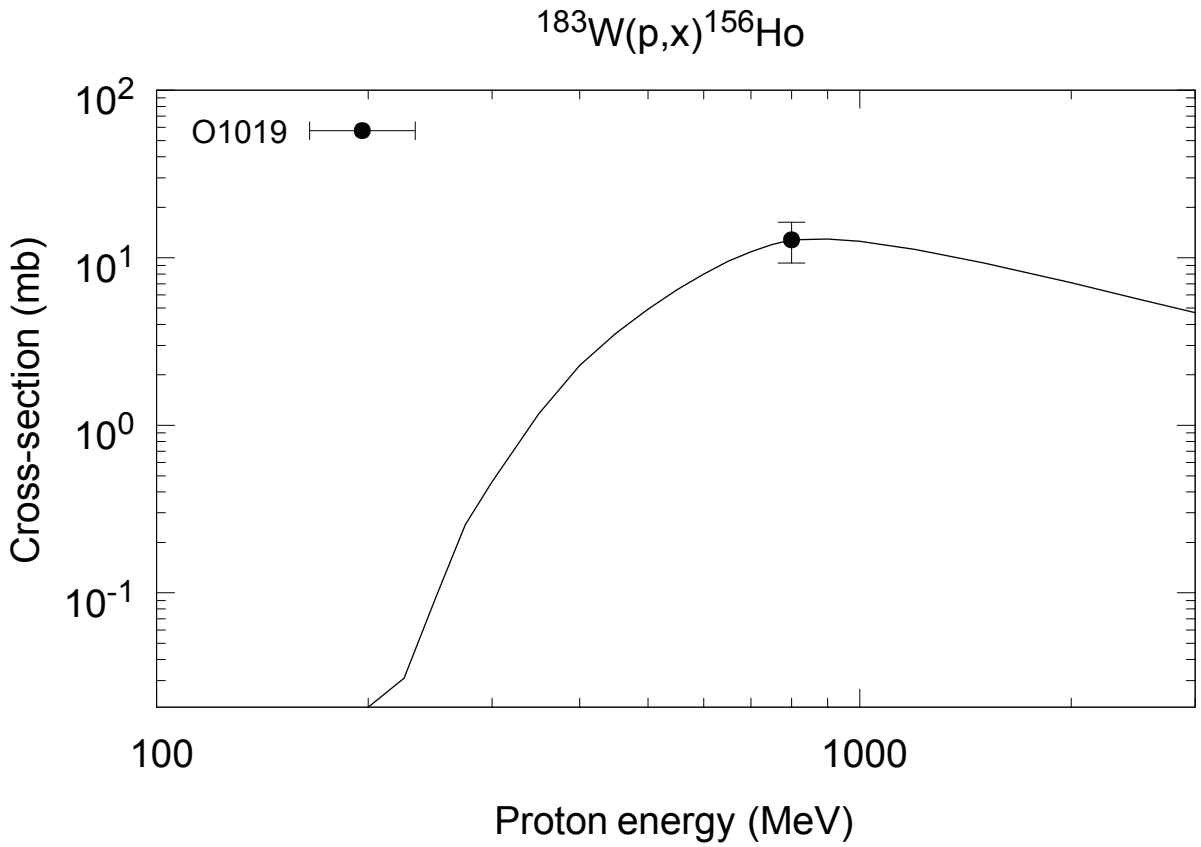

$^{183}W(p,x)^{133m}Ce$
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

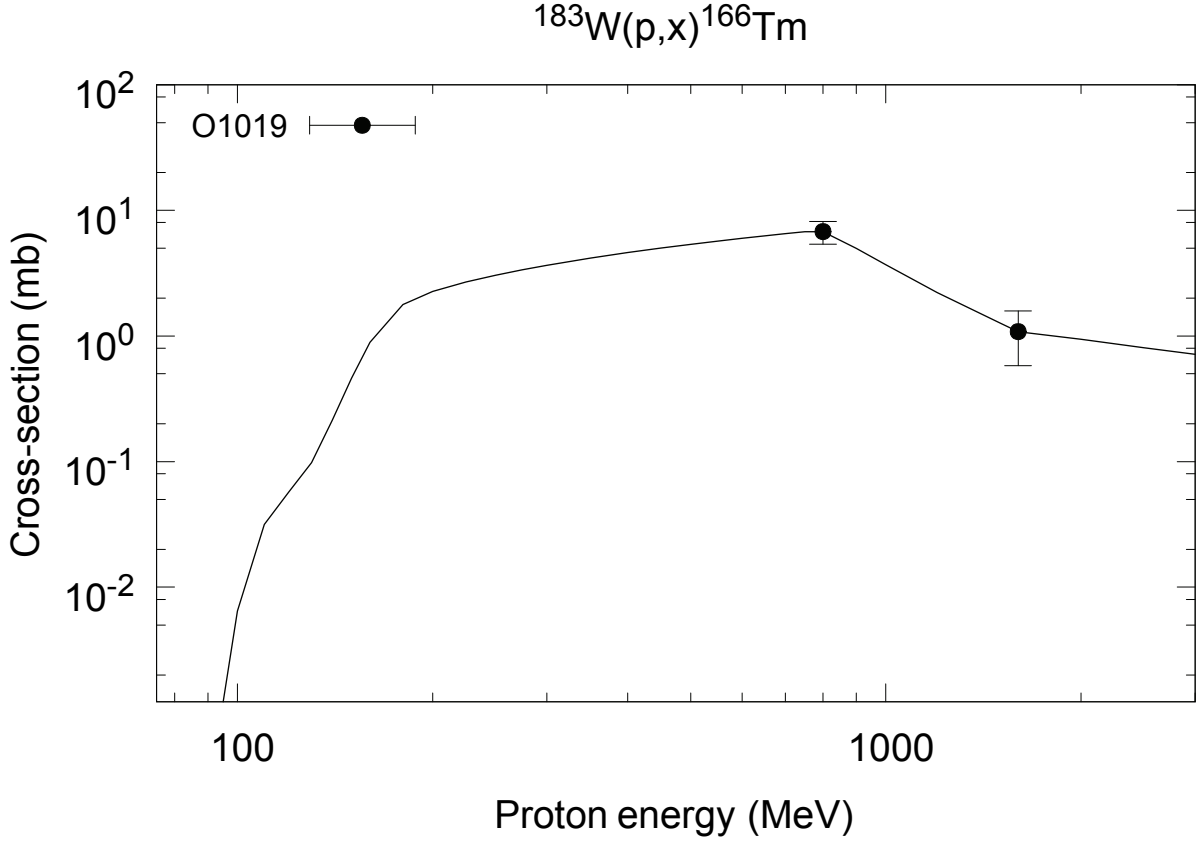

$^{183}W(p,x)^{139m}Nd$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

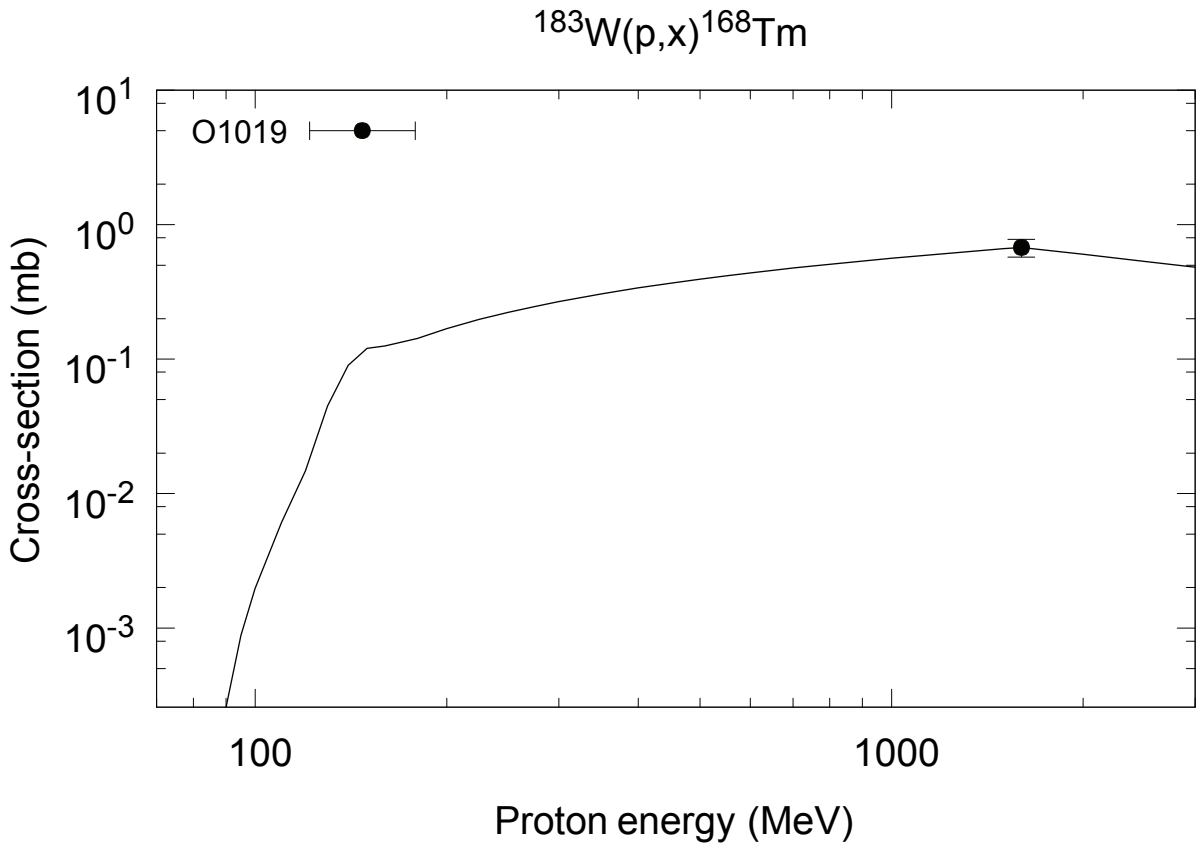

$^{183}W(p,x)^{144}Pm$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

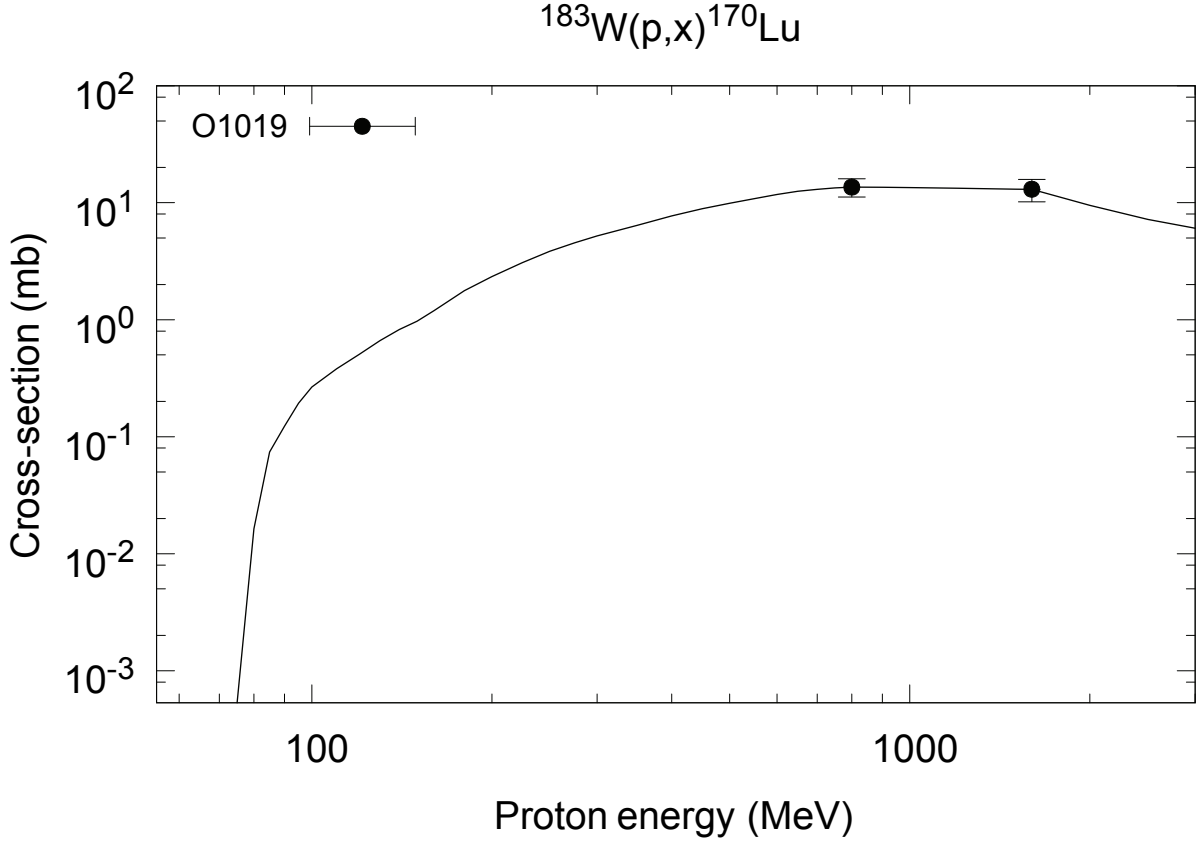

^{183}W(p,x)^{146}Eu
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

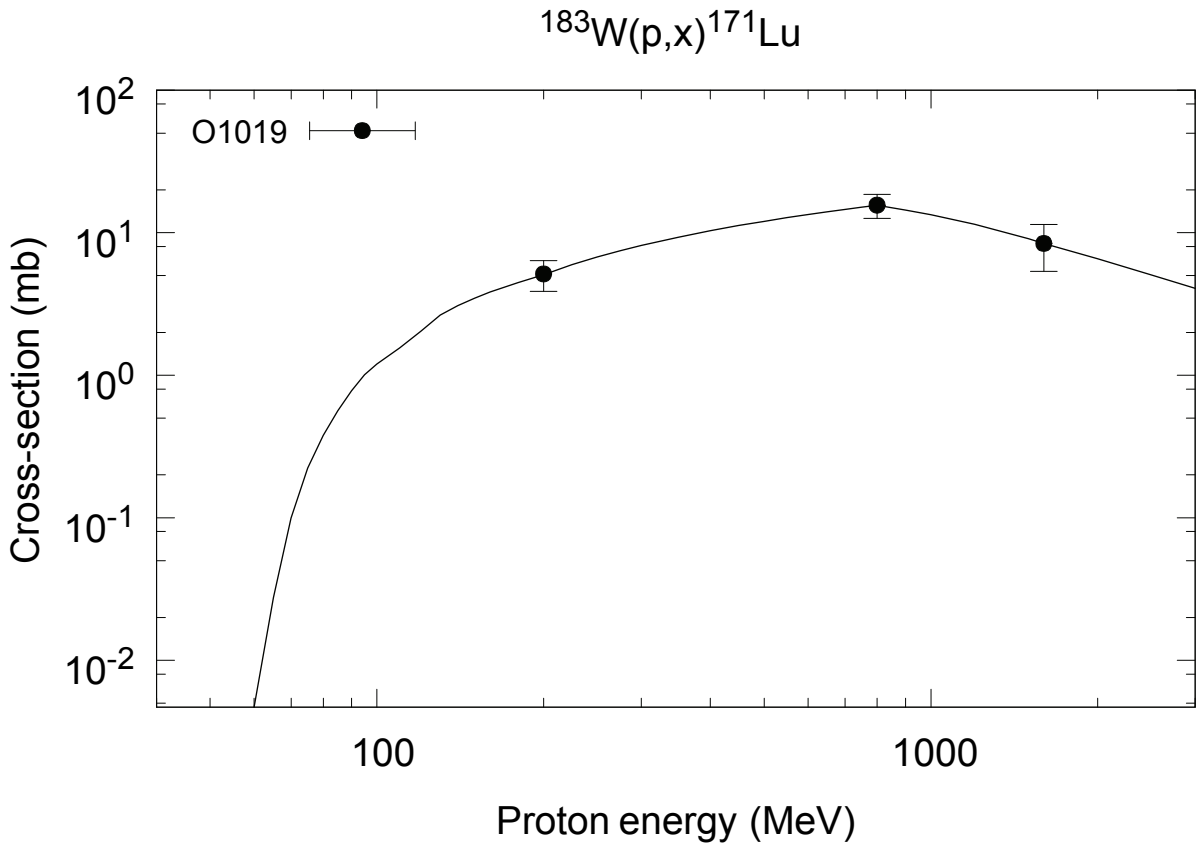

^{183}W(p,x)^{148}Eu
O1019
Cross-section (mb)
10^1
10^0
100
1000
Proton energy (MeV)

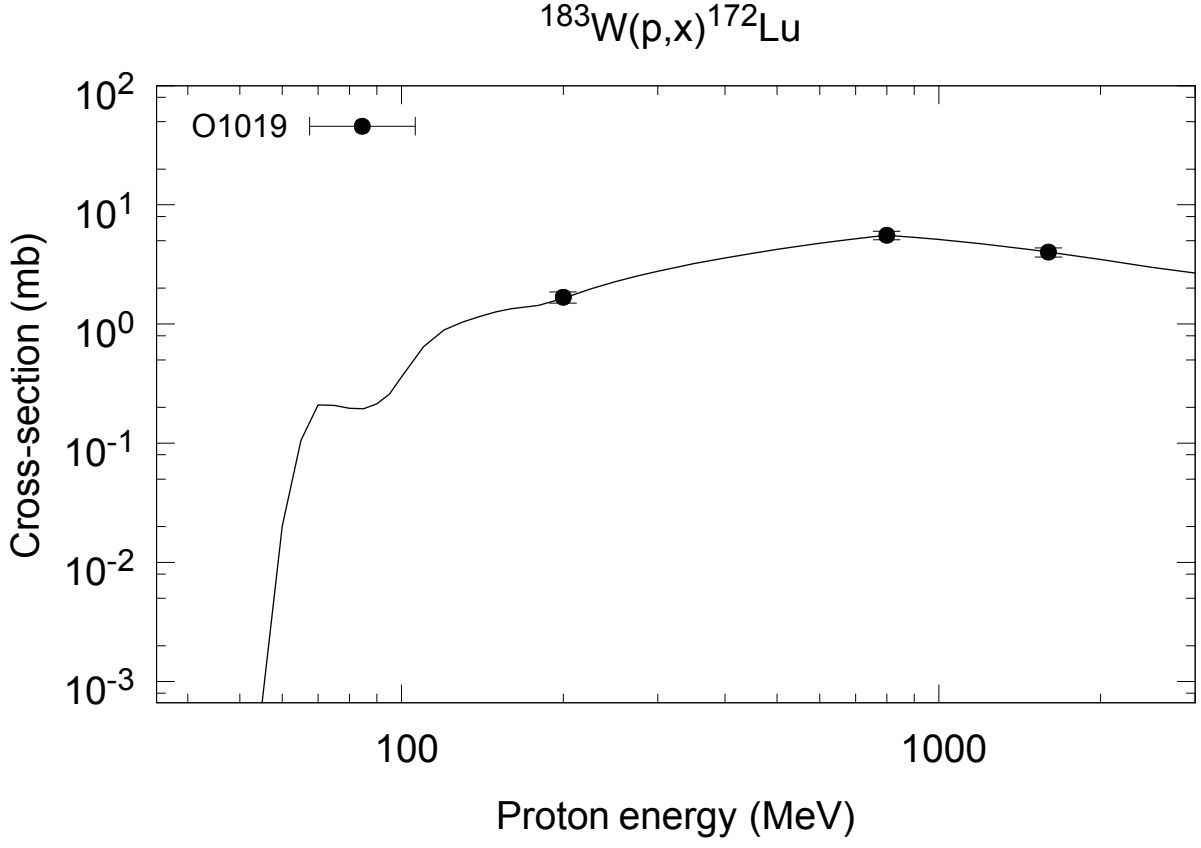

^{183}W(p,x)^{156}Ho
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

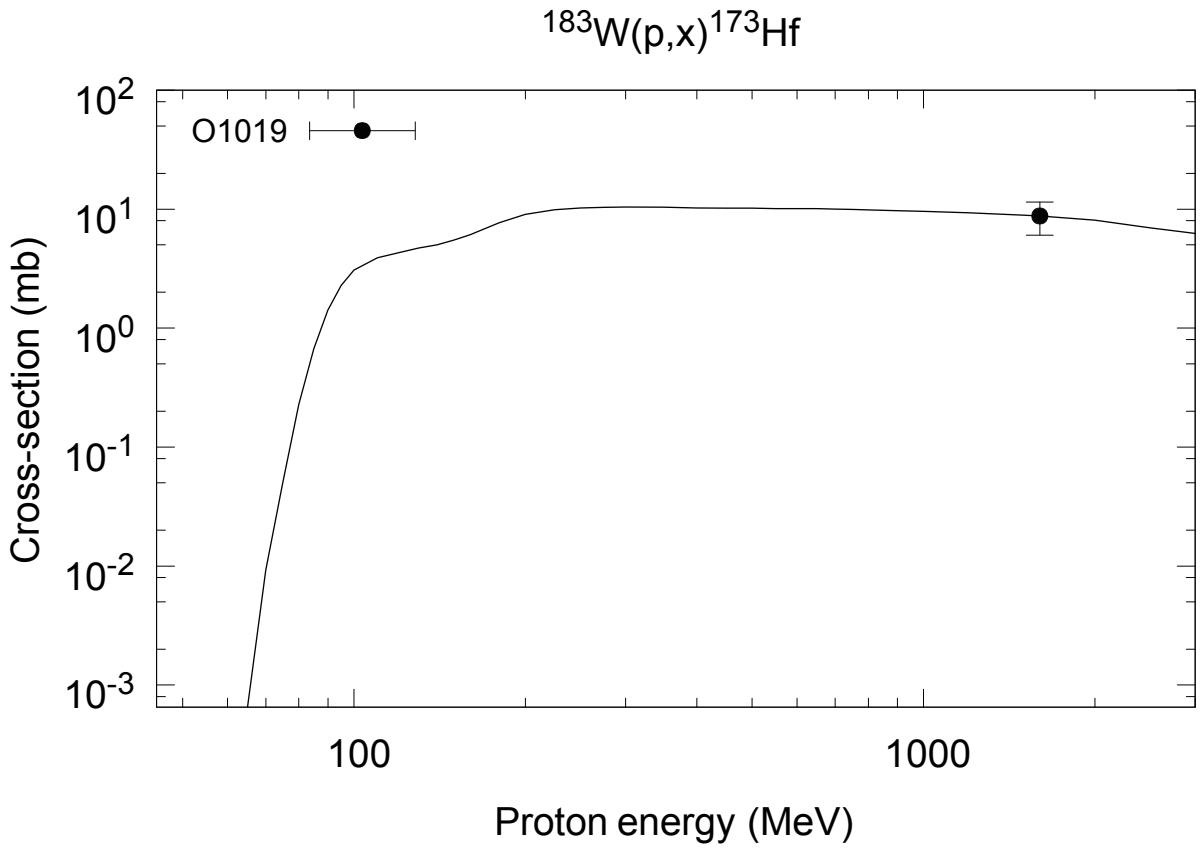

^{183}W(p,x)^{166}Tm
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

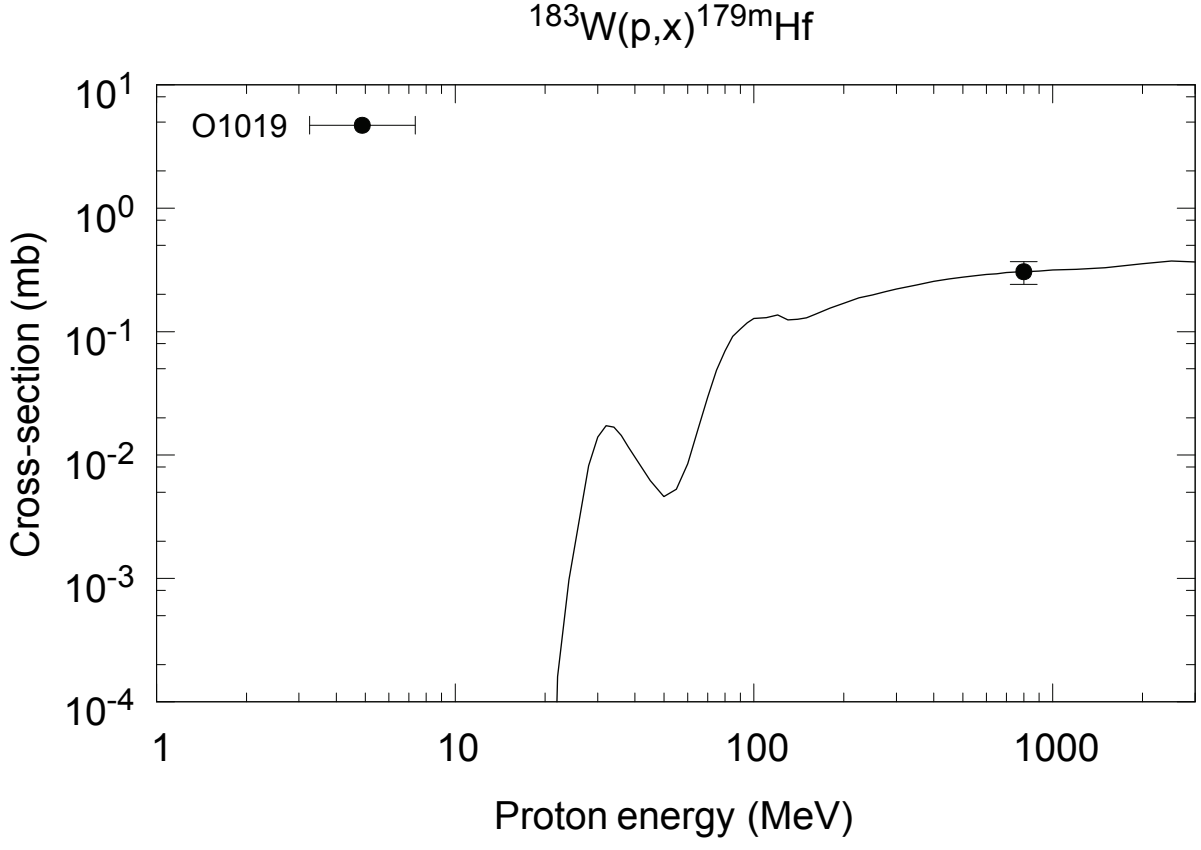

^{183}W(p,x)^{168}Tm
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

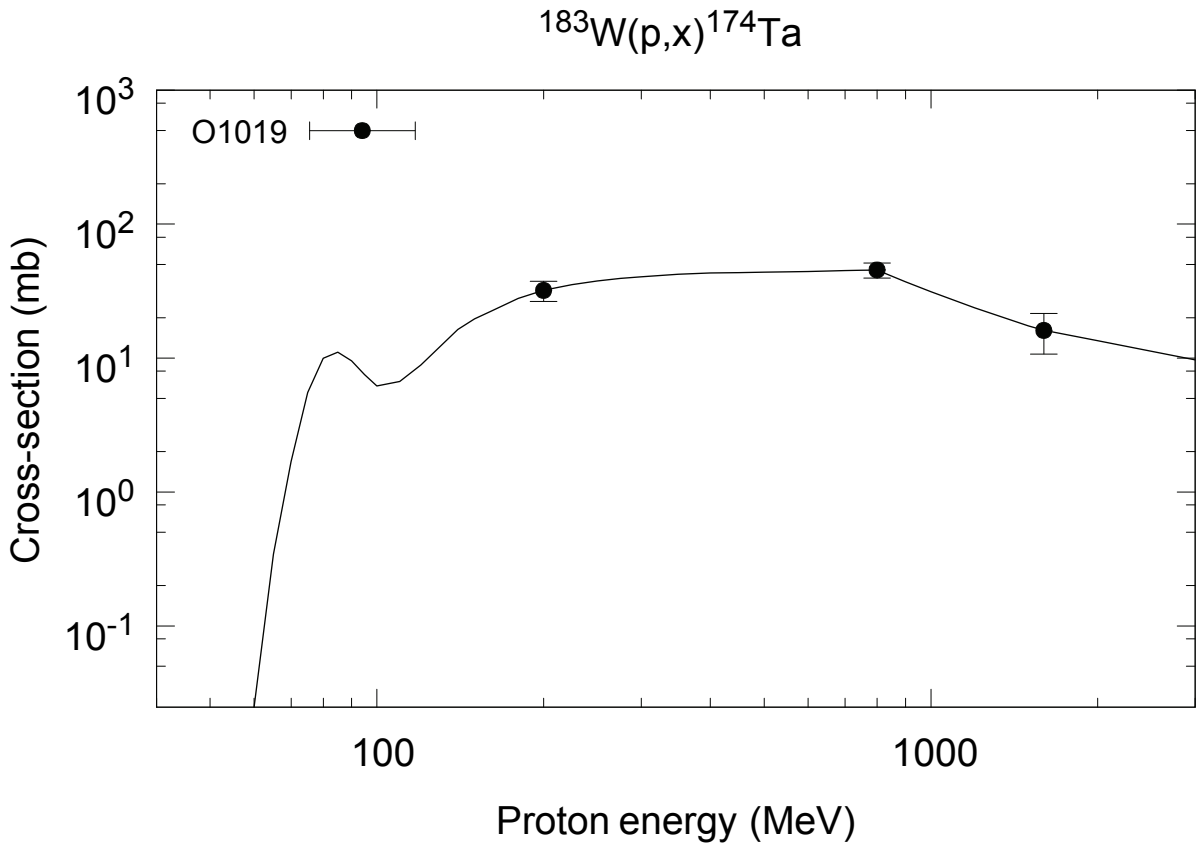

^{183}W(p,x)^{170}Lu
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

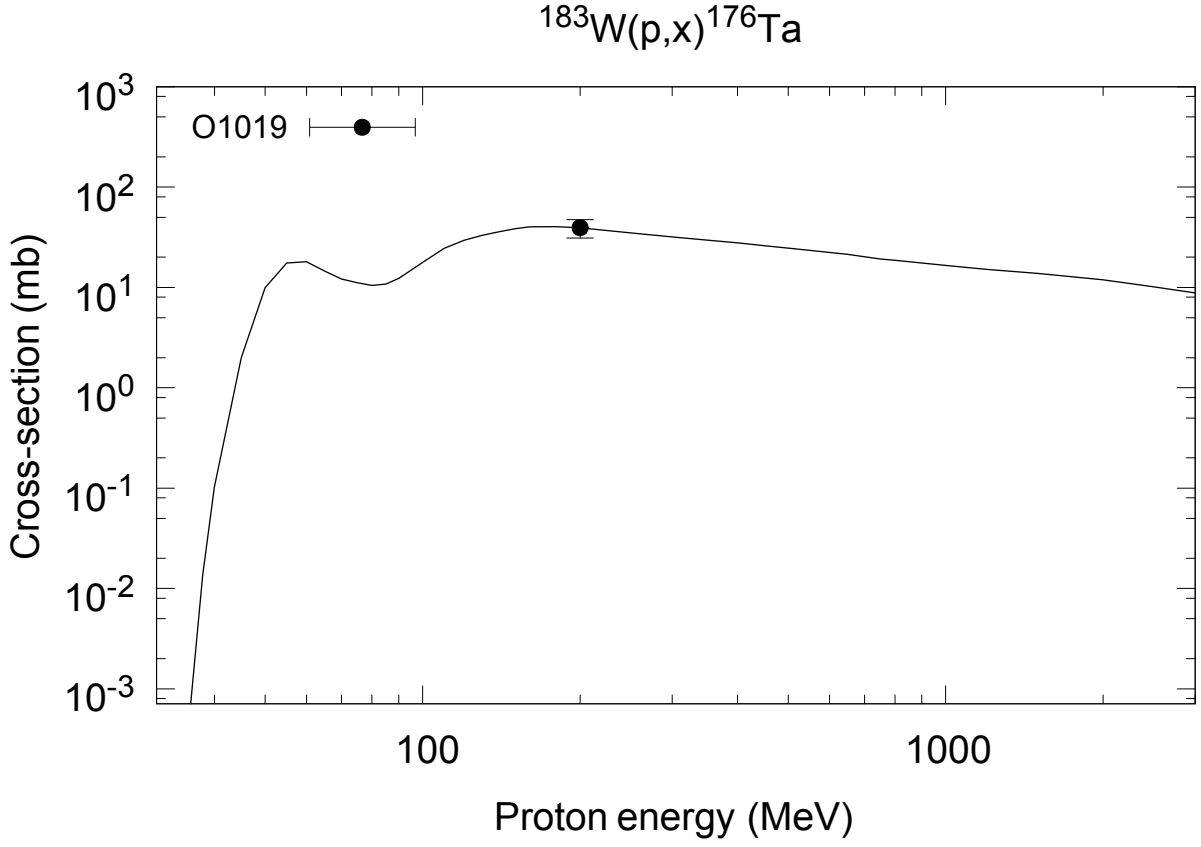

$^{183}W(p,x)^{171}Lu$
O1019
10^2
10^1
10^0
10^{-1}
10^{-2}
Cross-section (mb)
100
1000
Proton energy (MeV)

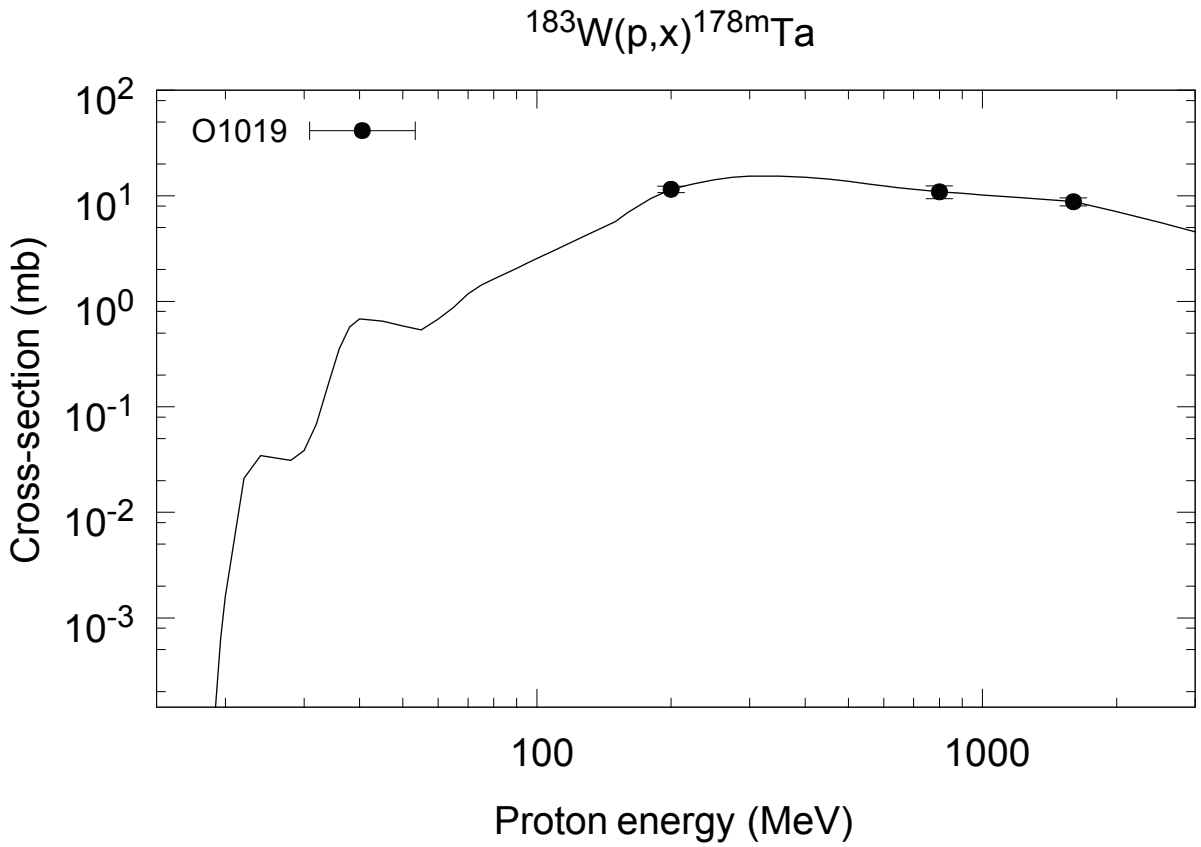

$^{183}W(p,x)^{172}Lu$
O1019
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

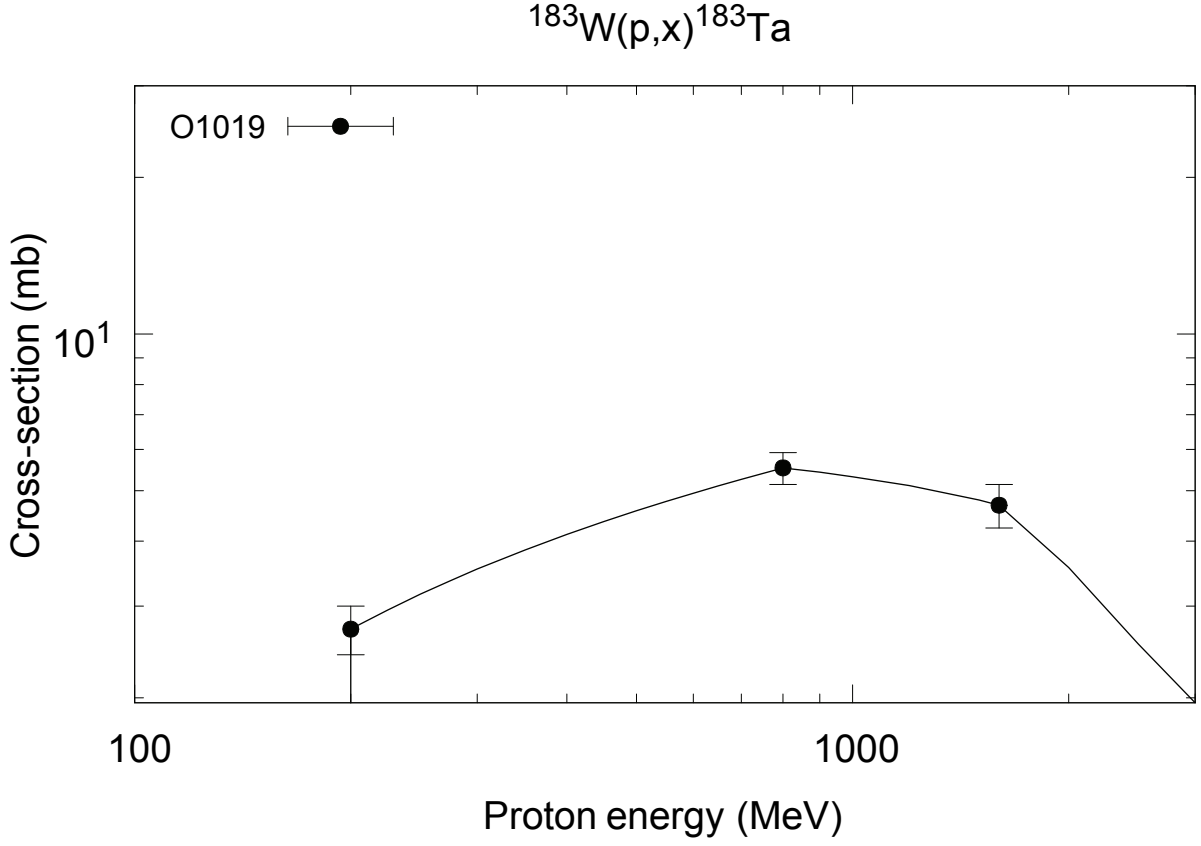

$^{183}W(p,x)^{173}Hf$
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

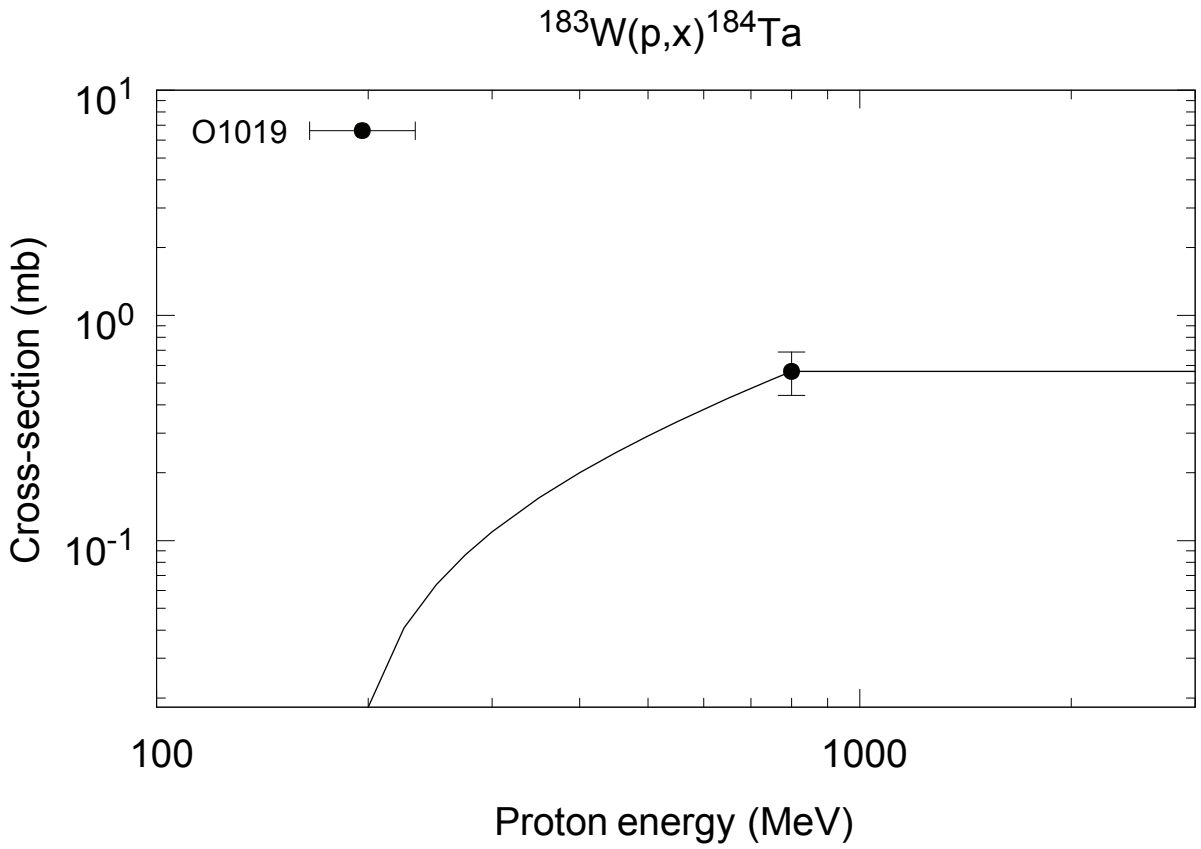

$^{183}W(p,x)^{179m}Hf$
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
1
10
100
1000
Proton energy (MeV)

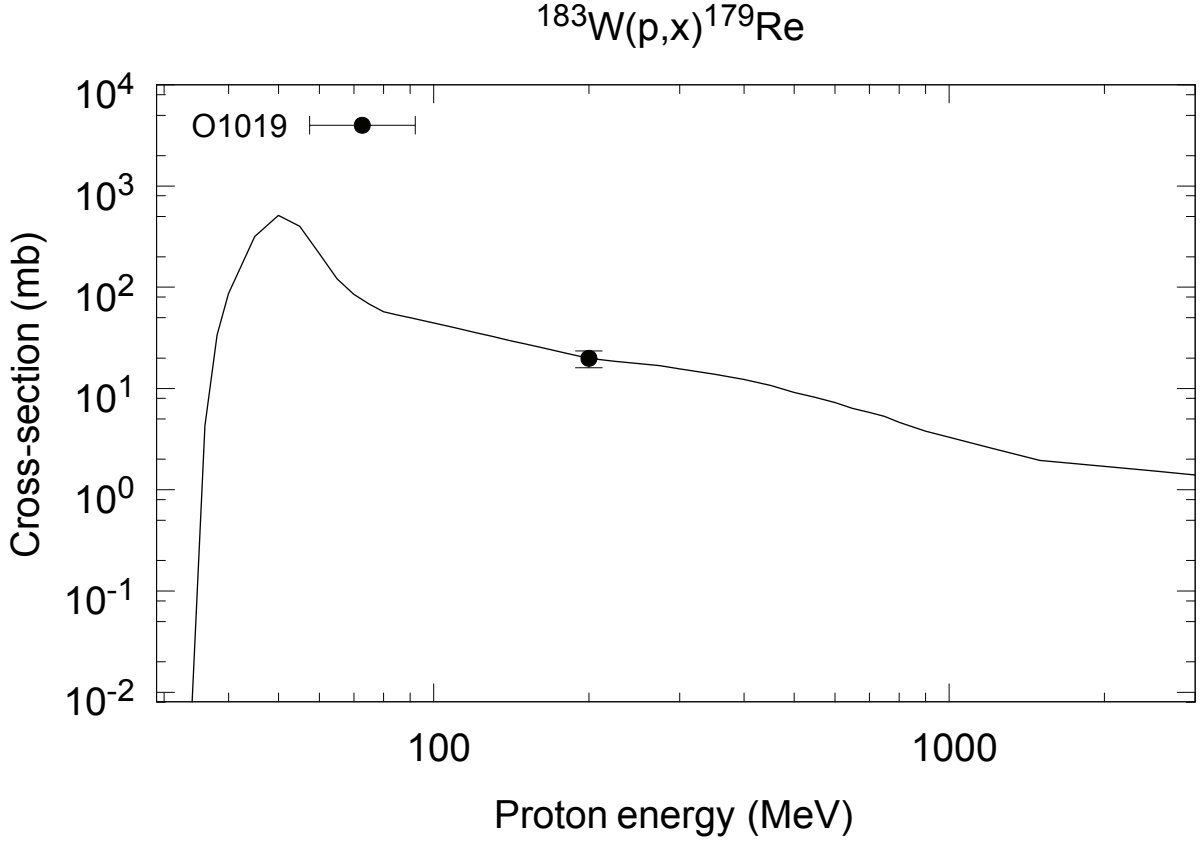

^{183}W(p,x)^{174}Ta
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

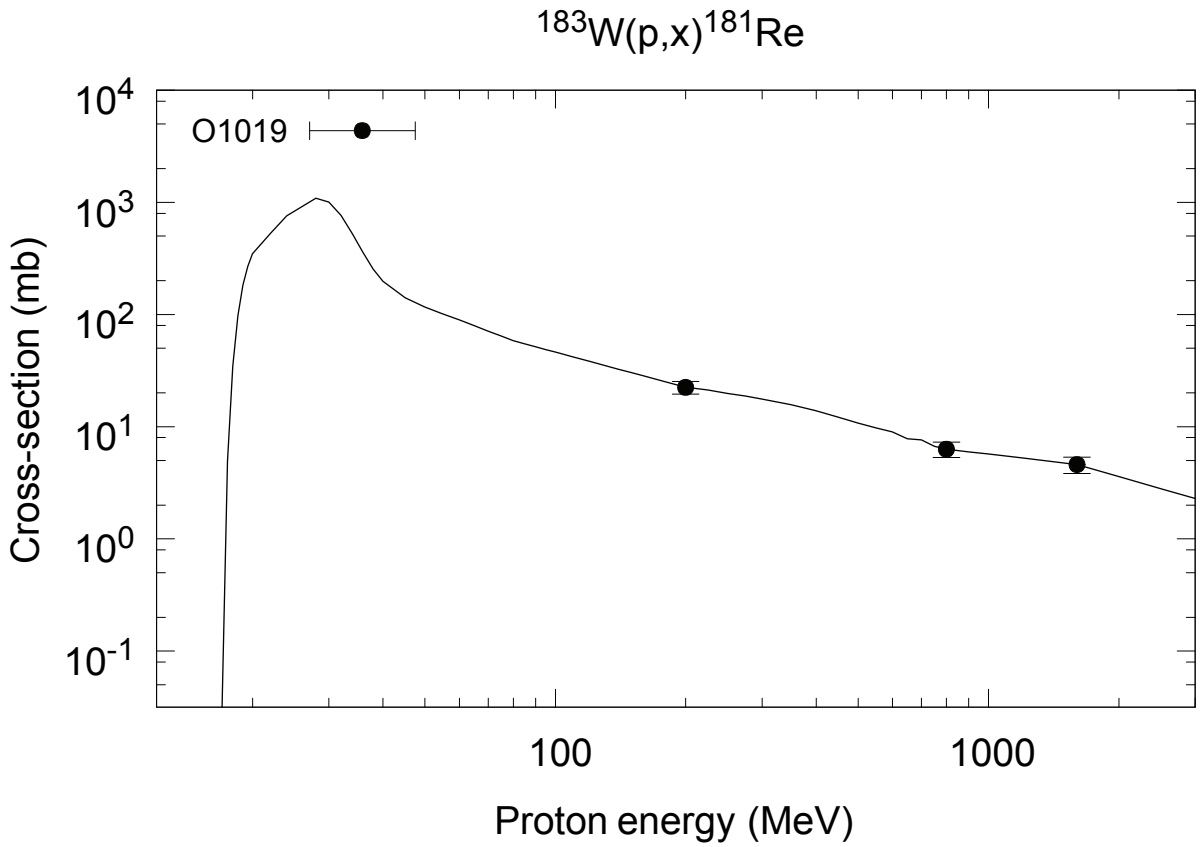

^{183}W(p,x)^{176}Ta
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

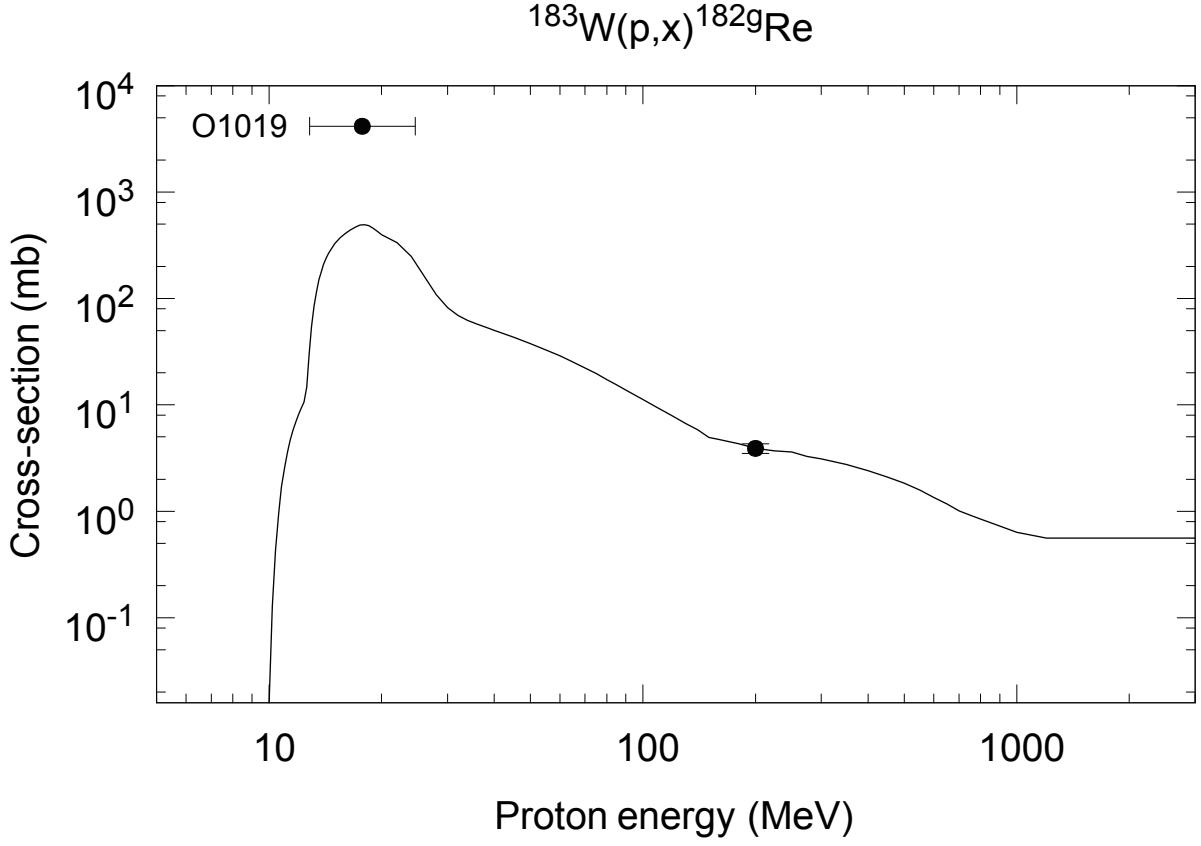

$^{183}W(p,x)^{178m}Ta$
O1019
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

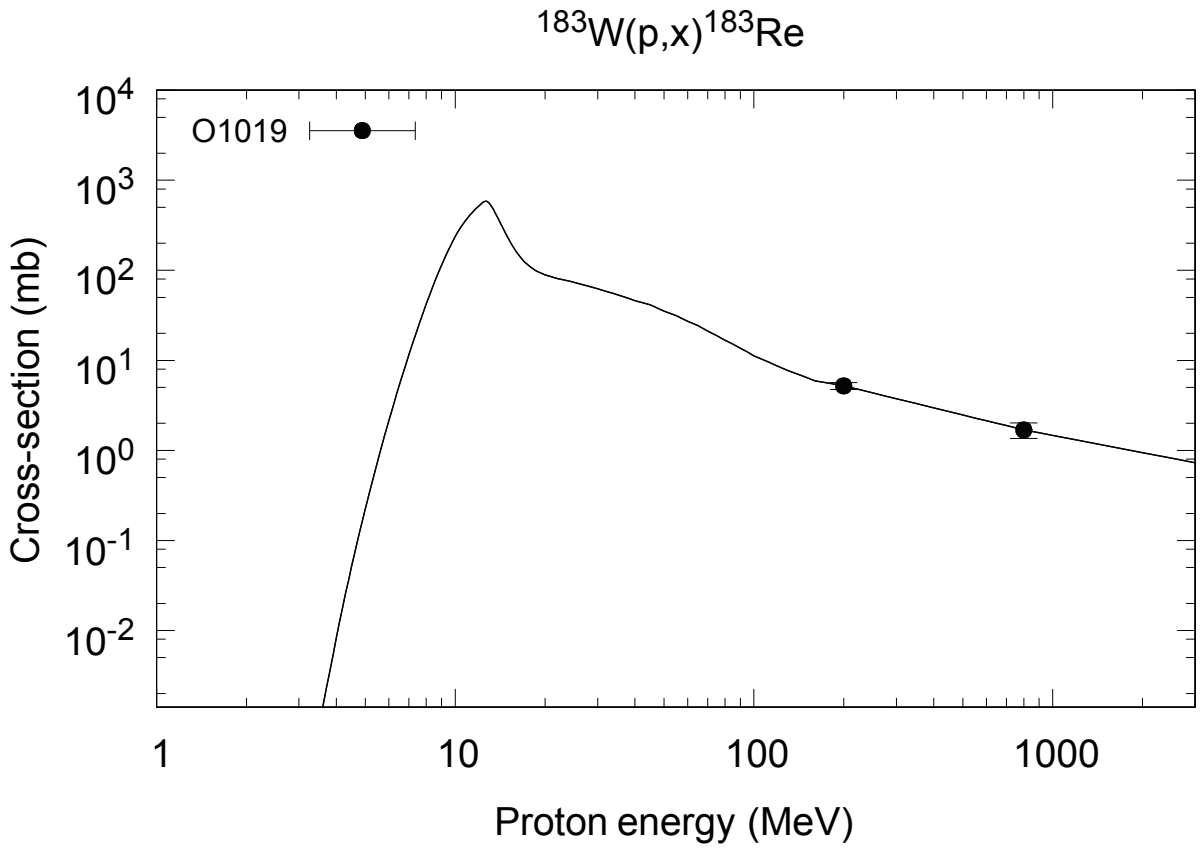

$^{183}W(p,x)^{183}Ta$
O1019
10^1
Cross-section (mb)
100
1000
Proton energy (MeV)

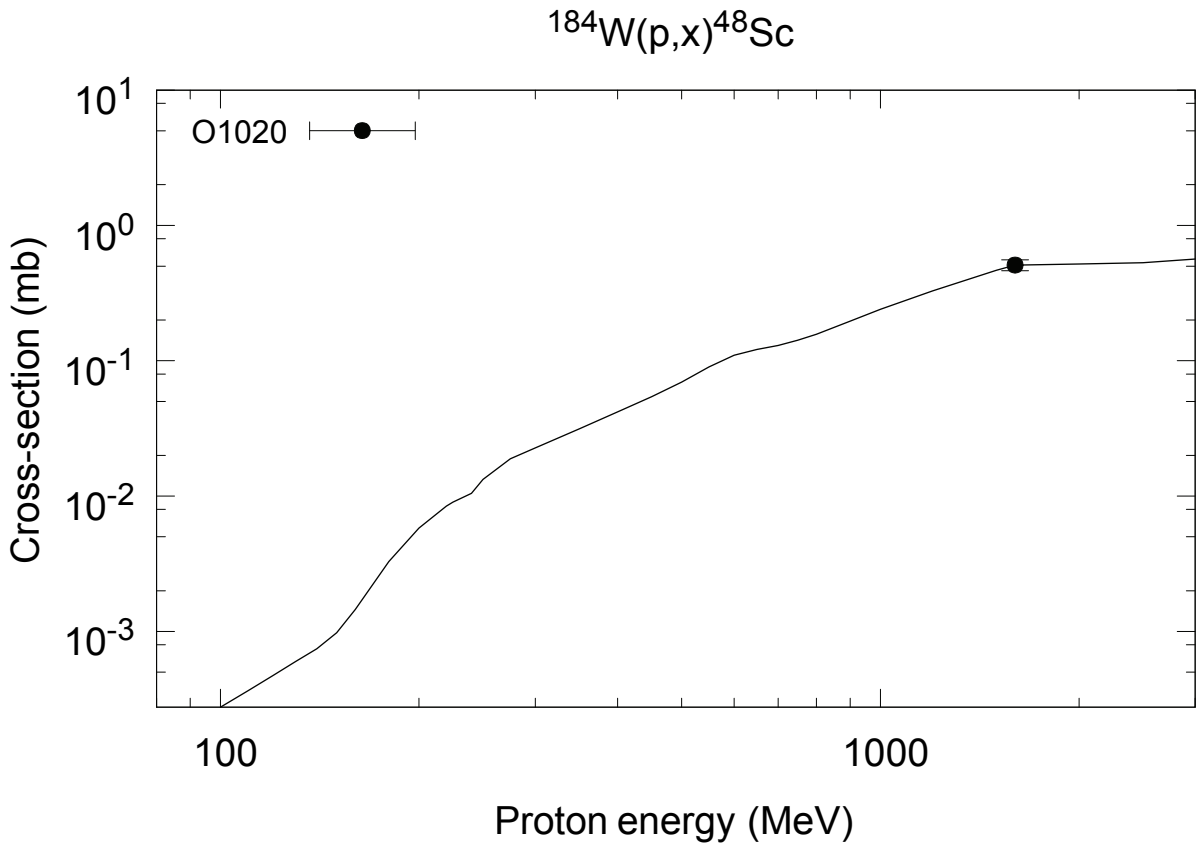

^{183}W(p,x)^{184}Ta
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

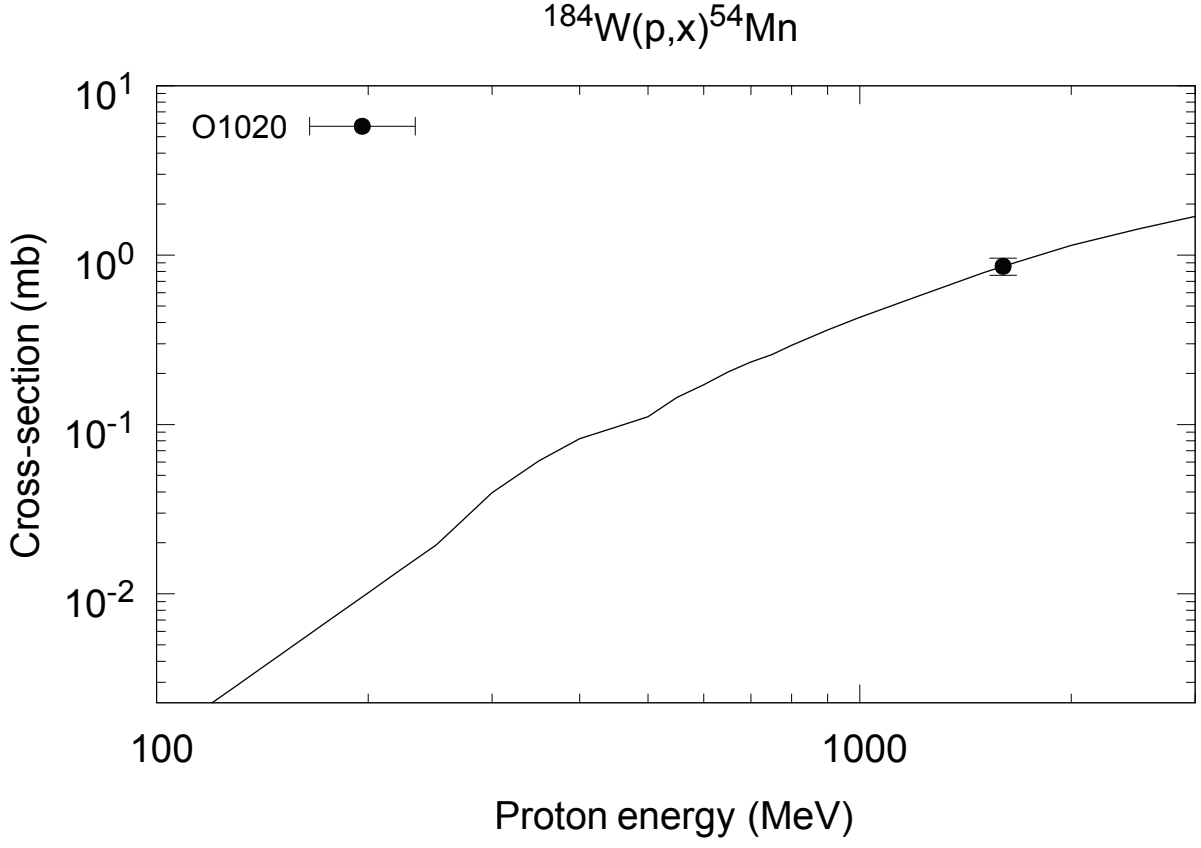

^{183}W(p,x)^{179}Re
O1019
Cross-section (mb)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

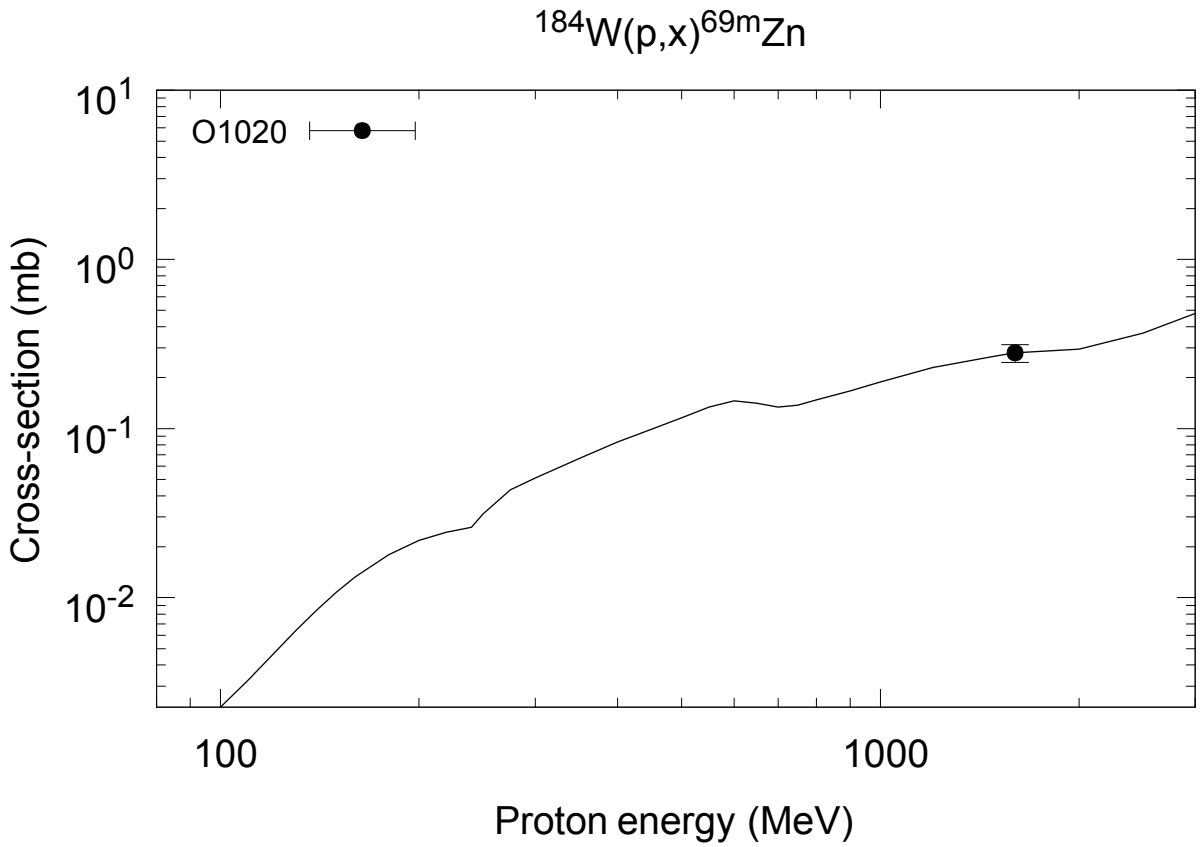

$^{183}W(p,x)^{181}Re$
O1019
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

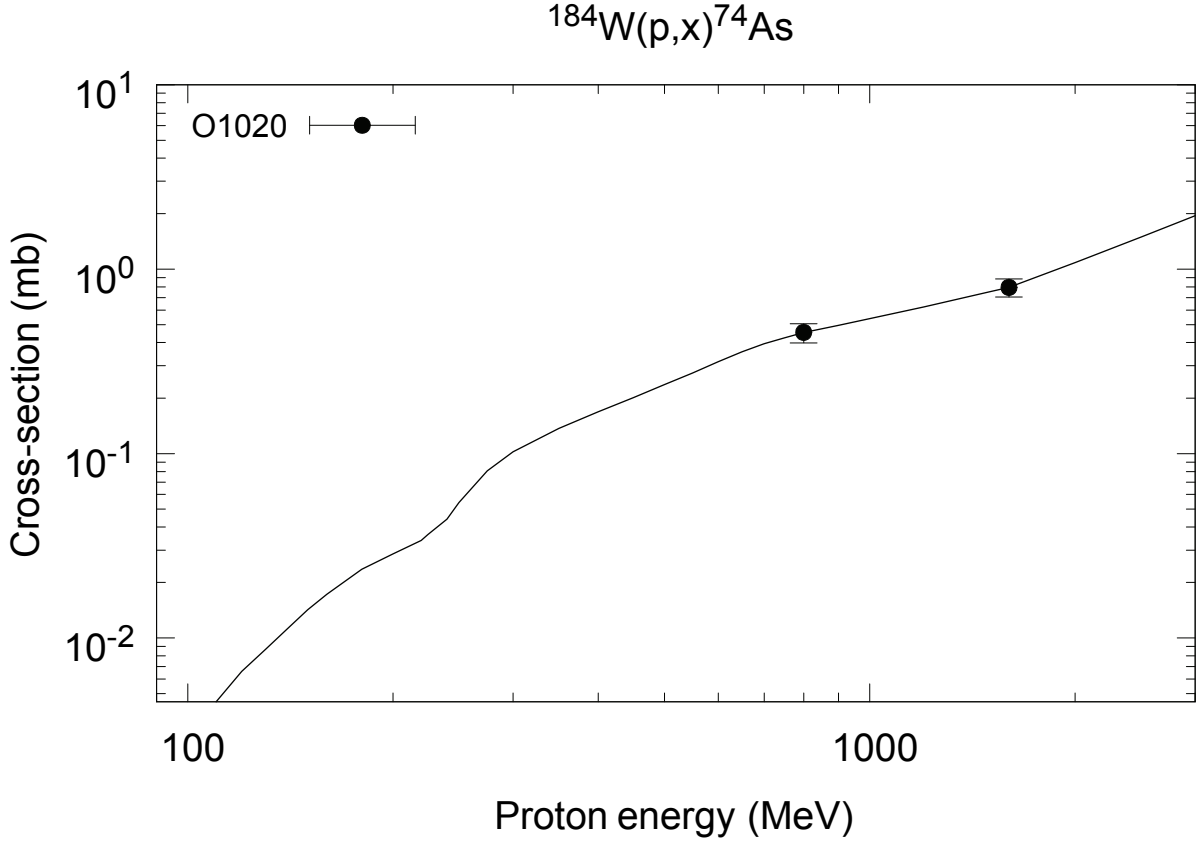

$^{183}W(p,x)^{182g}Re$
O1019
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10
100
1000
Proton energy (MeV)

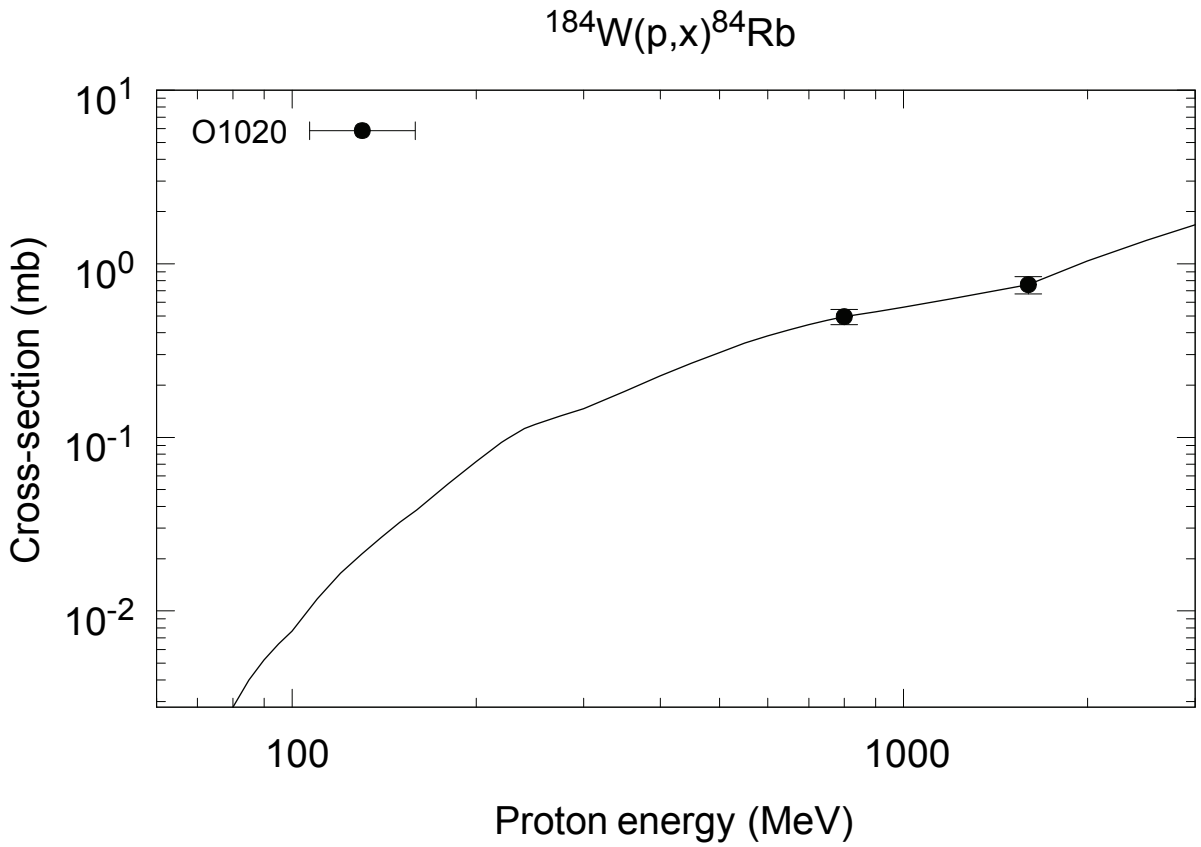

$^{183}W(p,x)^{183}Re$
O1019
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
1
10
100
1000
Proton energy (MeV)

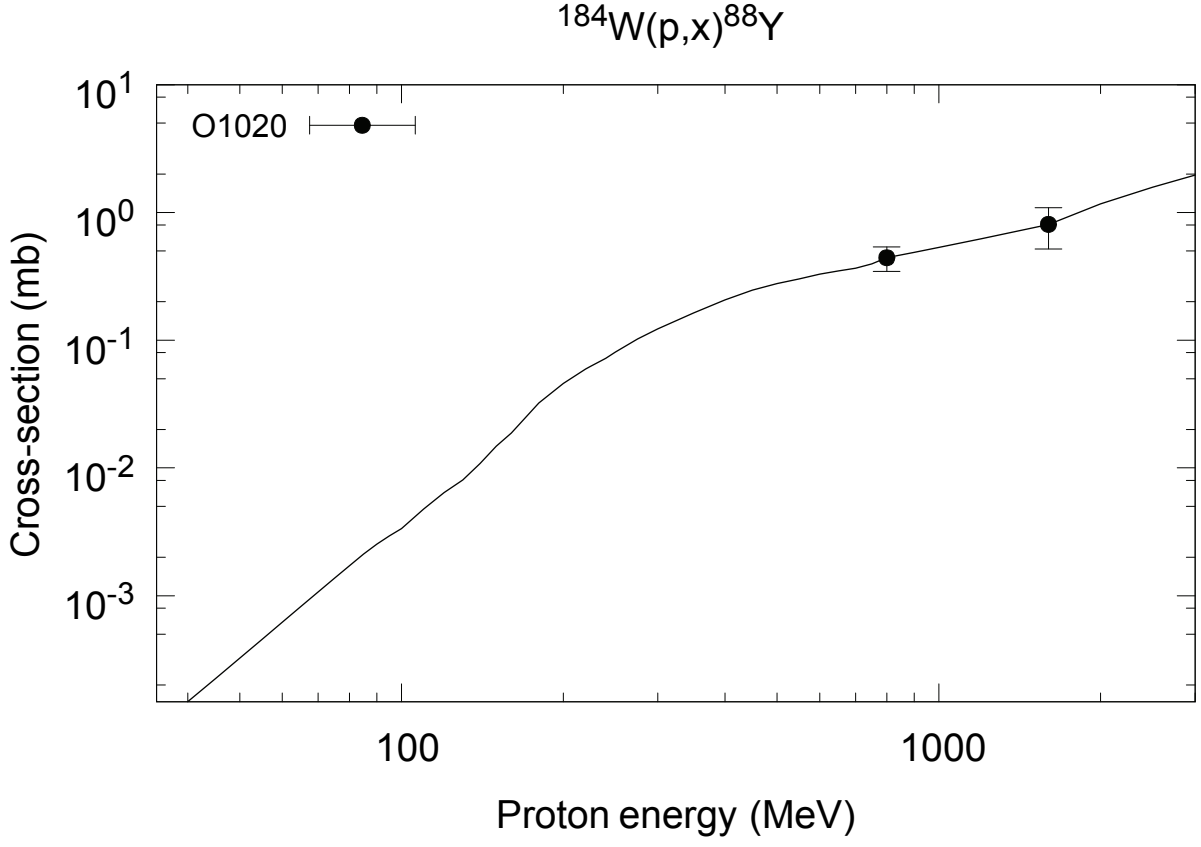

^{184}W(p,x)^{48}Sc
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

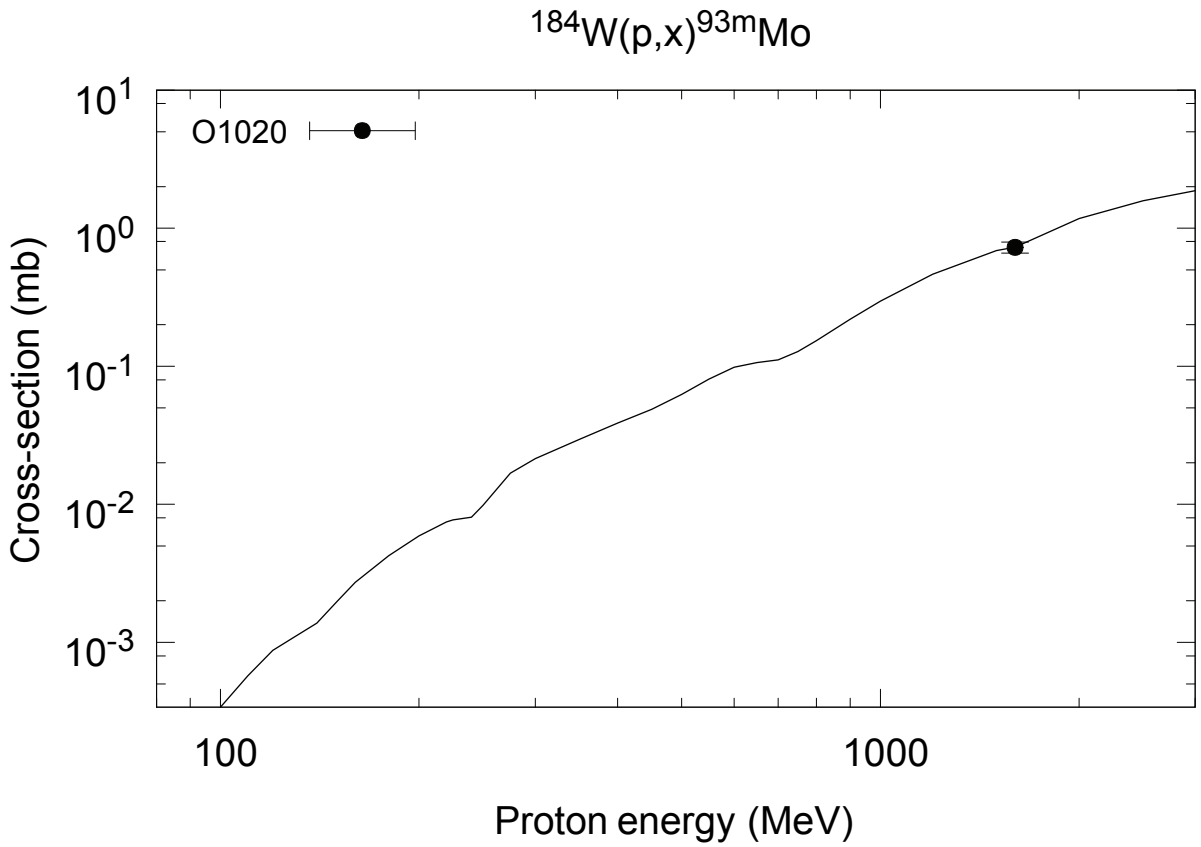

^{184}W(p,x)^{54}Mn
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

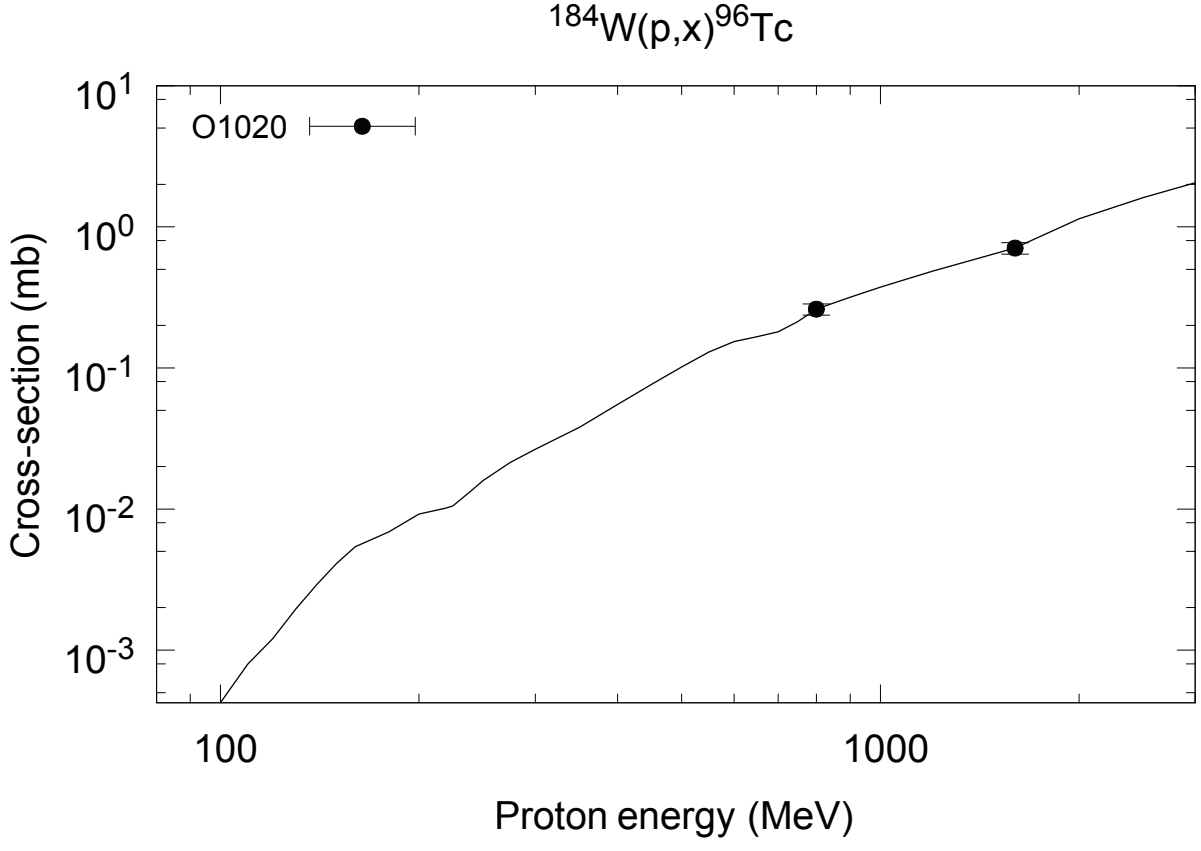

$^{184}W(p,x)^{69m}Zn$
O1020
10^{1}
10^{0}
10^{-1}
10^{-2}
Cross-section (mb)
100
1000
Proton energy (MeV)

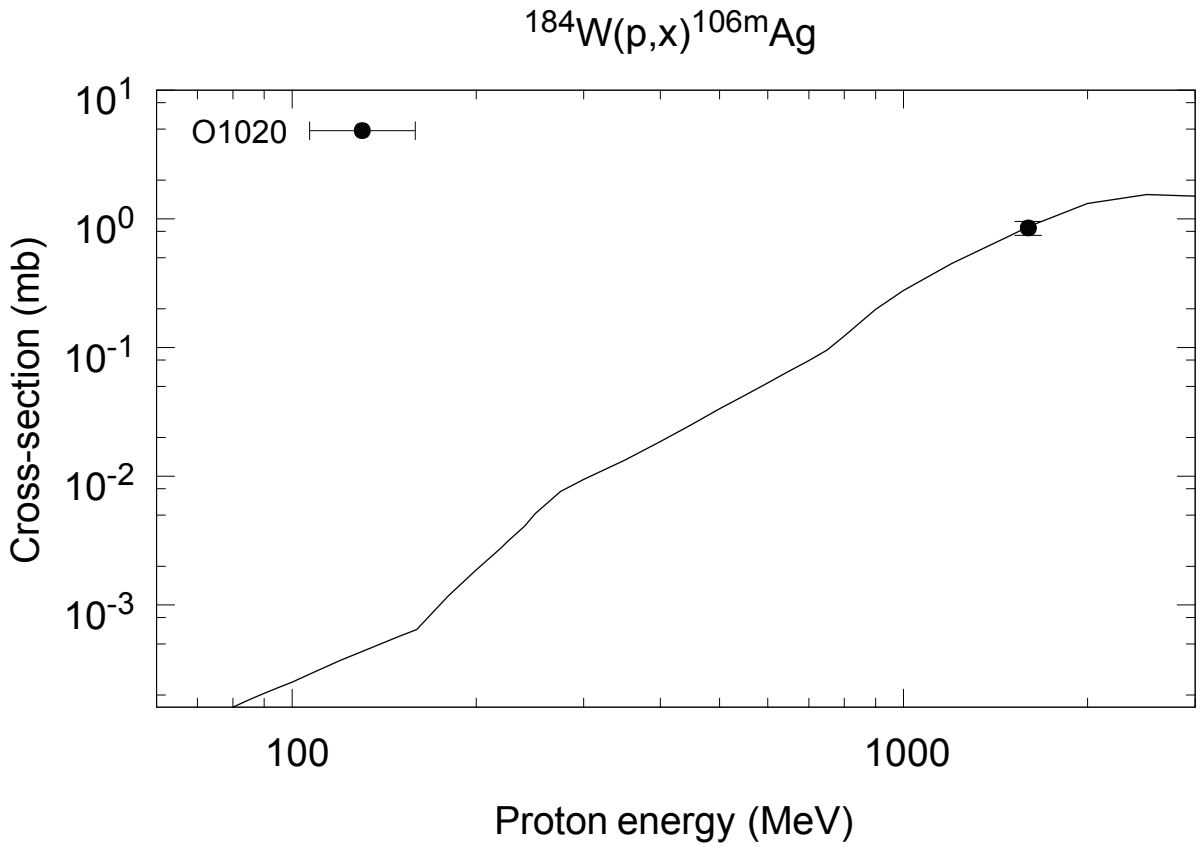

$^{184}W(p,x)^{74}As$
O1020
10^{1}
10^{0}
10^{-1}
10^{-2}
Cross-section (mb)
100
1000
Proton energy (MeV)

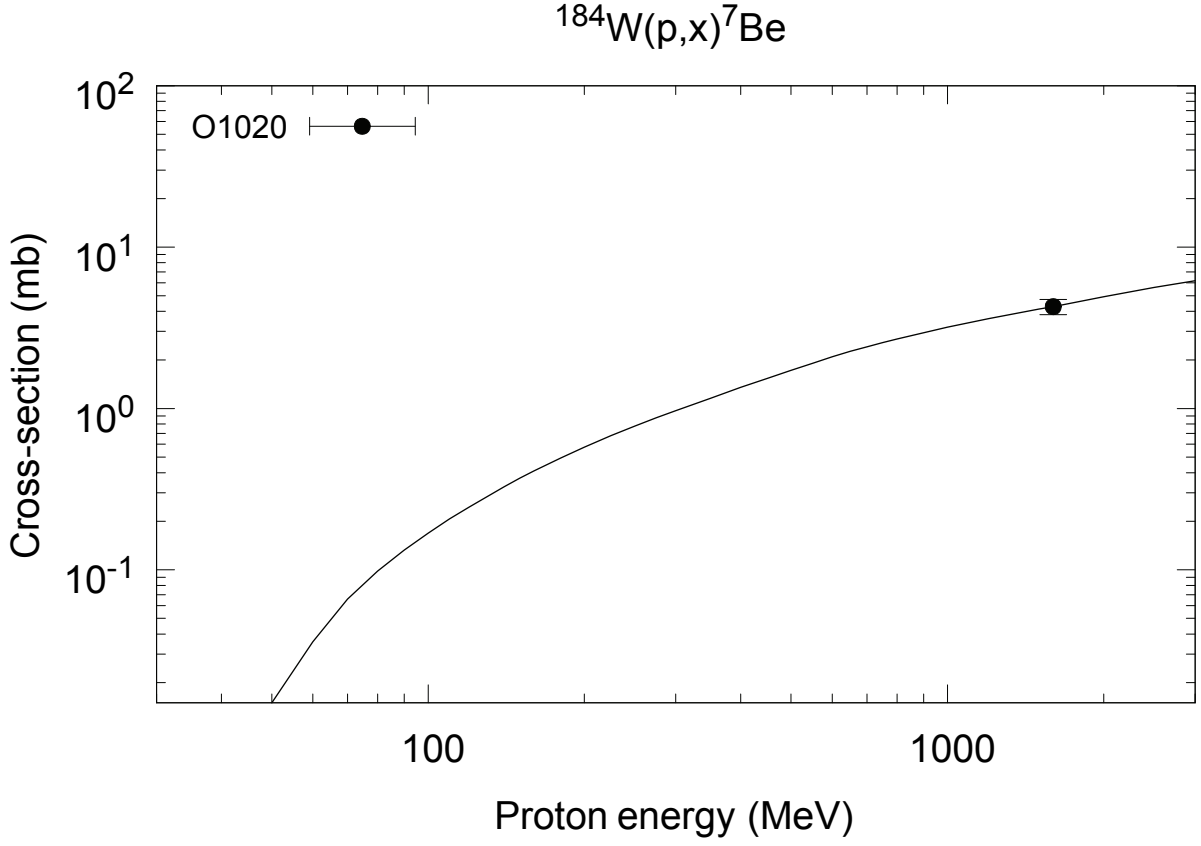

$^{184}W(p,x)^{84}Rb$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

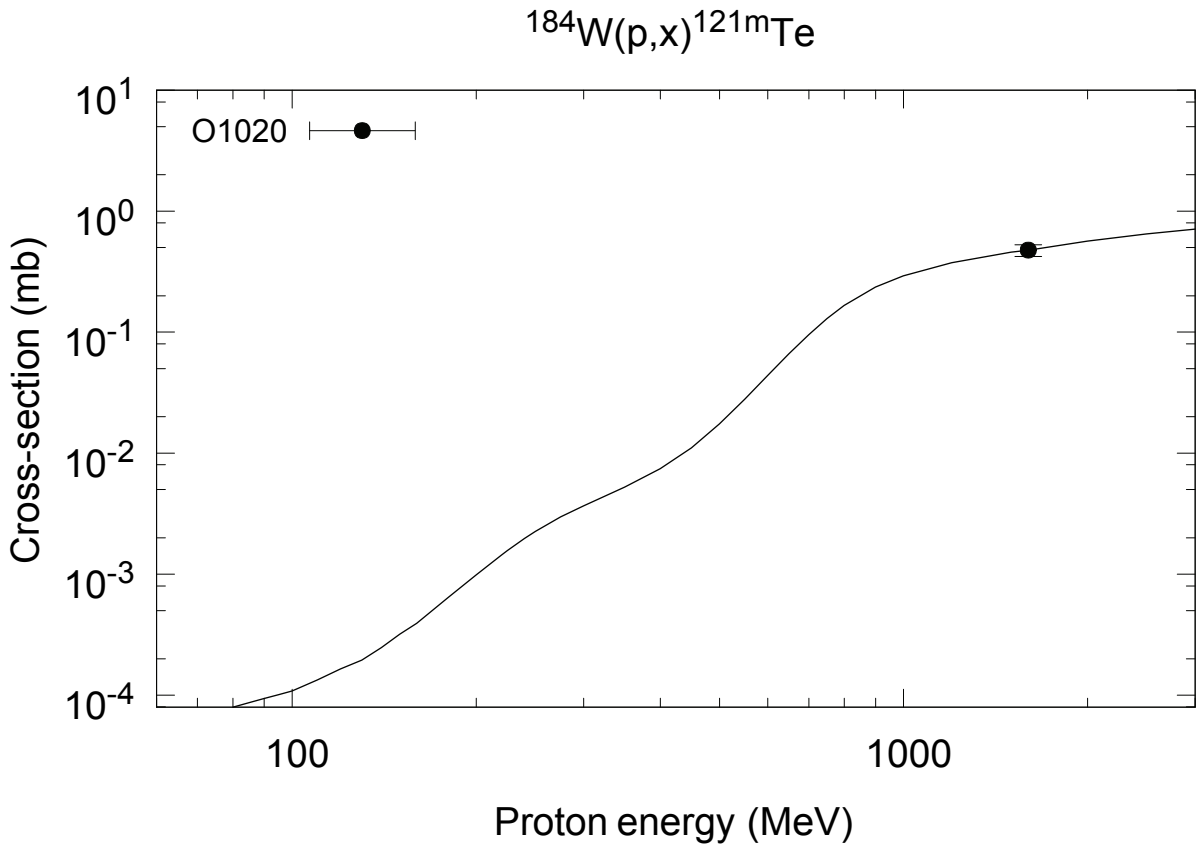

$^{184}W(p,x)^{88}Y$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

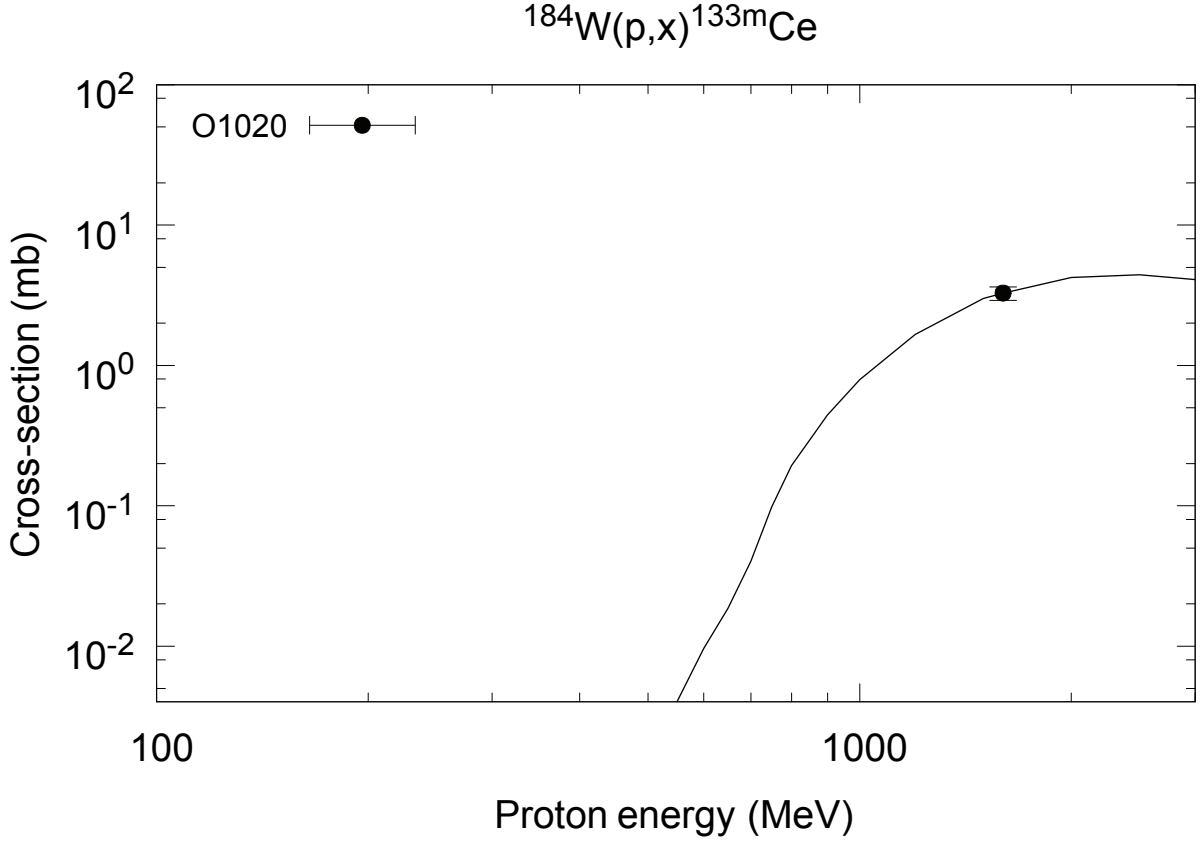

$^{184}W(p,x)^{93m}Mo$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

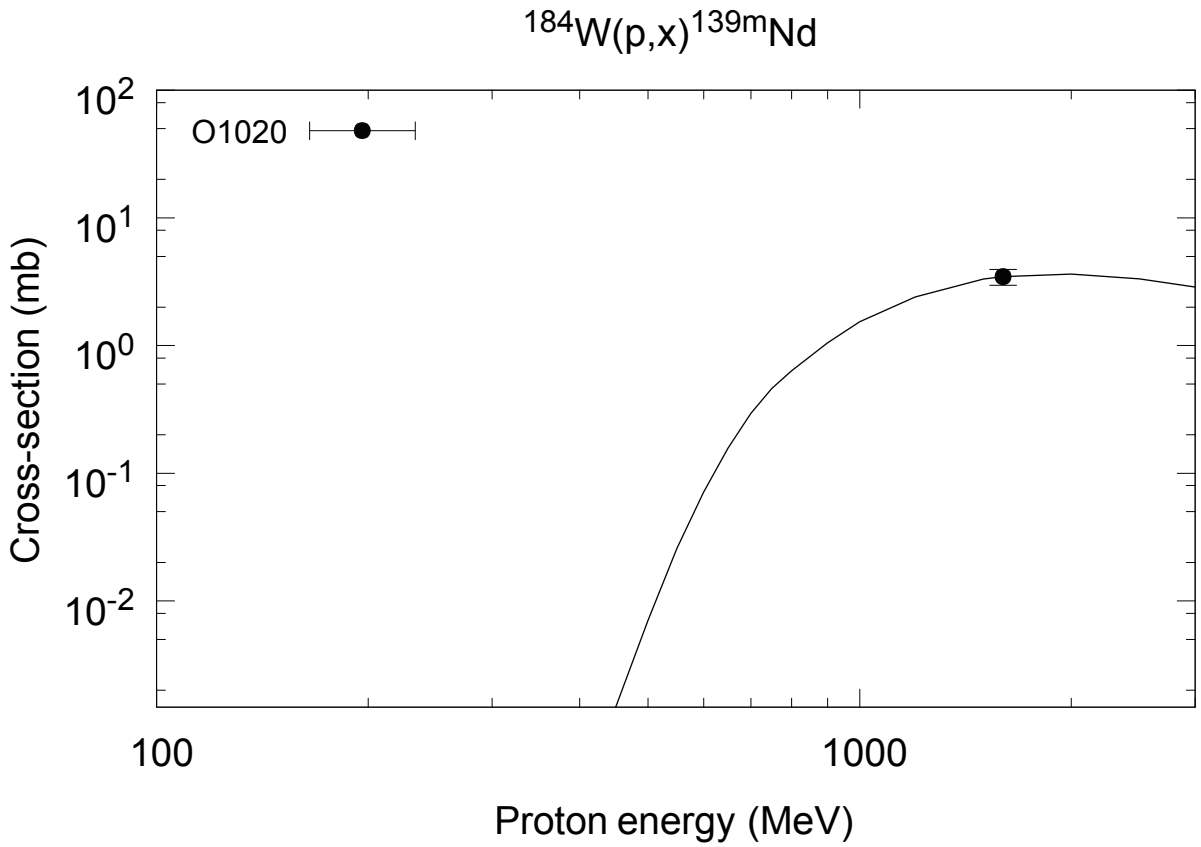

$^{184}W(p,x)^{96}Tc$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

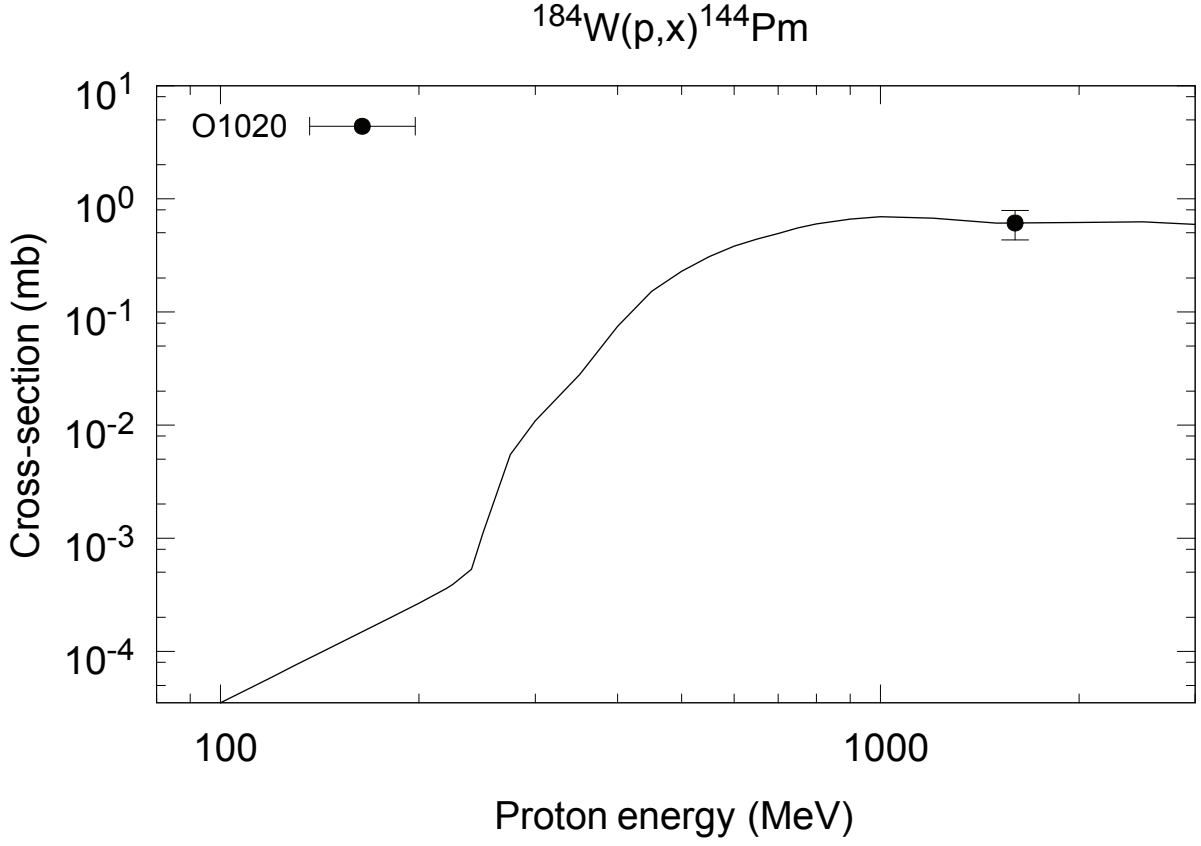

$^{184}W(p,x)^{106m}Ag$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

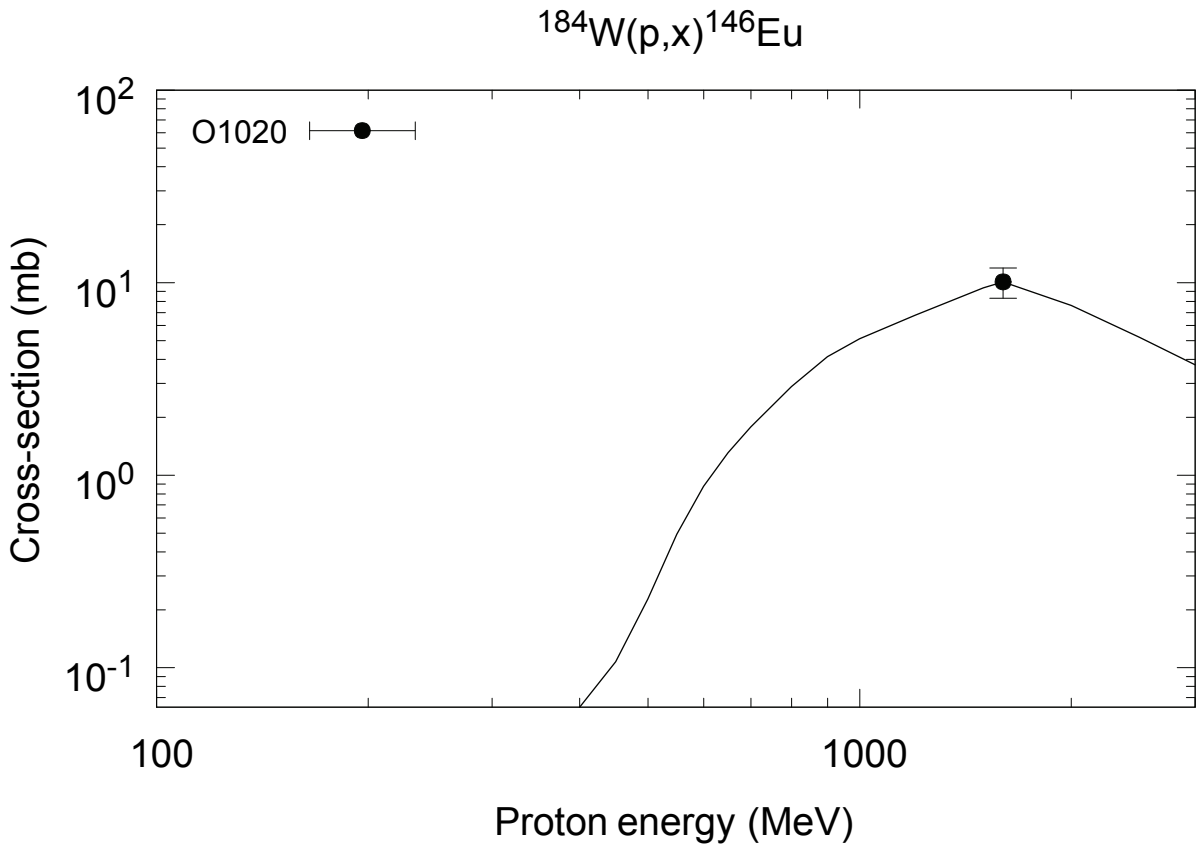

$^{184}W(p,x)^{7}Be$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

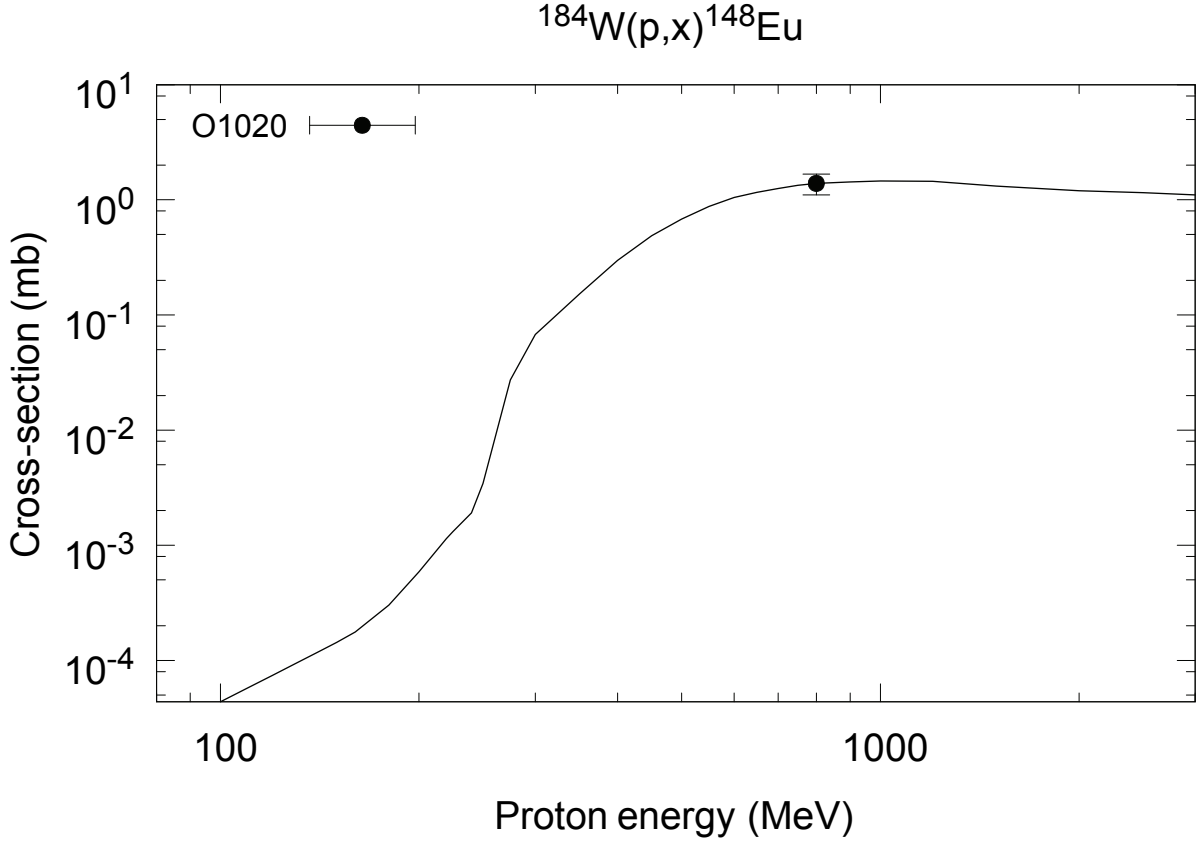

$^{184}W(p,x)^{121m}Te$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

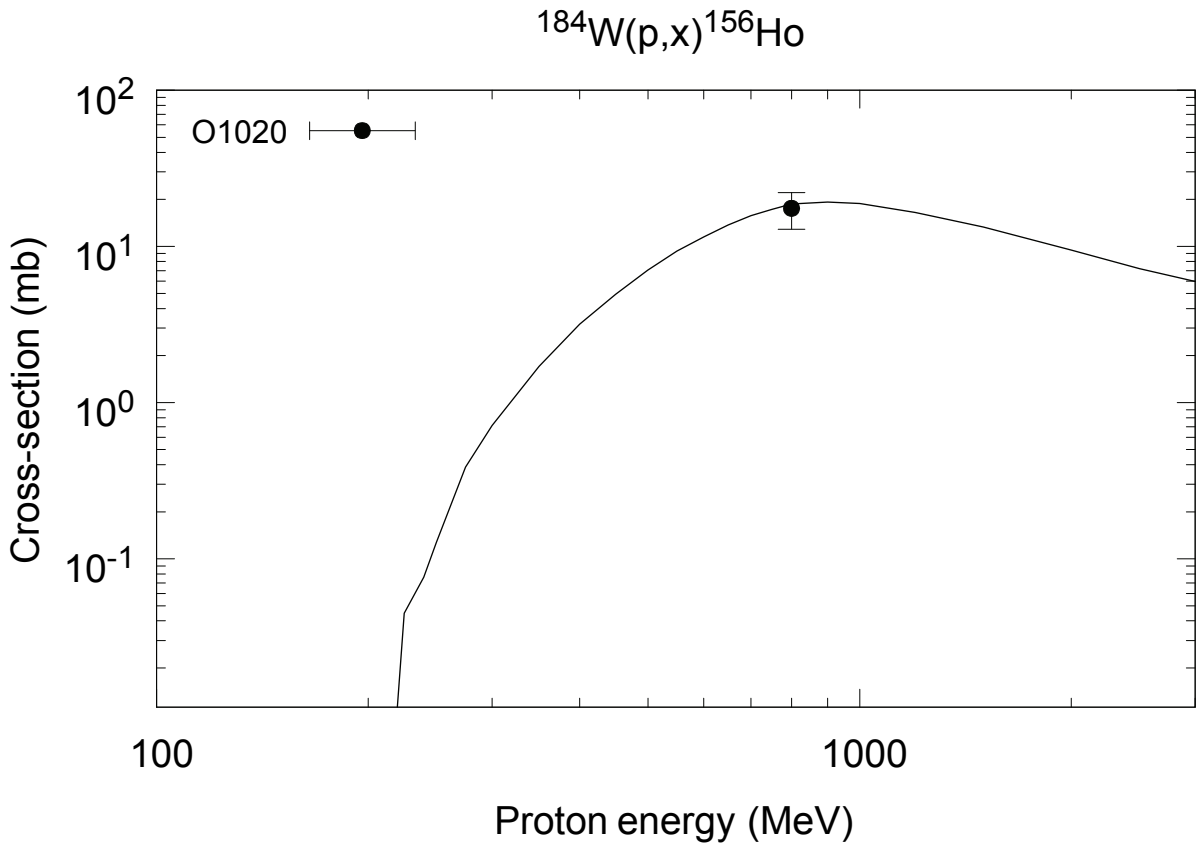

$^{184}W(p,x)^{133m}Ce$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

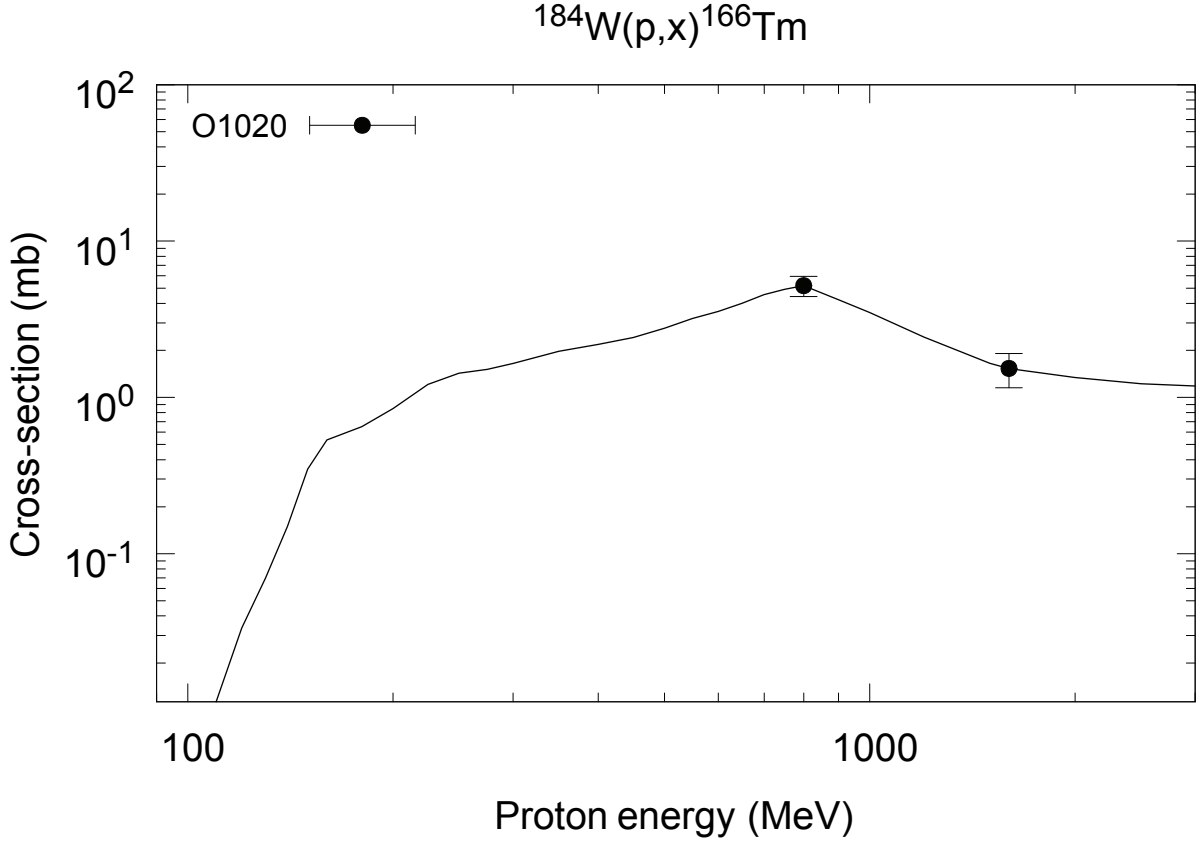

$^{184}W(p,x)^{139m}Nd$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

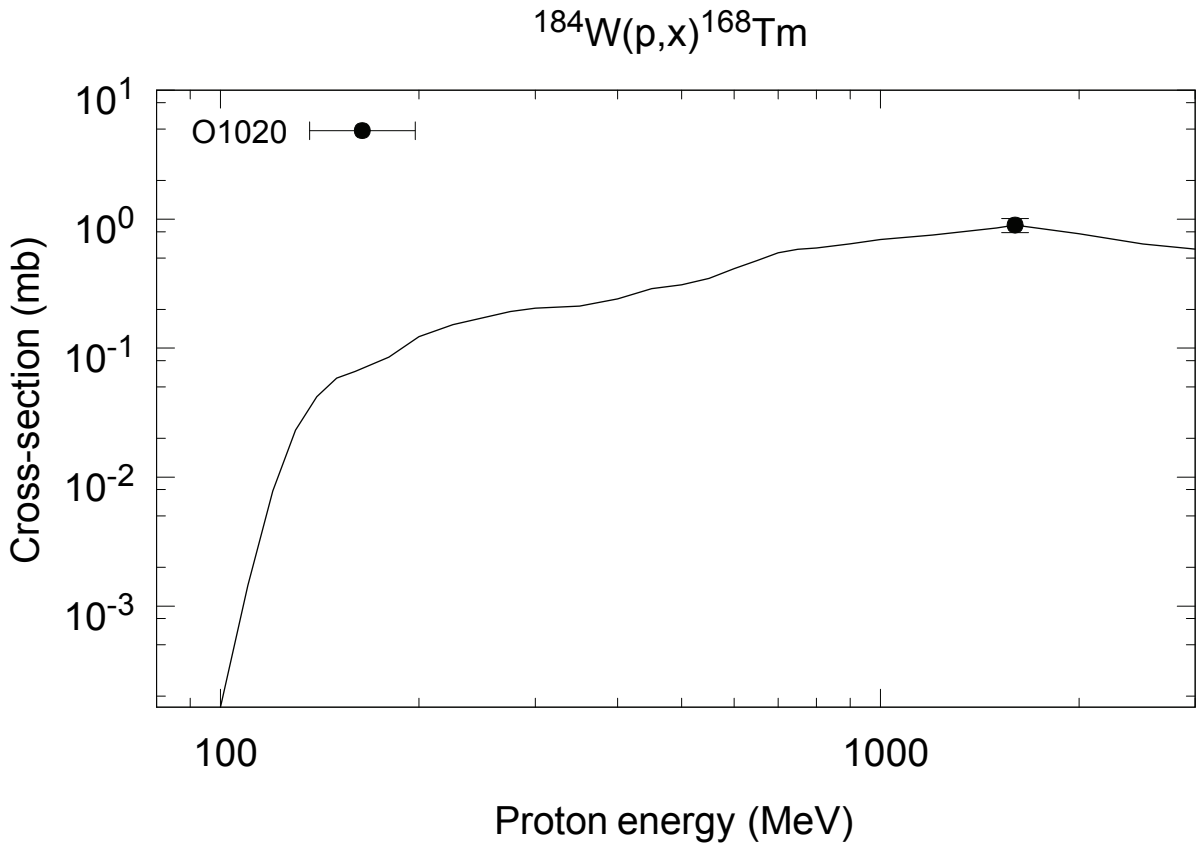

$^{184}W(p,x)^{144}Pm$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

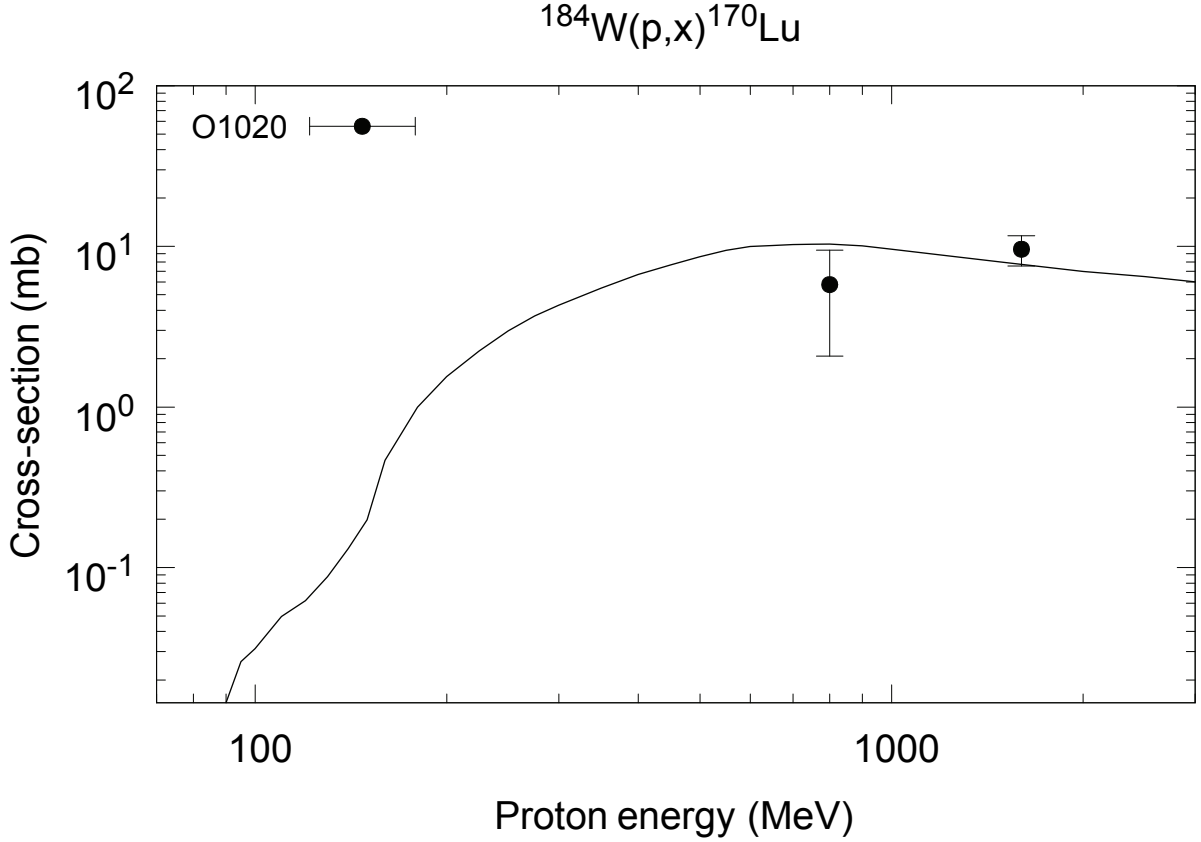

^{184}W(p,x)^{146}Eu
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

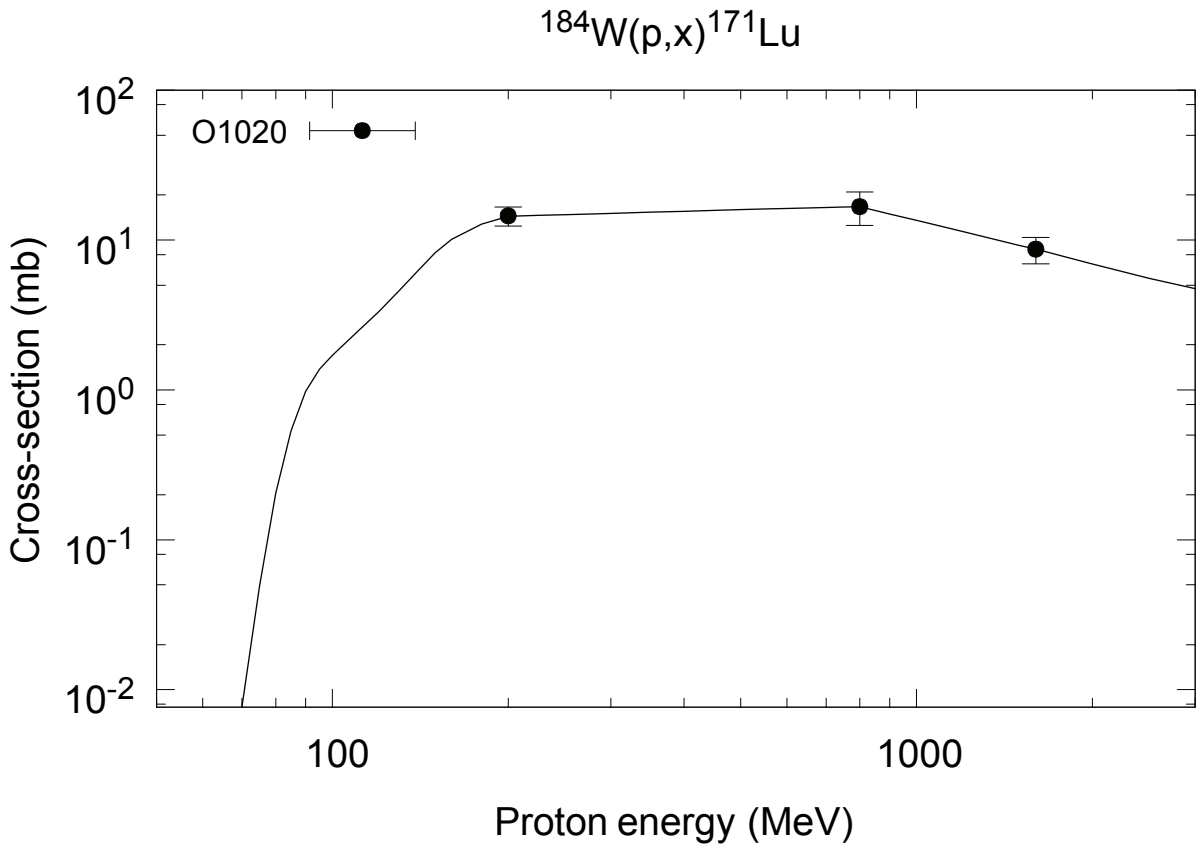

^{184}W(p,x)^{148}Eu
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

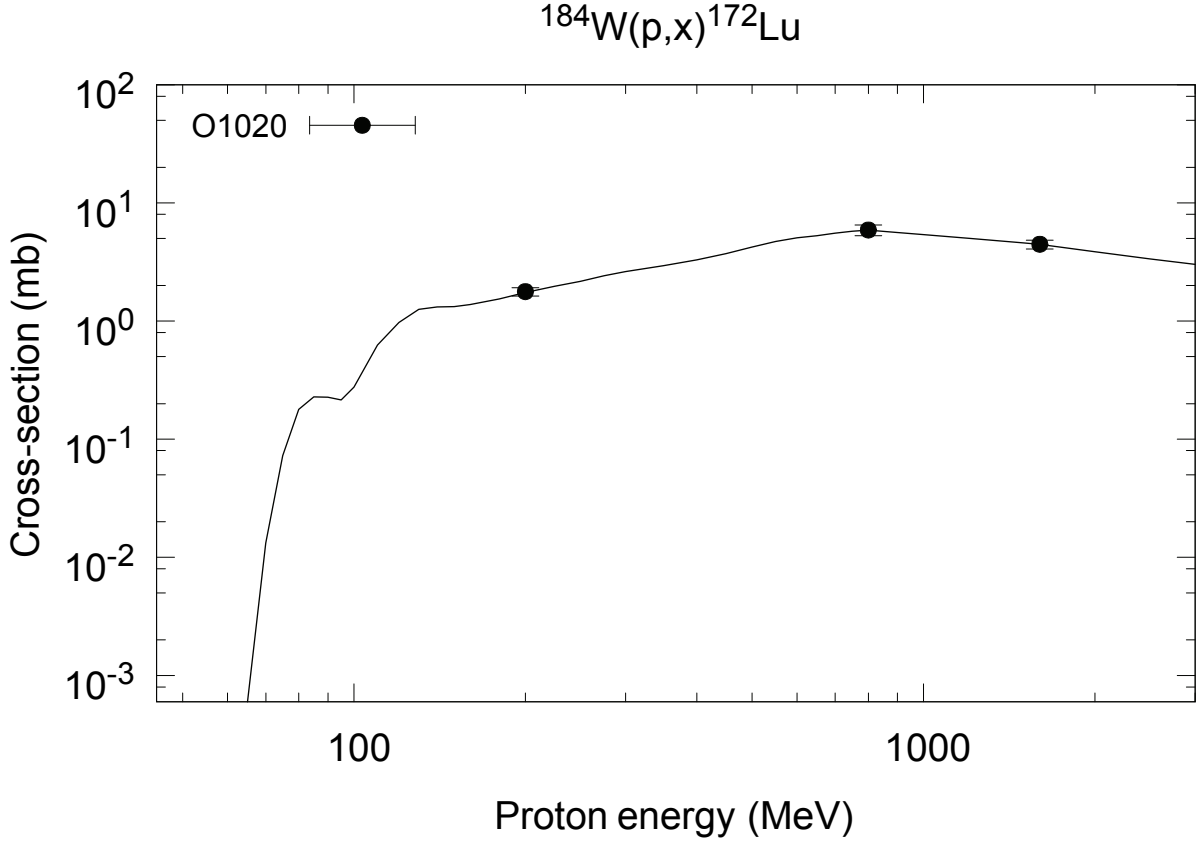

^{184}W(p,x)^{156}Ho
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

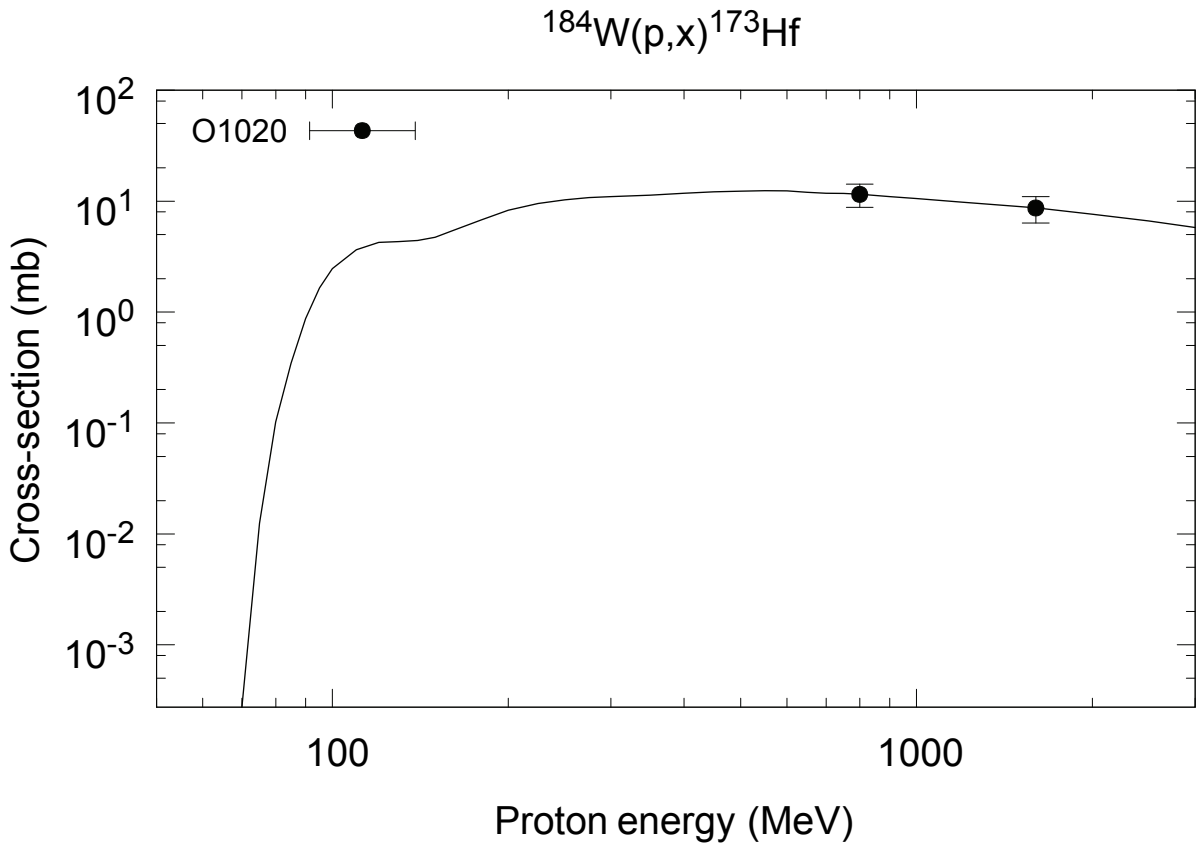

^{184}W(p,x)^{166}Tm
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

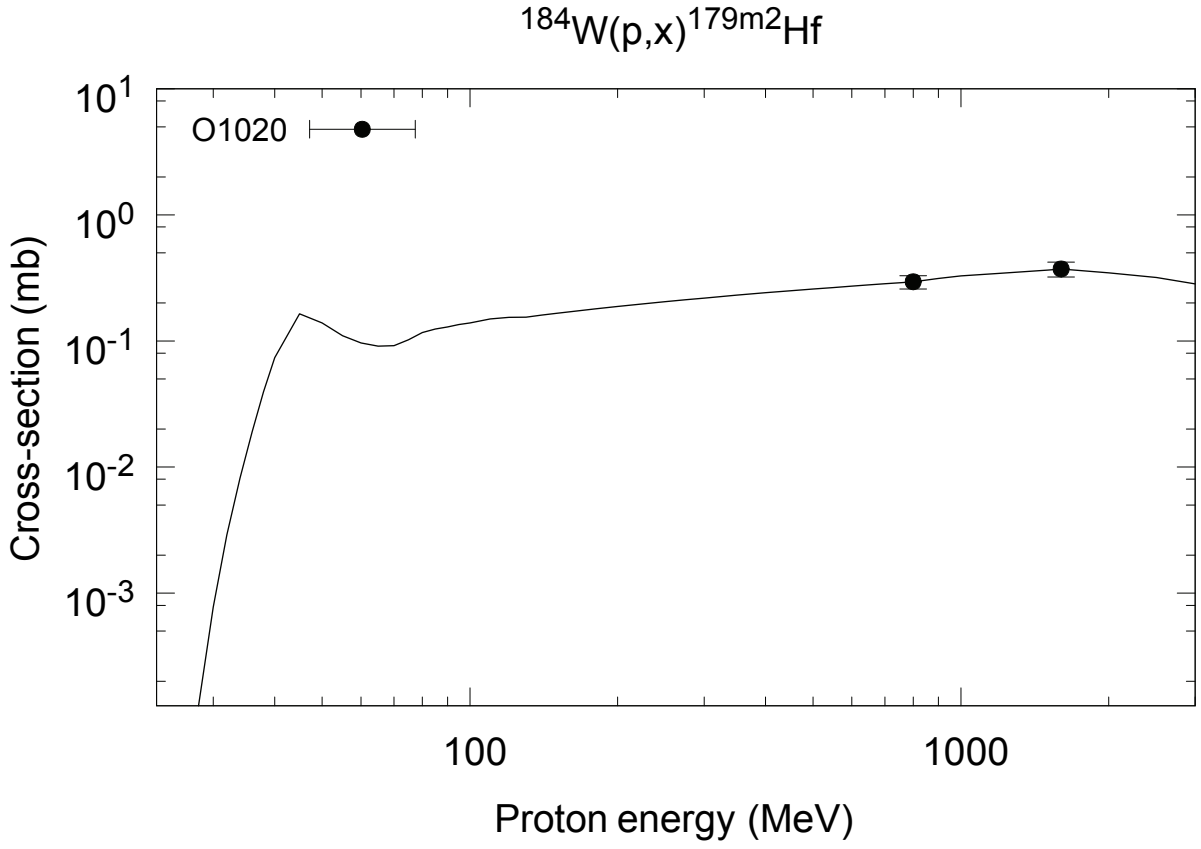

^{184}W(p,x)^{168}Tm
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

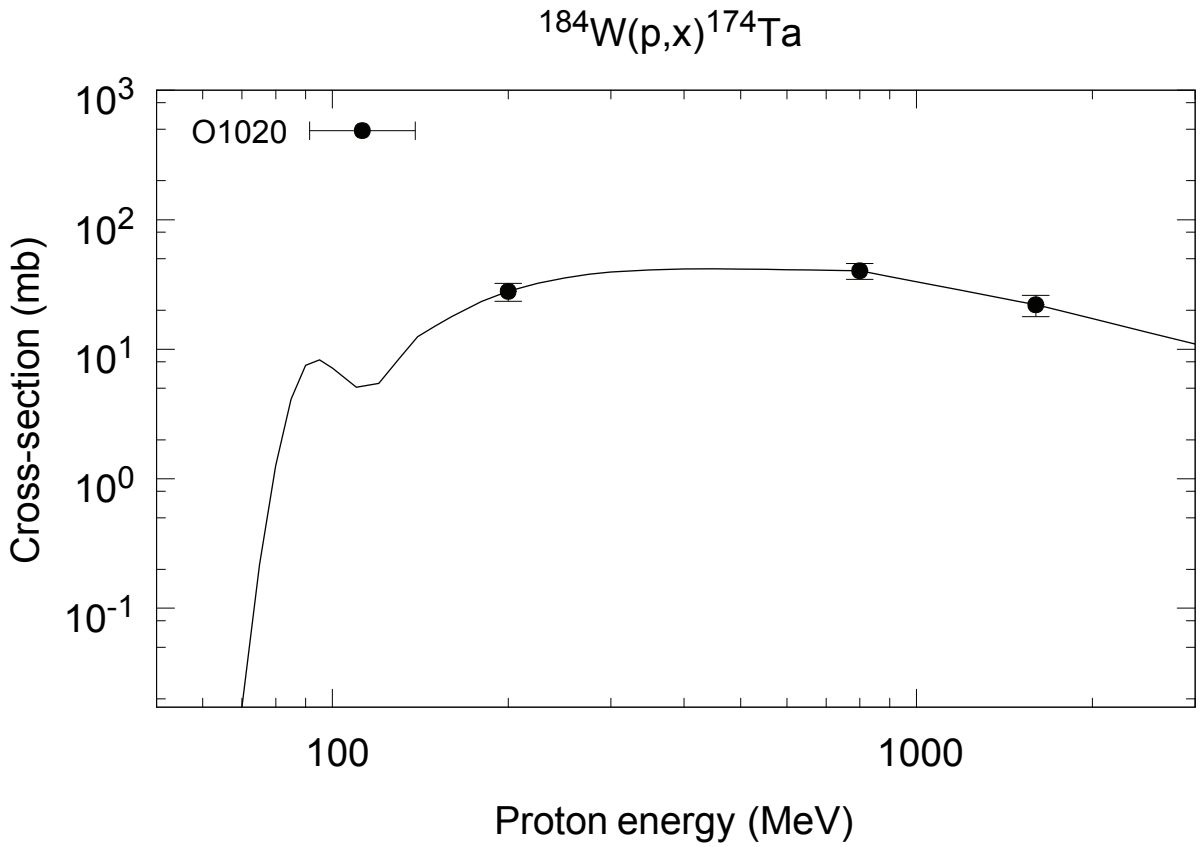

^{184}W(p,x)^{170}Lu
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

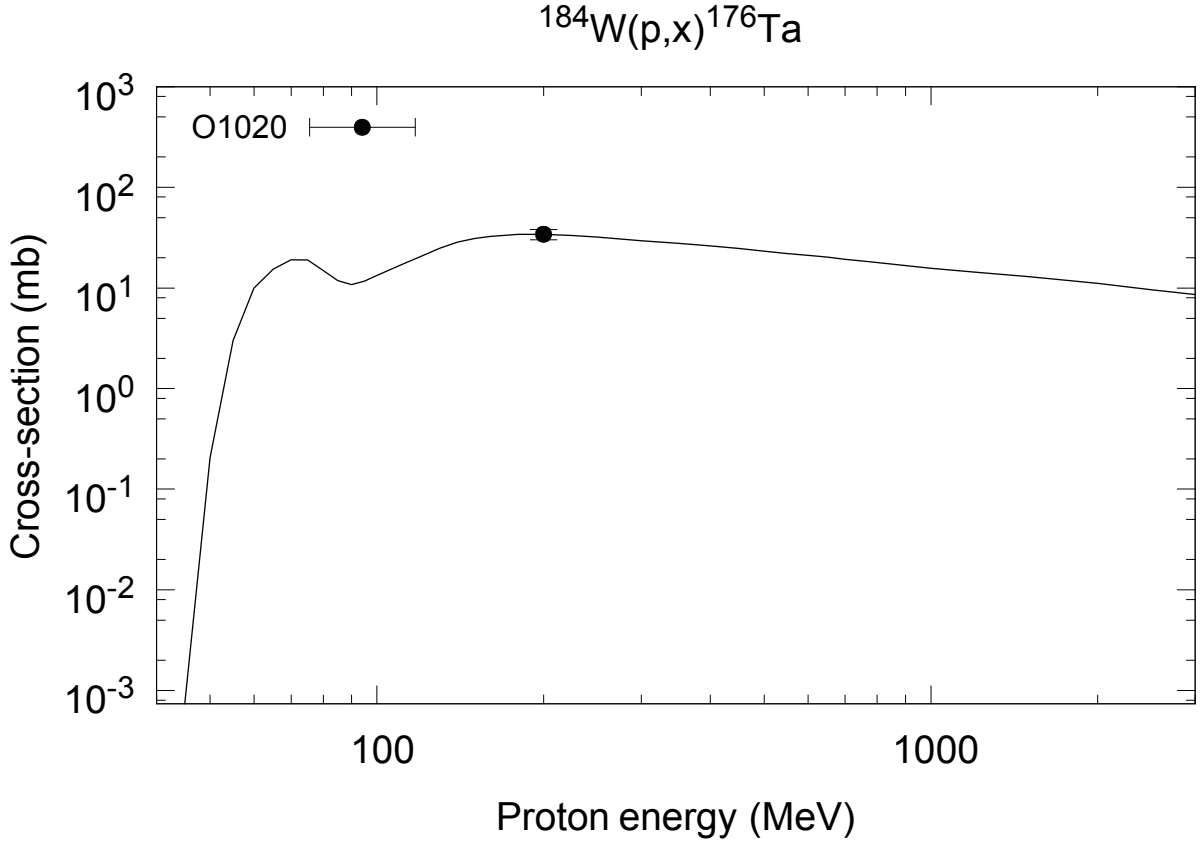

$^{184}W(p,x)^{171}Lu$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

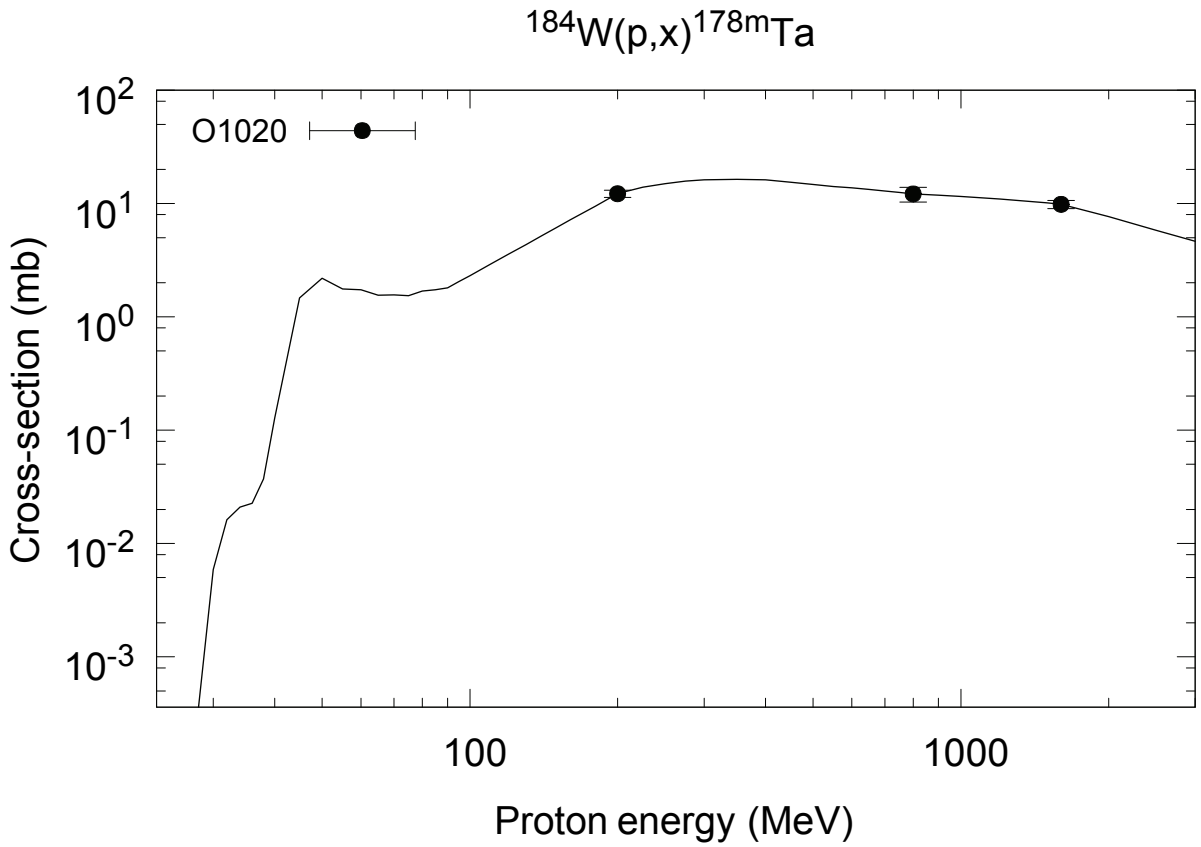

$^{184}W(p,x)^{172}Lu$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

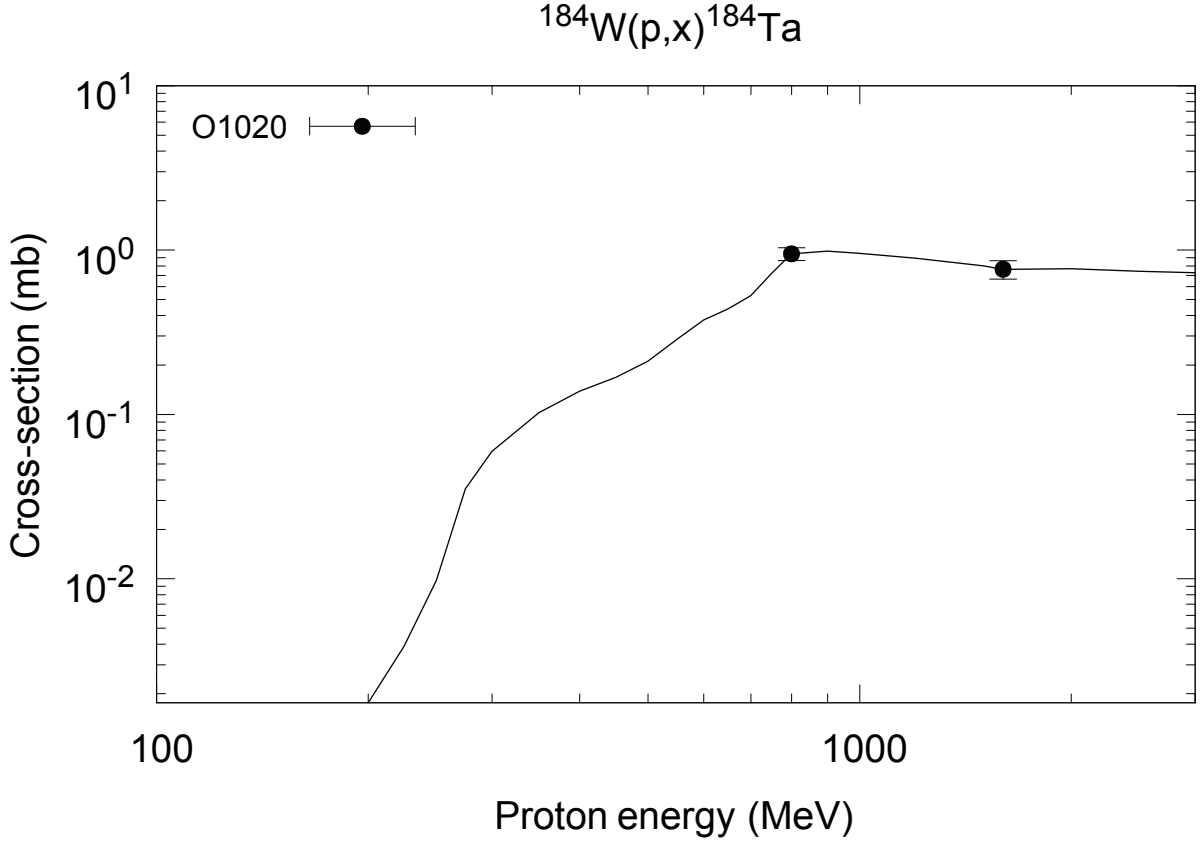

$^{184}W(p,x)^{173}Hf$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

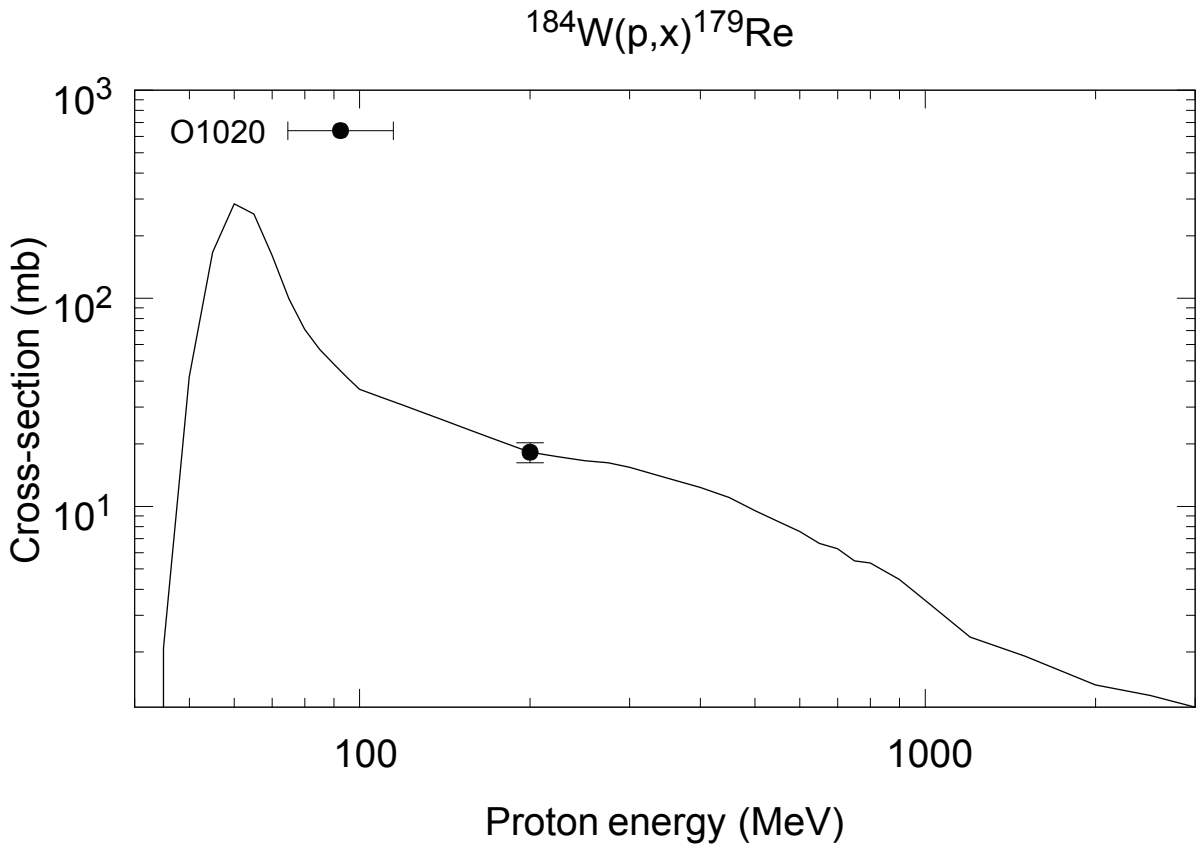

$^{184}W(p,x)^{179m2}Hf$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

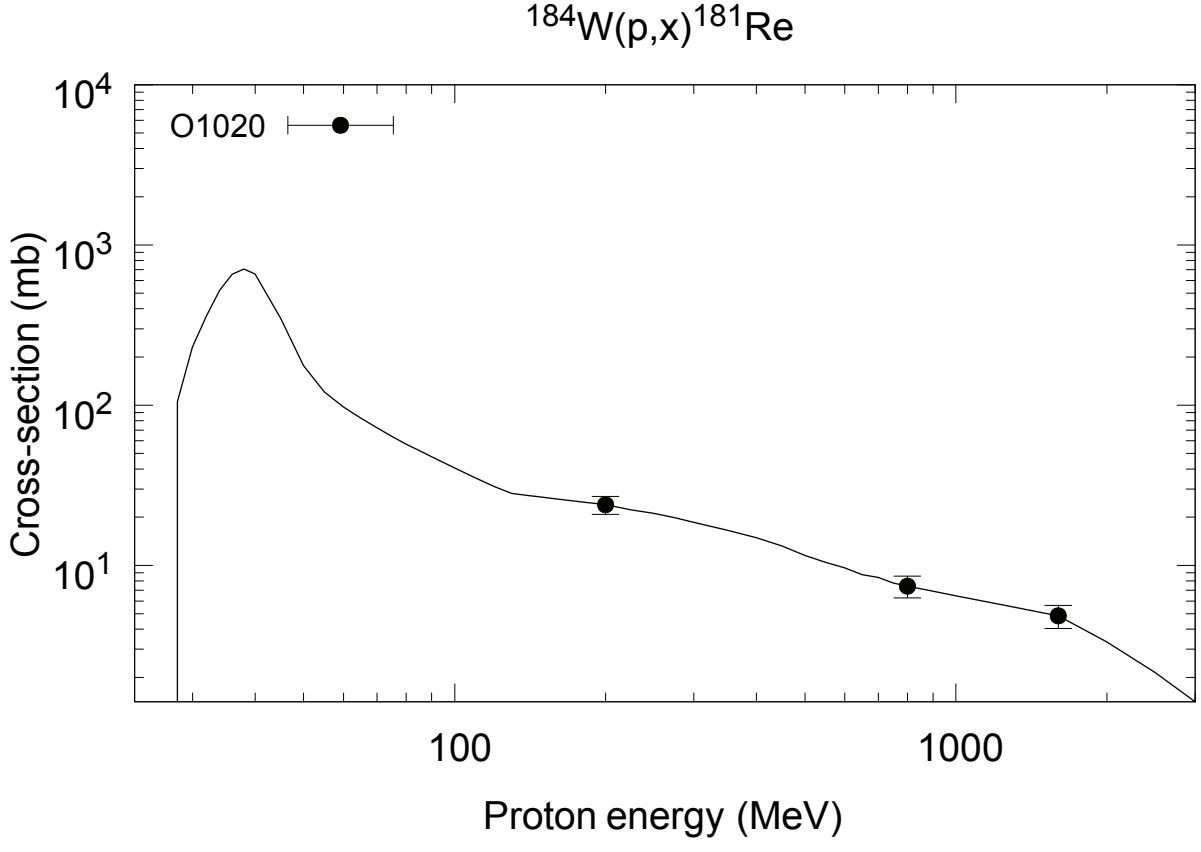

^{184}W(p,x)^{174}Ta
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

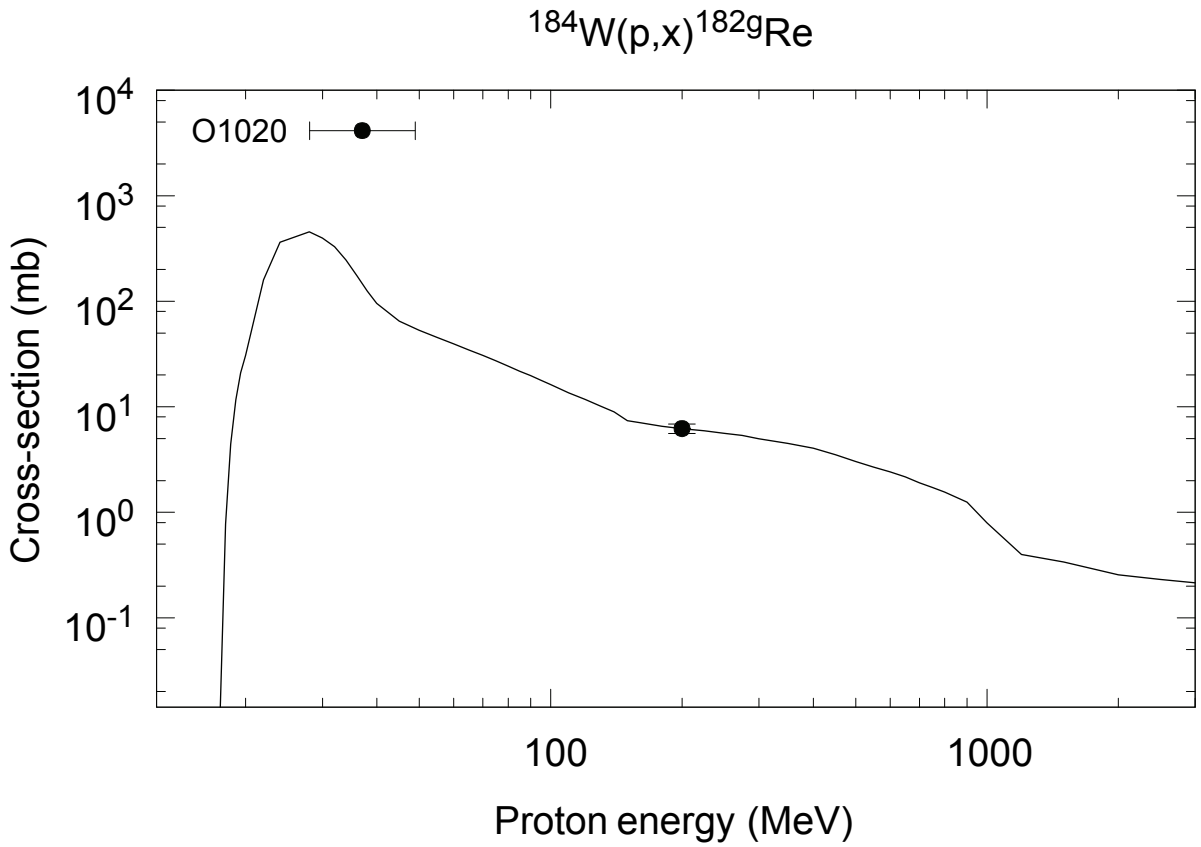

^{184}W(p,x)^{176}Ta
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

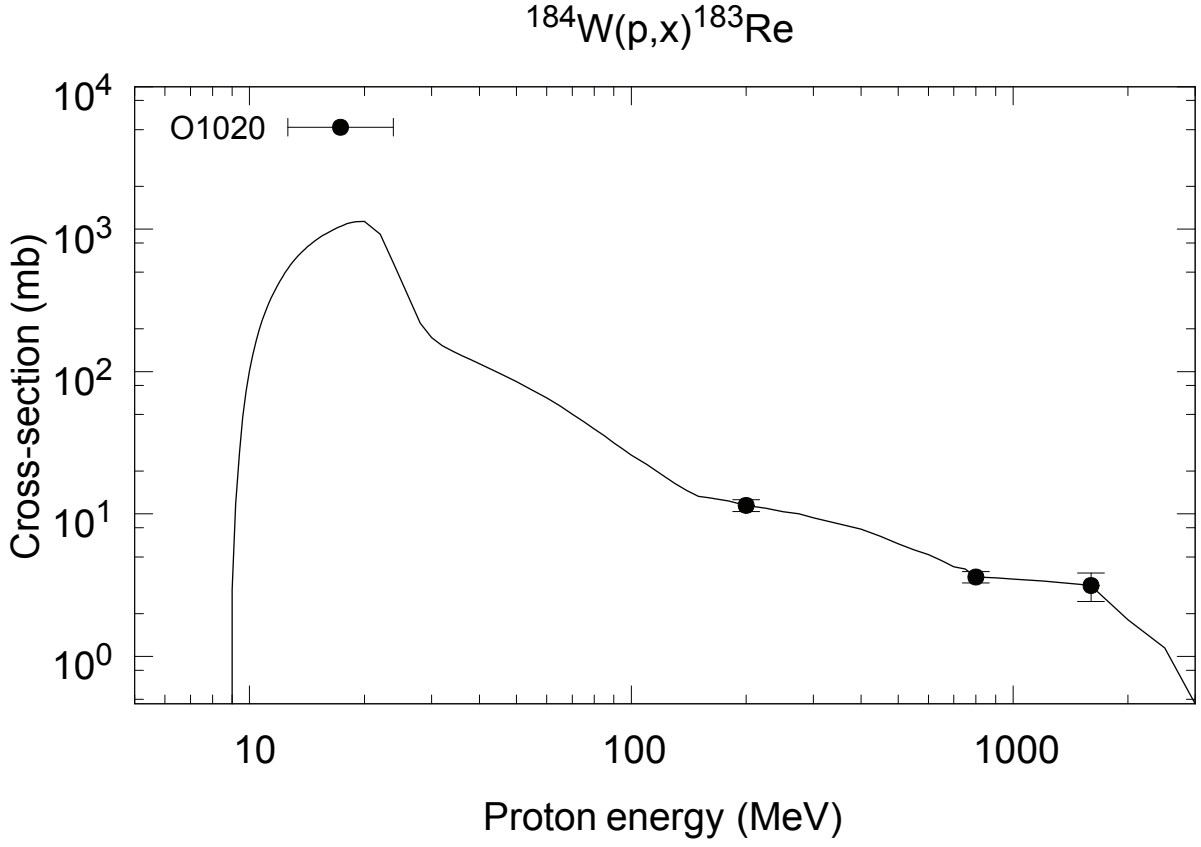

$^{184}W(p,x)^{178m}Ta$
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

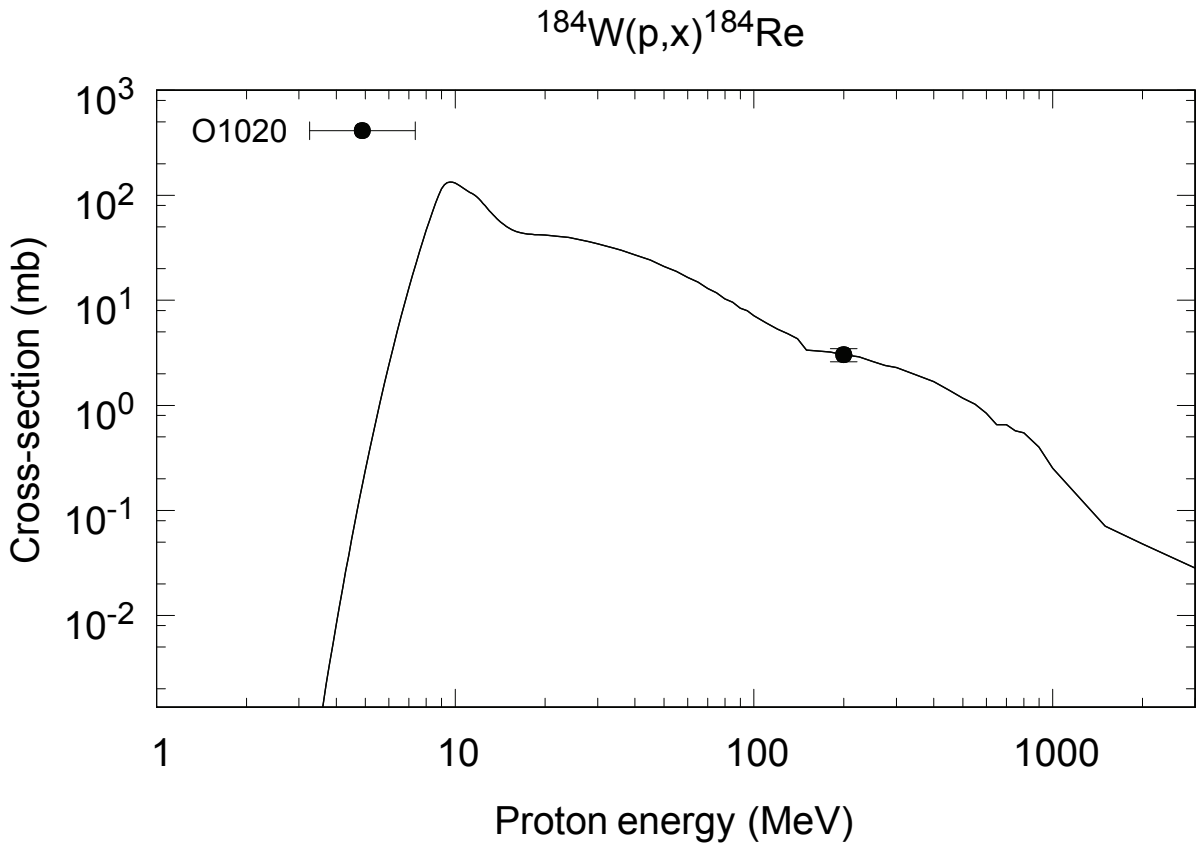

$^{184}W(p,x)^{184}Ta$
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

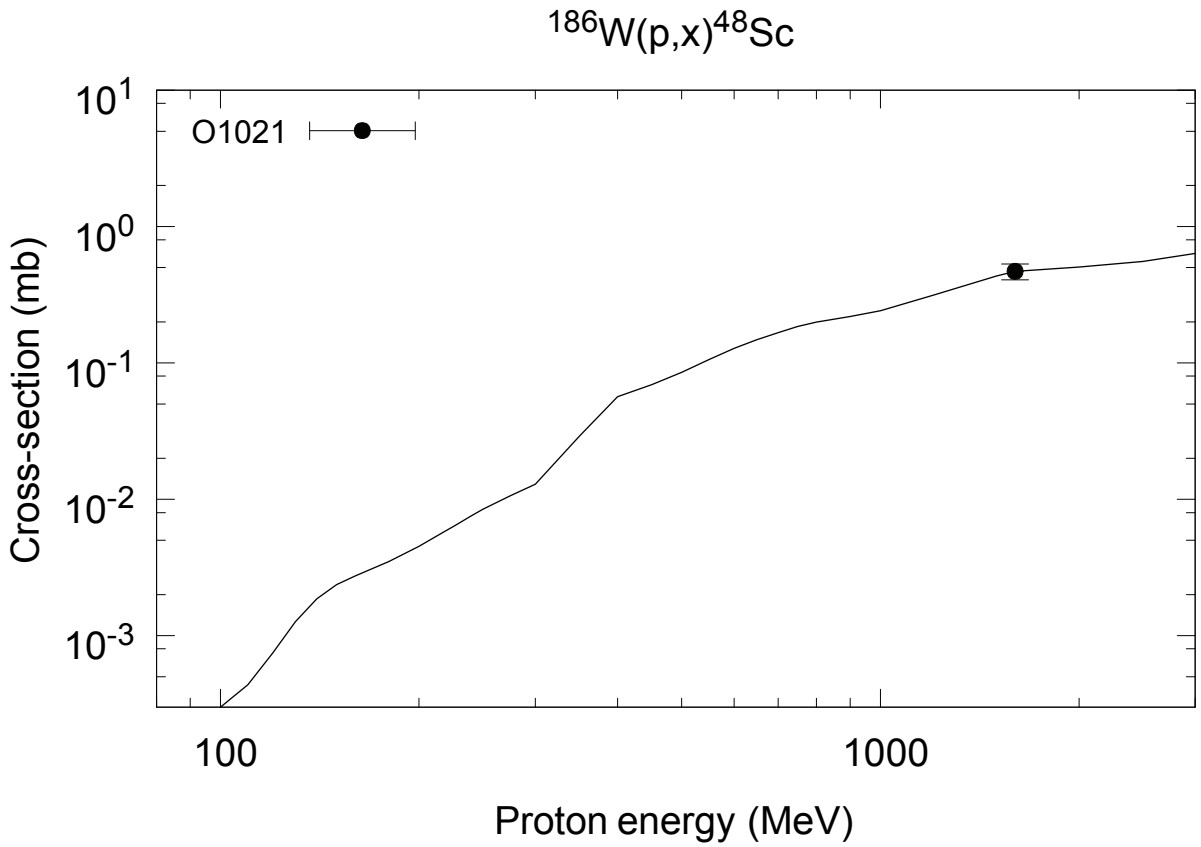

$^{184}W(p,x)^{179}Re$
O1020
Cross-section (mb)
10^3
10^2
10^1
100
1000
Proton energy (MeV)

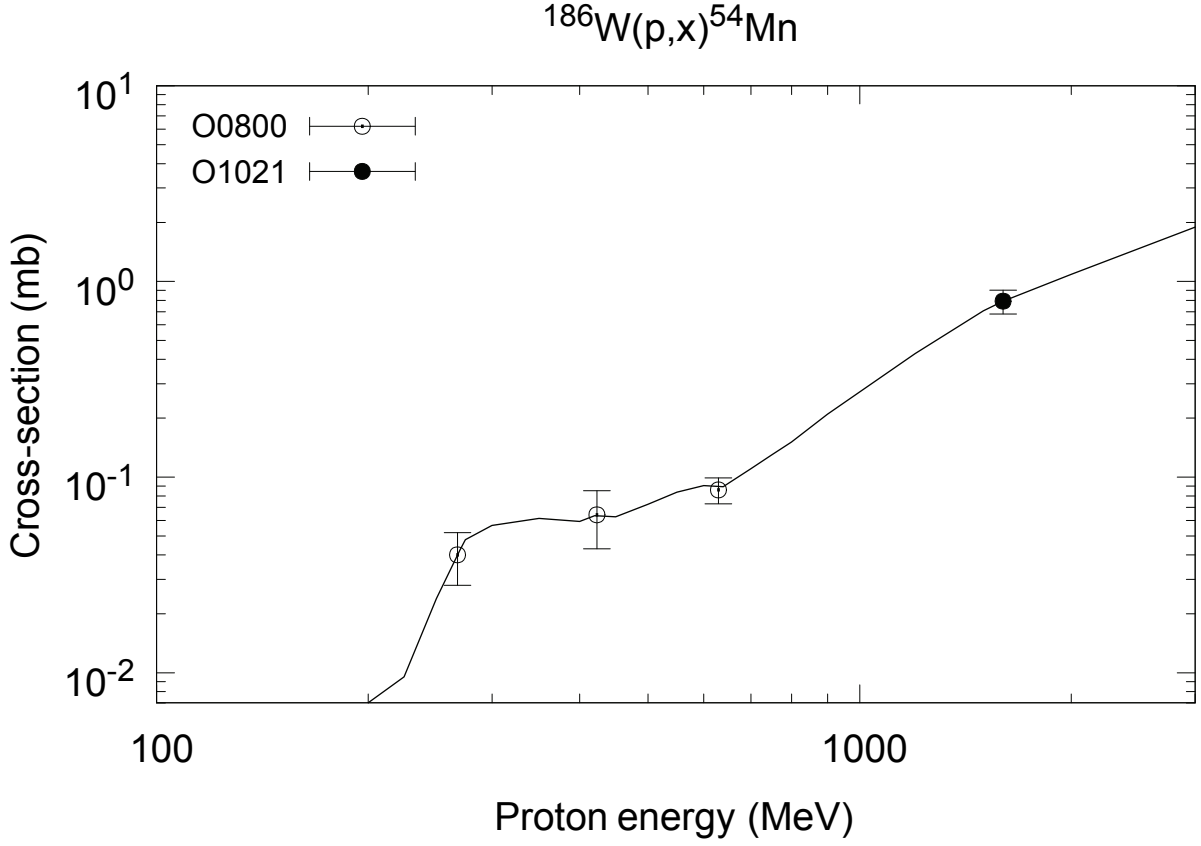

$^{184}W(p,x)^{181}Re$
O1020
Cross-section (mb)
10^4
10^3
10^2
10^1
100
1000
Proton energy (MeV)

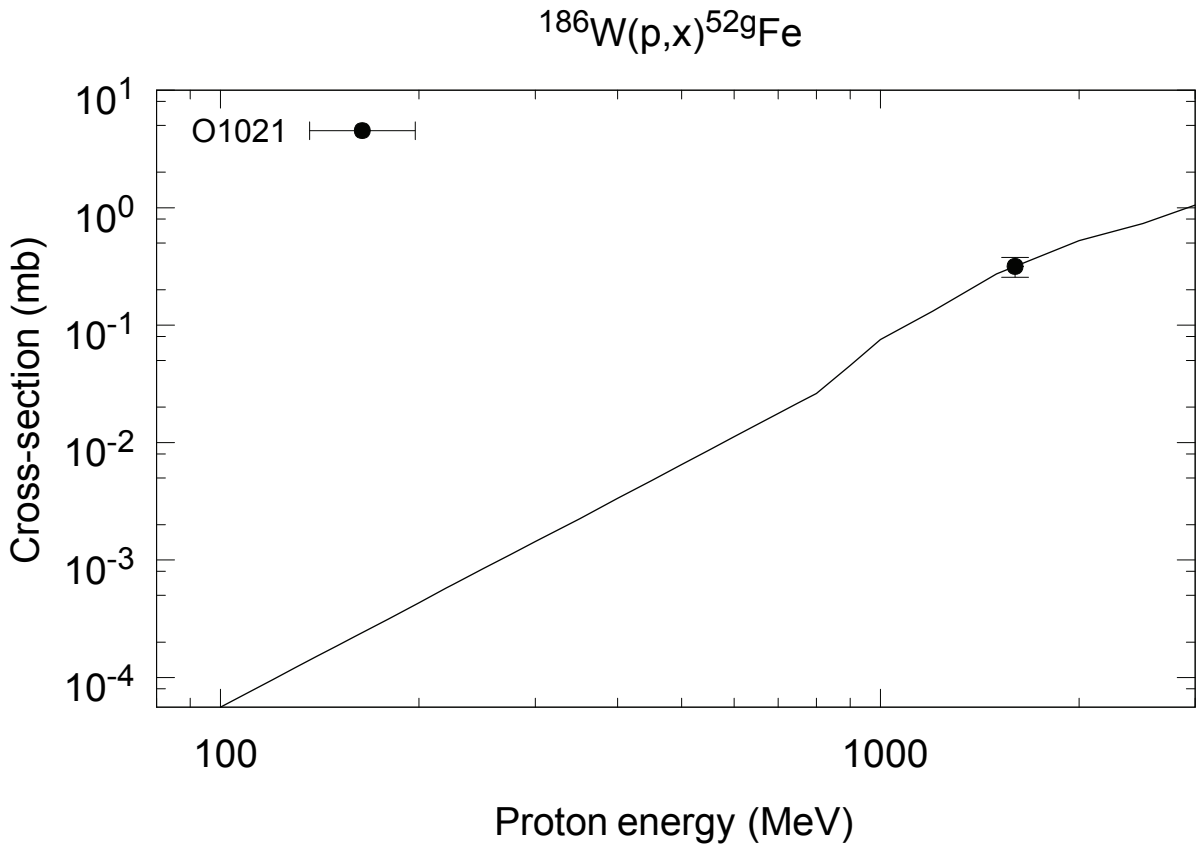

$^{184}W(p,x)^{182g}Re$
O1020
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

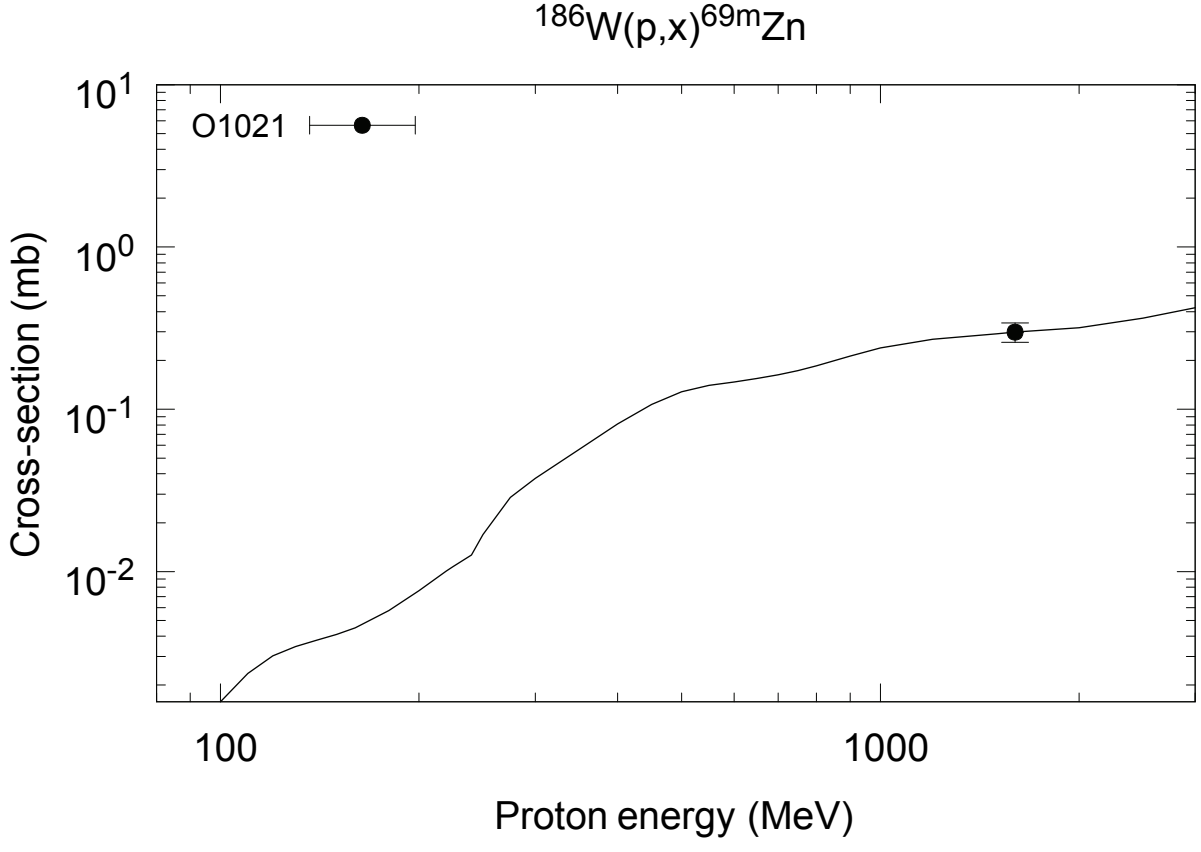

$^{184}W(p,x)^{183}Re$
O1020
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10
100
1000
Proton energy (MeV)

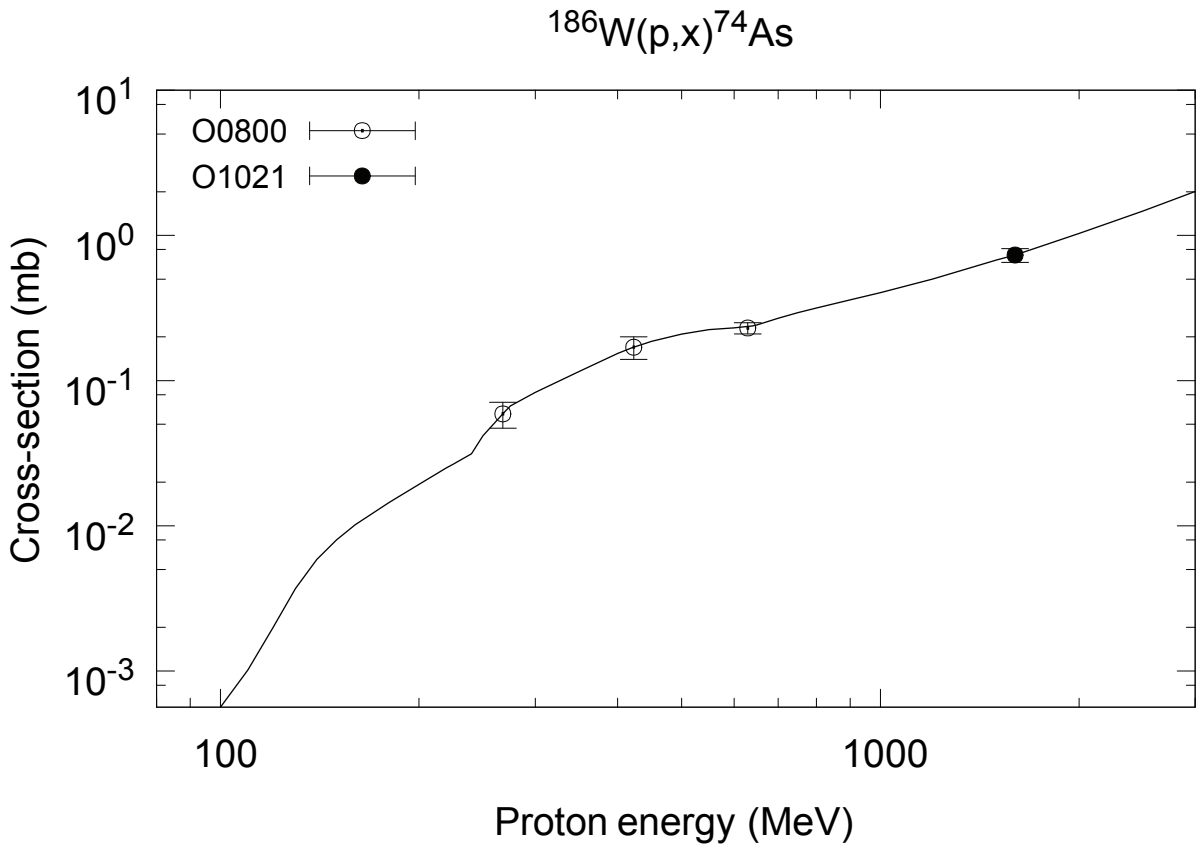

^{184}W(p,x)^{184}Re
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
1
10
100
1000
Proton energy (MeV)

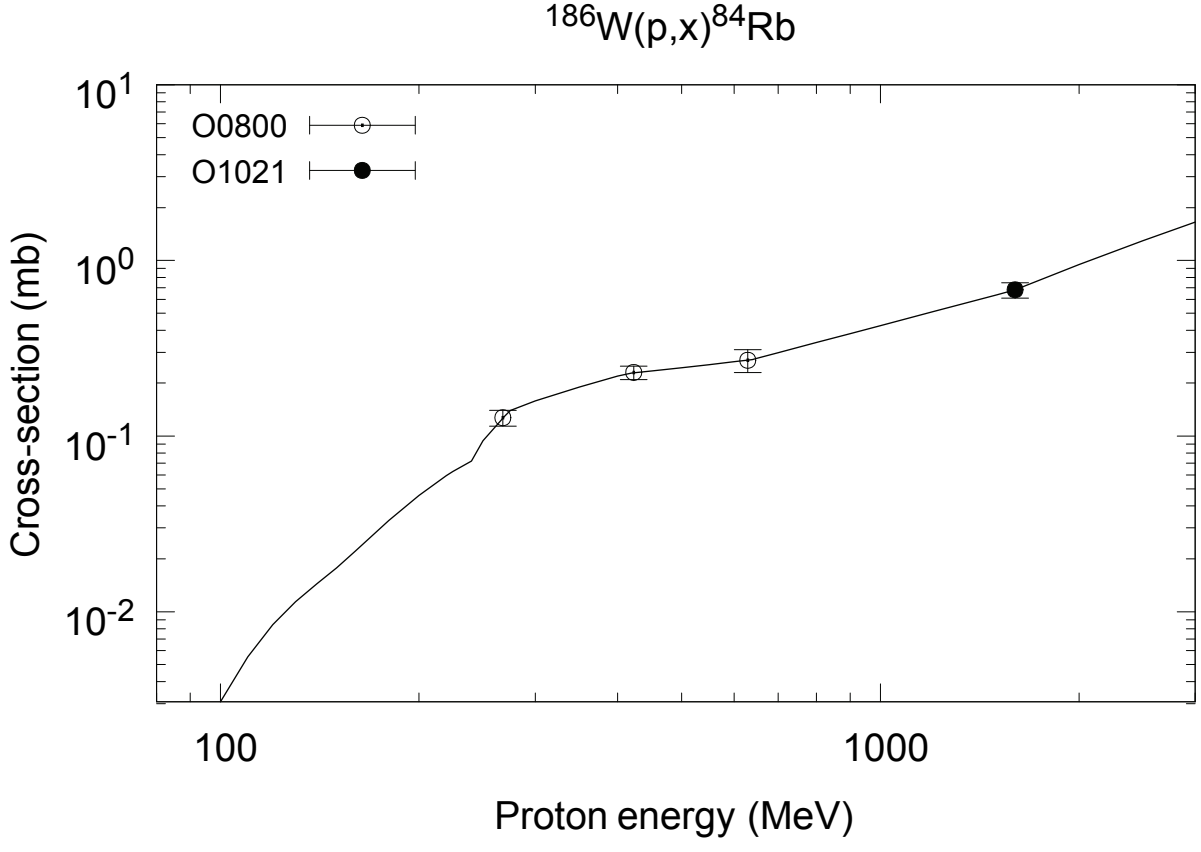

$^{186}W(p,x)^{48}Sc$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

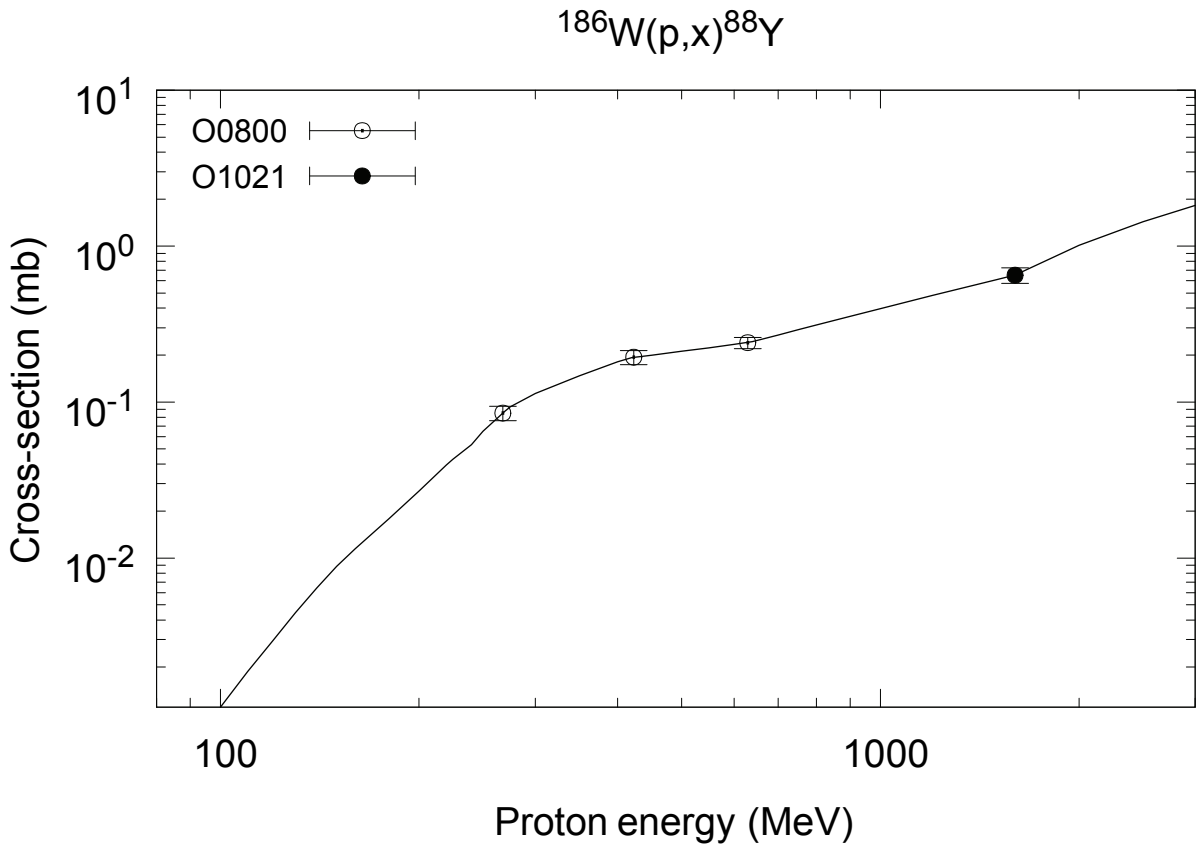

$^{186}W(p,x)^{54}Mn$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

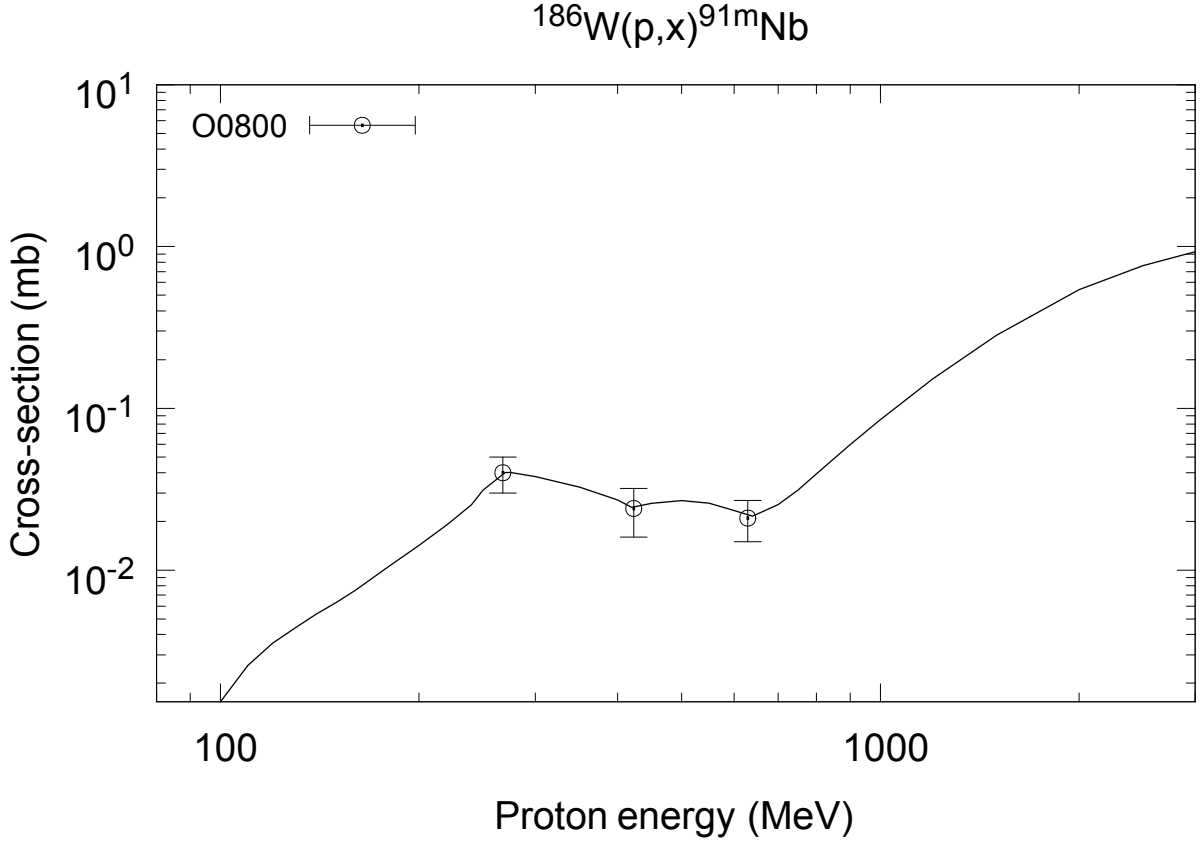

$^{186}W(p,x)^{52g}Fe$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

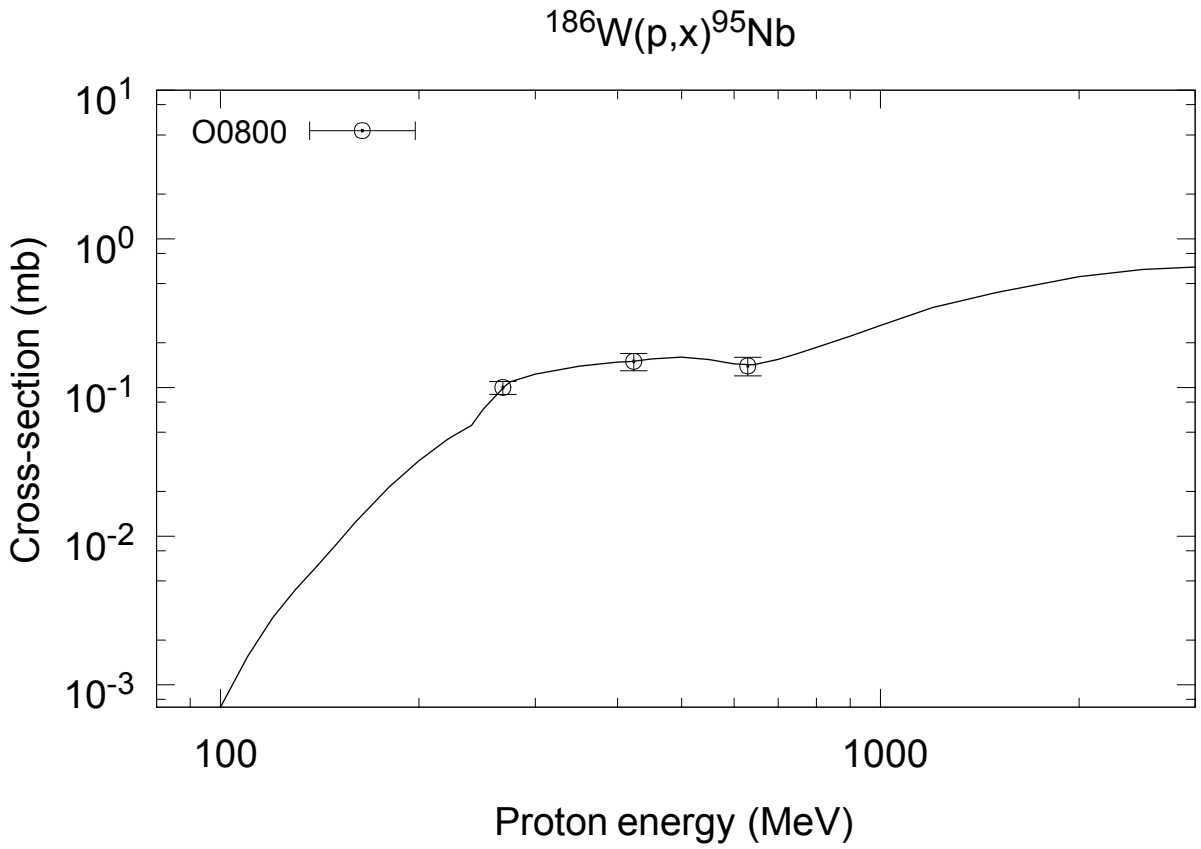

$^{186}W(p,x)^{69m}Zn$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

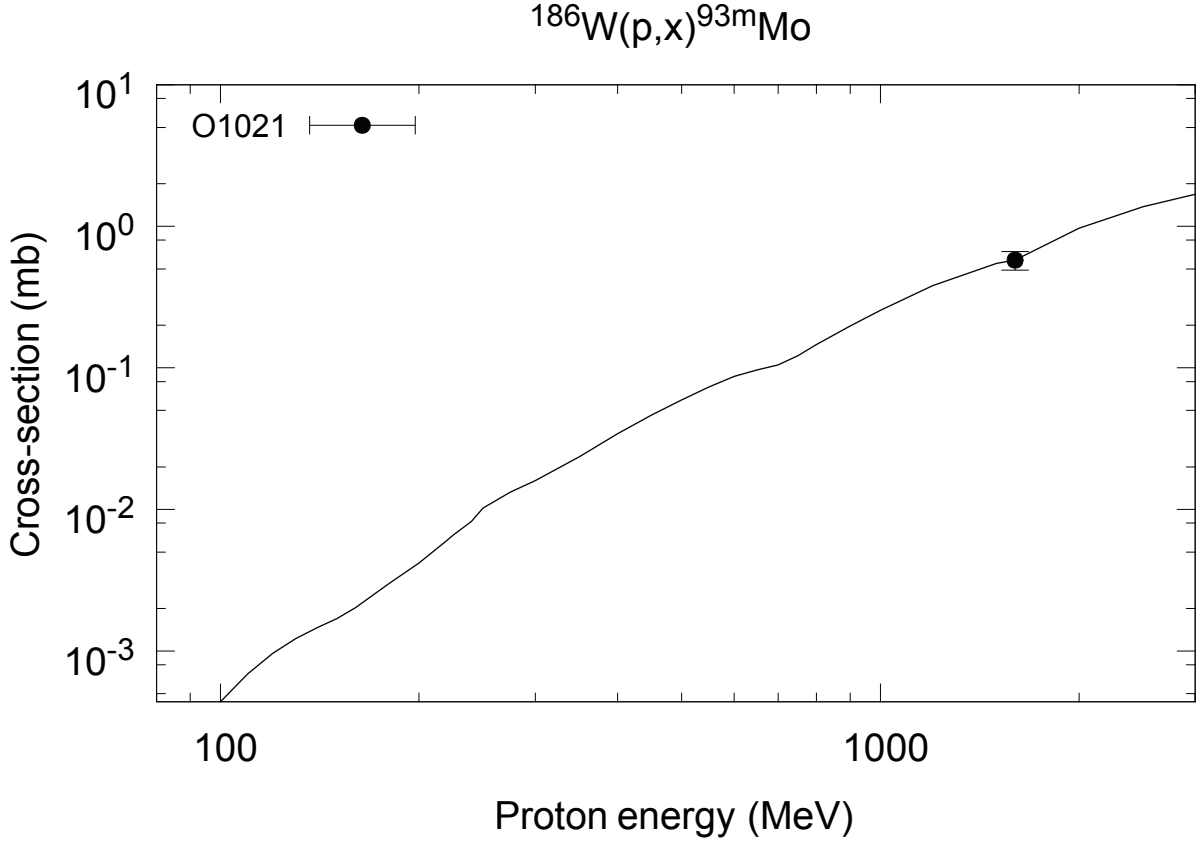

$^{186}W(p,x)^{74}As$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

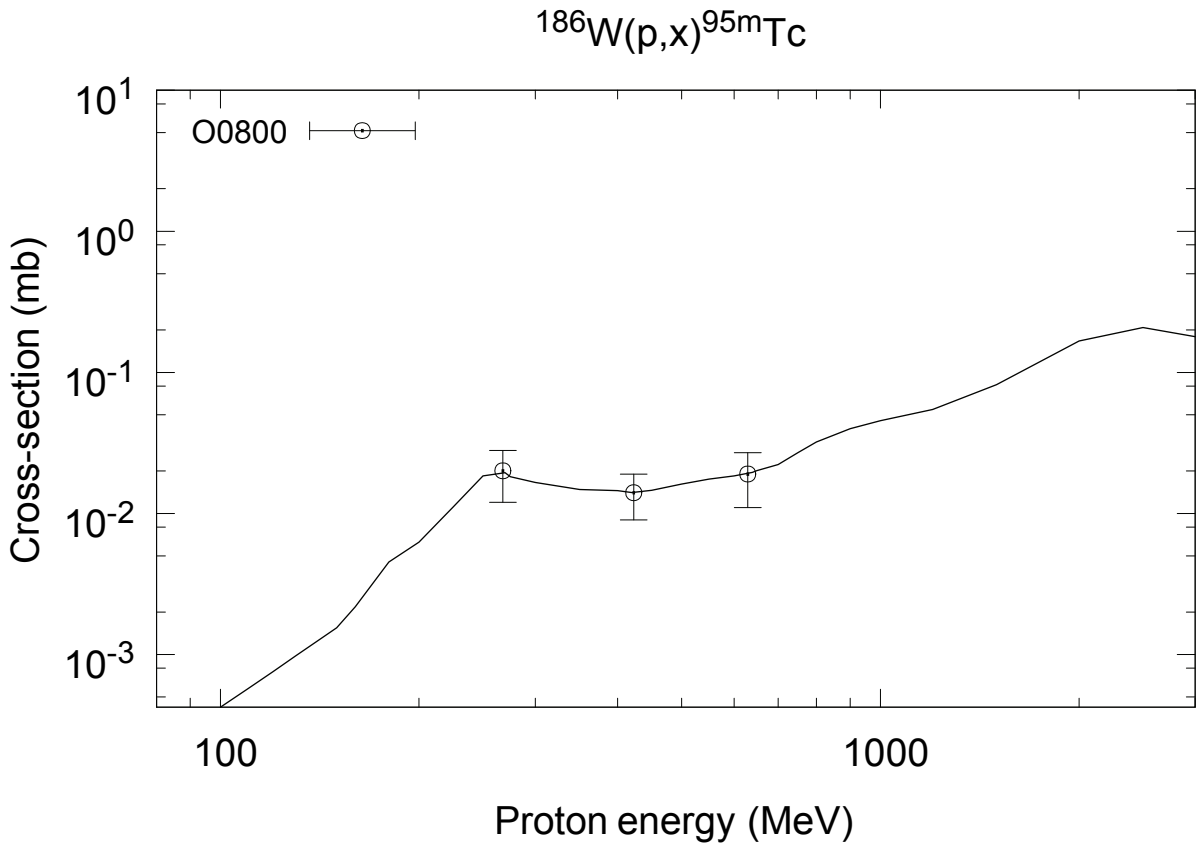

$^{186}W(p,x)^{84}Rb$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

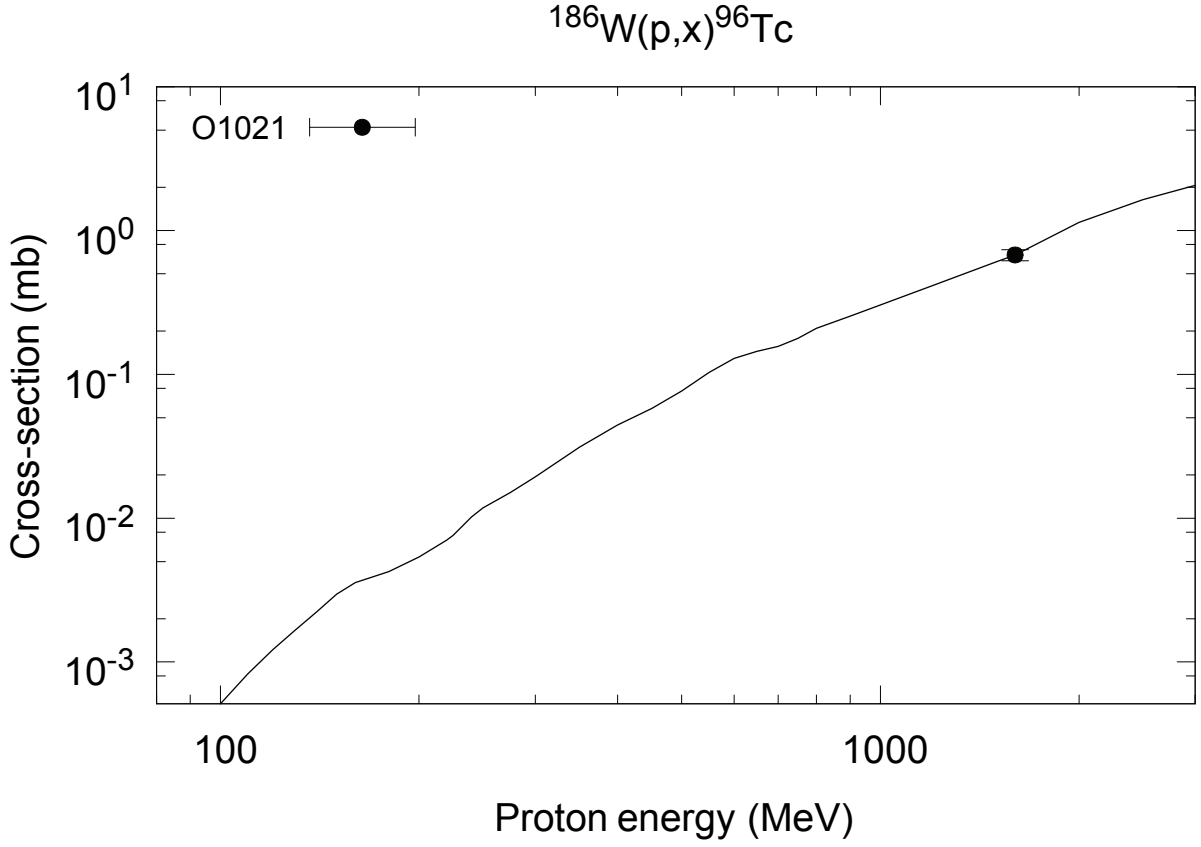

$^{186}W(p,x)^{88}Y$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

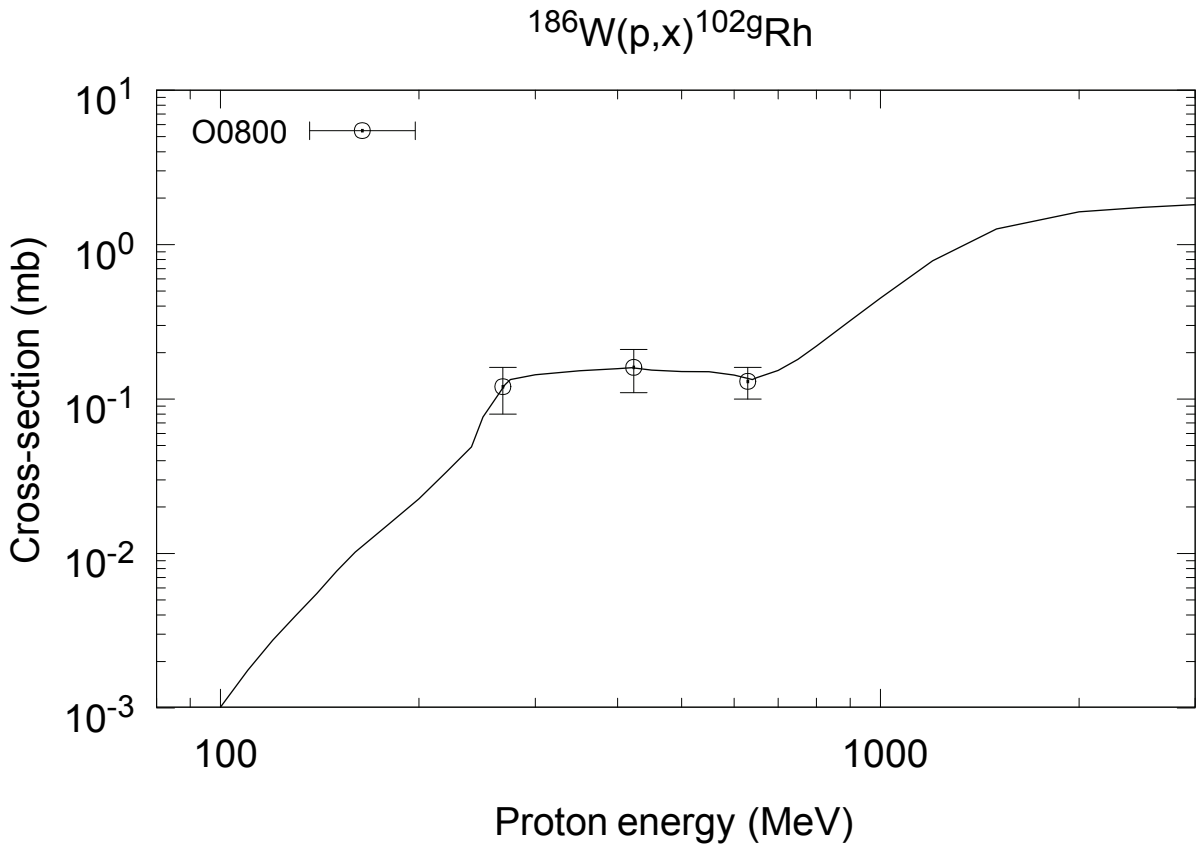

$^{186}W(p,x)^{91m}Nb$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

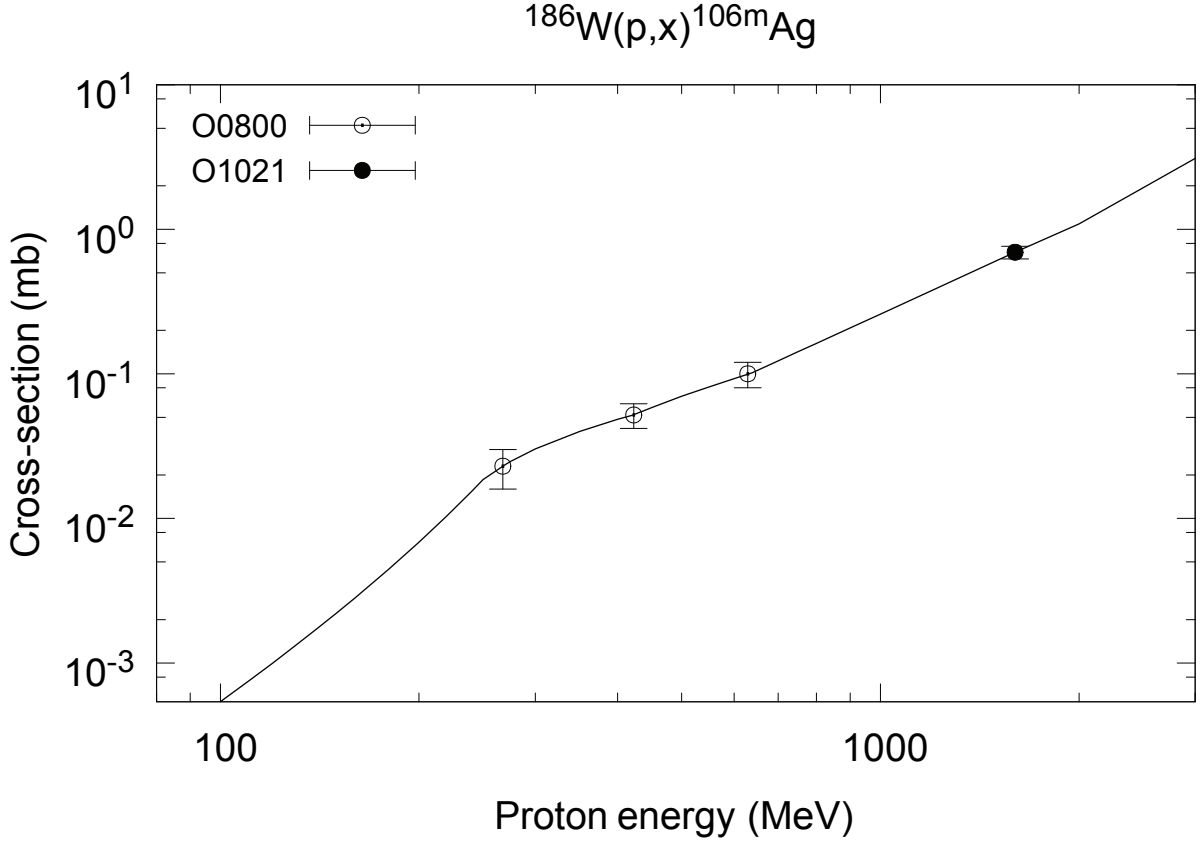

$^{186}W(p,x)^{95}Nb$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

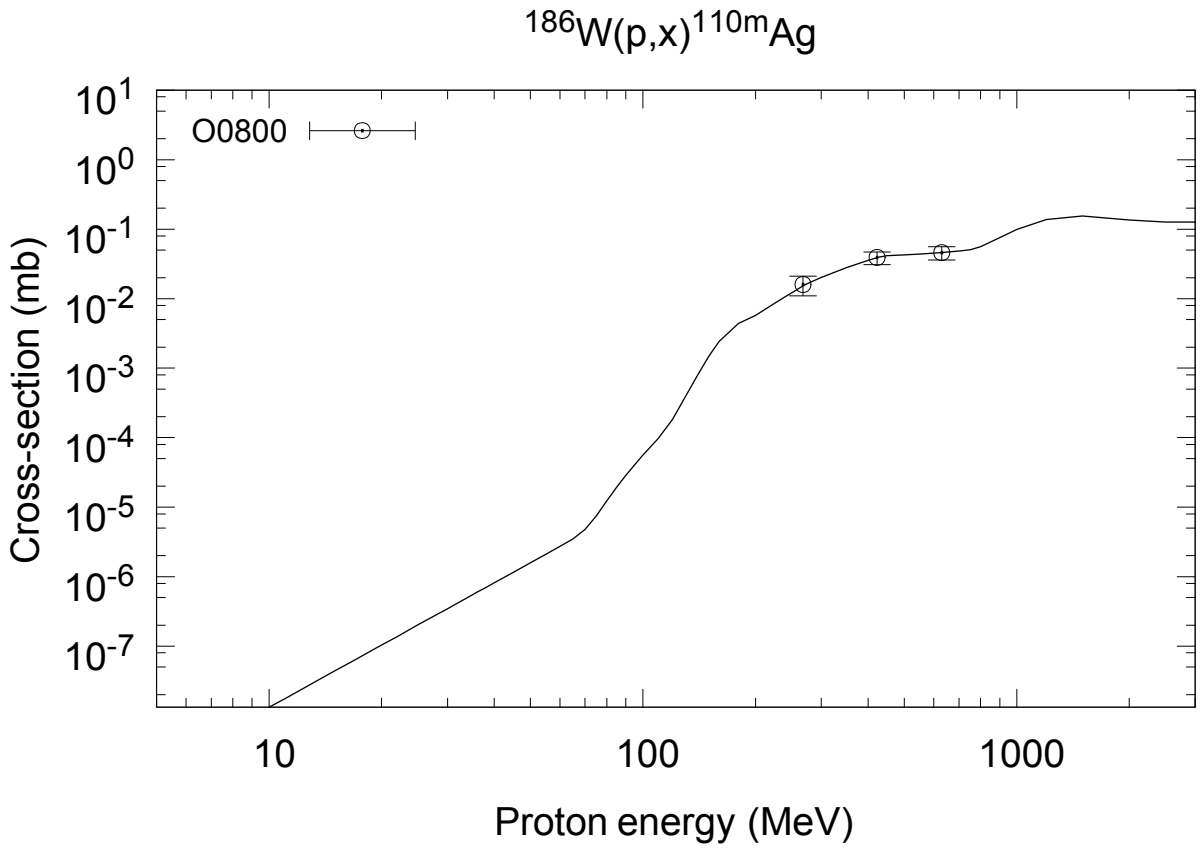

$^{186}W(p,x)^{93m}Mo$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

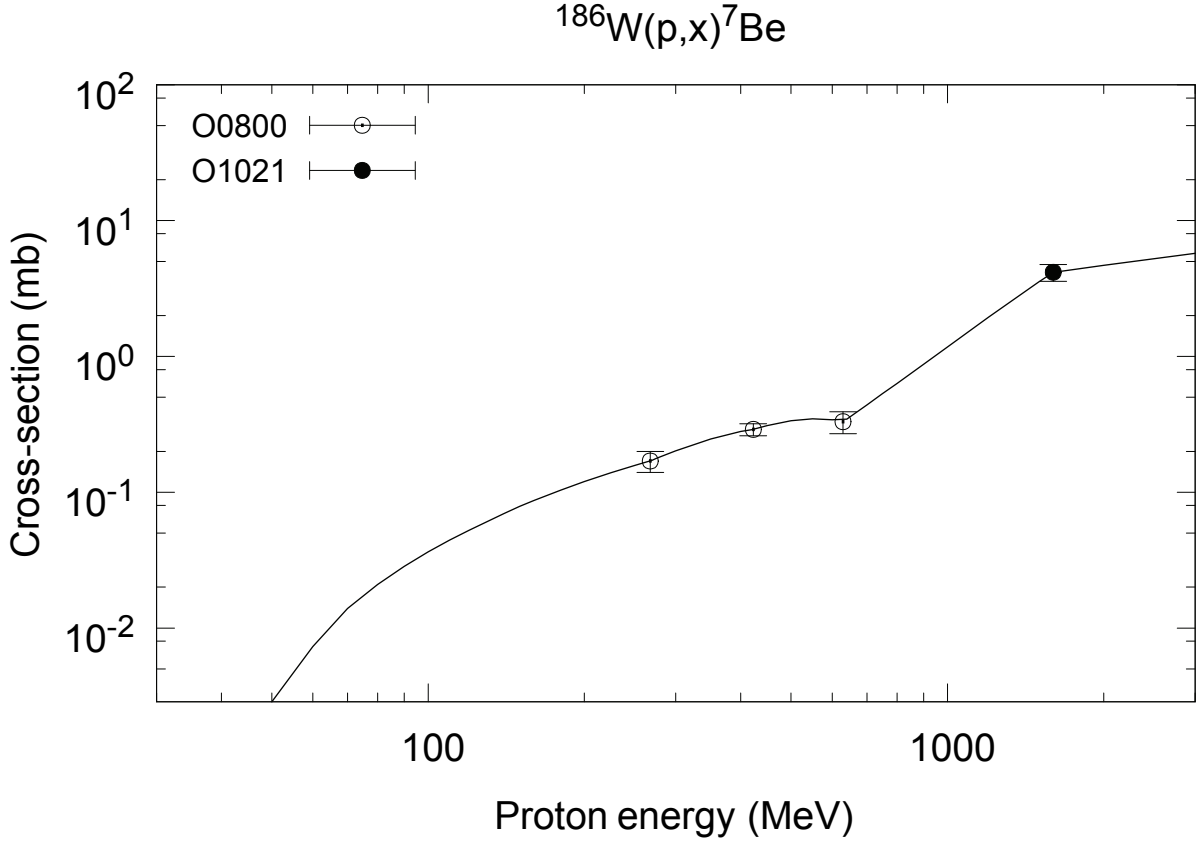

$^{186}W(p,x)^{95m}Tc$
O0800
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

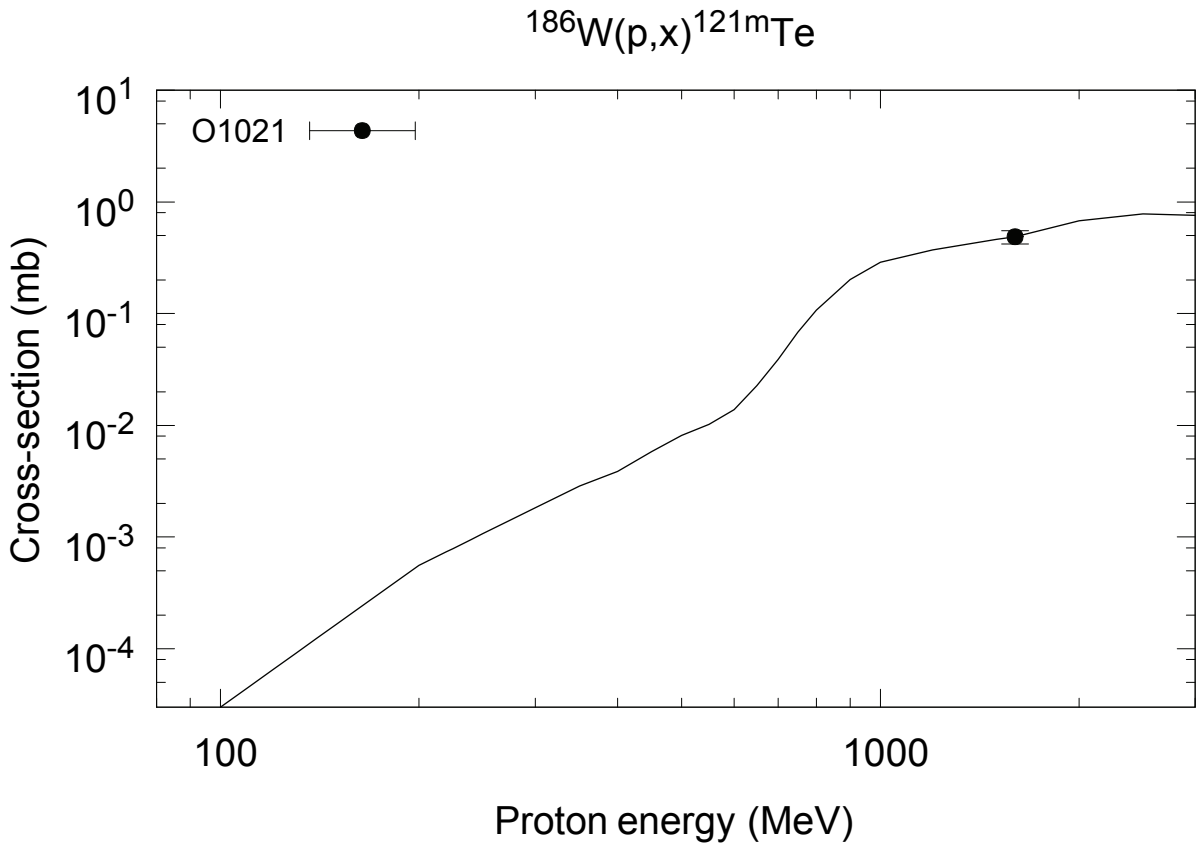

$^{186}W(p,x)^{96}Tc$
O1021
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
Cross-section (mb)
100
1000
Proton energy (MeV)

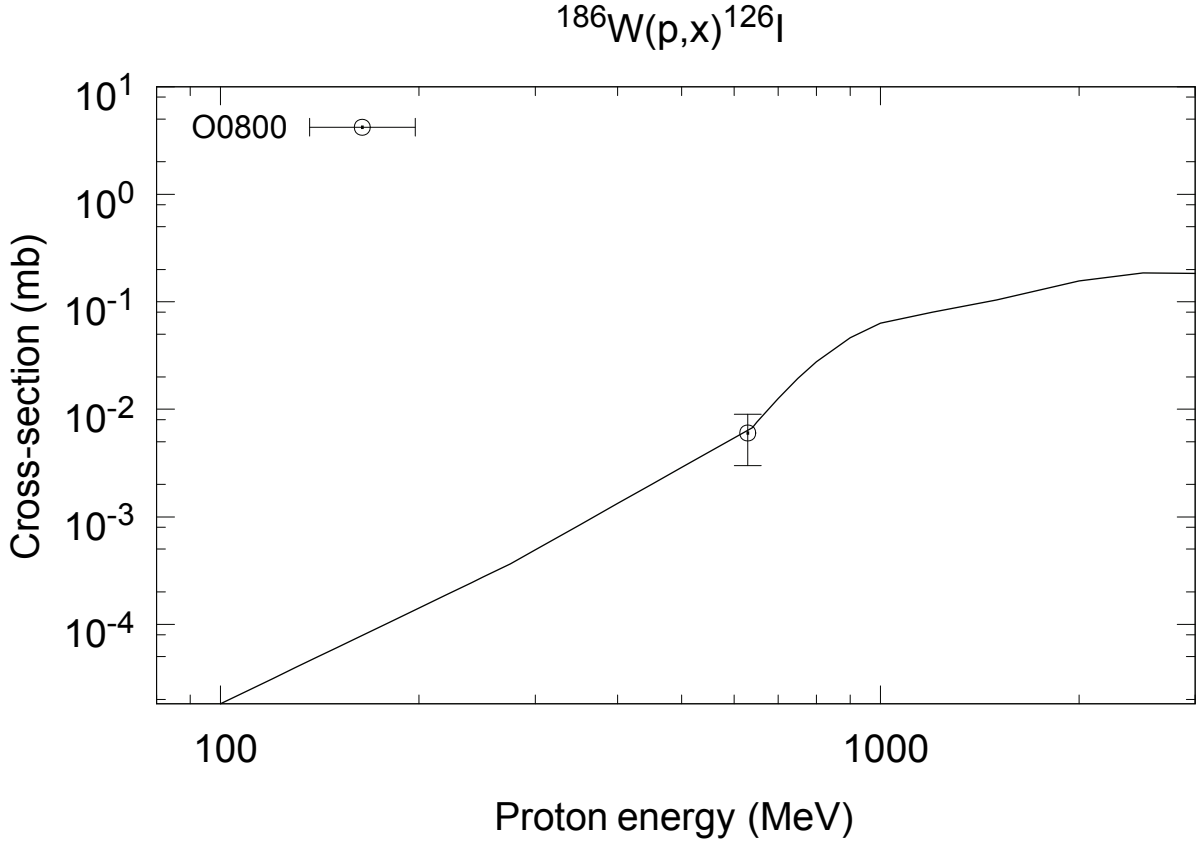

$^{186}W(p,x)^{102g}Rh$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

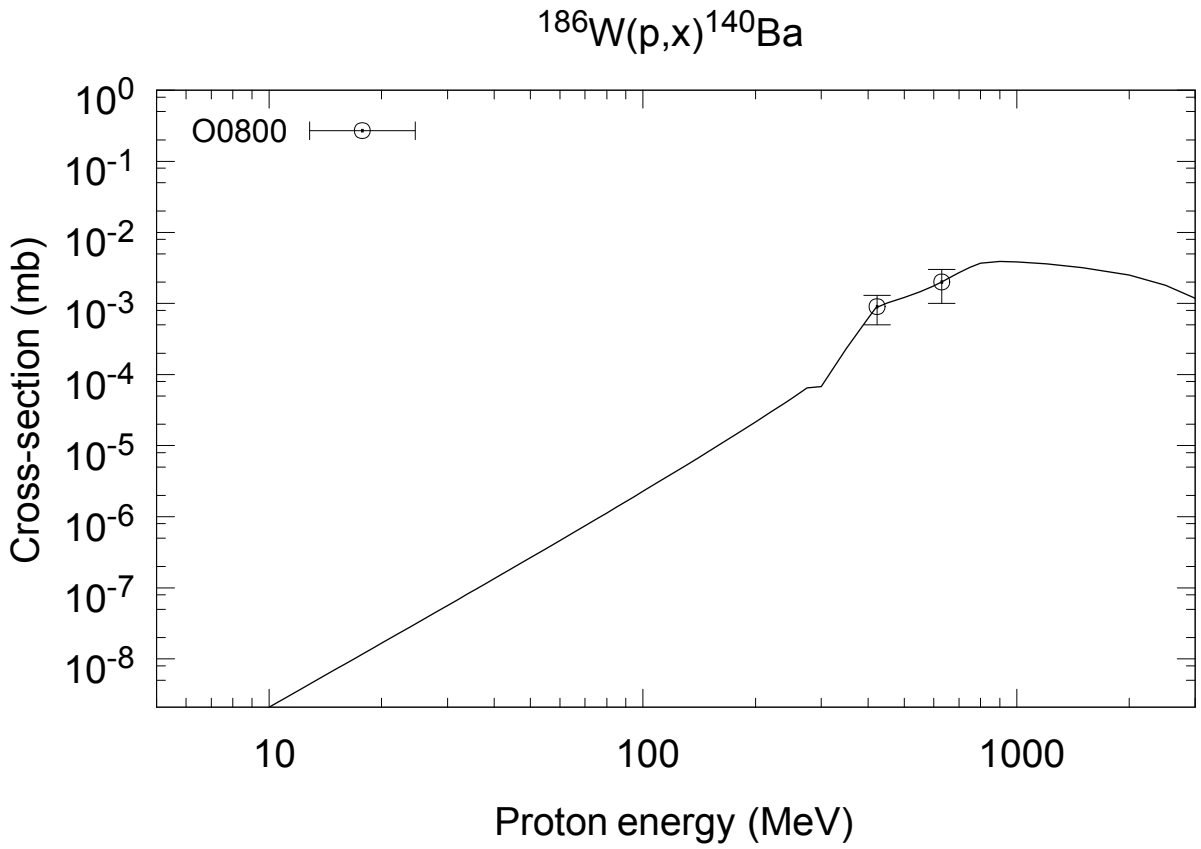

$^{186}W(p,x)^{106m}Ag$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

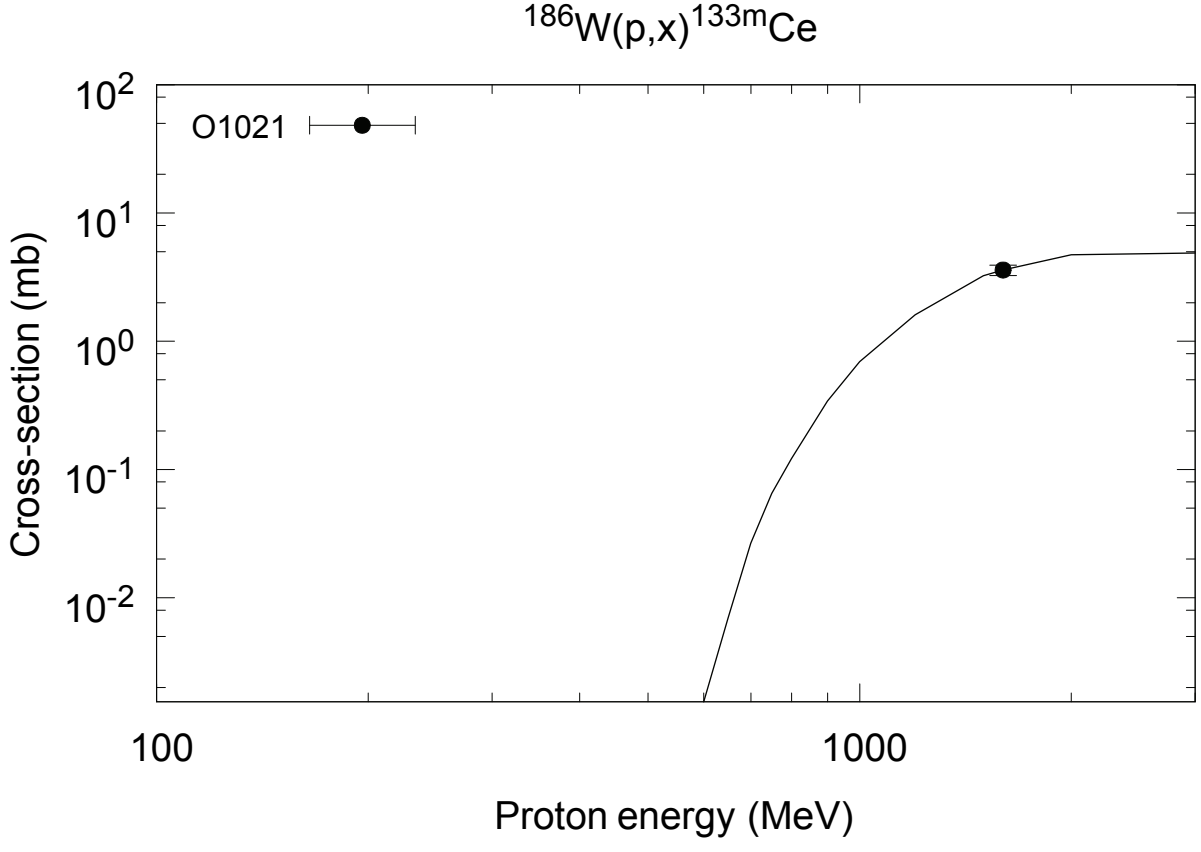

$^{186}W(p,x)^{110m}Ag$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10
100
1000
Proton energy (MeV)

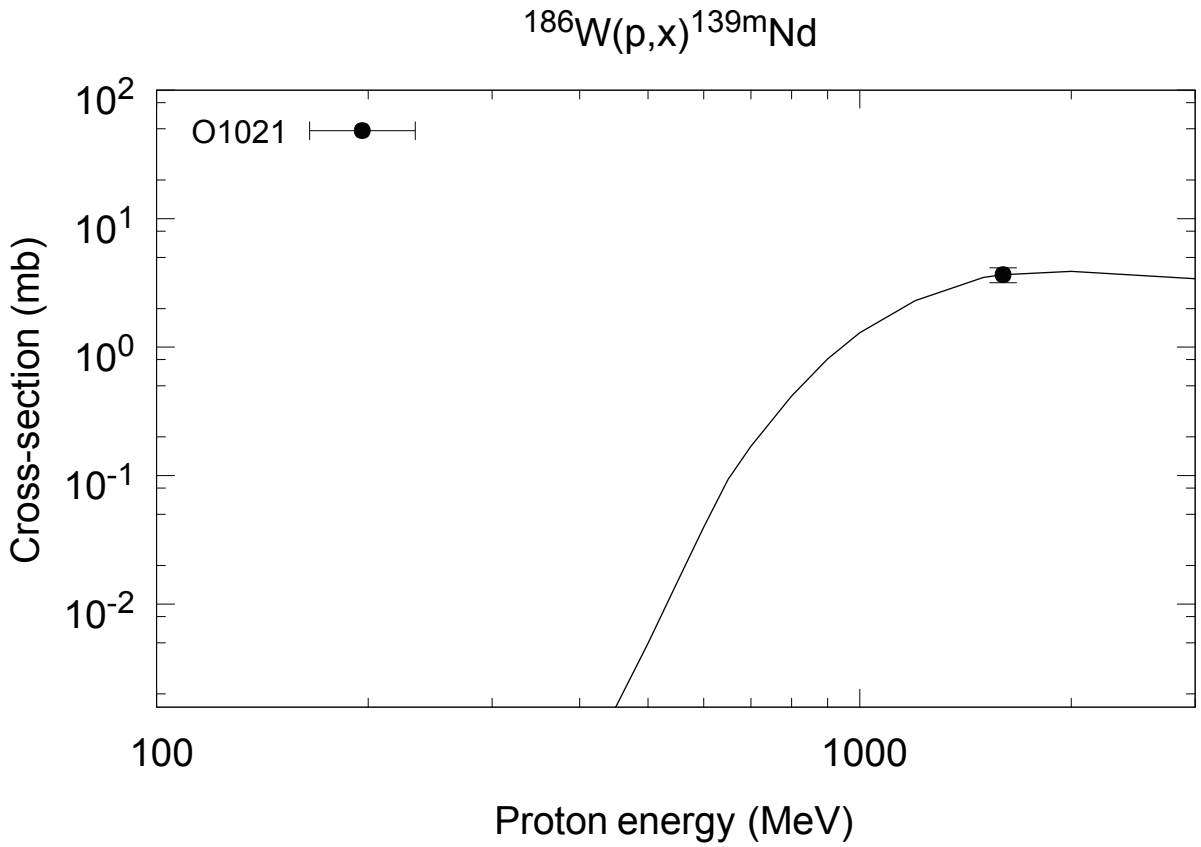

$^{186}W(p,x)^{7}Be$
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

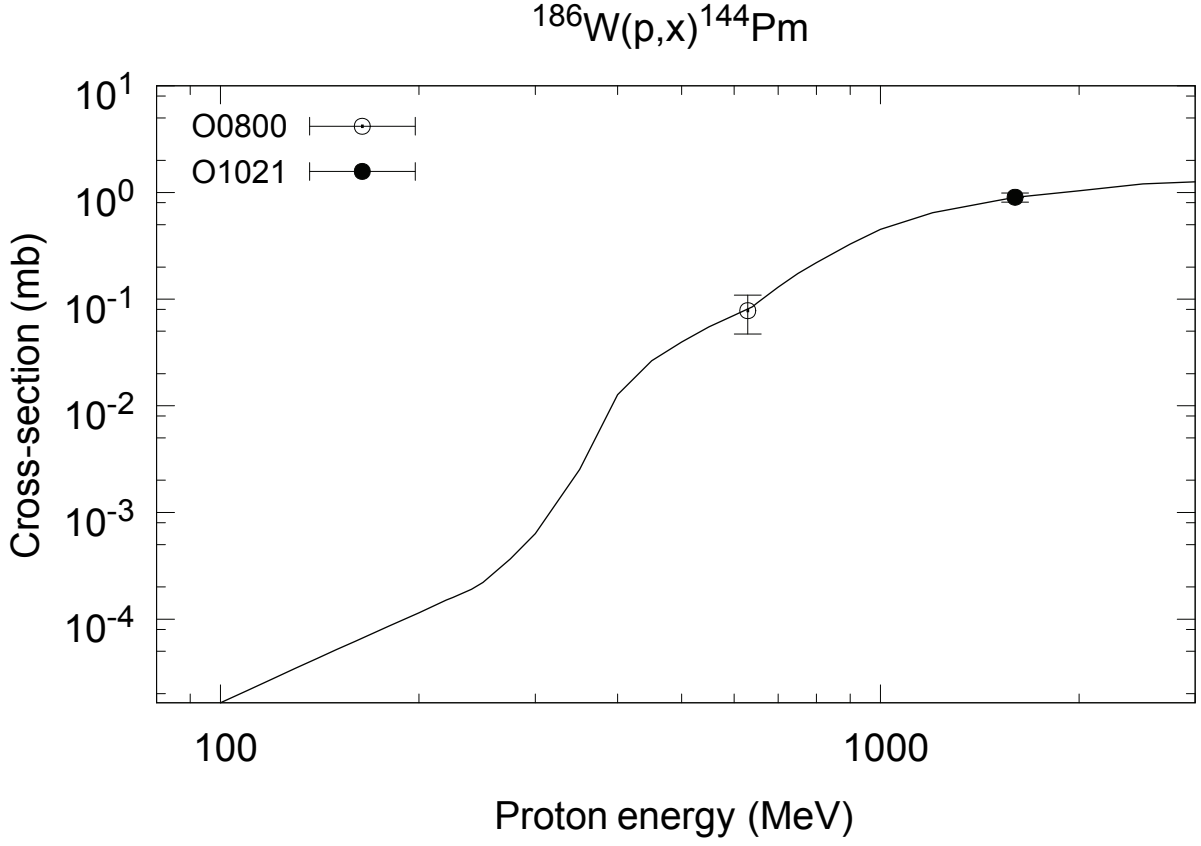

$^{186}W(p,x)^{121m}Te$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

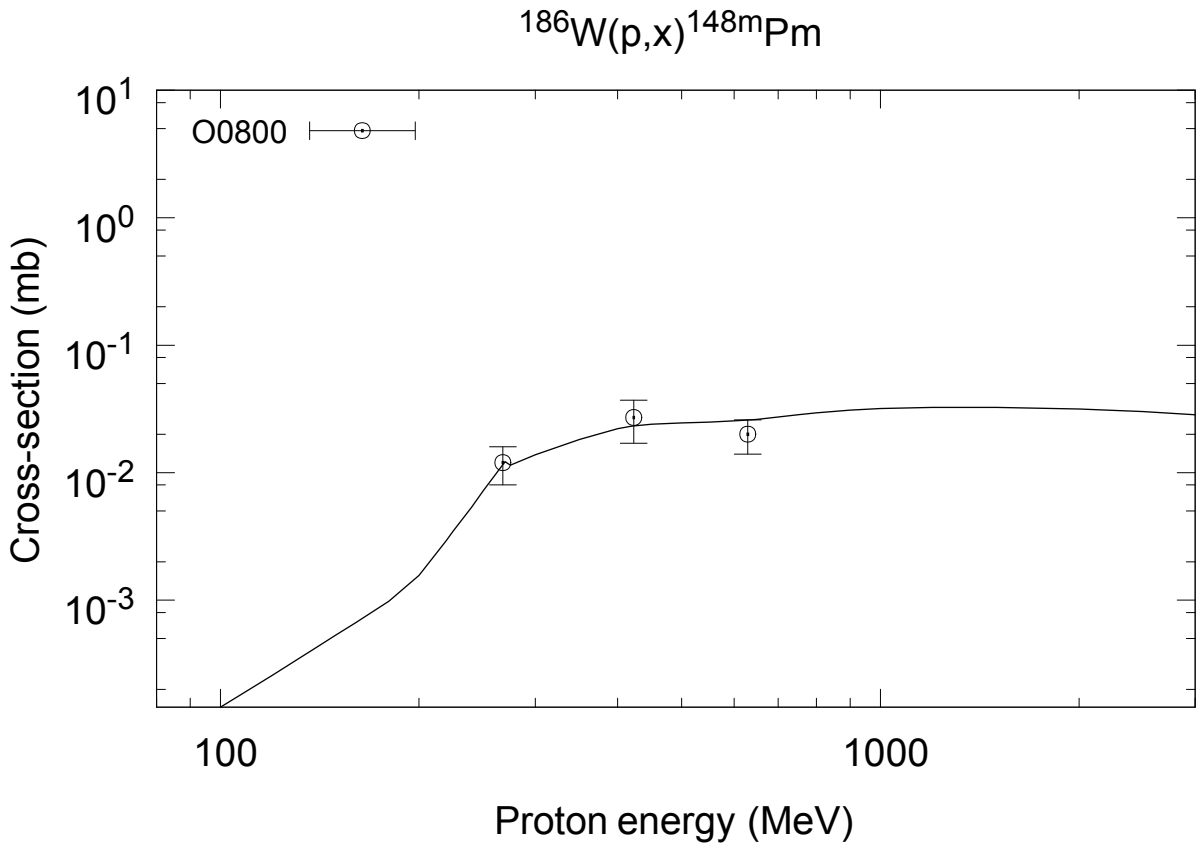

$^{186}W(p,x)^{126}I$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

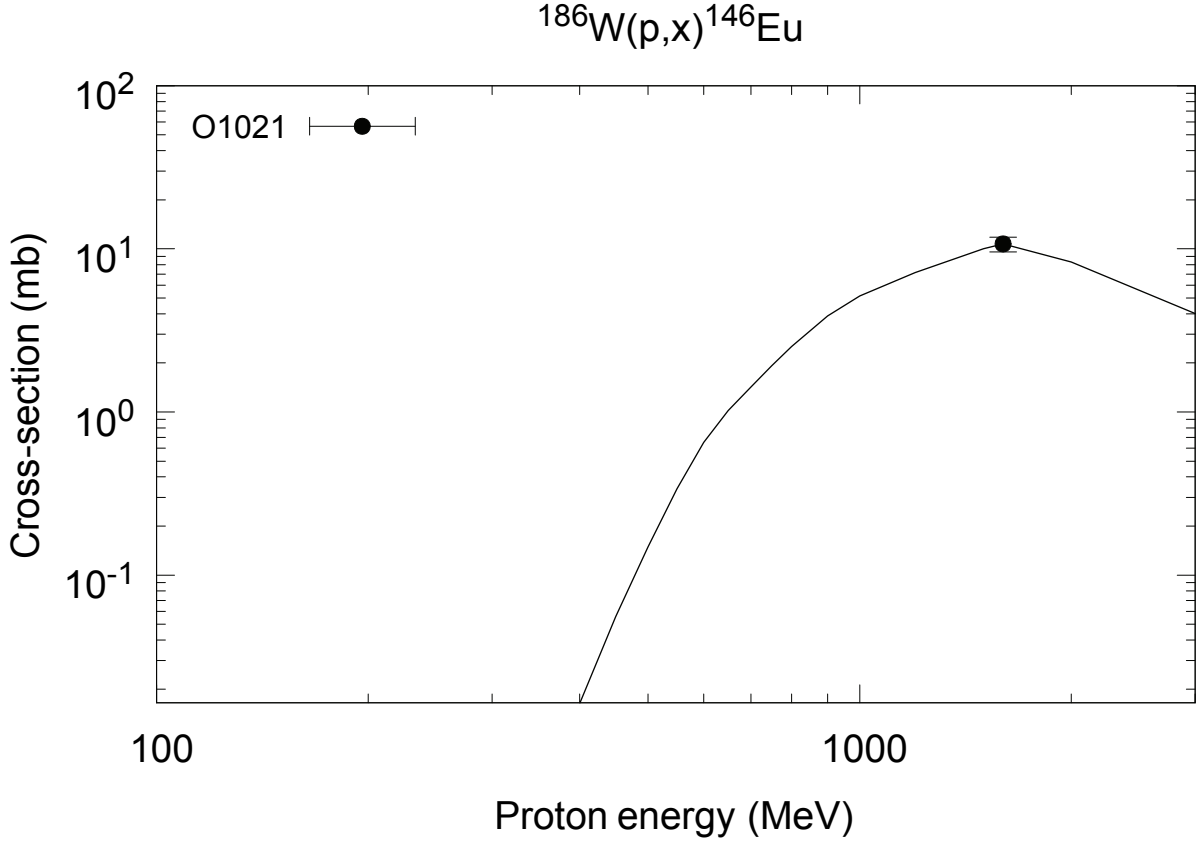

$^{186}W(p,x)^{140}Ba$
O0800
Cross-section (mb)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10
100
1000
Proton energy (MeV)

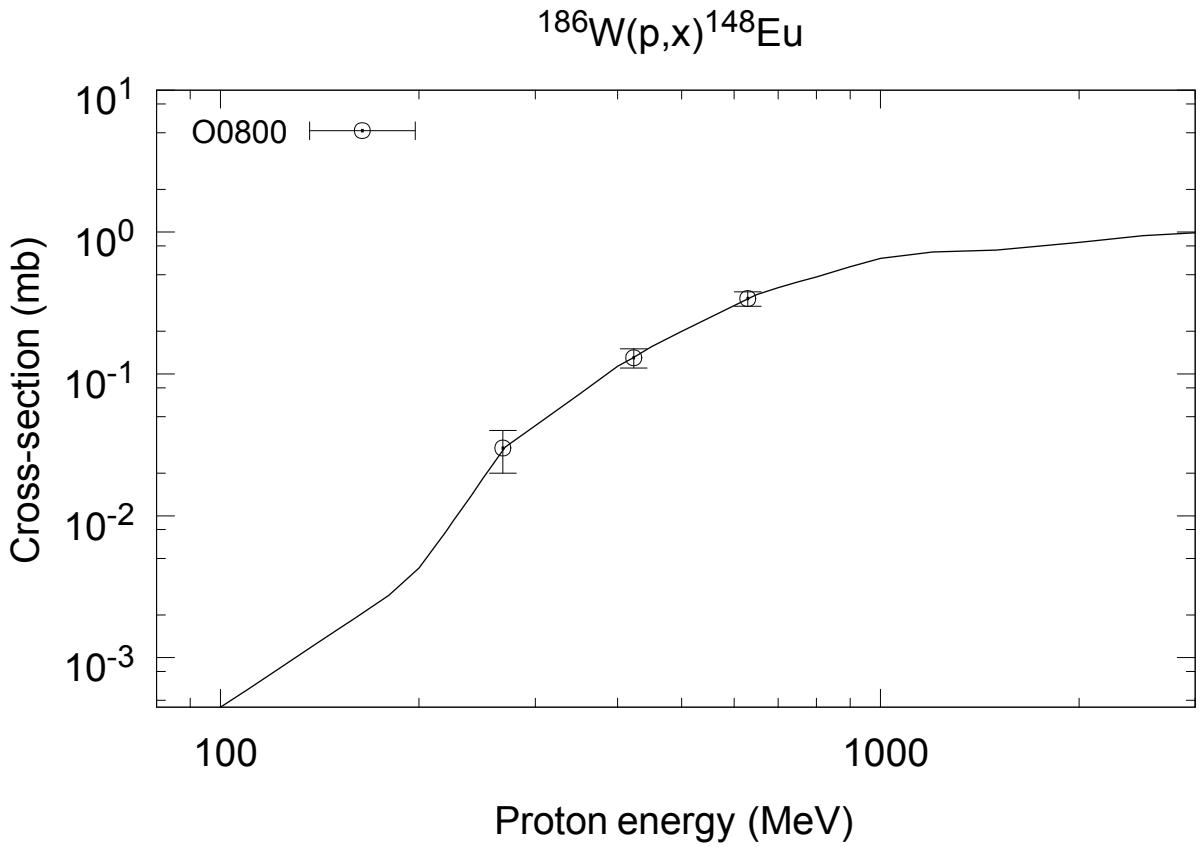

$^{186}W(p,x)^{133m}Ce$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

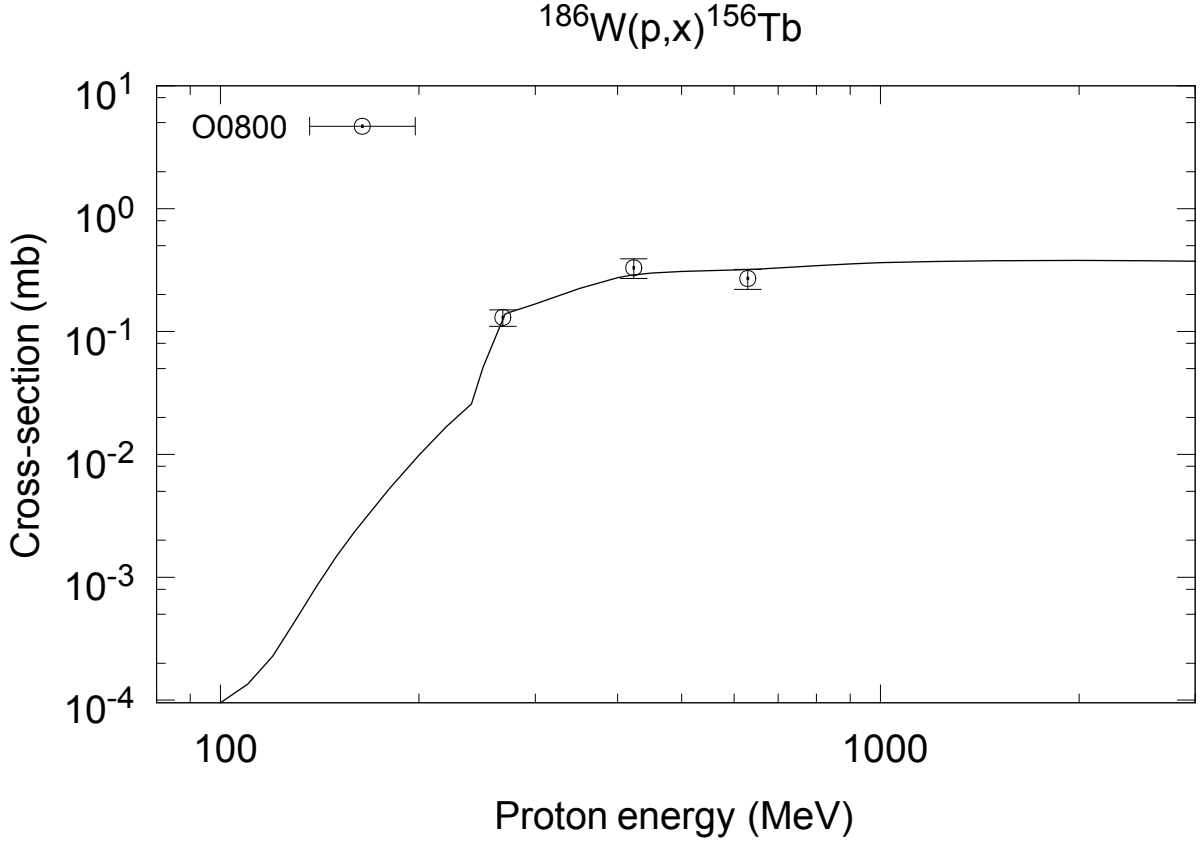

$^{186}W(p,x)^{139m}Nd$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

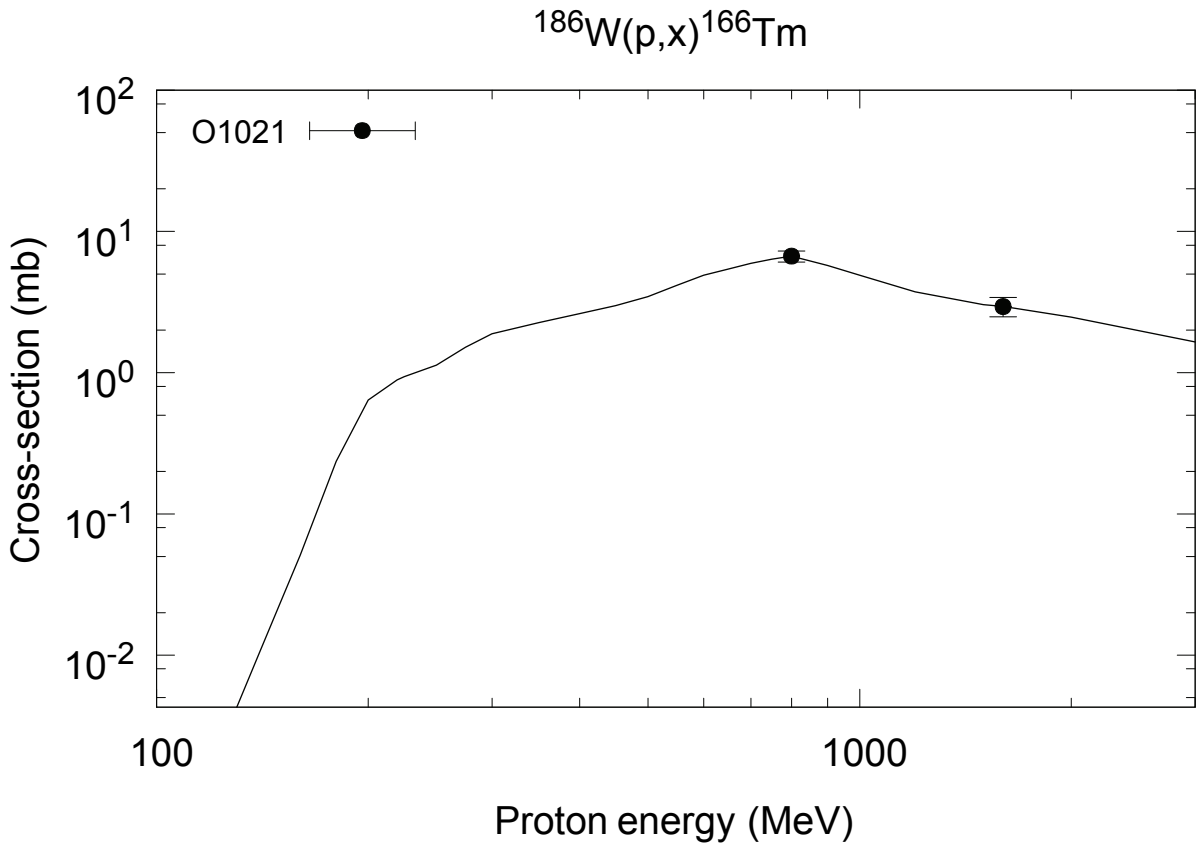

$^{186}W(p,x)^{144}Pm$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

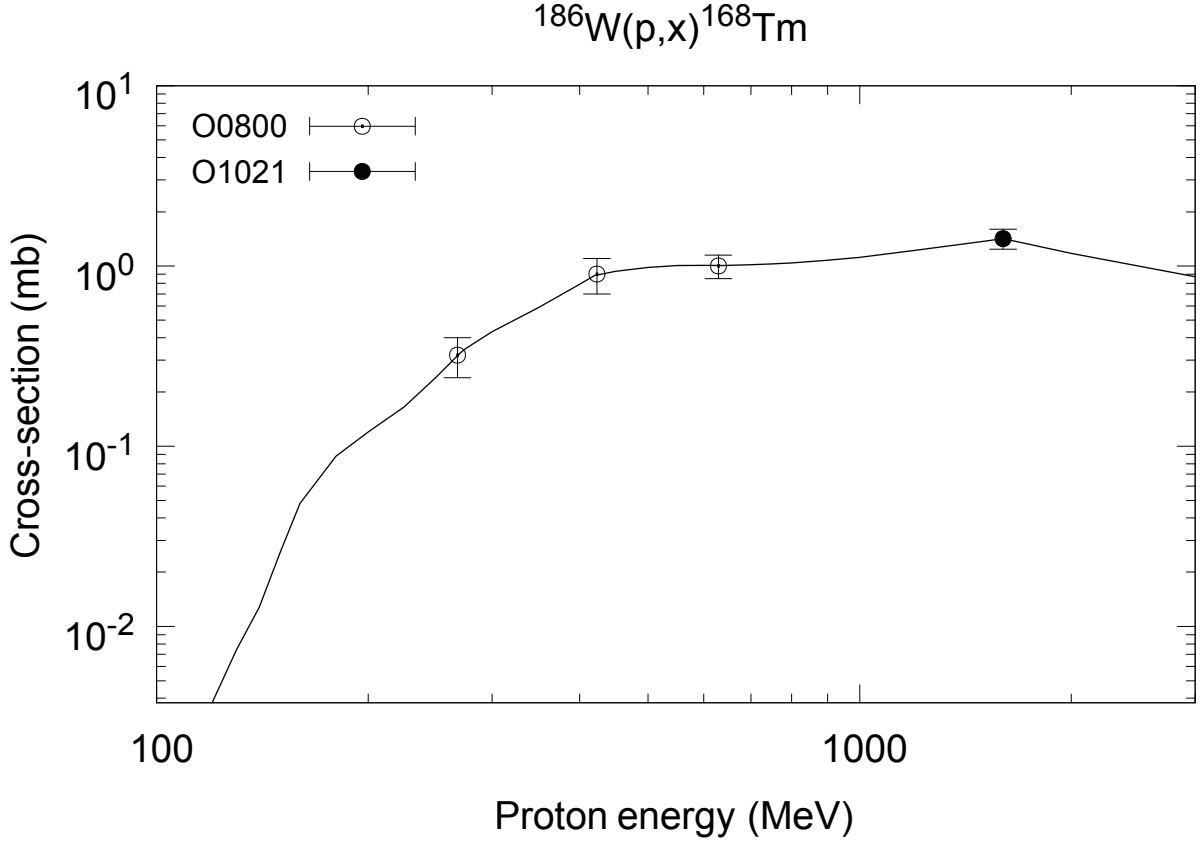

$^{186}W(p,x)^{148m}Pm$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

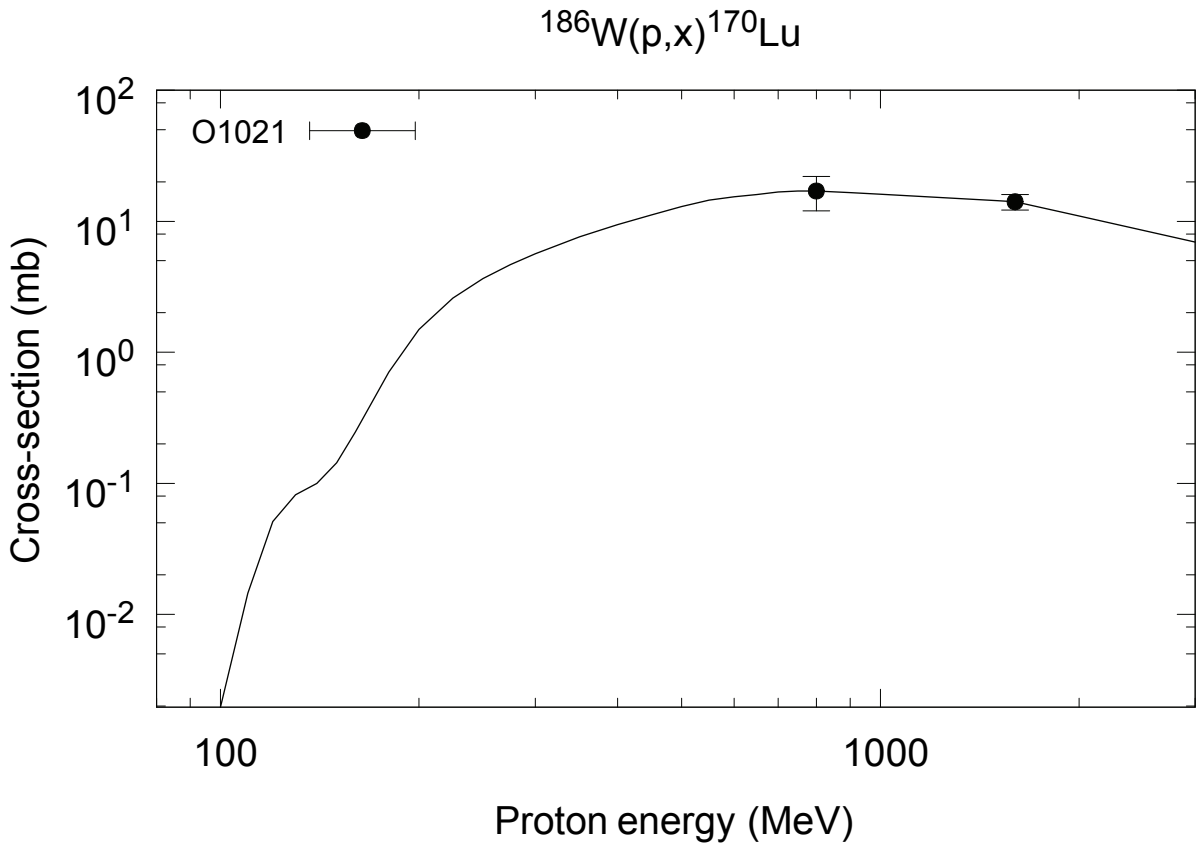

$^{186}W(p,x)^{146}Eu$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

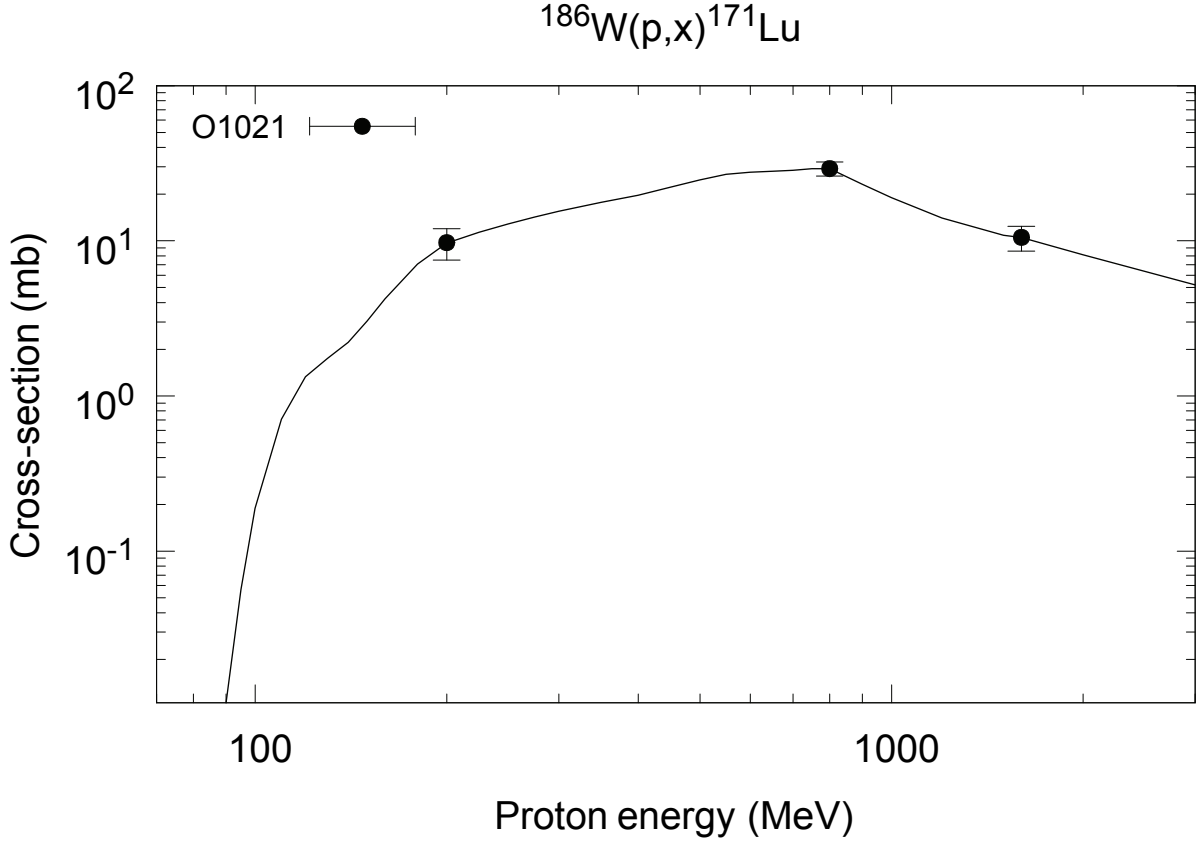

$^{186}W(p,x)^{148}Eu$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

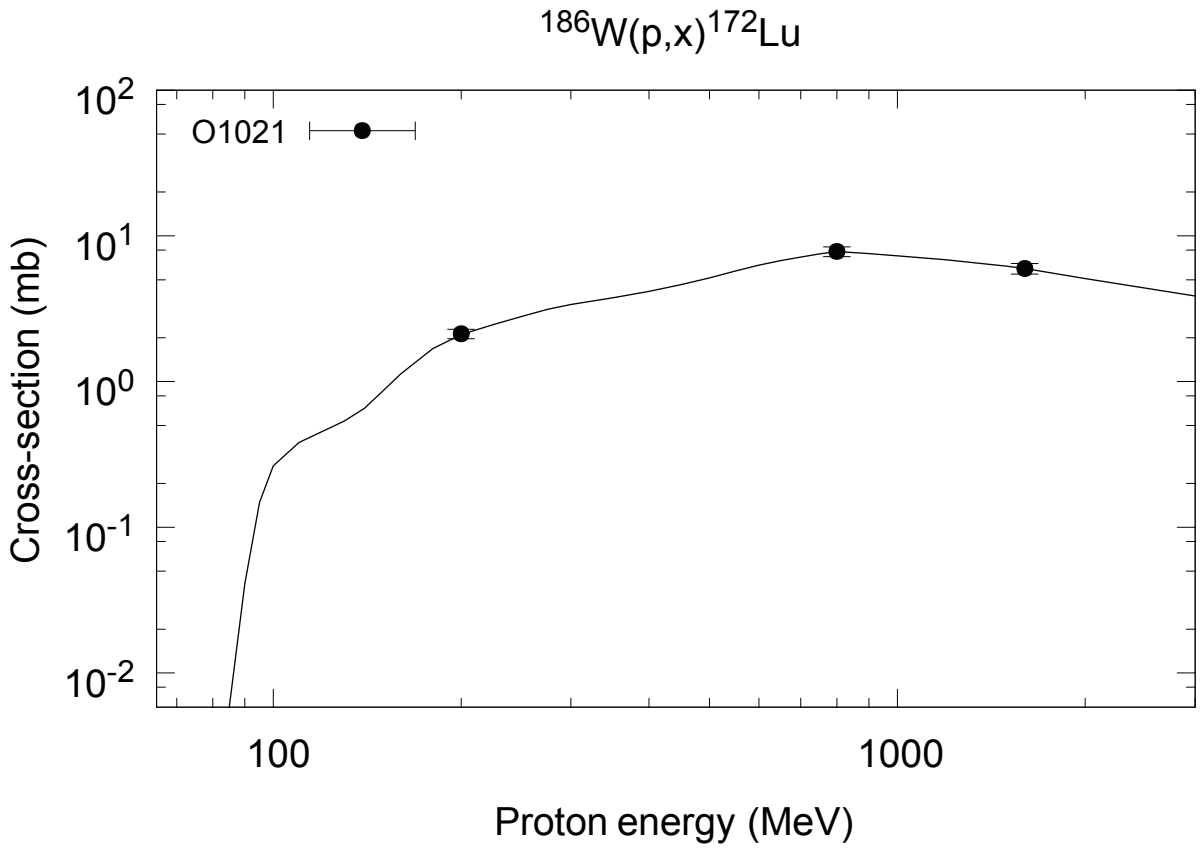

$^{186}W(p,x)^{156}Tb$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

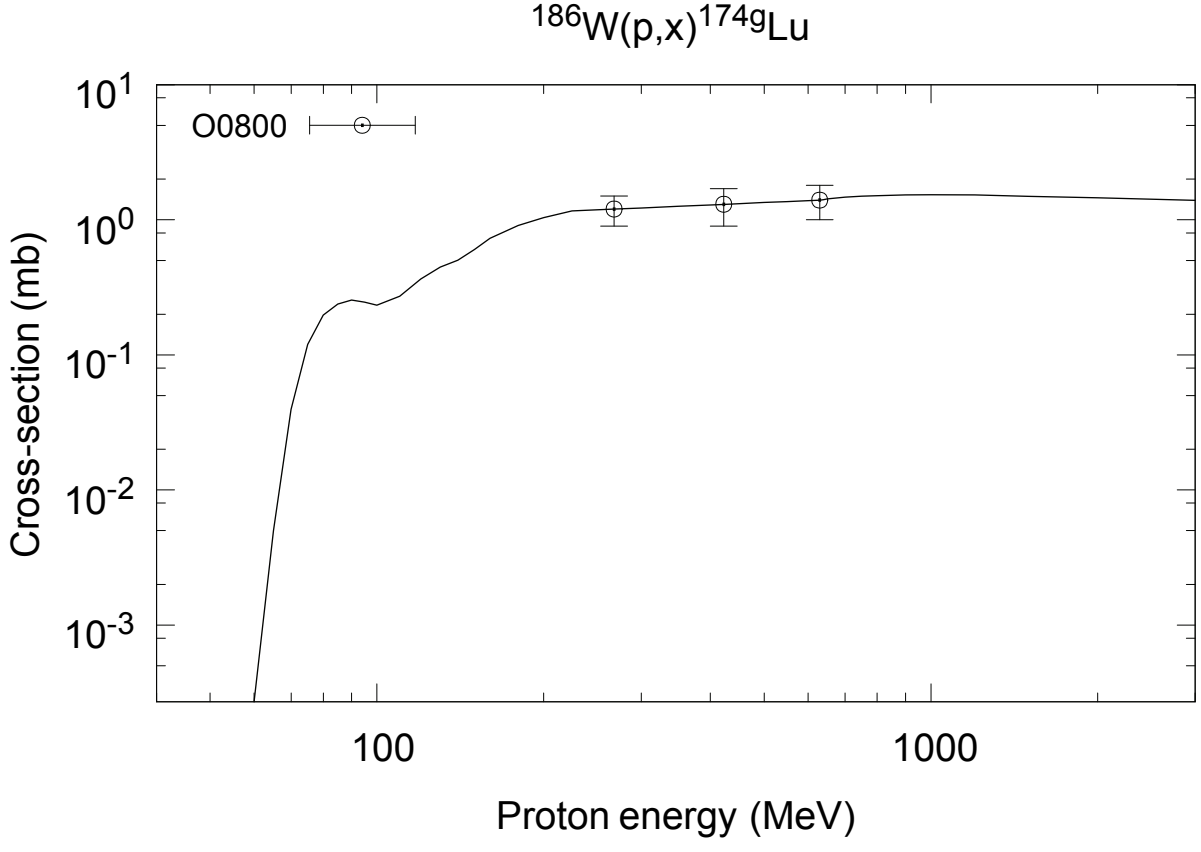

$^{186}W(p,x)^{166}Tm$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

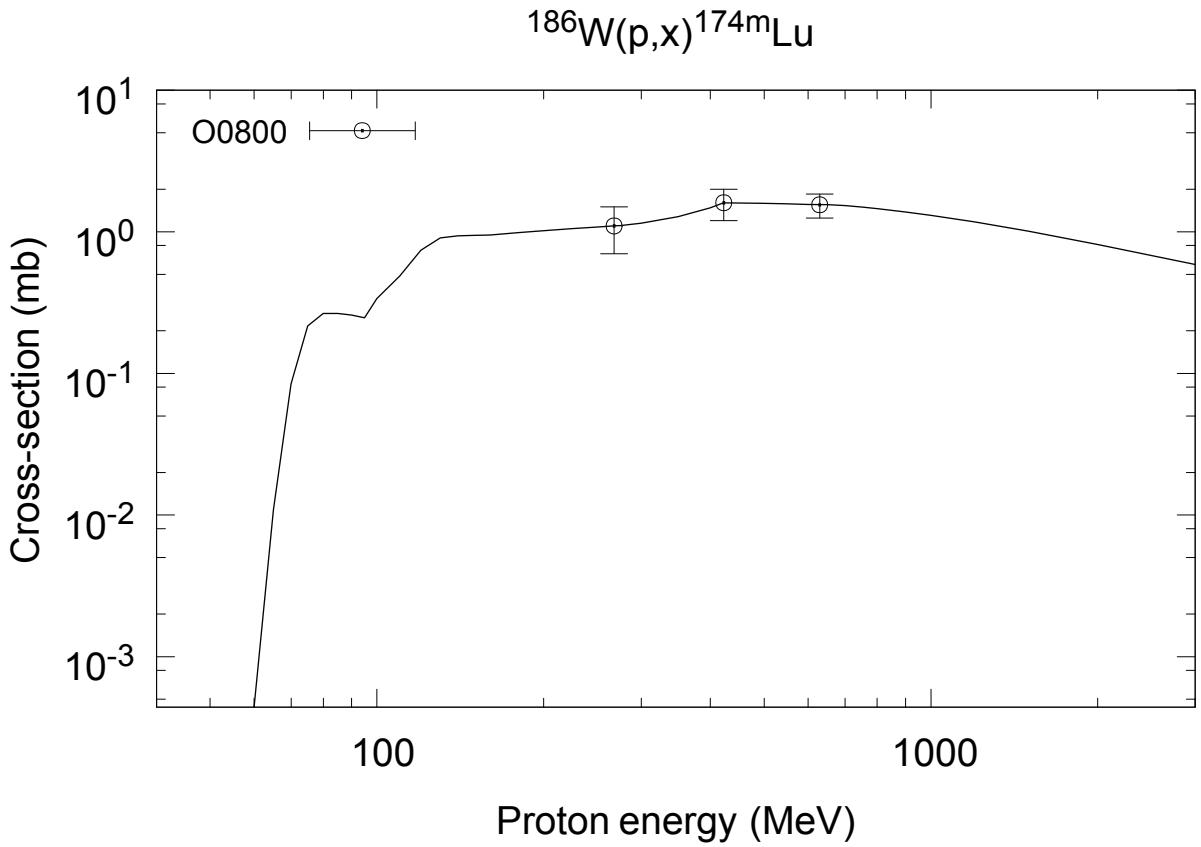

$^{186}W(p,x)^{168}Tm$
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

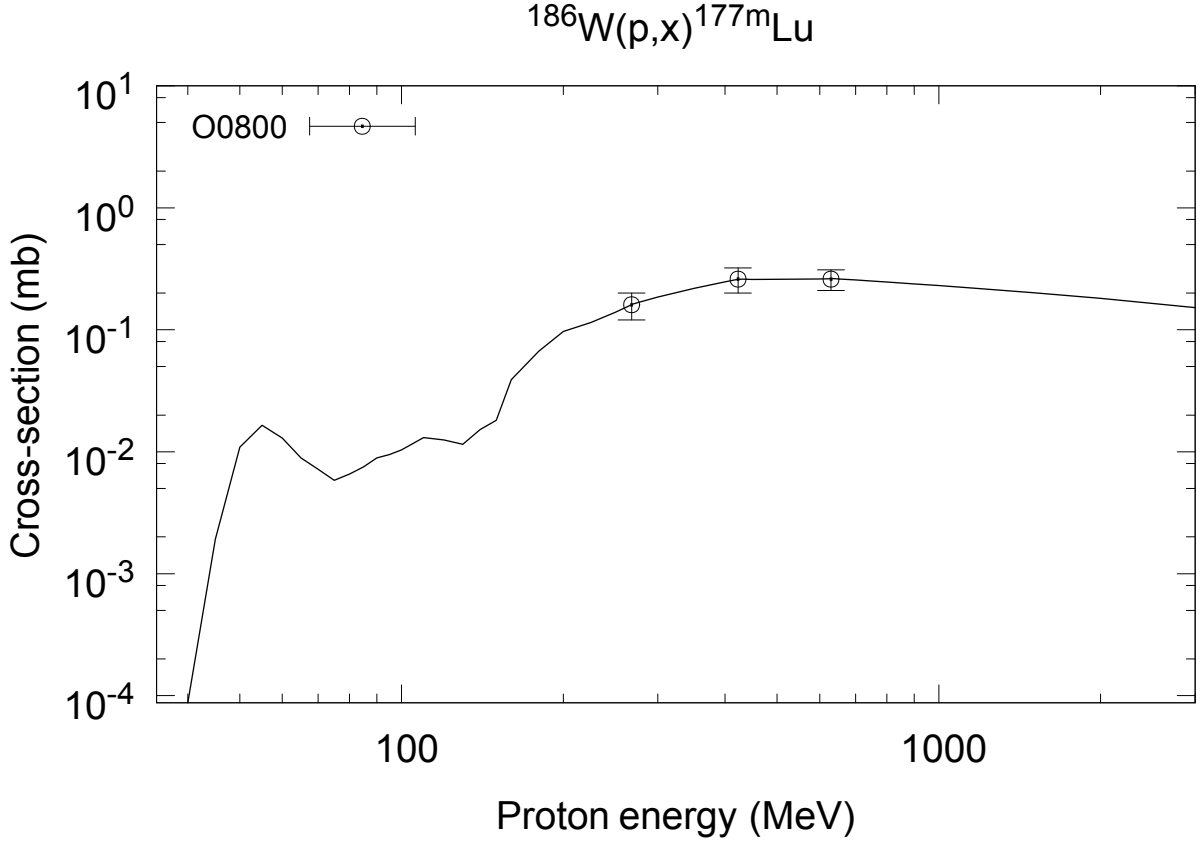

$^{186}W(p,x)^{170}Lu$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

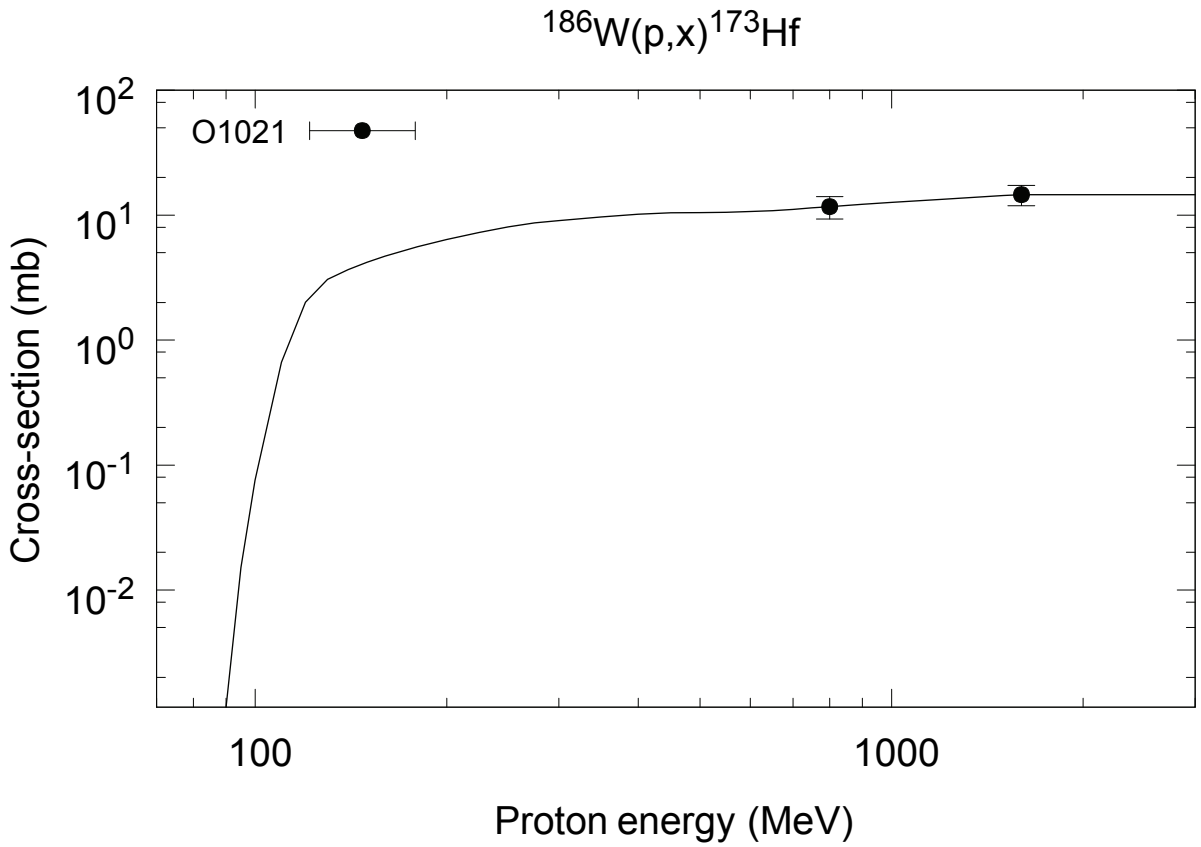

$^{186}W(p,x)^{171}Lu$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

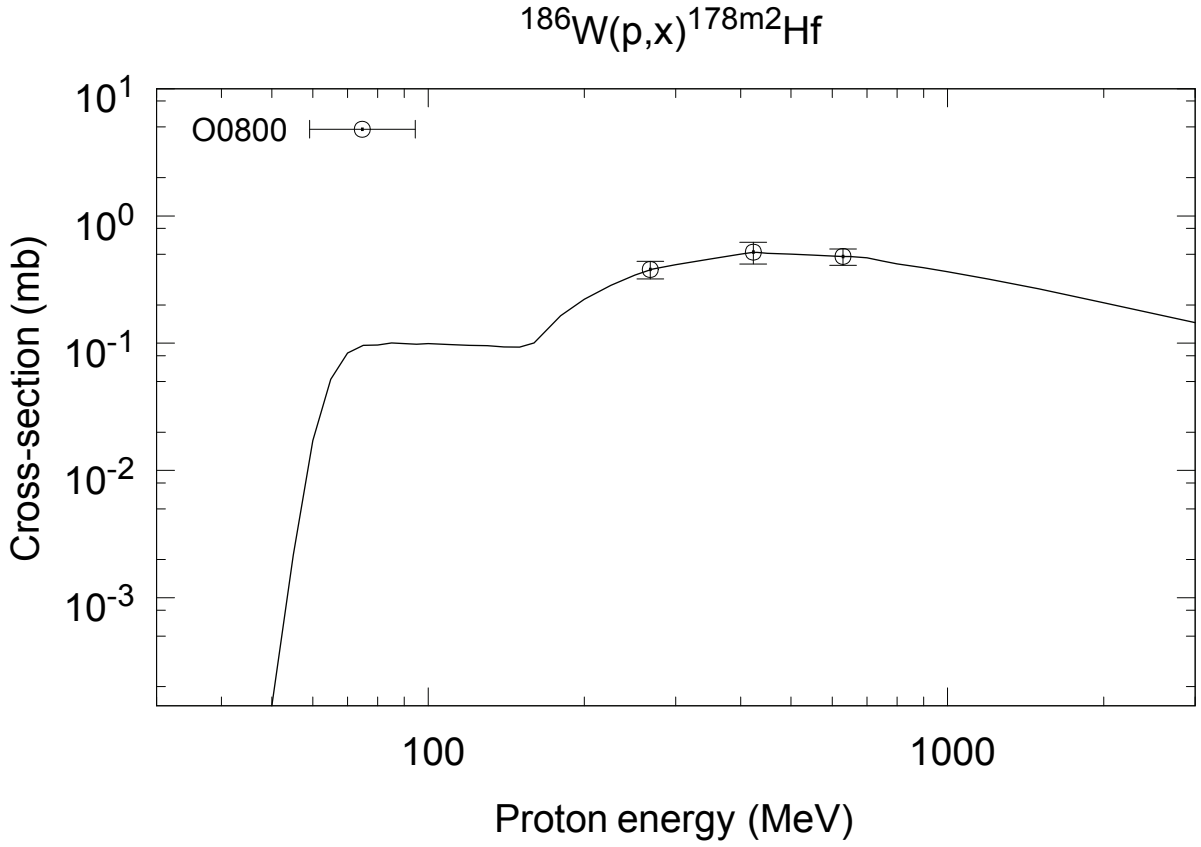

$^{186}W(p,x)^{172}Lu$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

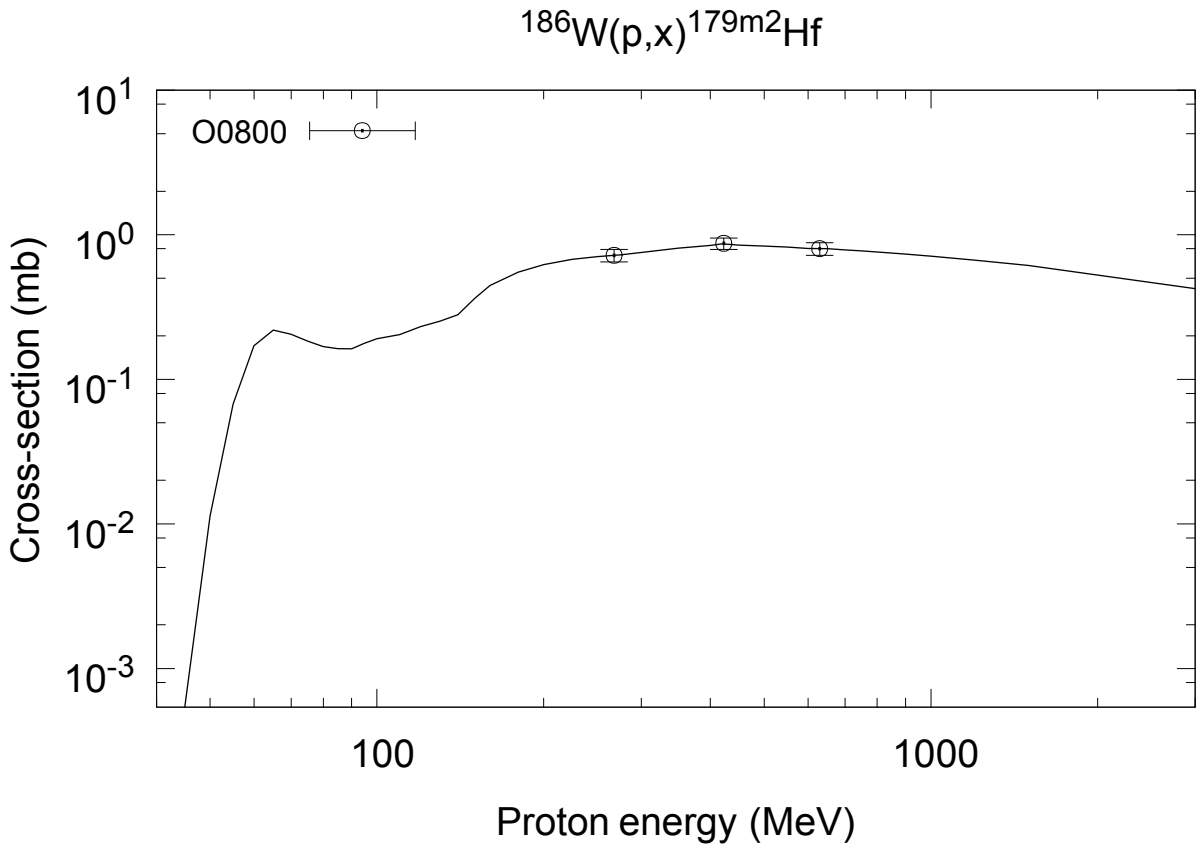

$^{186}W(p,x)^{174g}Lu$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

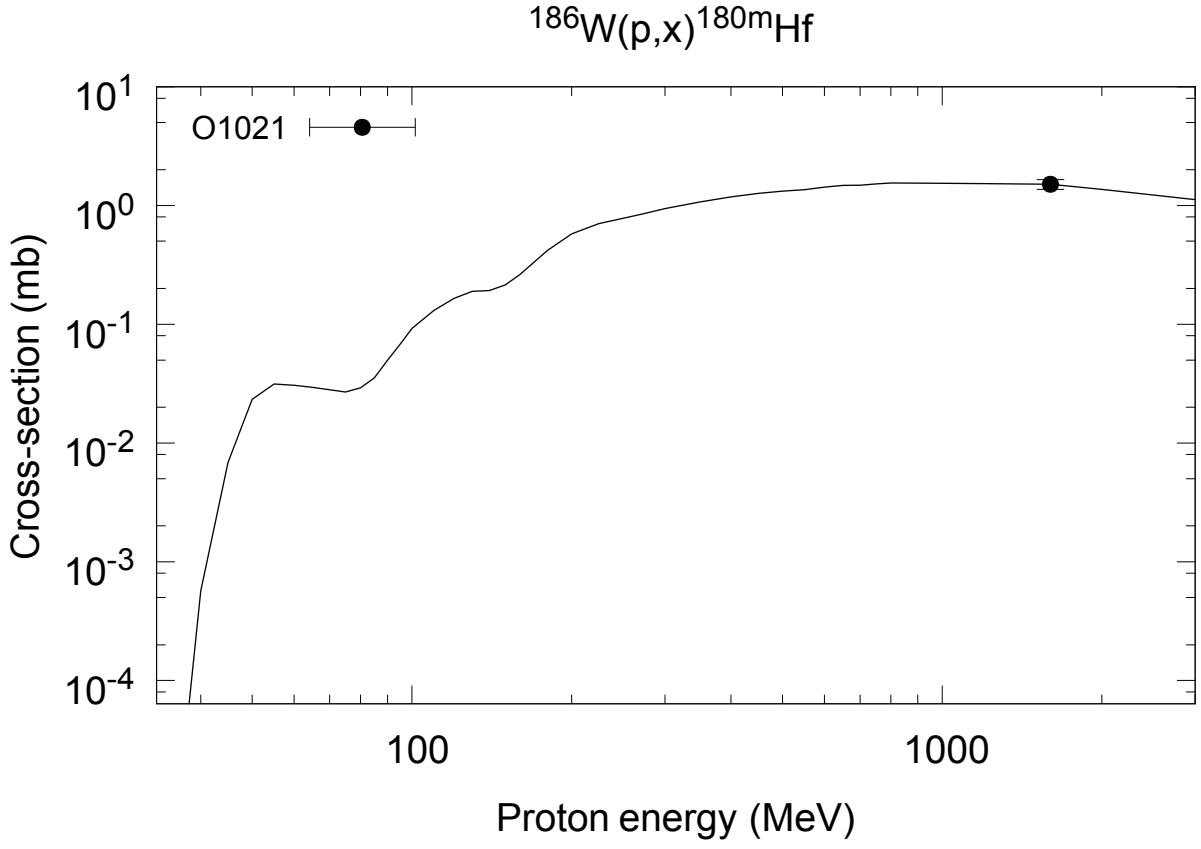

$^{186}W(p,x)^{174m}Lu$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

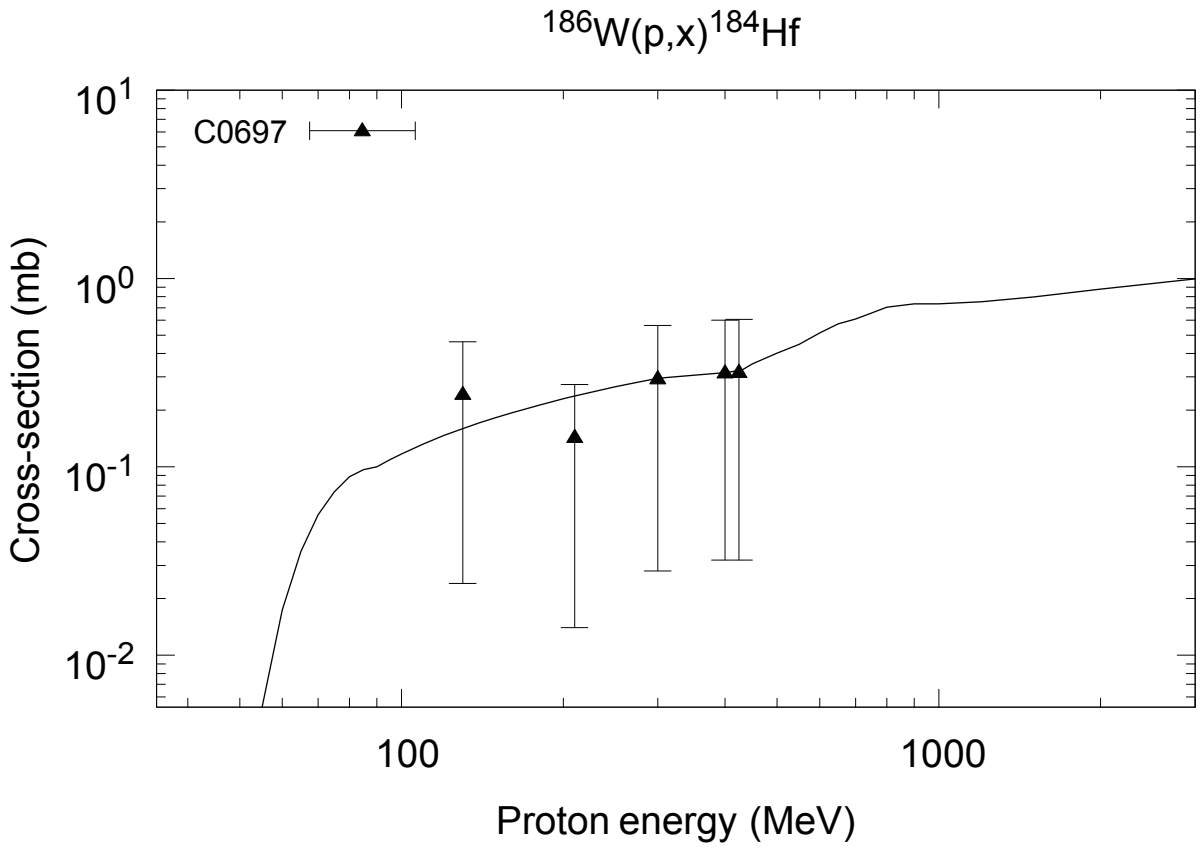

$^{186}W(p,x)^{177m}Lu$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

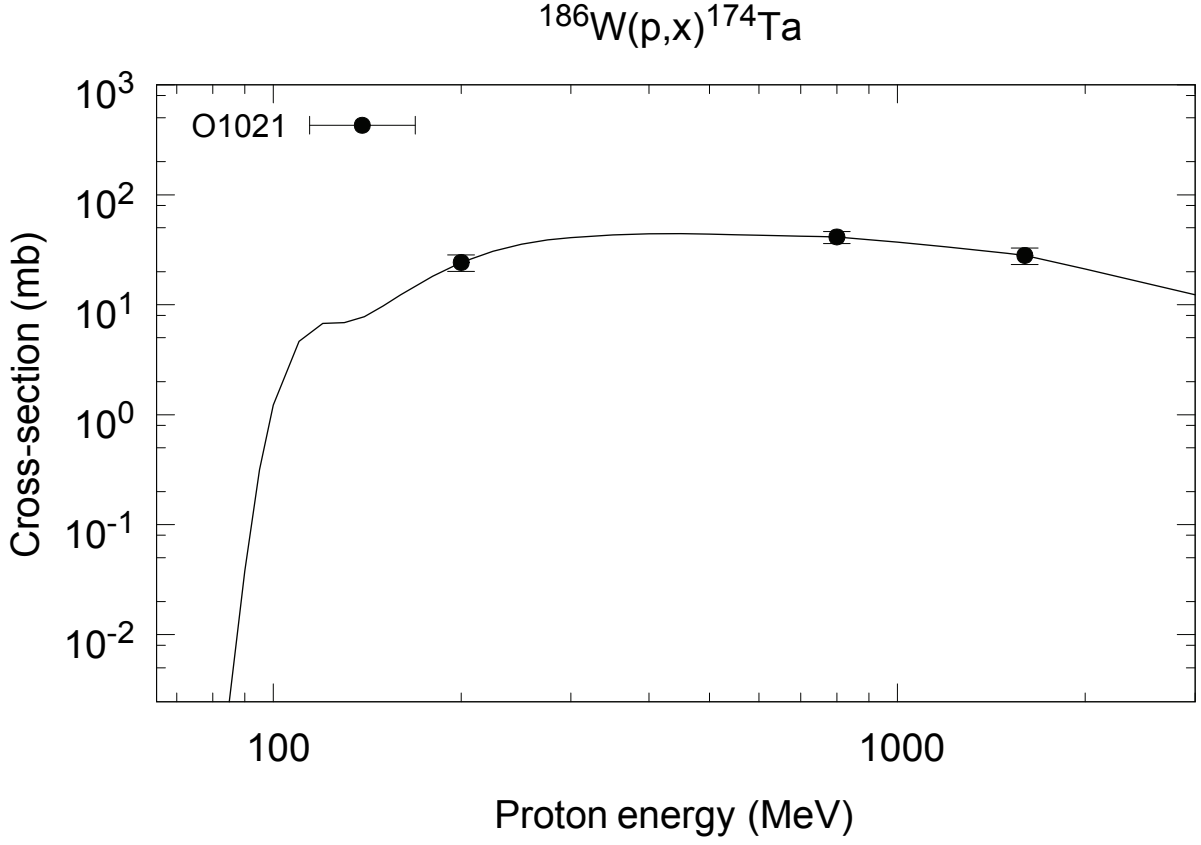

$^{186}W(p,x)^{173}Hf$
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

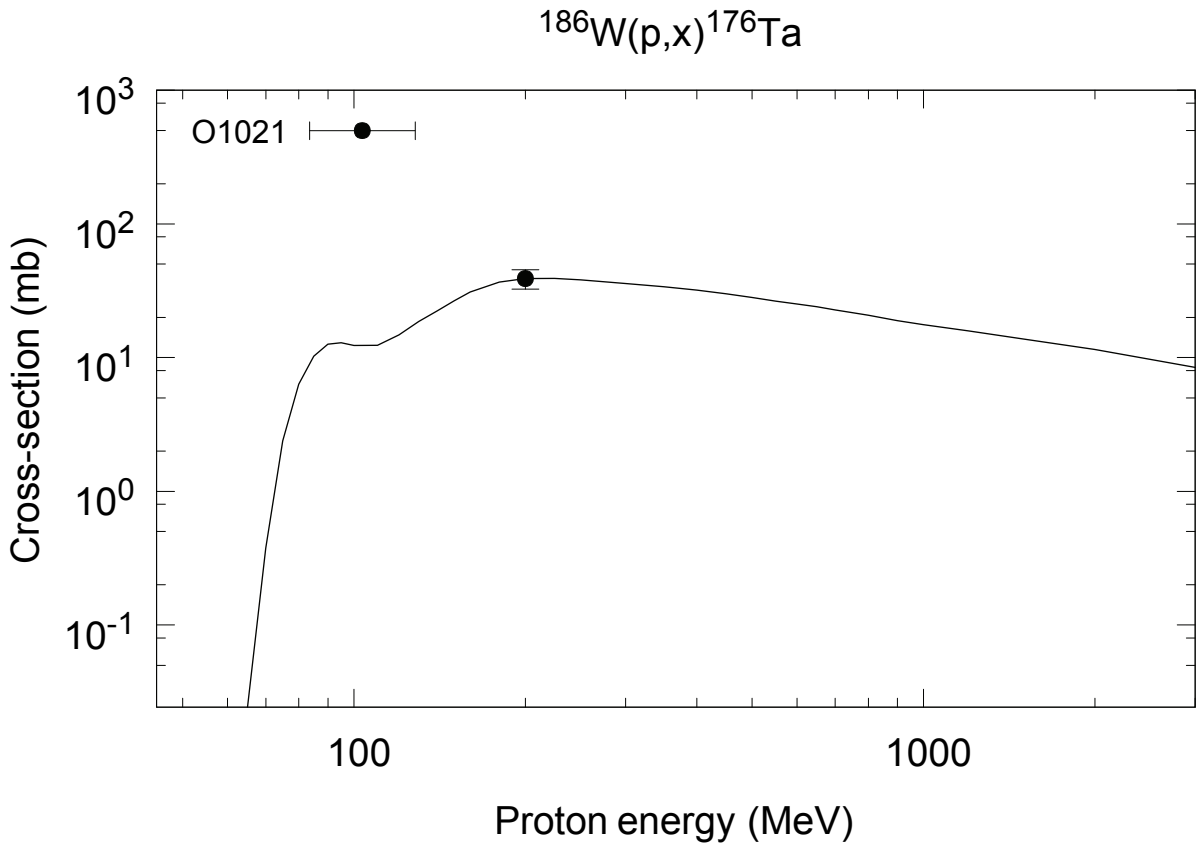

$^{186}W(p,x)^{178m2}Hf$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

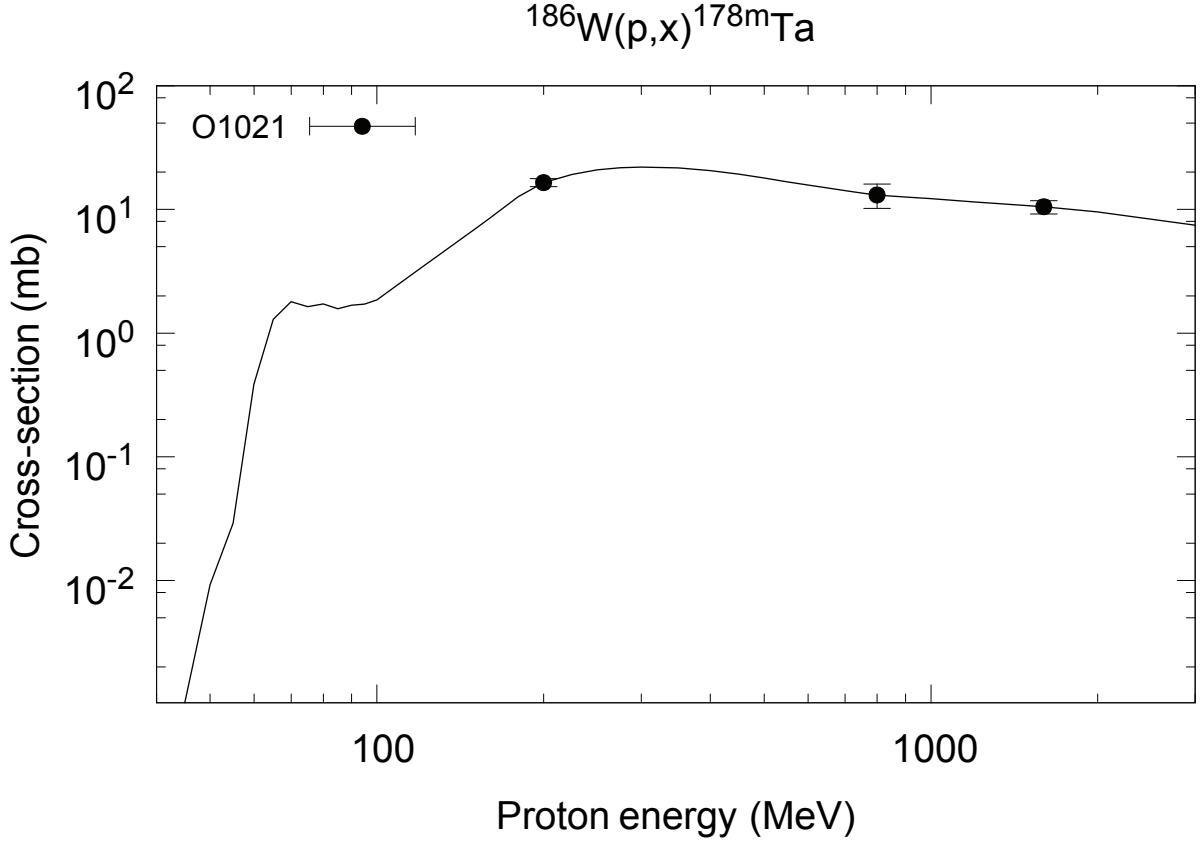

$^{186}W(p,x)^{179m2}Hf$
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

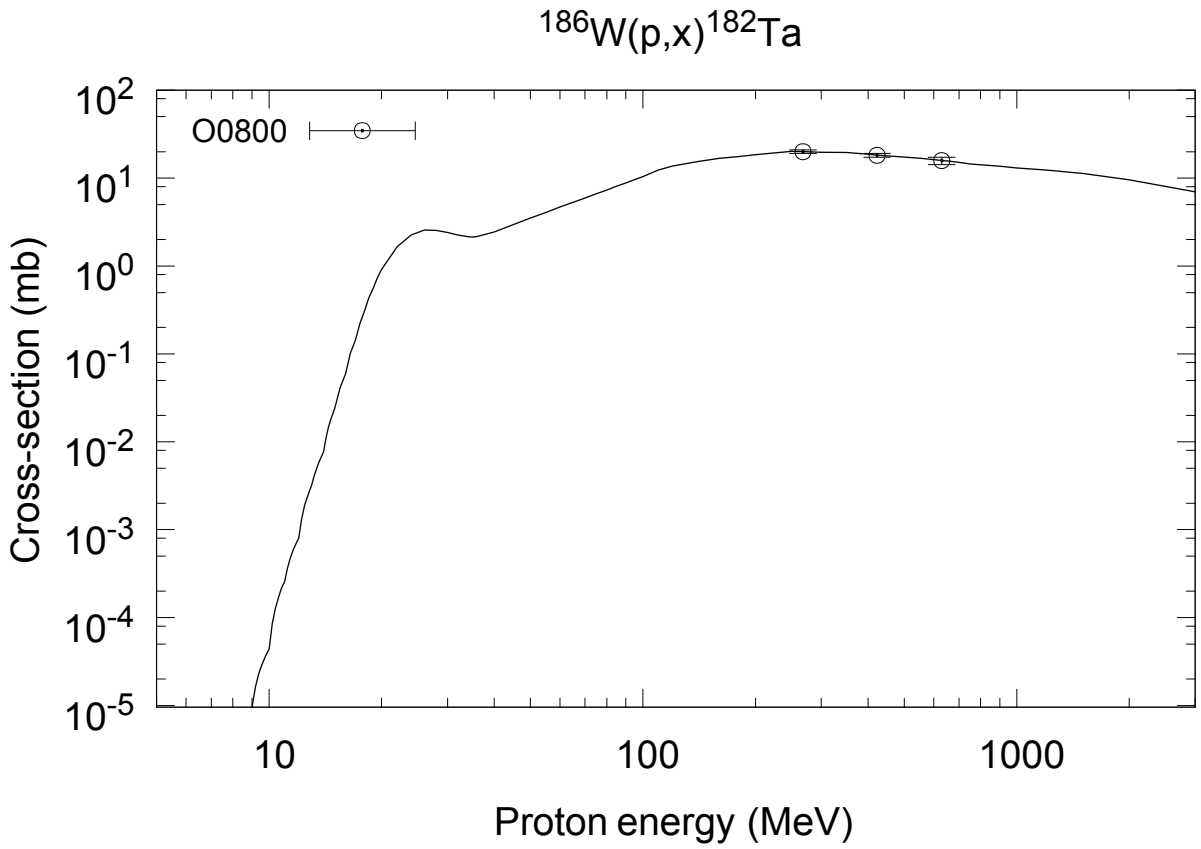

$^{186}W(p,x)^{180m}Hf$
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

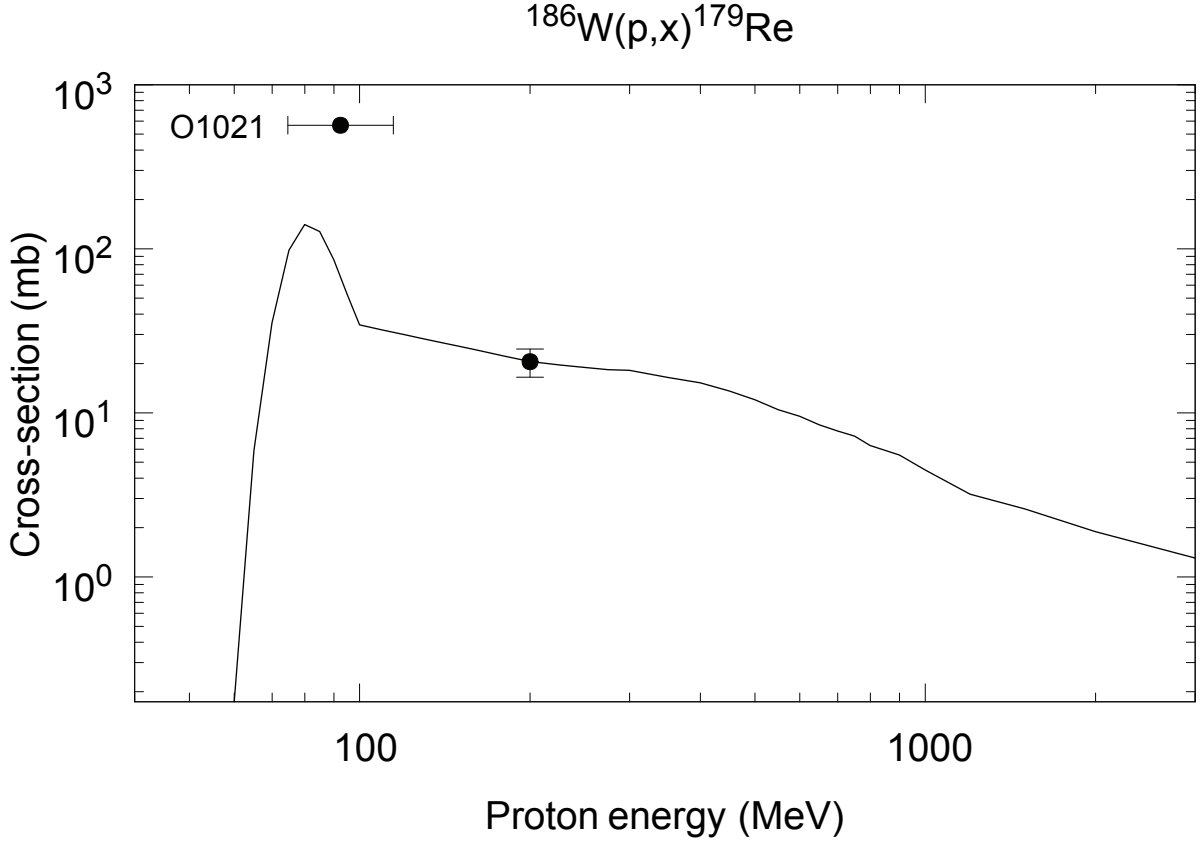

$^{186}W(p,x)^{184}Hf$
C0697
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

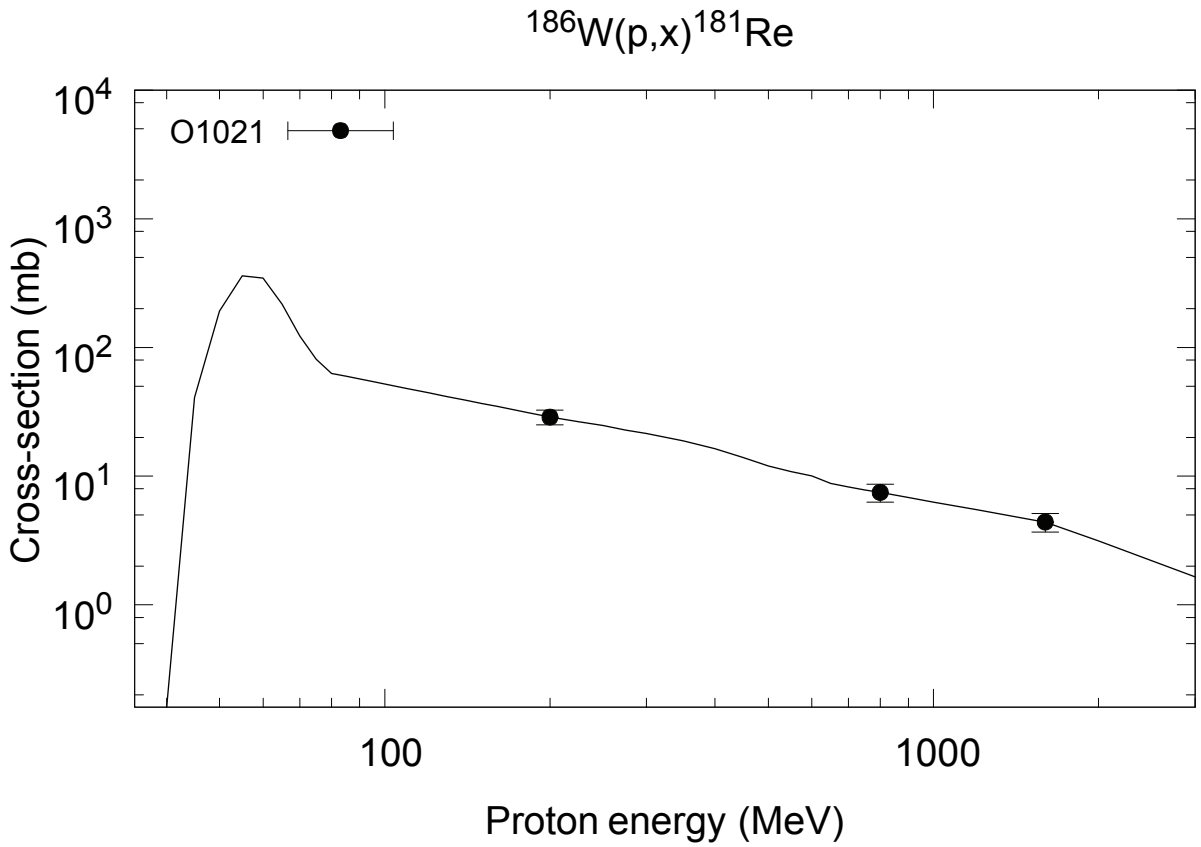

$^{186}W(p,x)^{174}Ta$
O1021
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

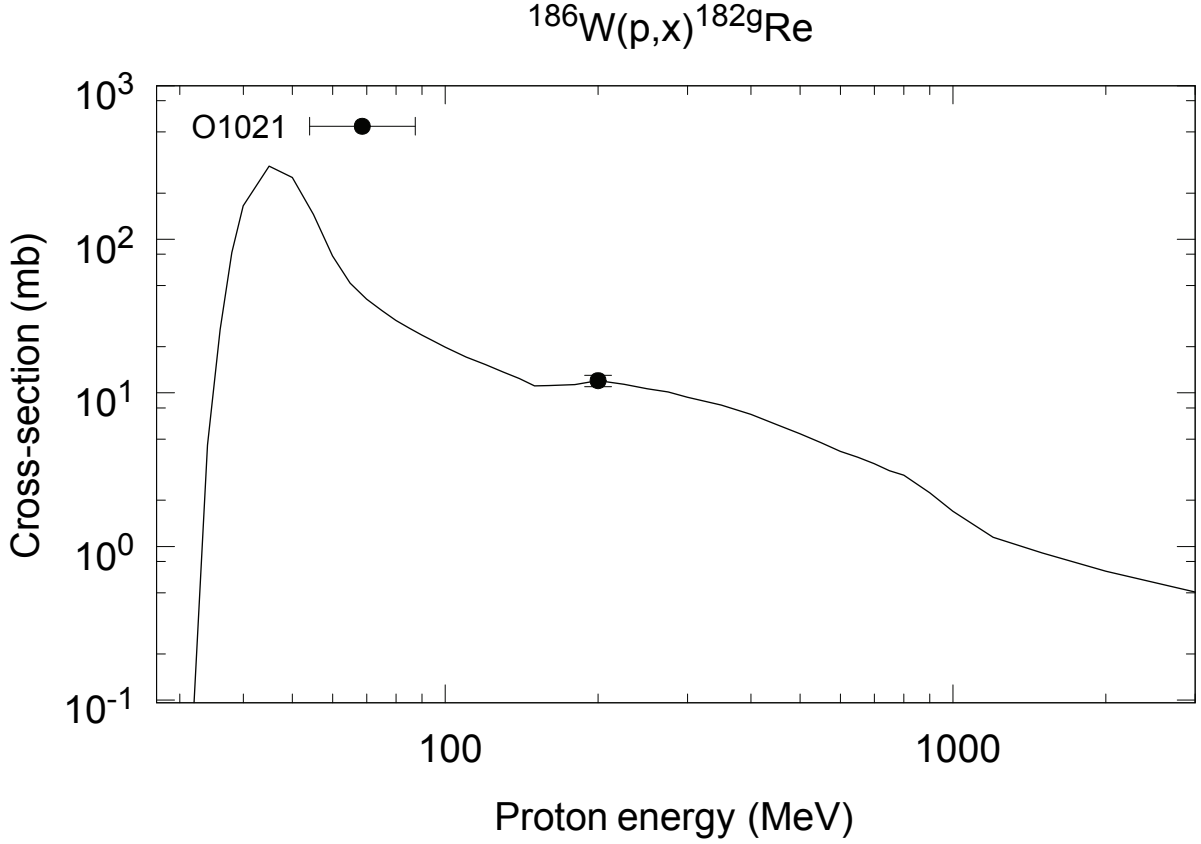

$^{186}W(p,x)^{176}Ta$
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

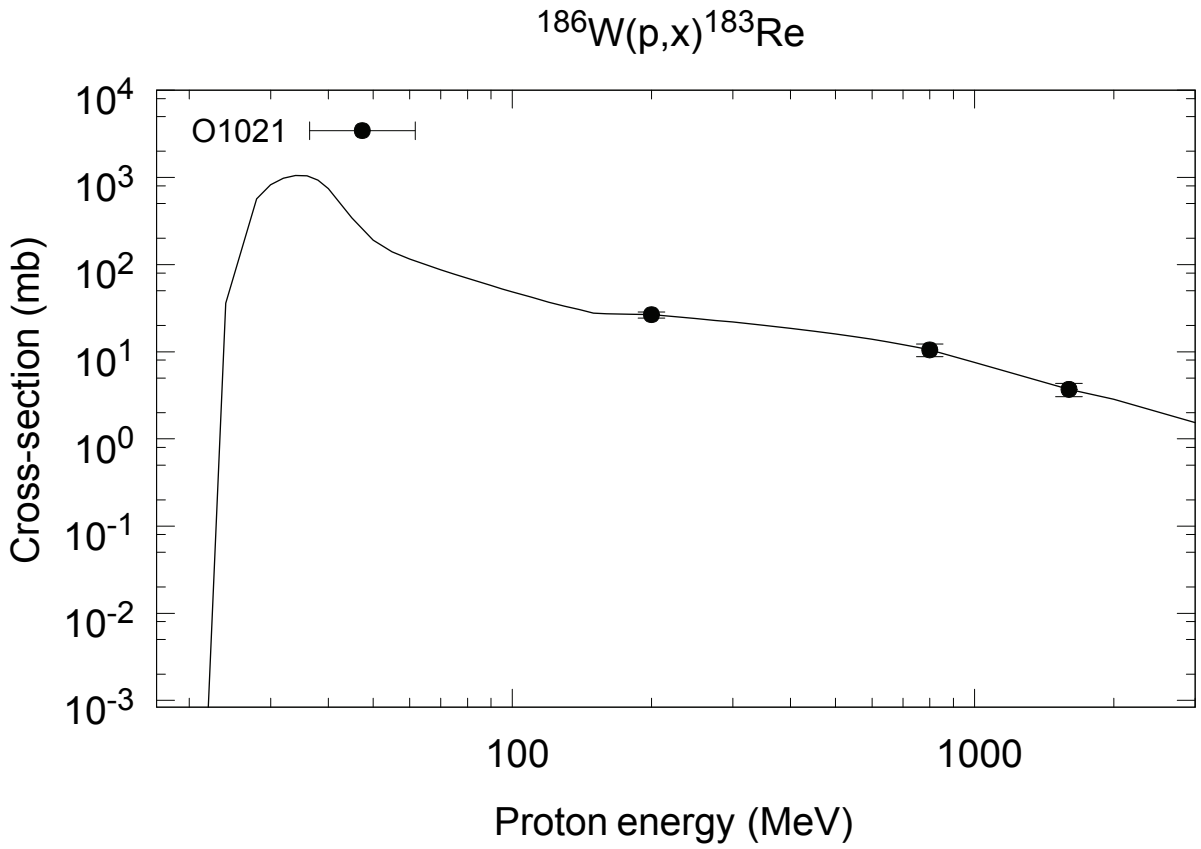

$^{186}W(p,x)^{178m}Ta$
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

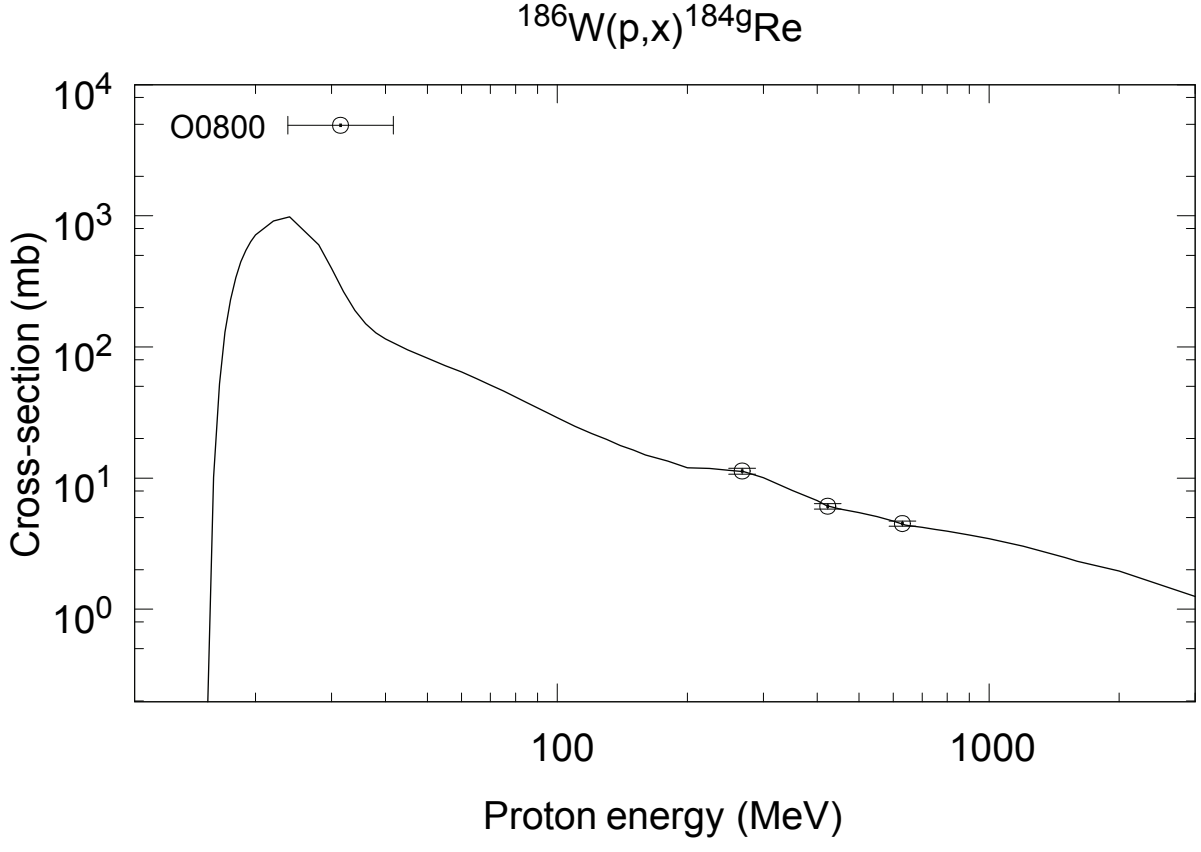

$^{186}W(p,x)^{182}Ta$
O0800
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10
100
1000
Proton energy (MeV)

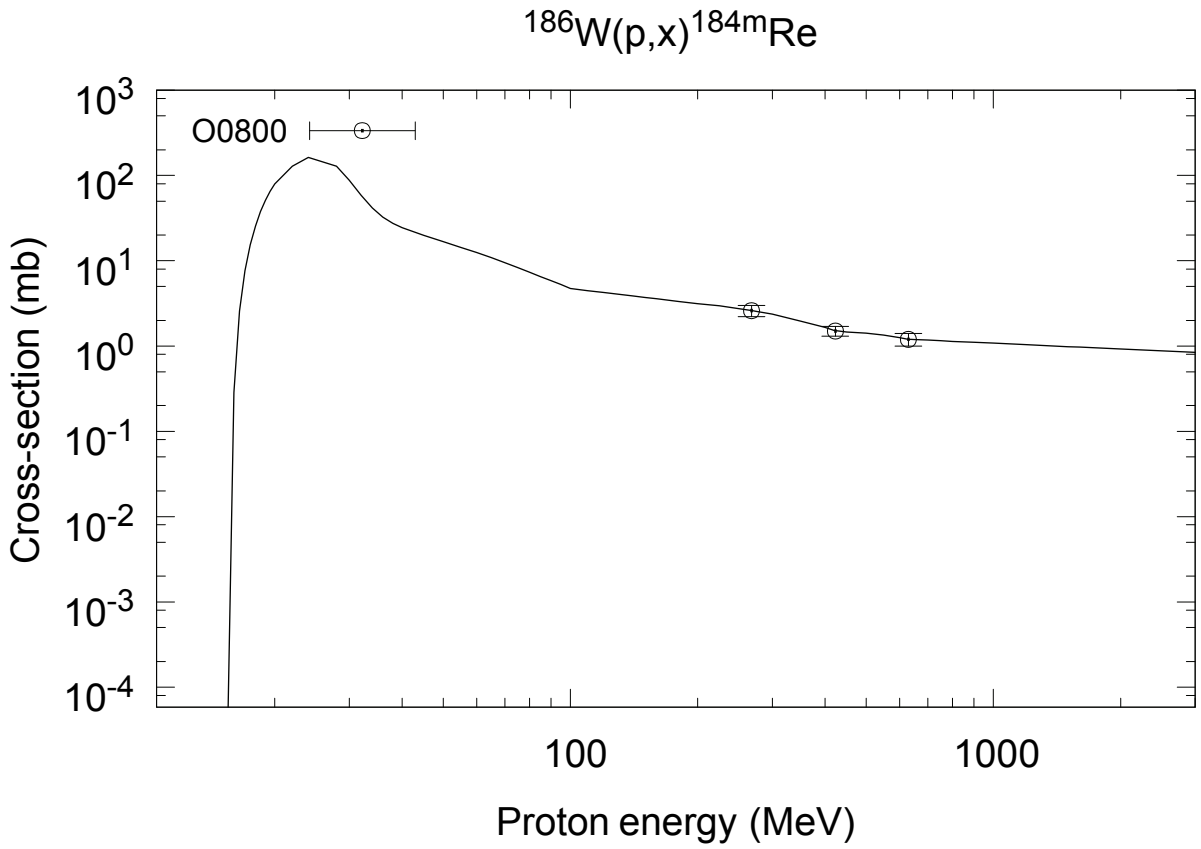

$^{186}W(p,x)^{179}Re$
O1021
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
100
1000
Proton energy (MeV)

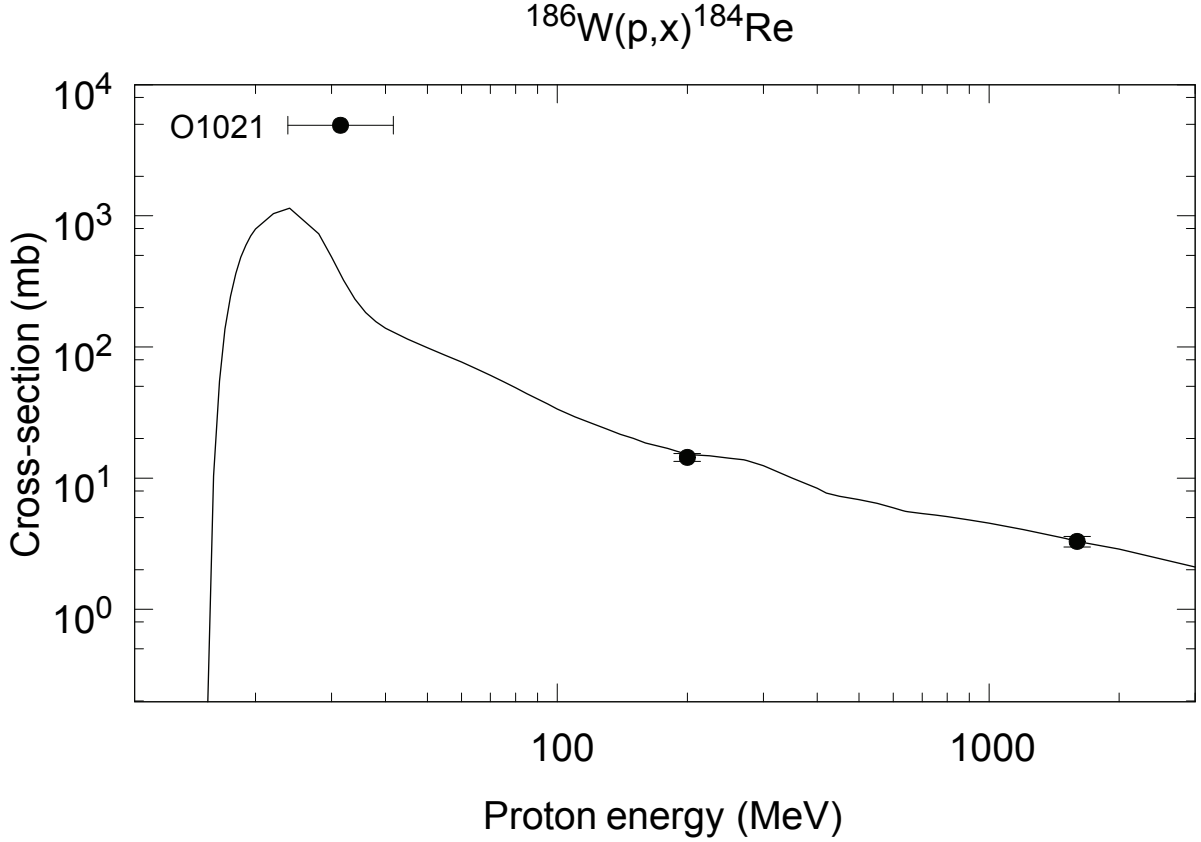

$^{186}W(p,x)^{181}Re$
O1021
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
100
1000
Proton energy (MeV)


$^{186}W(p,x)^{182g}Re$
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

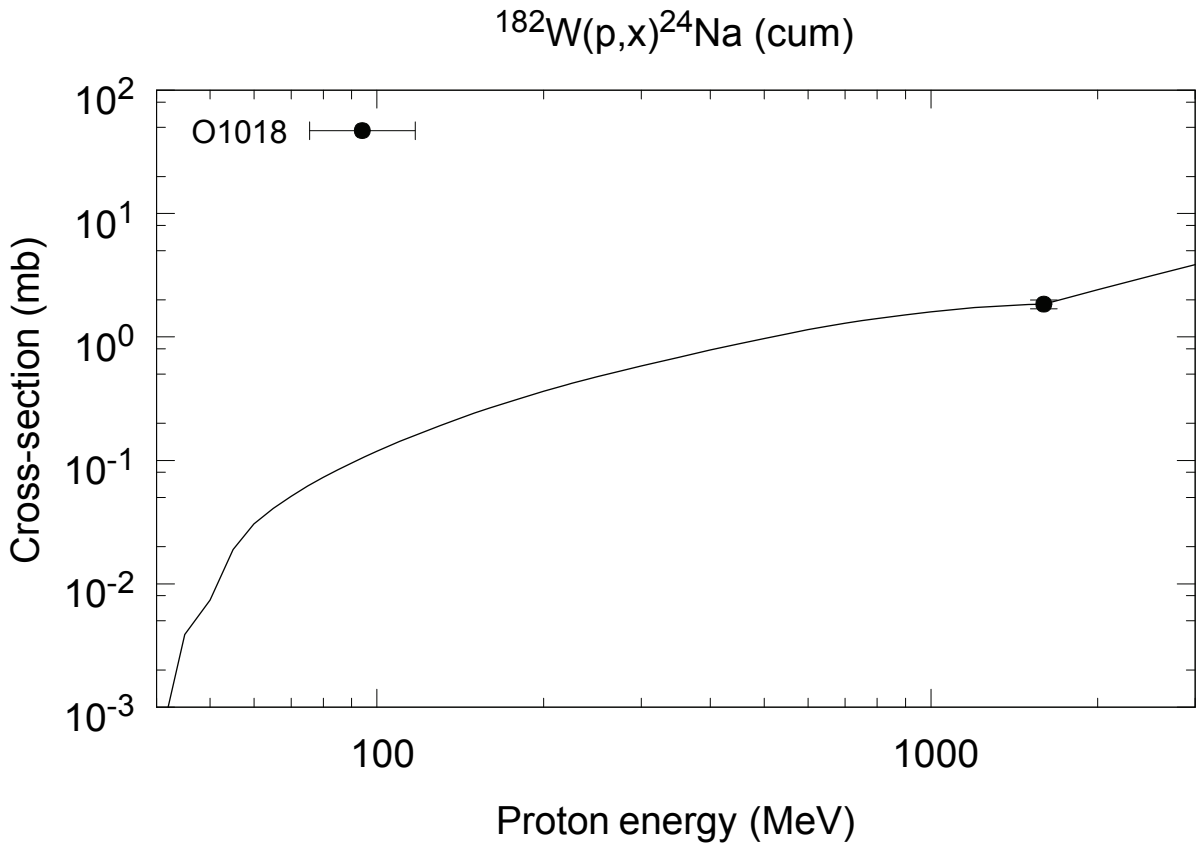

$^{186}W(p,x)^{183}Re$
O1021
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

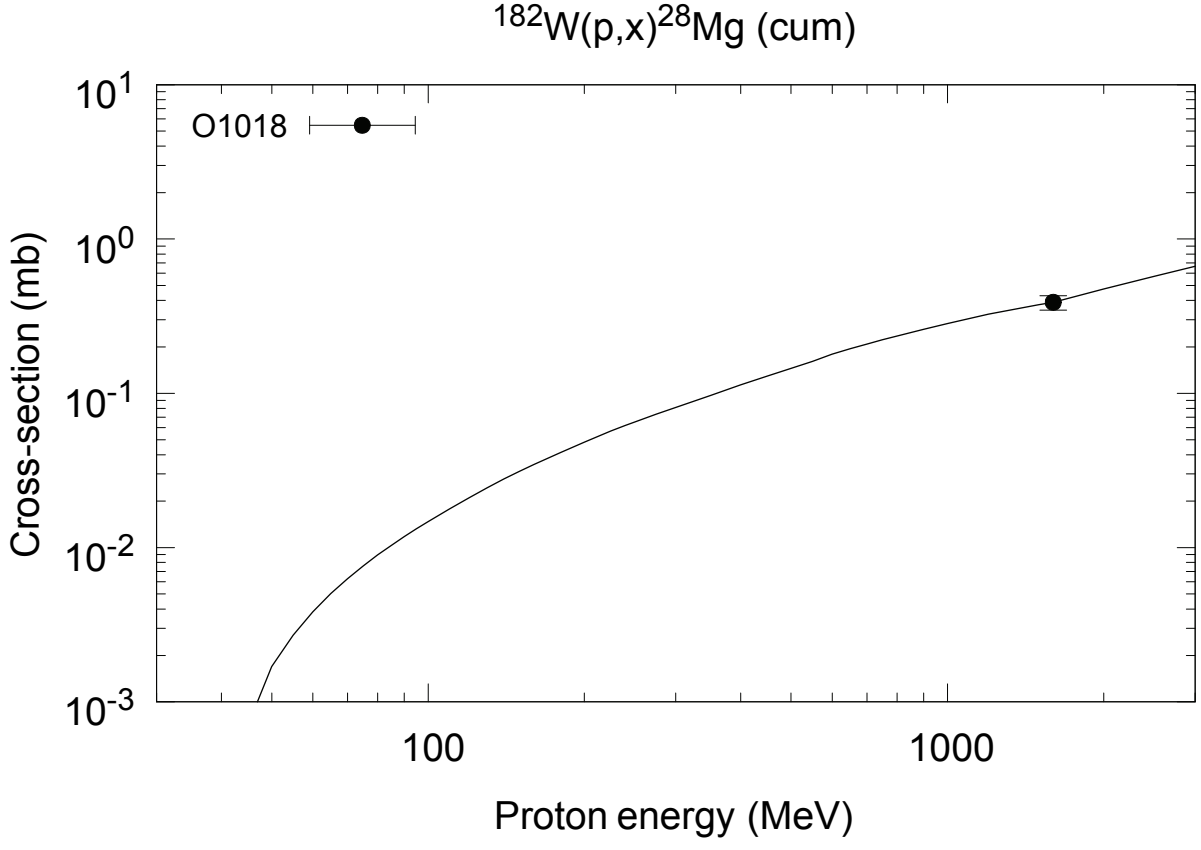

$^{186}W(p,x)^{184g}Re$
O0800
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
100
1000
Proton energy (MeV)

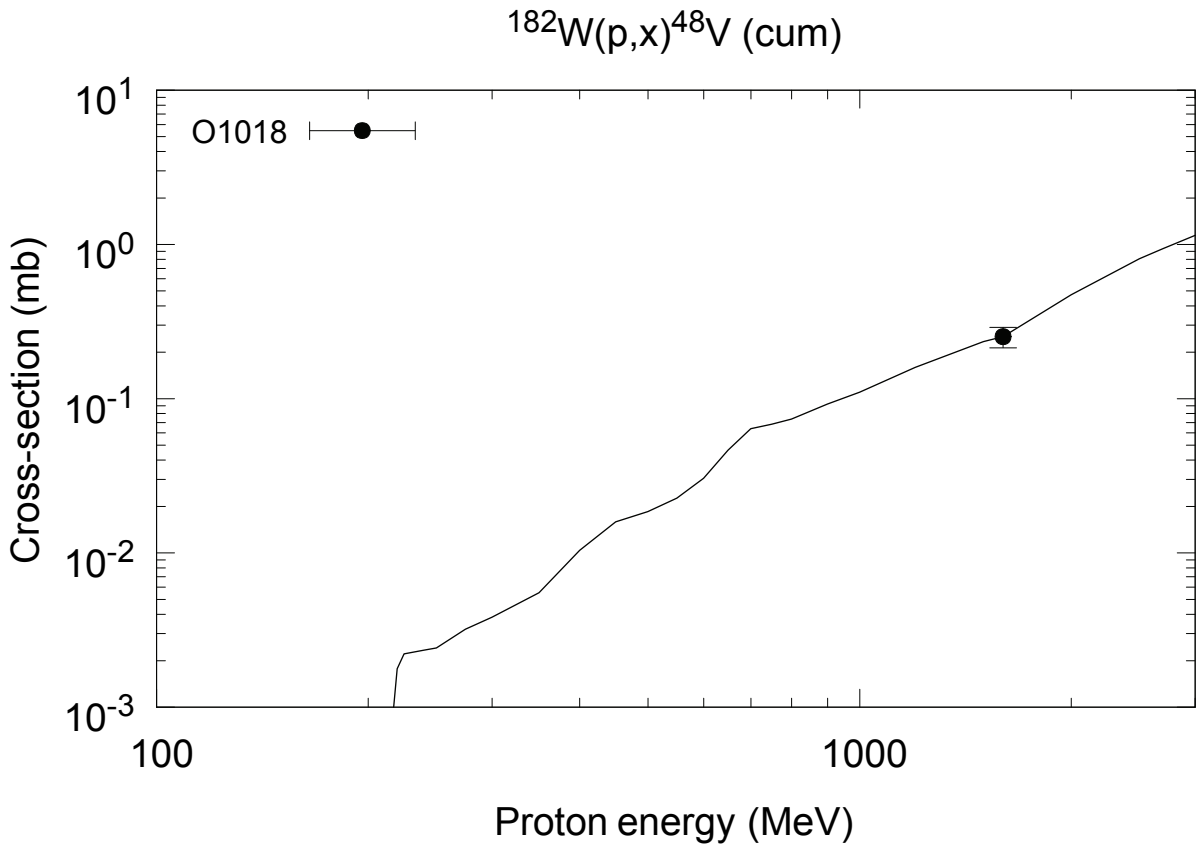

$^{186}W(p,x)^{184m}Re$
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
10^{-4}
100
1000
Proton energy (MeV)

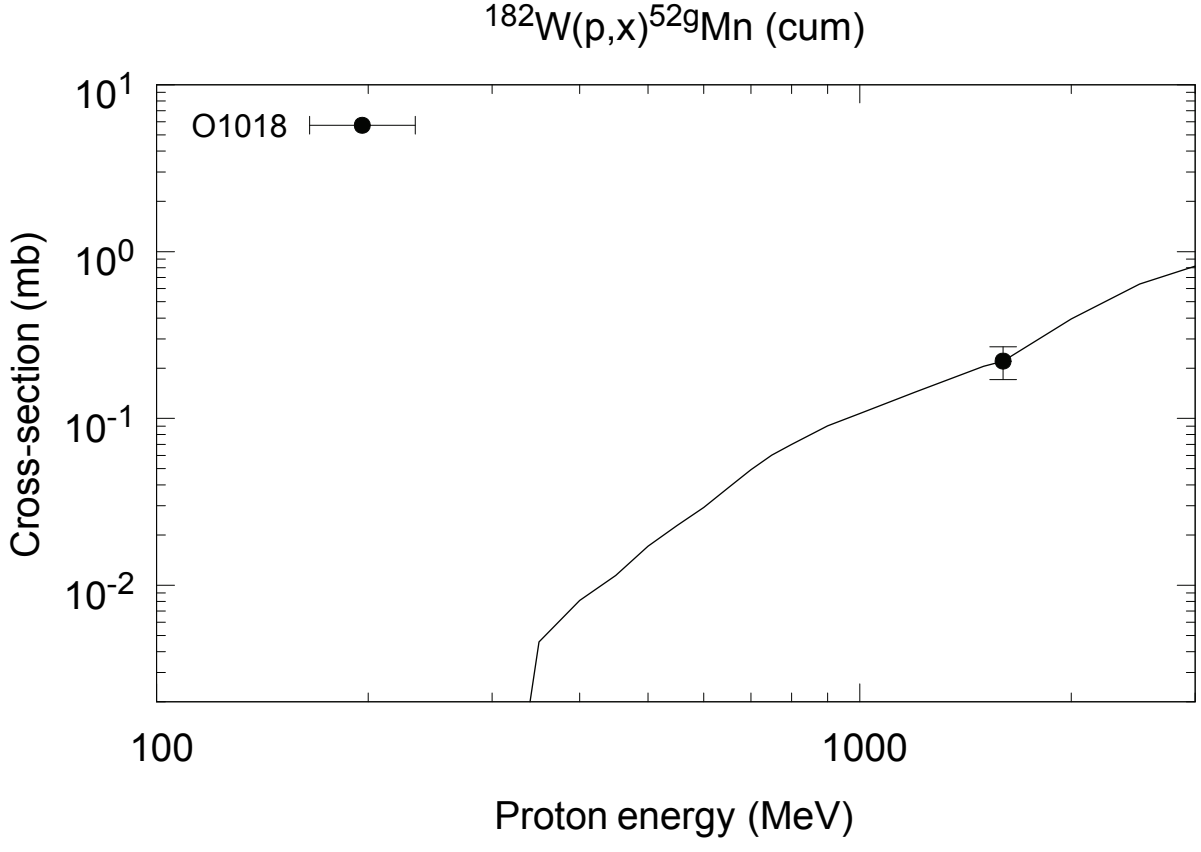

$^{186}W(p,x)^{184}Re$
O1021
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
100
1000
Proton energy (MeV)

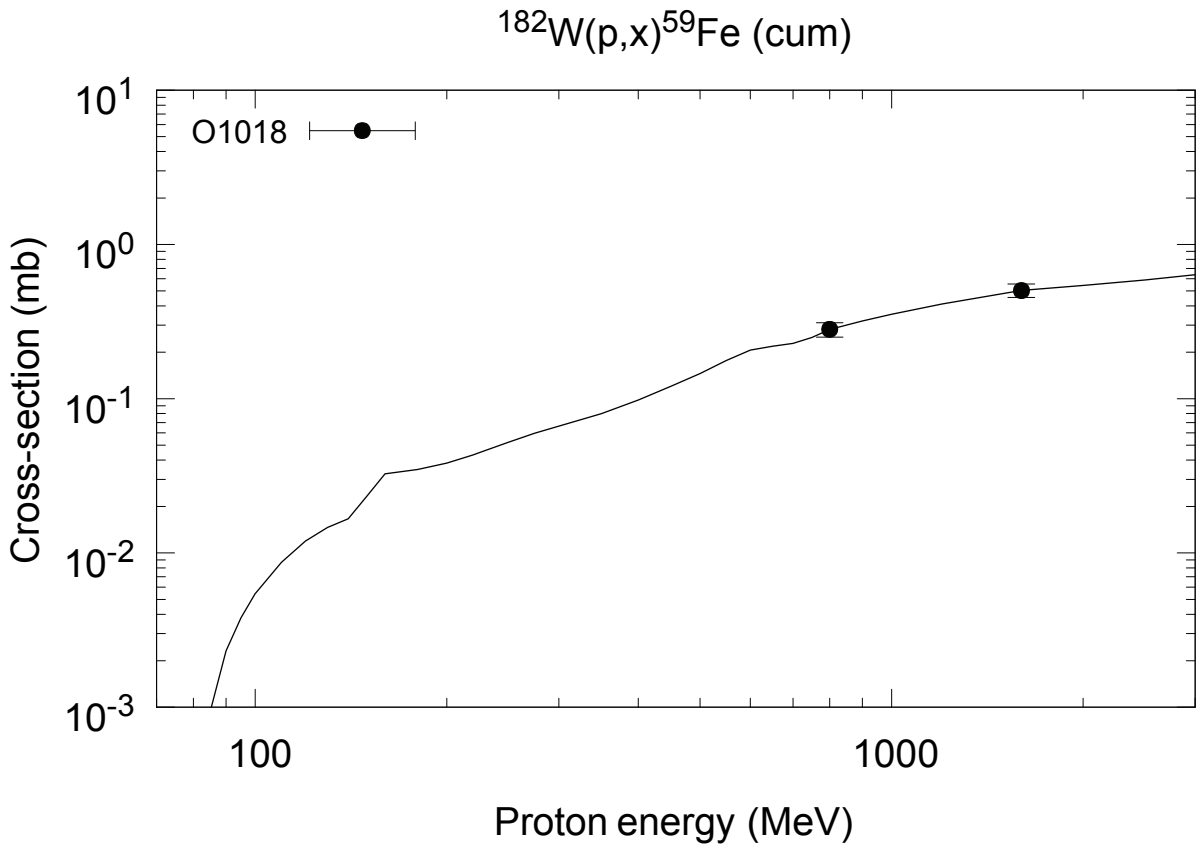
Appendix B: Cumulative radionuclide production cross-sections in proton induced reactions with stable tungsten isotopes evaluated using experimental data

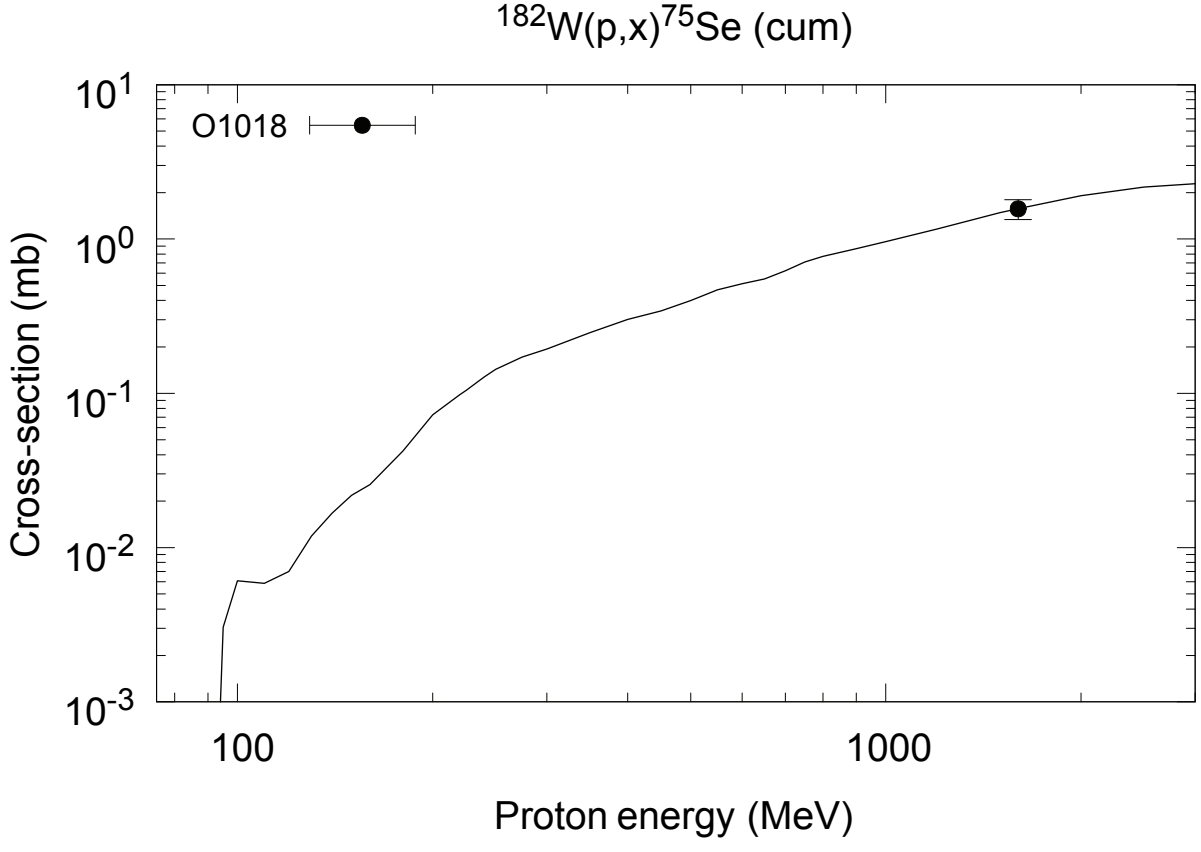

^{182}W(p,x)^{24}Na (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

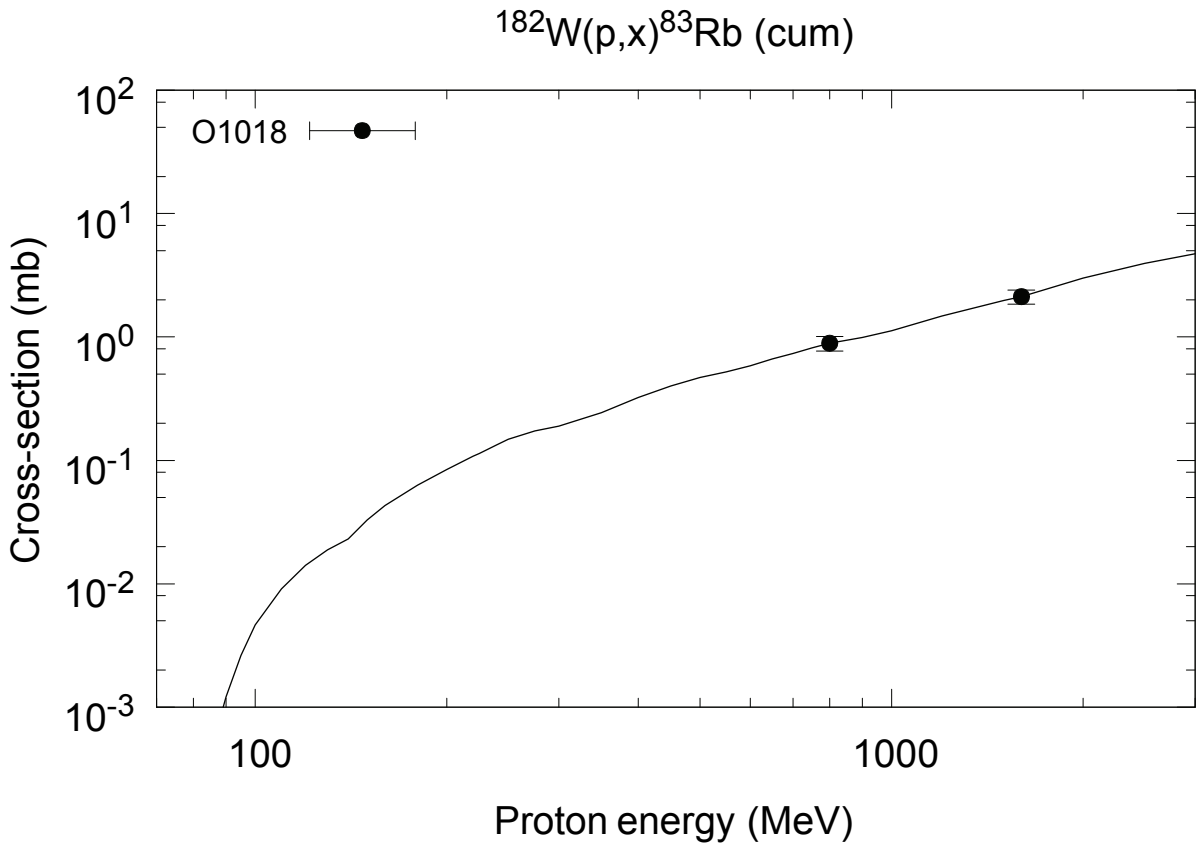

^{182}W(p,x)^{28}Mg (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

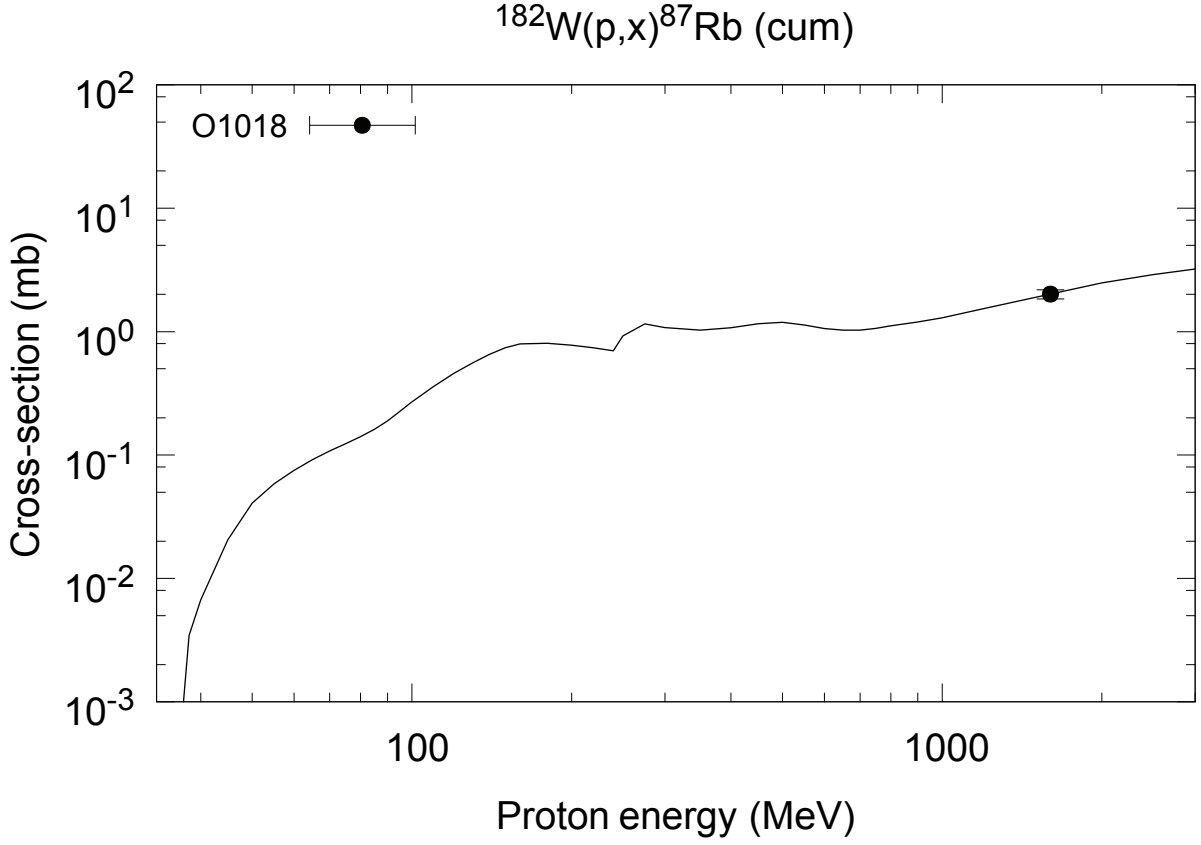

^{182}W(p,x)^{48}V (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

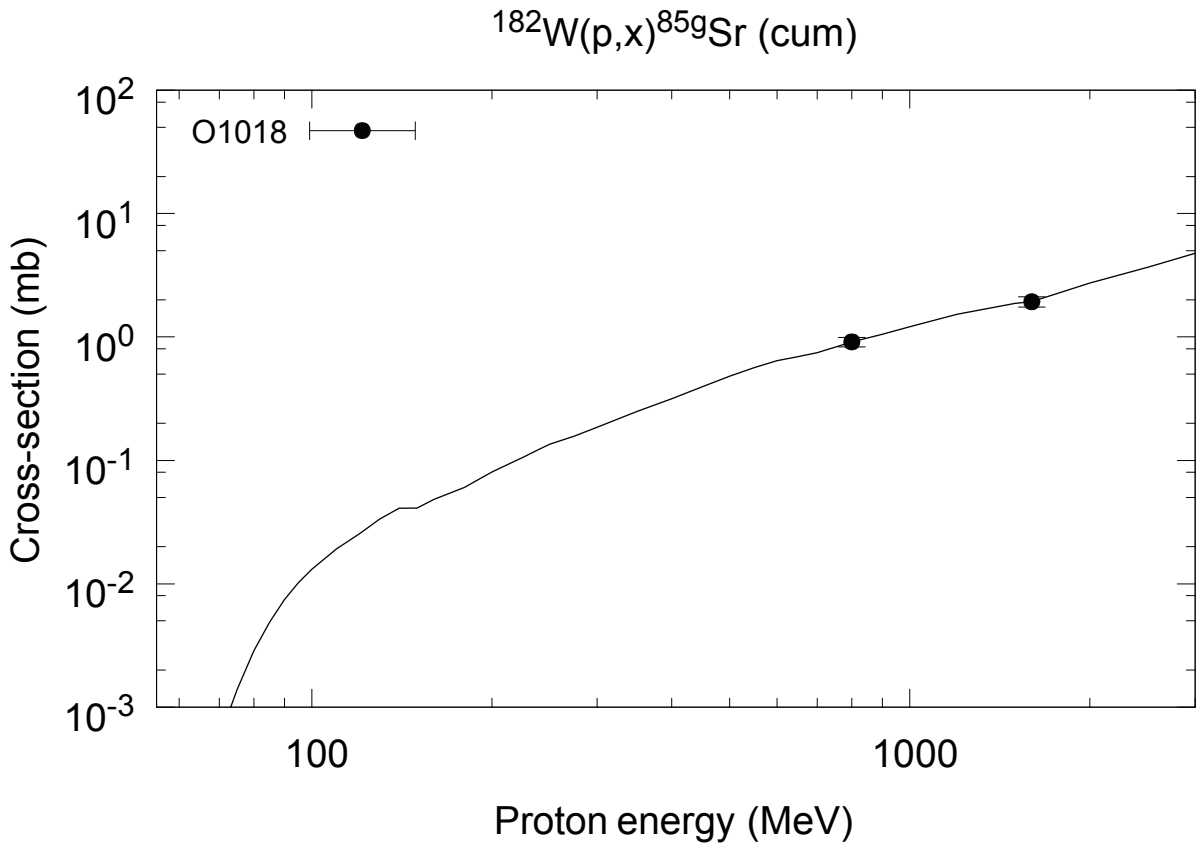

^{182}W(p,x)^{52g}Mn (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

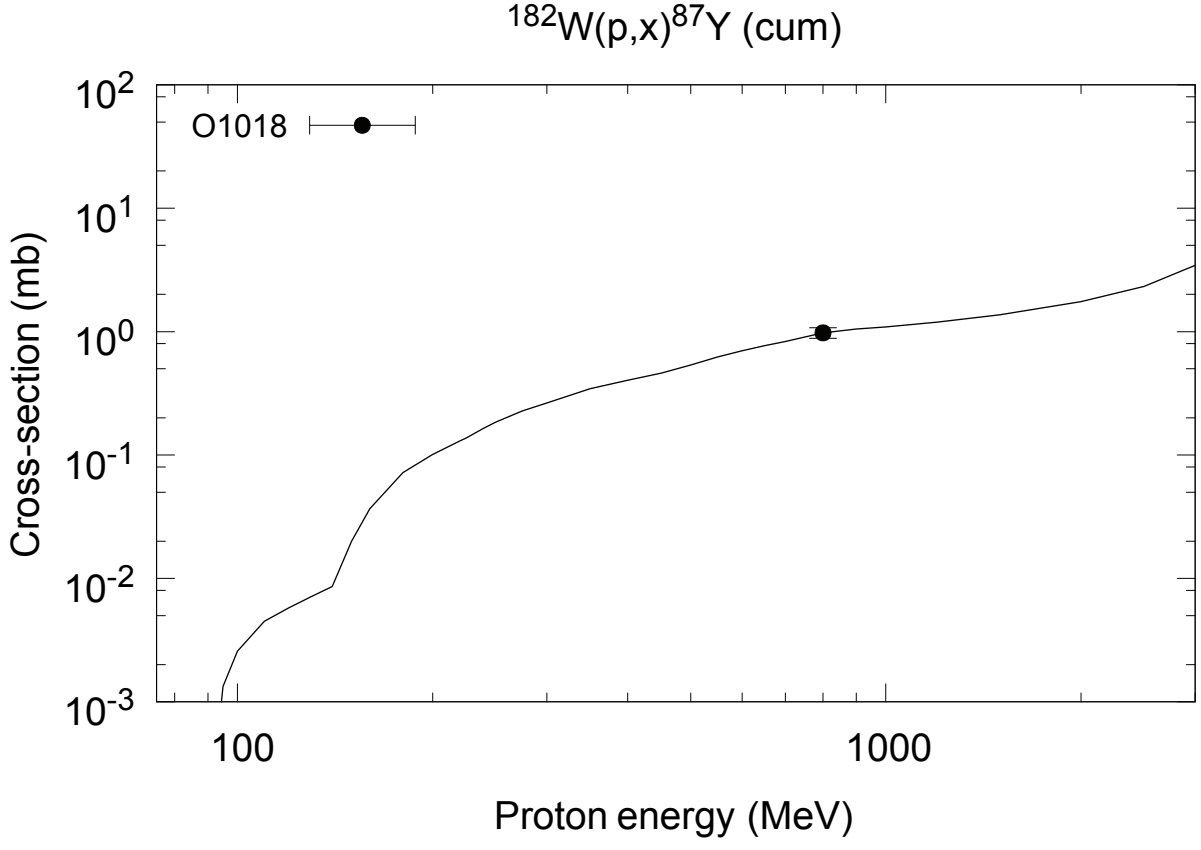

^{182}W(p,x)^{59}Fe (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

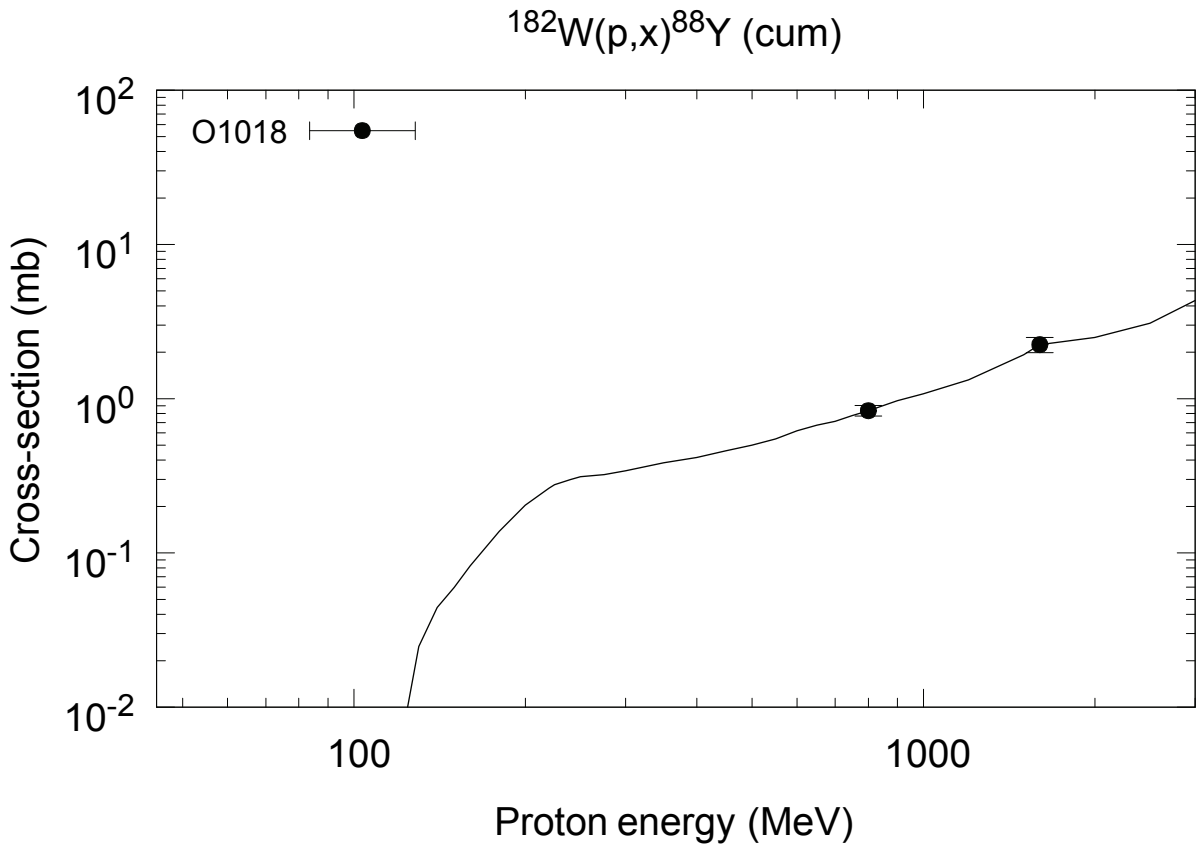

^{182}W(p,x)^{75}Se (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

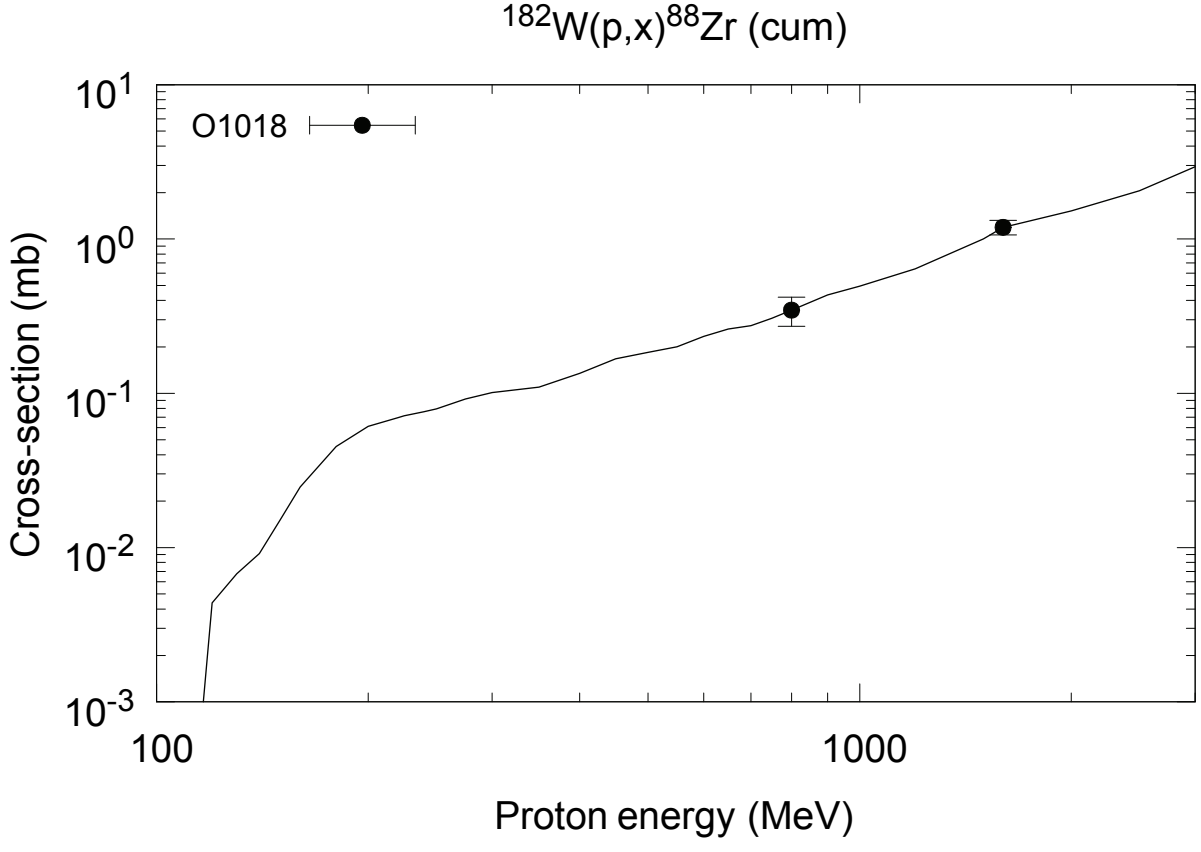

$^{182}W(p,x)^{83}Rb$ (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

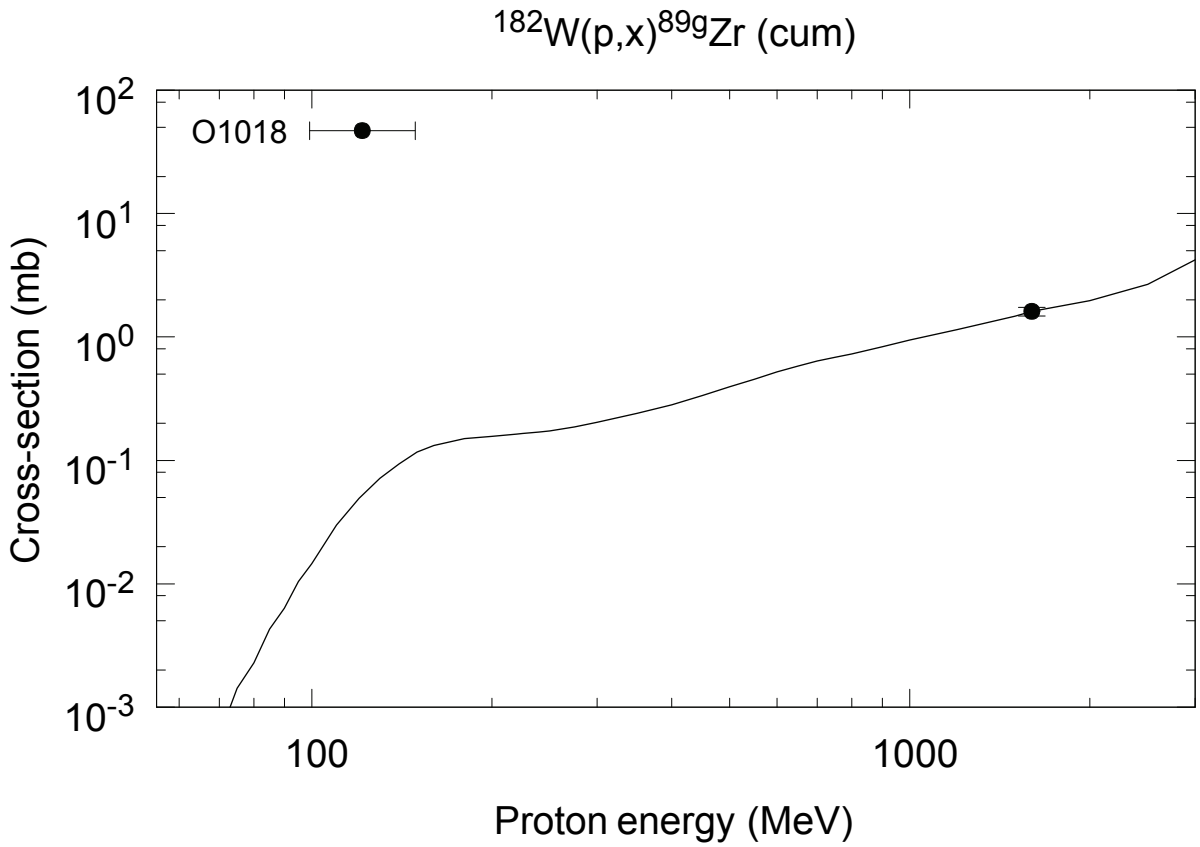

$^{182}W(p,x)^{87}Rb$ (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

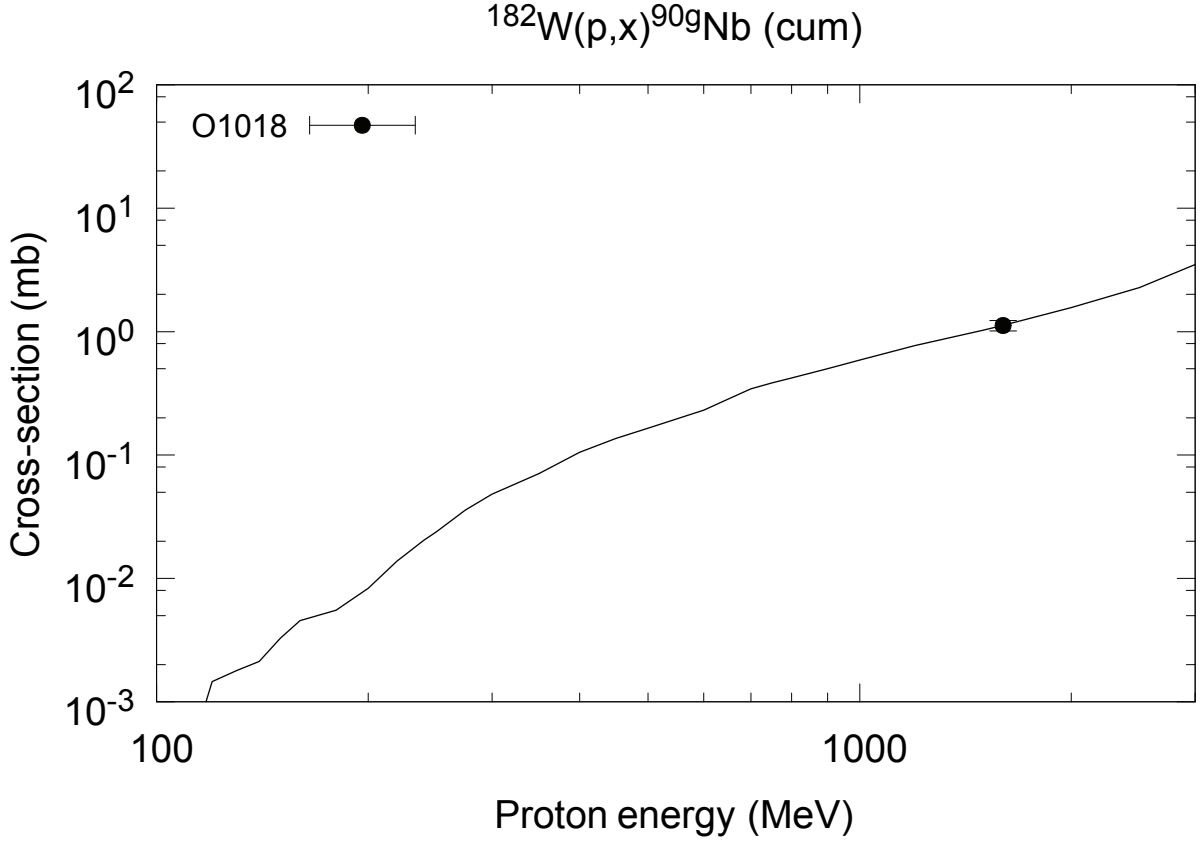

^{182}W(p,x)^{85g}Sr (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

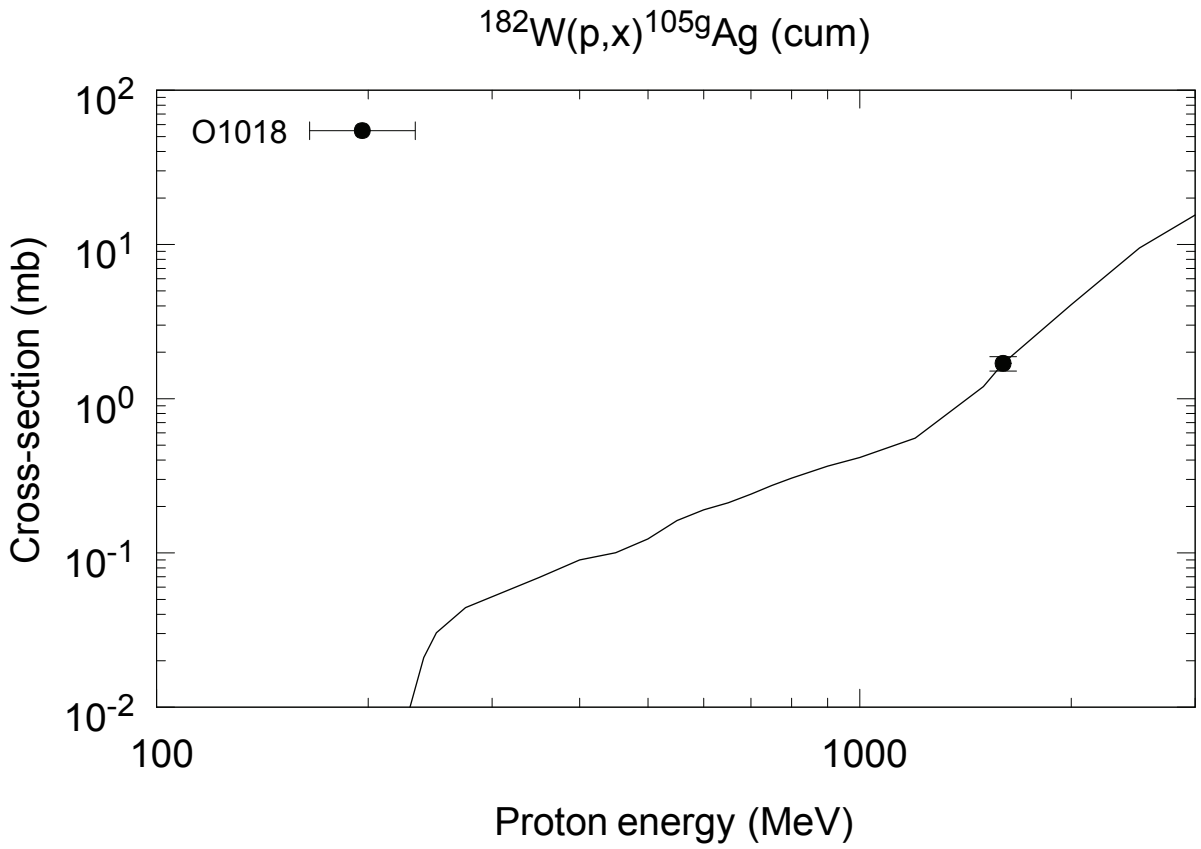

^{182}W(p,x)^{87}Y (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

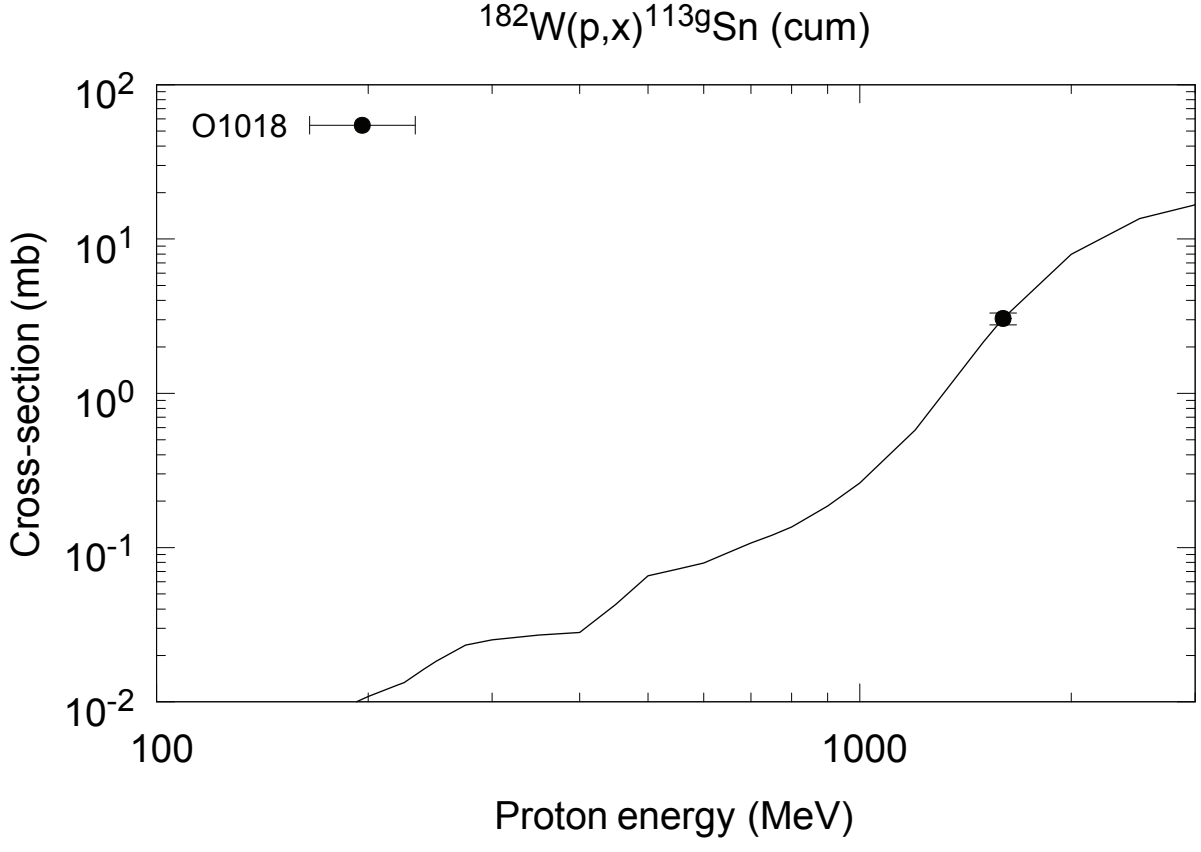

^{182}W(p,x)^{88}Y (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

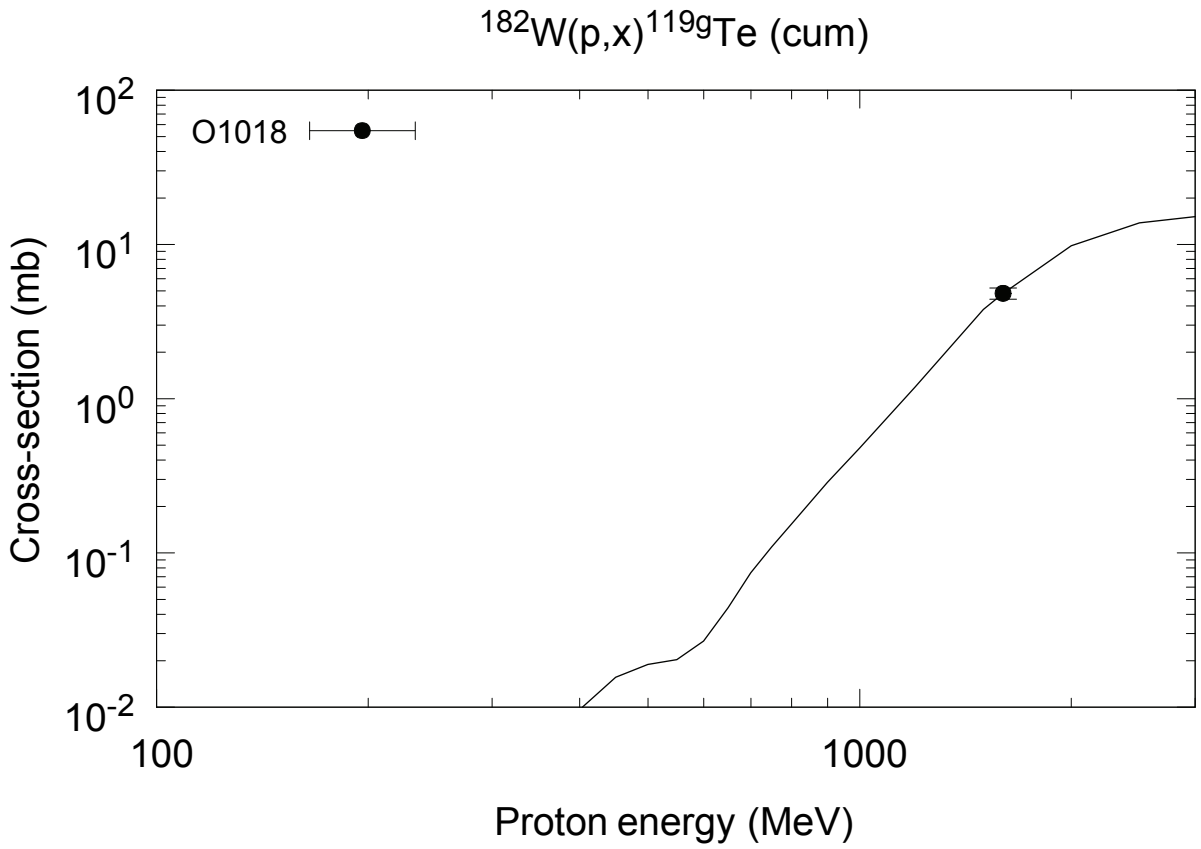

^{182}W(p,x)^{88}Zr (cum)
O1018
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

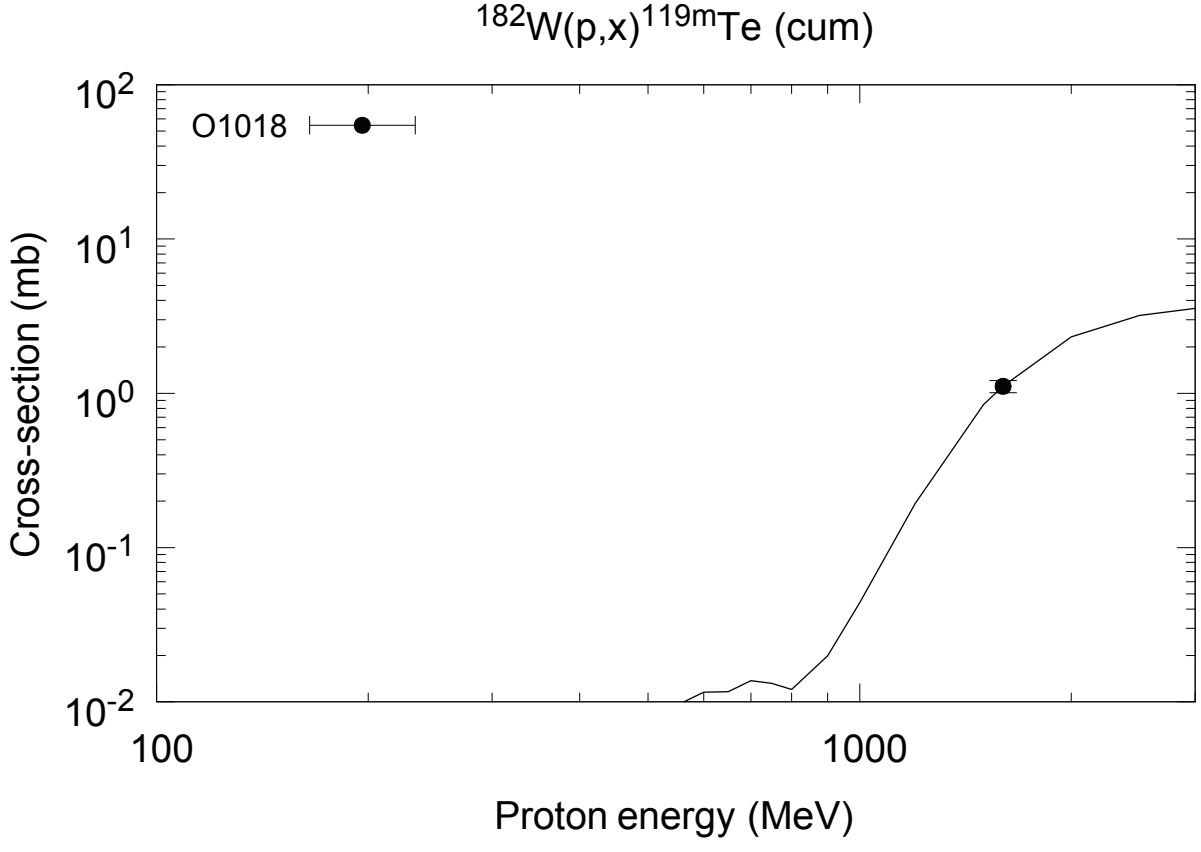

^{182}W(p,x)^{89g}Zr (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

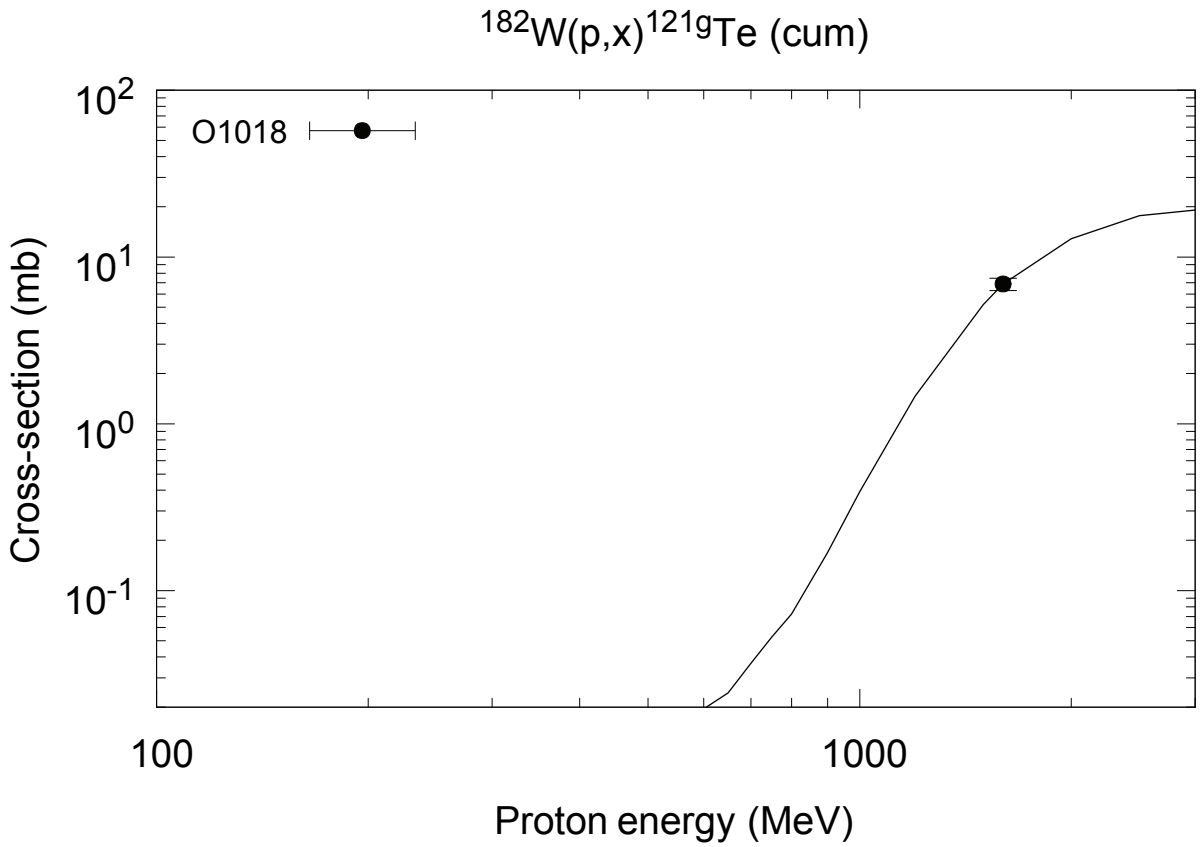

^{182}W(p,x)^{90g}Nb (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

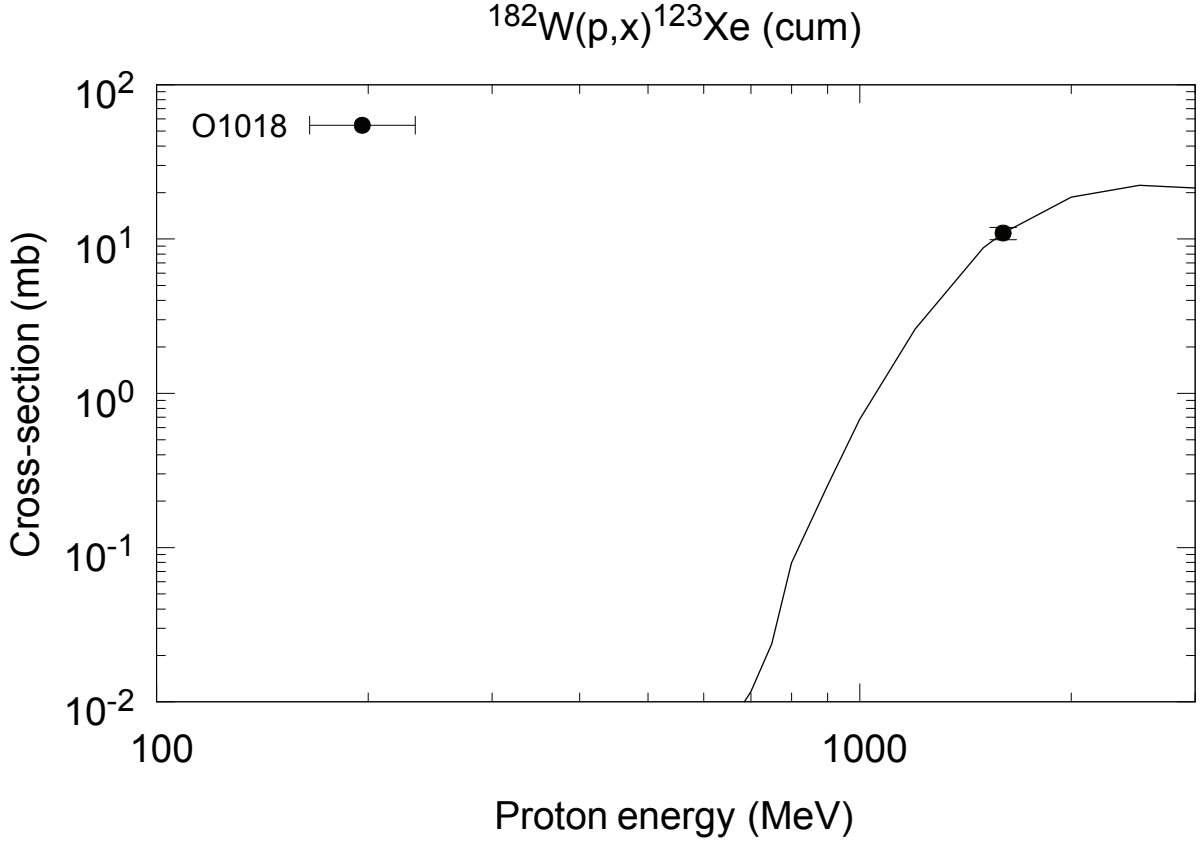

^{182}W(p,x)^{105g}Ag (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

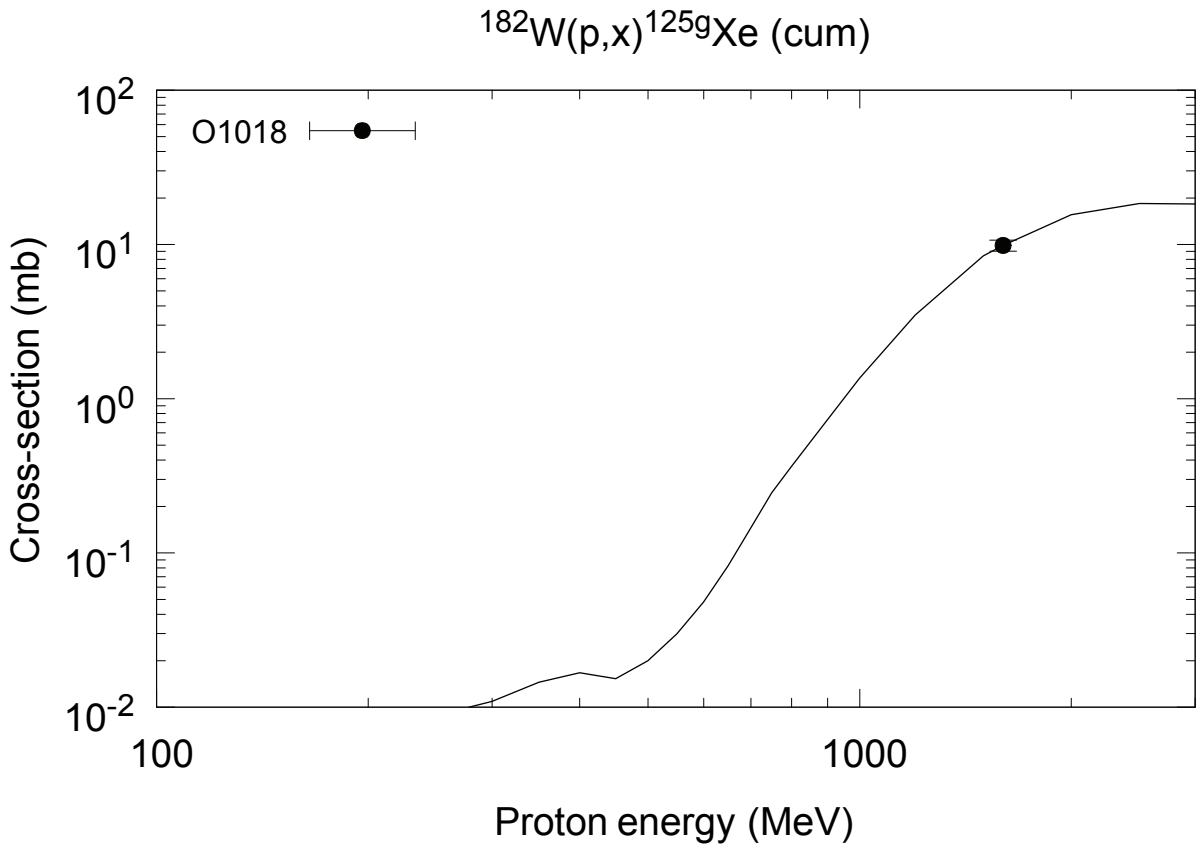

^{182}W(p,x)^{113g}Sn (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

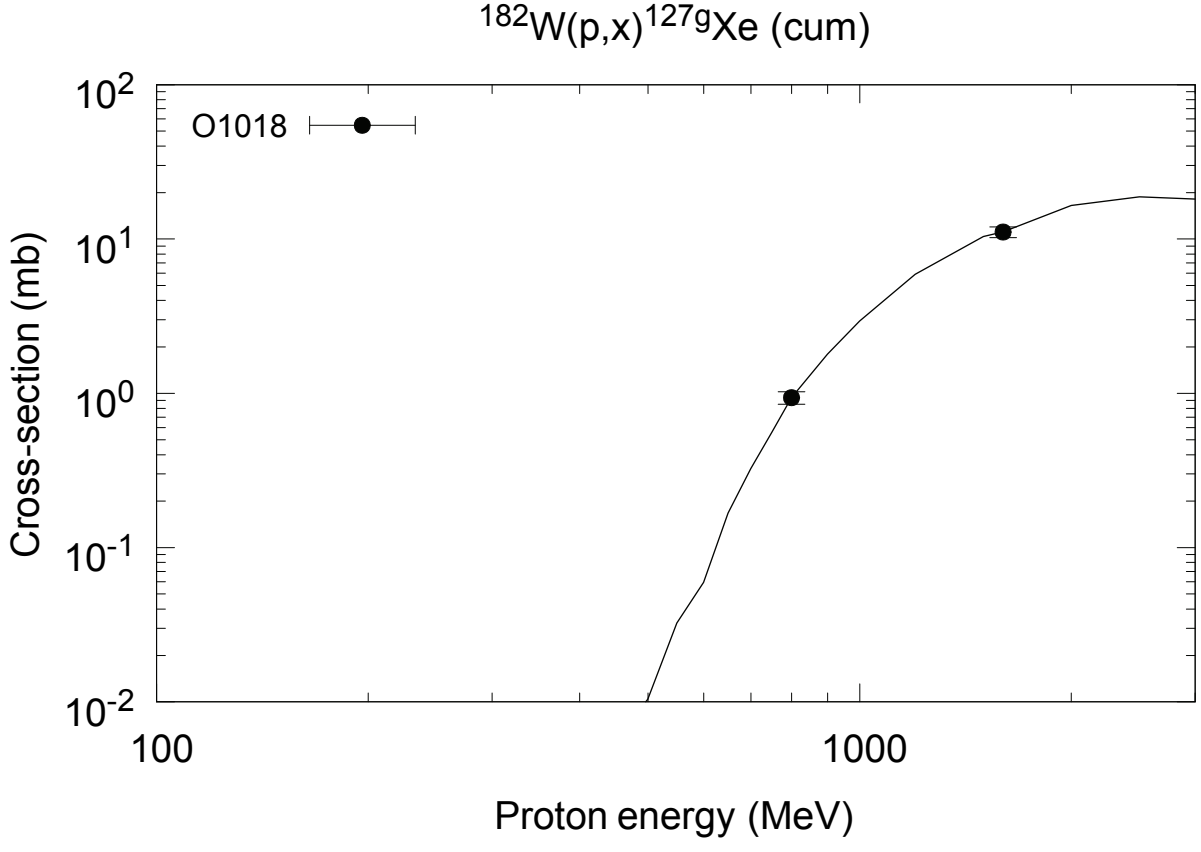

^{182}W(p,x)^{119g}Te (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

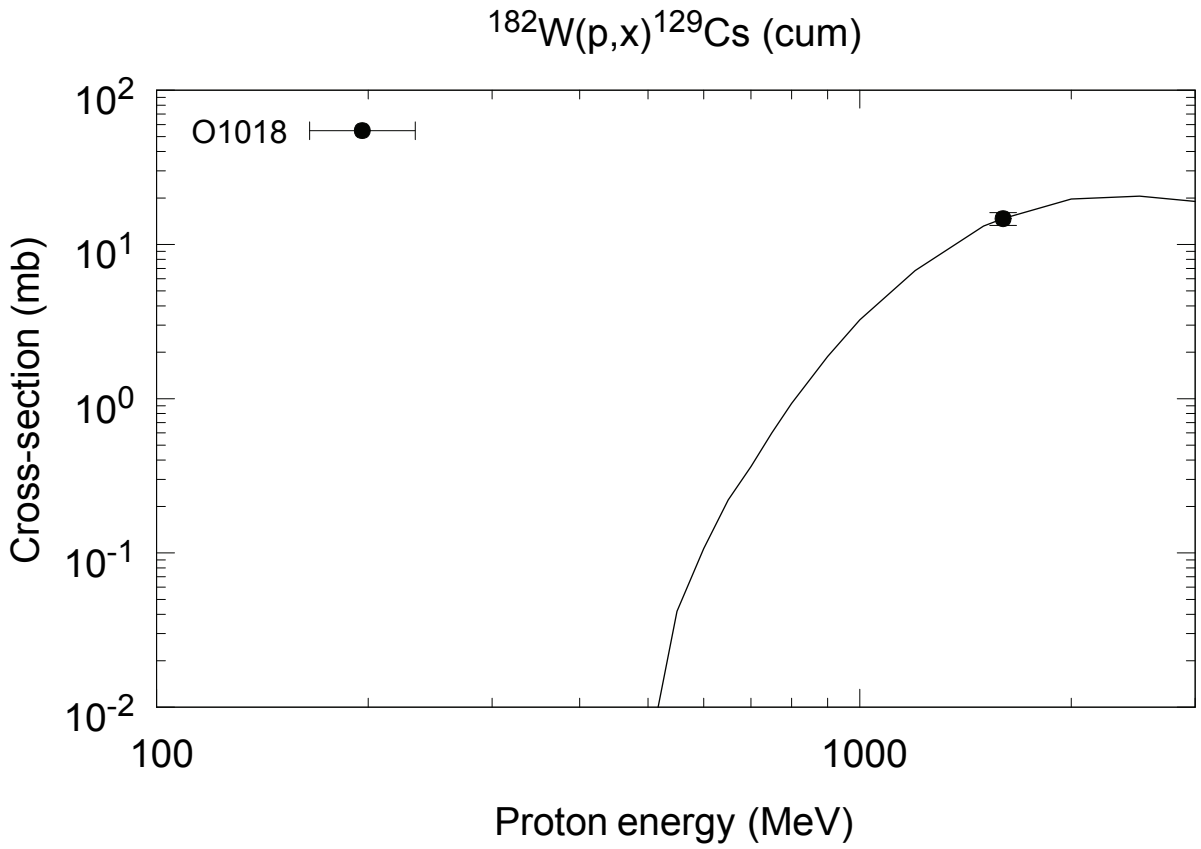

^{182}W(p,x)^{119m}Te (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

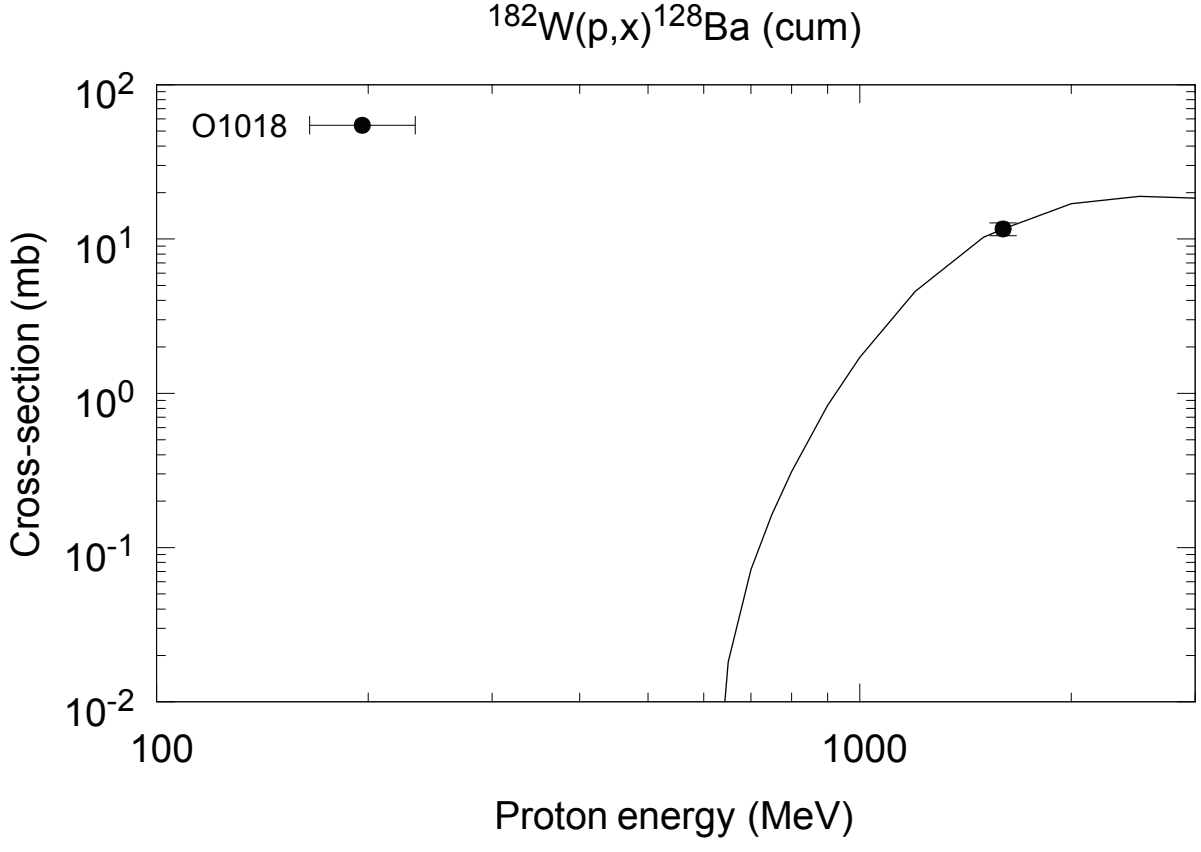

^{182}W(p,x)^{121g}Te (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

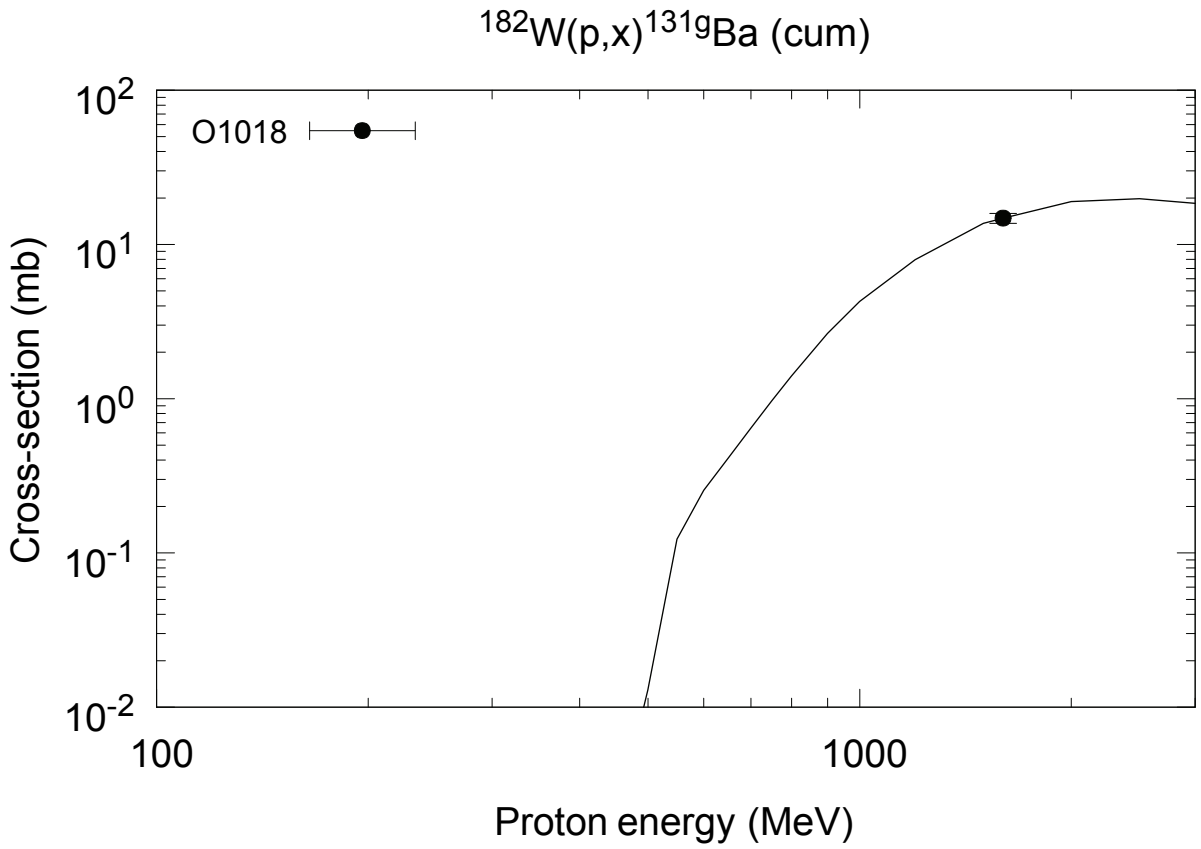

^{182}W(p,x)^{123}Xe (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

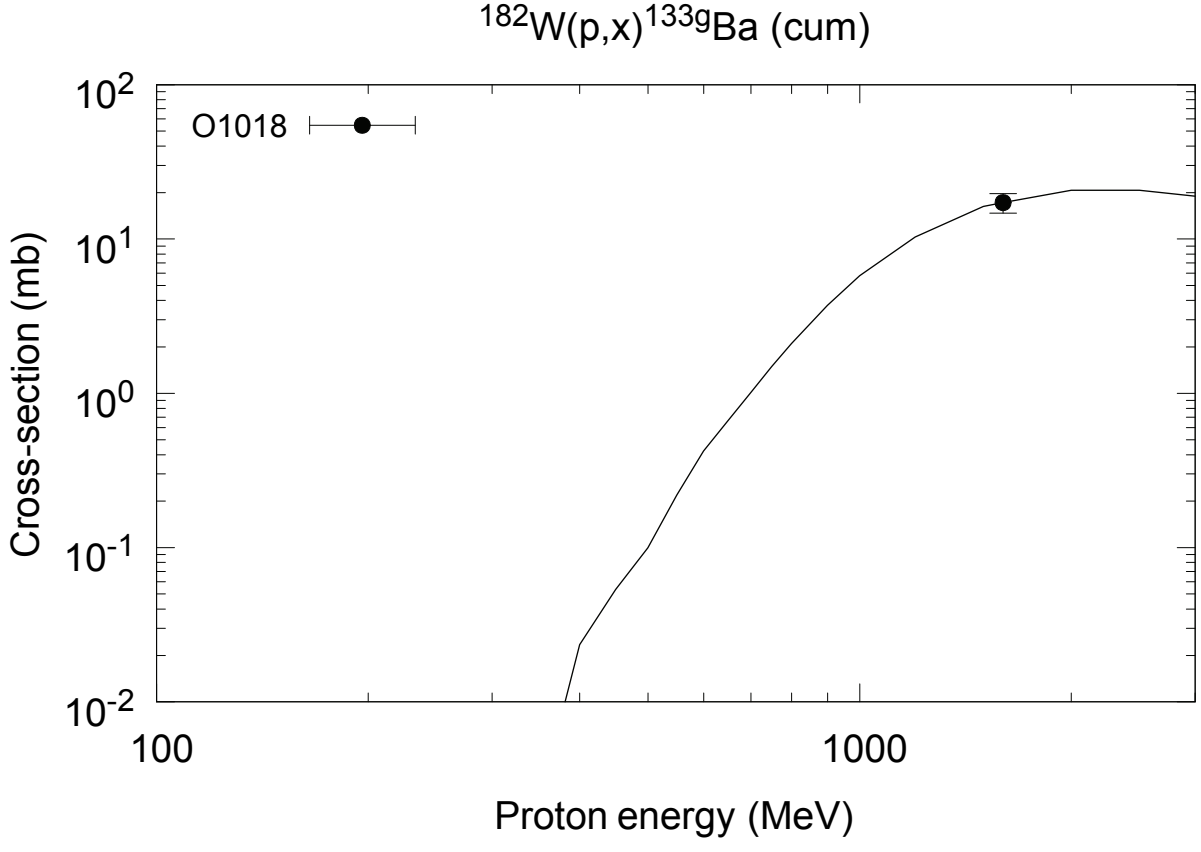

^{182}W(p,x)^{125g}Xe (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

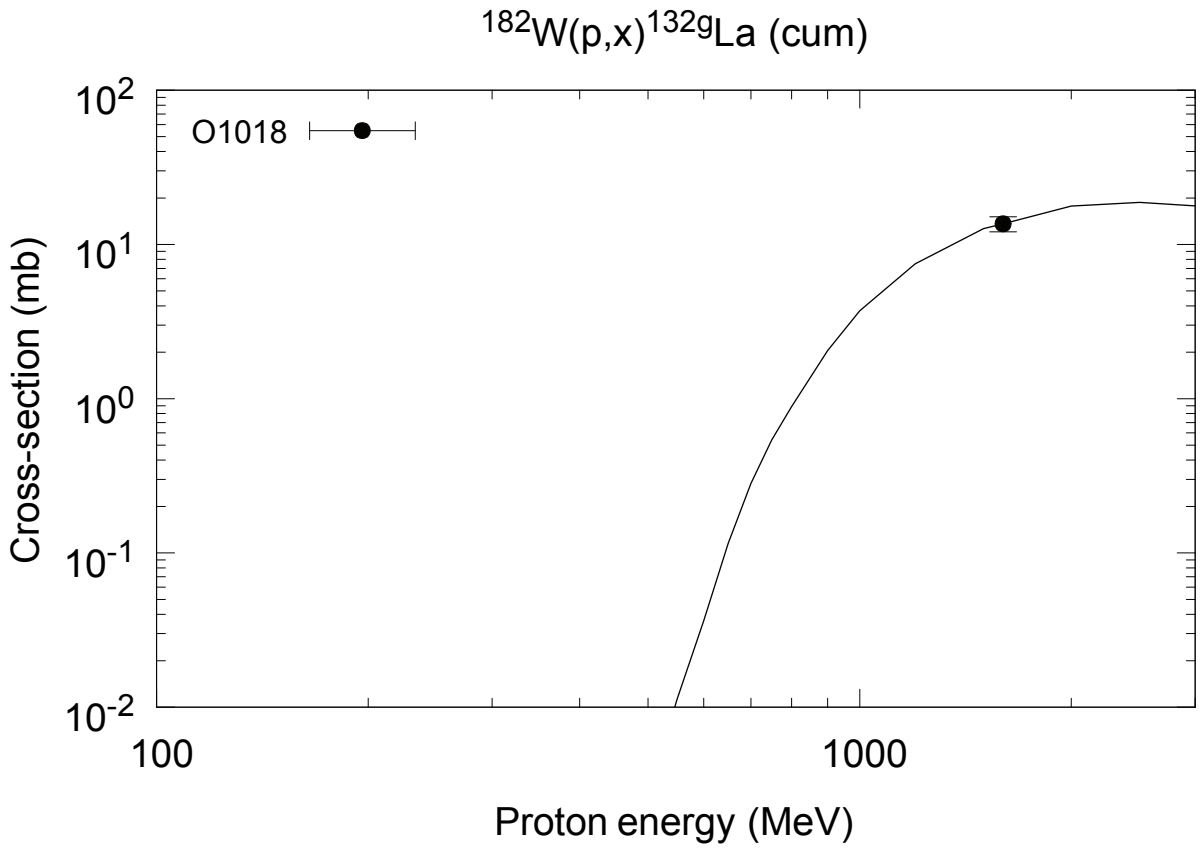

^{182}W(p,x)^{127g}Xe (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

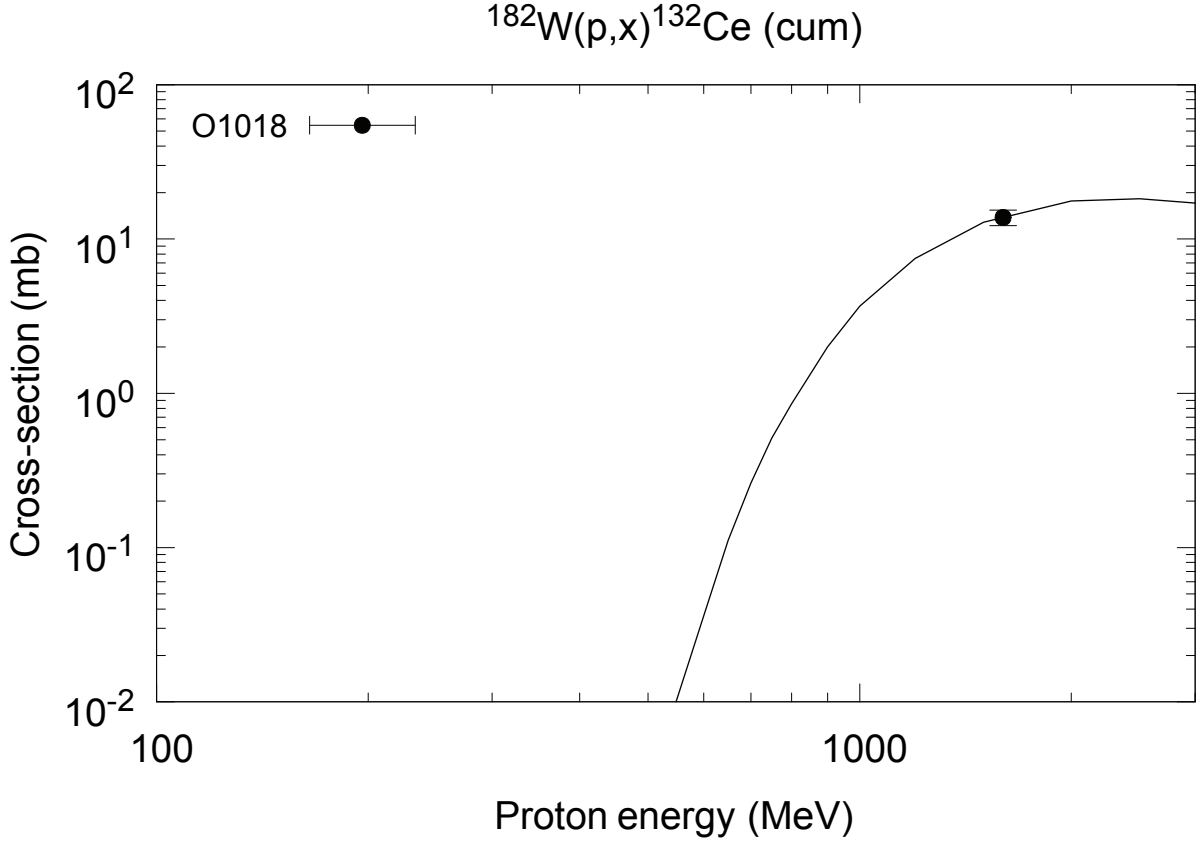

^{182}W(p,x)^{129}Cs (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

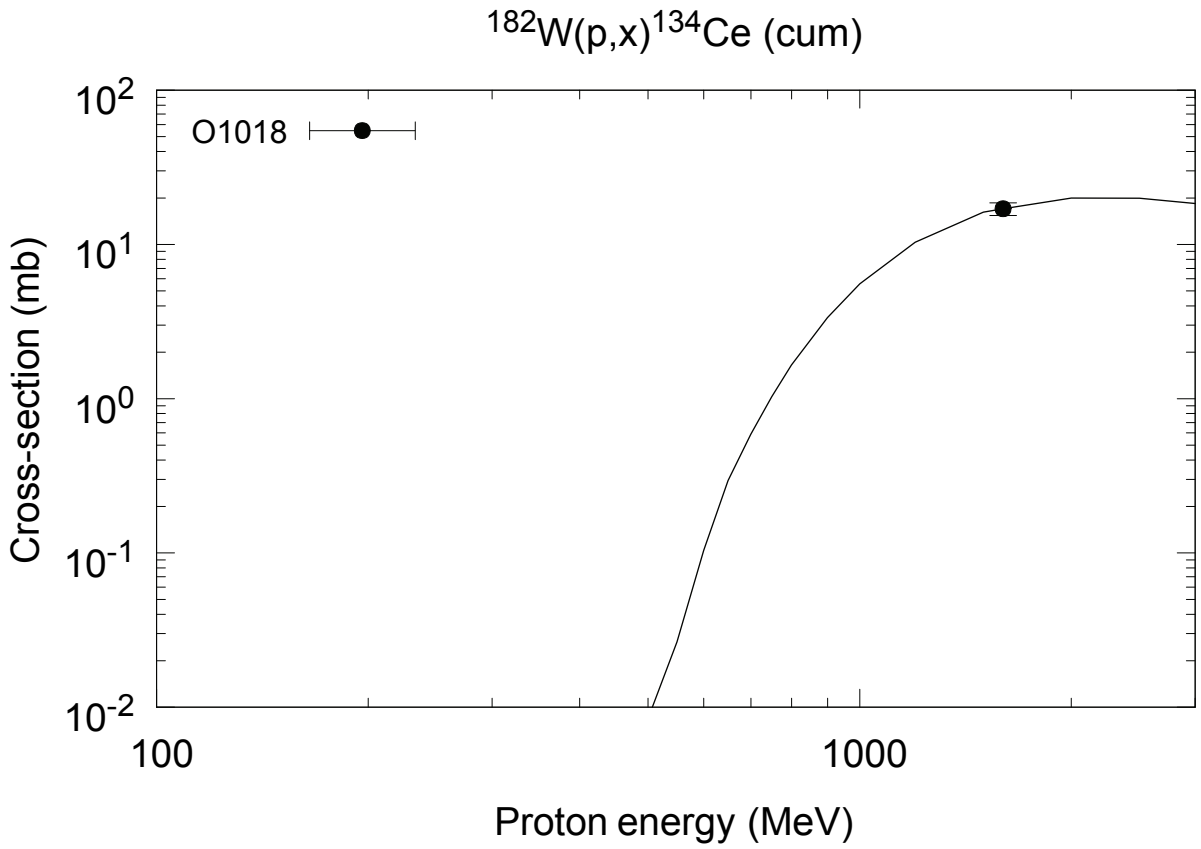

^{182}W(p,x)^{128}Ba (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

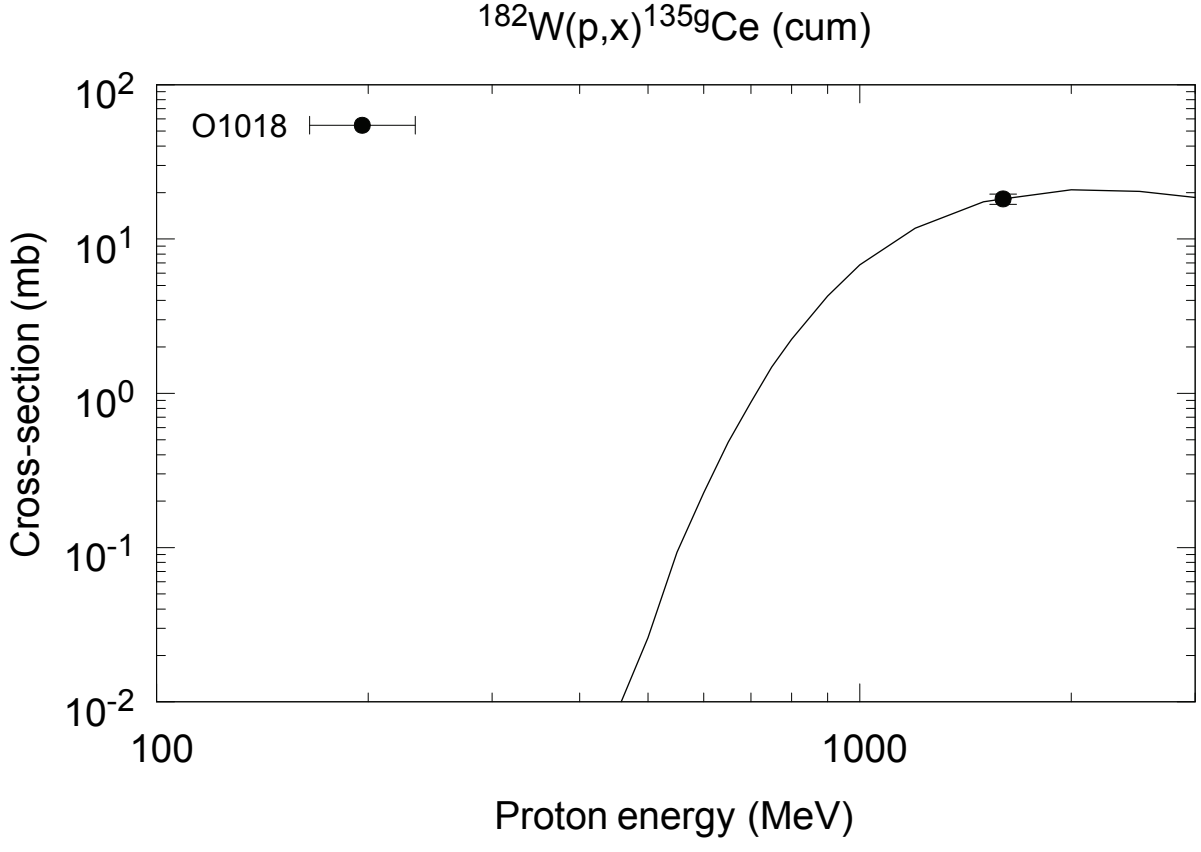

^{182}W(p,x)^{131g}Ba (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

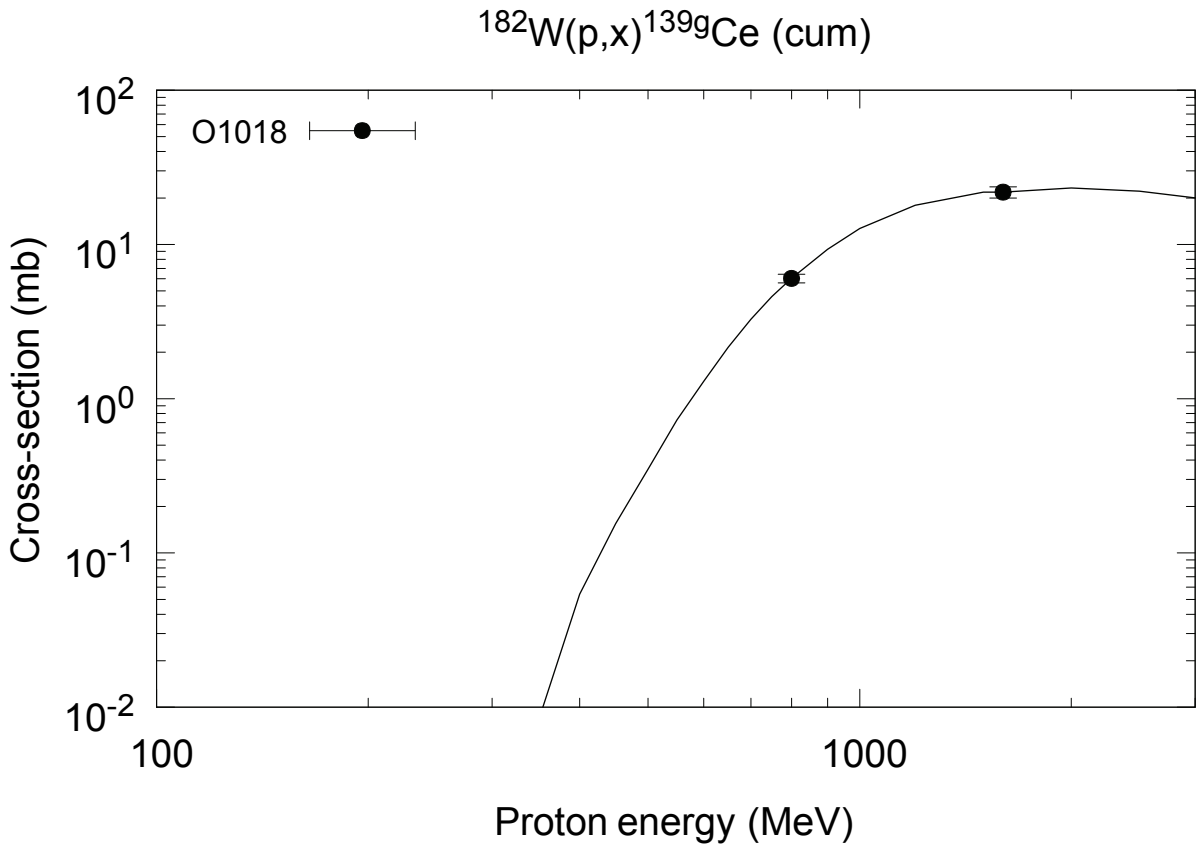

^{182}W(p,x)^{133g}Ba (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

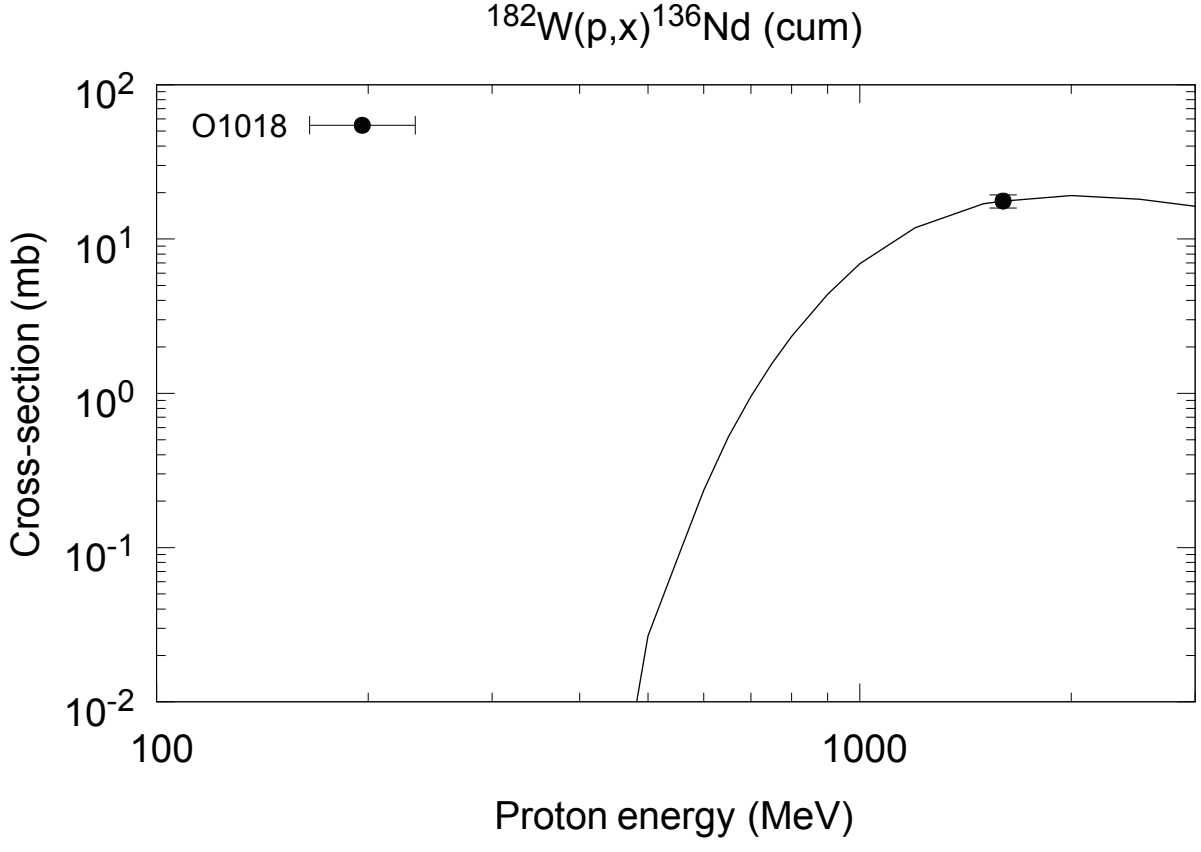

^{182}W(p,x)^{132g}La (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

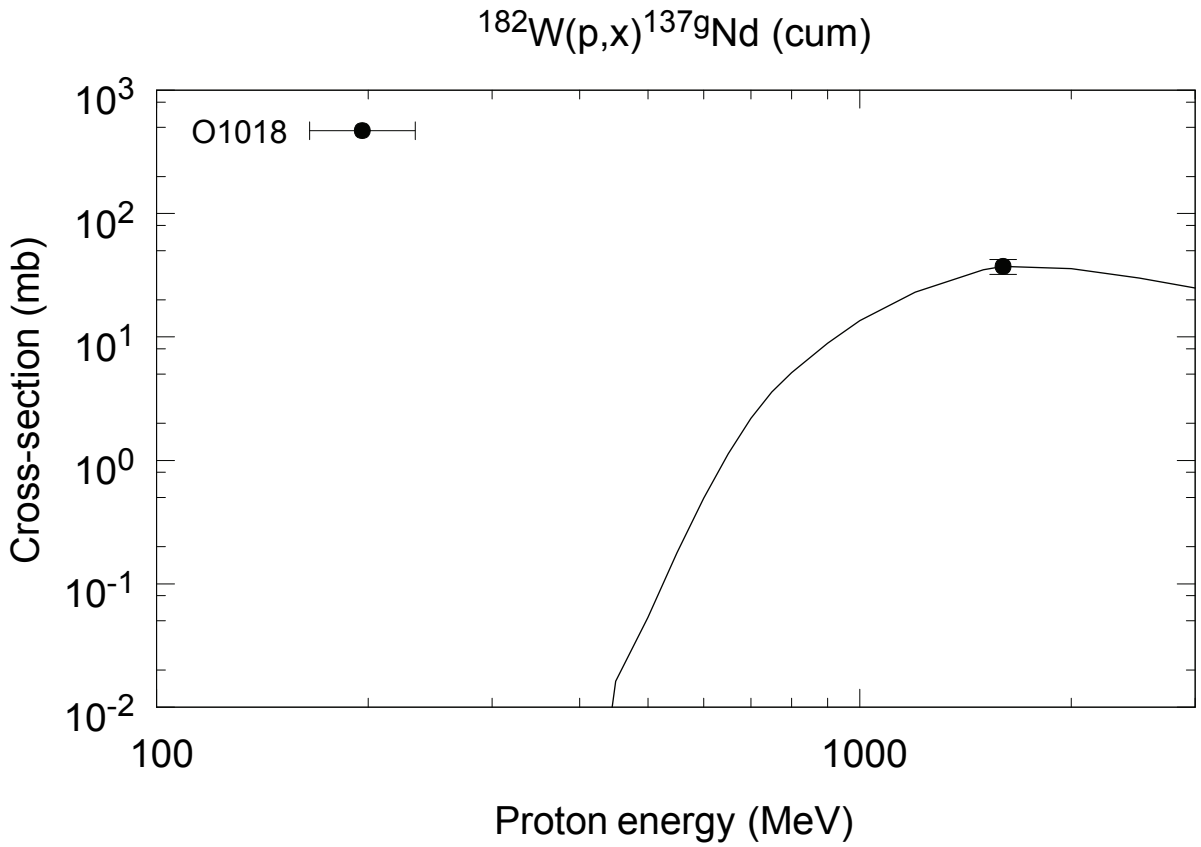

^{182}W(p,x)^{132}Ce (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

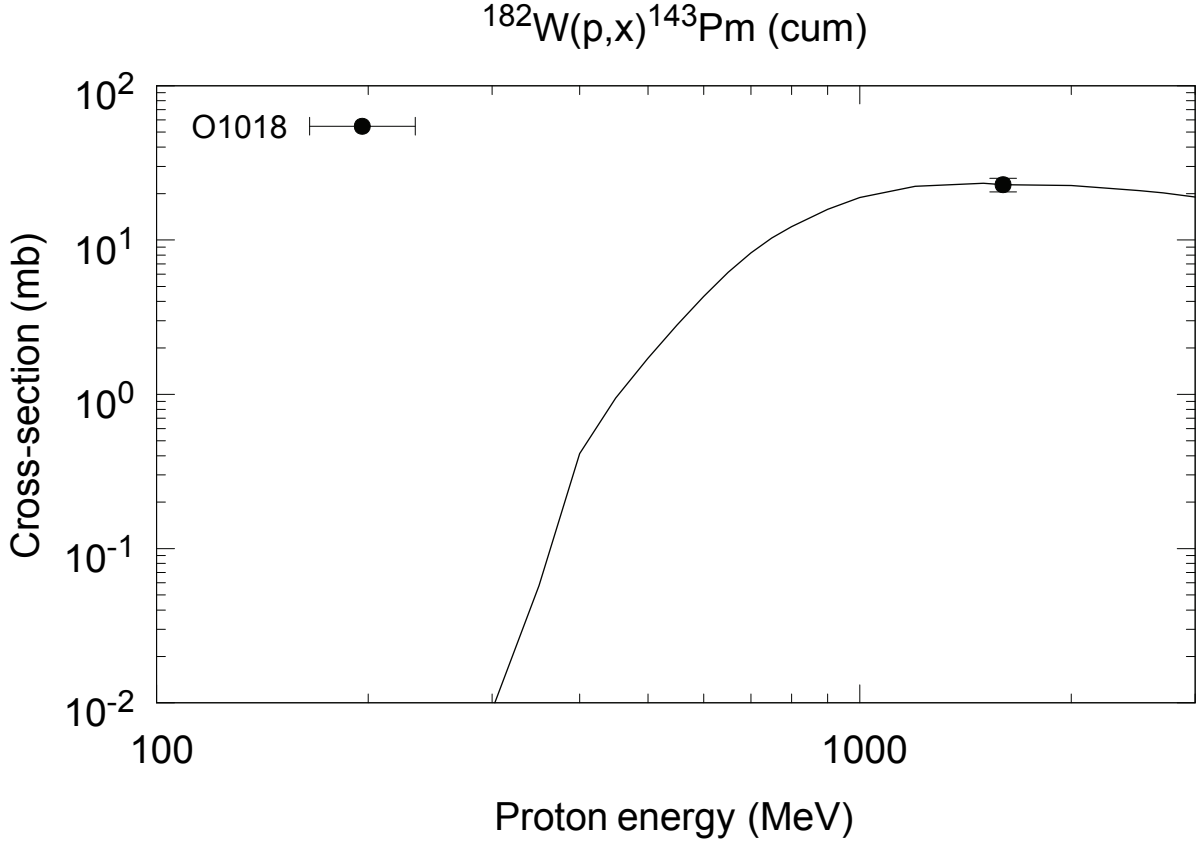

^{182}W(p,x)^{134}Ce (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

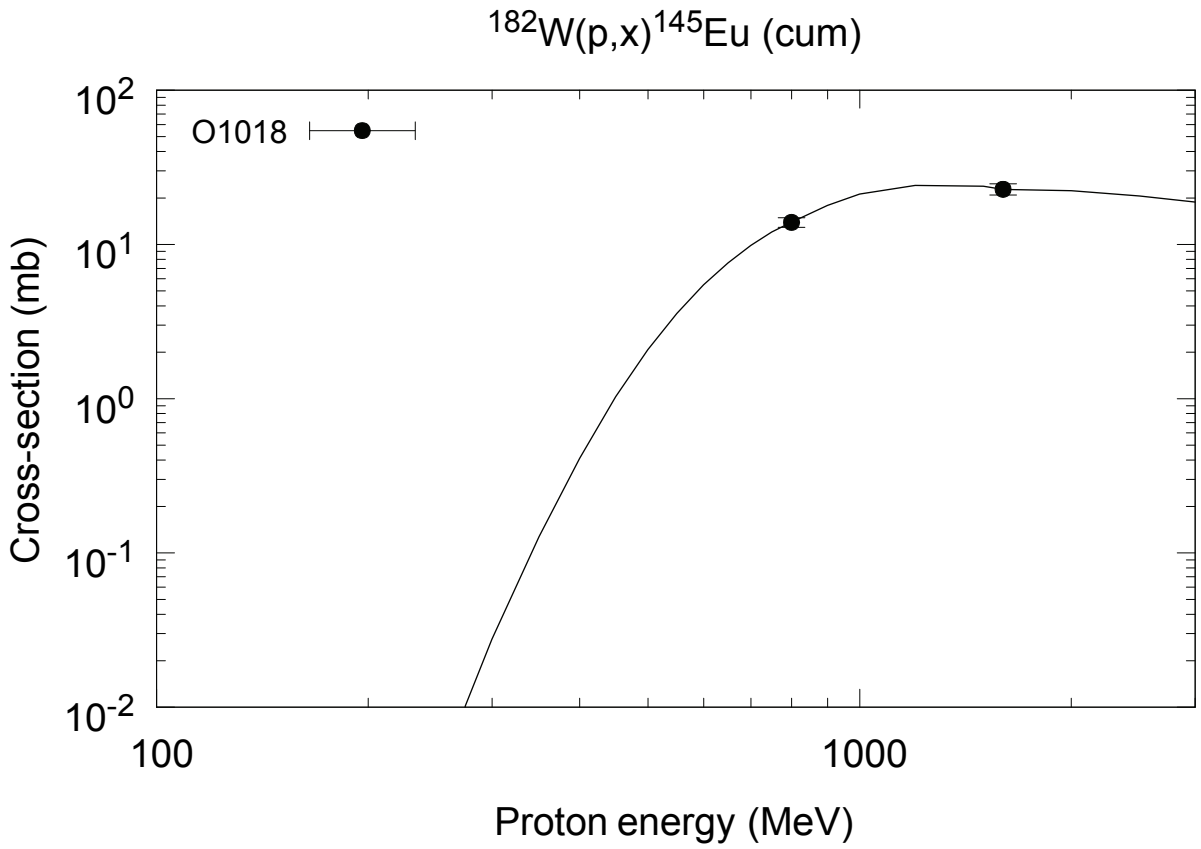

^{182}W(p,x)^{135g}Ce (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

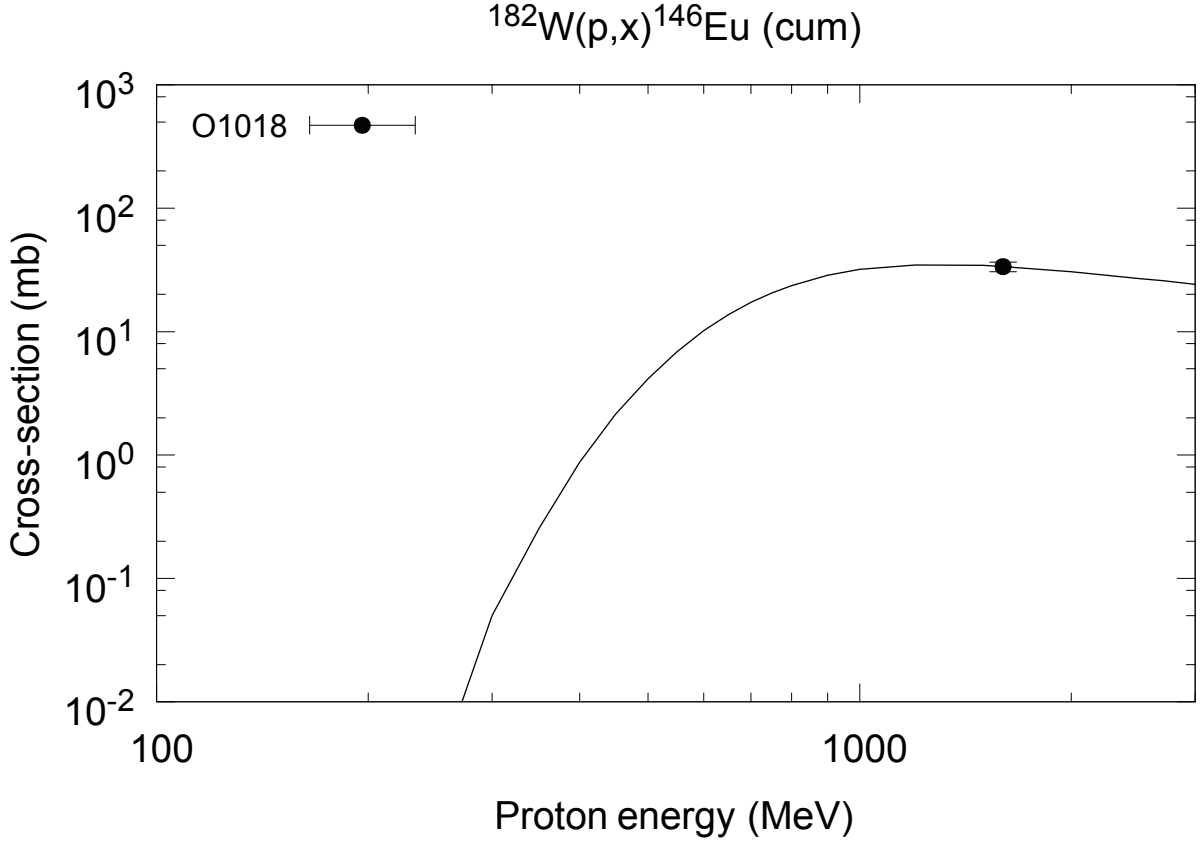

^{182}W(p,x)^{139g}Ce (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

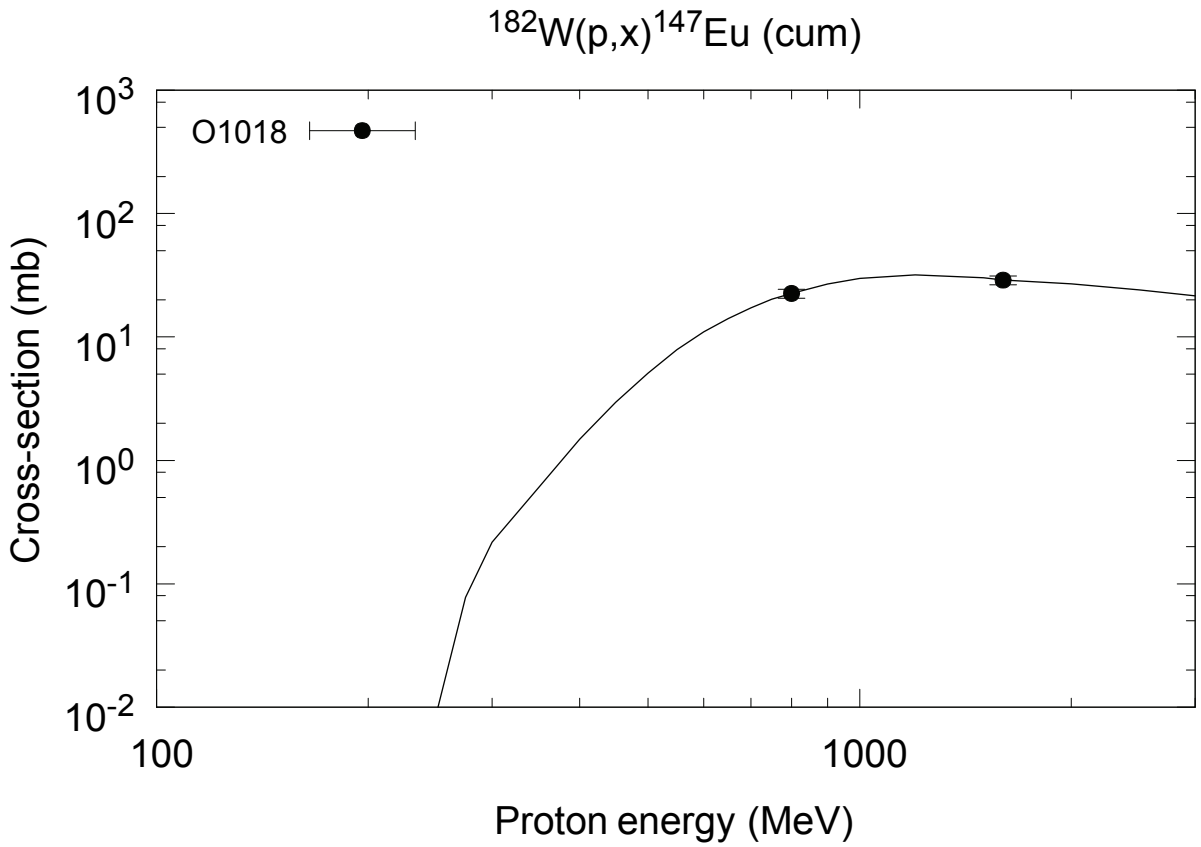

^{182}W(p,x)^{136}Nd (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

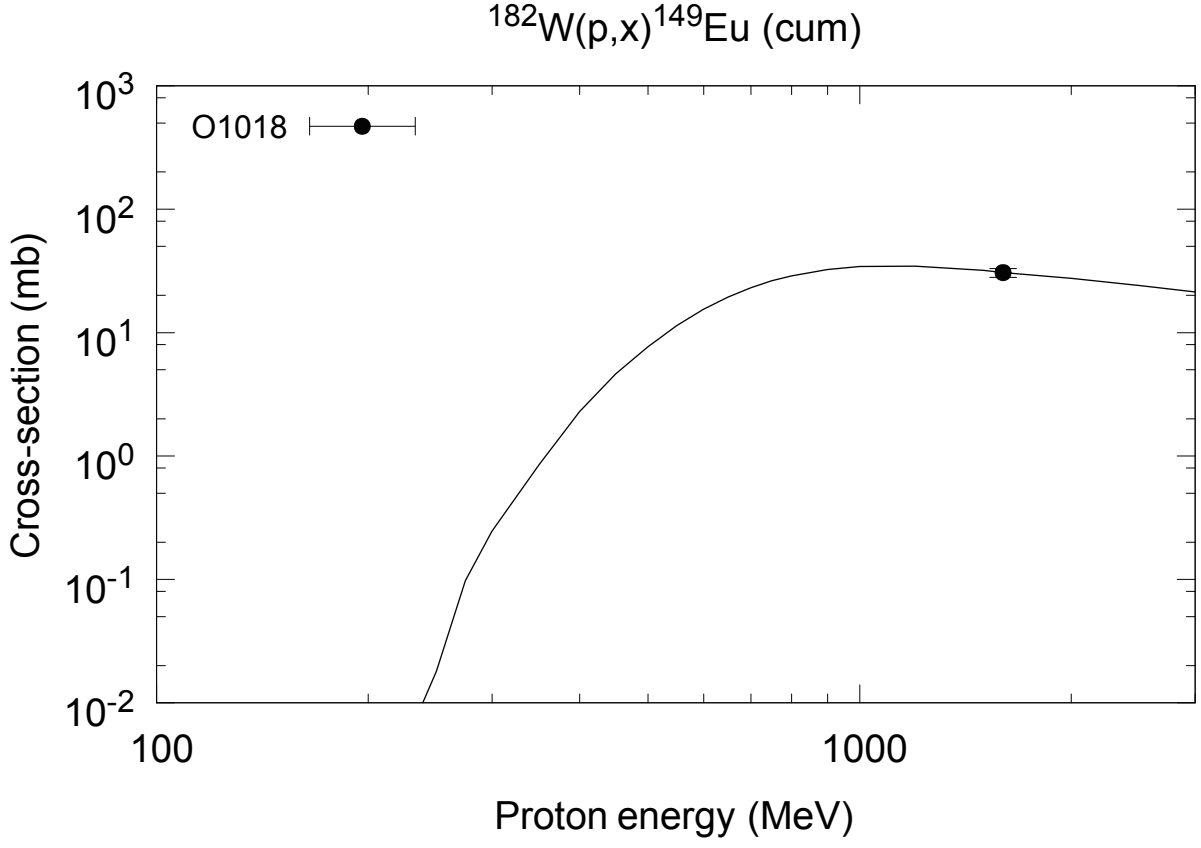

^{182}W(p,x)^{137g}Nd (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

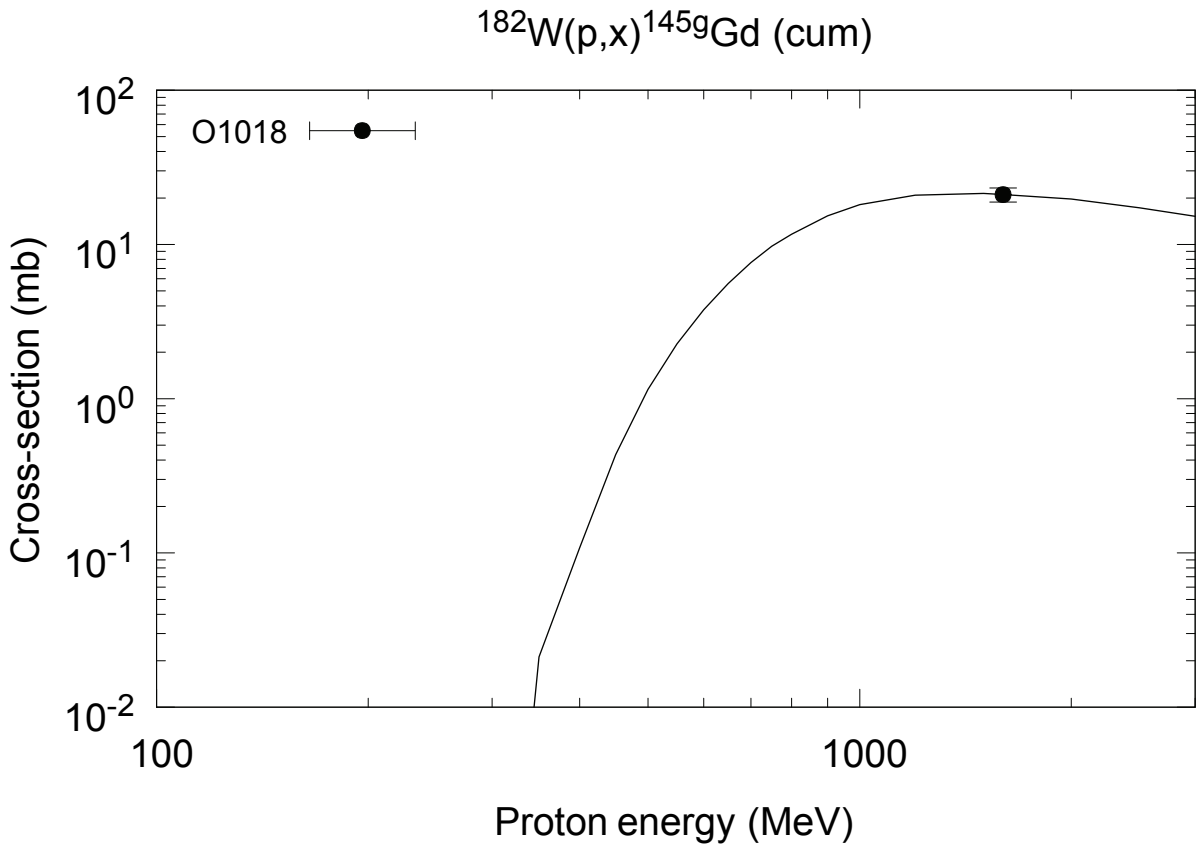

^{182}W(p,x)^{143}Pm (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

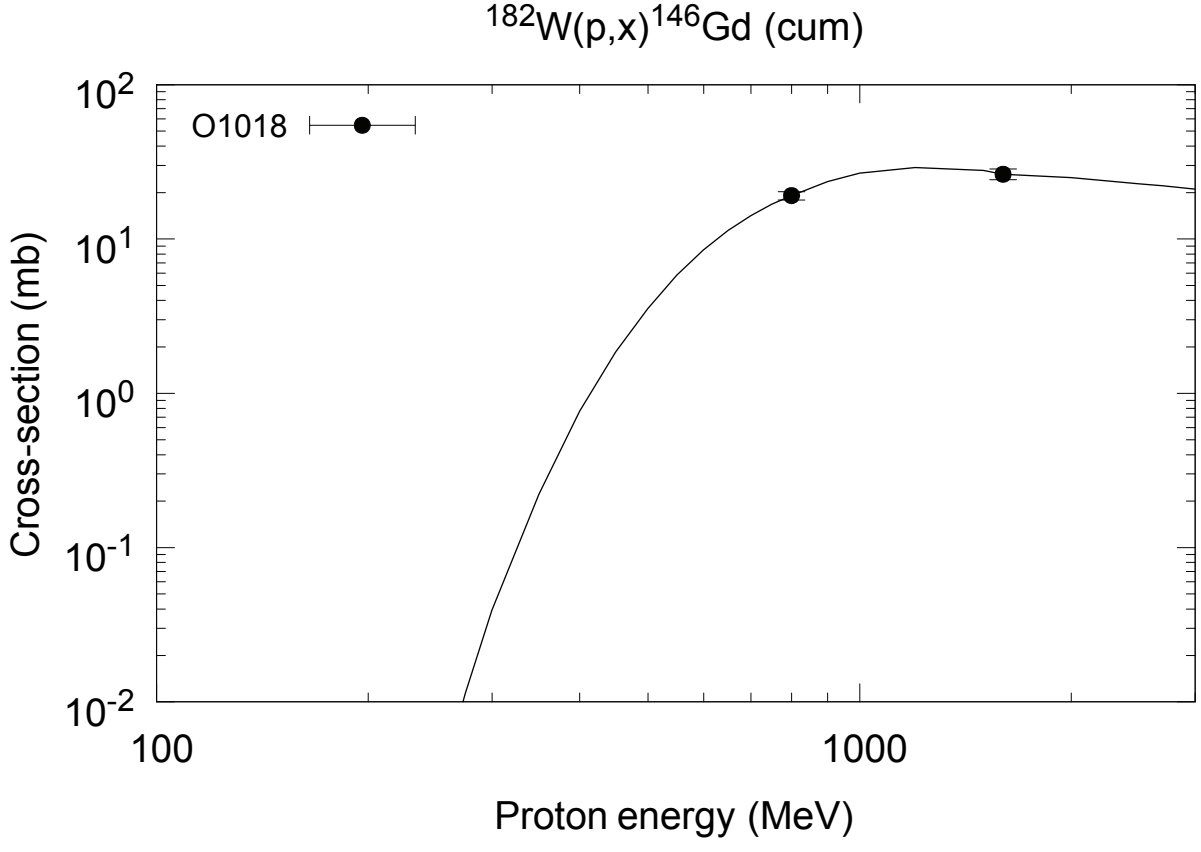

^{182}W(p,x)^{145}Eu (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

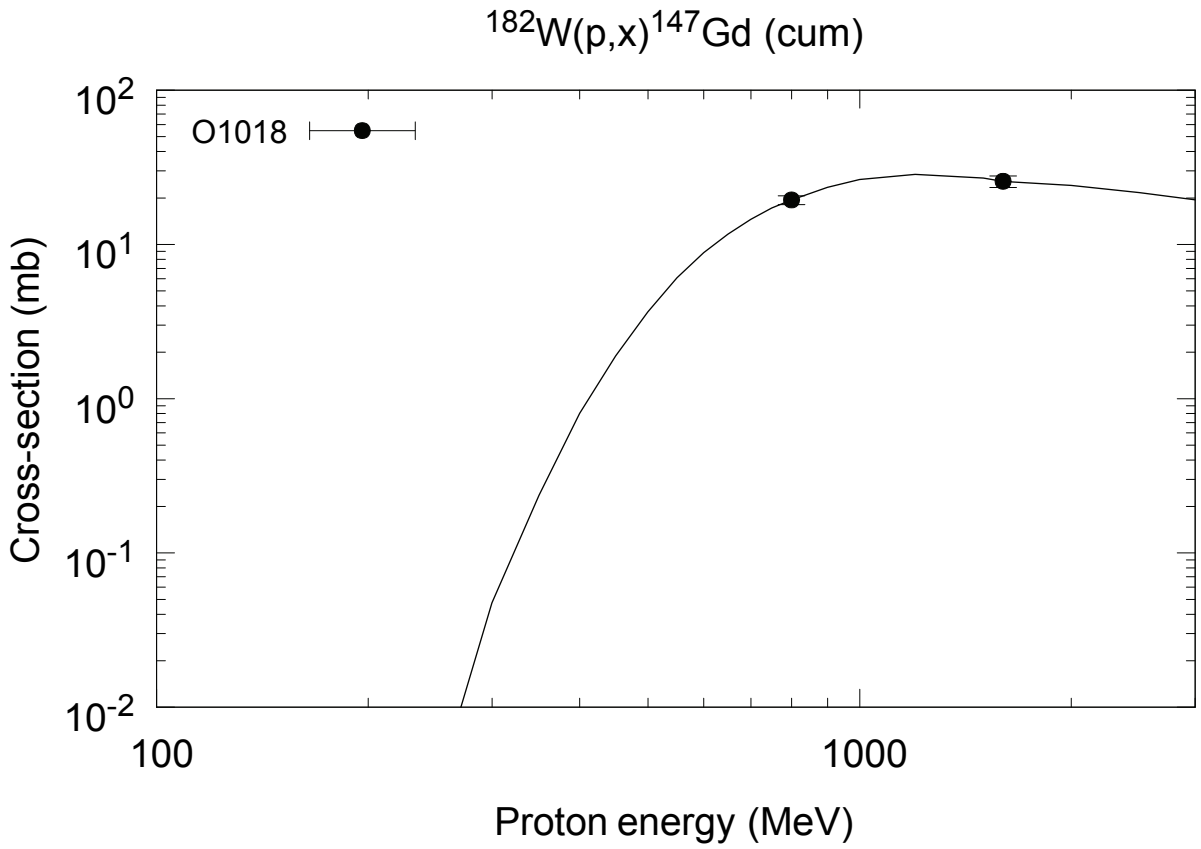

^{182}W(p,x)^{146}Eu (cum)
O1018
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

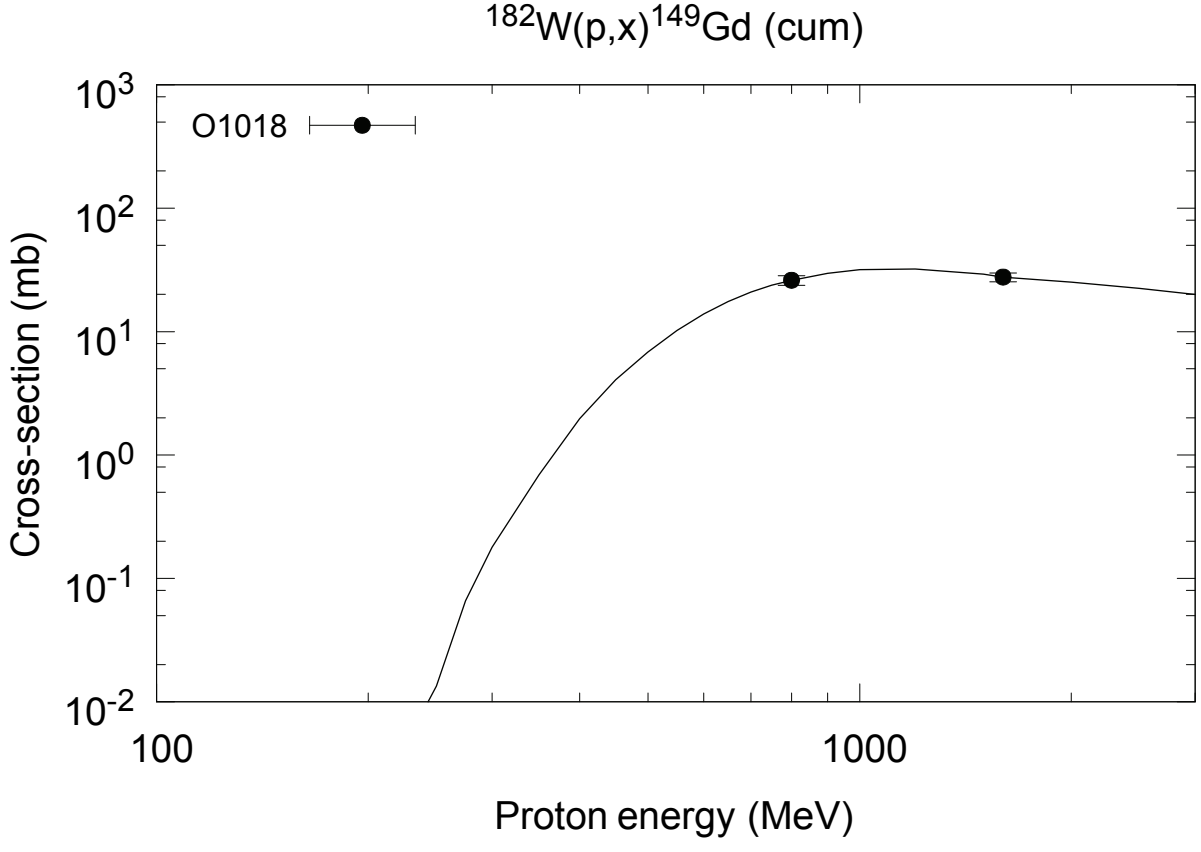

^{182}W(p,x)^{147}Eu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

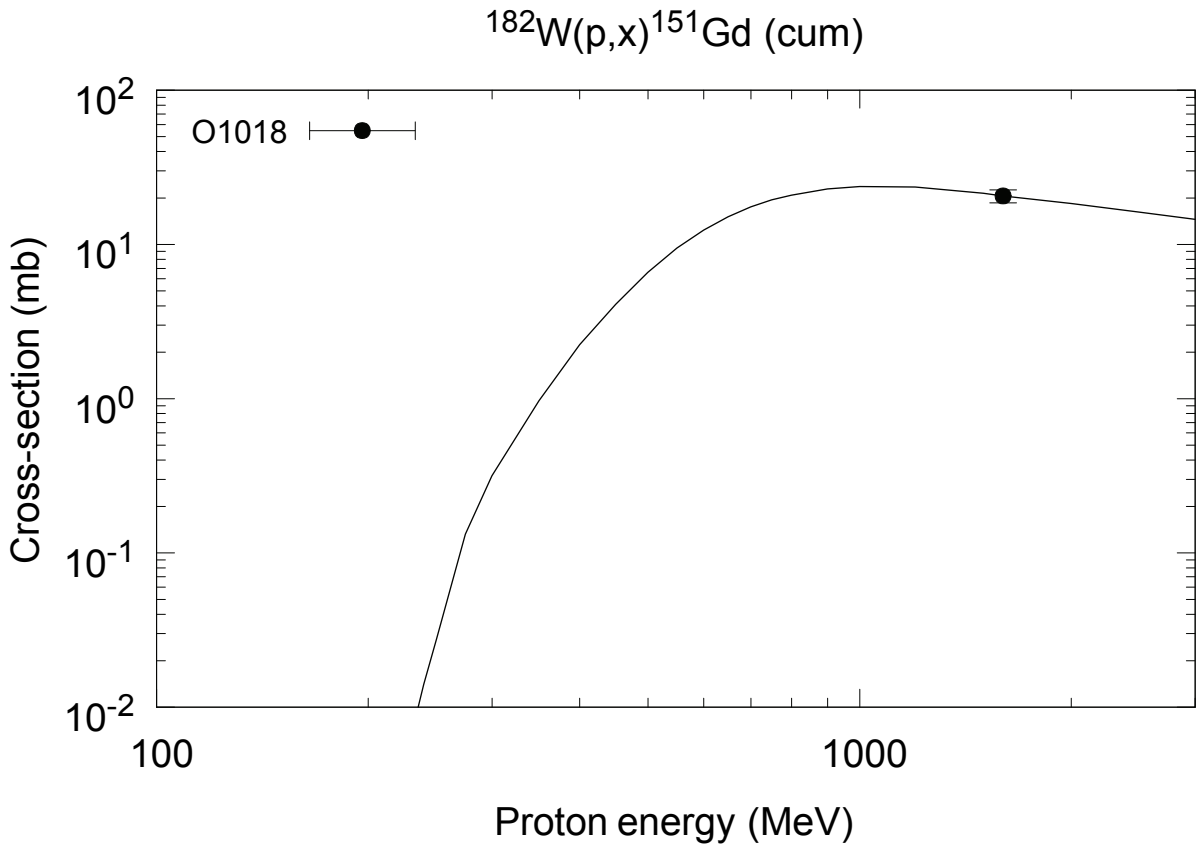

^{182}W(p,x)^{149}Eu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

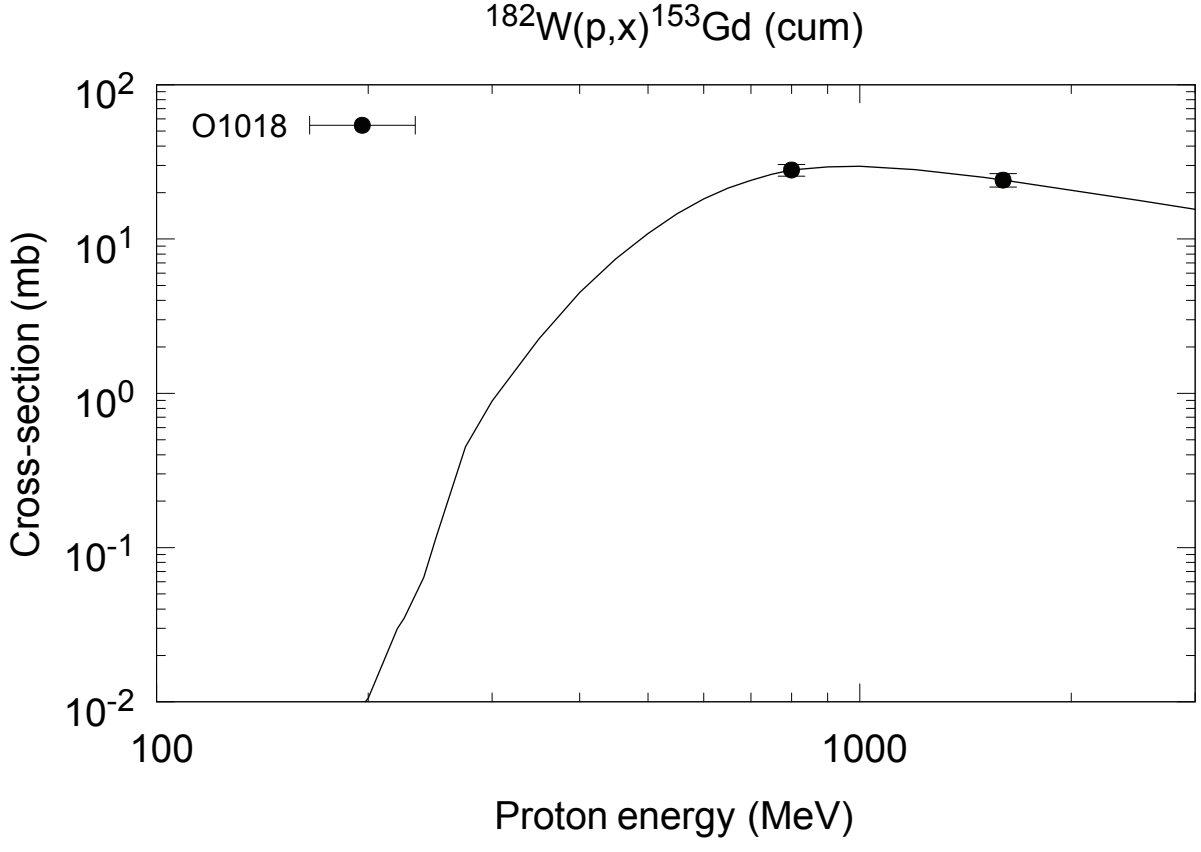

^{182}W(p,x)^{145g}Gd (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

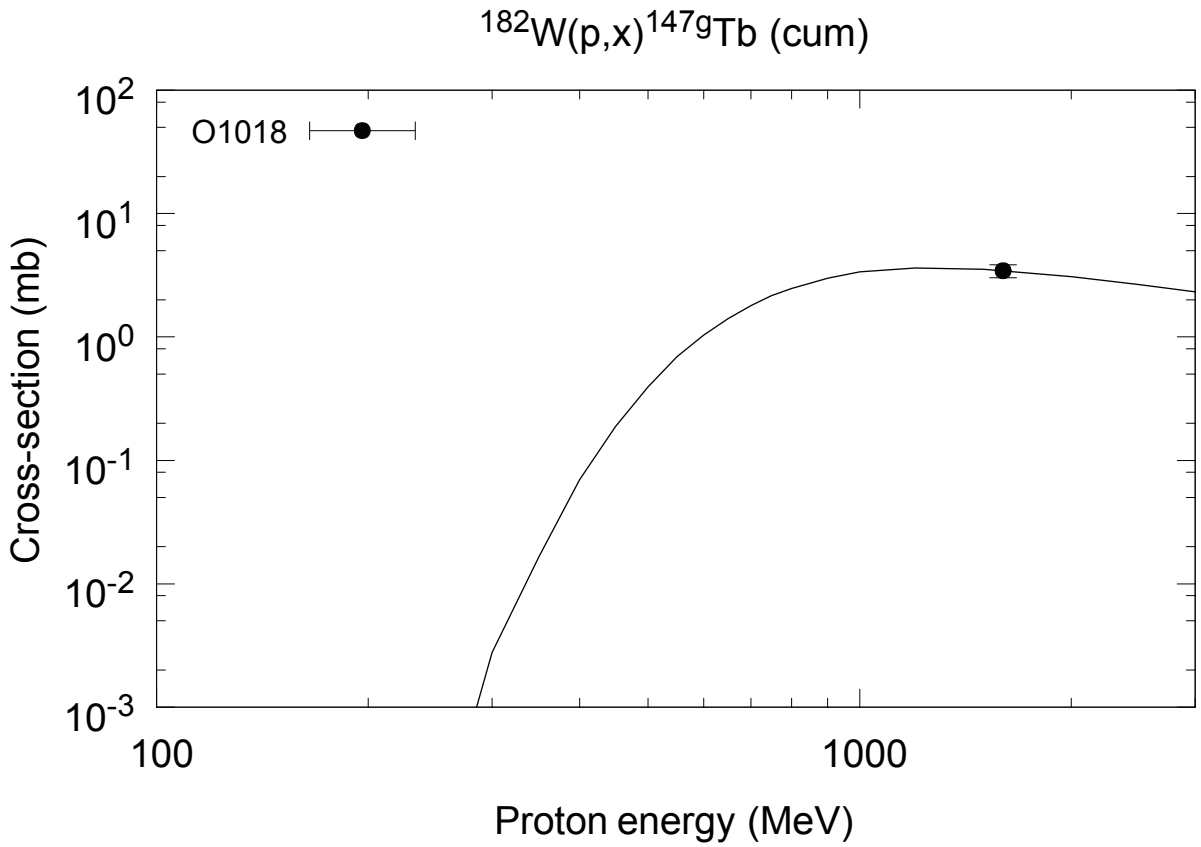

^{182}W(p,x)^{146}Gd (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

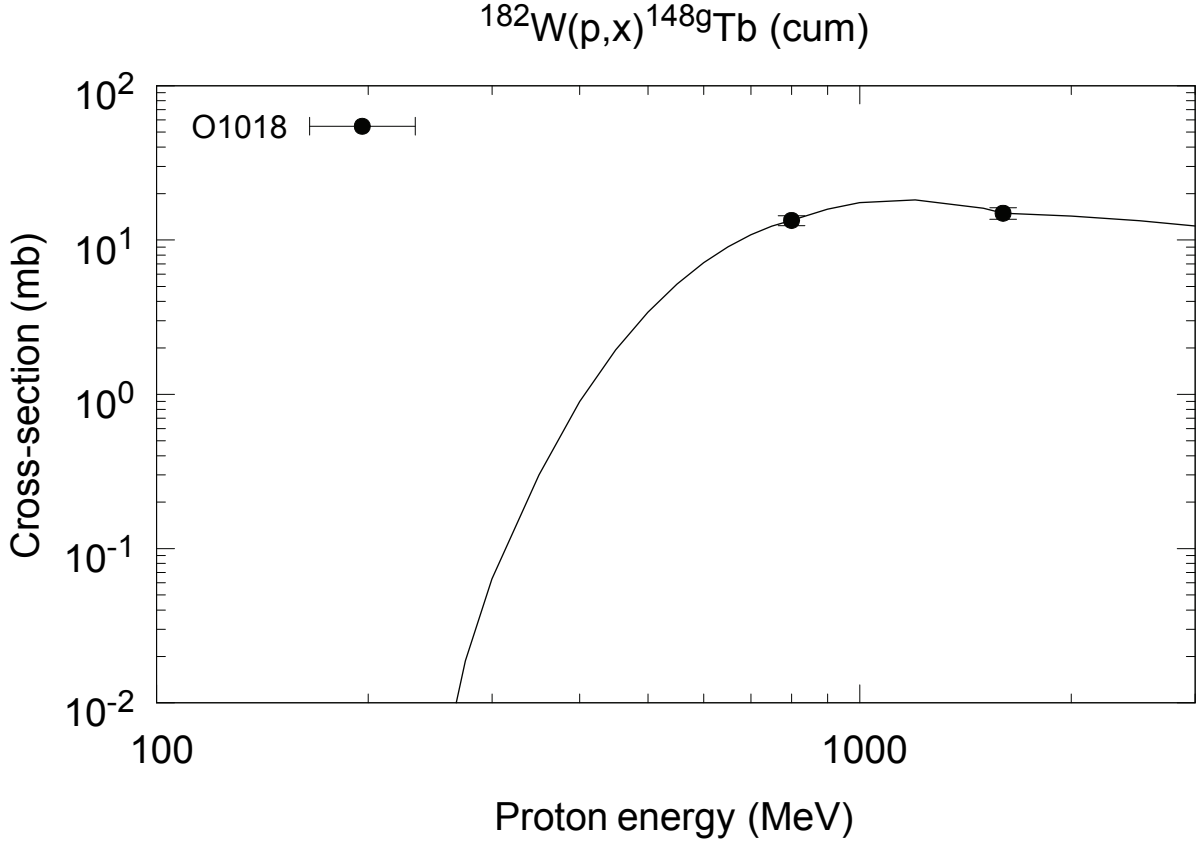

182W(p,x)147Gd (cum)
O1018
Cross-section (mb)
Proton energy (MeV)
100
1000
10^2
10^1
10^0
10^-1
10^-2

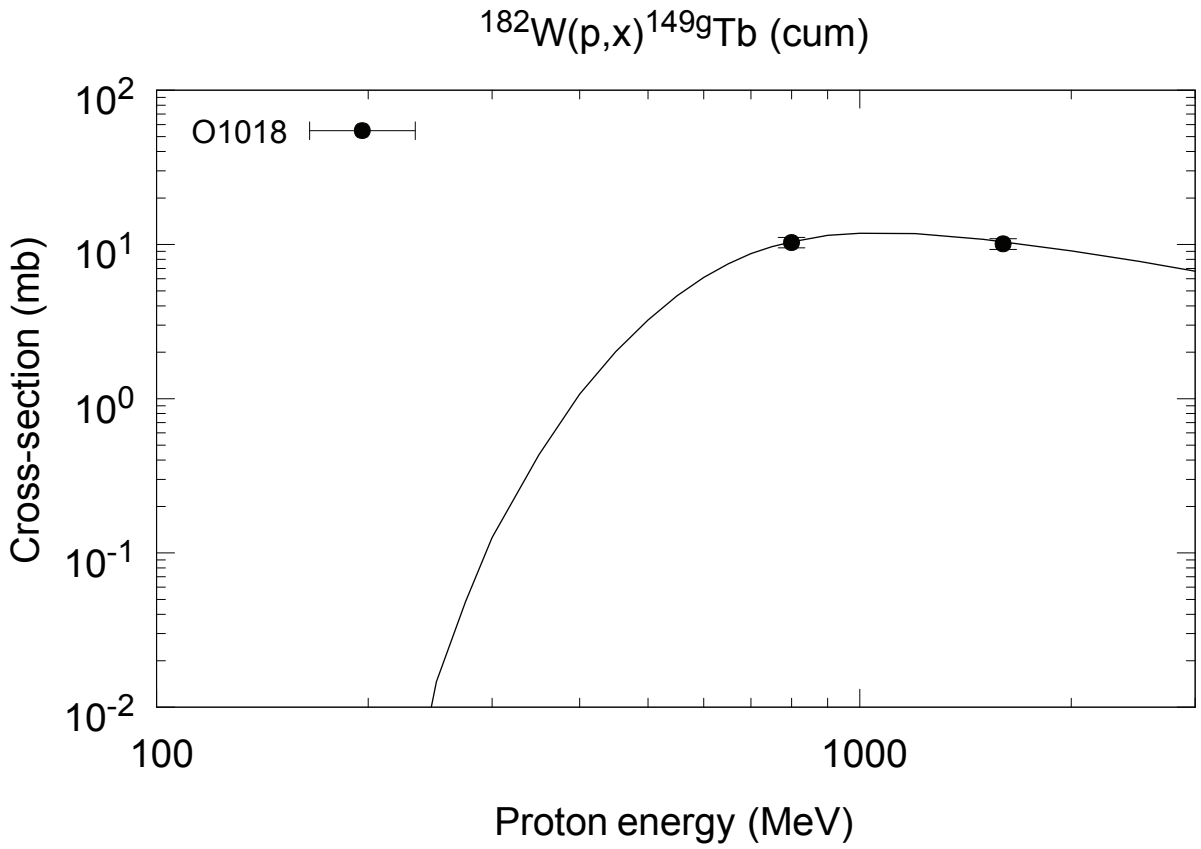

182W(p,x)149Gd (cum)
O1018
Cross-section (mb)
Proton energy (MeV)
100
1000
10^3
10^2
10^1
10^0
10^-1
10^-2

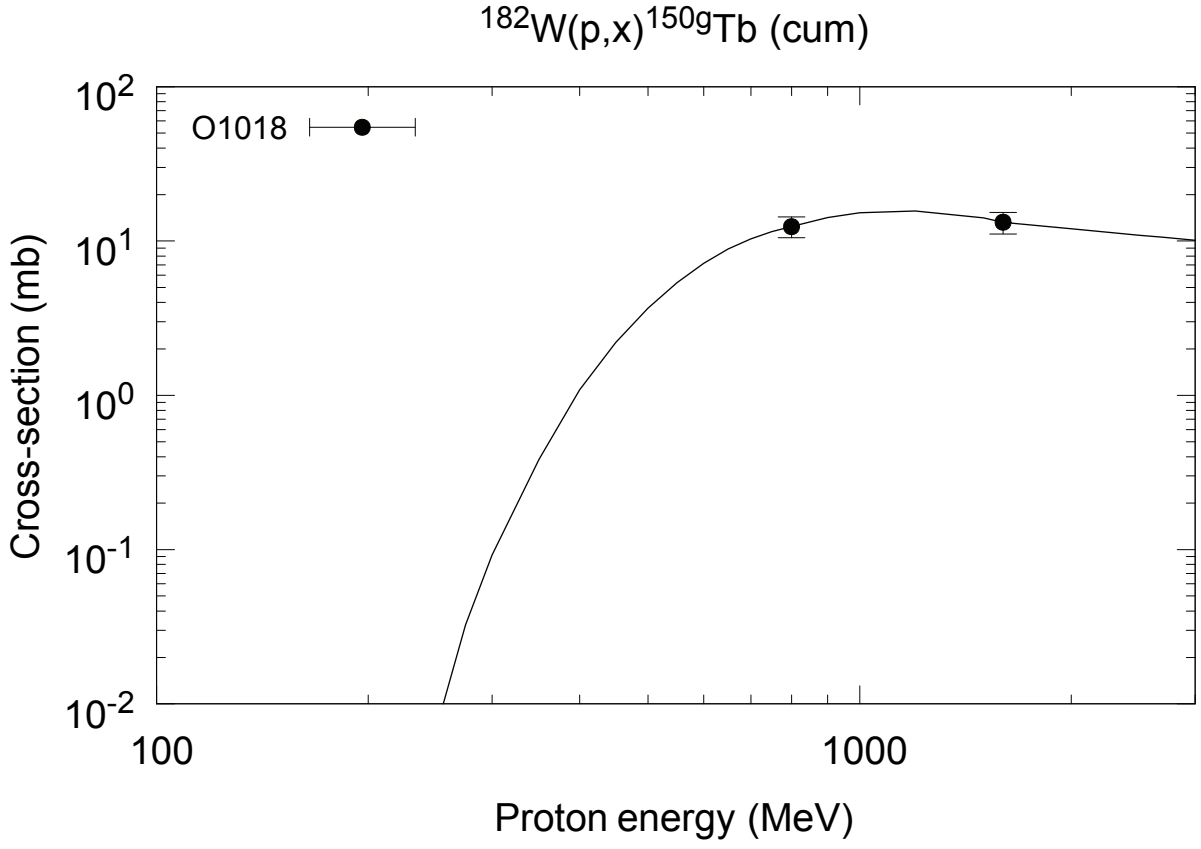

^{182}W(p,x)^{151}Gd (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

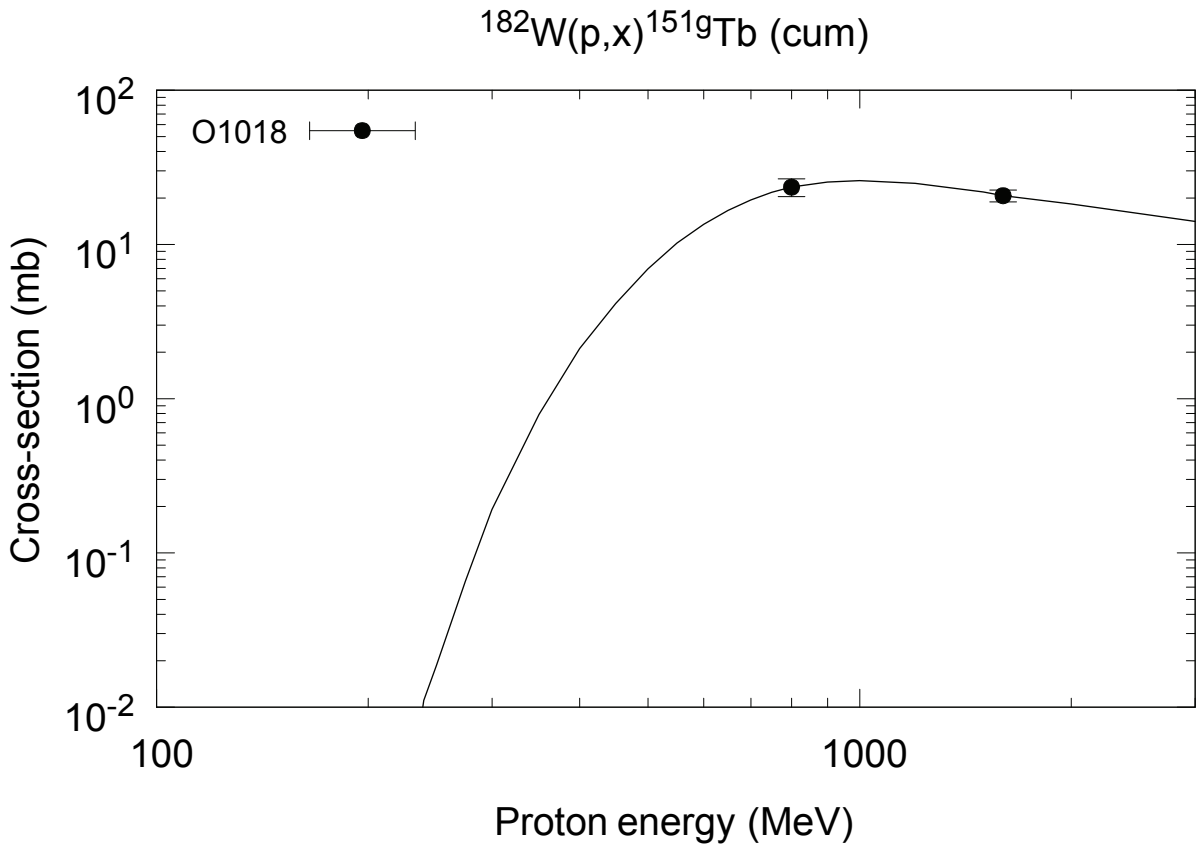

^{182}W(p,x)^{153}Gd (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

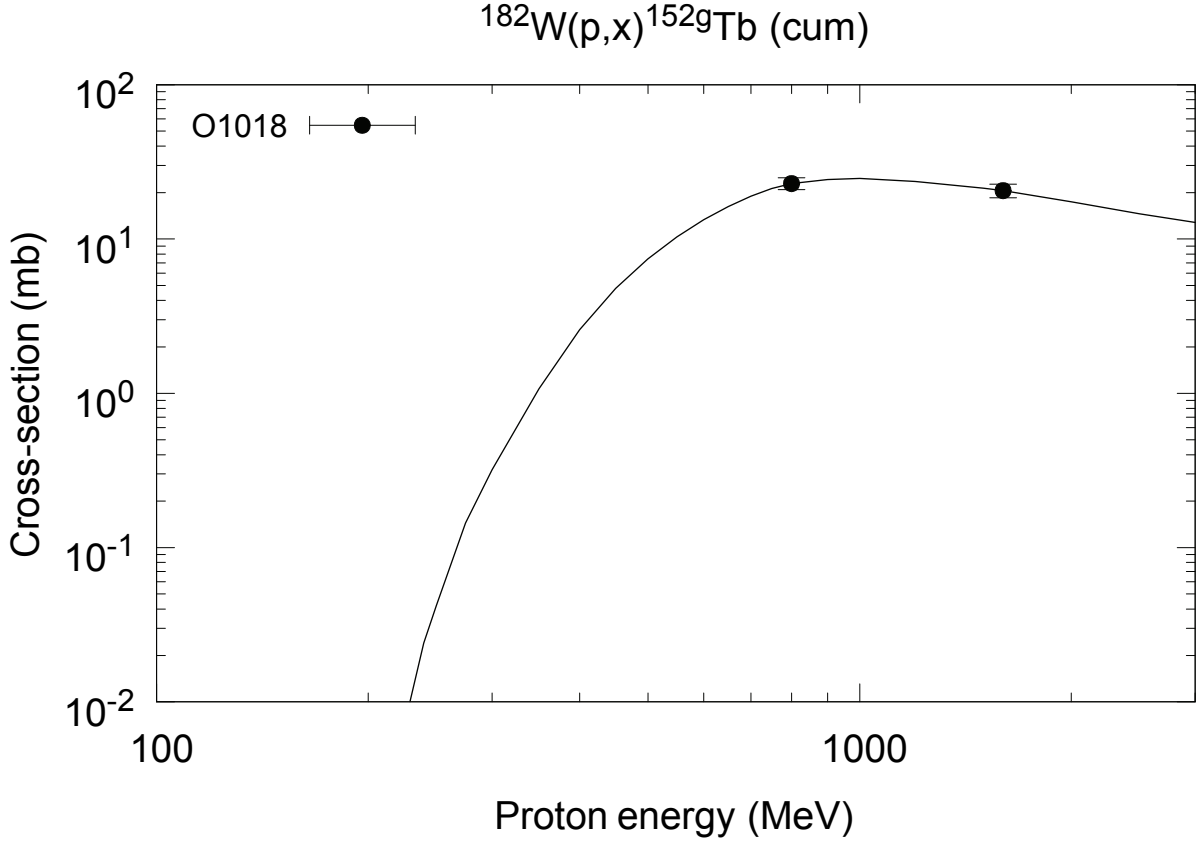

182W(p,x)147gTb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
10^-3
100
1000
Proton energy (MeV)

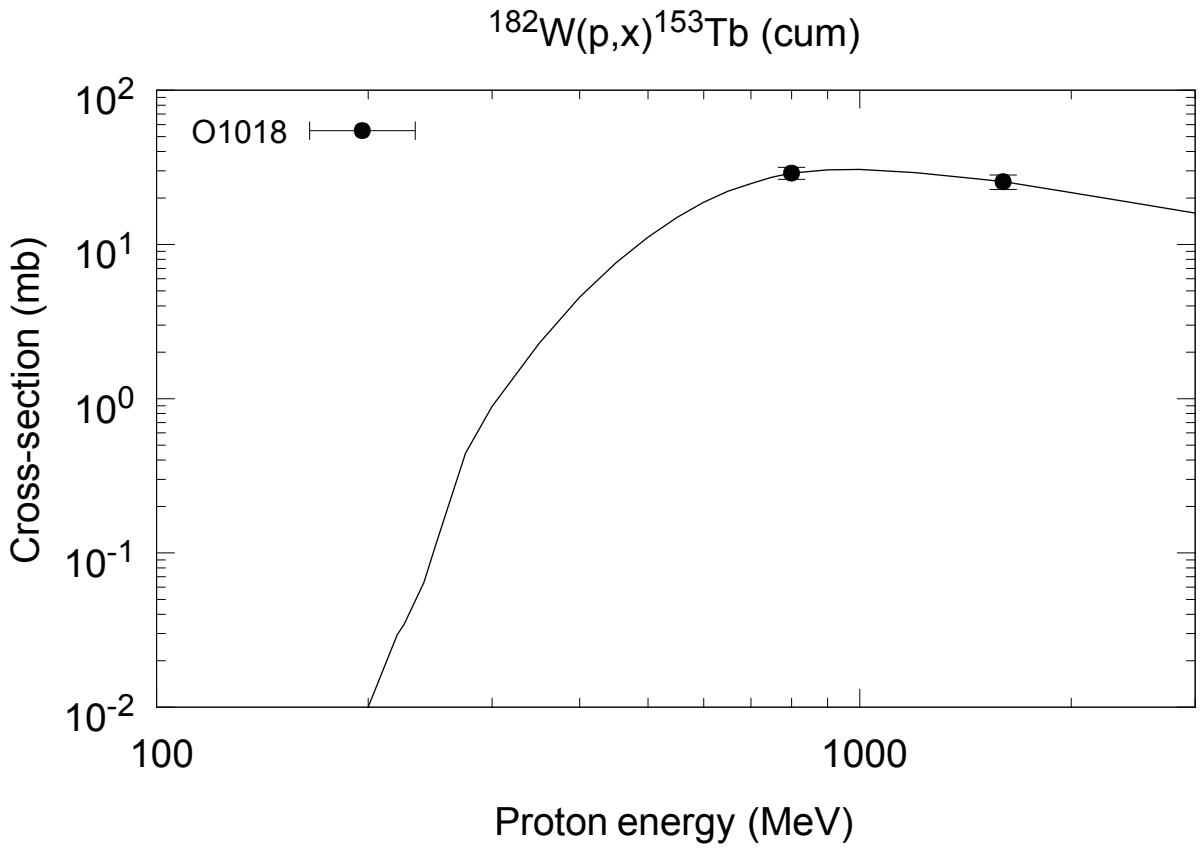

182W(p,x)148gTb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

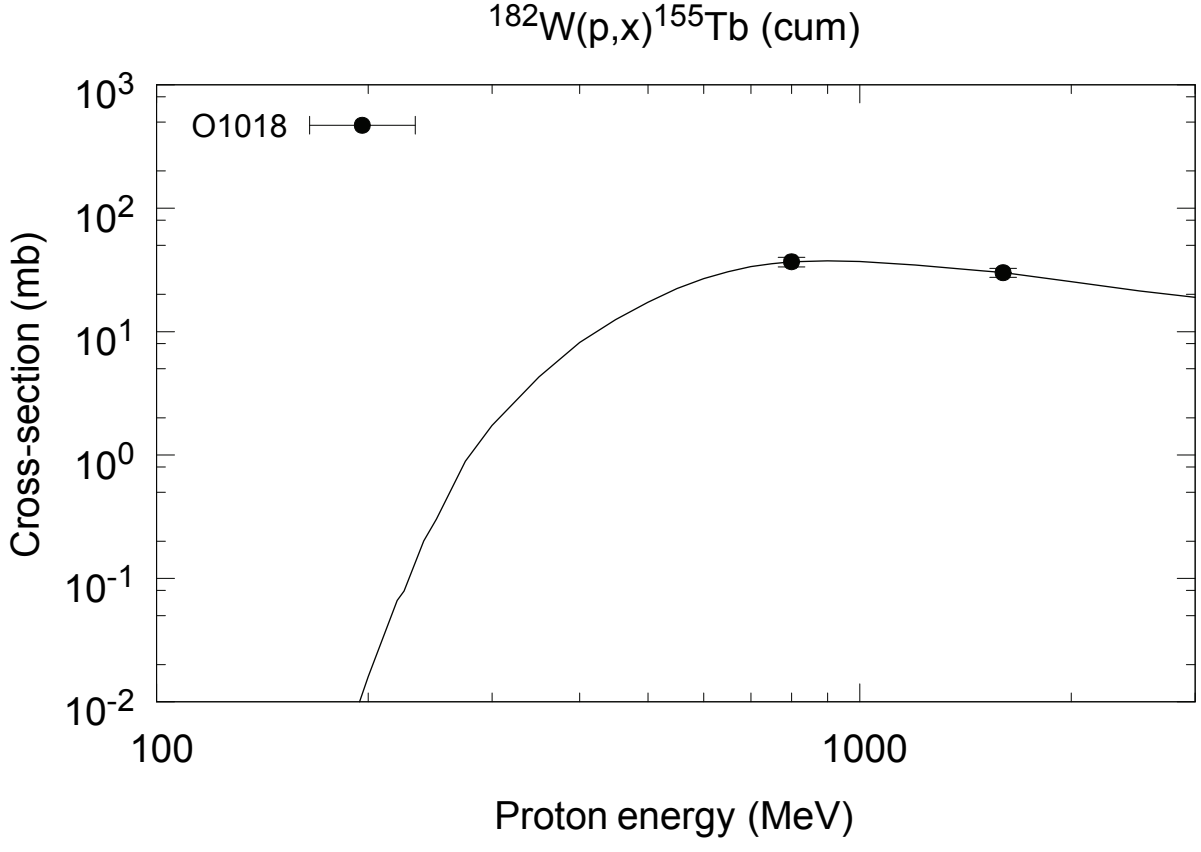

^{182}W(p,x)^{149g}Tb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

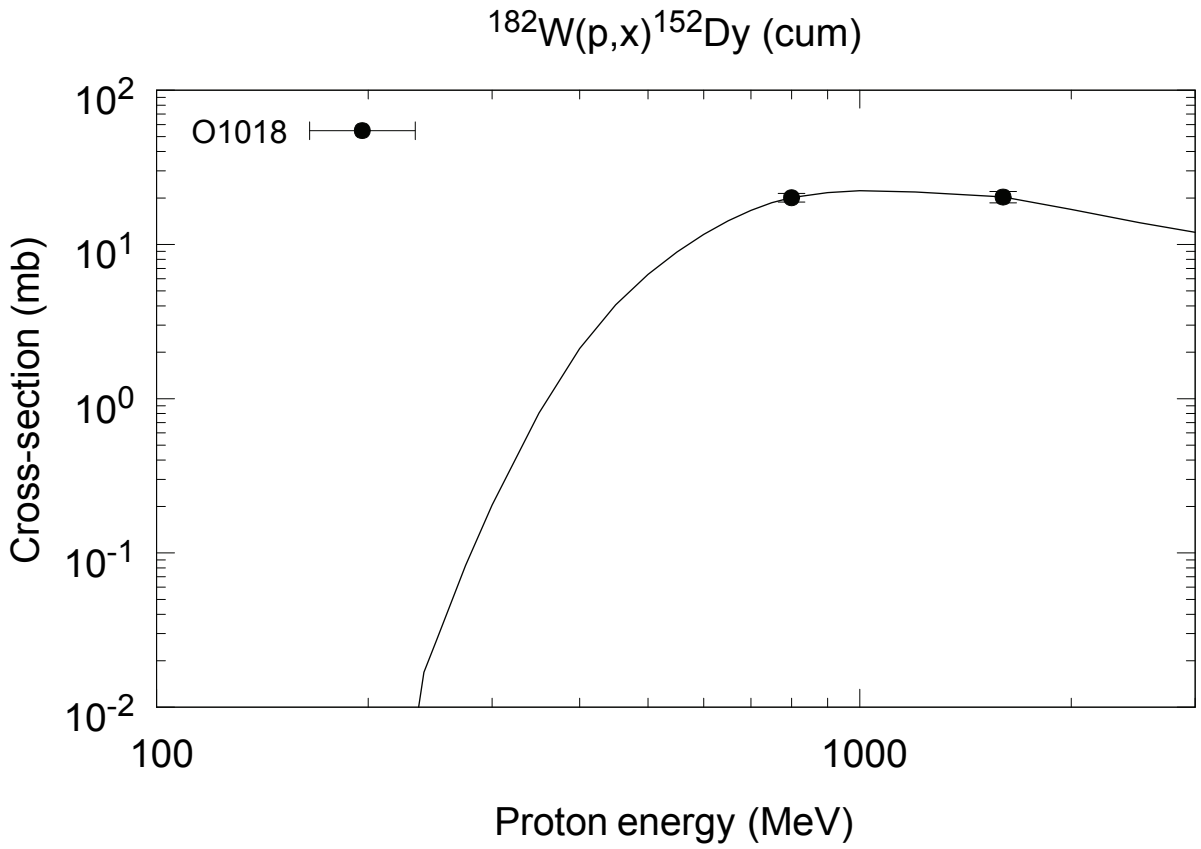

^{182}W(p,x)^{150g}Tb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

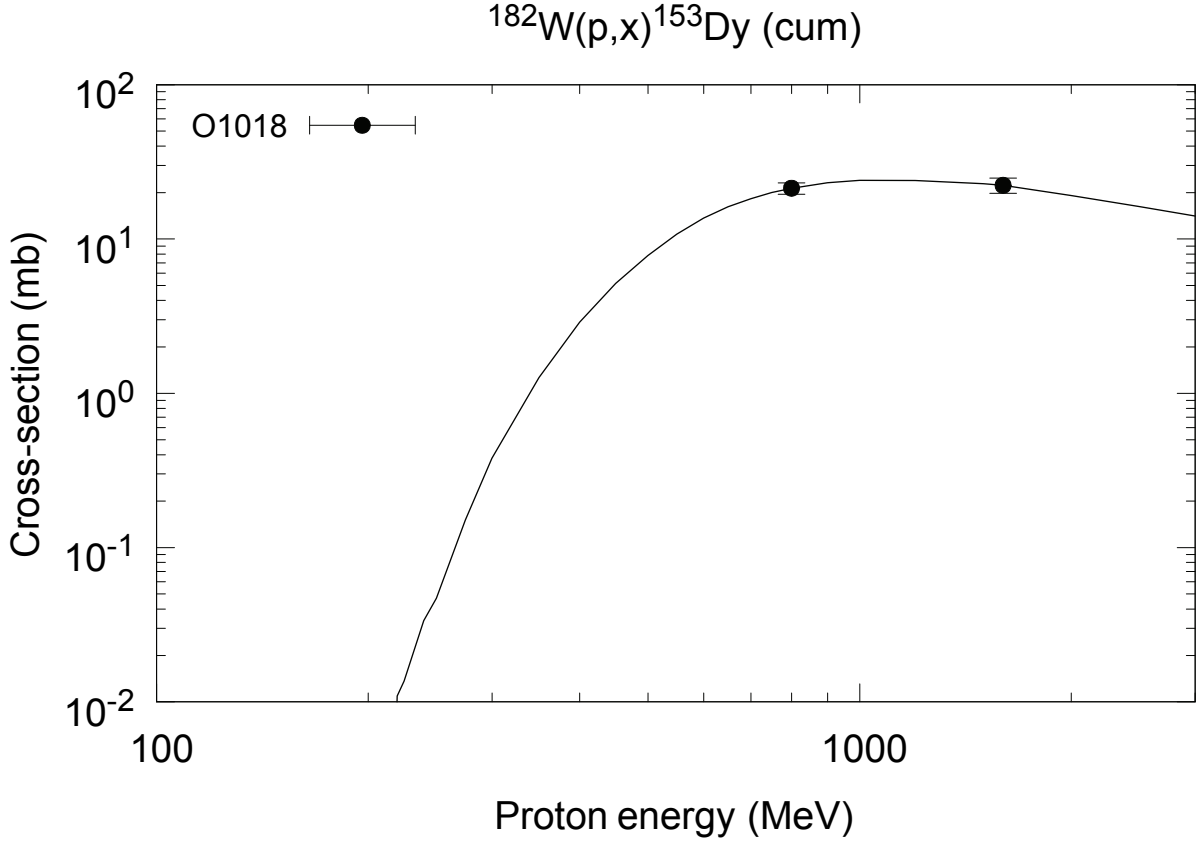

^{182}W(p,x)^{151g}Tb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

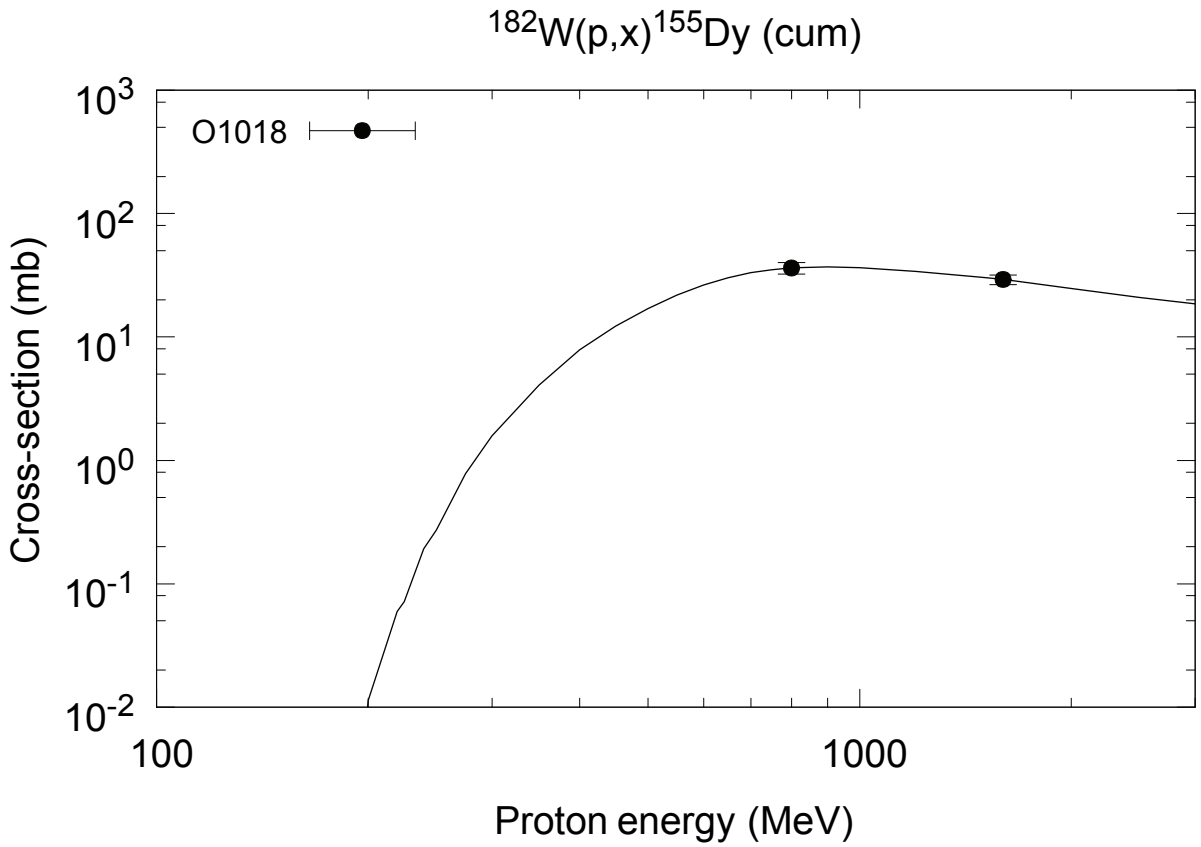

^{182}W(p,x)^{152g}Tb (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

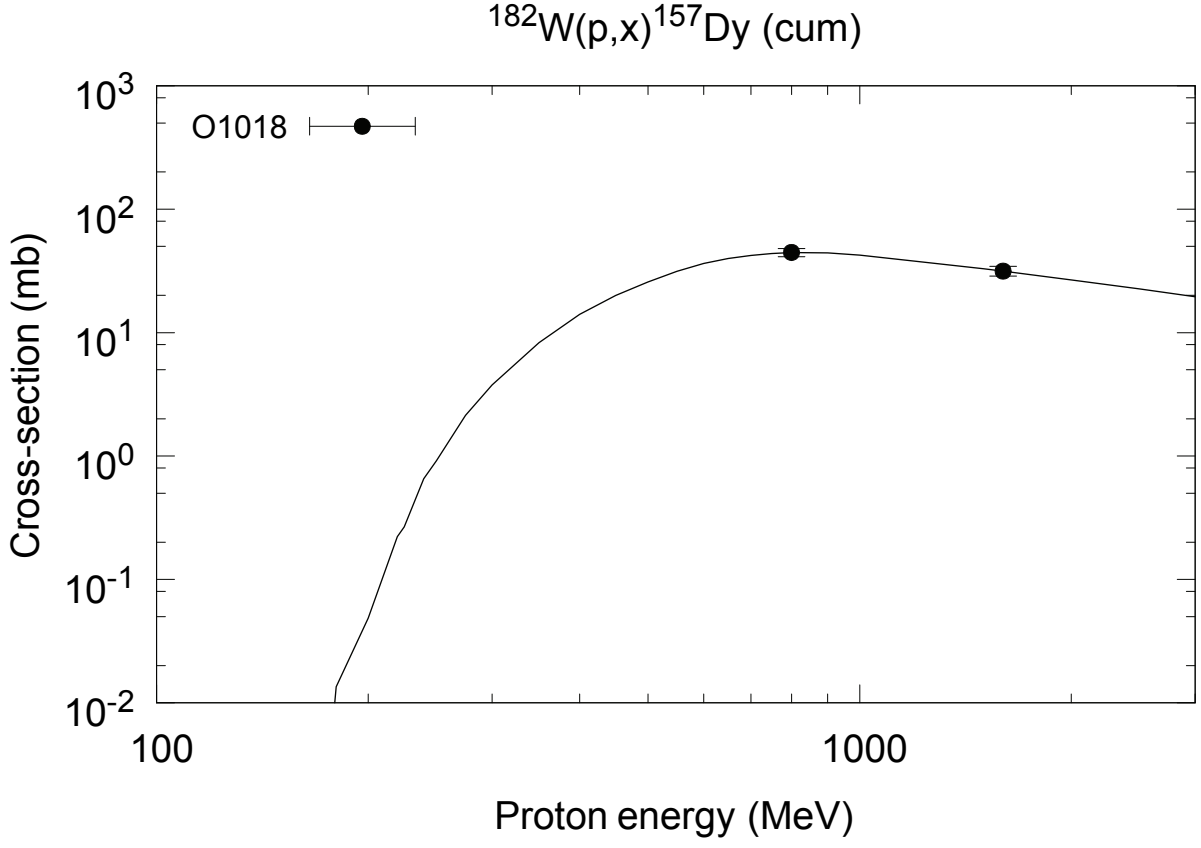

^{182}W(p,x)^{153}Tb (cum)
O1018
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

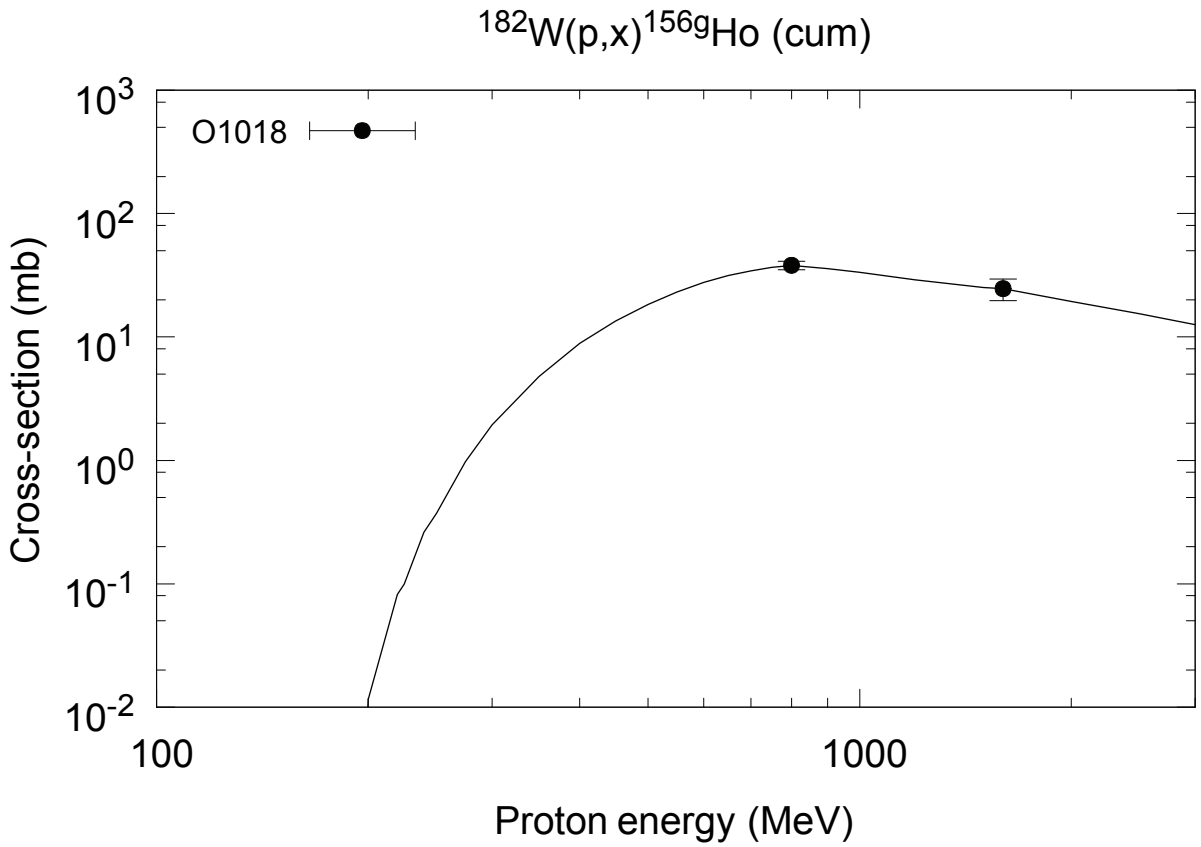

^{182}W(p,x)^{155}Tb (cum)
O1018
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

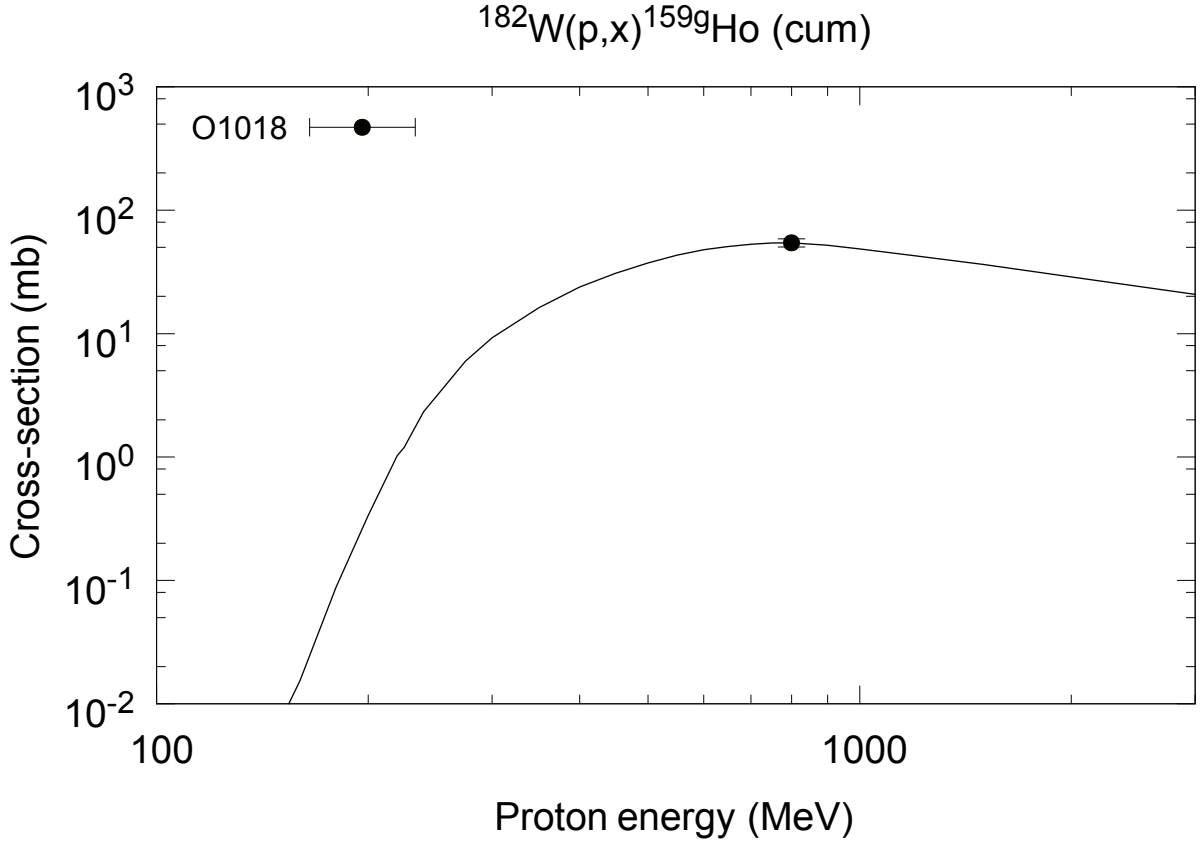

^{182}W(p,x)^{152}Dy (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

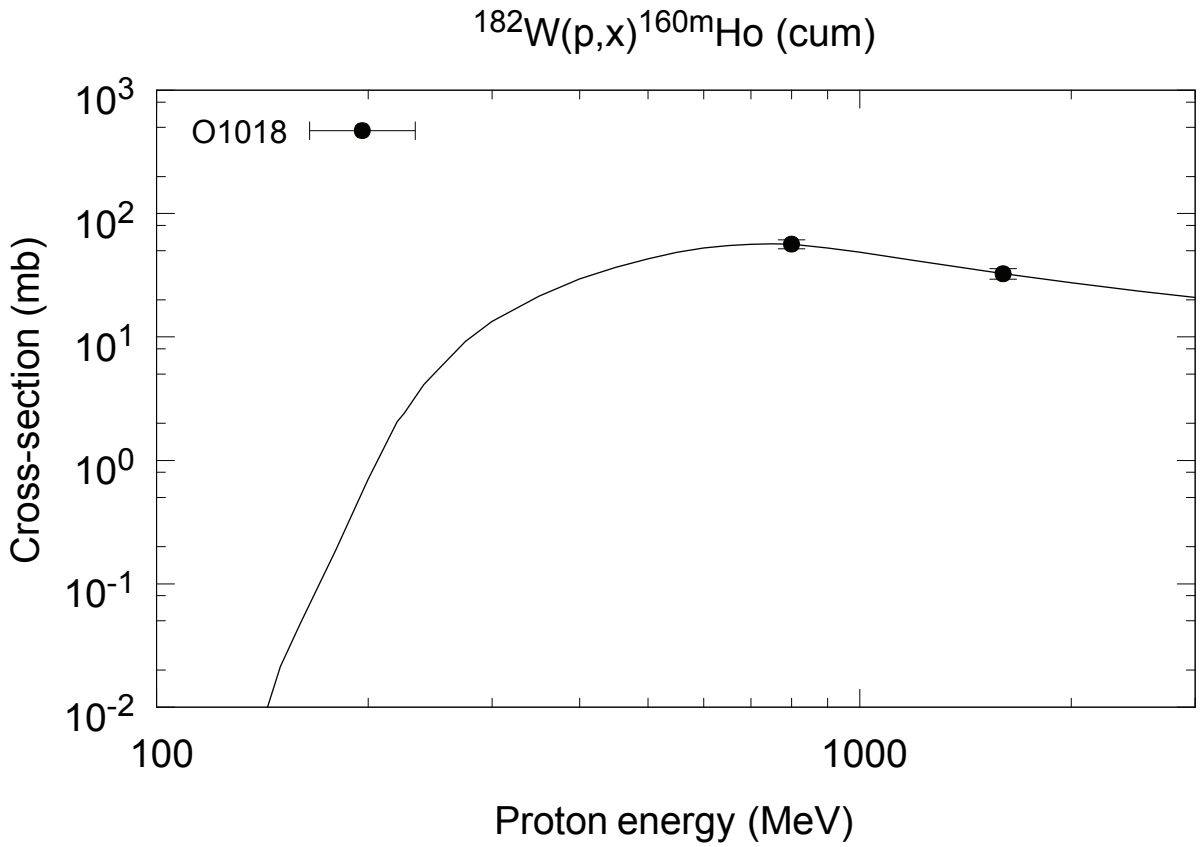

^{182}W(p,x)^{153}Dy (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

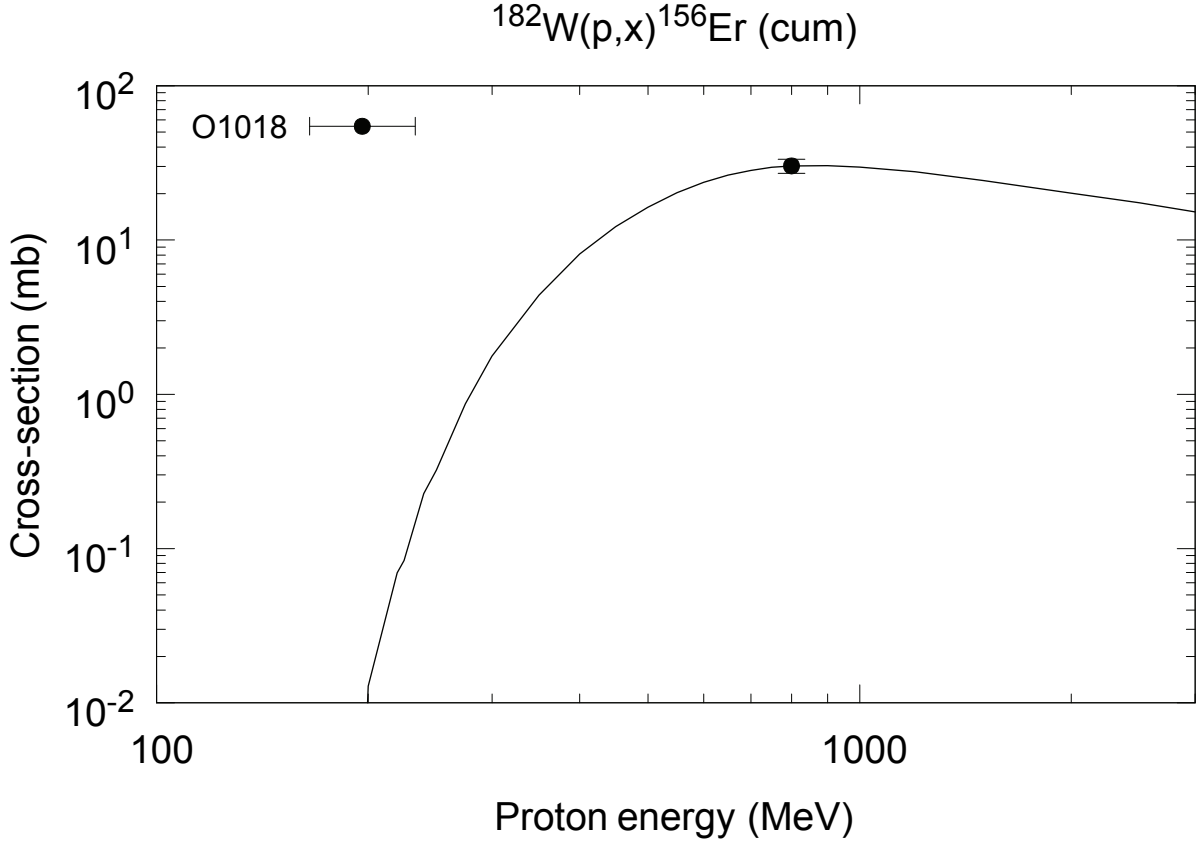

^{182}W(p,x)^{155}Dy (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

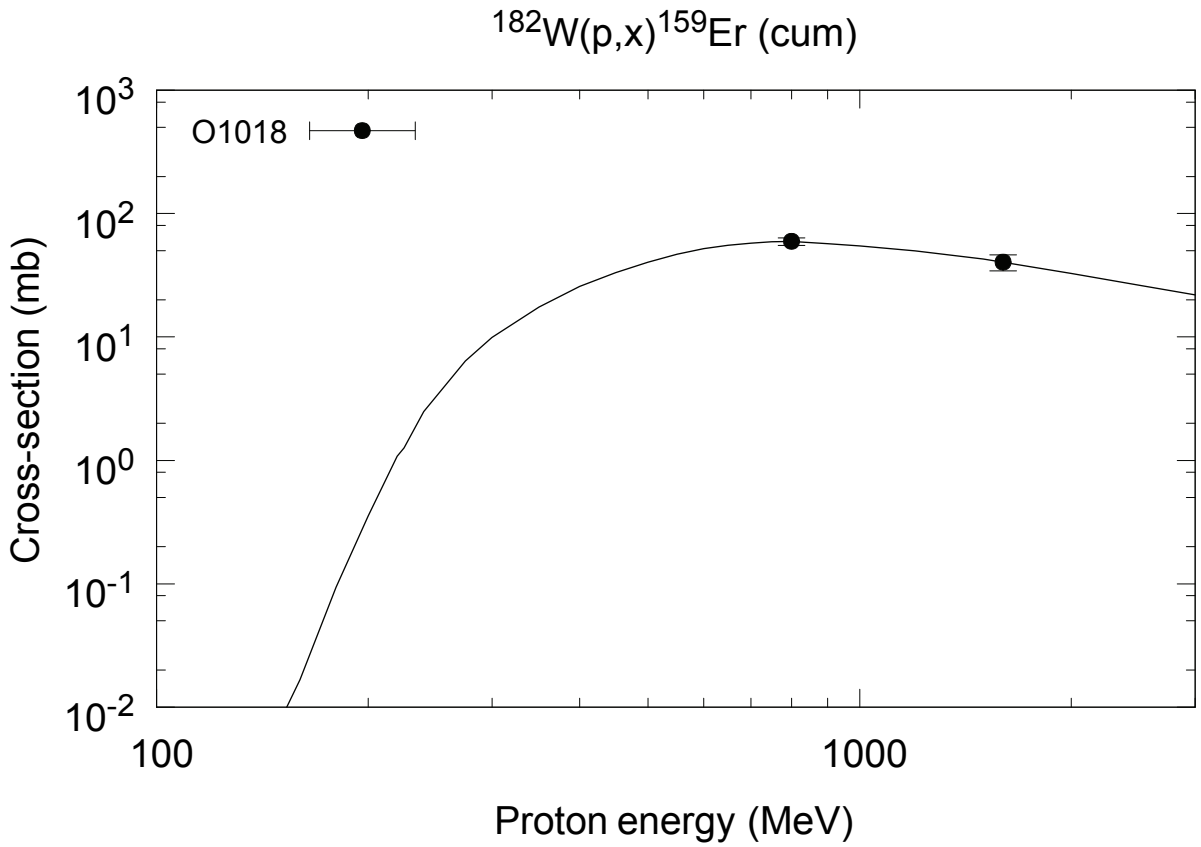

^{182}W(p,x)^{157}Dy (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

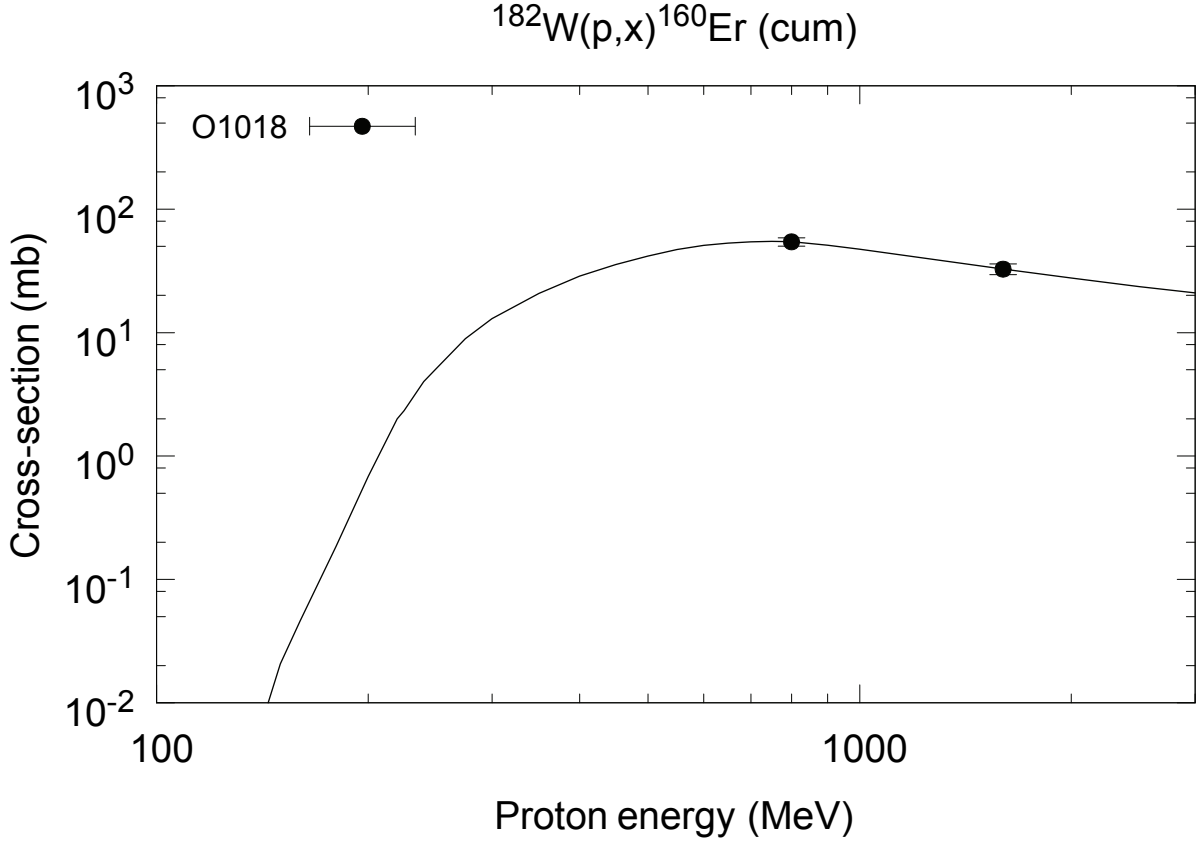

^{182}W(p,x)^{156g}Ho (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

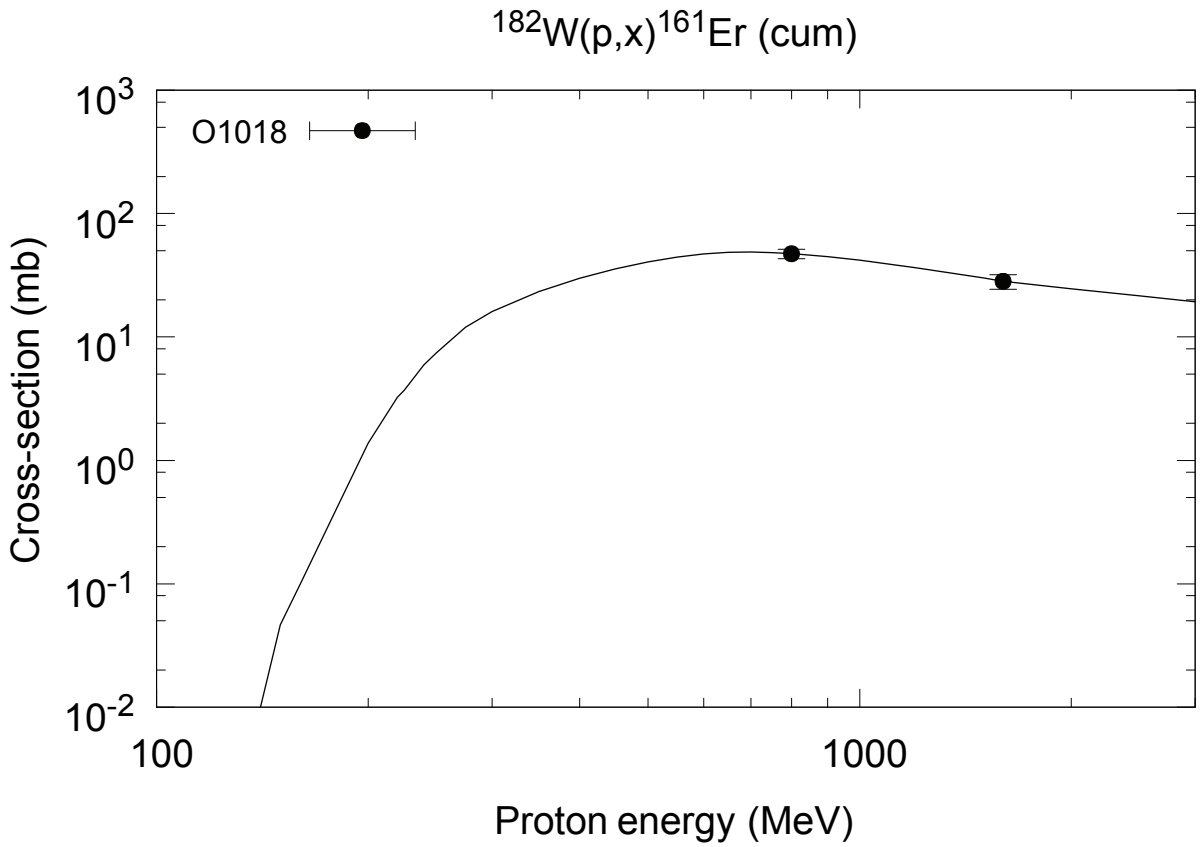

^{182}W(p,x)^{159g}Ho (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

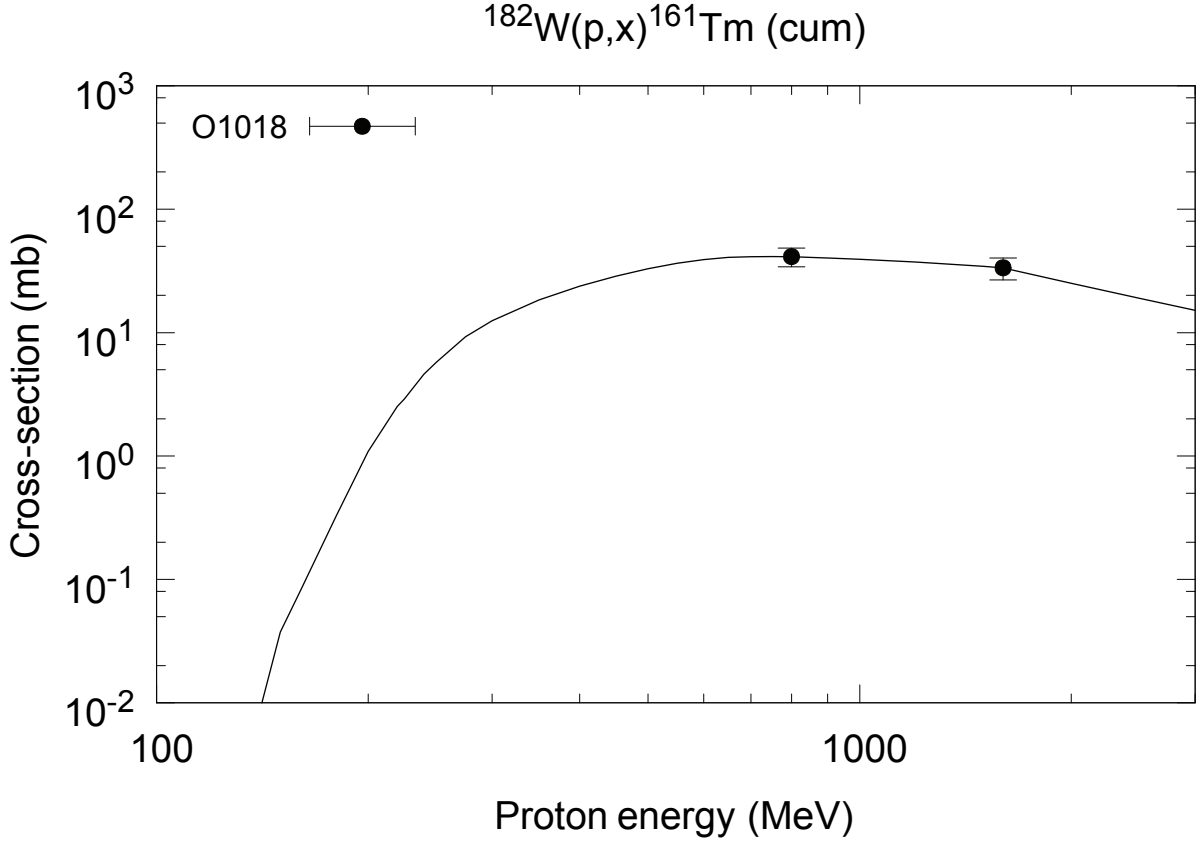

^{182}W(p,x)^{160m}Ho (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

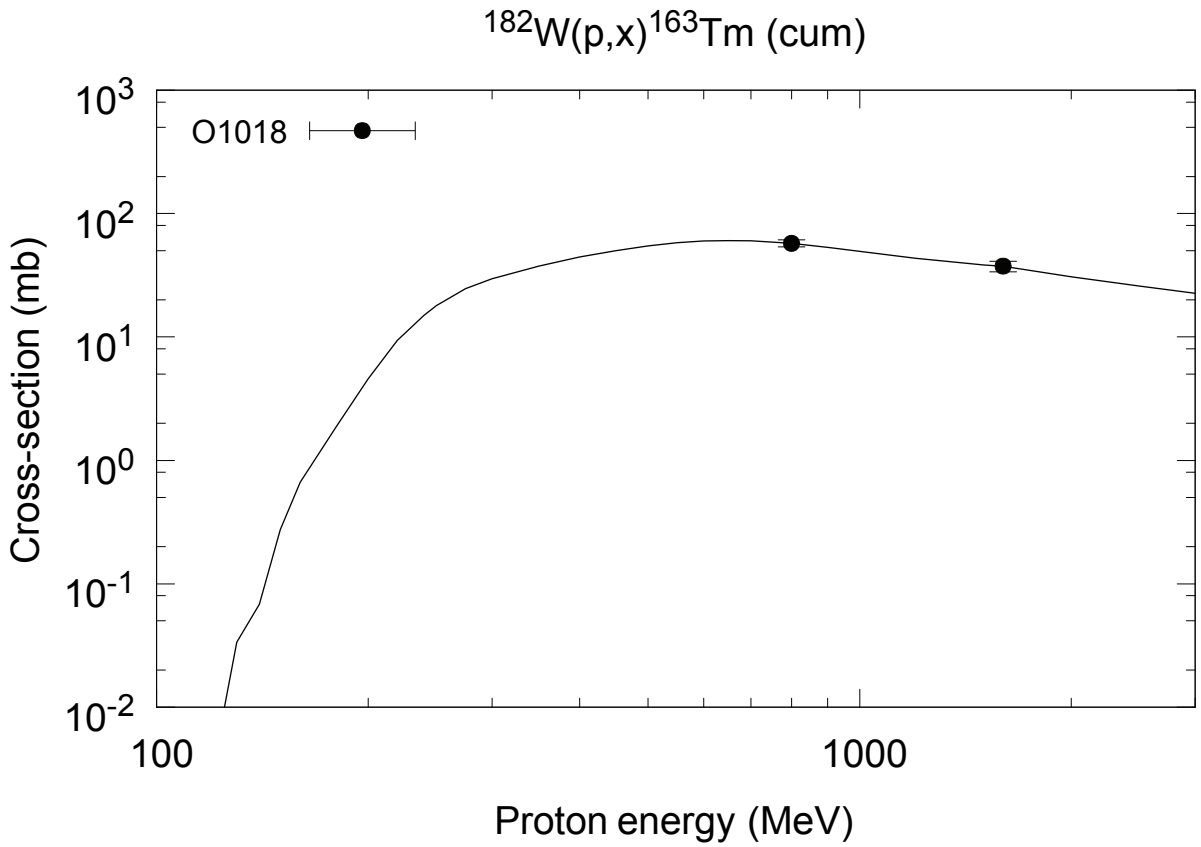

^{182}W(p,x)^{156}Er (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

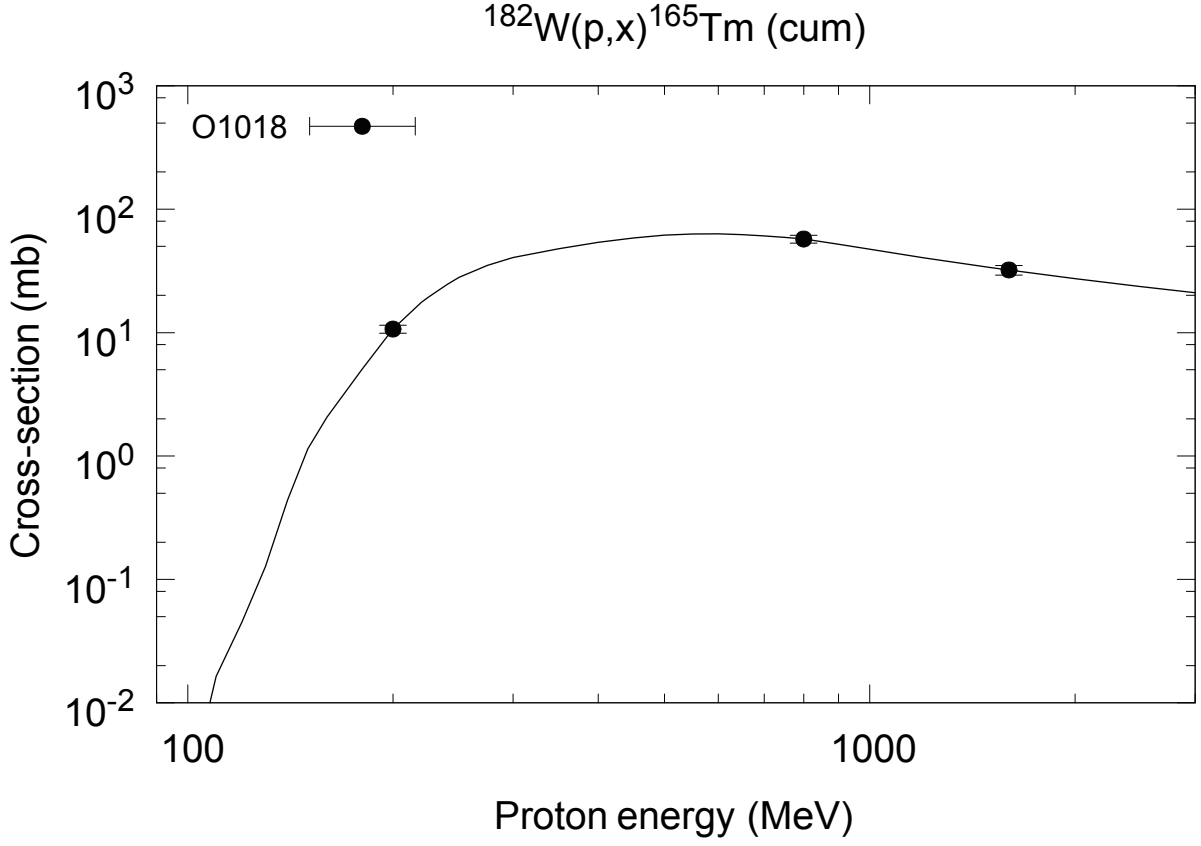

182W(p,x)159Er (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

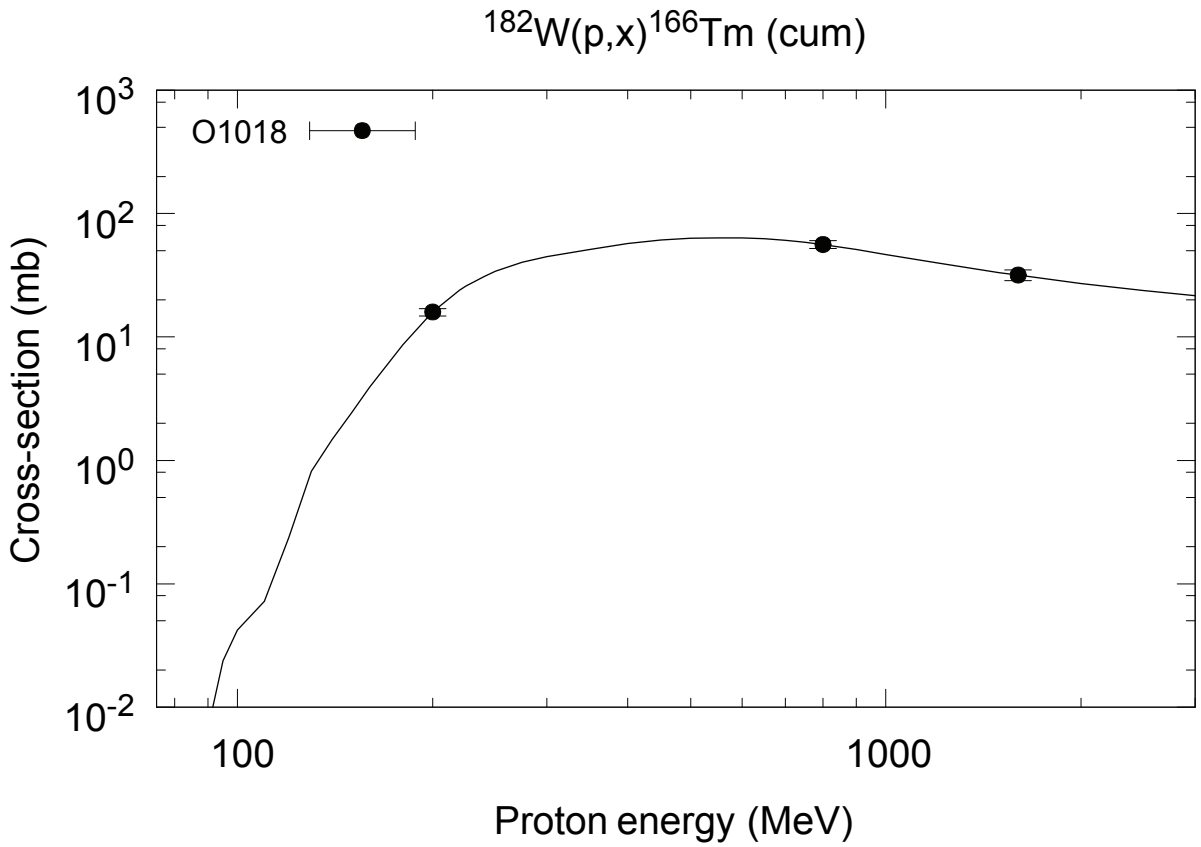

182W(p,x)160Er (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

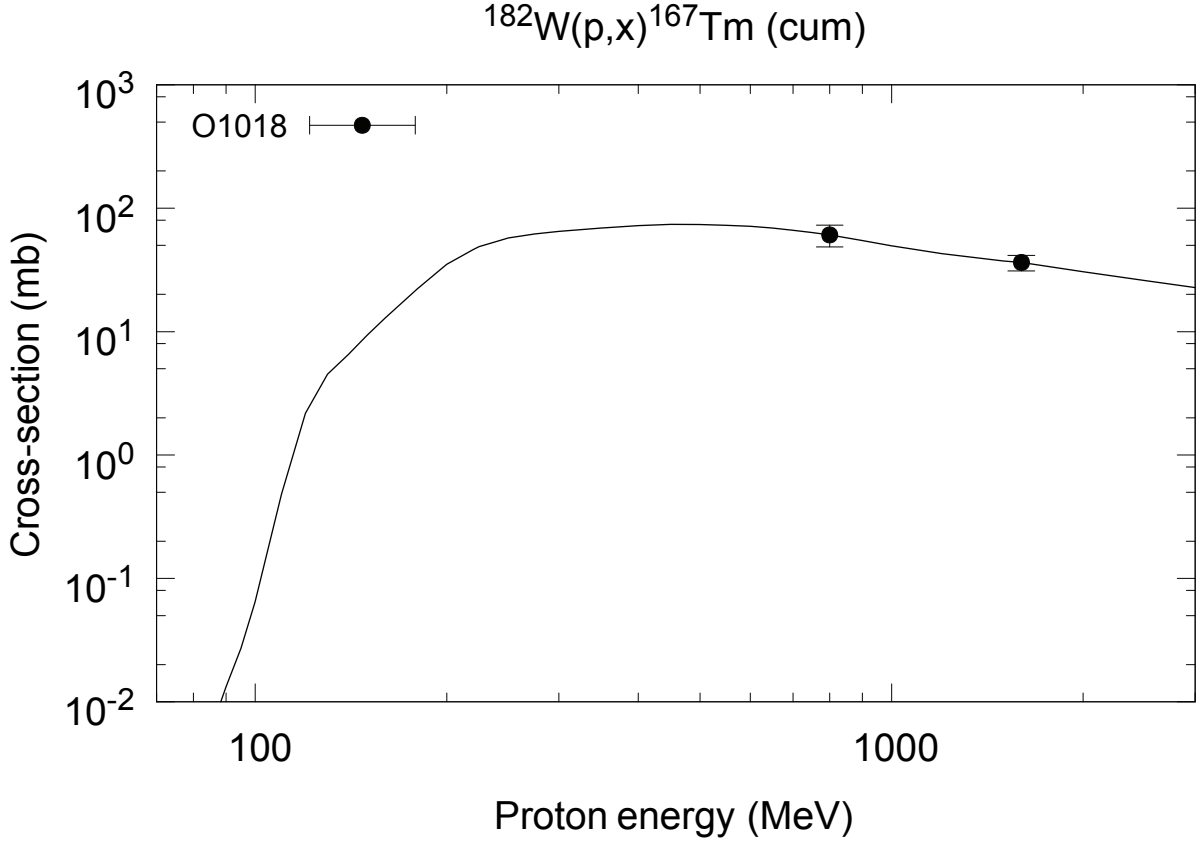

^{182}W(p,x)^{161}Er (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

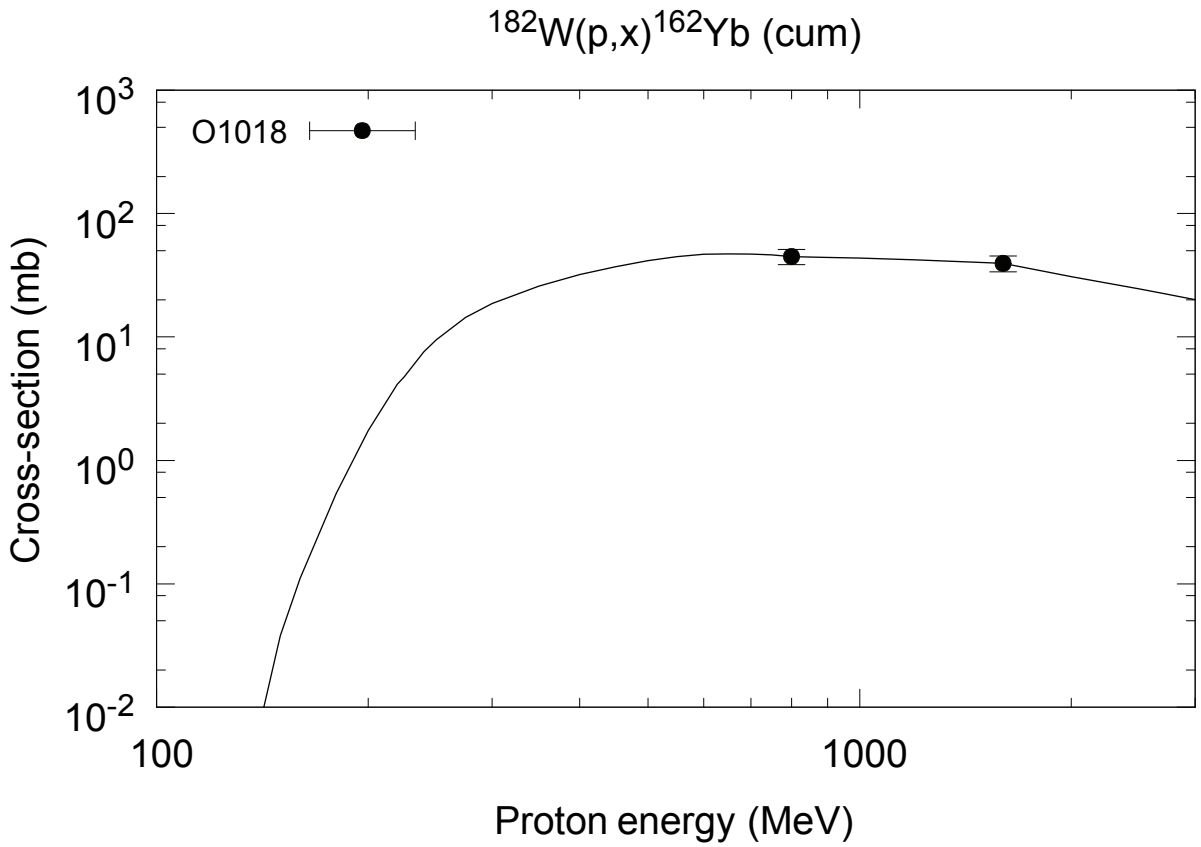

^{182}W(p,x)^{161}Tm (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

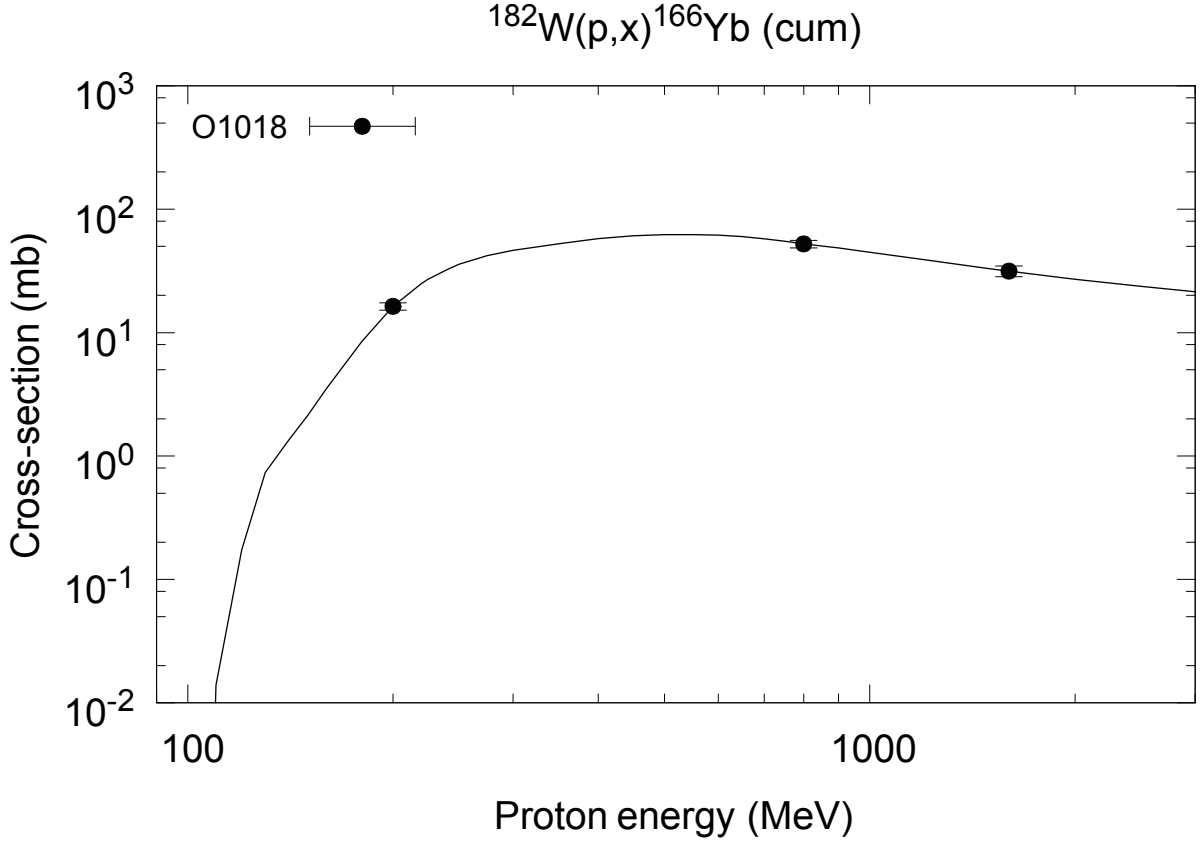

182W(p,x)163Tm (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

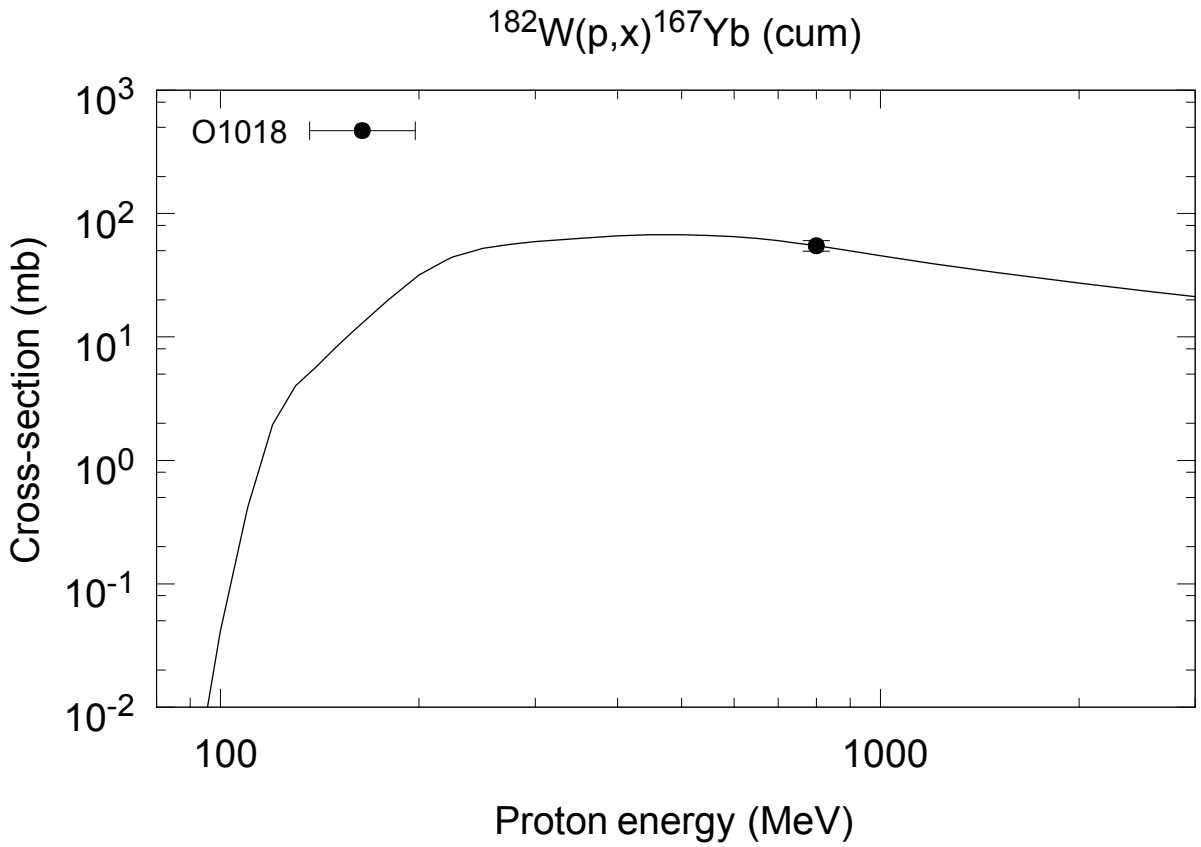

182W(p,x)165Tm (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

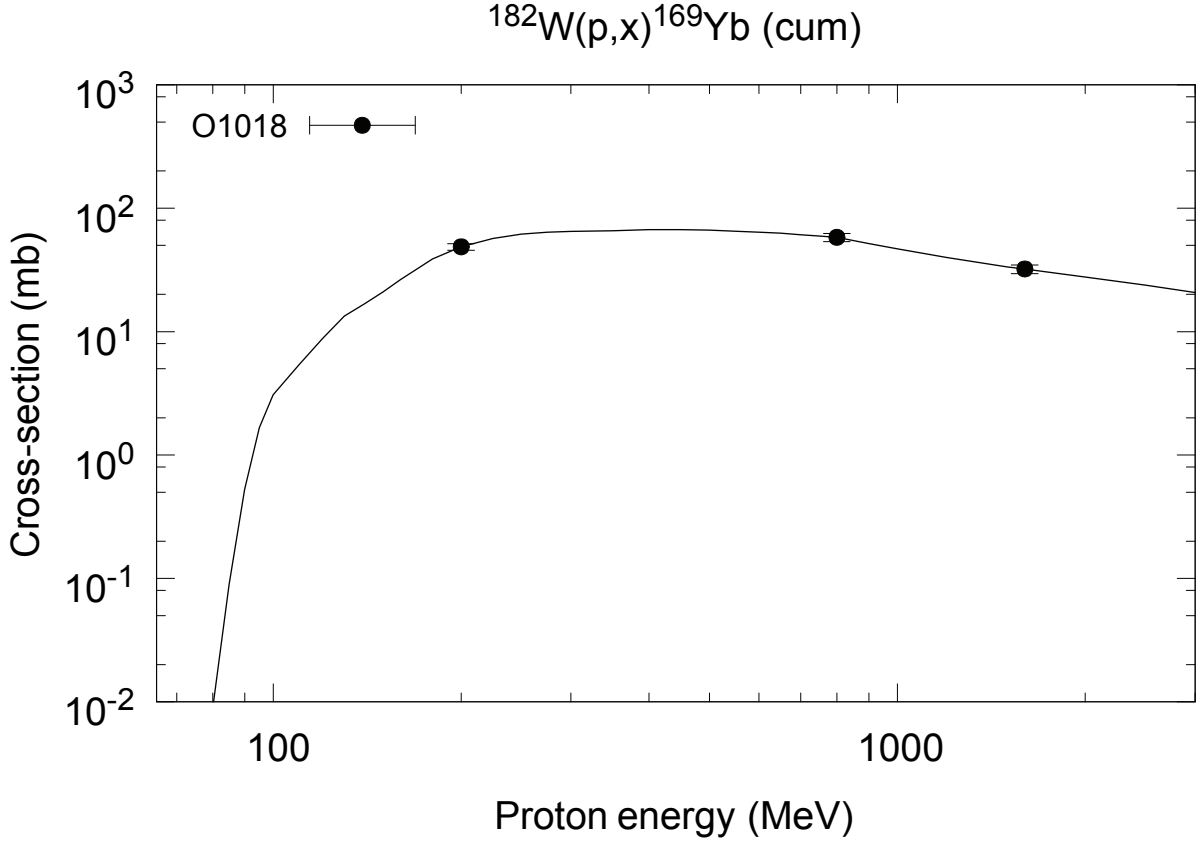

^{182}W(p,x)^{166}Tm (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

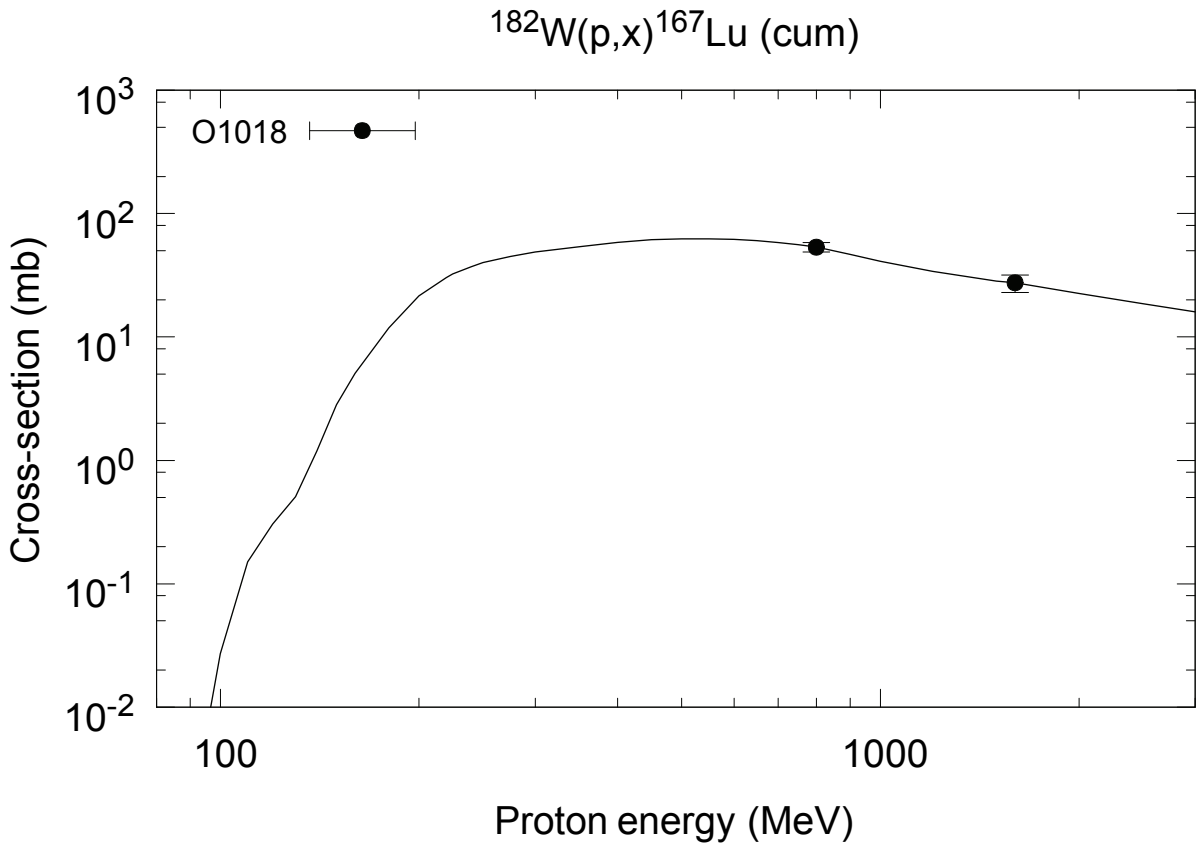

^{182}W(p,x)^{167}Tm (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

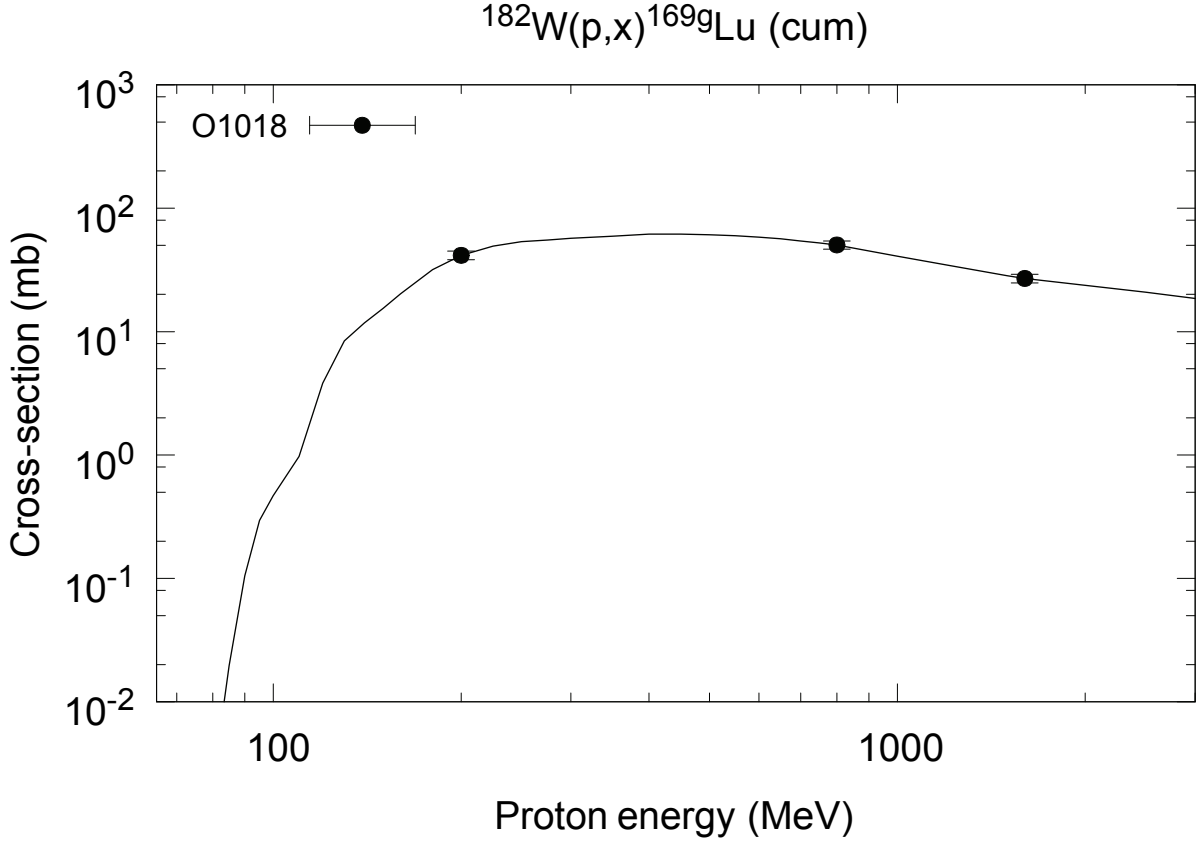

^{182}W(p,x)^{162}Yb (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

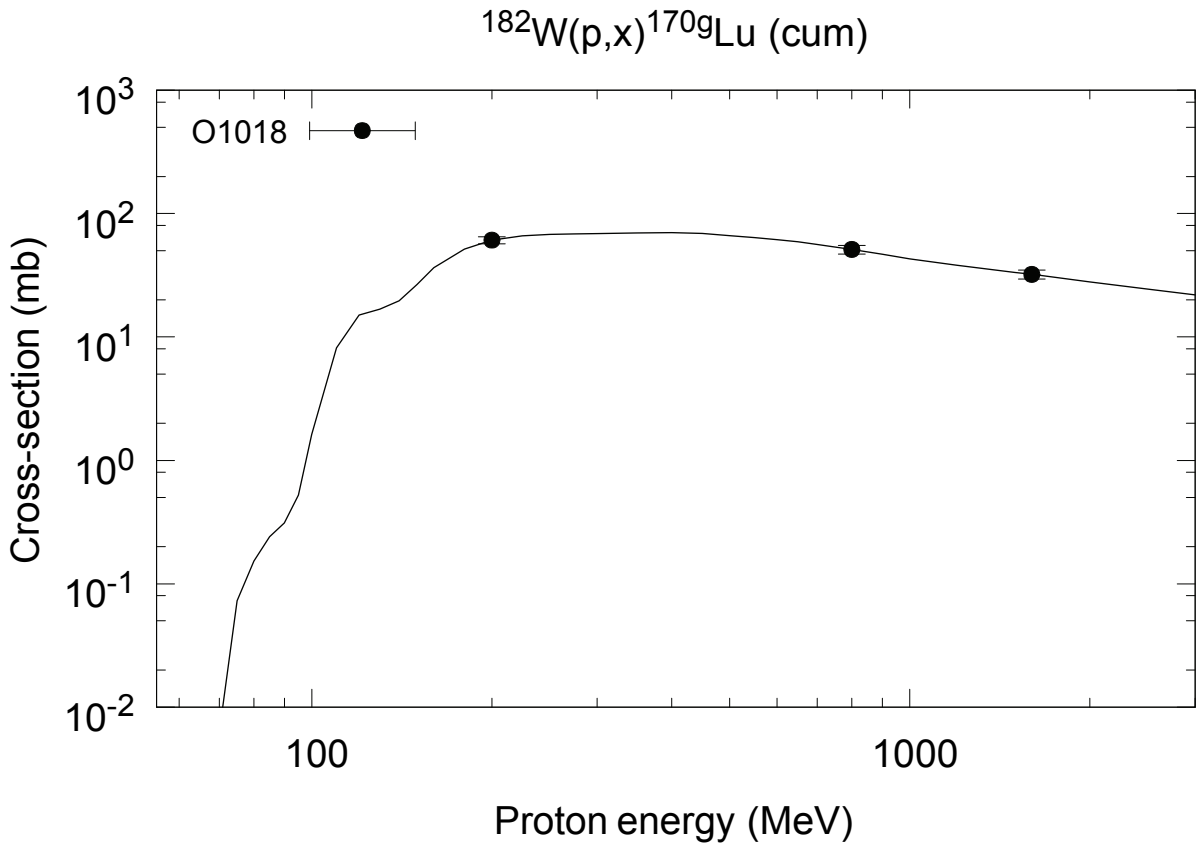

^{182}W(p,x)^{166}Yb (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

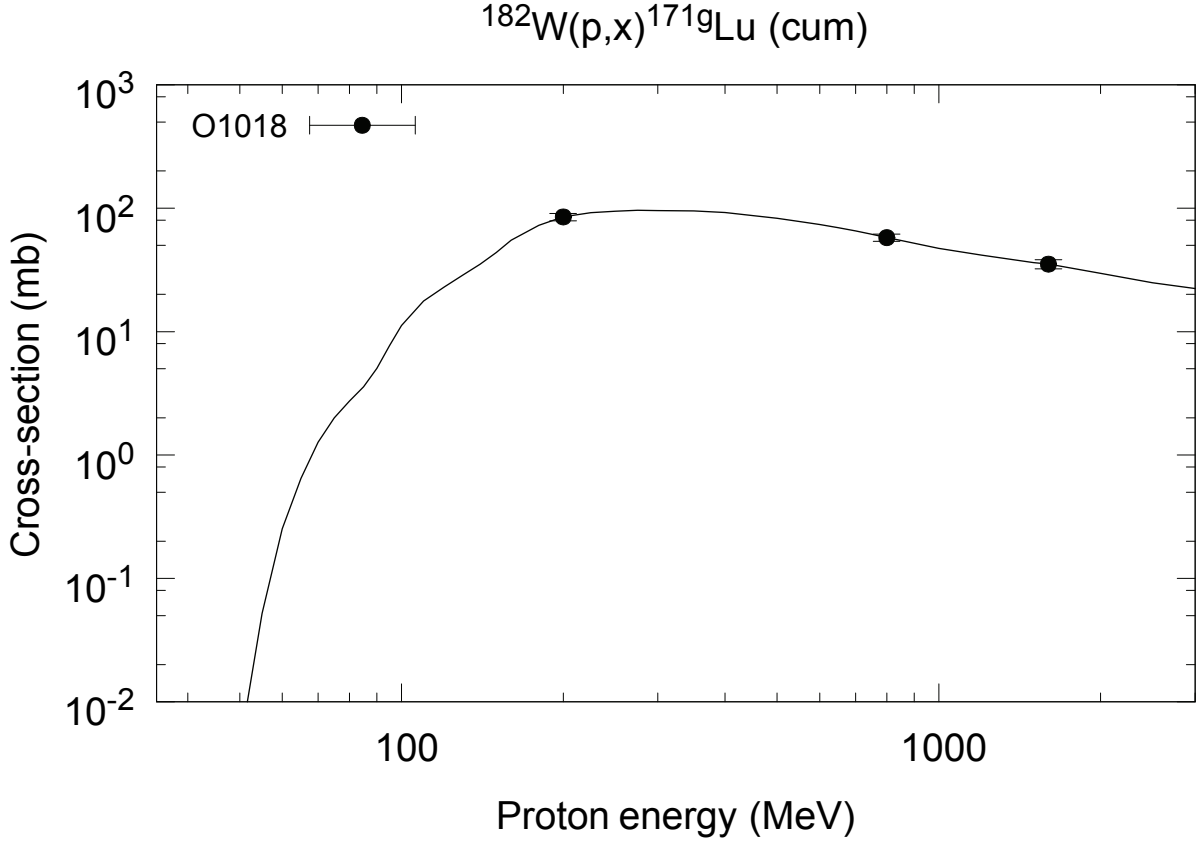

^{182}W(p,x)^{167}Yb (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

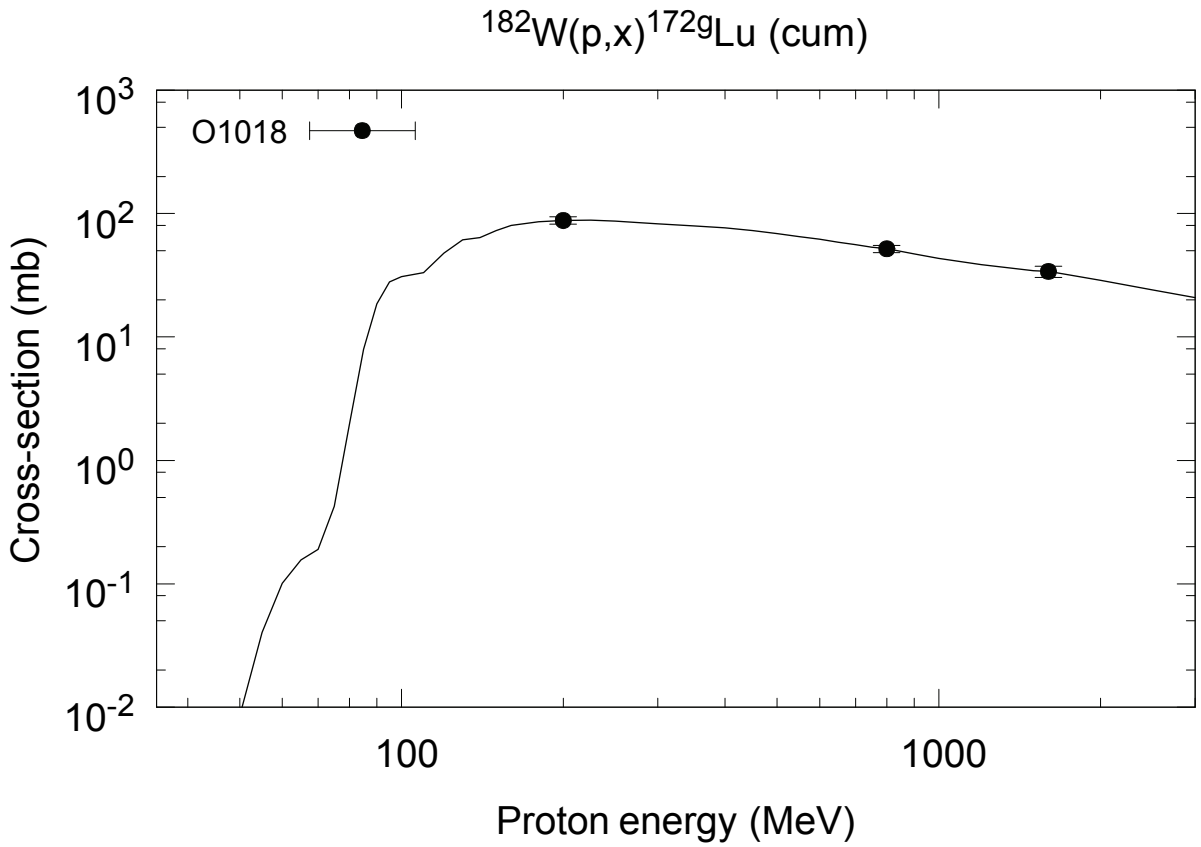

^{182}W(p,x)^{169}Yb (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

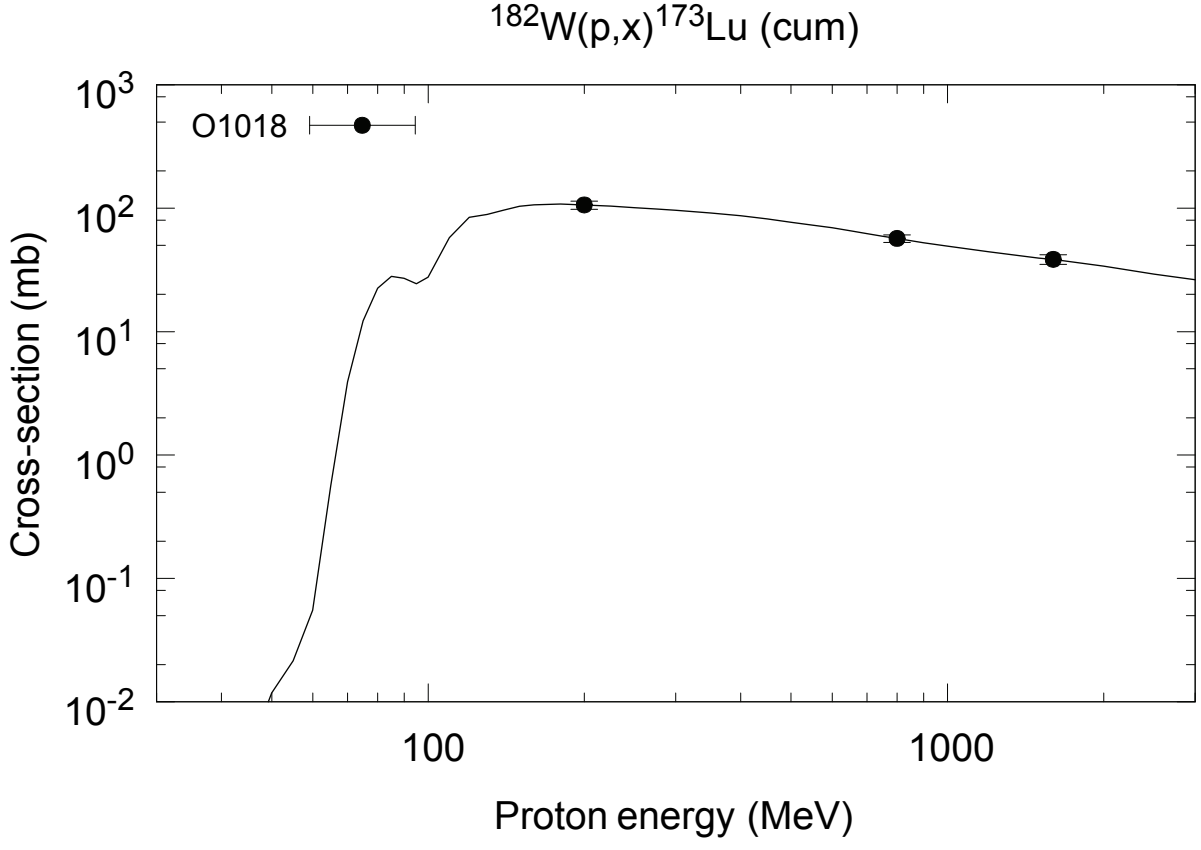

^{182}W(p,x)^{167}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

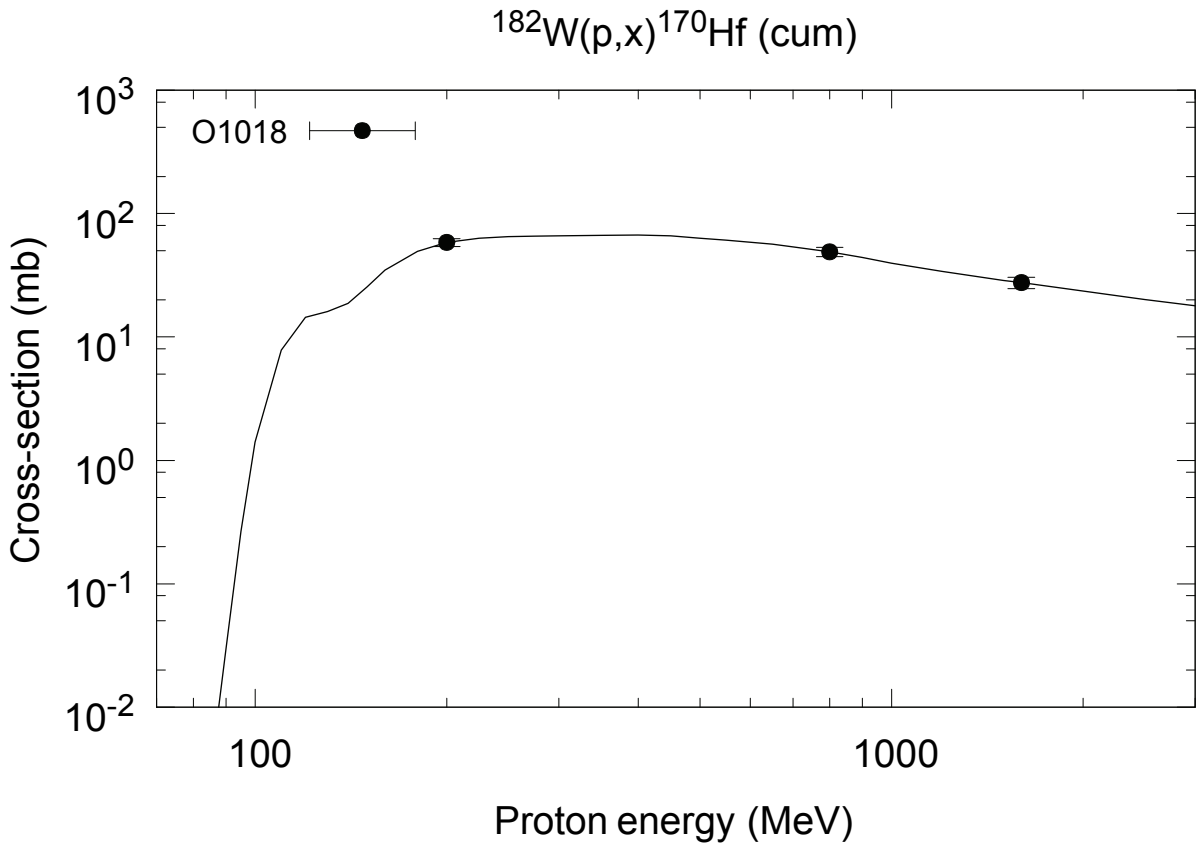

^{182}W(p,x)^{169g}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

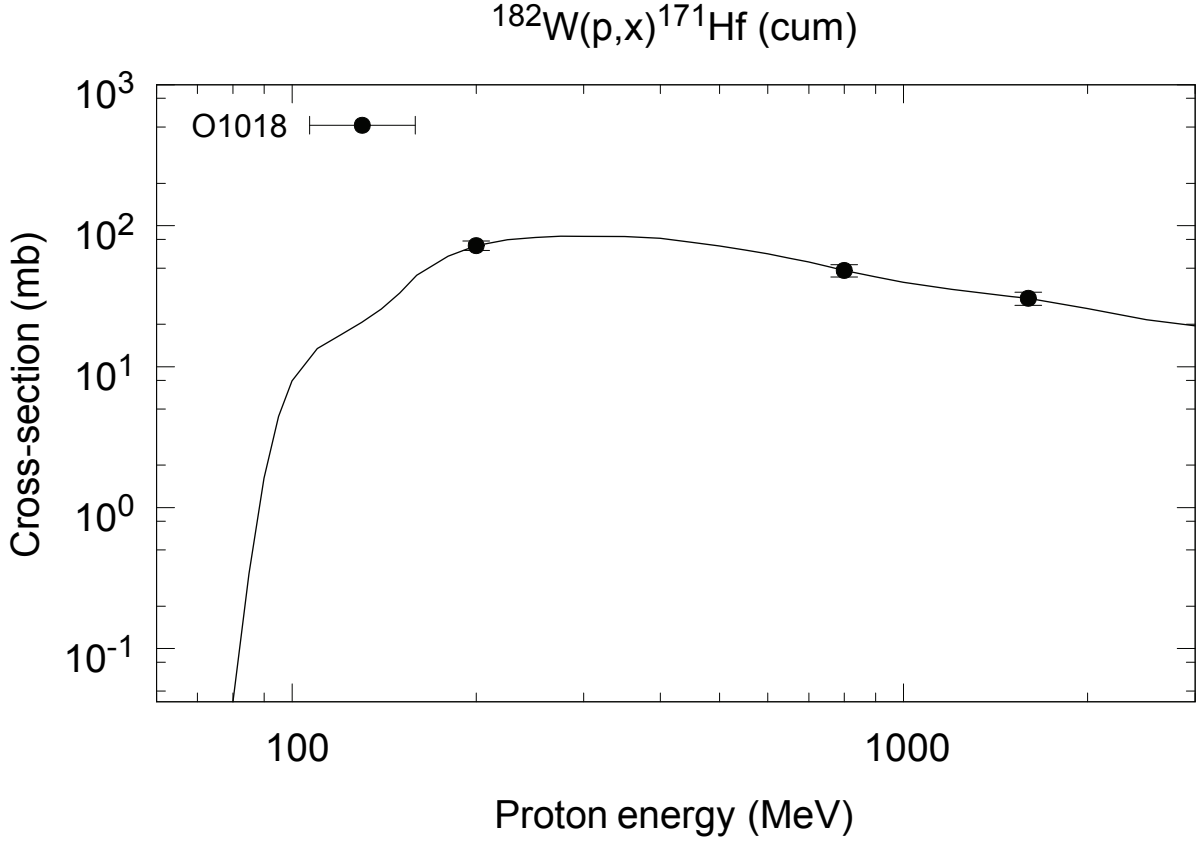

^{182}W(p,x)^{170g}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

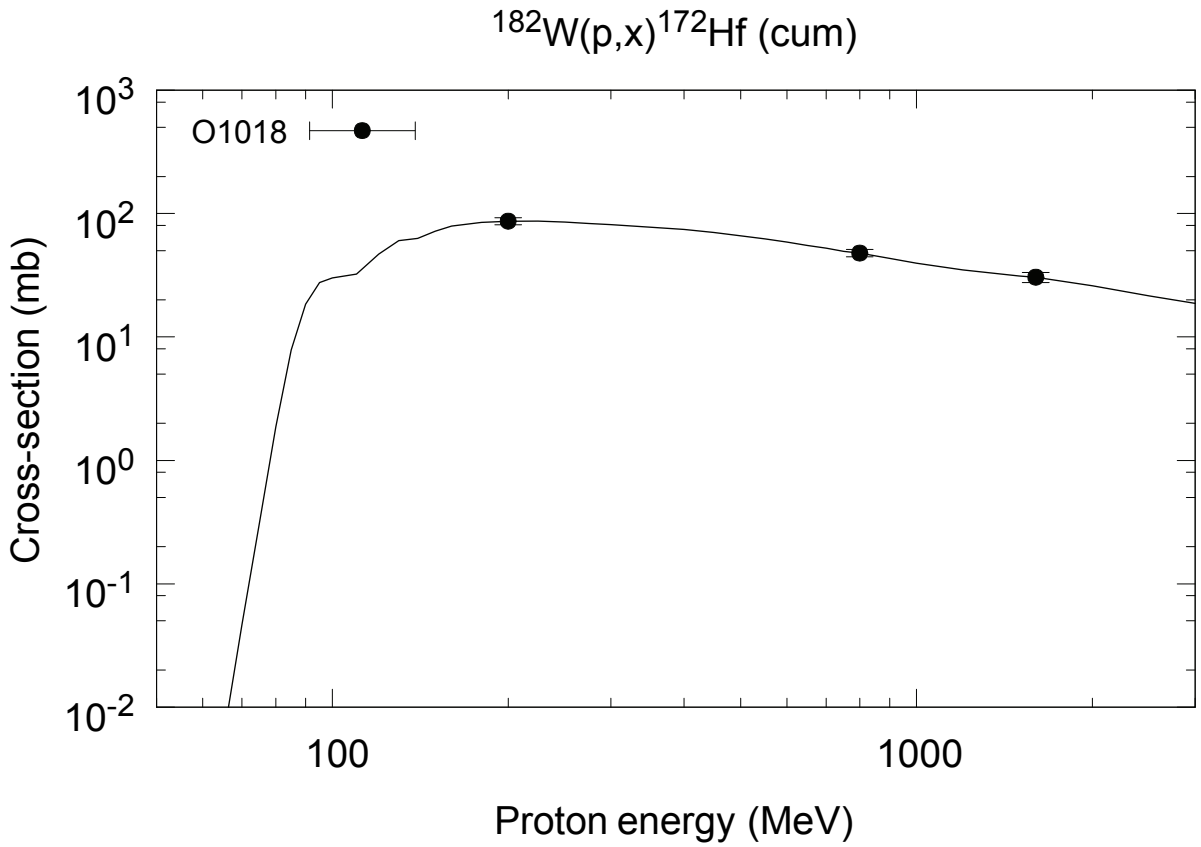

^{182}W(p,x)^{171g}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

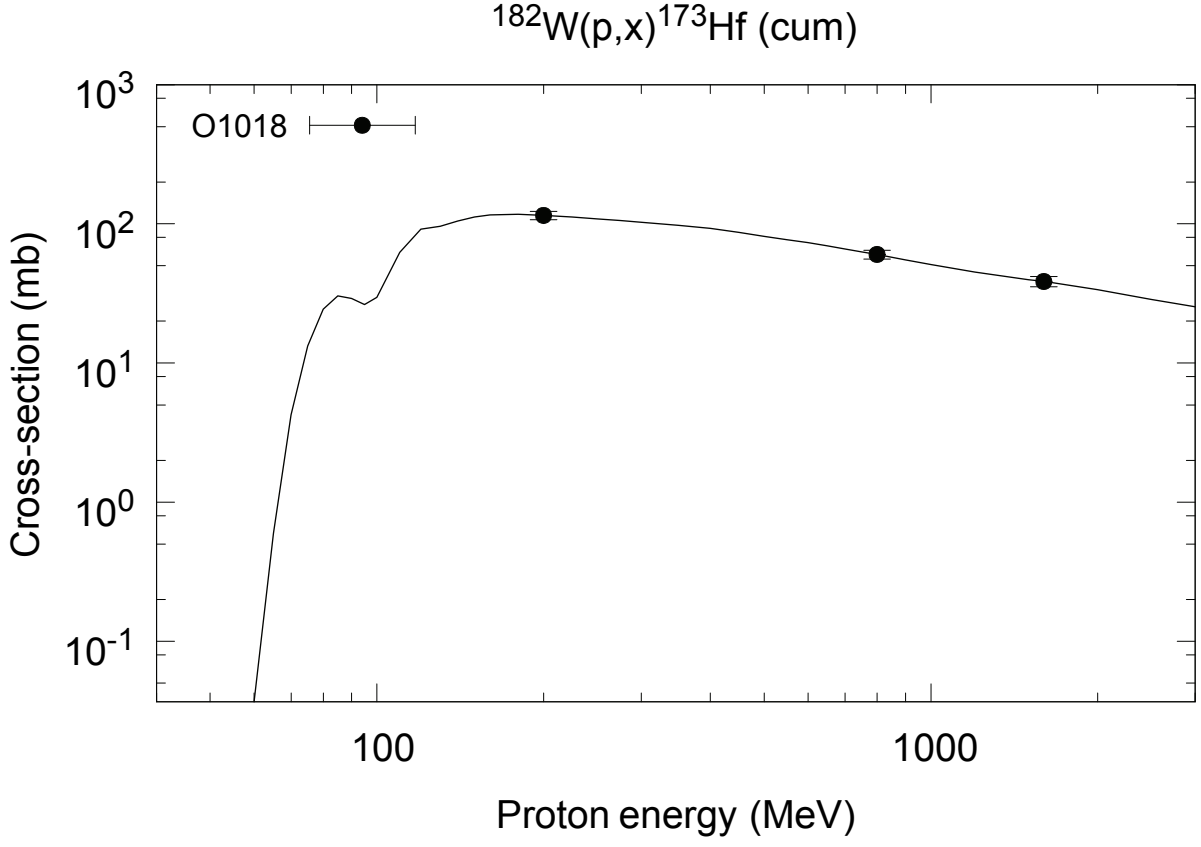

^{182}W(p,x)^{172g}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

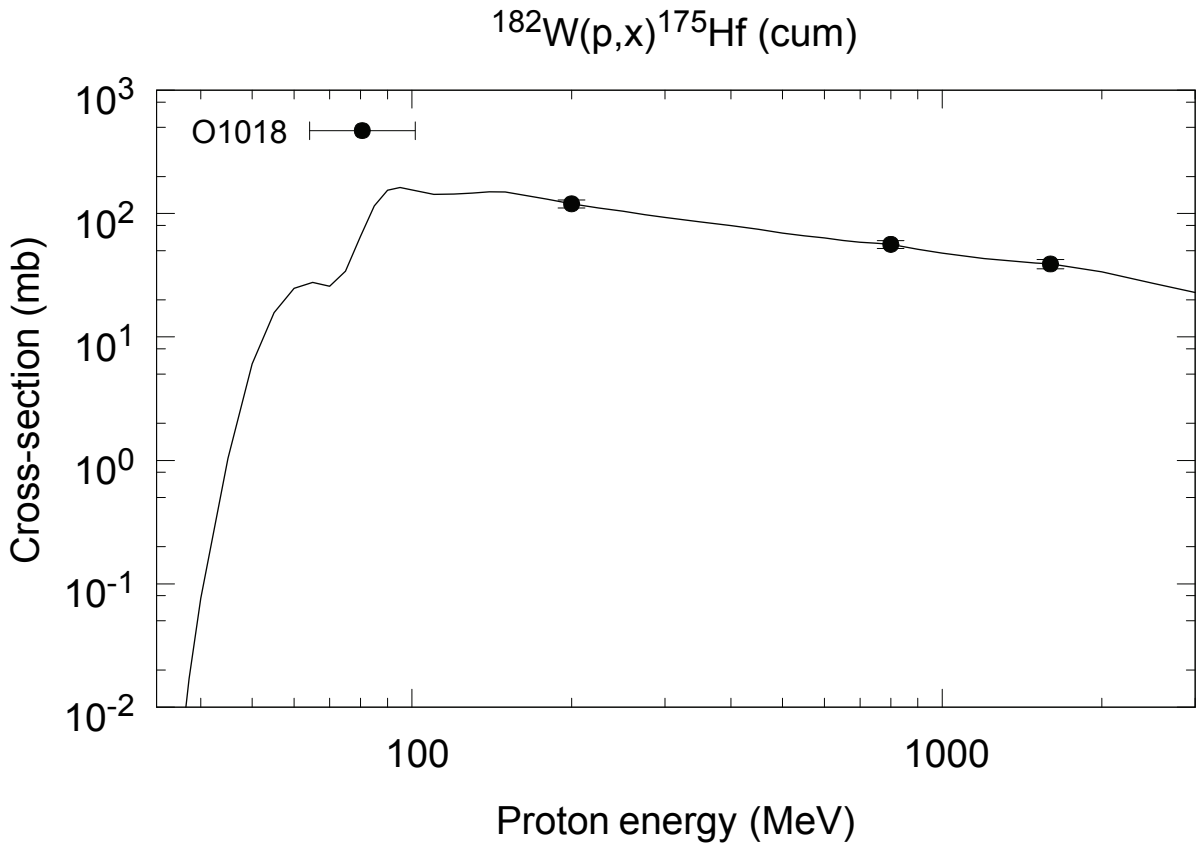

^{182}W(p,x)^{173}Lu (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

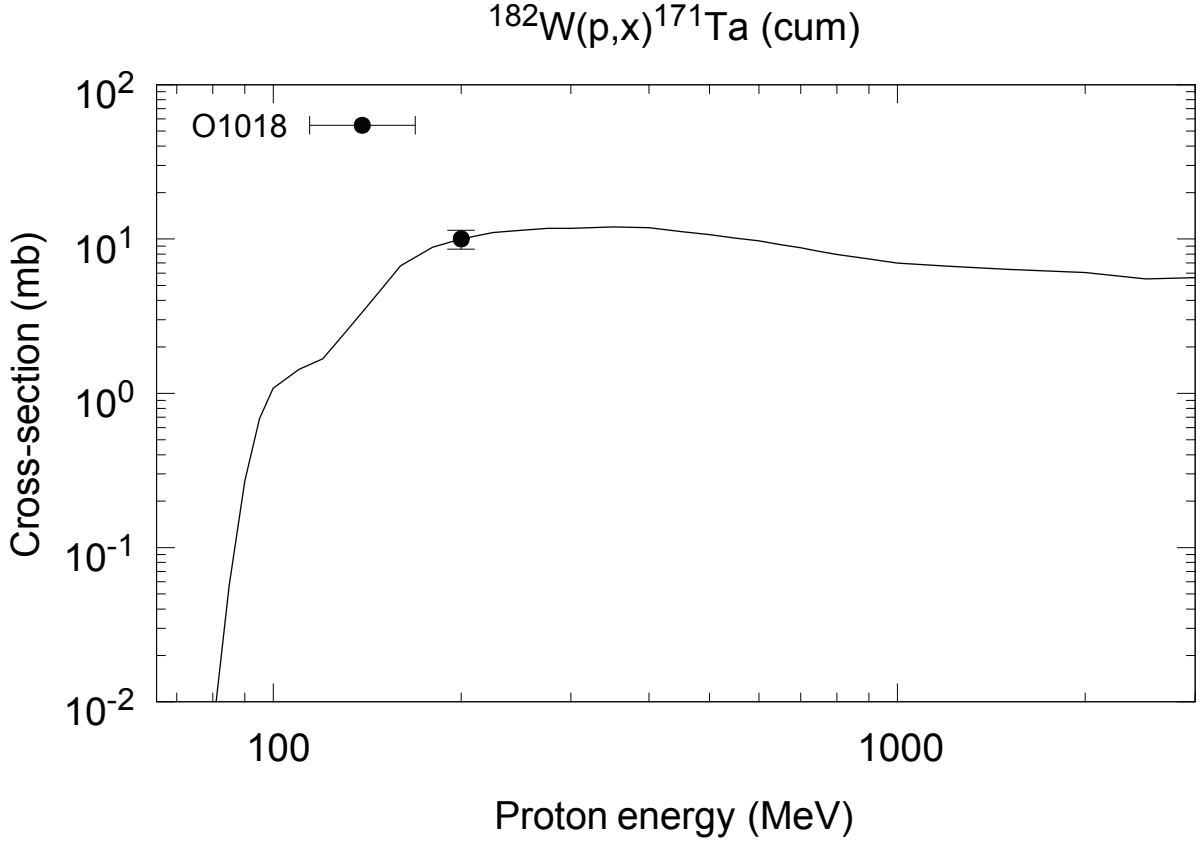

^{182}W(p,x)^{170}Hf (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

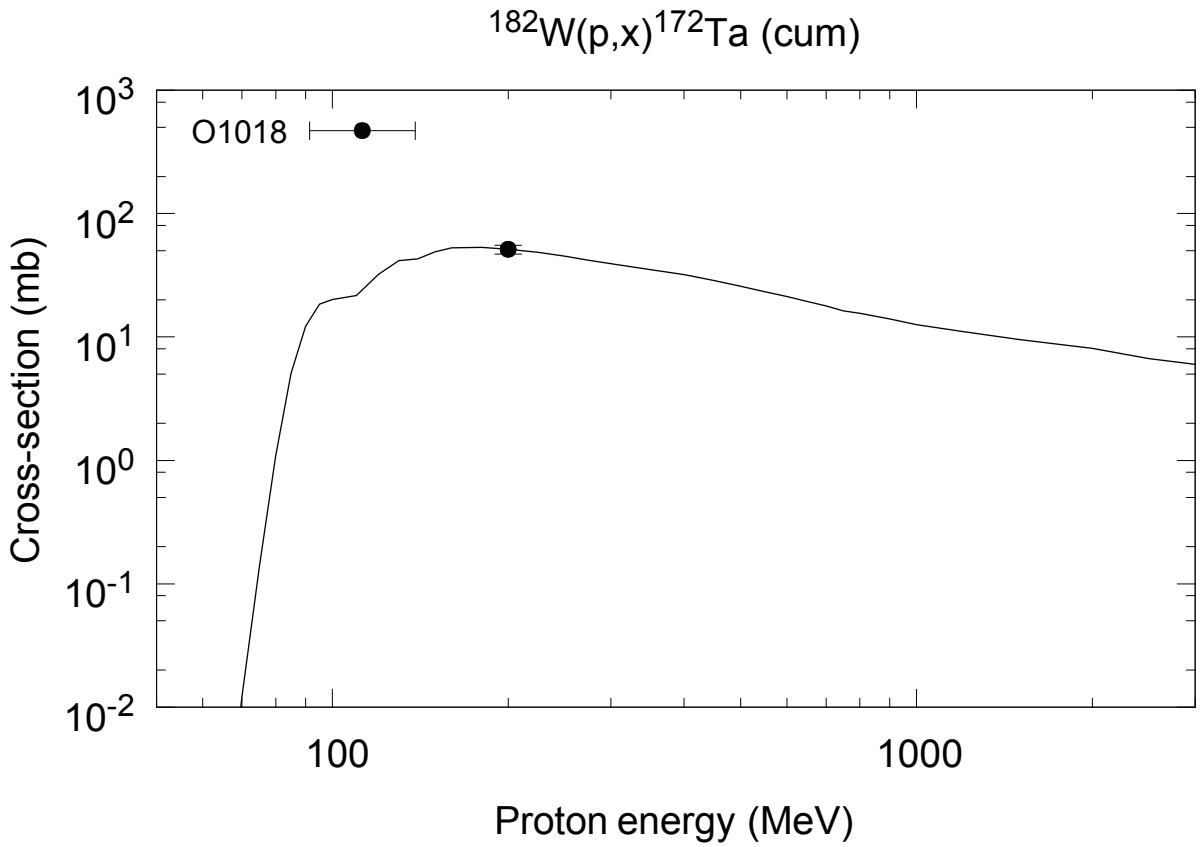

^{182}W(p,x)^{171}Hf (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

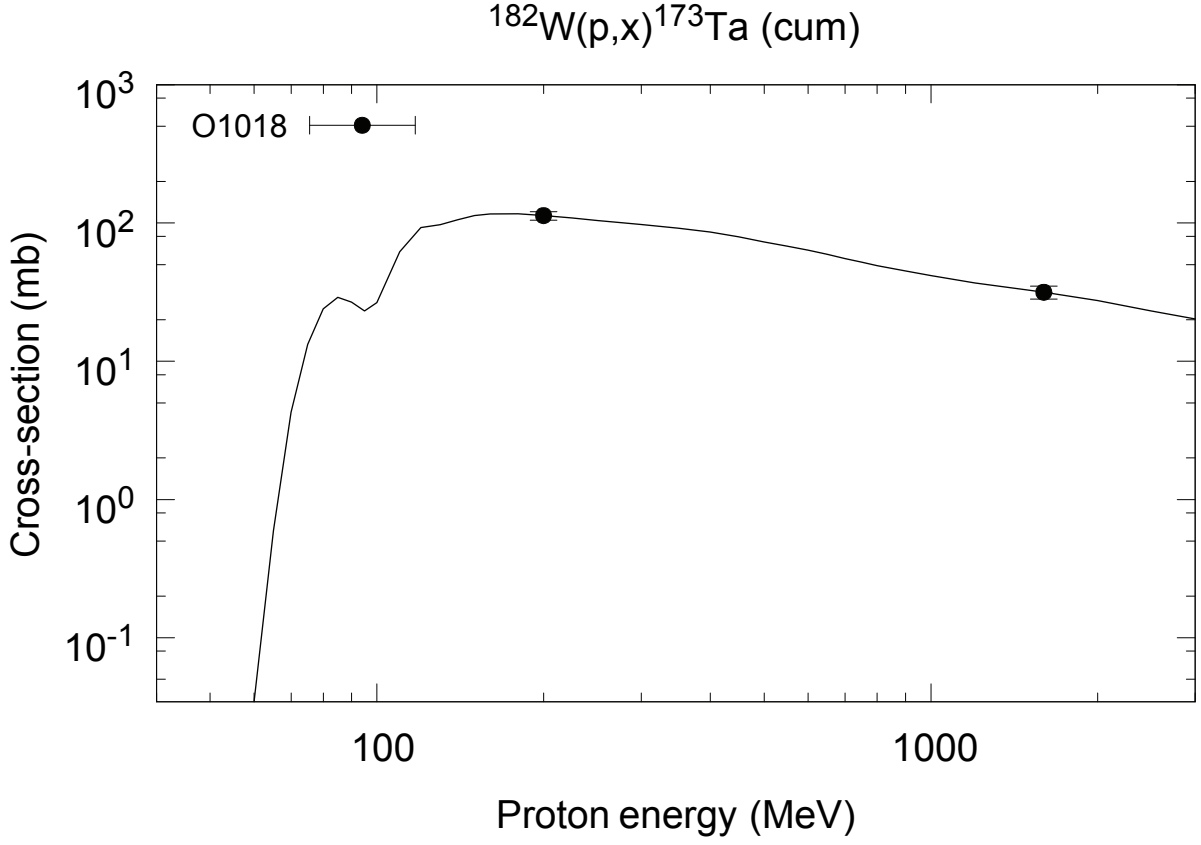

^{182}W(p,x)^{172}Hf (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

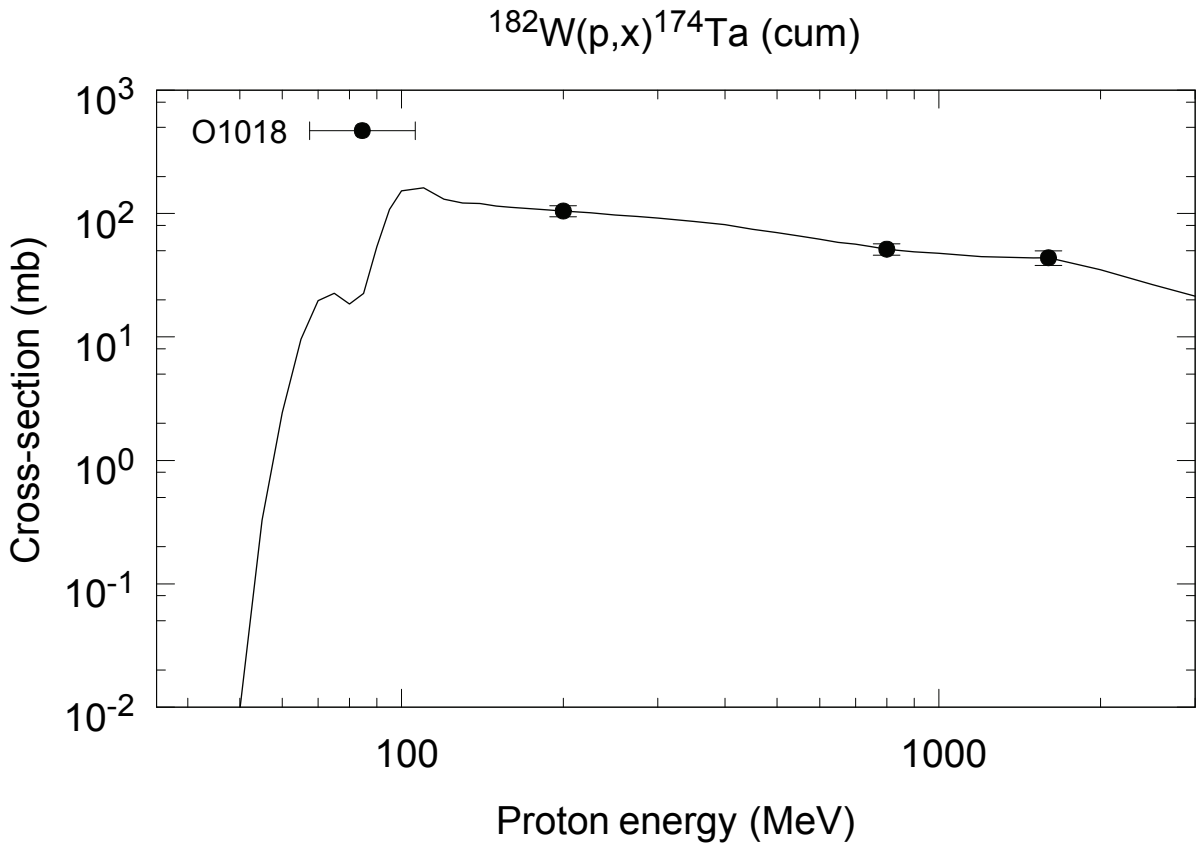

^{182}W(p,x)^{173}Hf (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

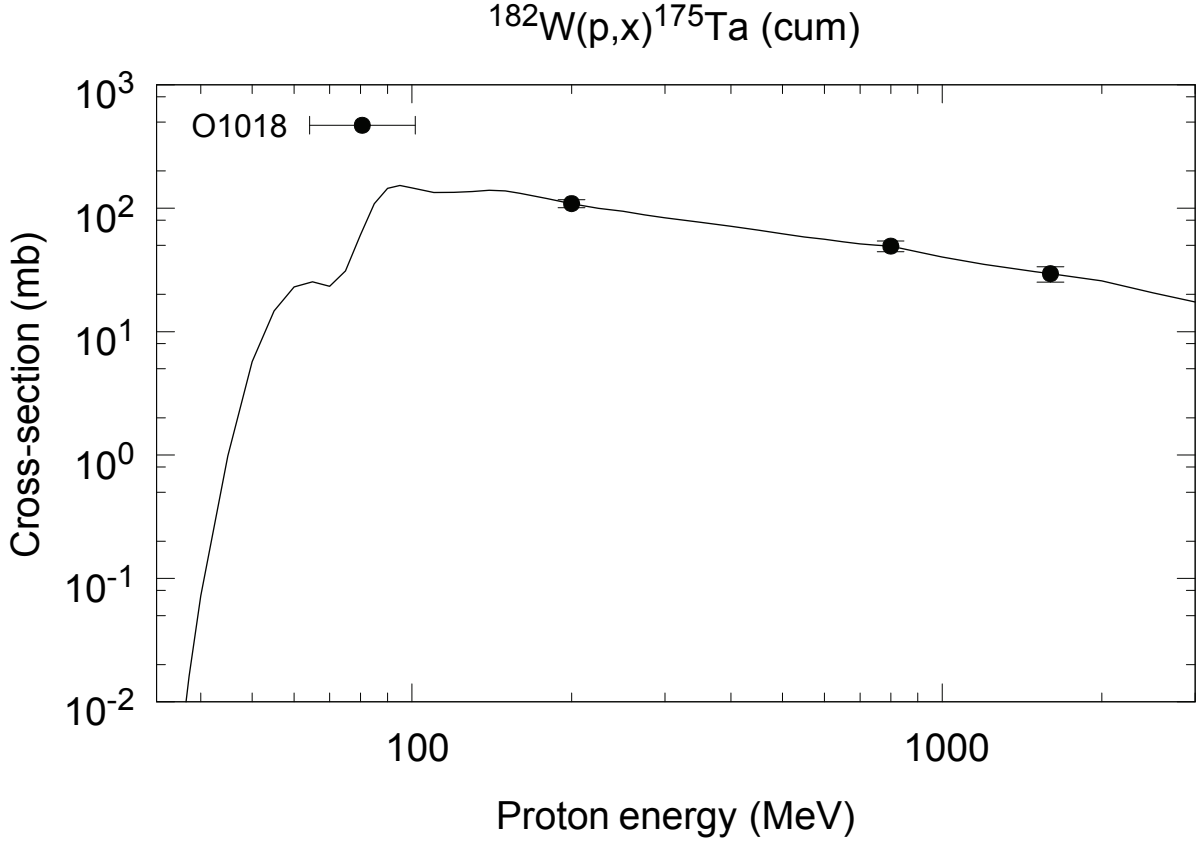

^{182}W(p,x)^{175}Hf (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

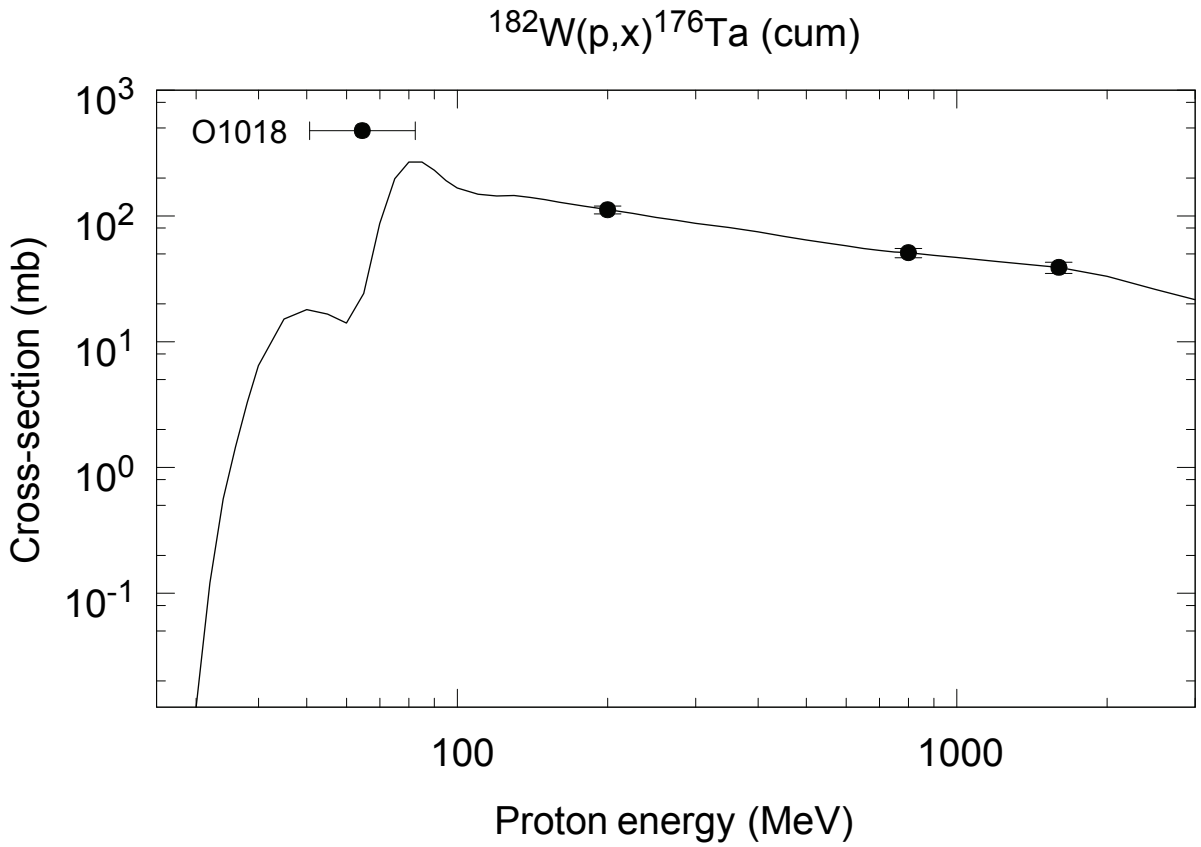

^{182}W(p,x)^{171}Ta (cum)
O1018
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

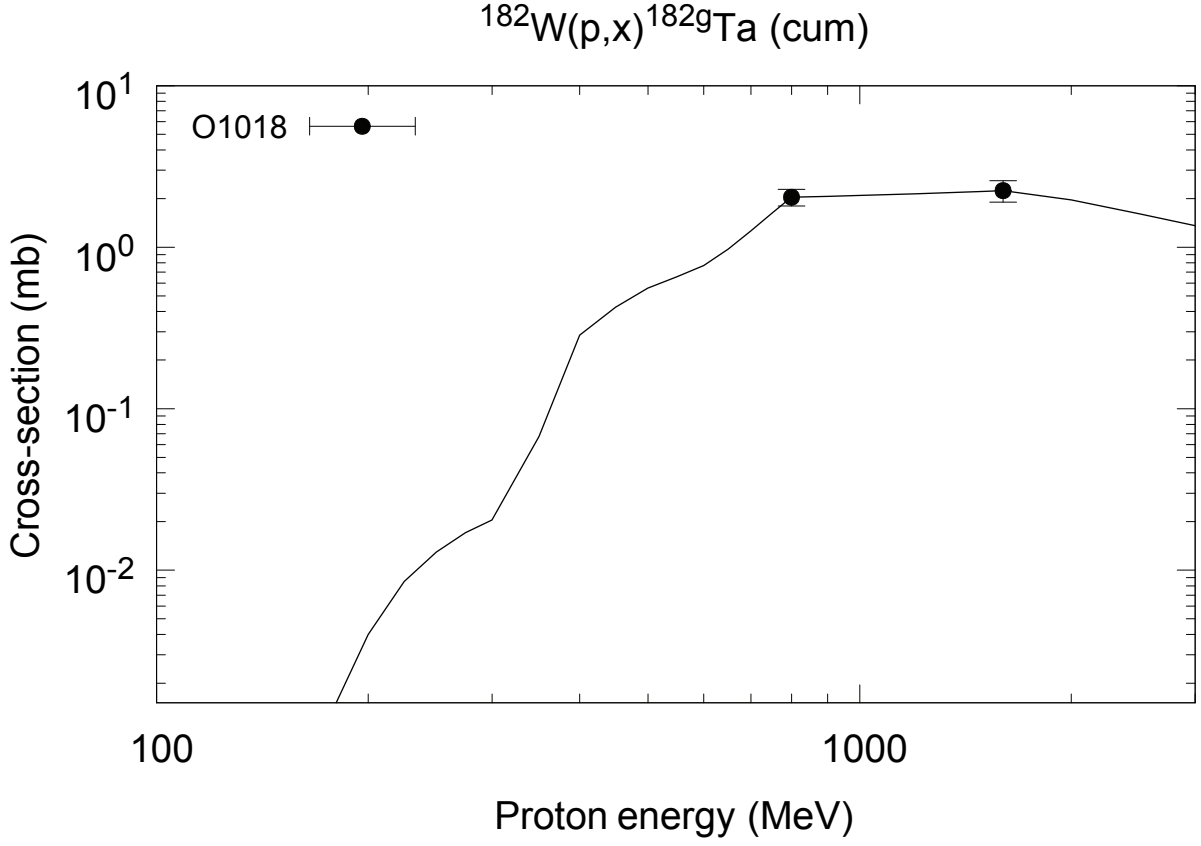

^{182}W(p,x)^{172}Ta (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

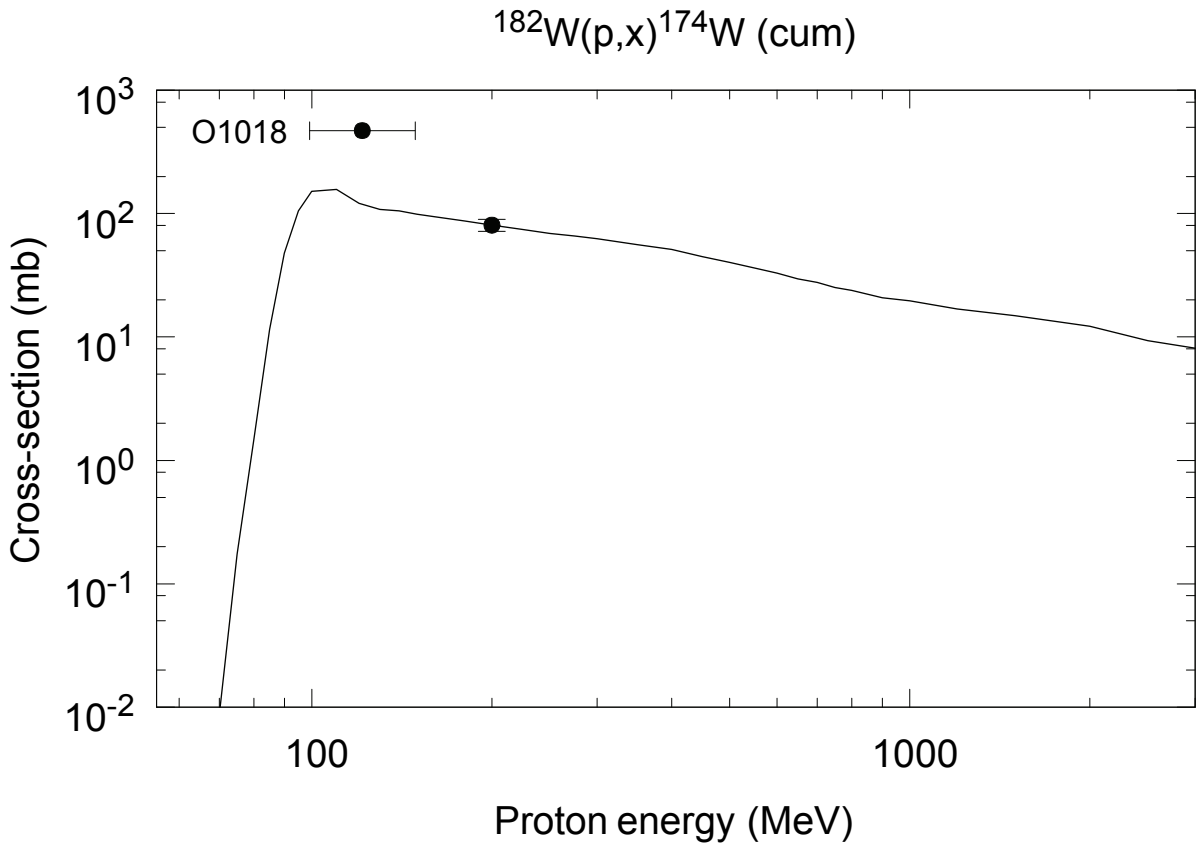

^{182}W(p,x)^{173}Ta (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

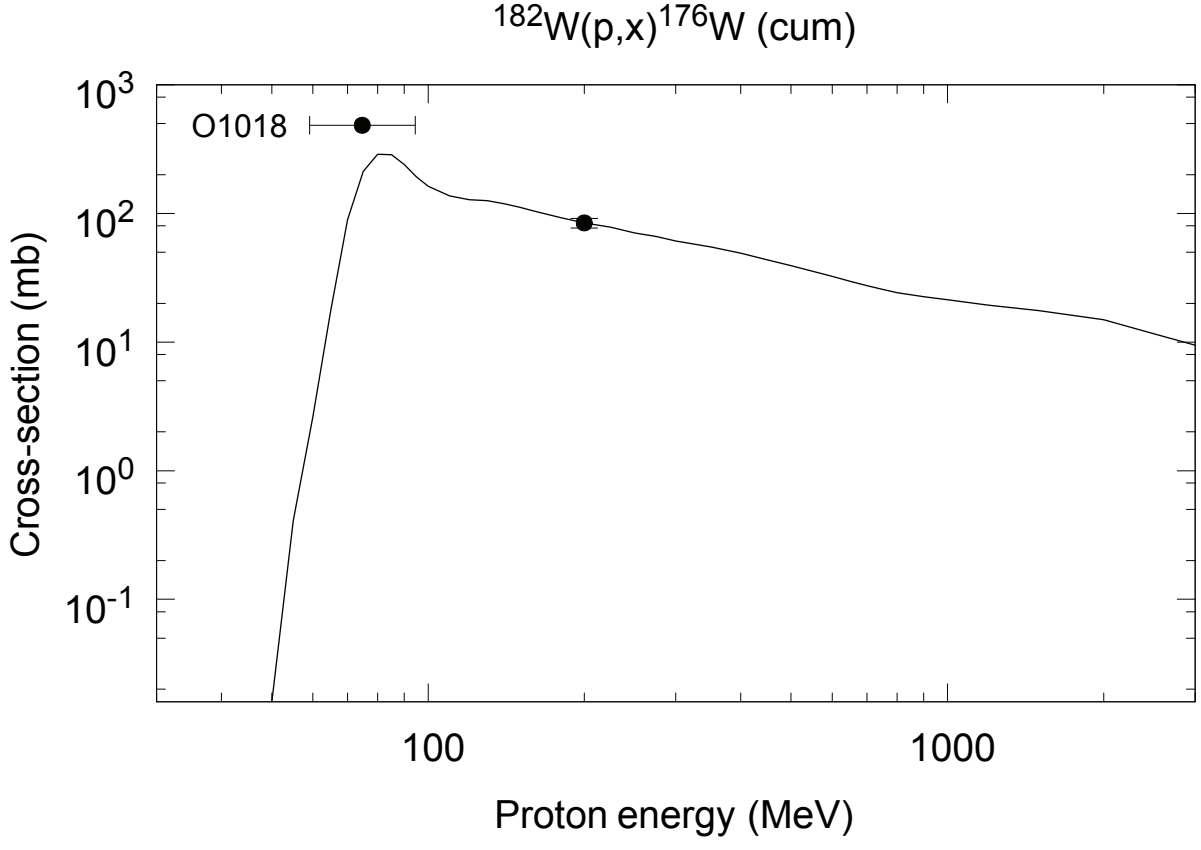

^{182}W(p,x)^{174}Ta (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

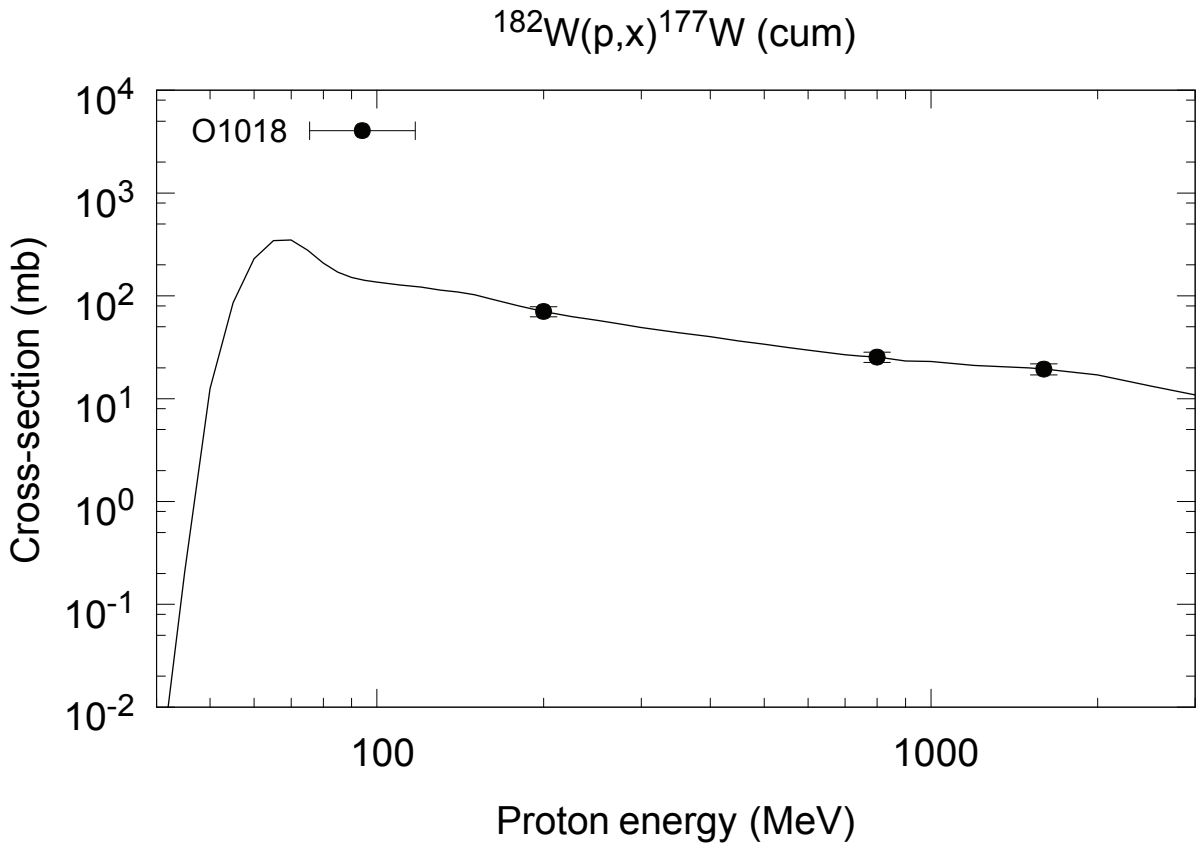

^{182}W(p,x)^{175}Ta (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

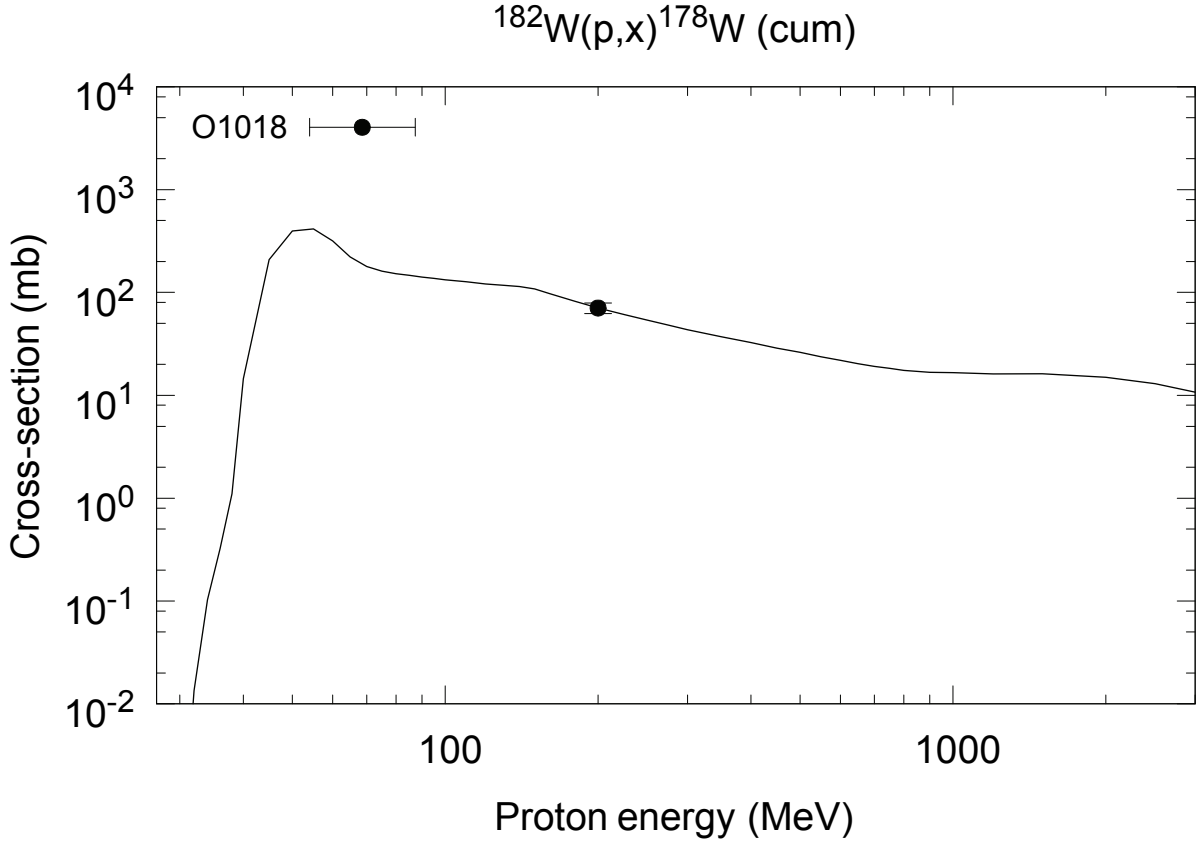

^{182}W(p,x)^{176}Ta (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

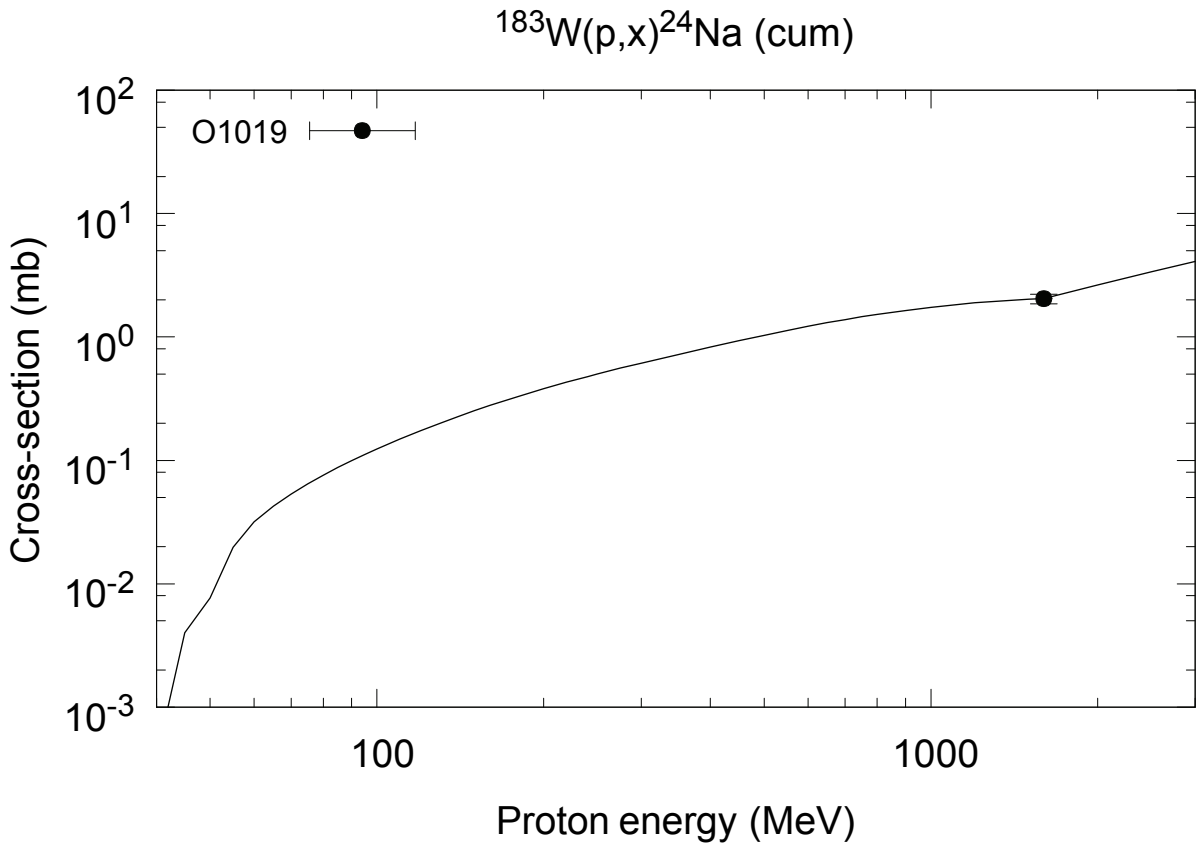

^{182}W(p,x)^{182g}Ta (cum)
O1018
Cross-section (mb)
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

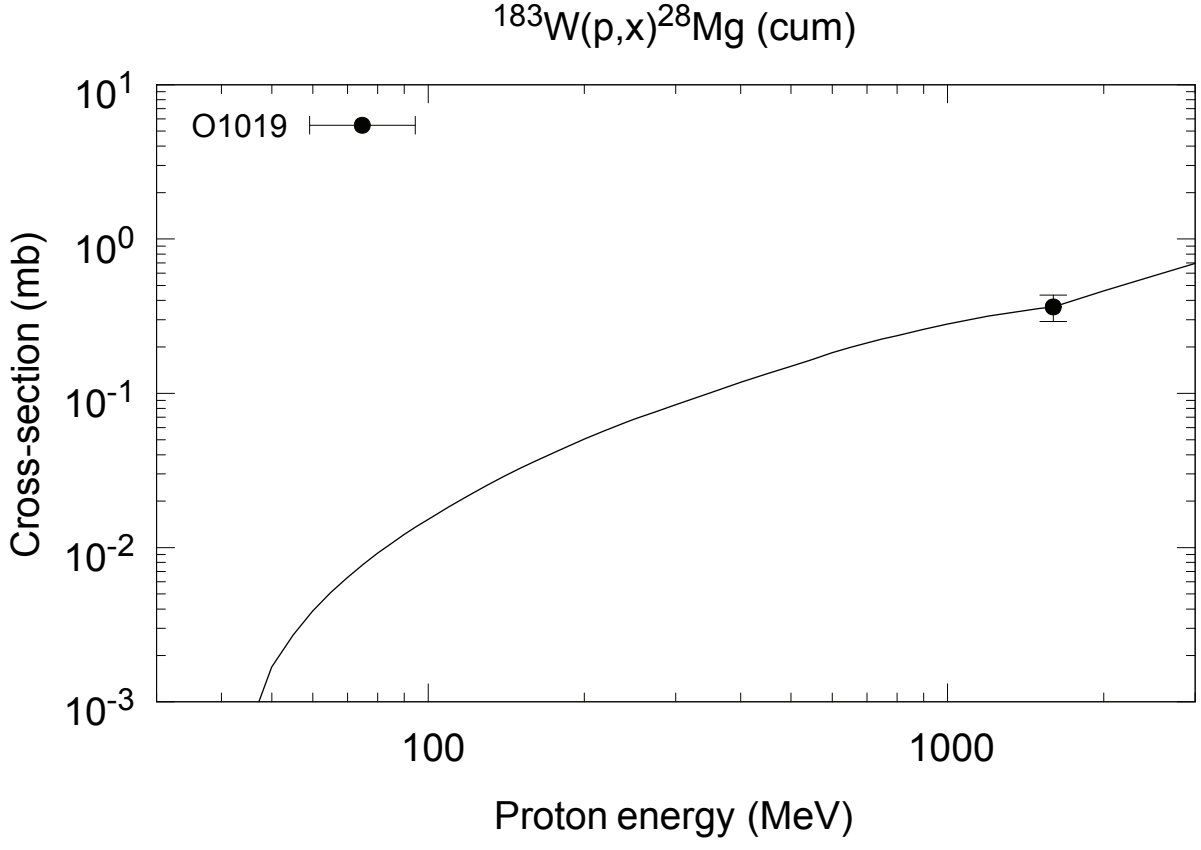

^{182}W(p,x)^{174}W (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

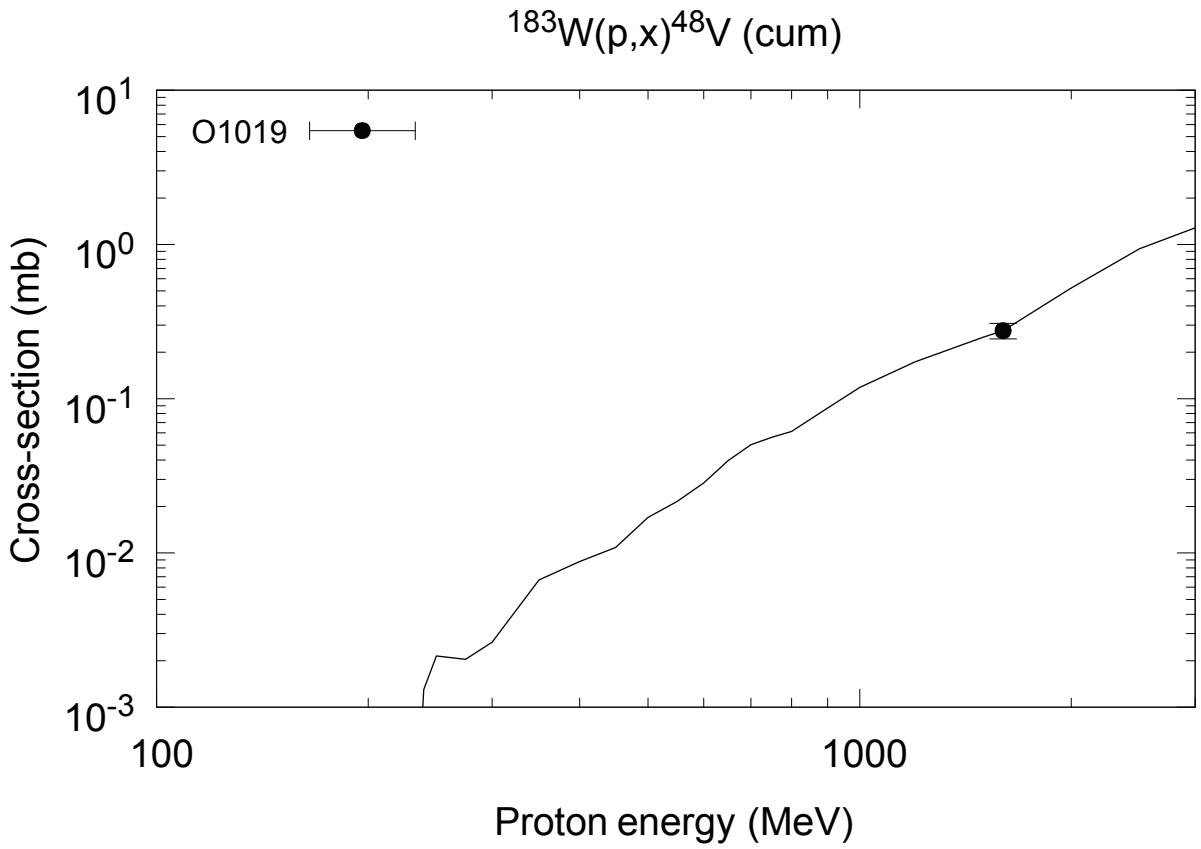

^{182}W(p,x)^{176}W (cum)
O1018
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

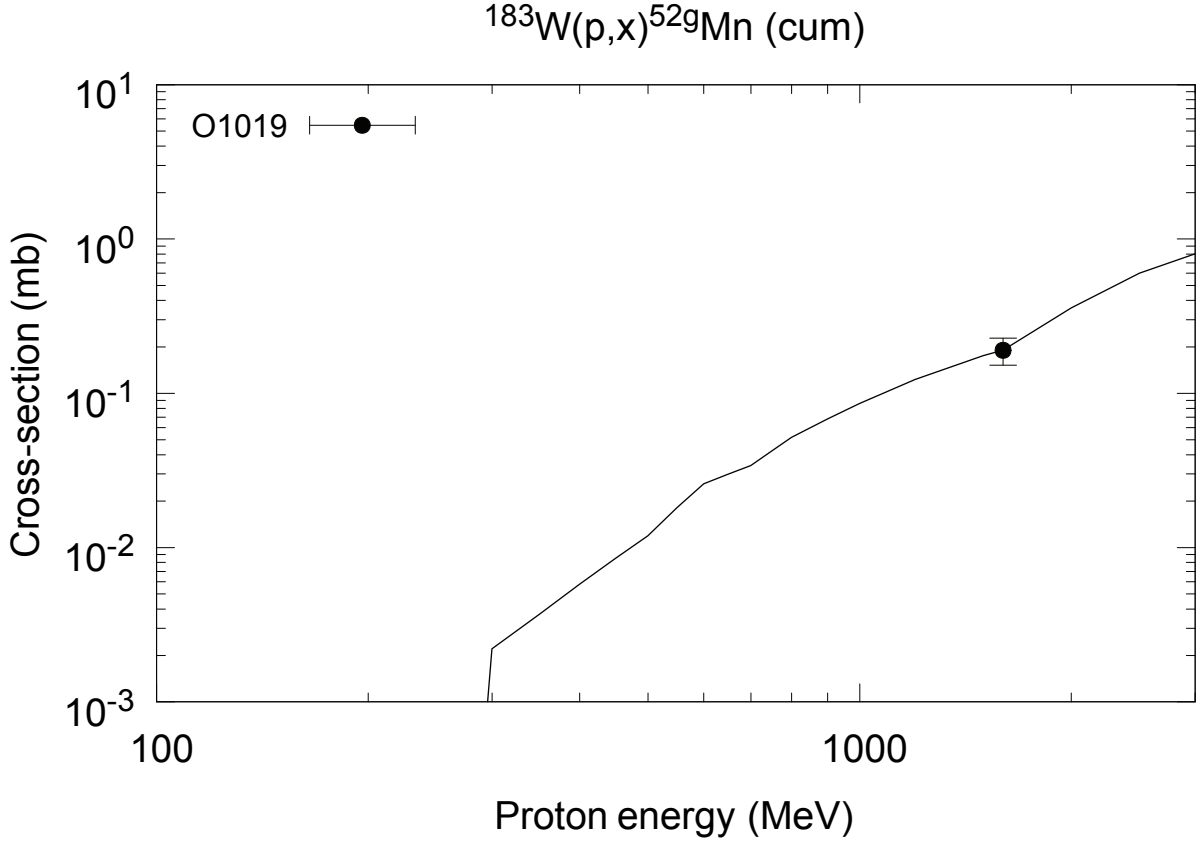

^{182}W(p,x)^{177}W (cum)
O1018
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

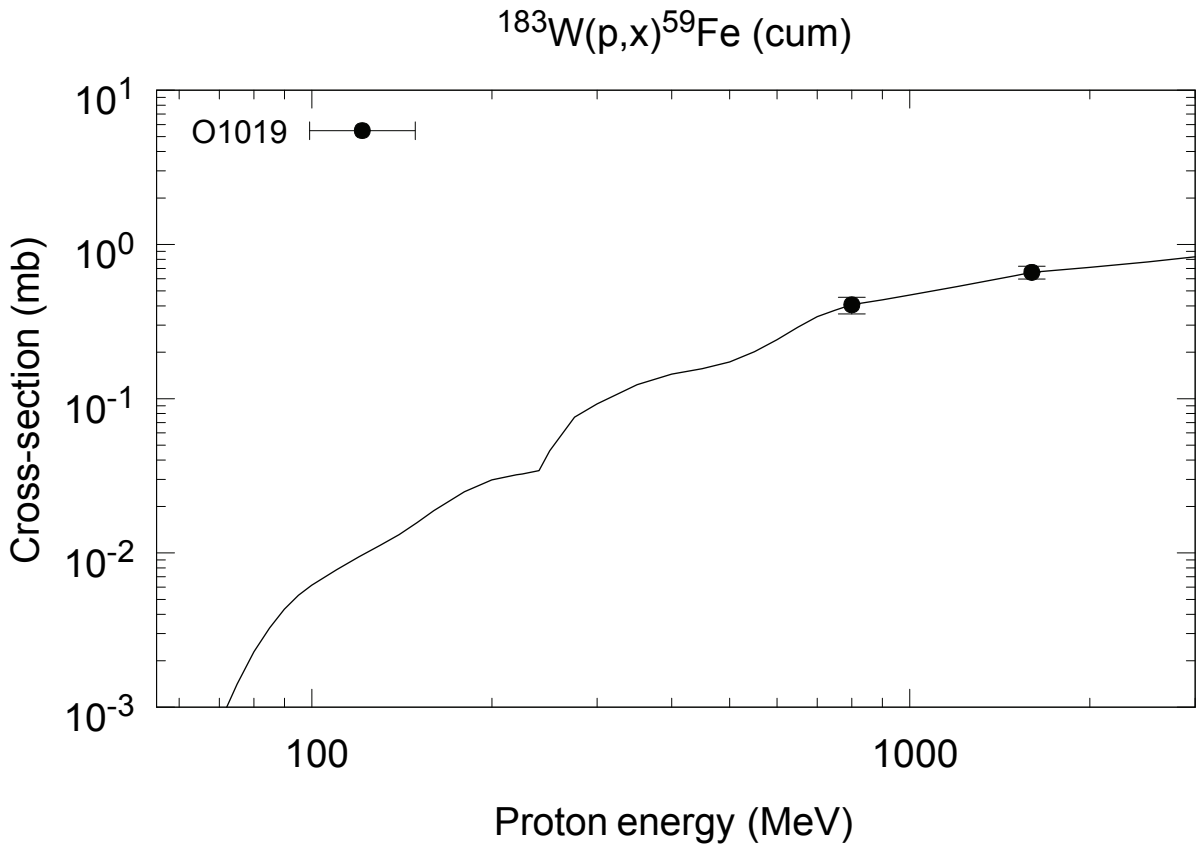

^{182}W(p,x)^{178}W (cum)
O1018
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

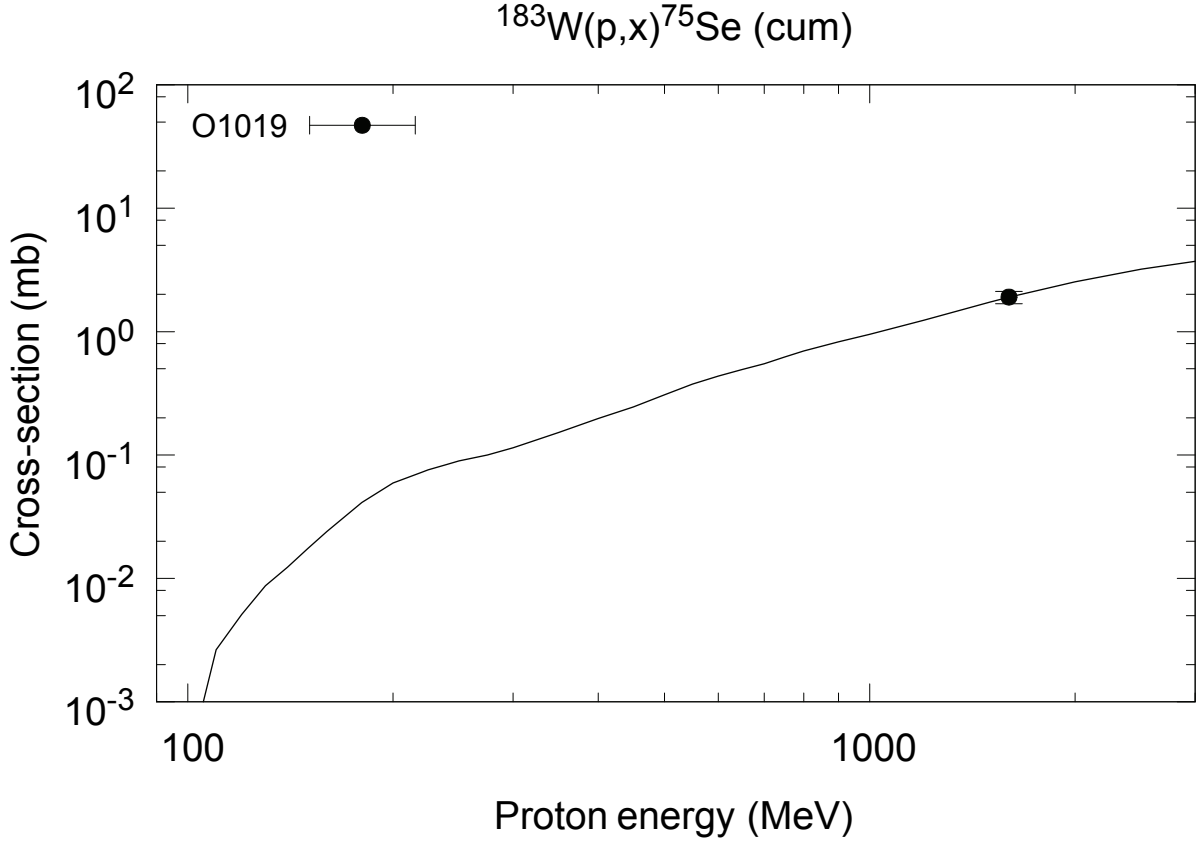

^{183}W(p,x)^{24}Na (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

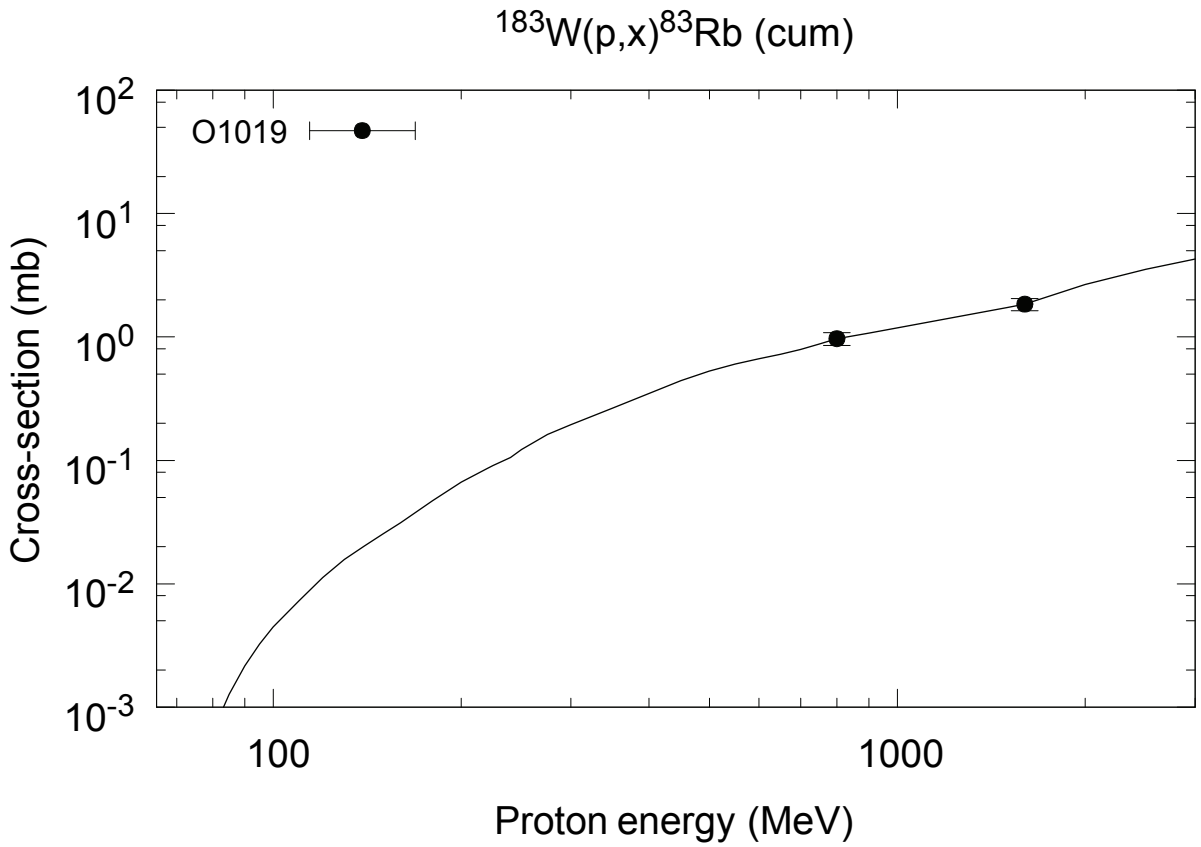

^{183}W(p,x)^{28}Mg (cum)
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

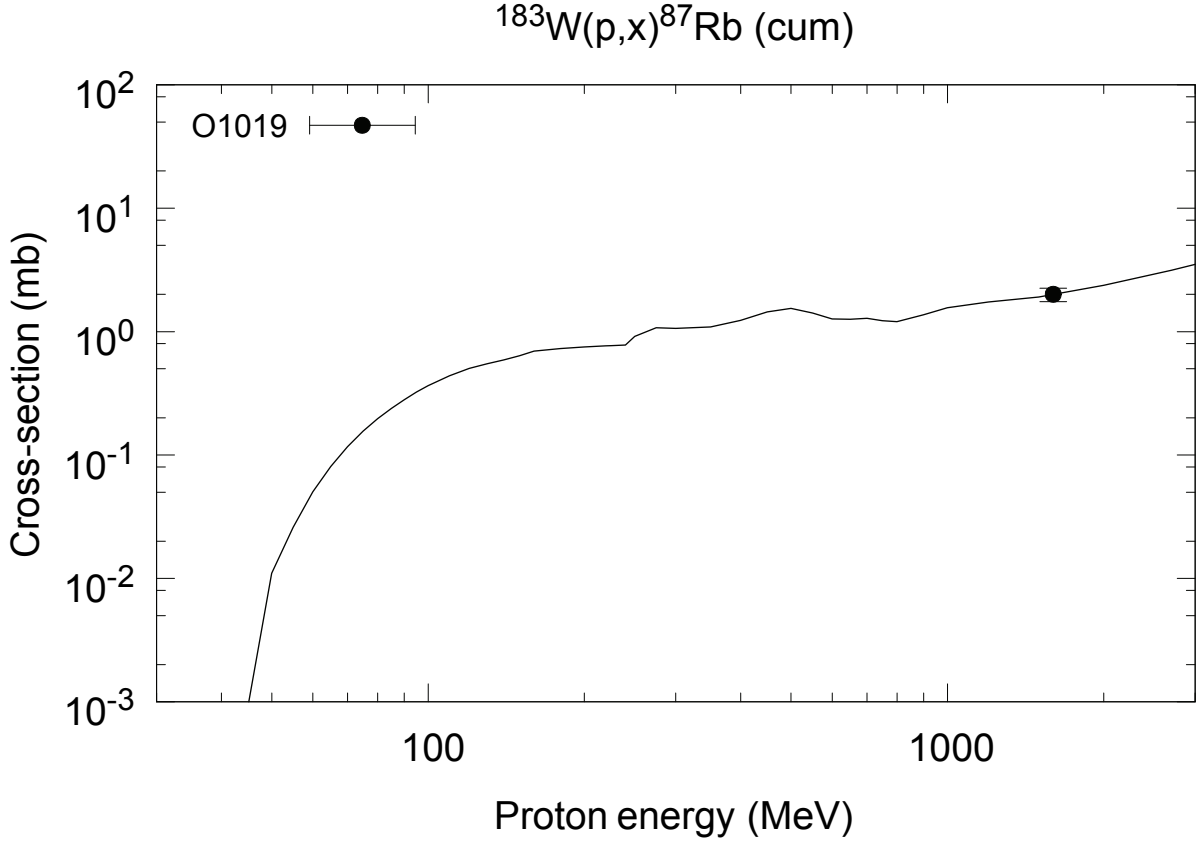

^{183}W(p,x)^{48}V (cum)
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

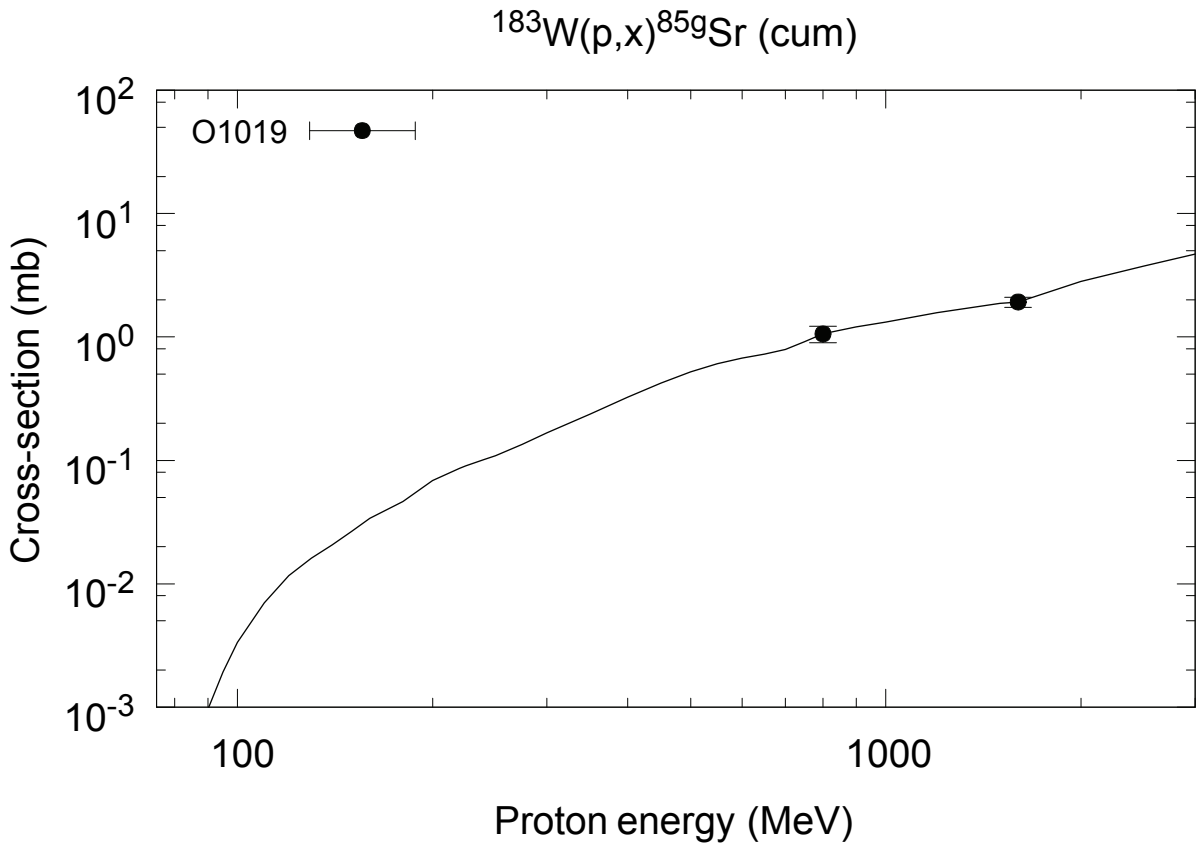

^{183}W(p,x)^{52g}Mn (cum)
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

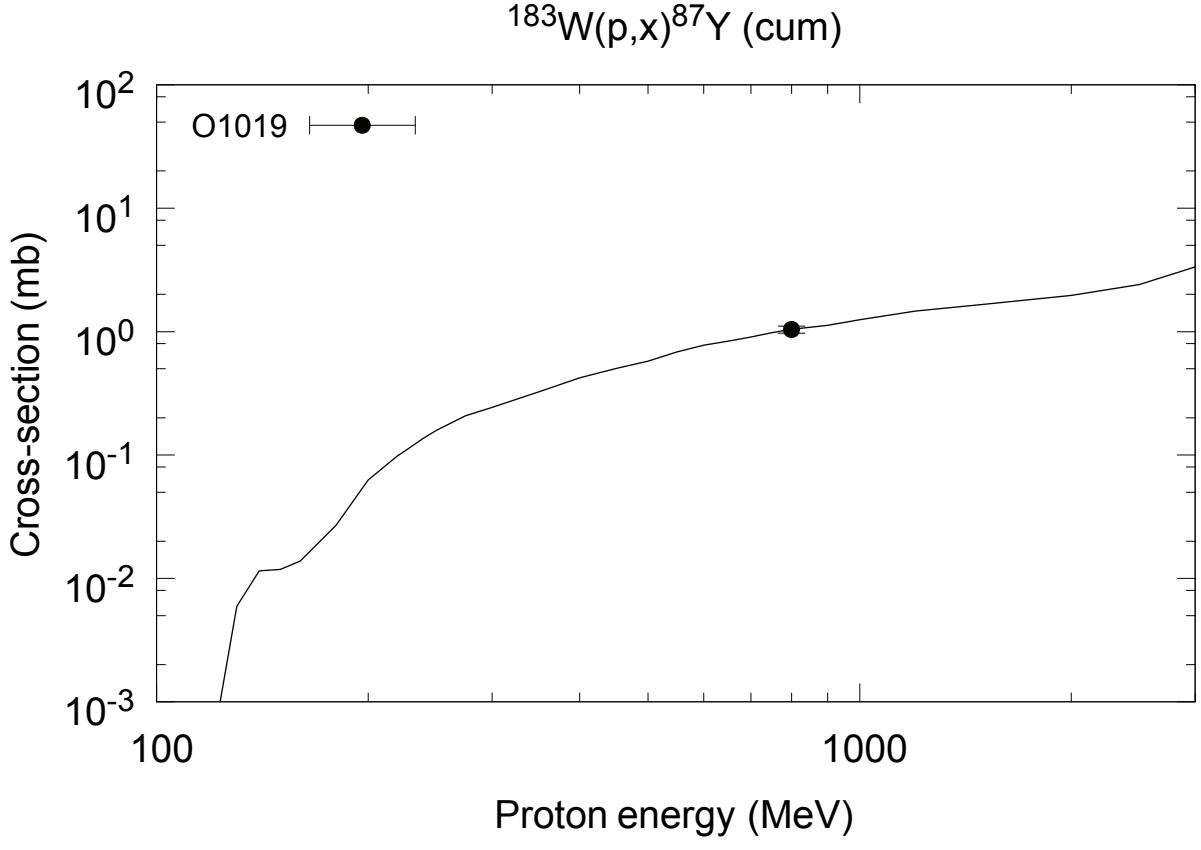

^{183}W(p,x)^{59}Fe (cum)
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

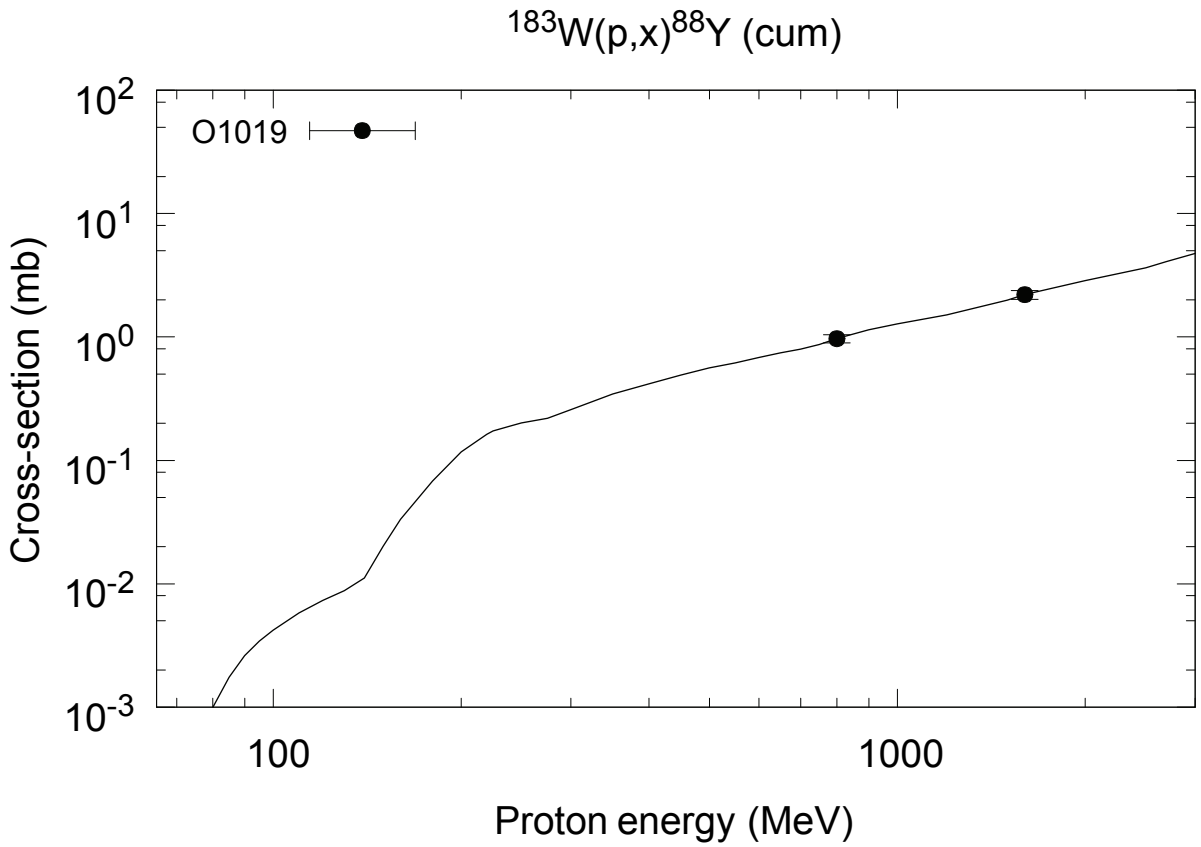

^{183}W(p,x)^{75}Se (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

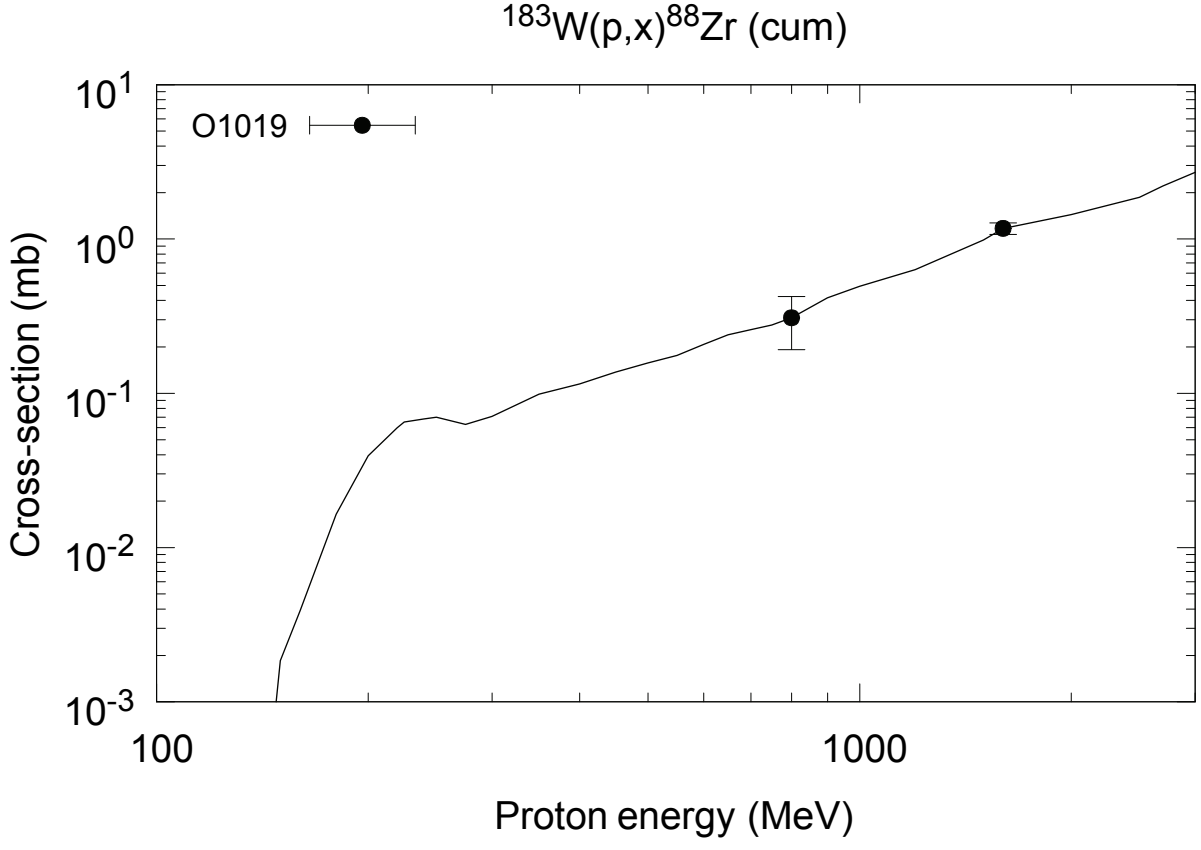

^{183}W(p,x)^{83}Rb (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

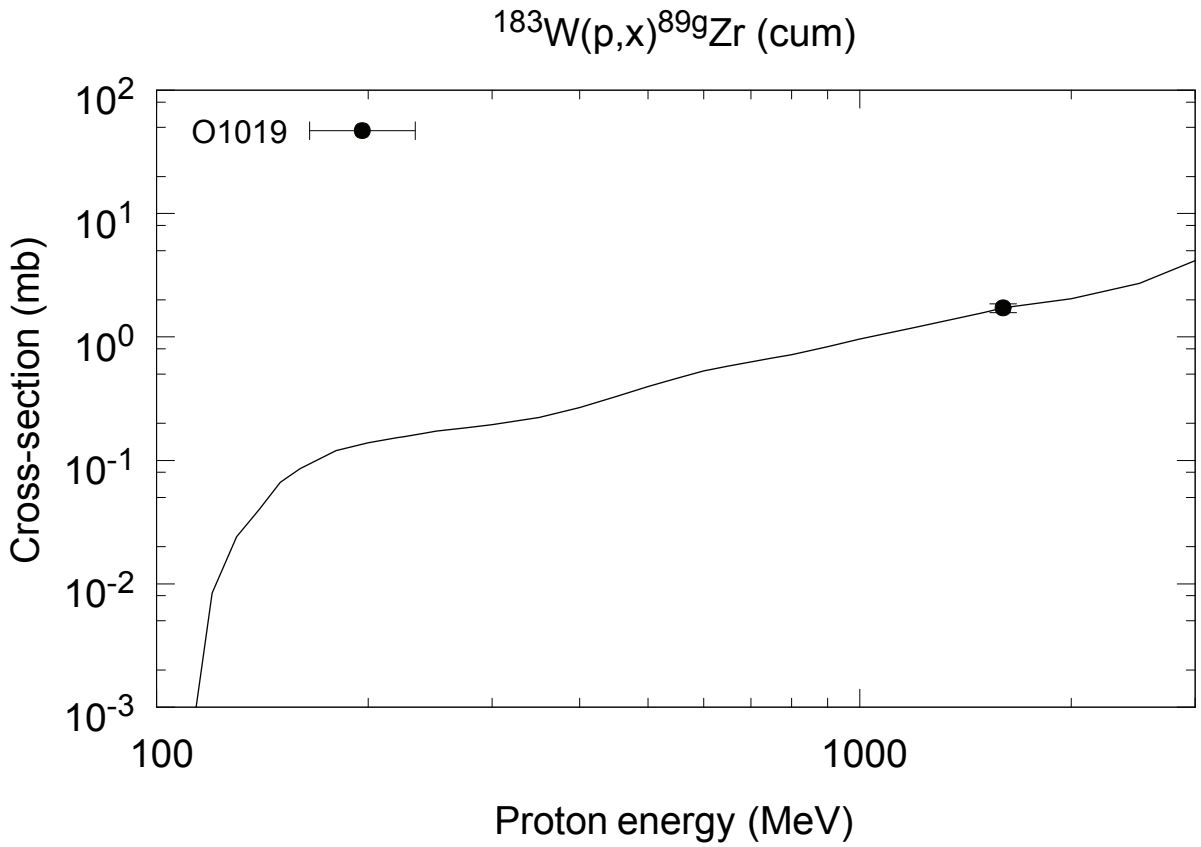

^{183}W(p,x)^{87}Rb (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

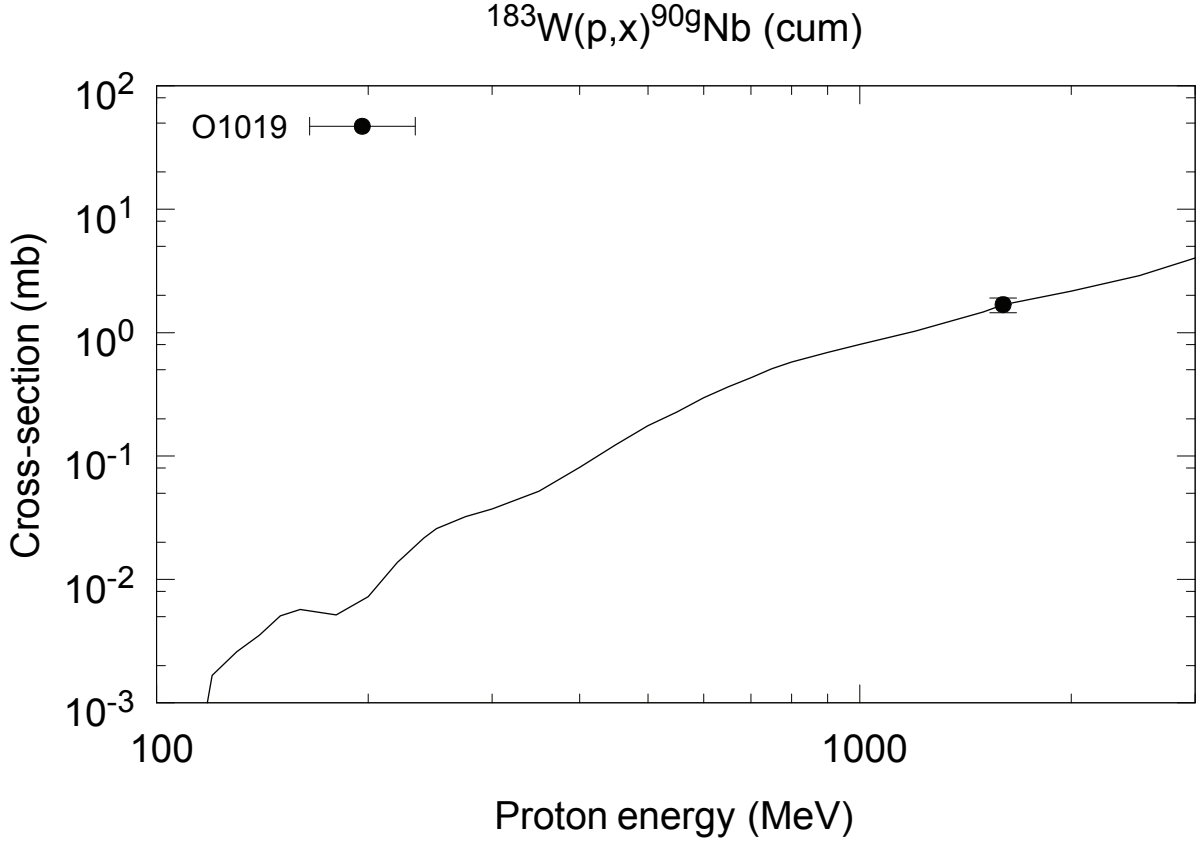

^{183}W(p,x)^{85g}Sr (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

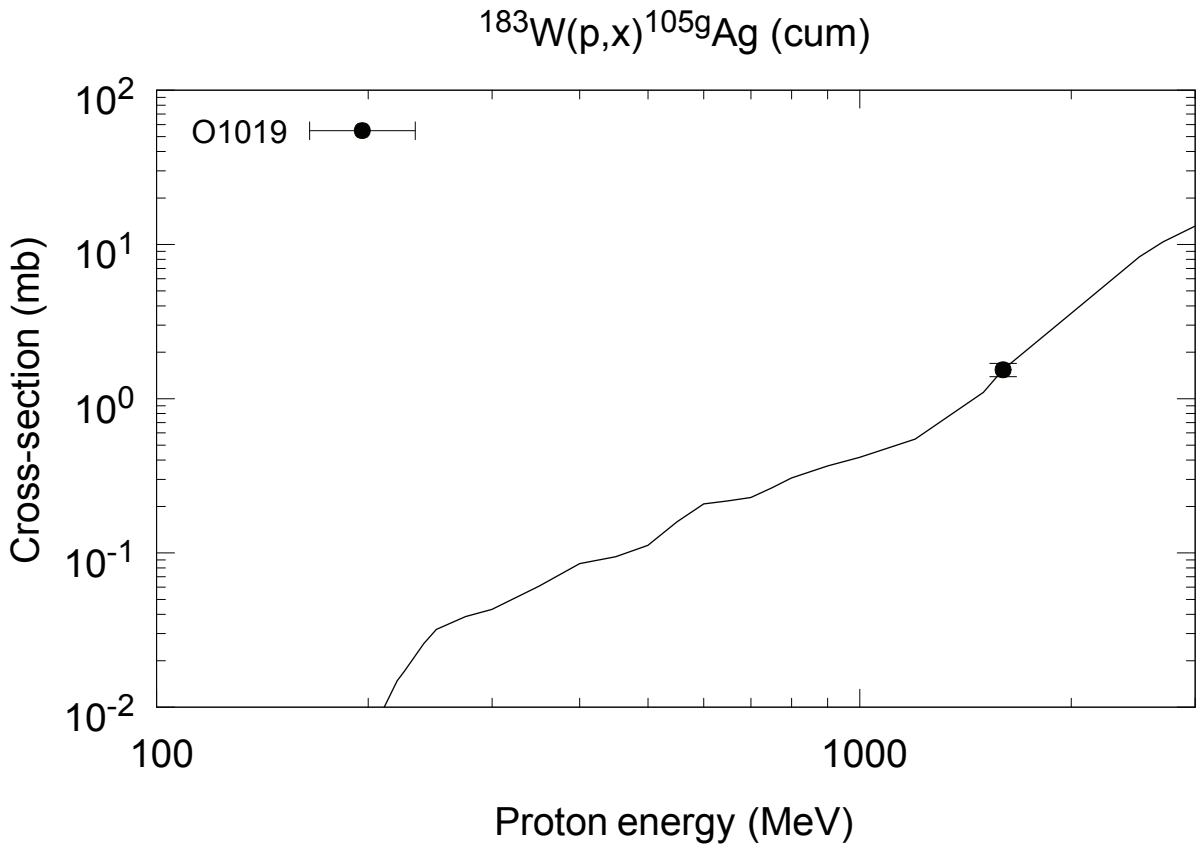

^{183}W(p,x)^{87}Y (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

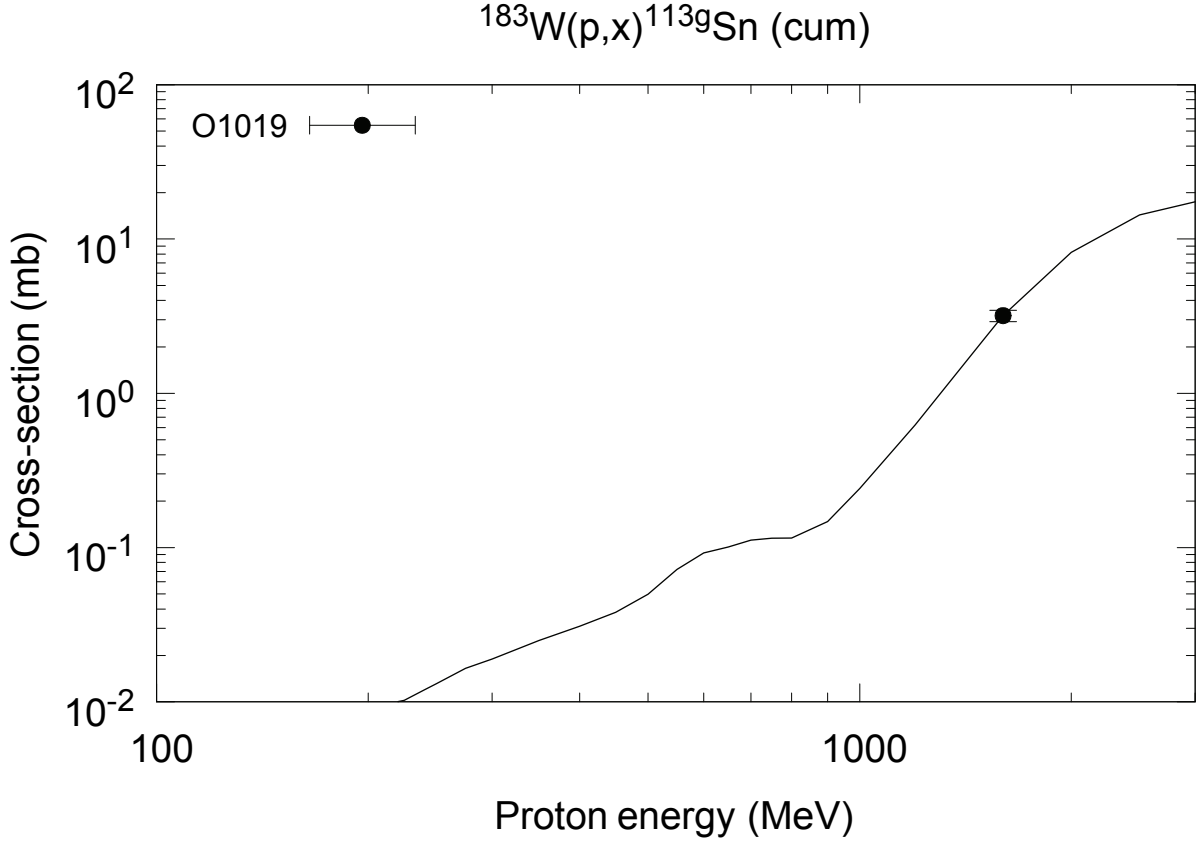

^{183}W(p,x)^{88}Y (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

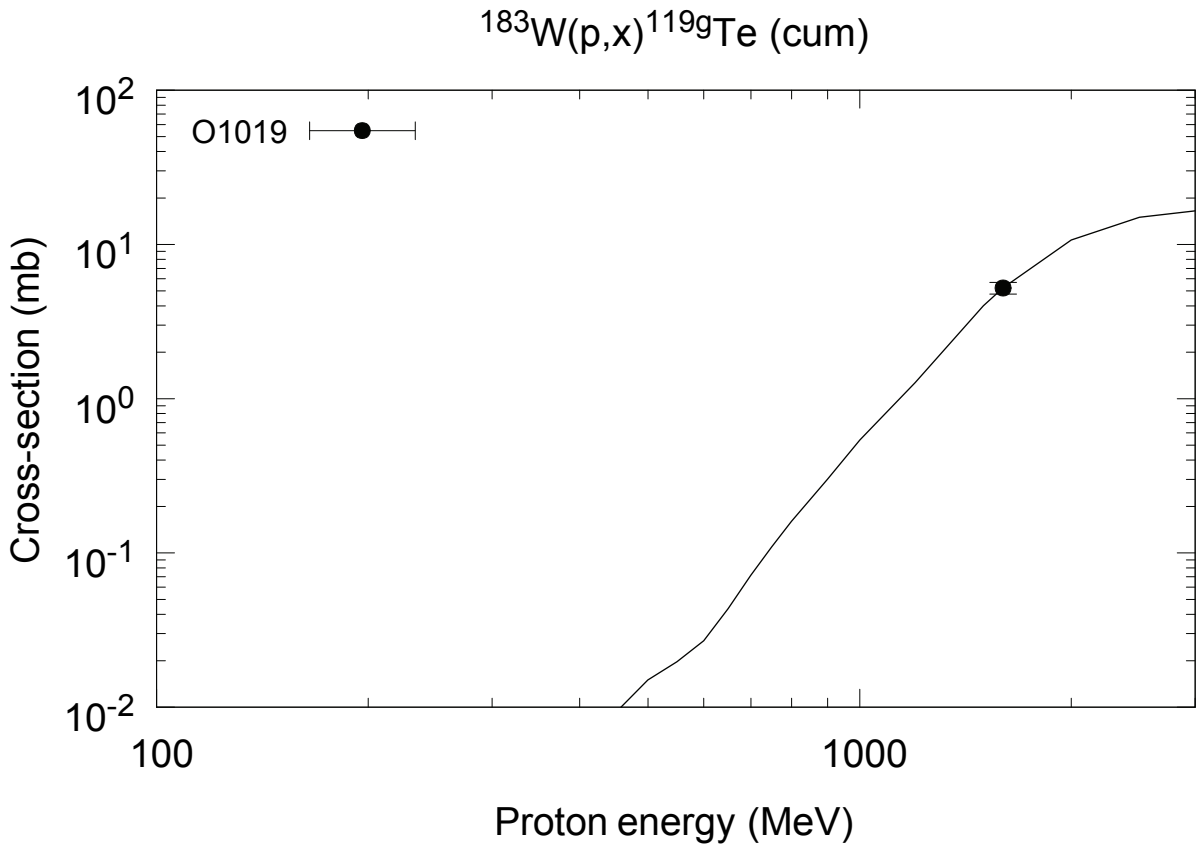

^{183}W(p,x)^{88}Zr (cum)
O1019
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

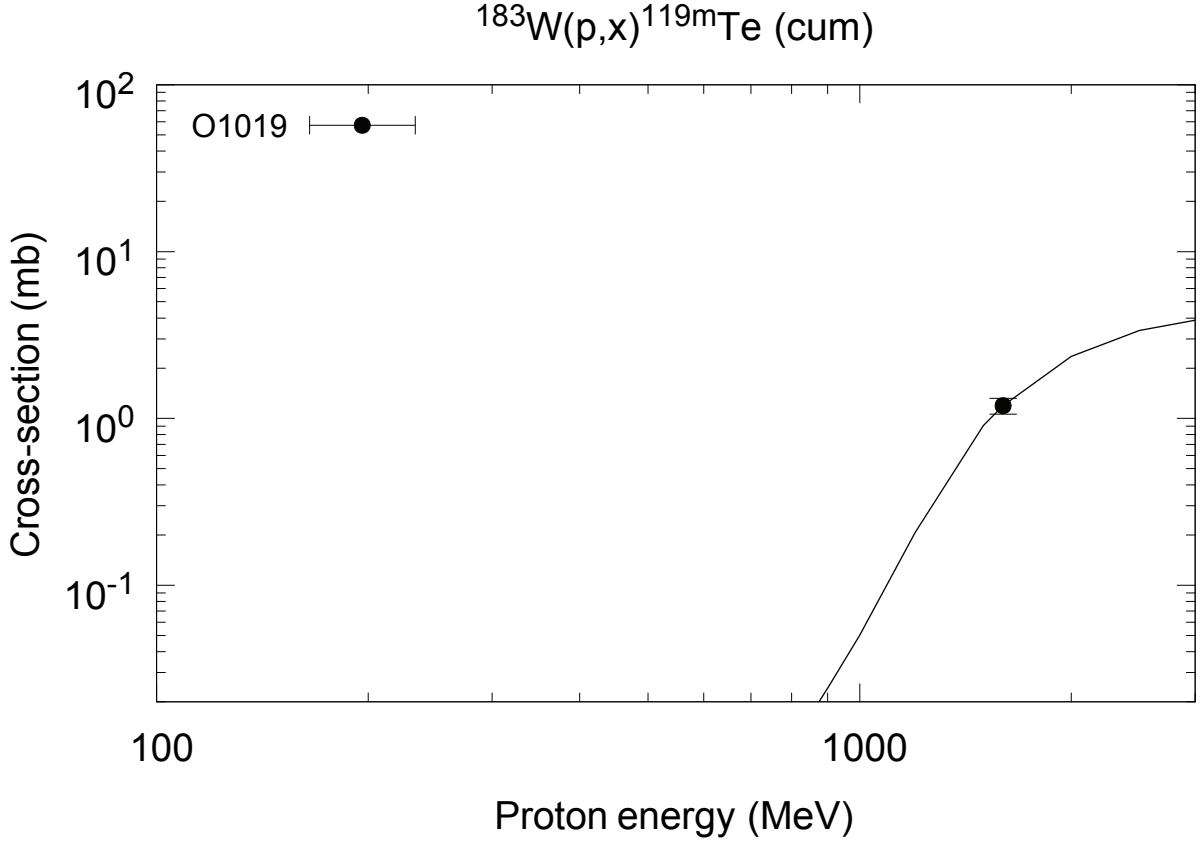

^{183}W(p,x)^{89g}Zr (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

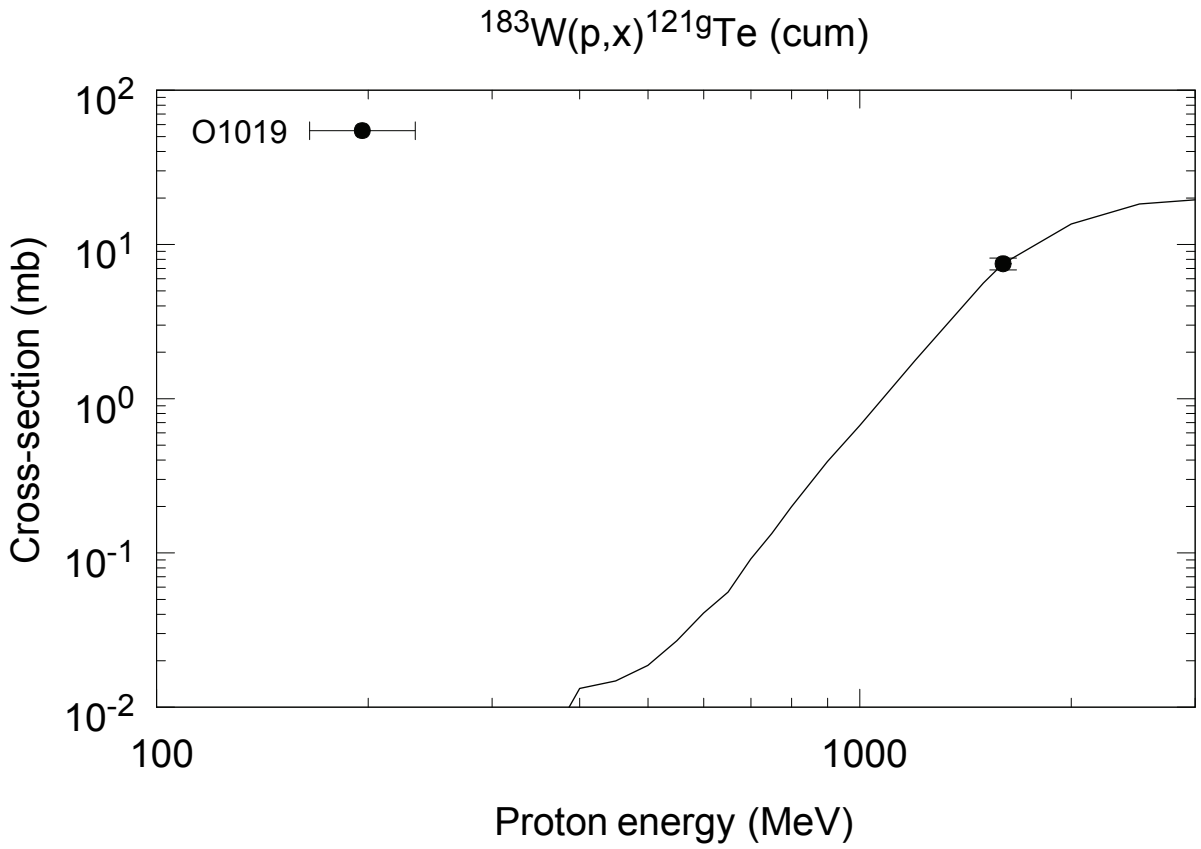

^{183}W(p,x)^{90g}Nb (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

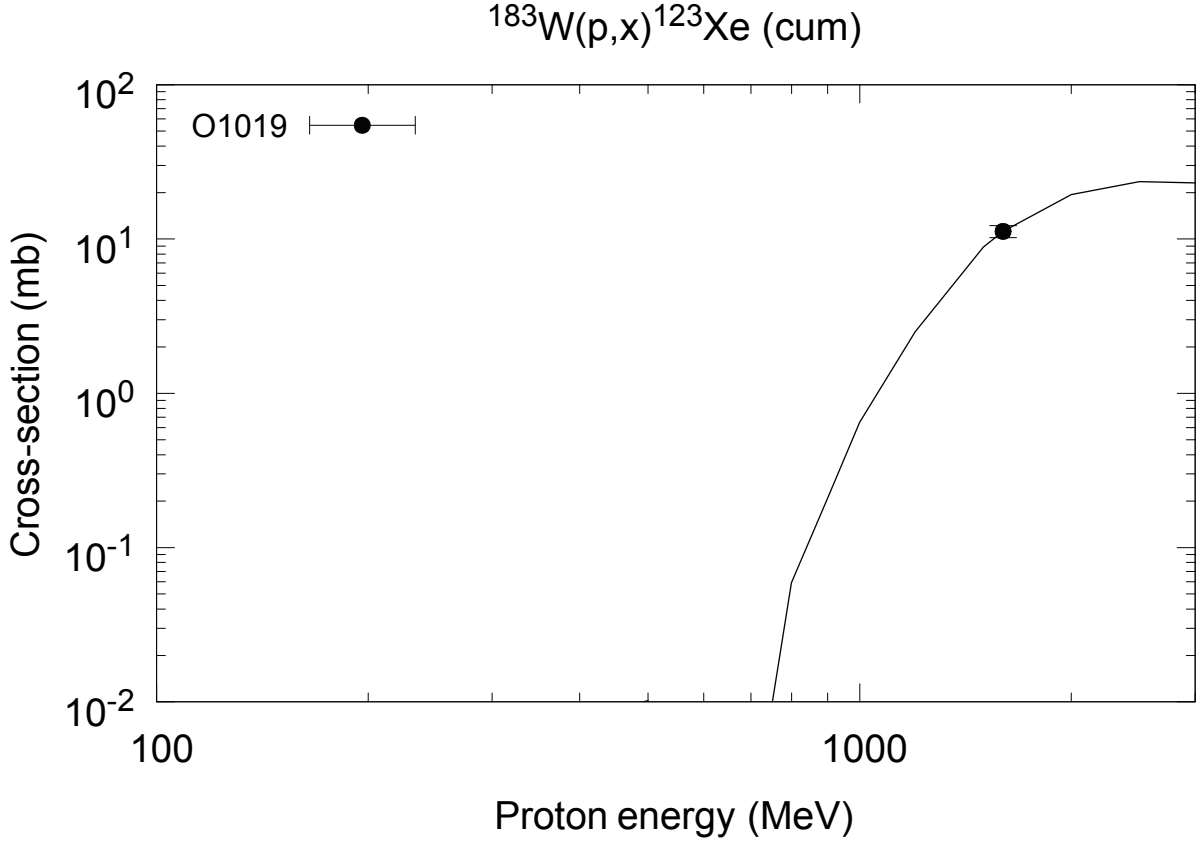

^{183}W(p,x)^{105g}Ag (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

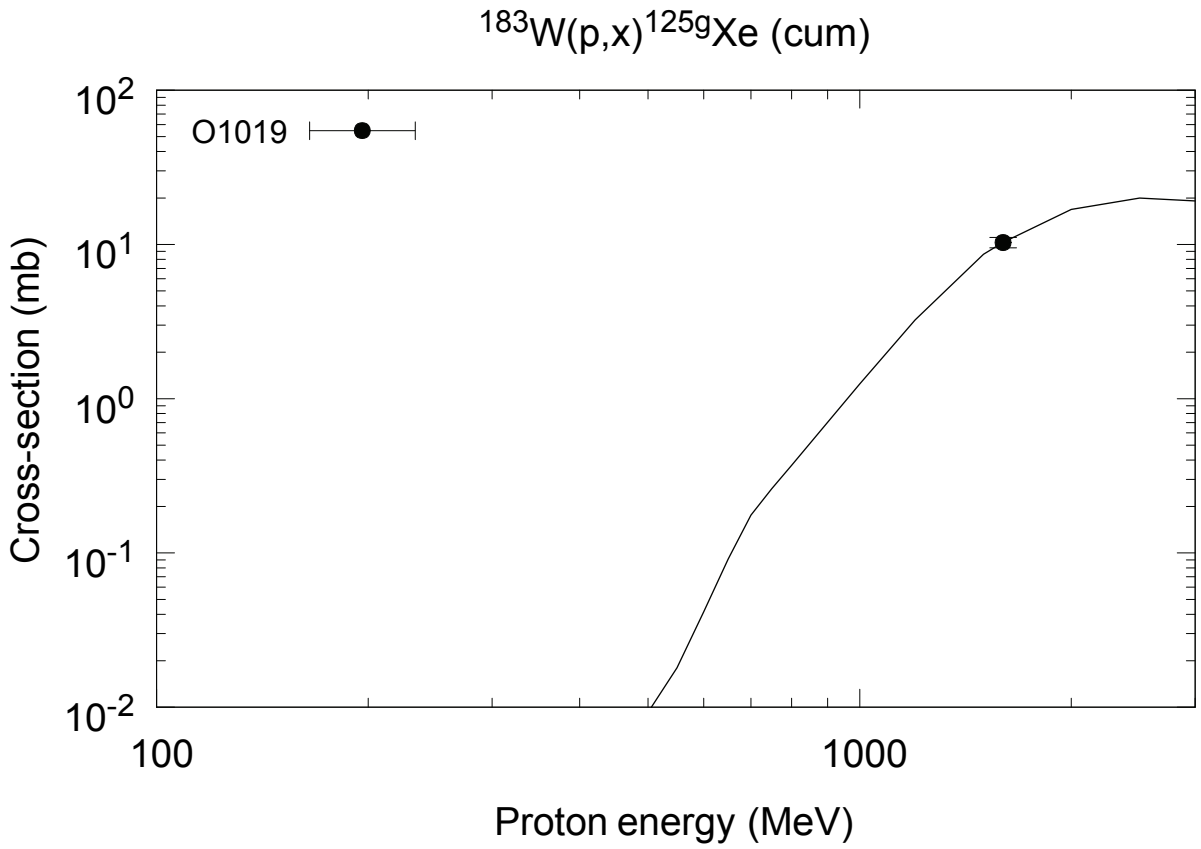

^{183}W(p,x)^{113g}Sn (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

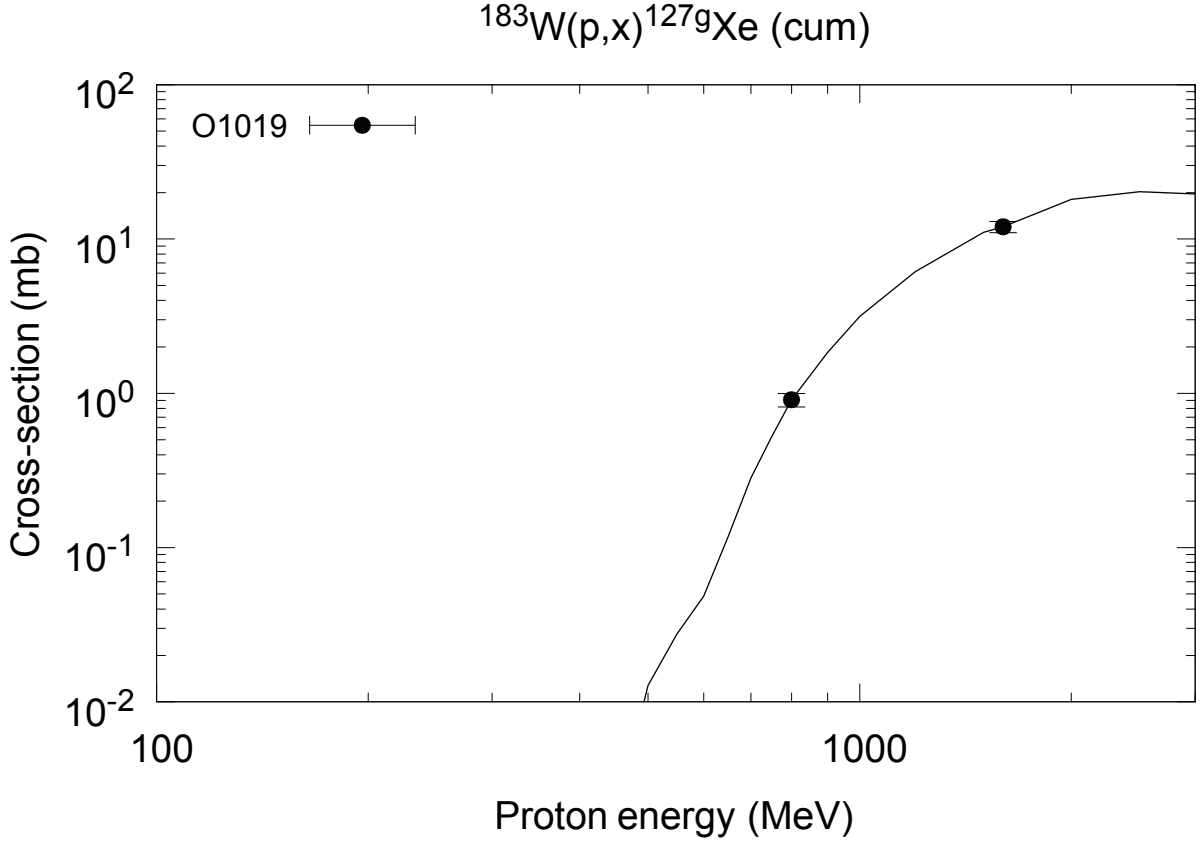

^{183}W(p,x)^{119g}Te (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

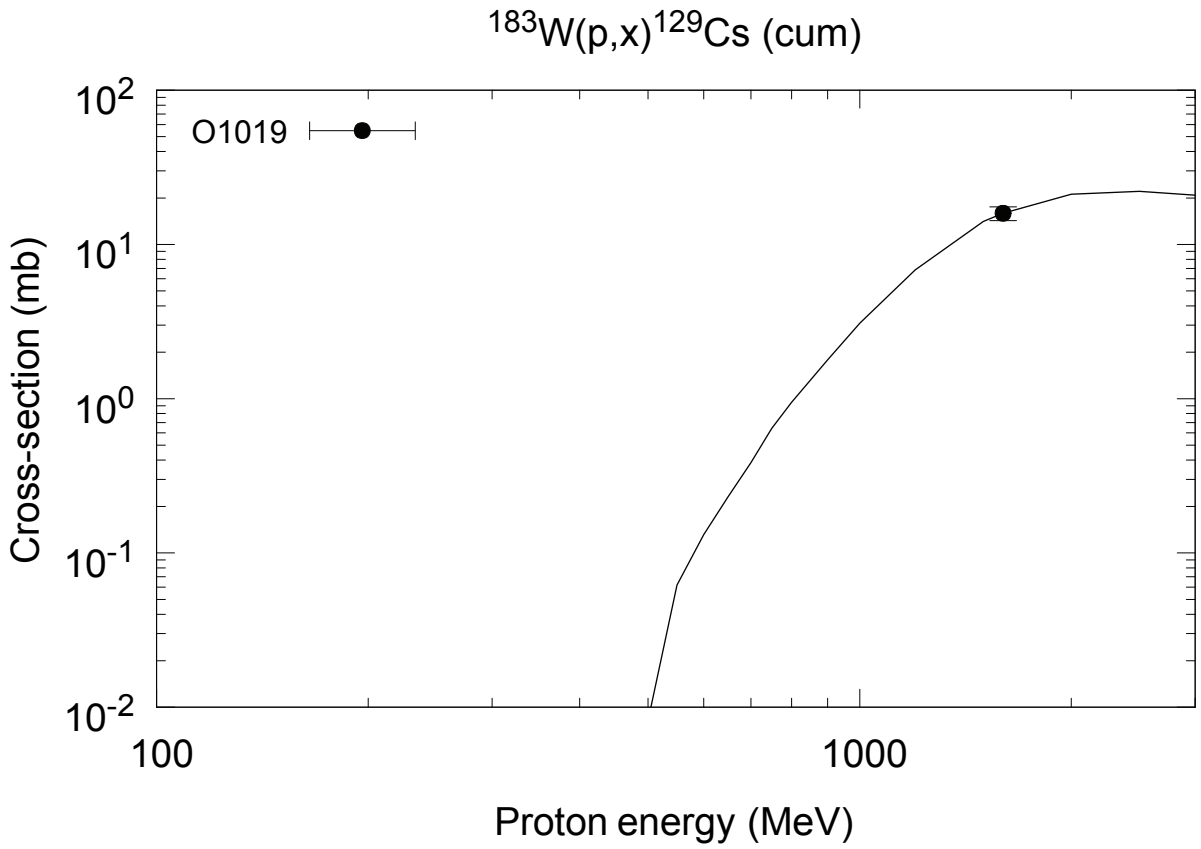

^{183}W(p,x)^{119m}Te (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

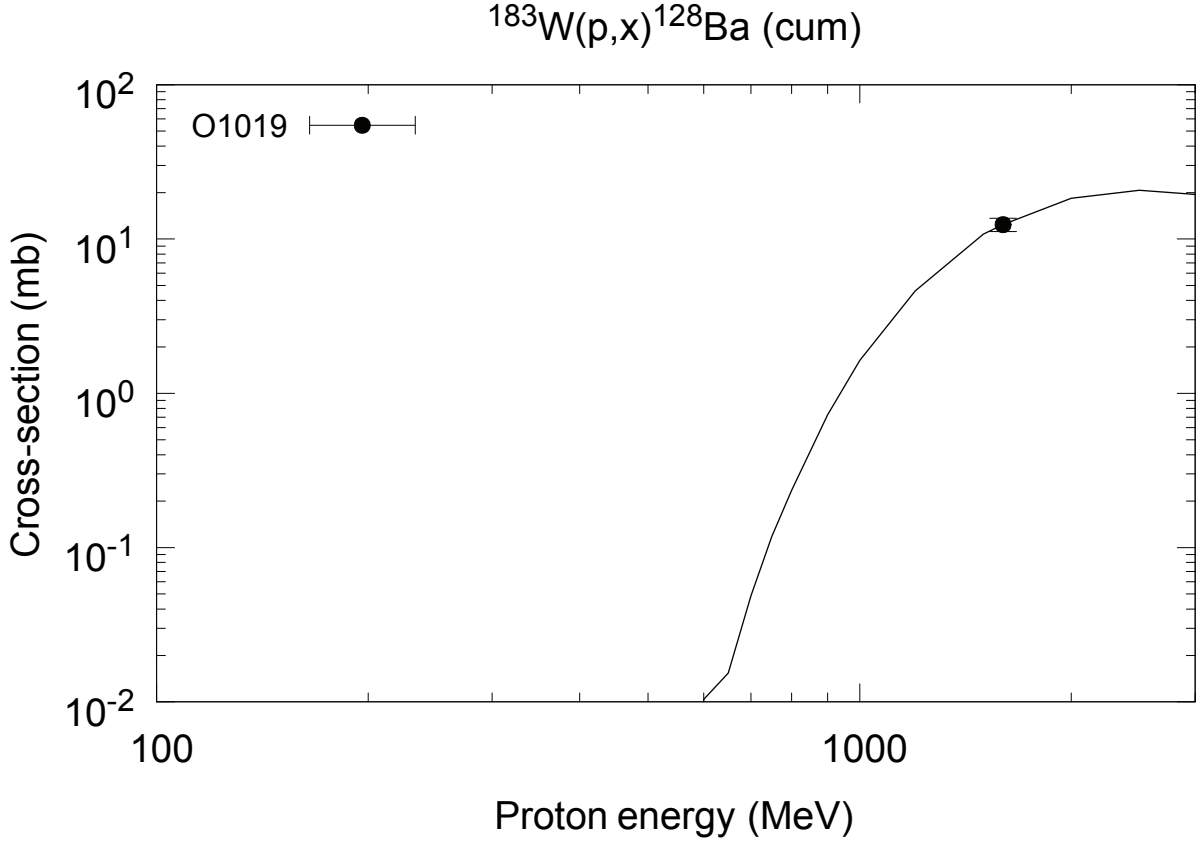

^{183}W(p,x)^{121g}Te (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

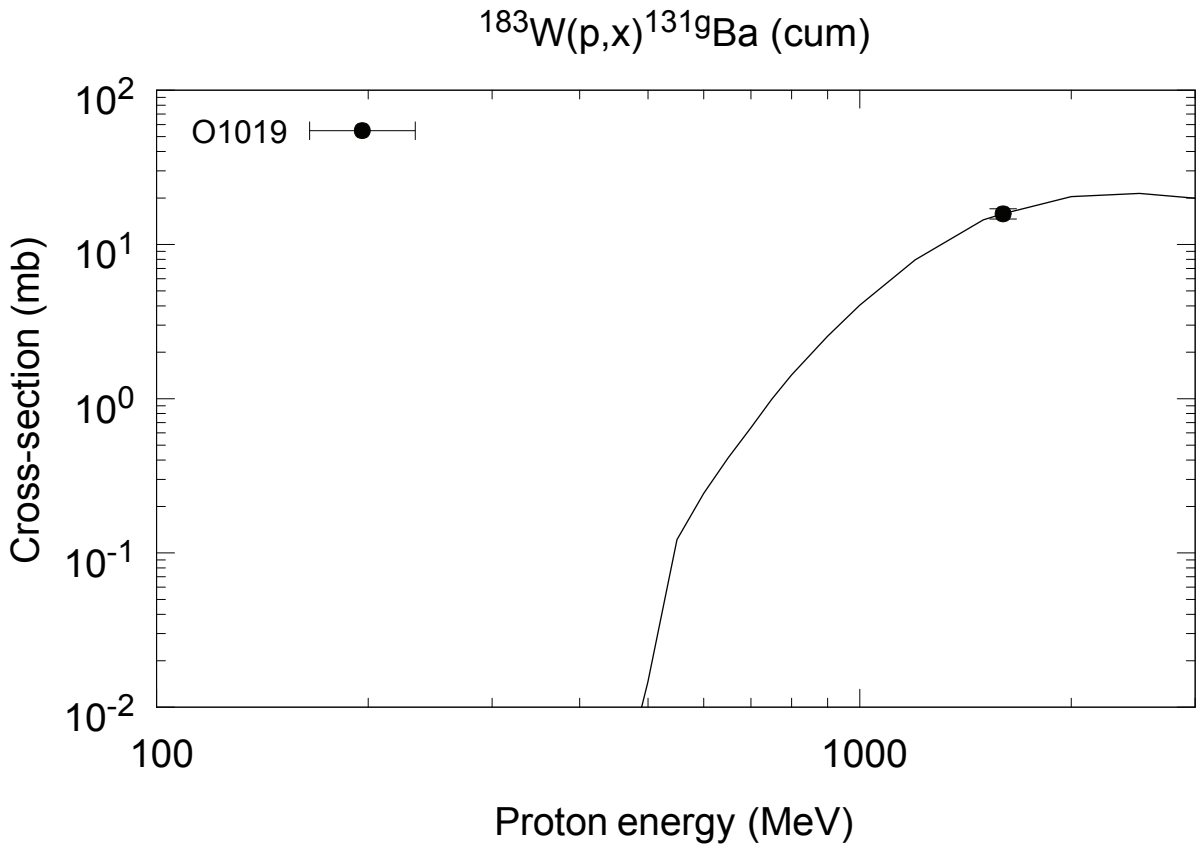

^{183}W(p,x)^{123}Xe (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

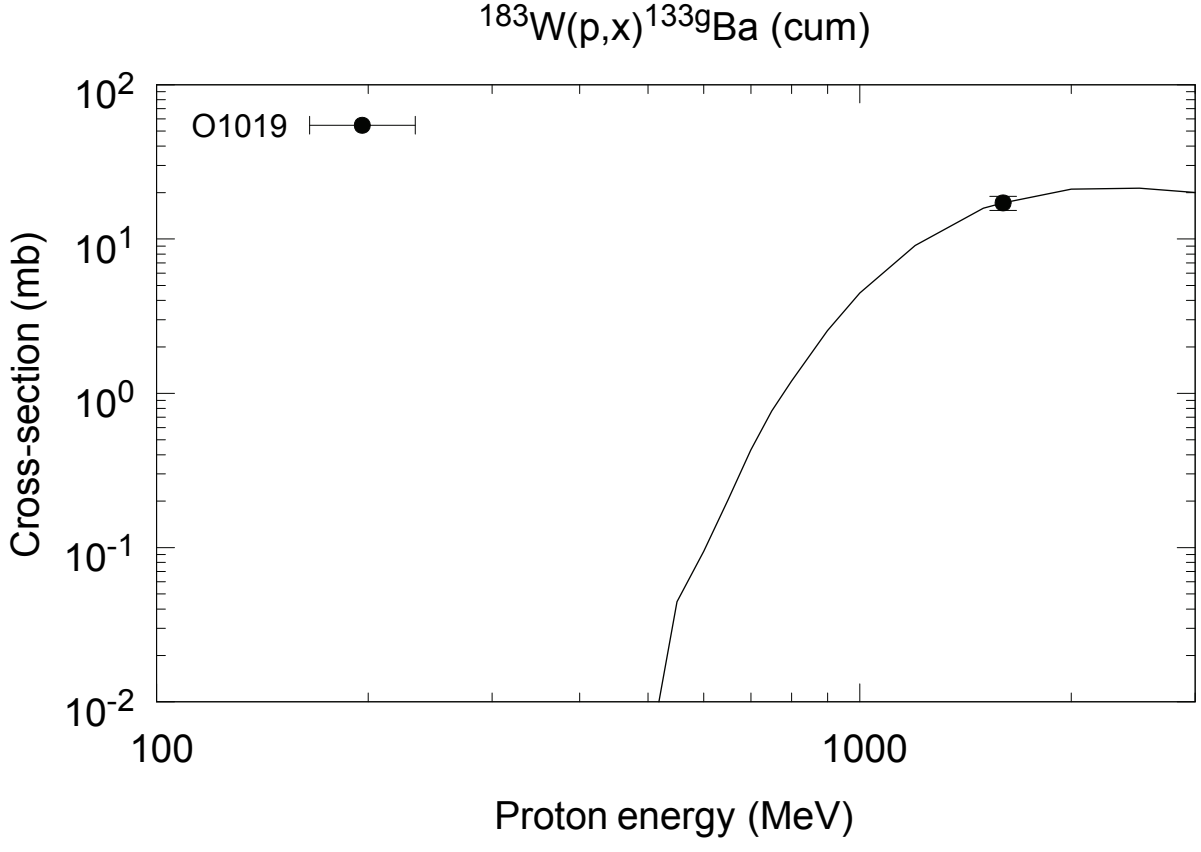

^{183}W(p,x)^{125g}Xe (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

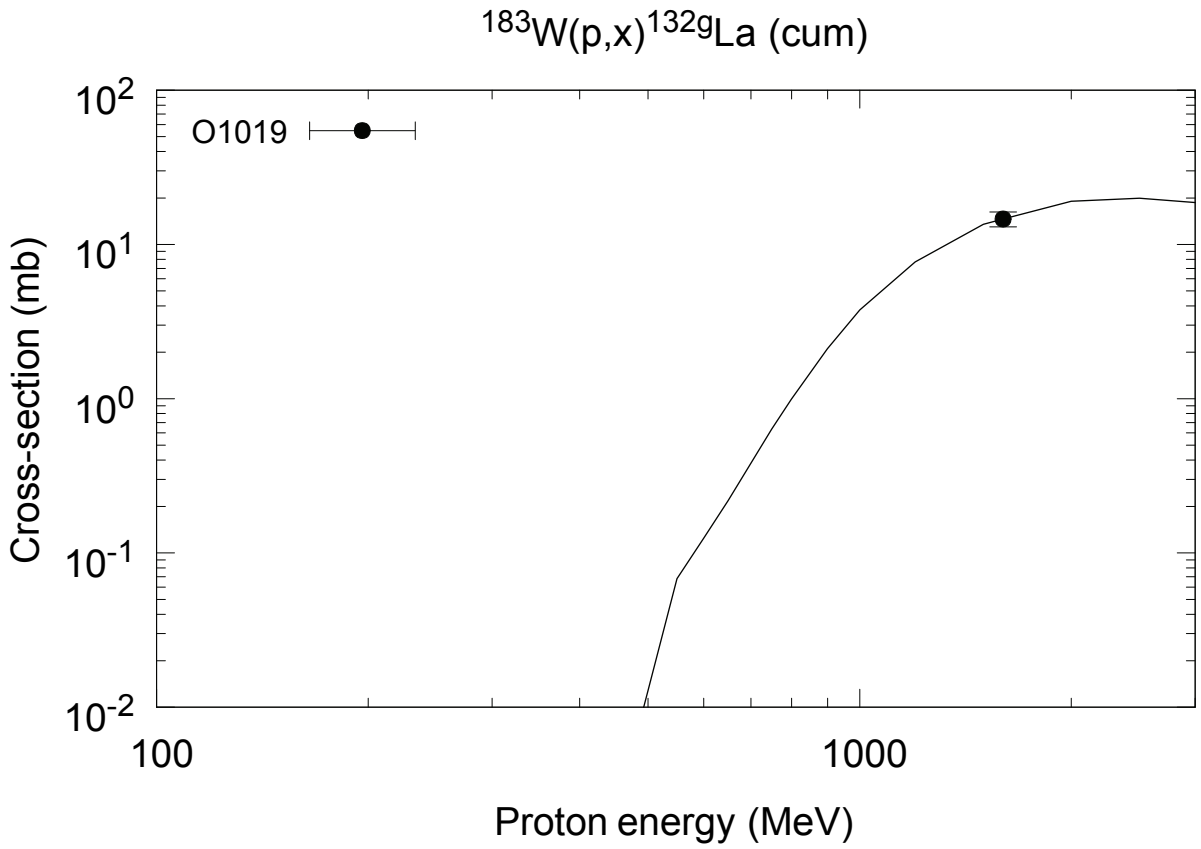

^{183}W(p,x)^{127g}Xe (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

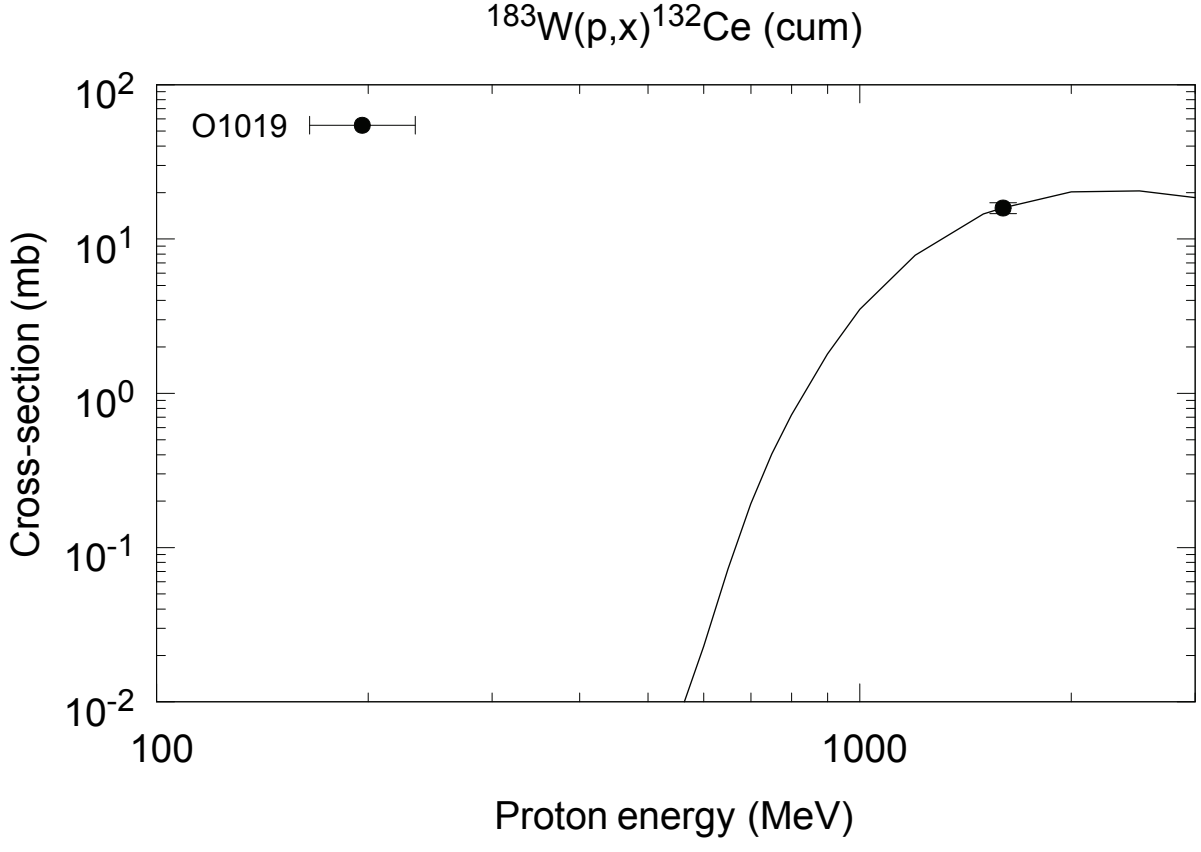

^{183}W(p,x)^{129}Cs (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

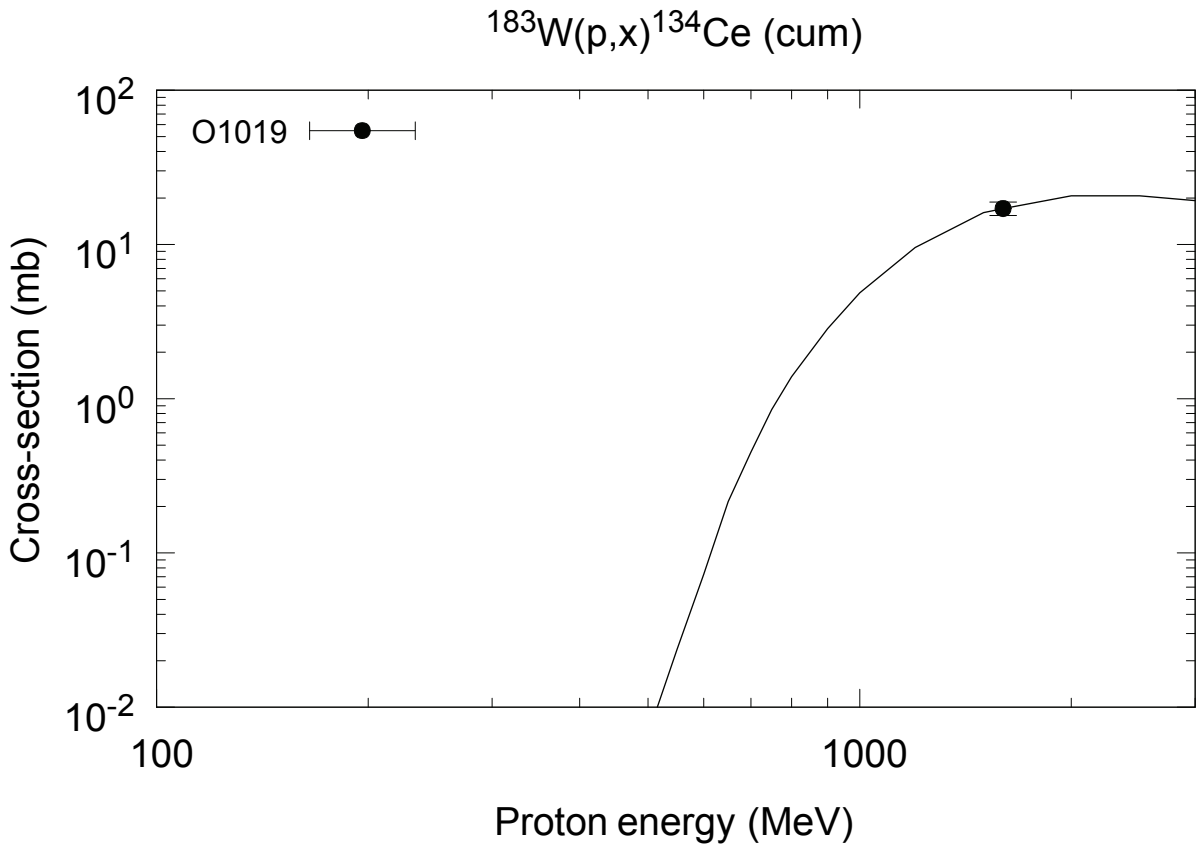

^{183}W(p,x)^{128}Ba (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

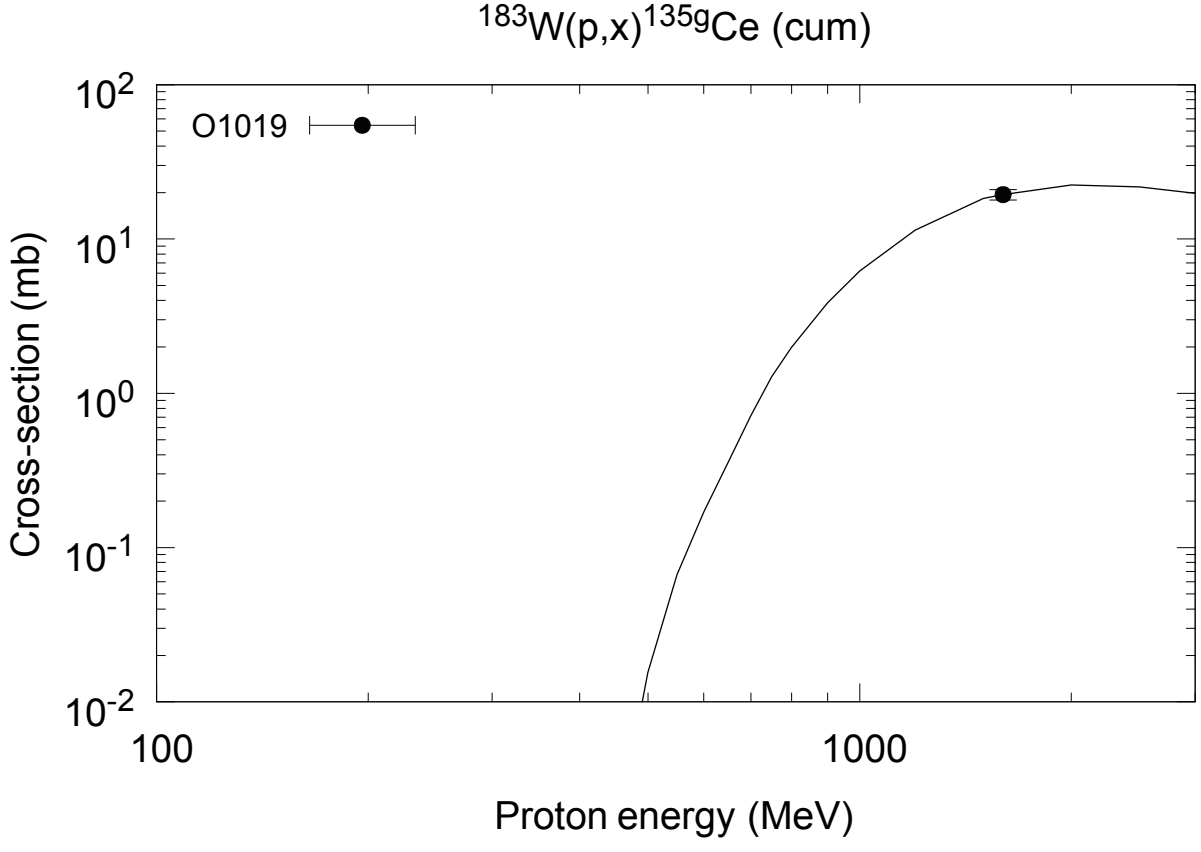

^{183}W(p,x)^{131g}Ba (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

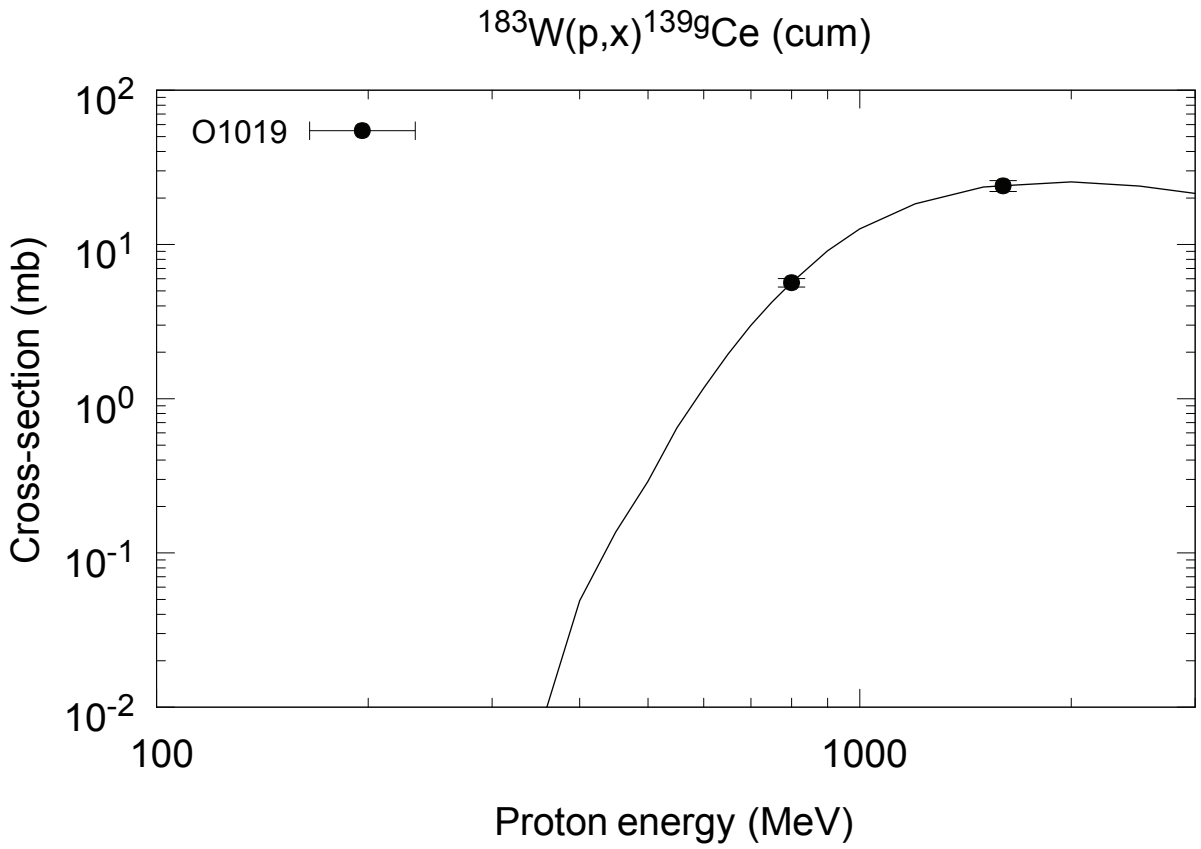

^{183}W(p,x)^{133g}Ba (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

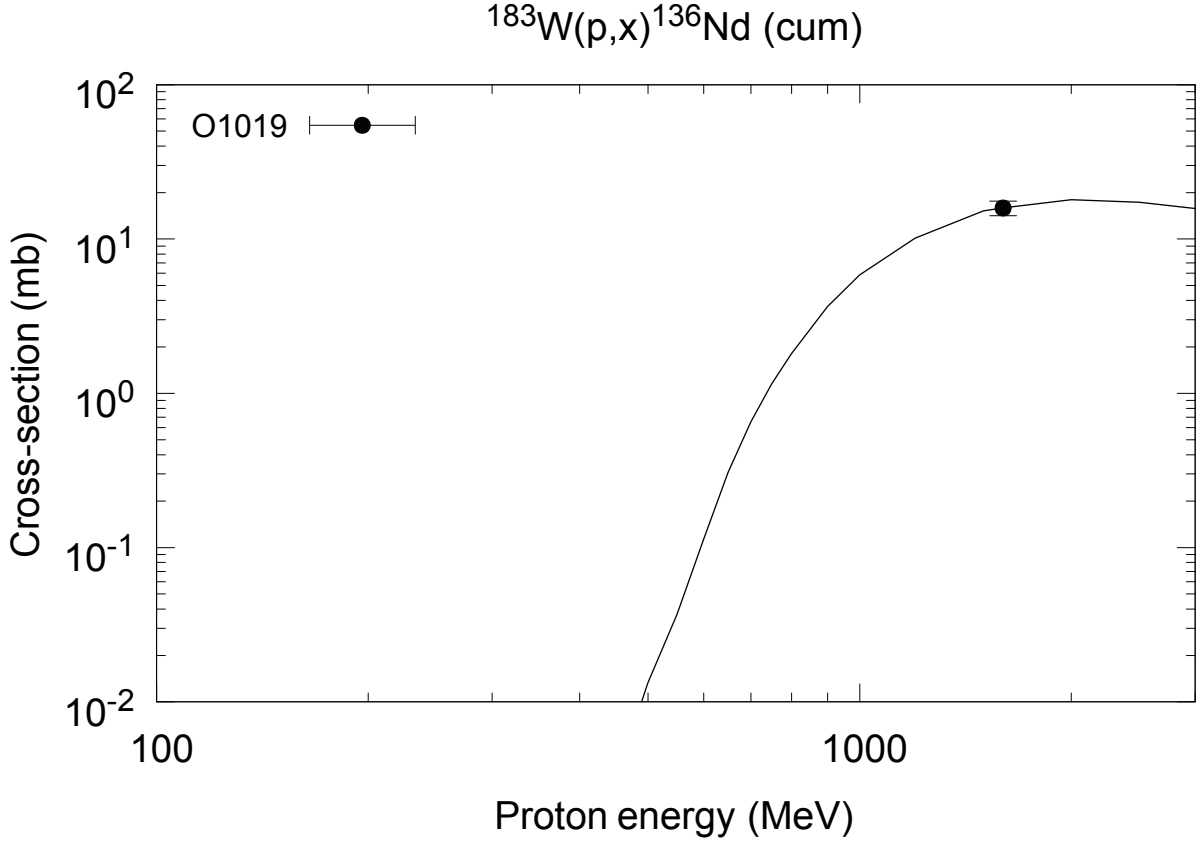

^{183}W(p,x)^{132g}La (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

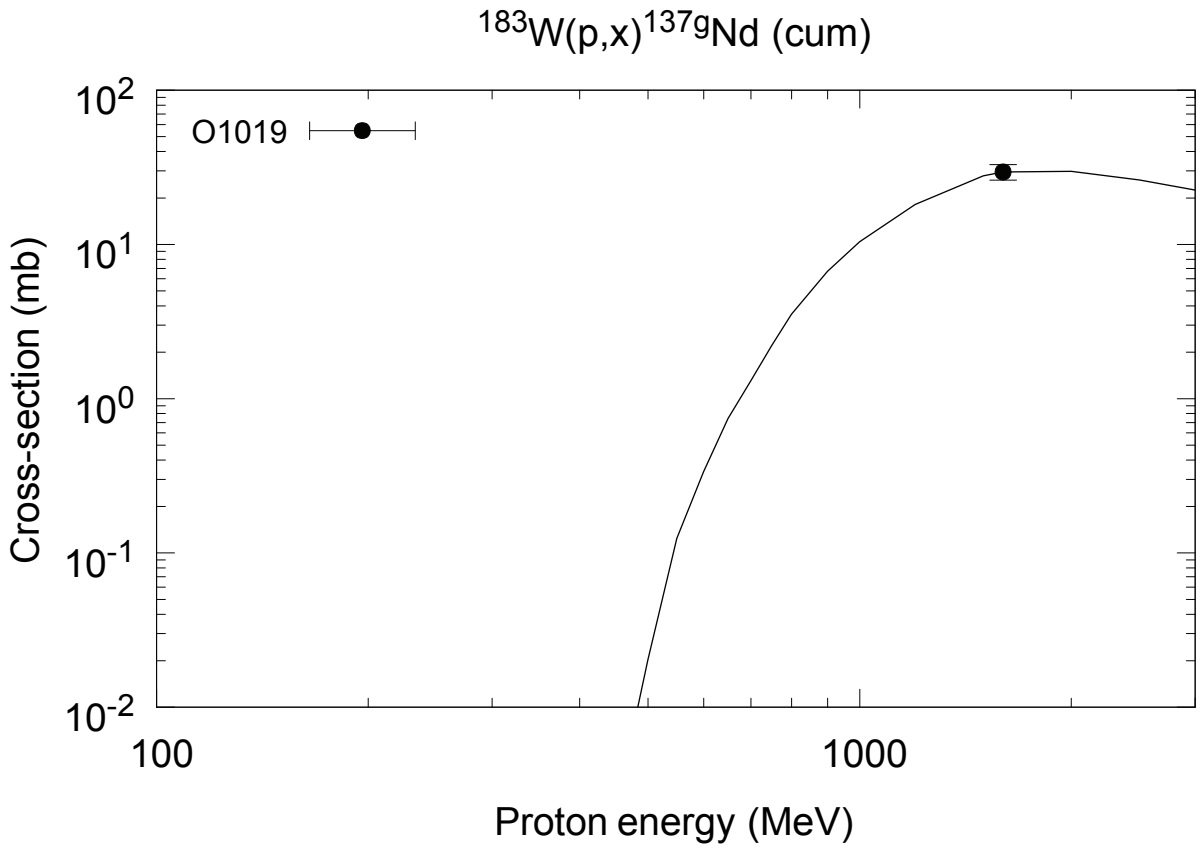

^{183}W(p,x)^{132}Ce (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

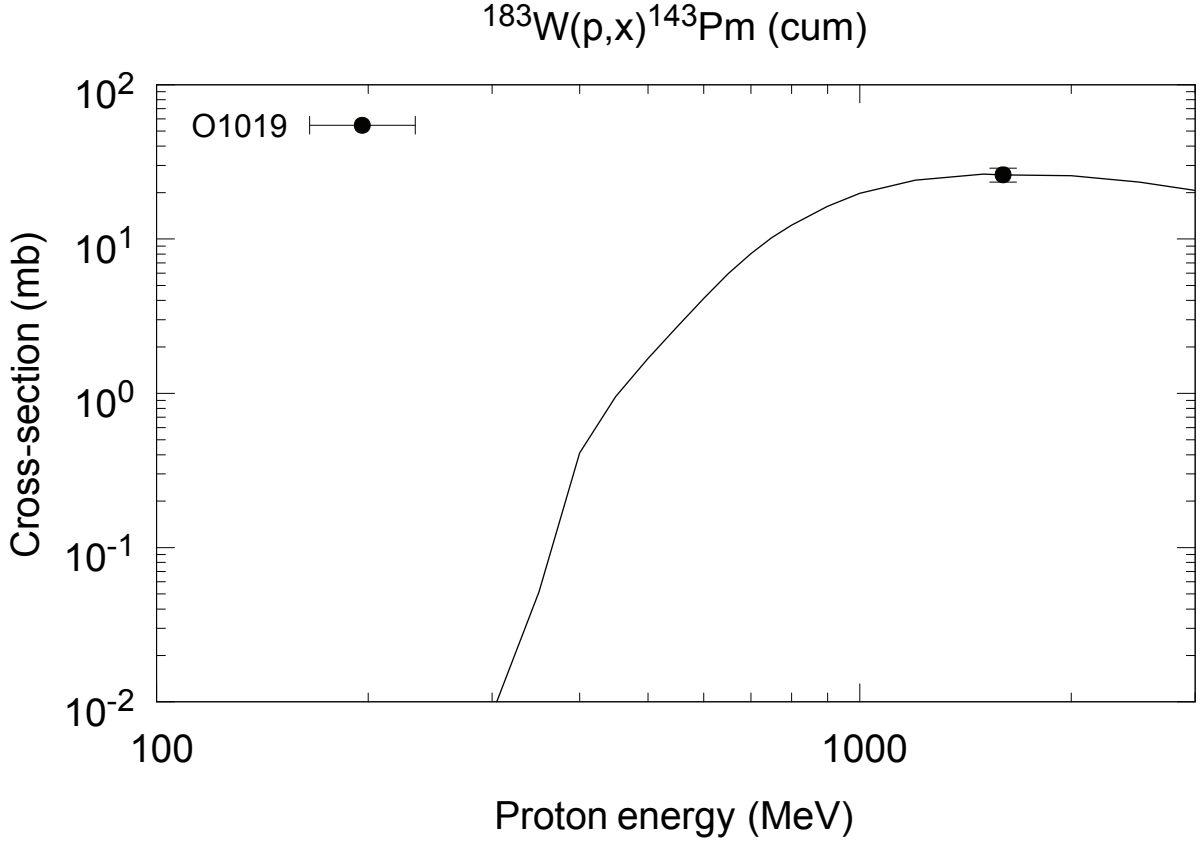

183W(p,x)134Ce (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

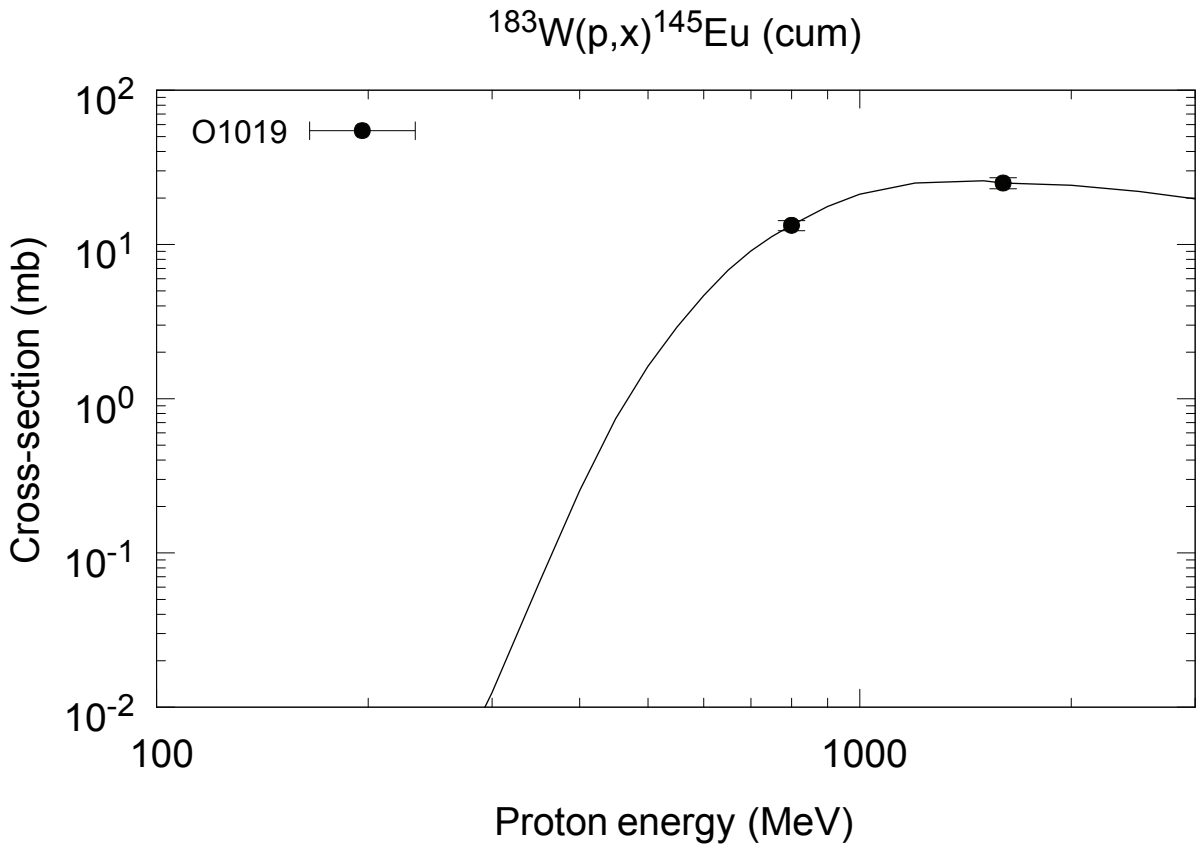

183W(p,x)135gCe (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

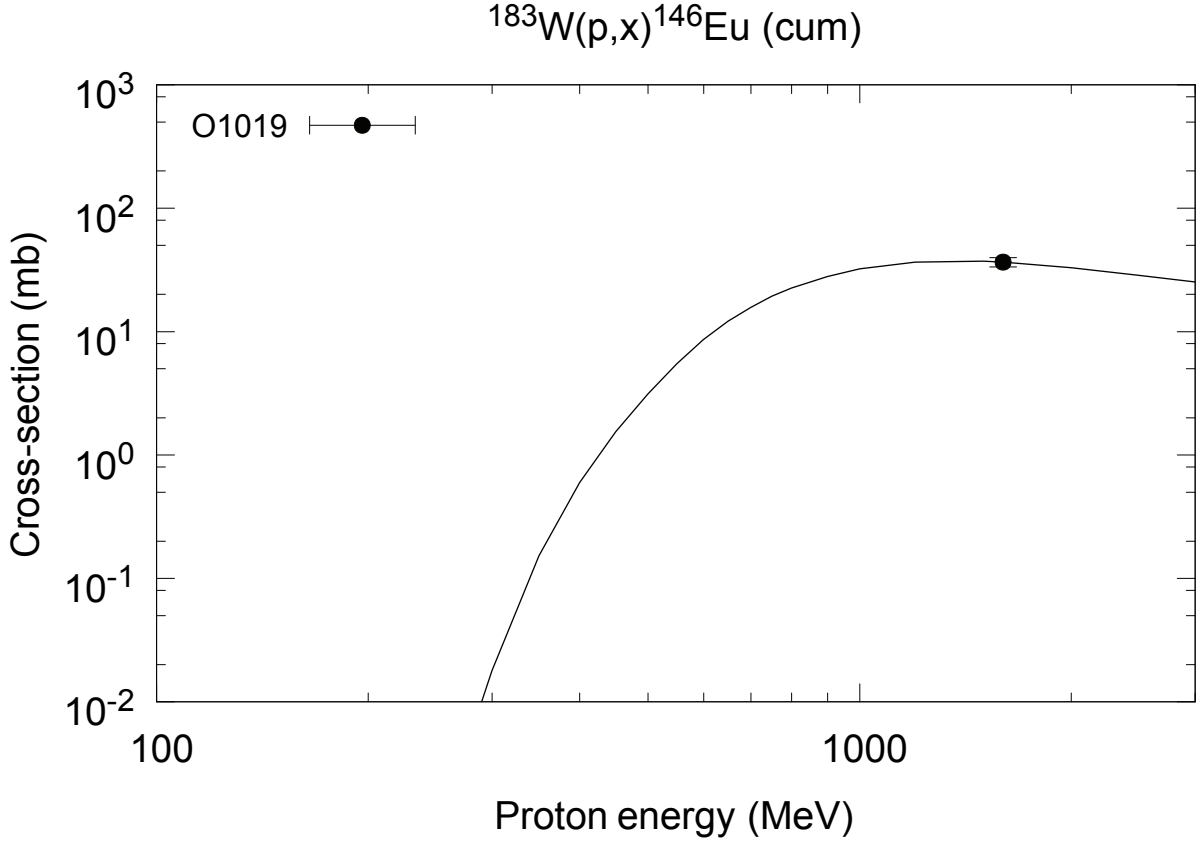

^{183}W(p,x)^{139g}Ce (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

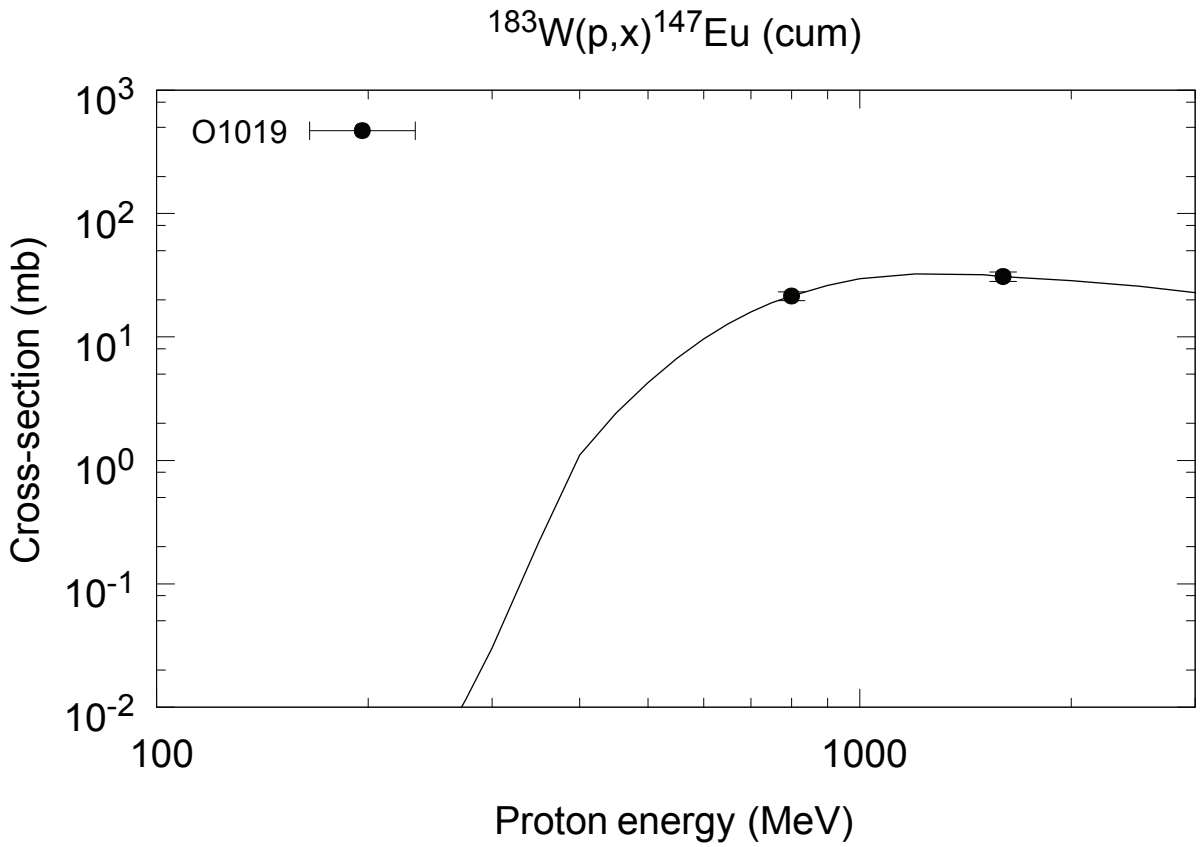

^{183}W(p,x)^{136}Nd (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

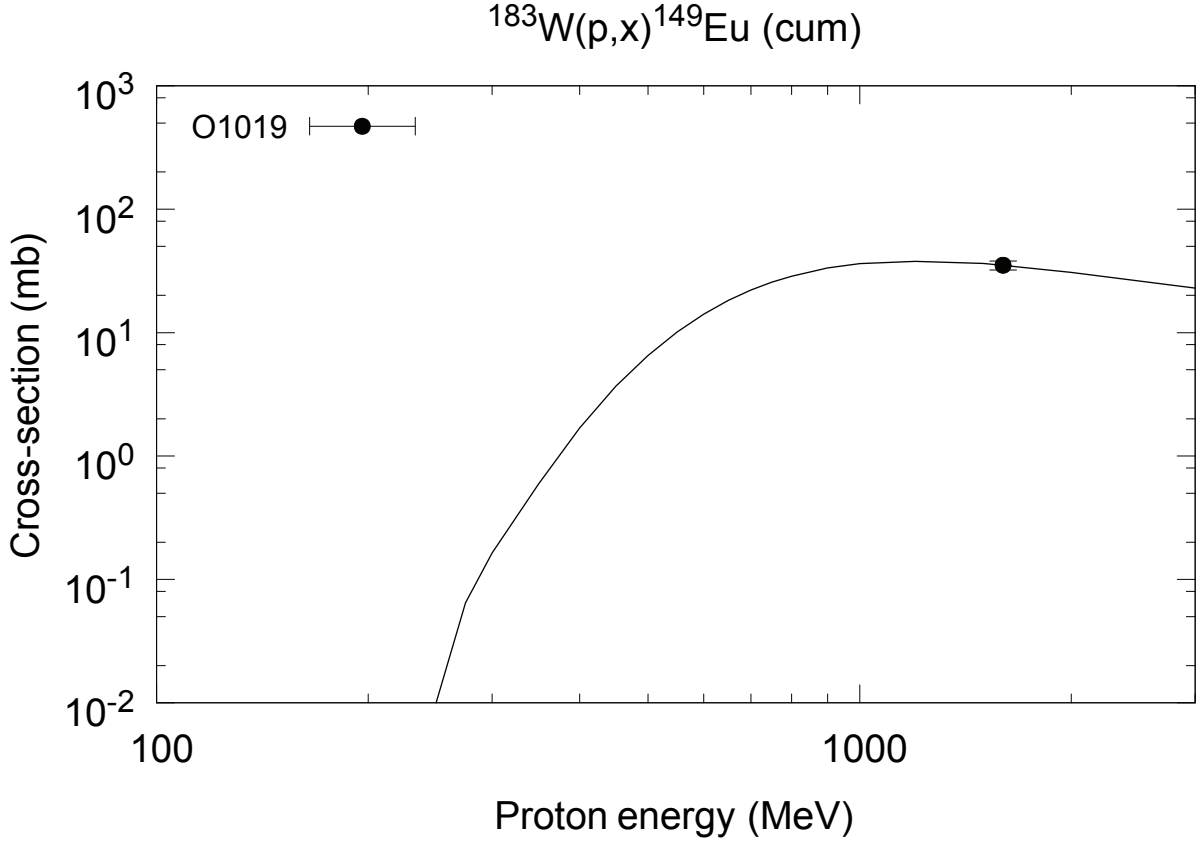

^{183}W(p,x)^{137g}Nd (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

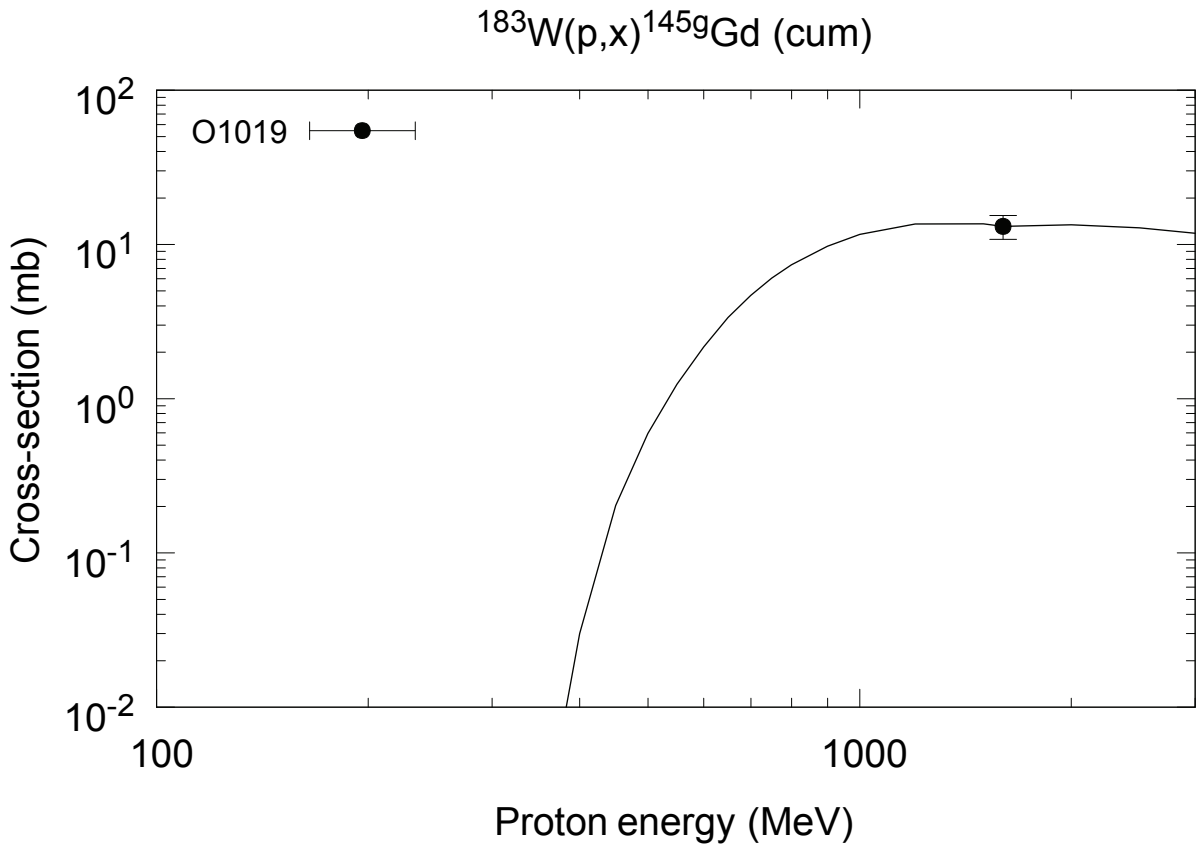

^{183}W(p,x)^{143}Pm (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

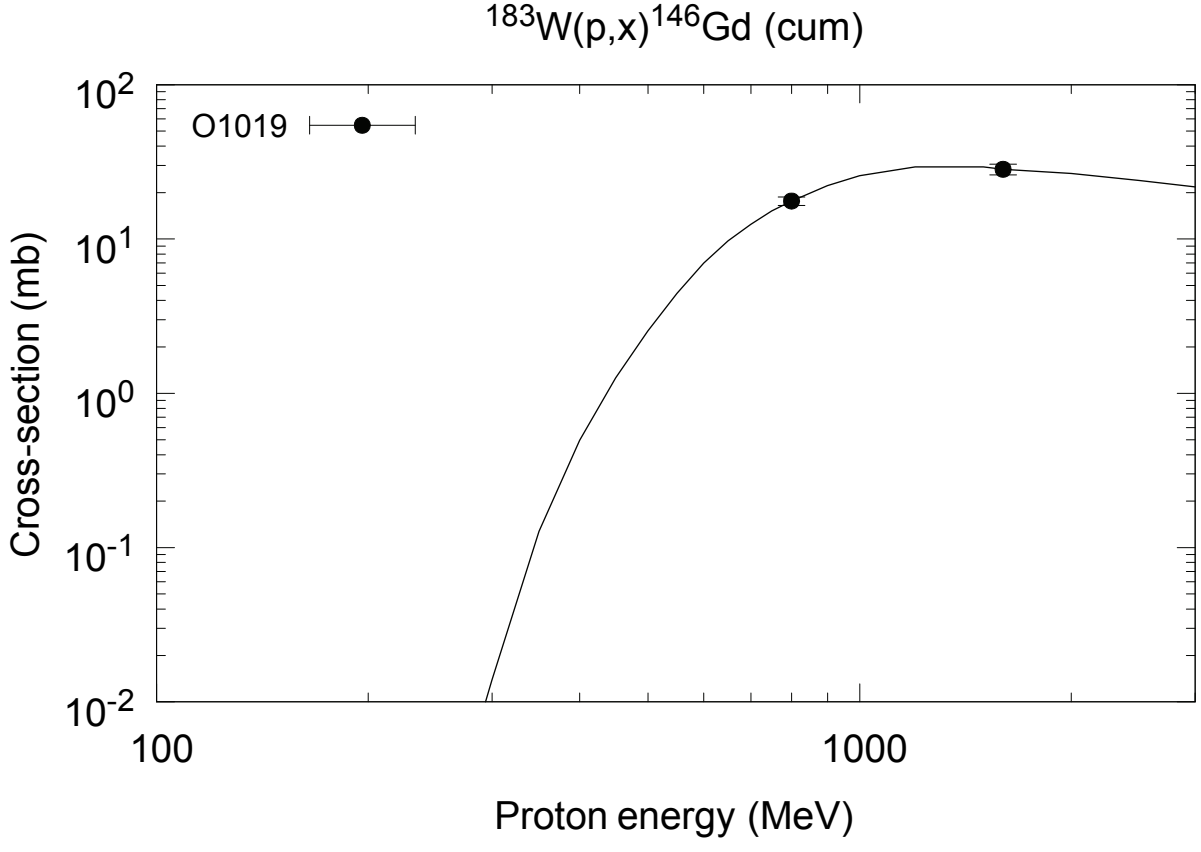

183W(p,x)145Eu (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

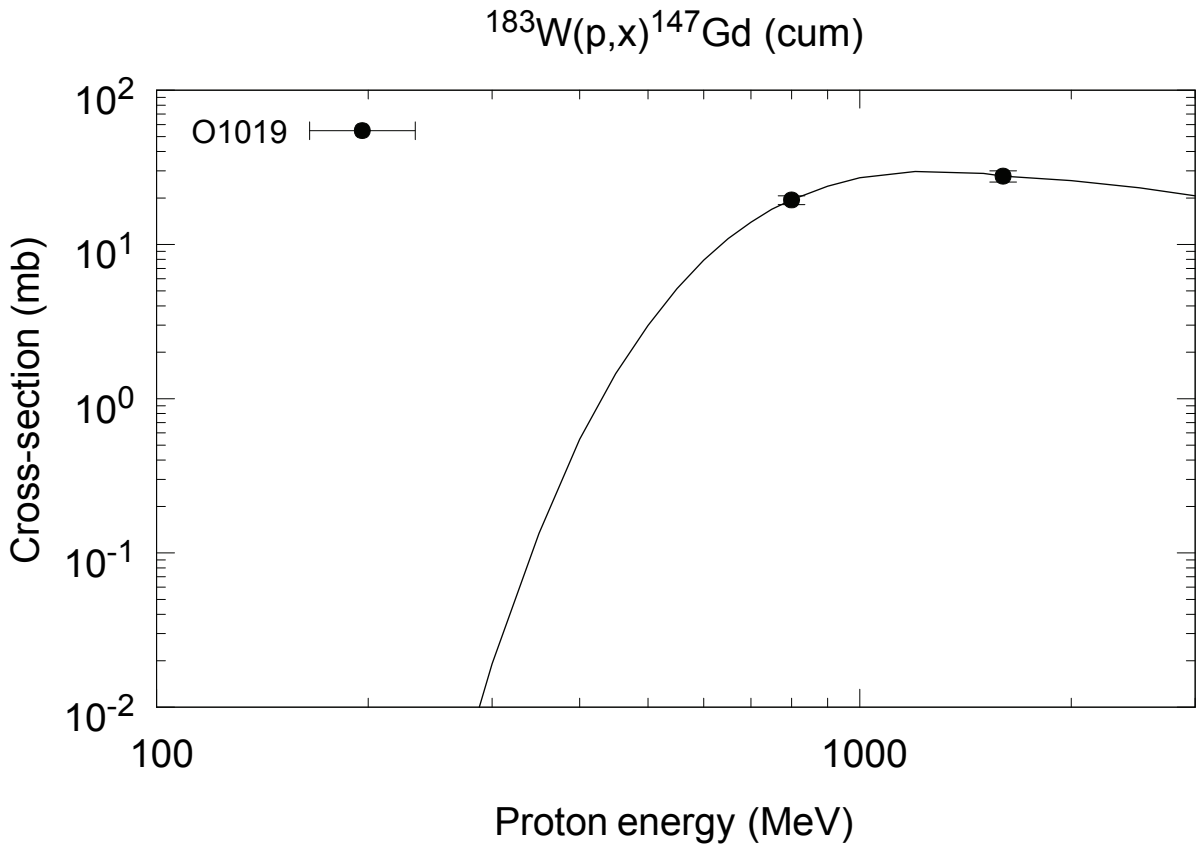

183W(p,x)146Eu (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

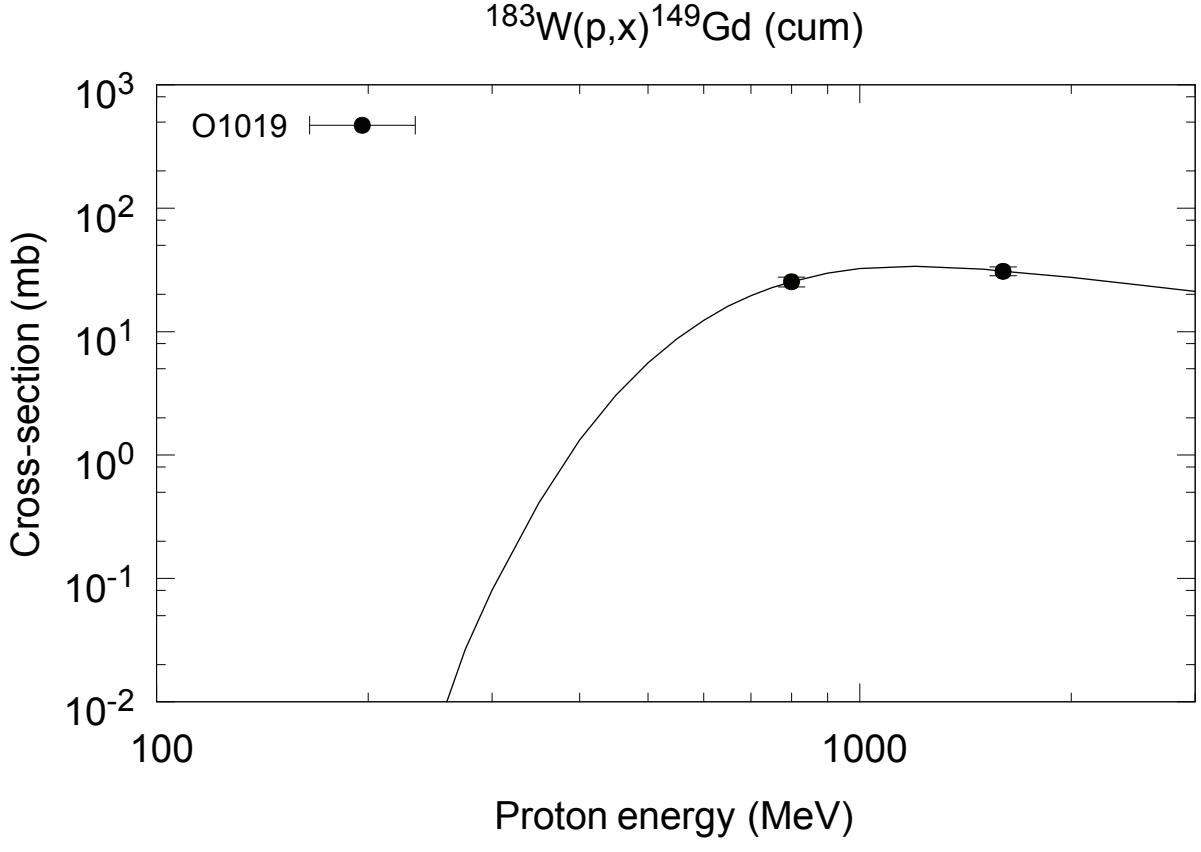

183W(p,x)147Eu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

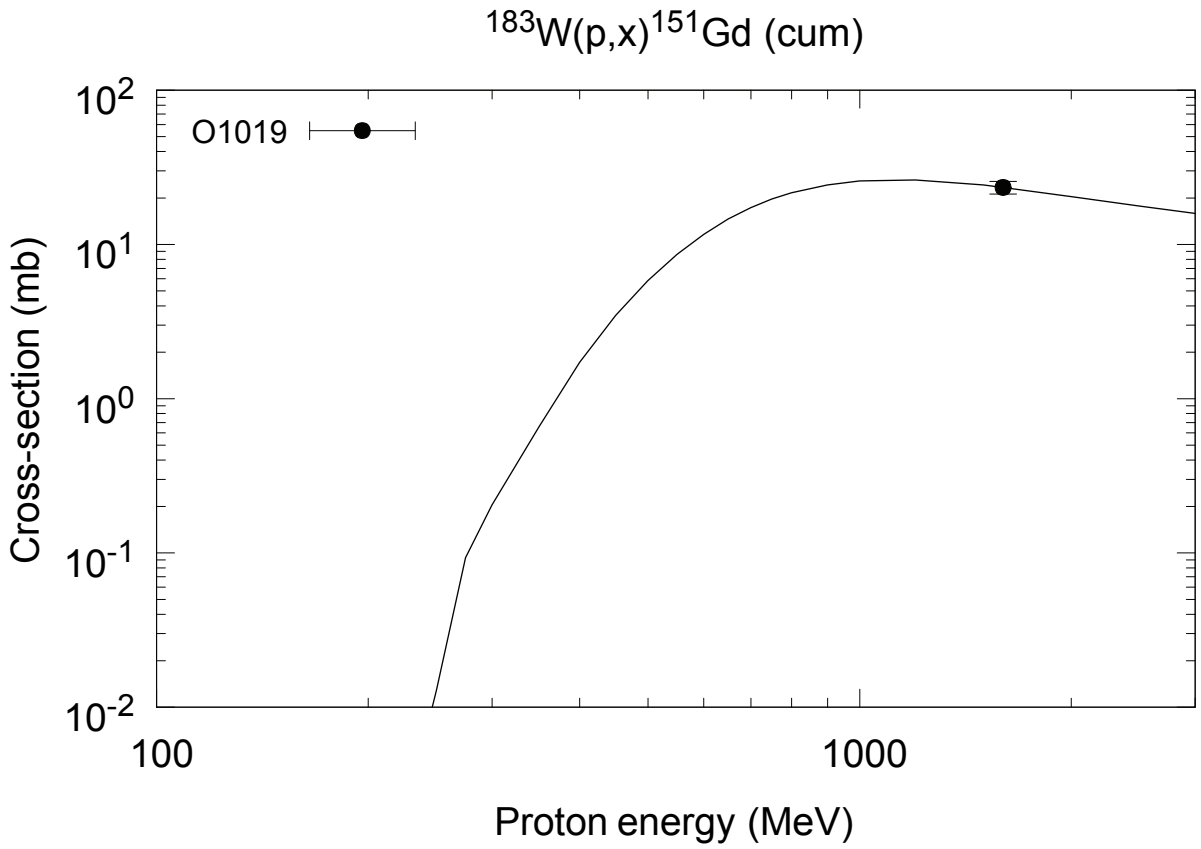

183W(p,x)149Eu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

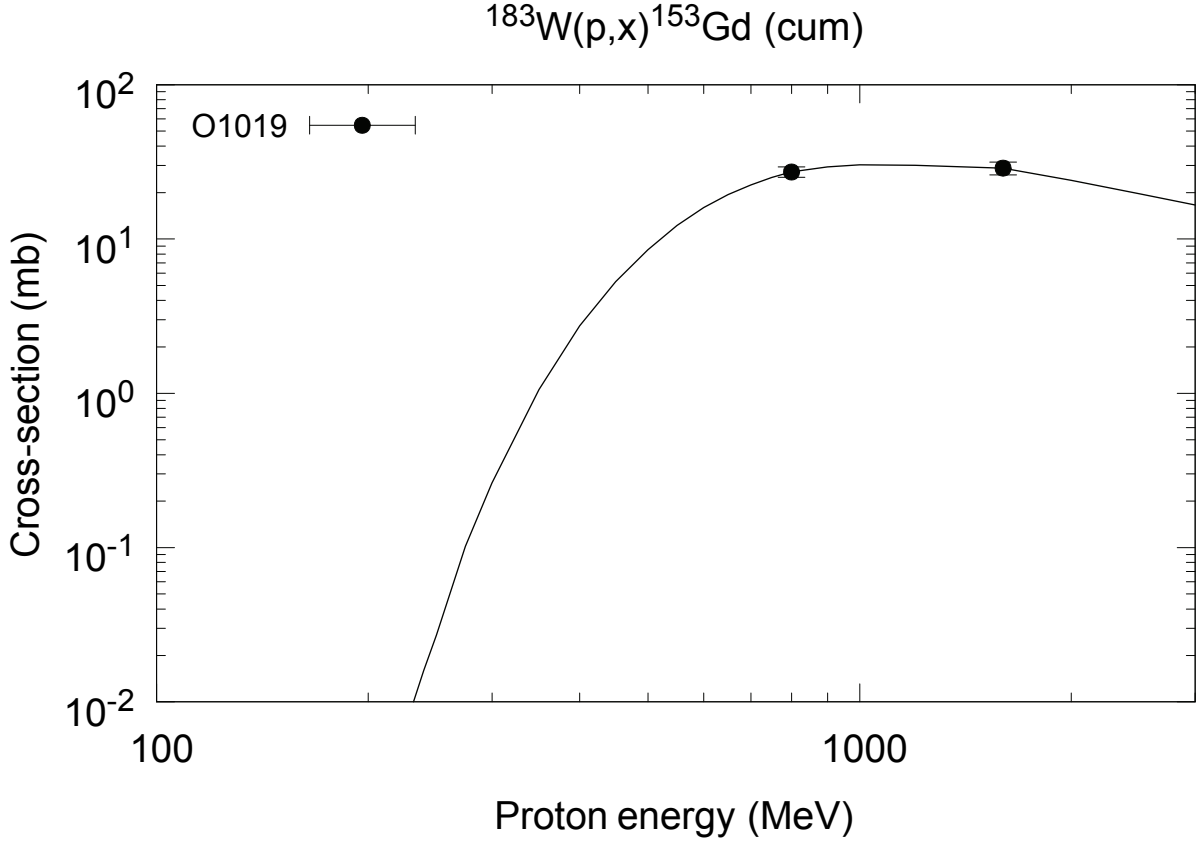

^{183}W(p,x)^{145g}Gd (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

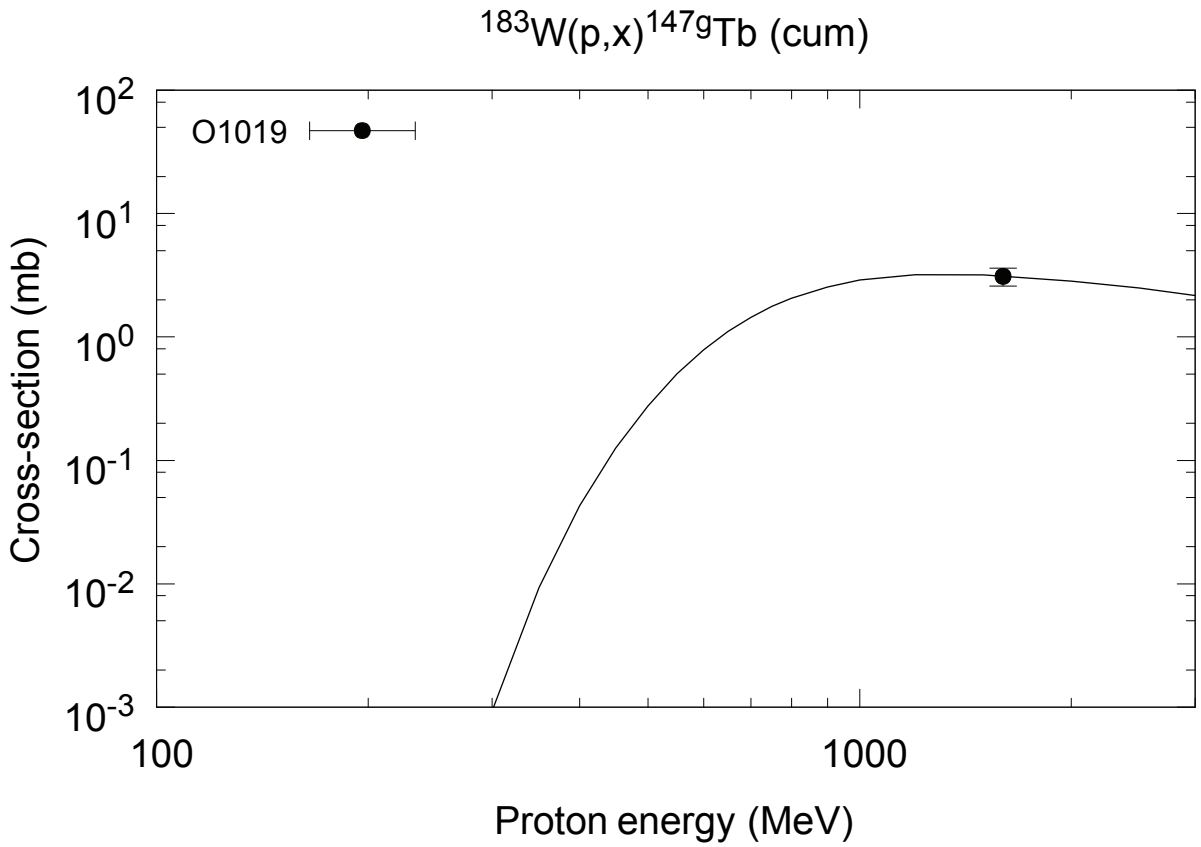

^{183}W(p,x)^{146}Gd (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

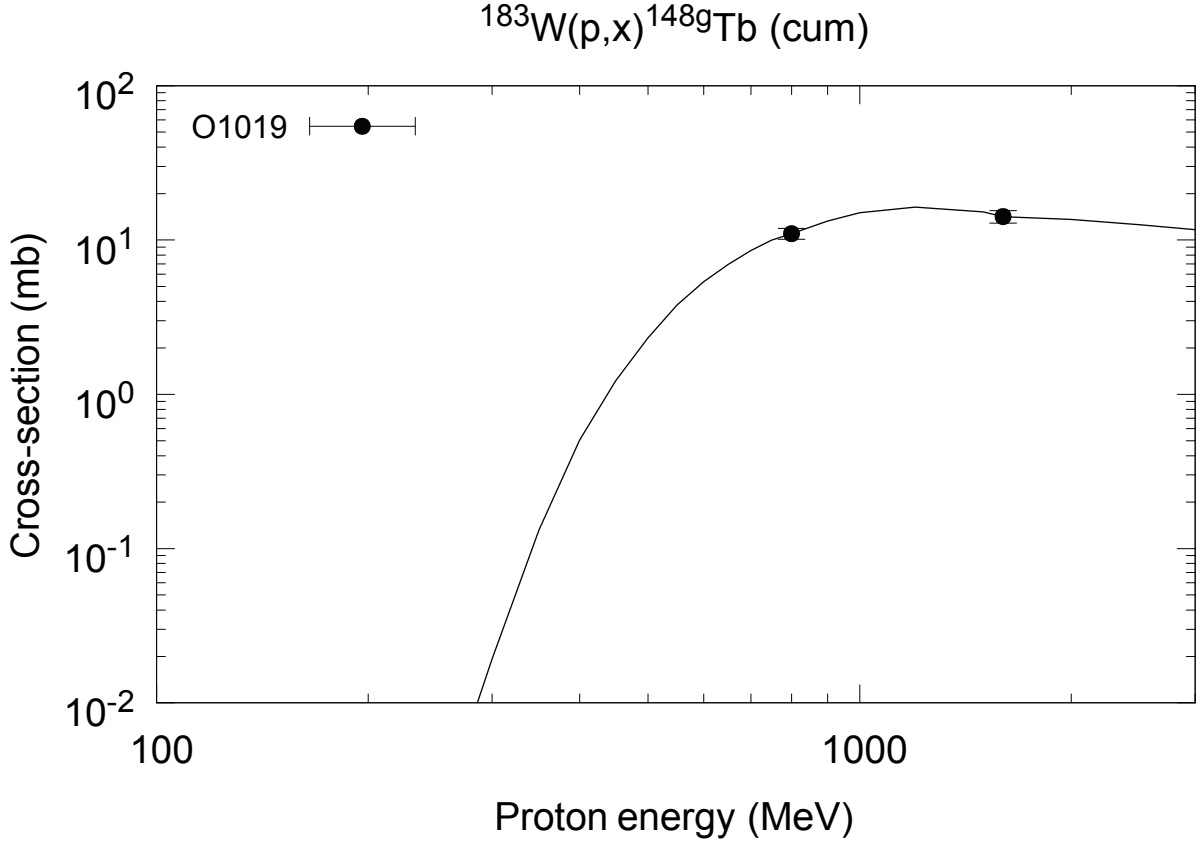

183W(p,x)147Gd (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

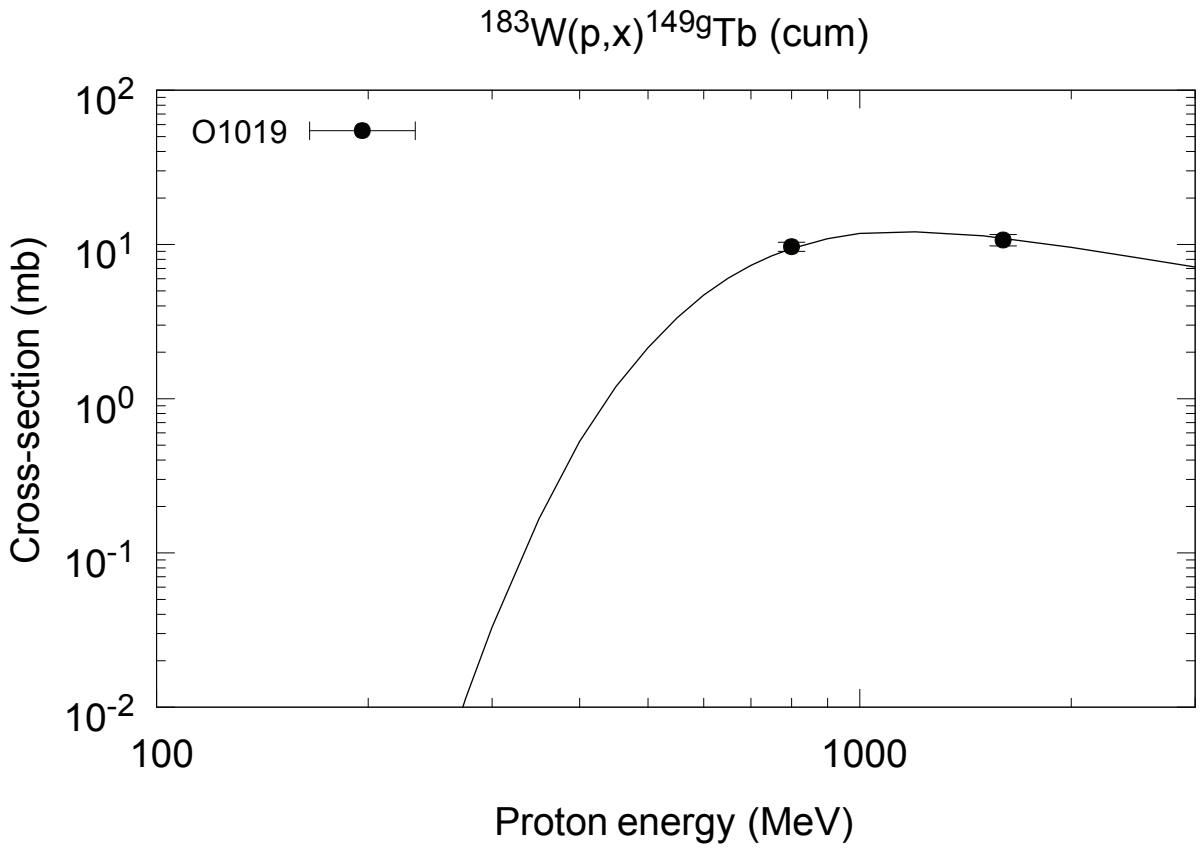

183W(p,x)149Gd (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

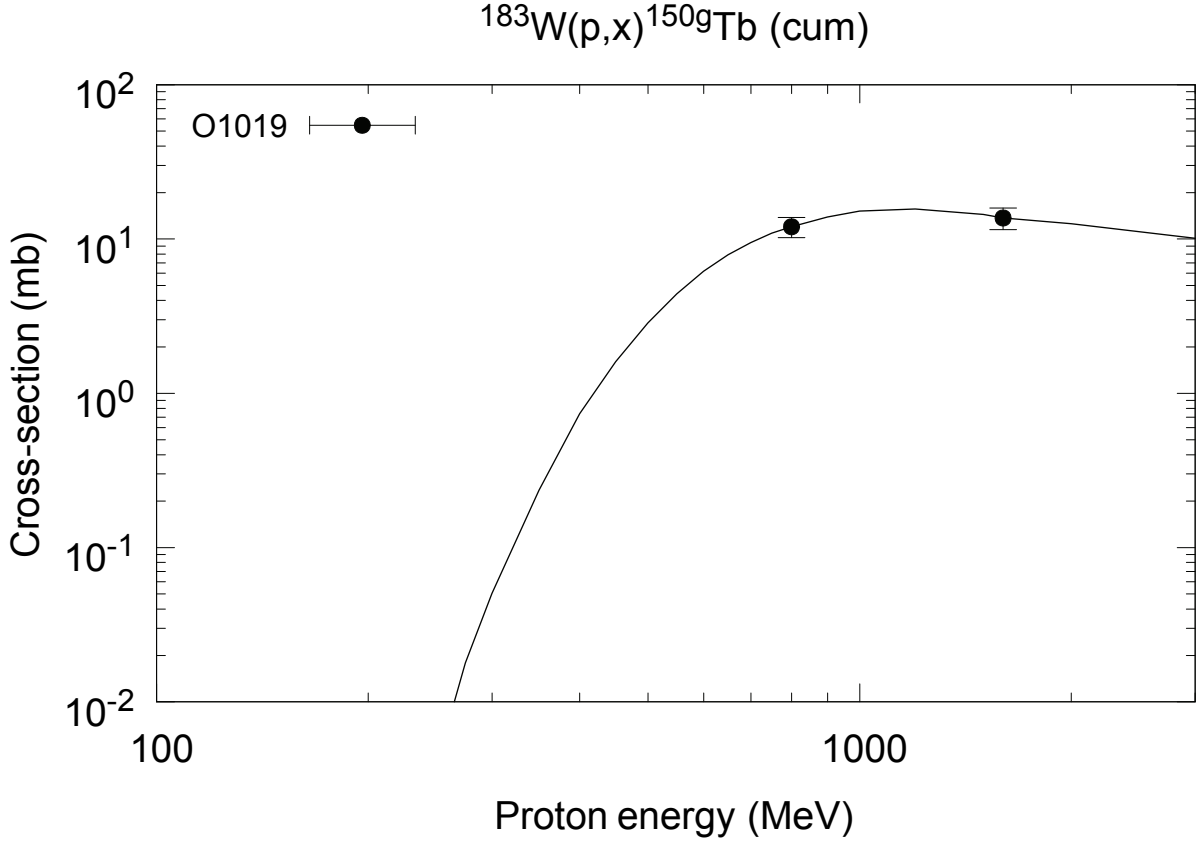

^{183}W(p,x)^{151}Gd (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

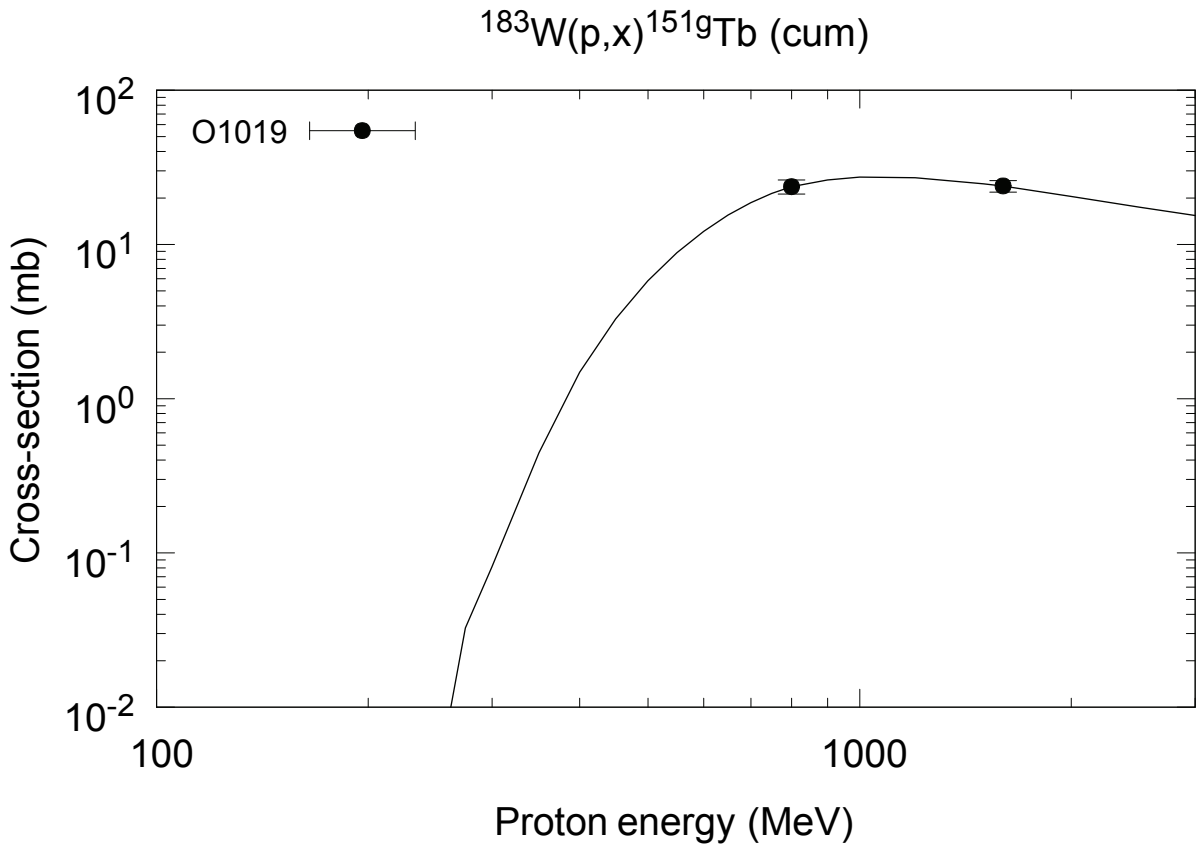

^{183}W(p,x)^{153}Gd (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

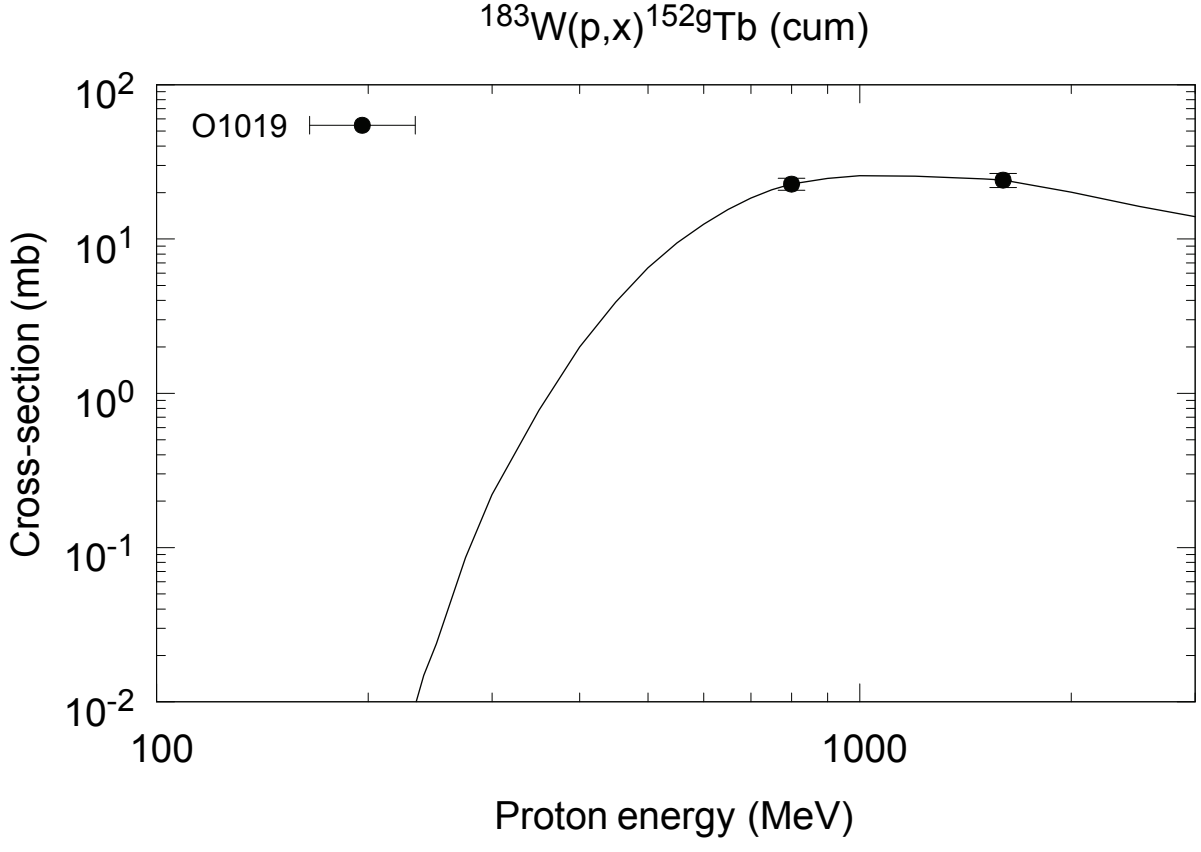

183W(p,x)147gTb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
10^-3
100
1000
Proton energy (MeV)

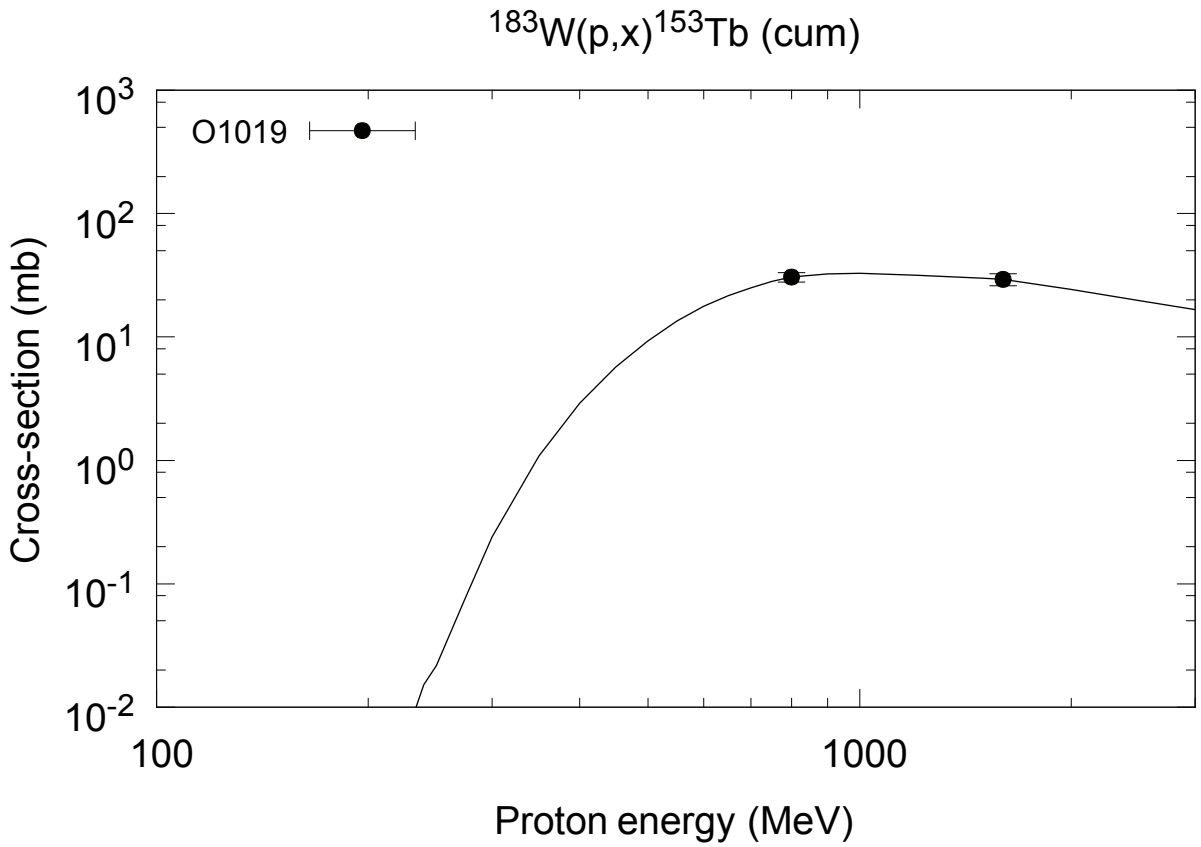

183W(p,x)148gTb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

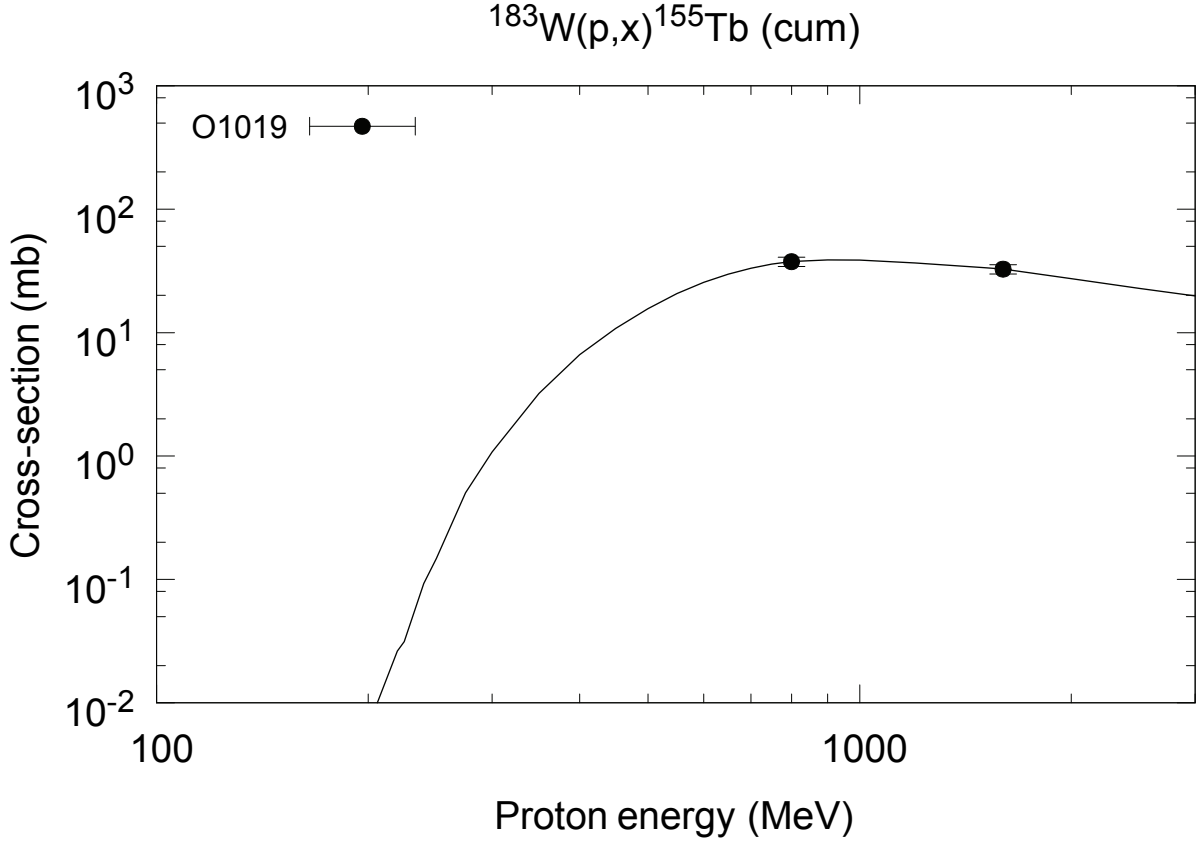

^{183}W(p,x)^{149g}Tb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

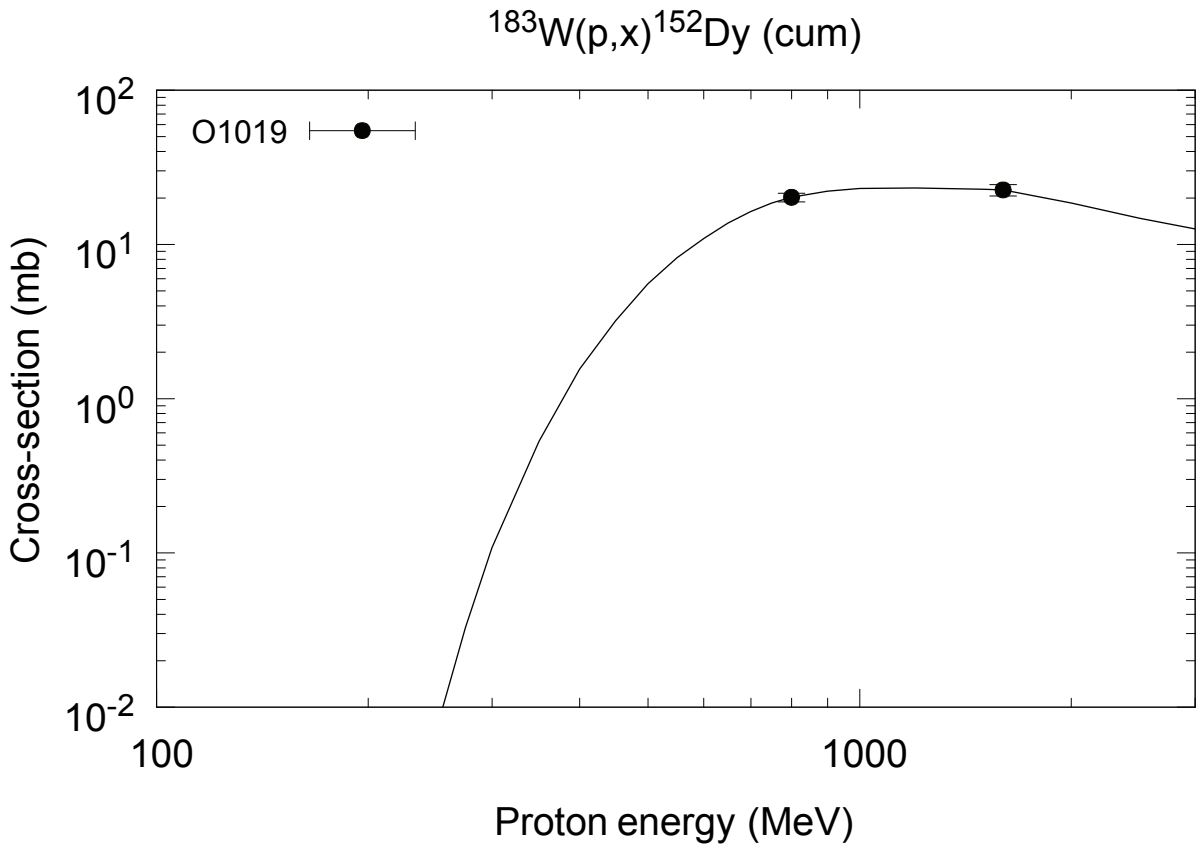

^{183}W(p,x)^{150g}Tb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

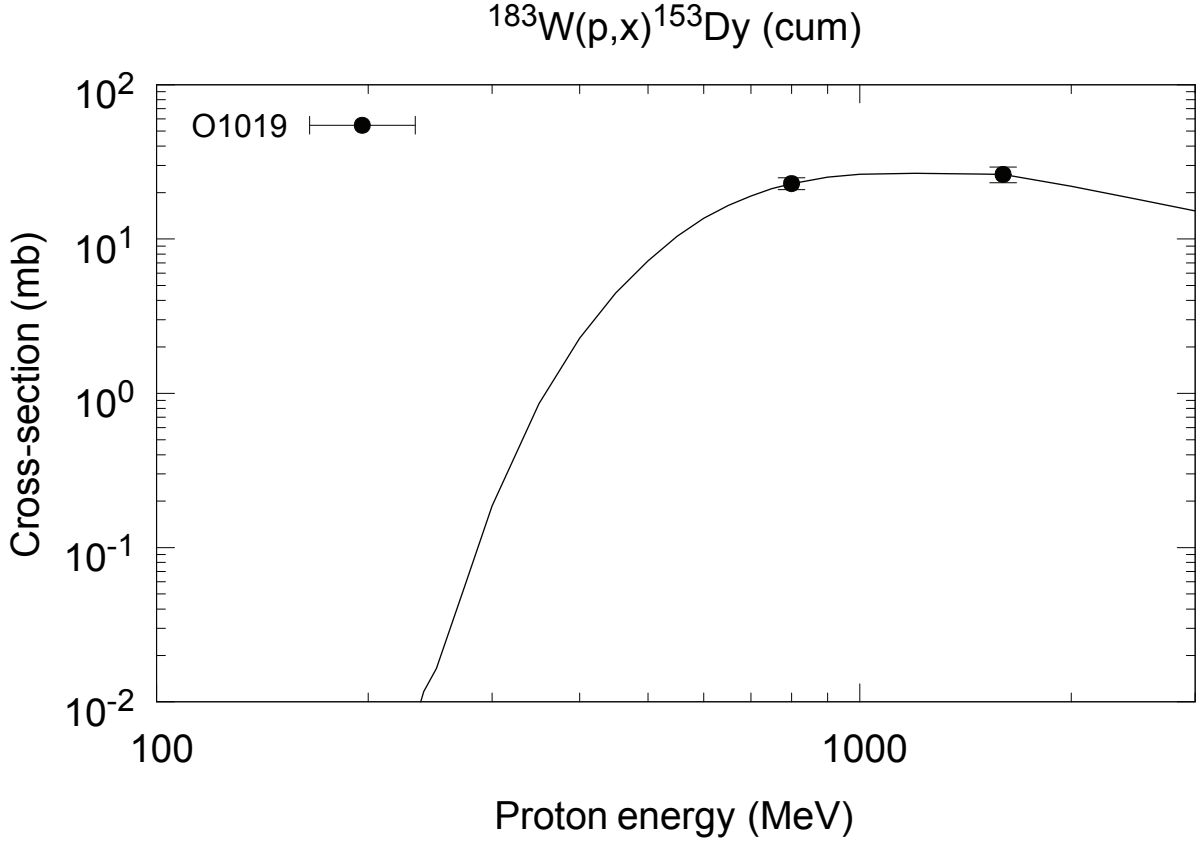

^{183}W(p,x)^{151g}Tb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

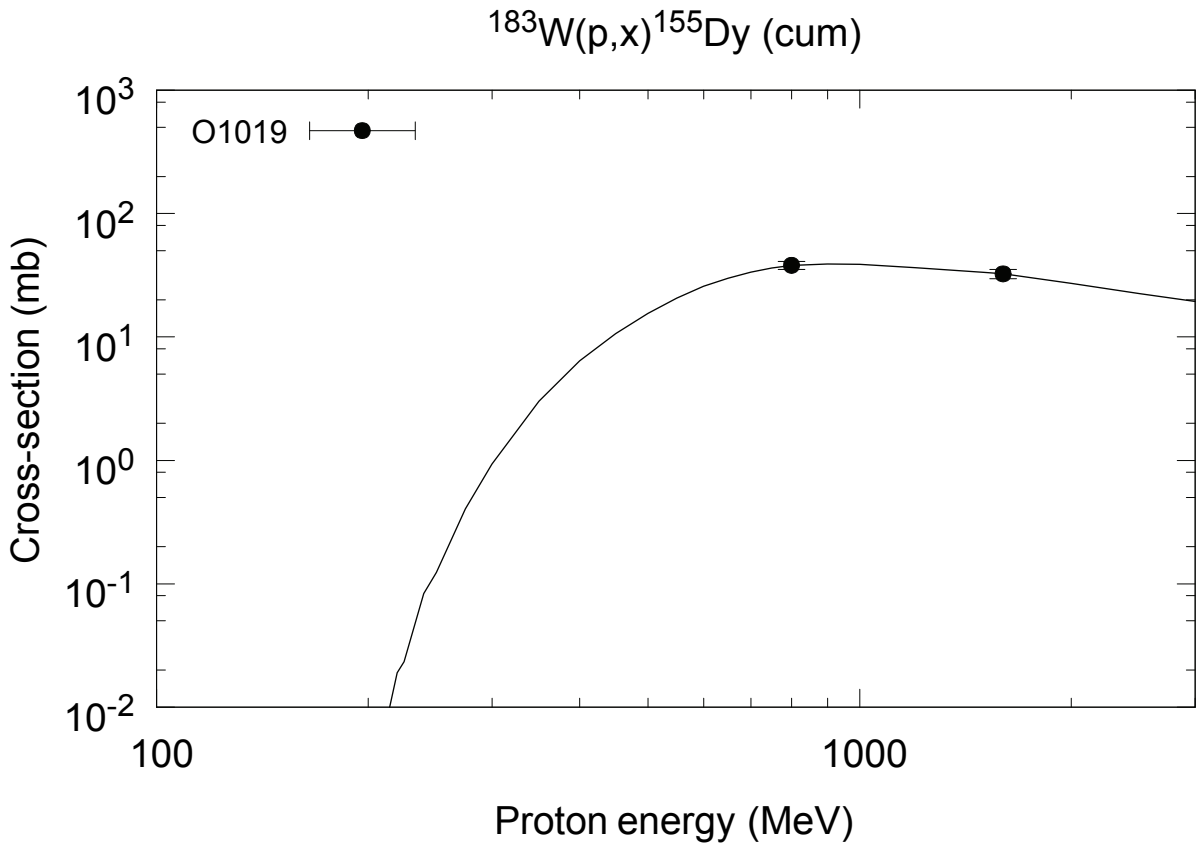

^{183}W(p,x)^{152g}Tb (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

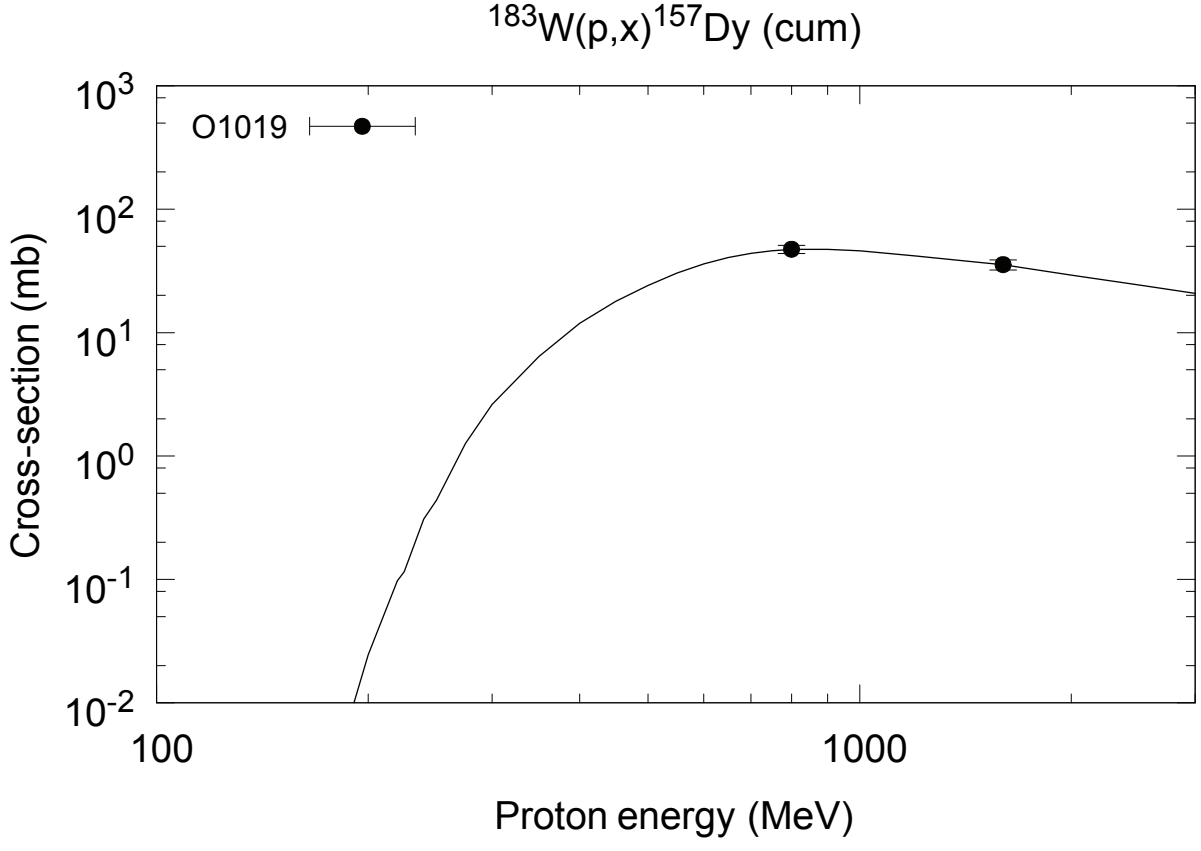

^{183}W(p,x)^{153}Tb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

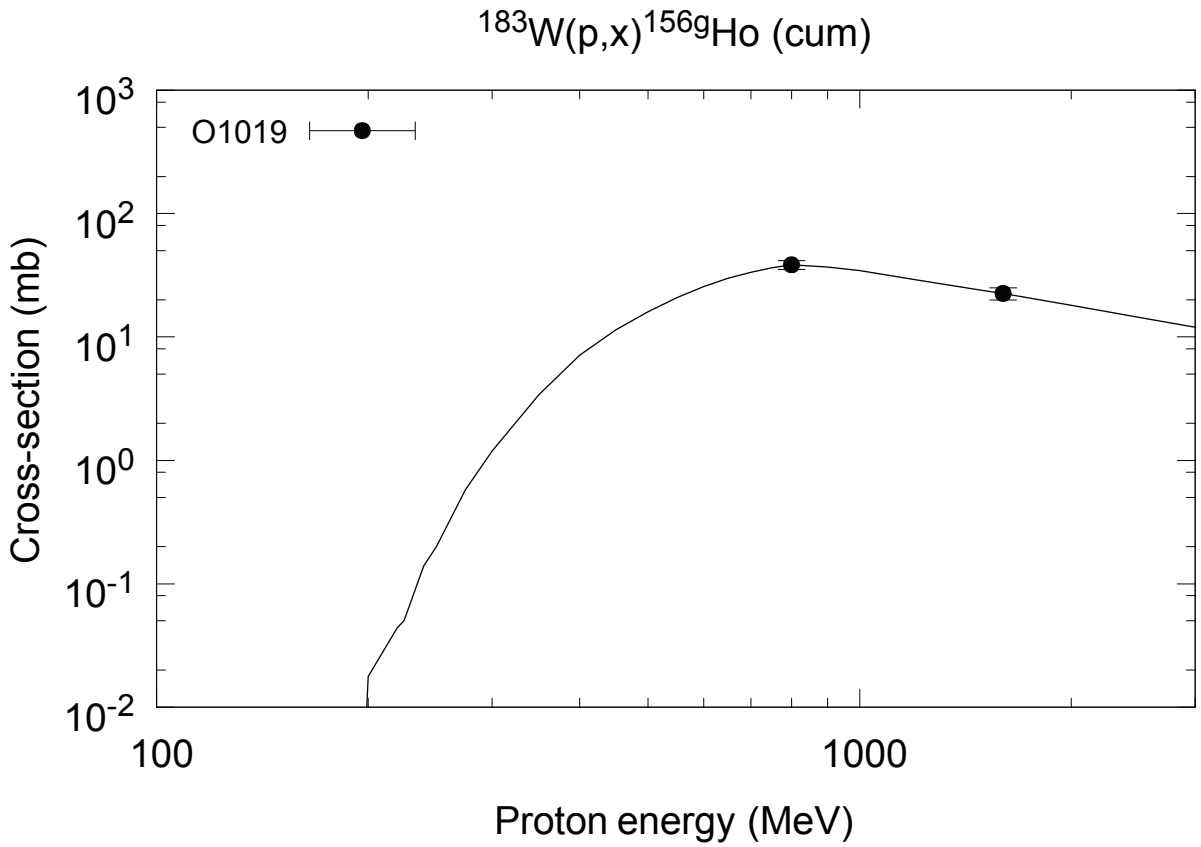

^{183}W(p,x)^{155}Tb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

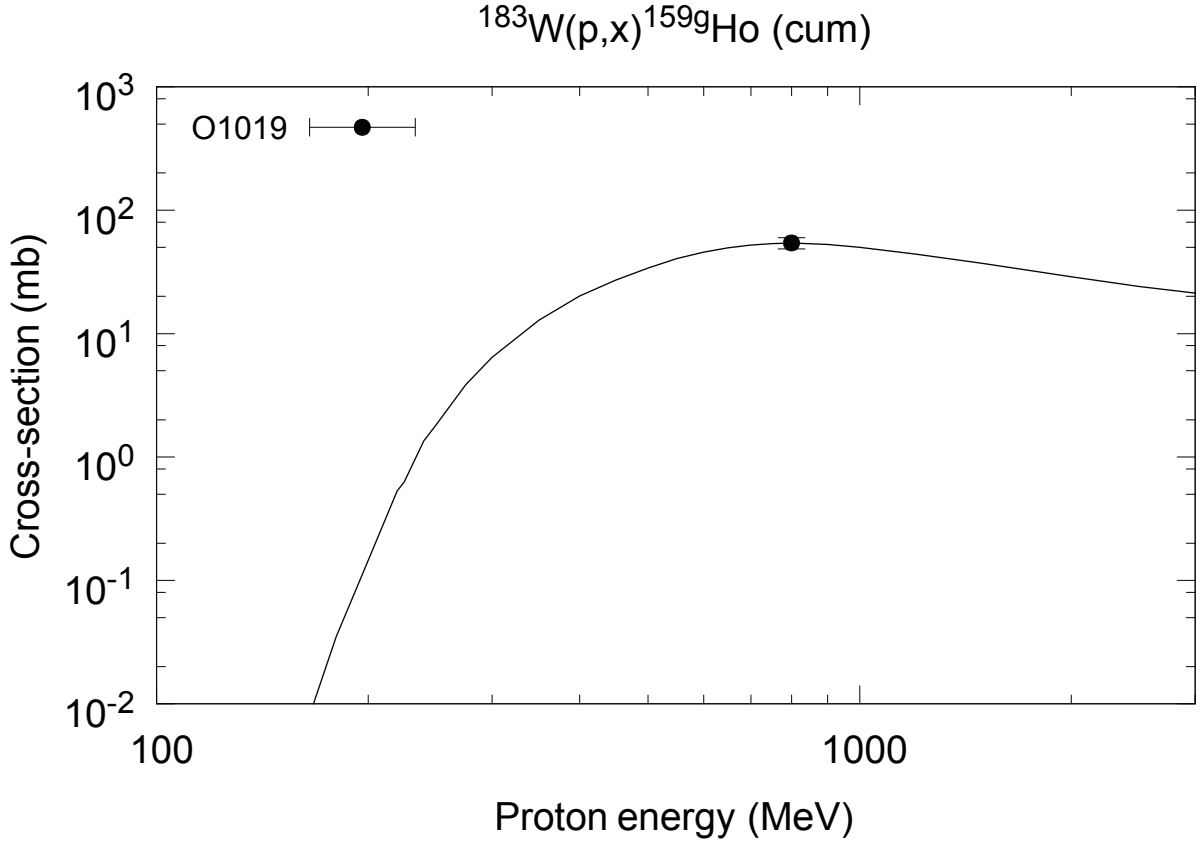

^{183}W(p,x)^{152}Dy (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

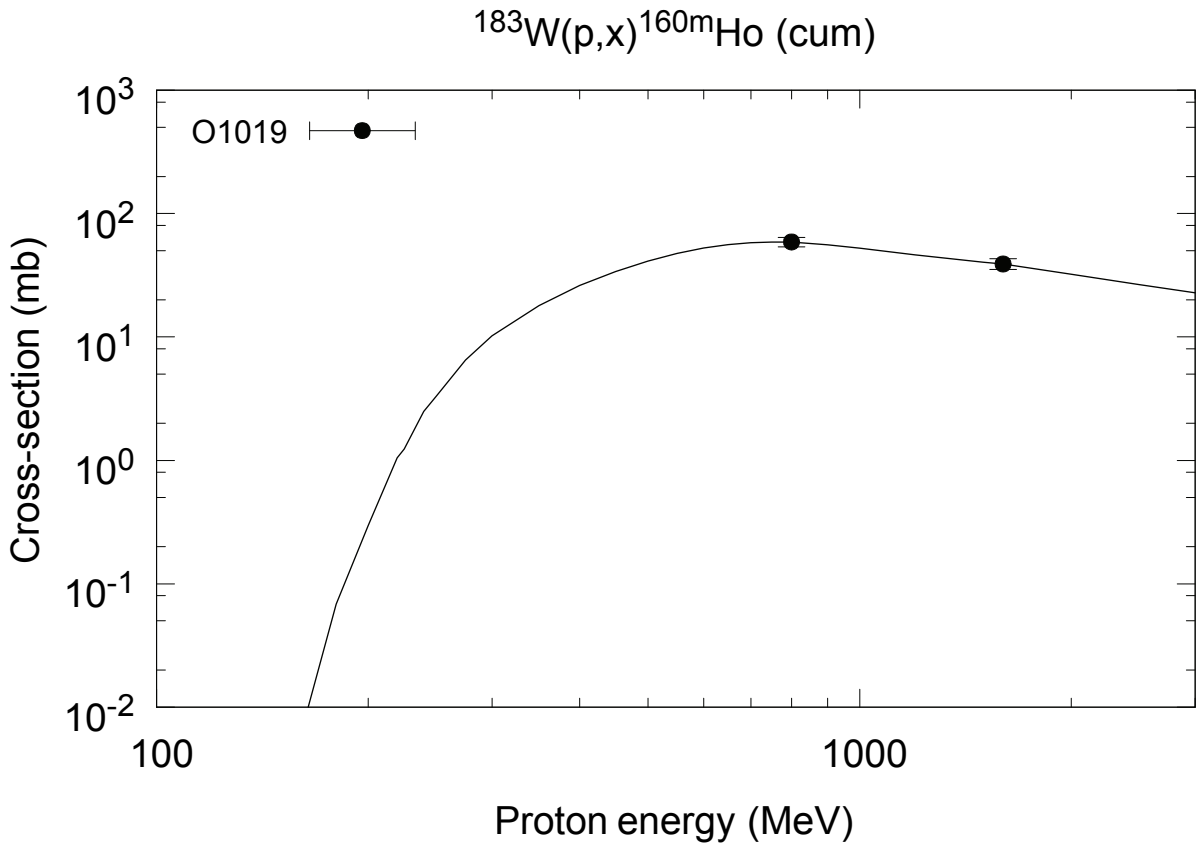

^{183}W(p,x)^{153}Dy (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

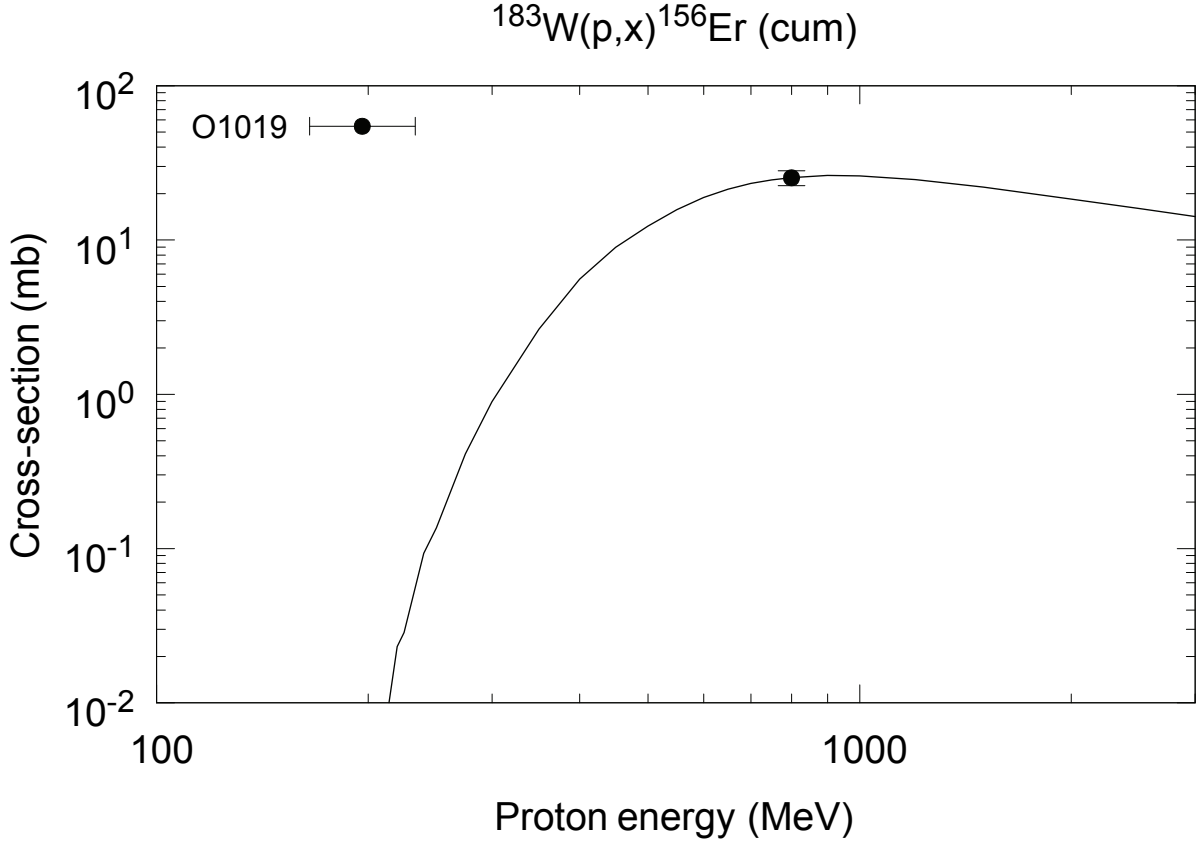

^{183}W(p,x)^{155}Dy (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

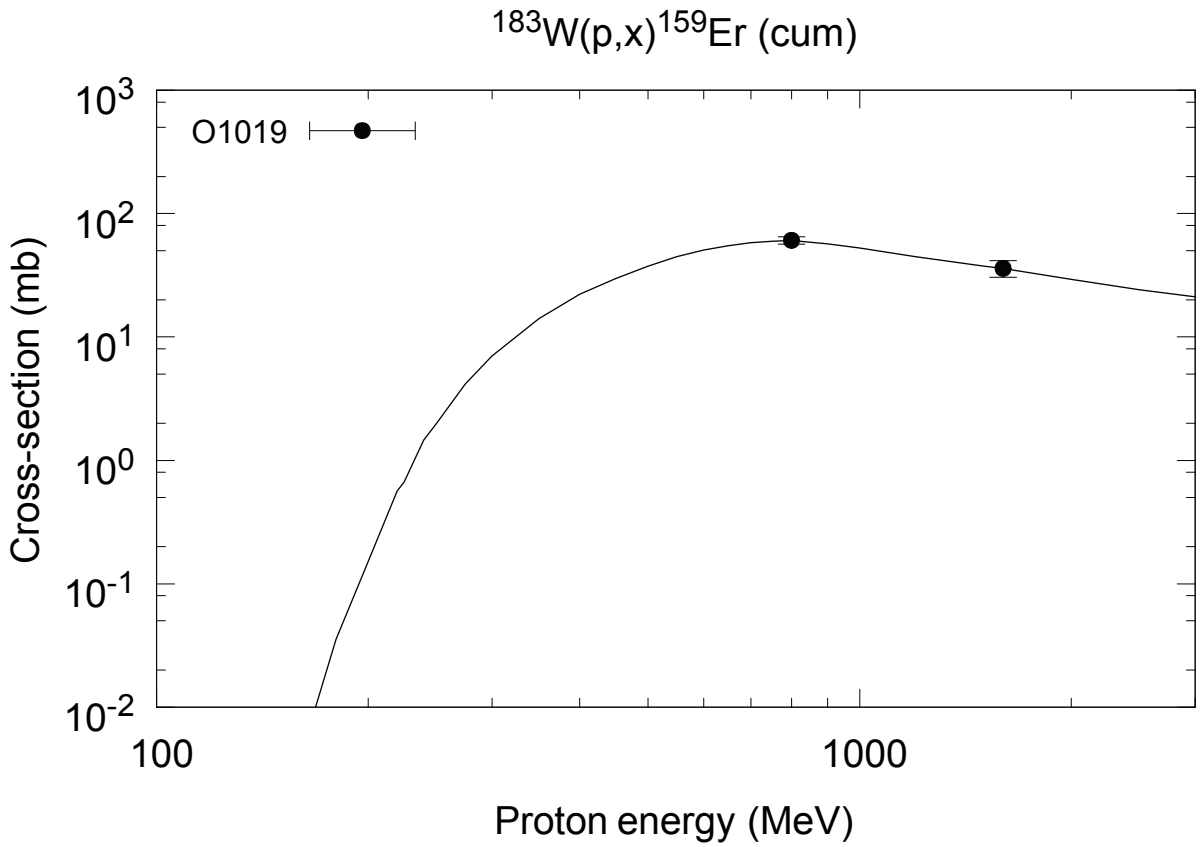

^{183}W(p,x)^{157}Dy (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

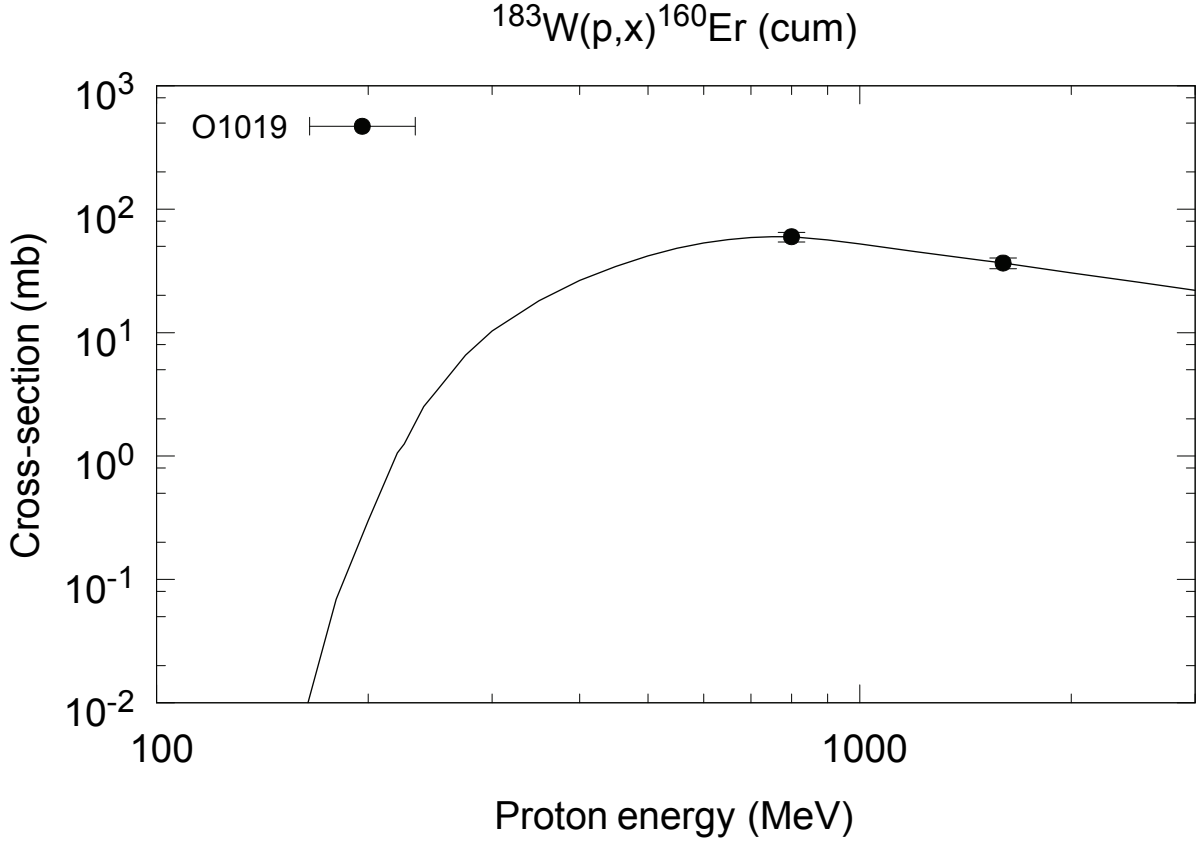

^{183}W(p,x)^{156g}Ho (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

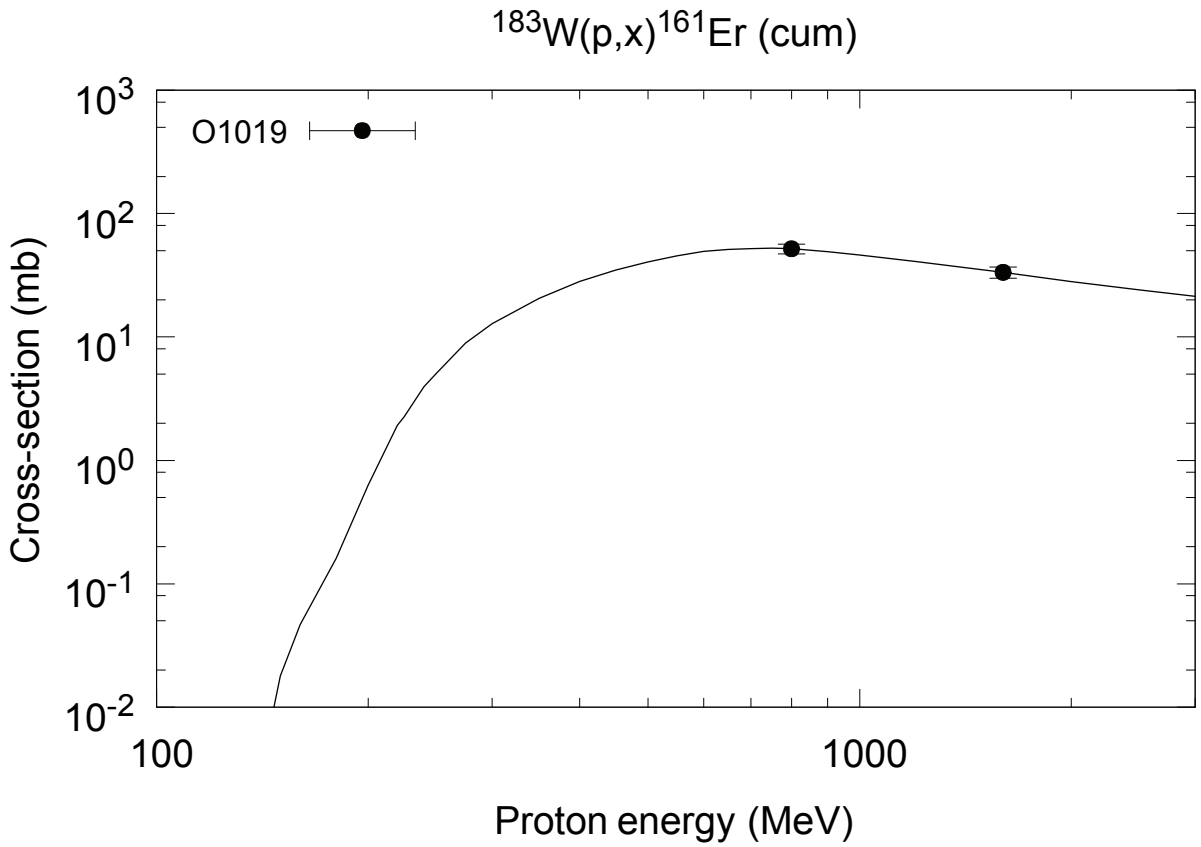

^{183}W(p,x)^{159g}Ho (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

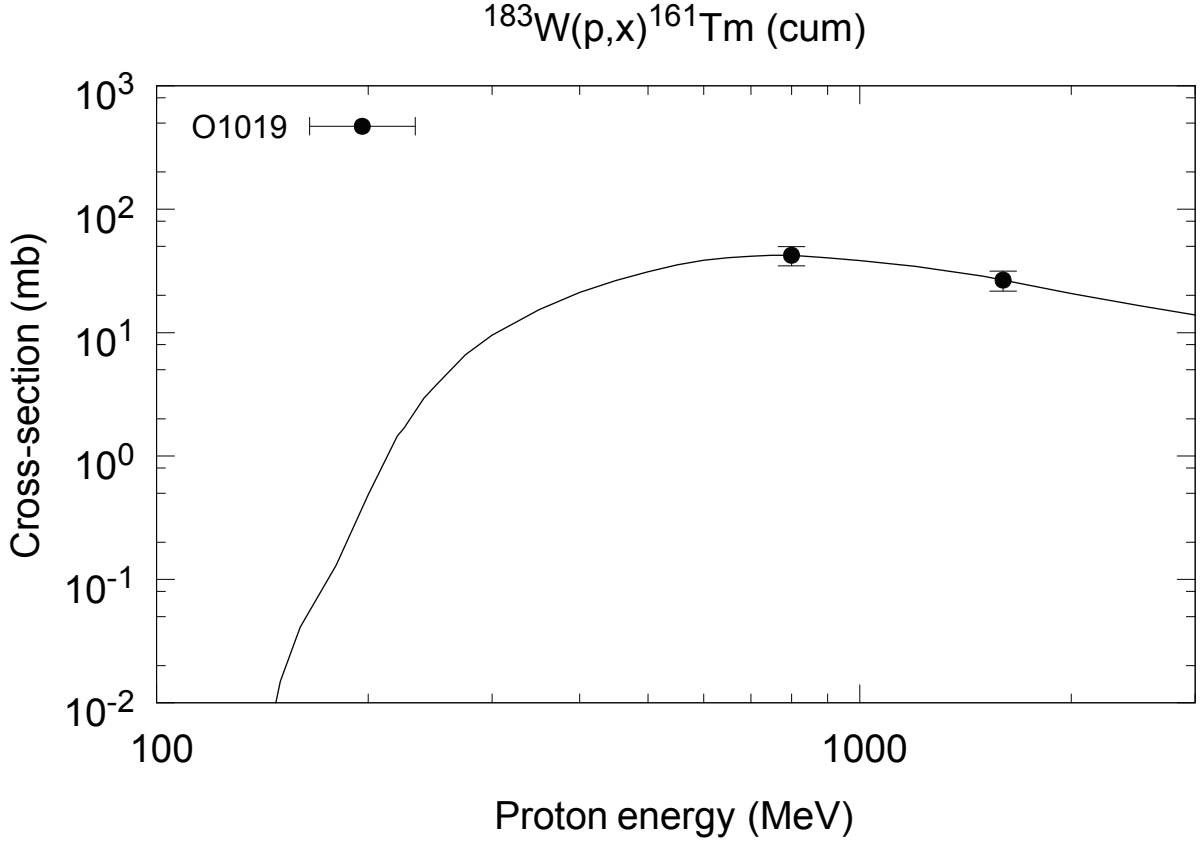

^{183}W(p,x)^{160m}Ho (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

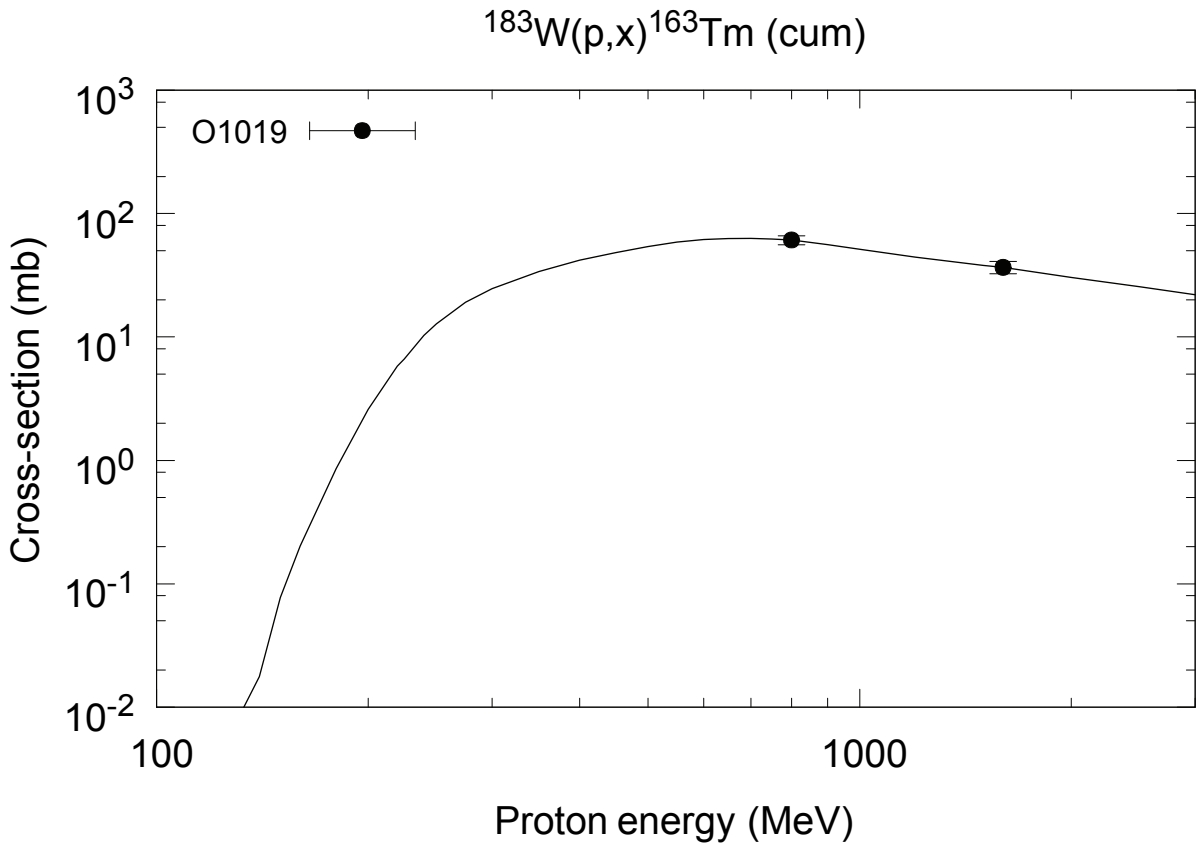

^{183}W(p,x)^{156}Er (cum)
O1019
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

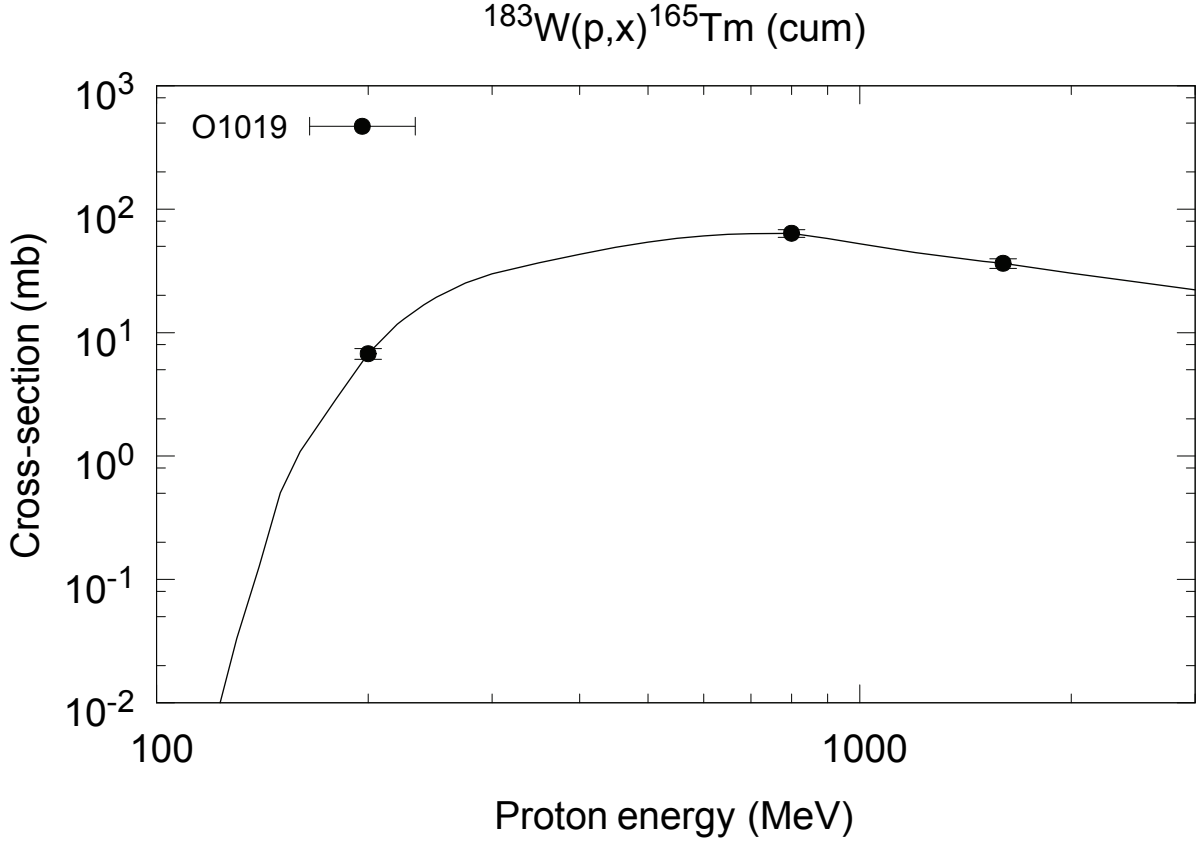

183W(p,x)159Er (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

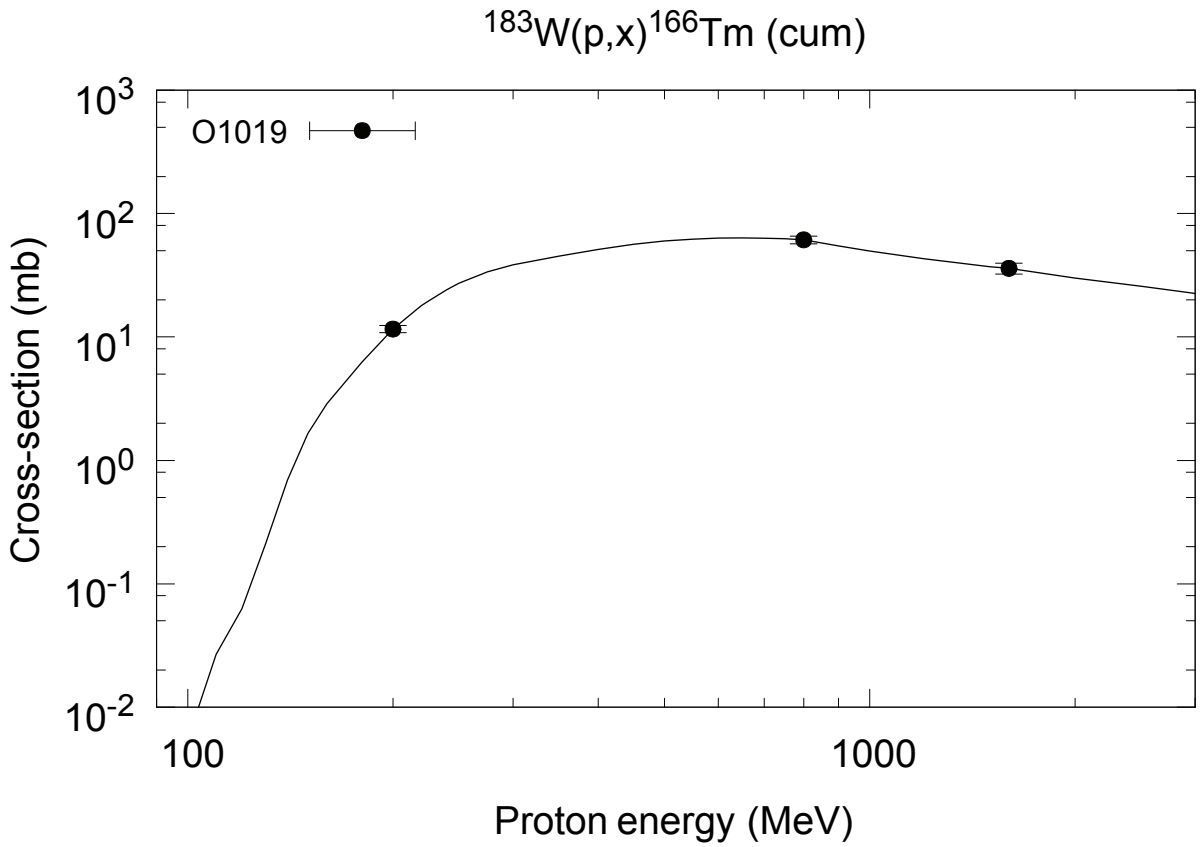

183W(p,x)160Er (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

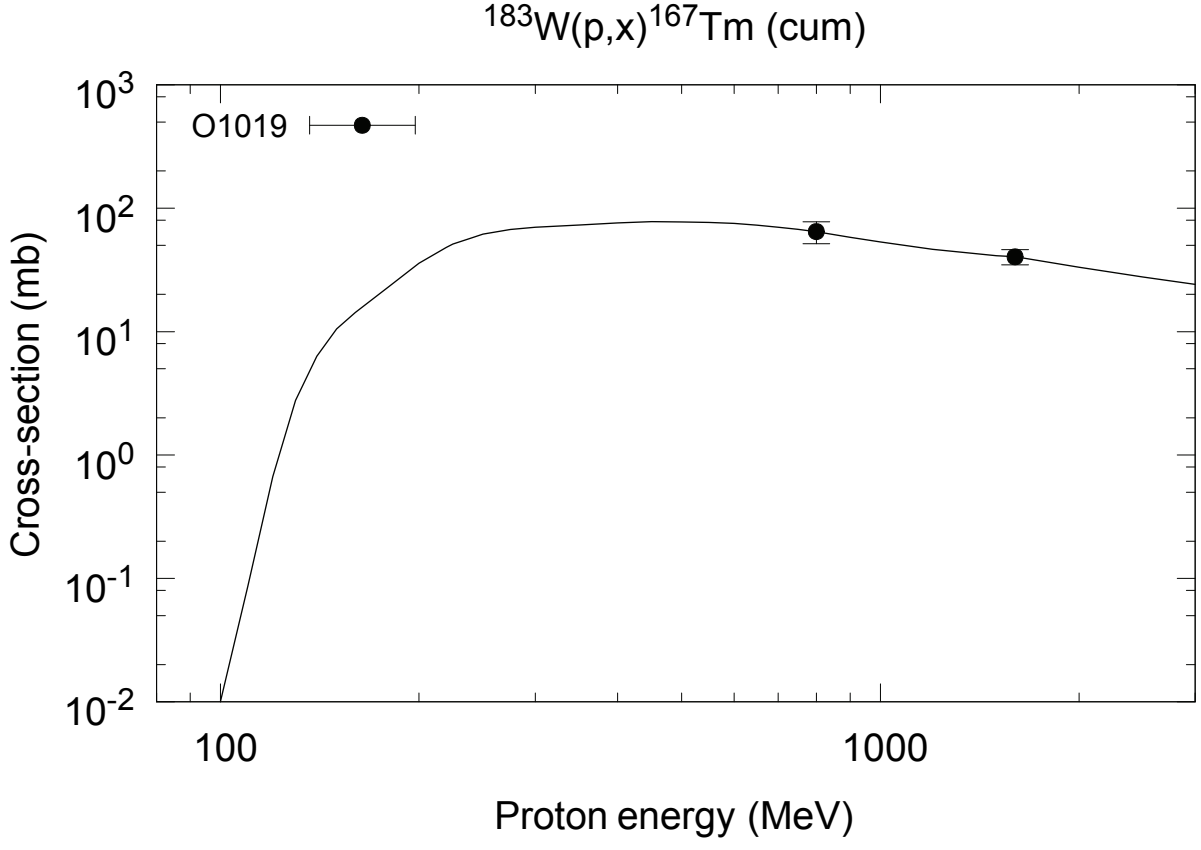

^{183}W(p,x)^{161}Er (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

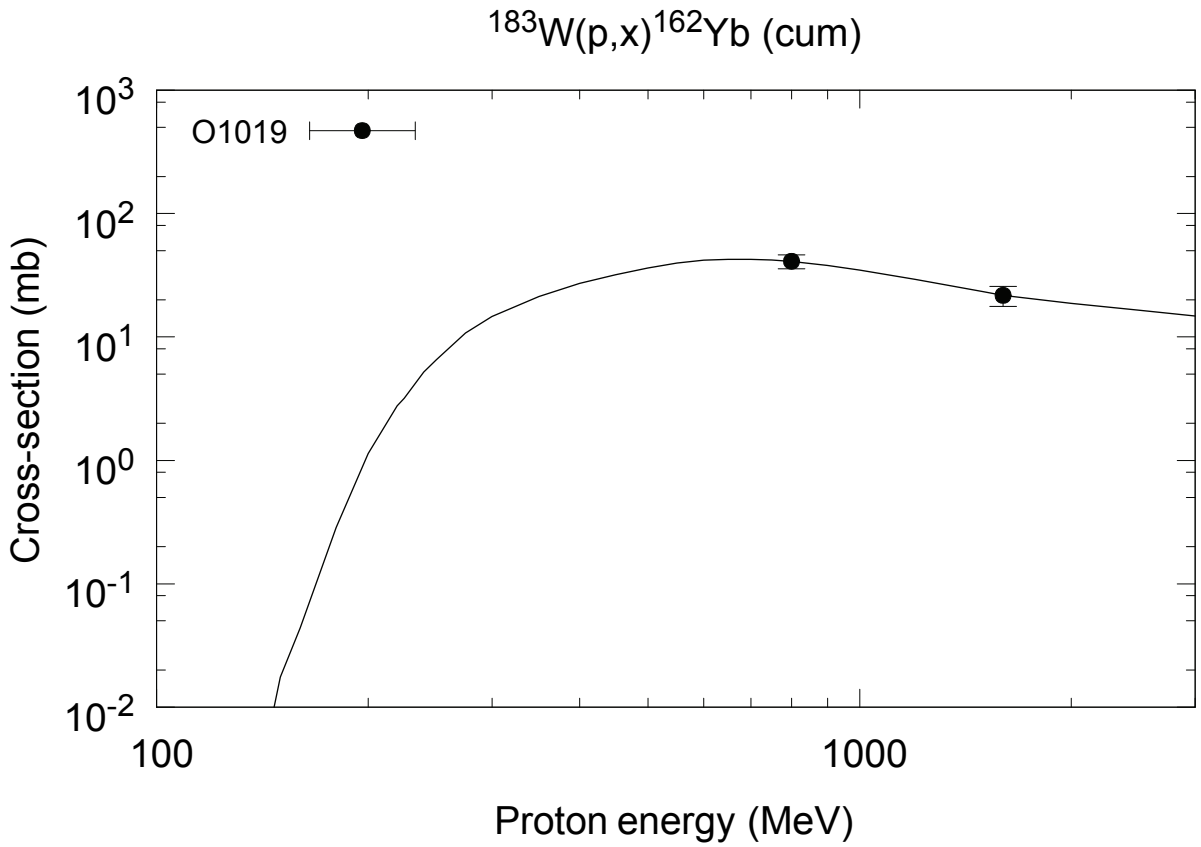

^{183}W(p,x)^{161}Tm (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

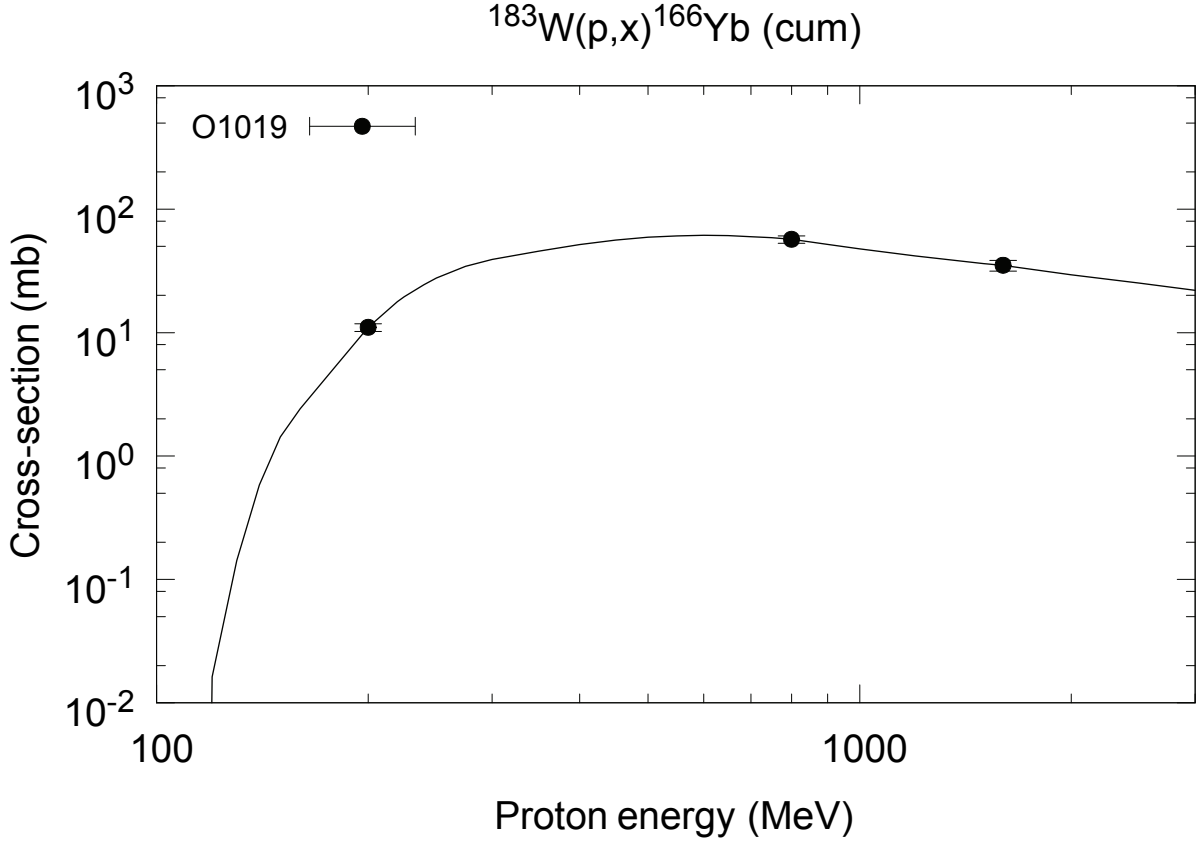

^{183}W(p,x)^{163}Tm (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

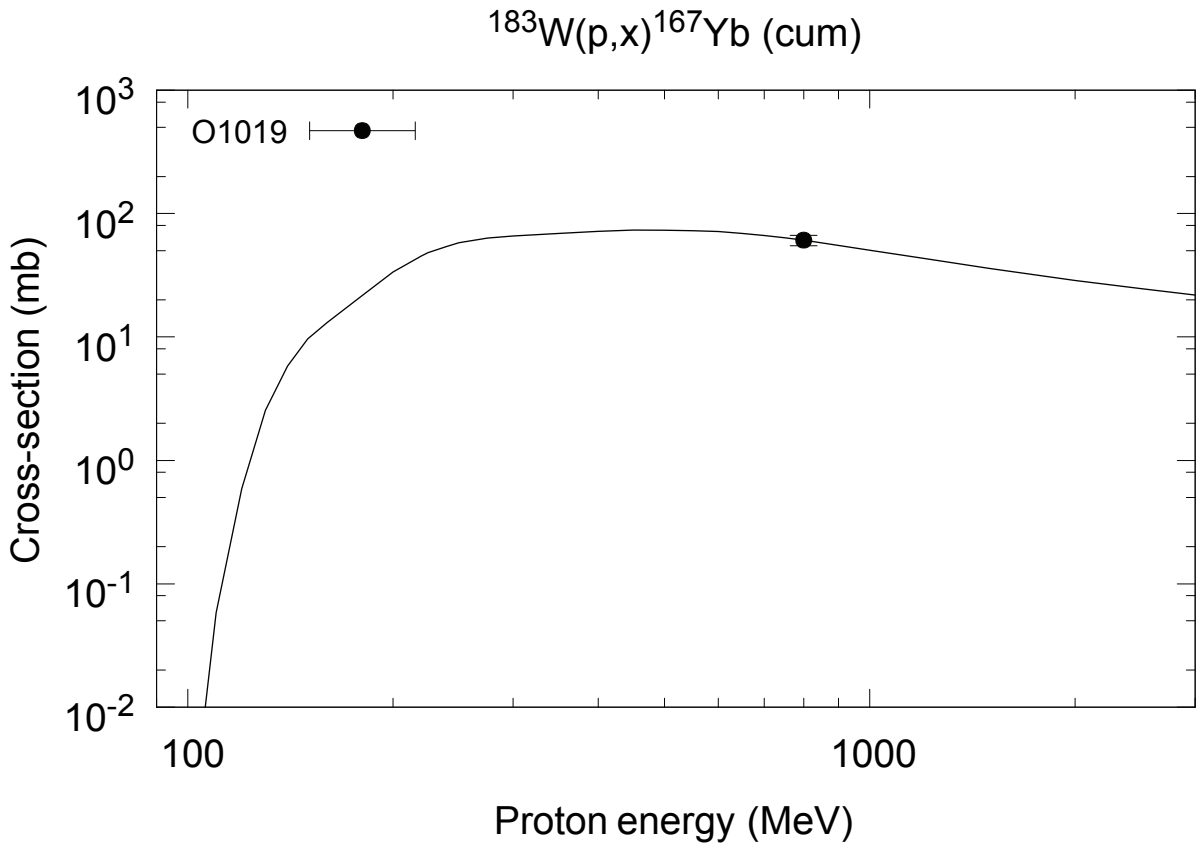

^{183}W(p,x)^{165}Tm (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

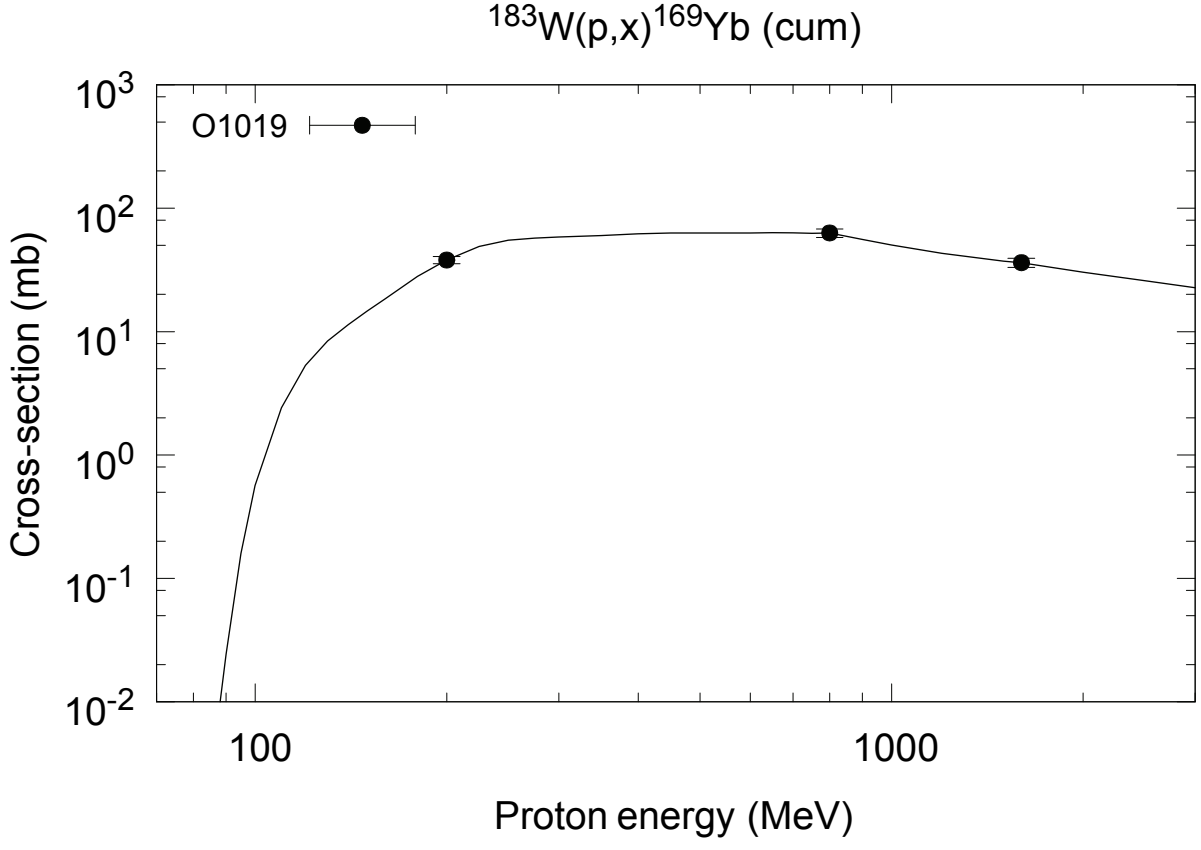

^{183}W(p,x)^{166}Tm (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

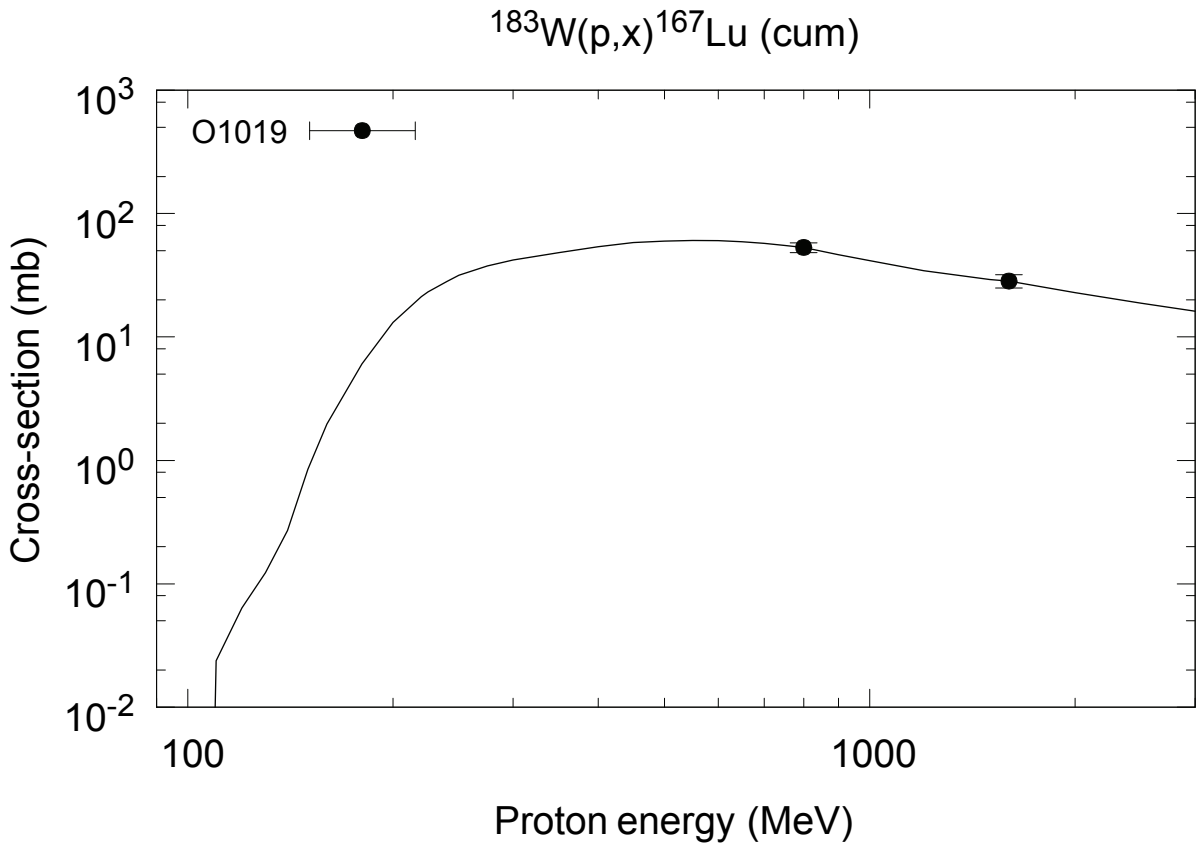

^{183}W(p,x)^{167}Tm (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

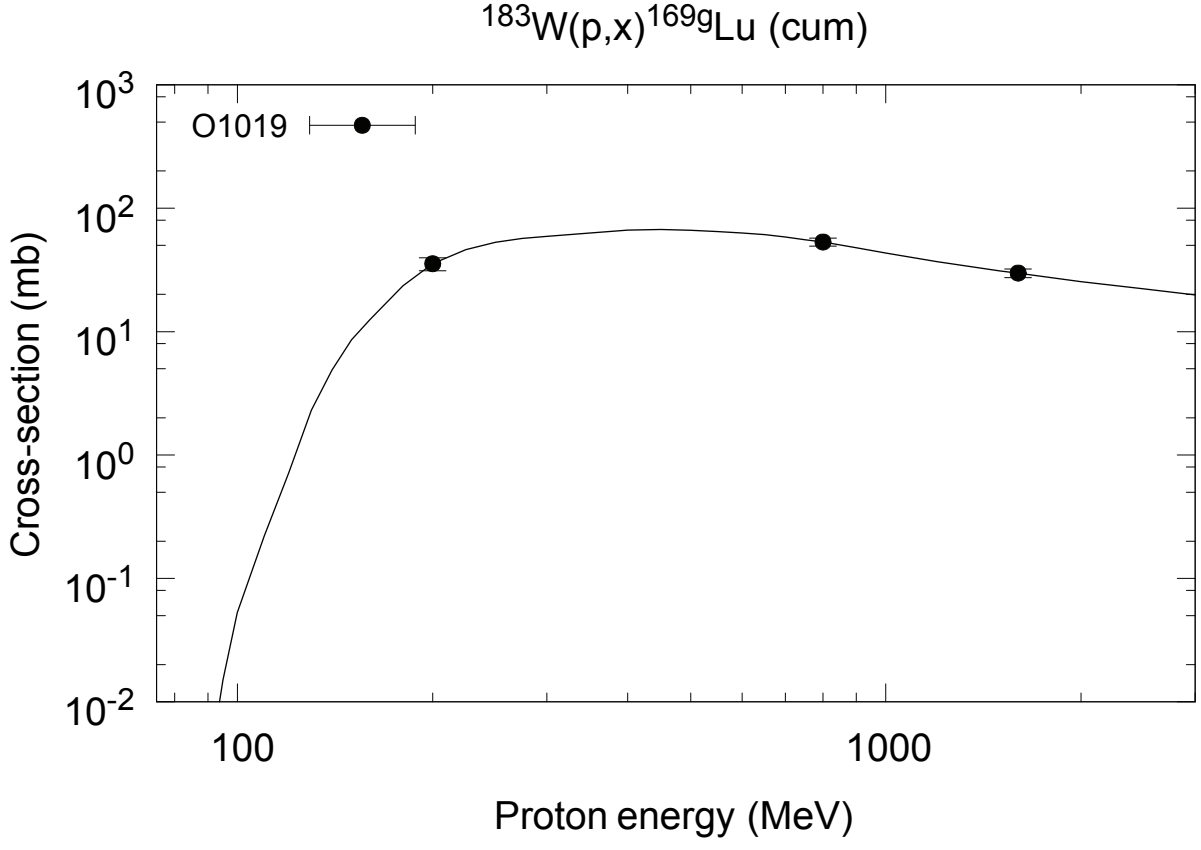

^{183}W(p,x)^{162}Yb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

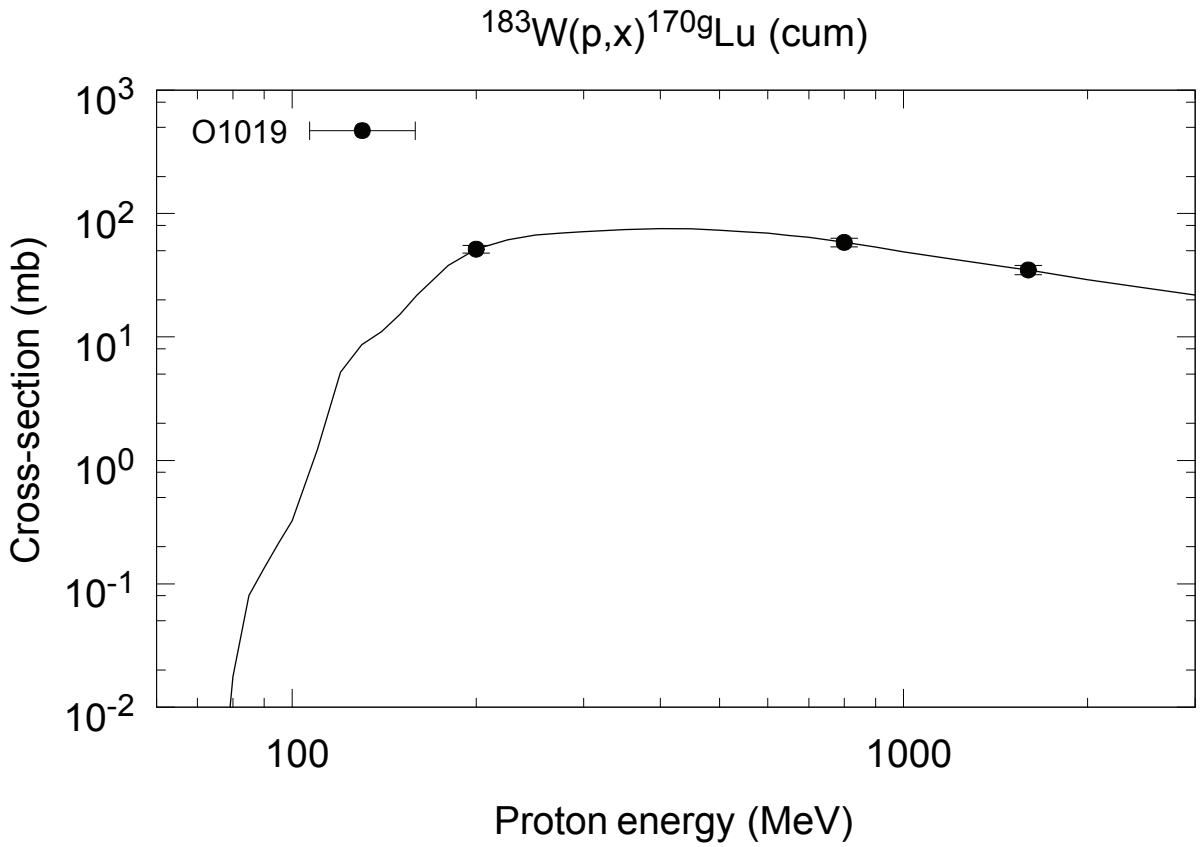

^{183}W(p,x)^{166}Yb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

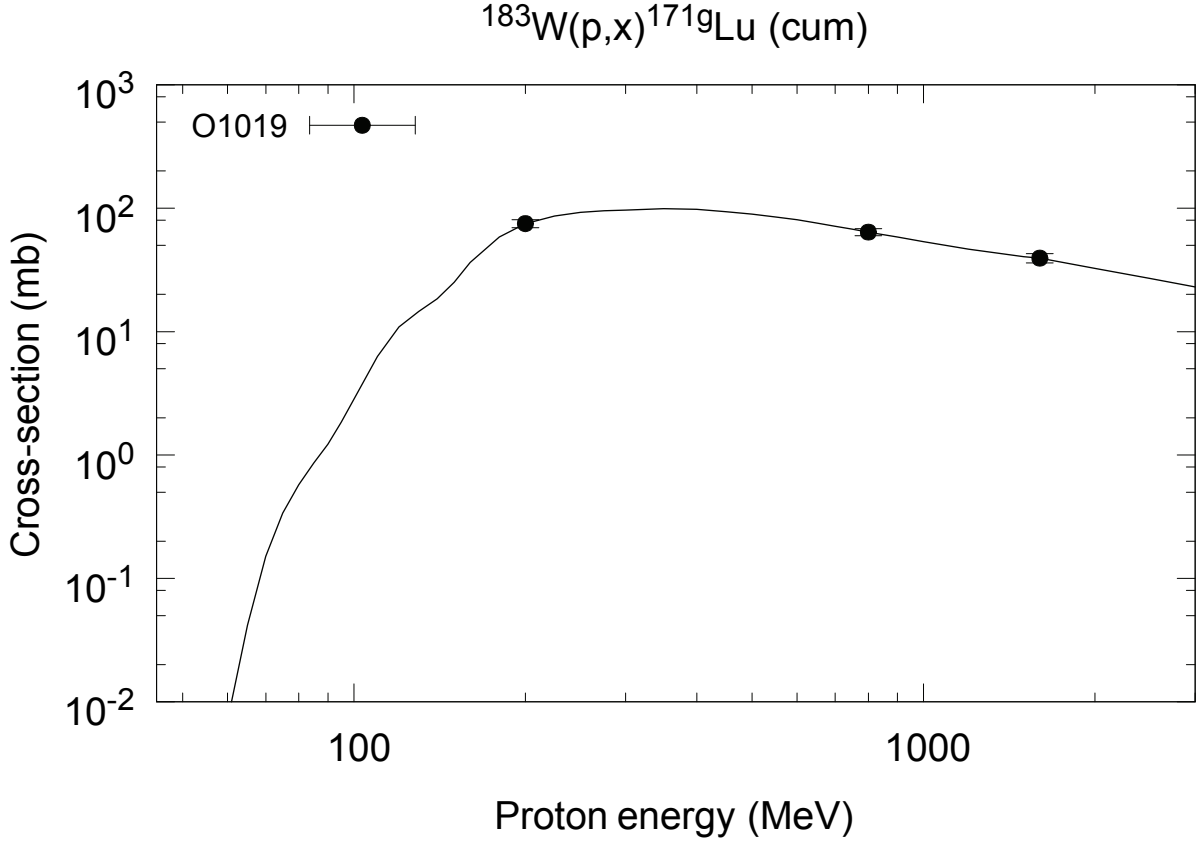

^{183}W(p,x)^{167}Yb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

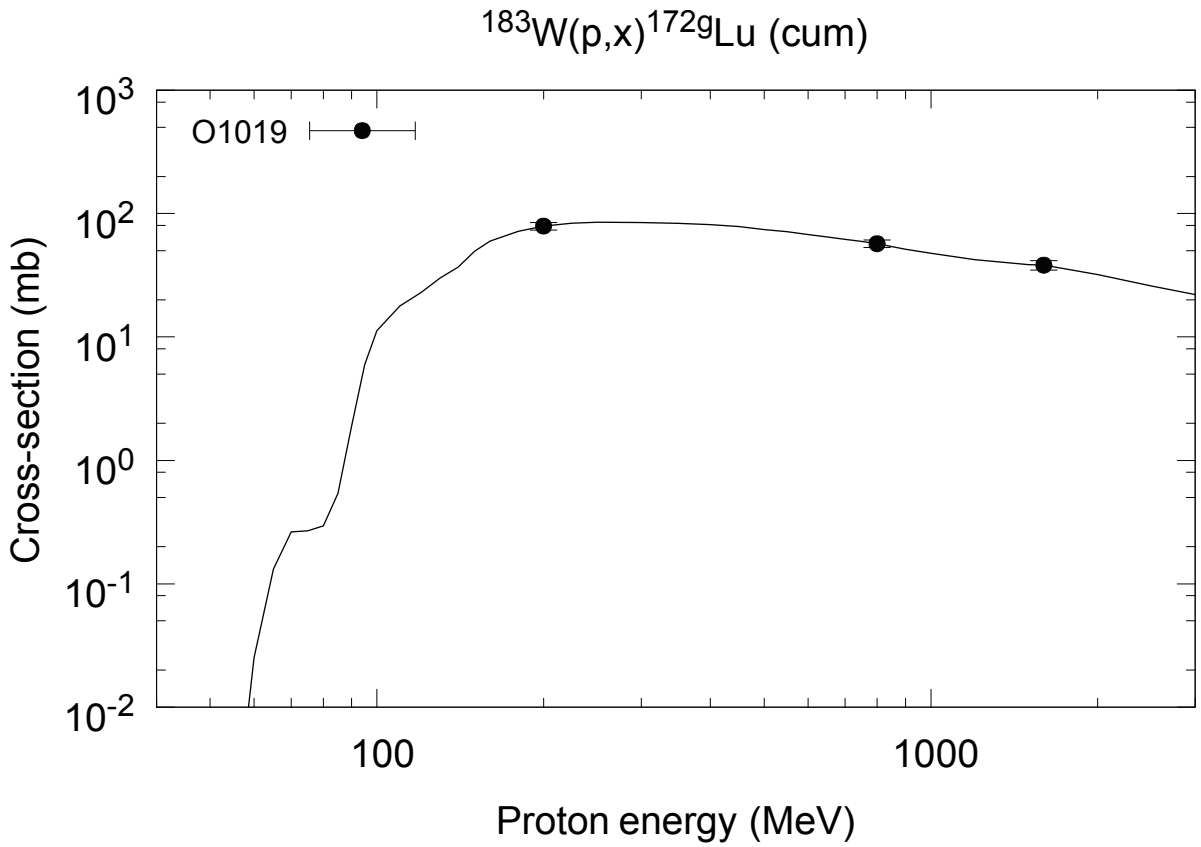

^{183}W(p,x)^{169}Yb (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

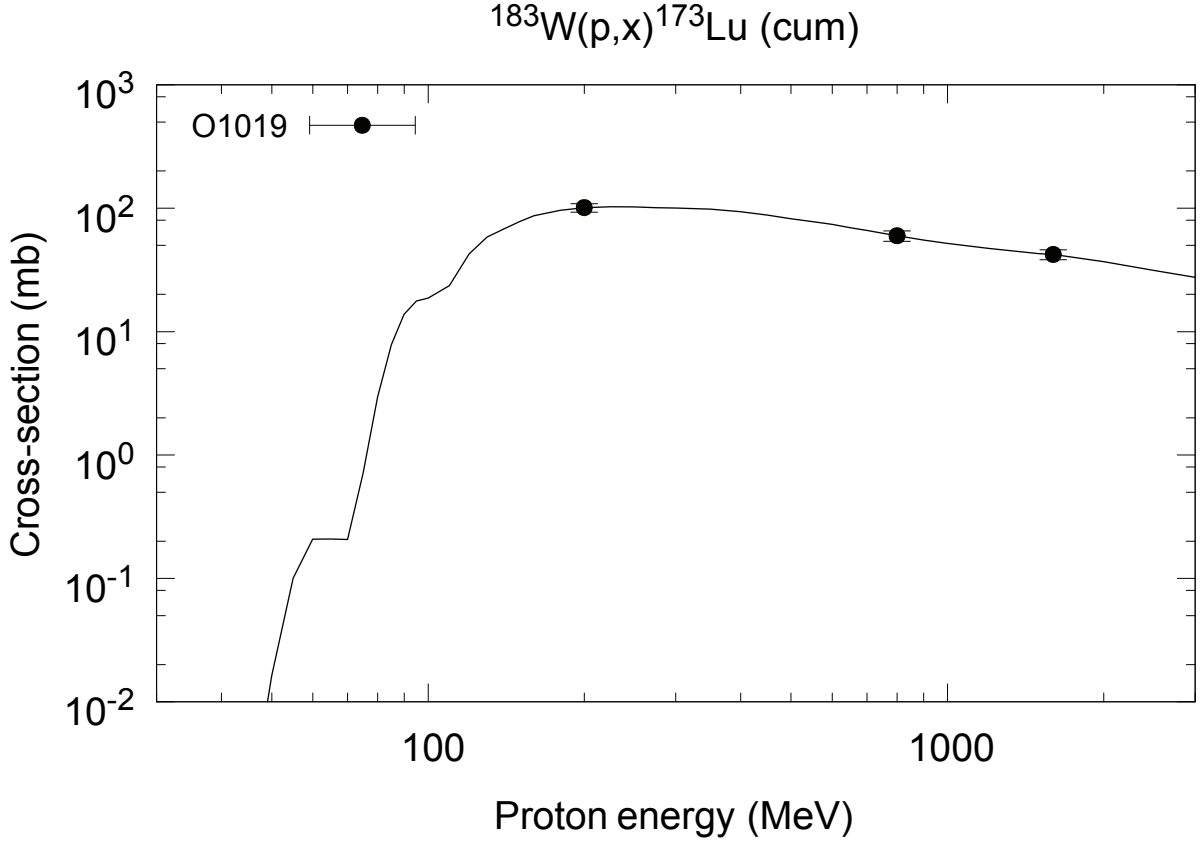

^{183}W(p,x)^{167}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

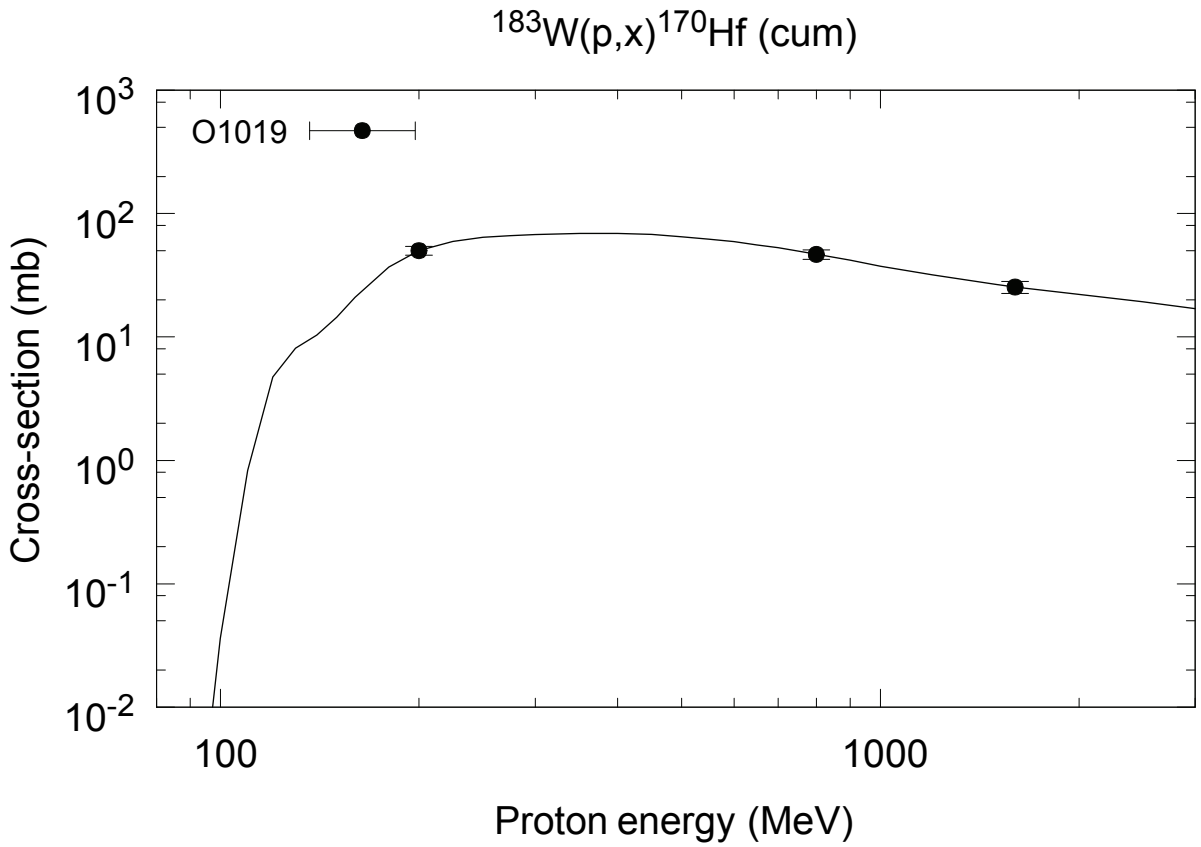

^{183}W(p,x)^{169g}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

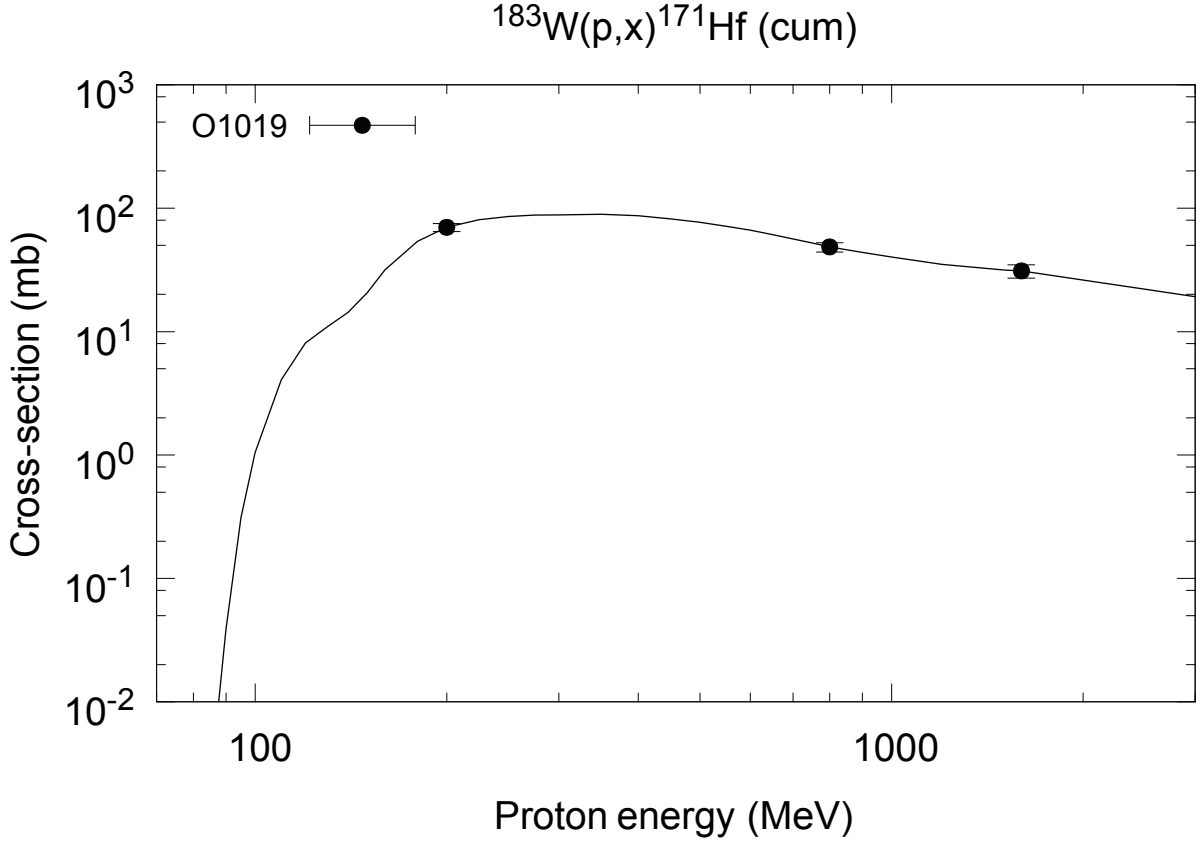

^{183}W(p,x)^{170g}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

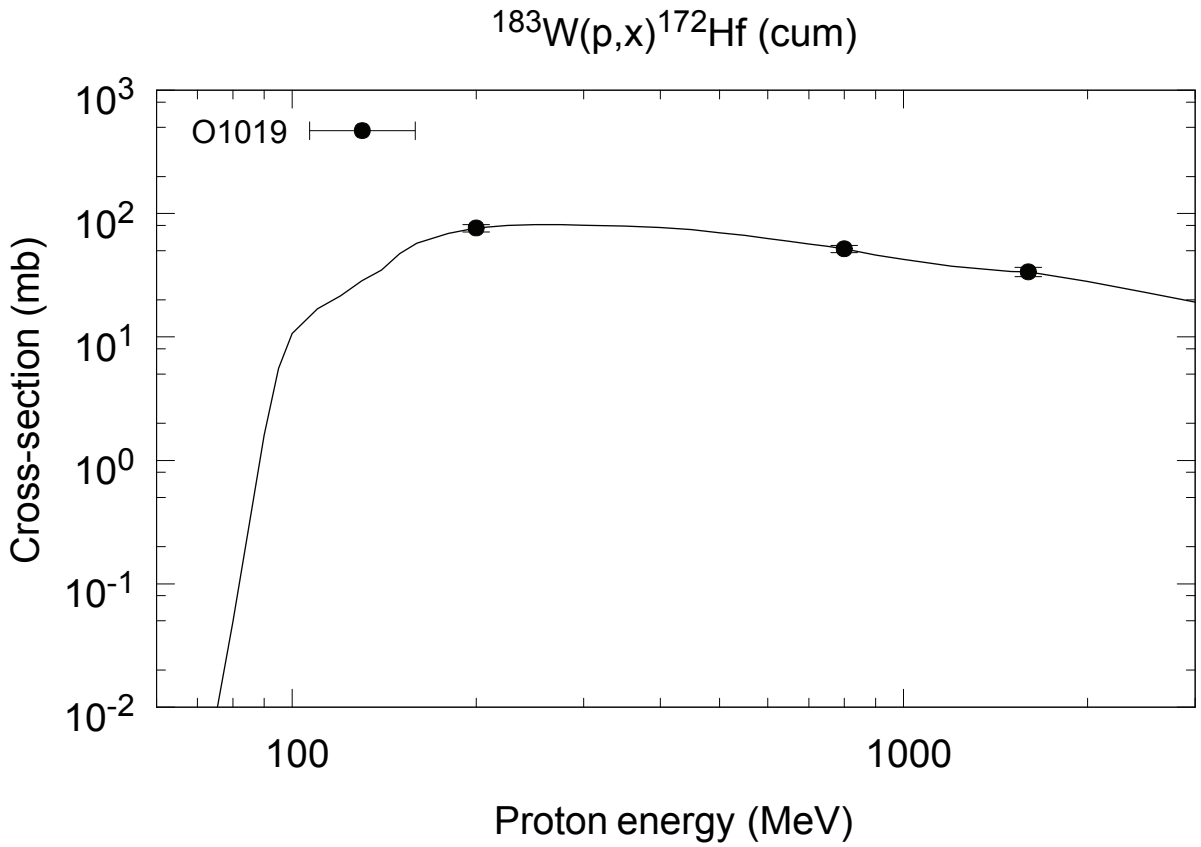

^{183}W(p,x)^{171g}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

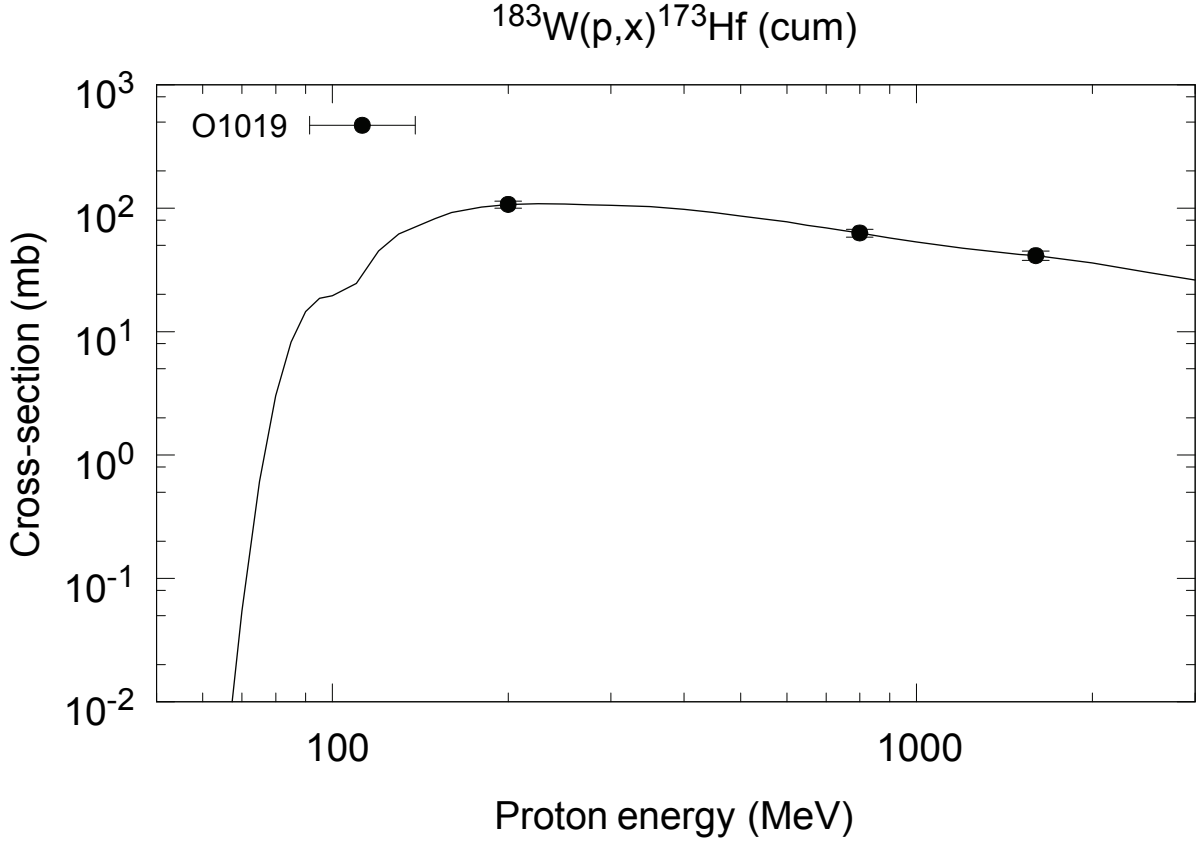

^{183}W(p,x)^{172g}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

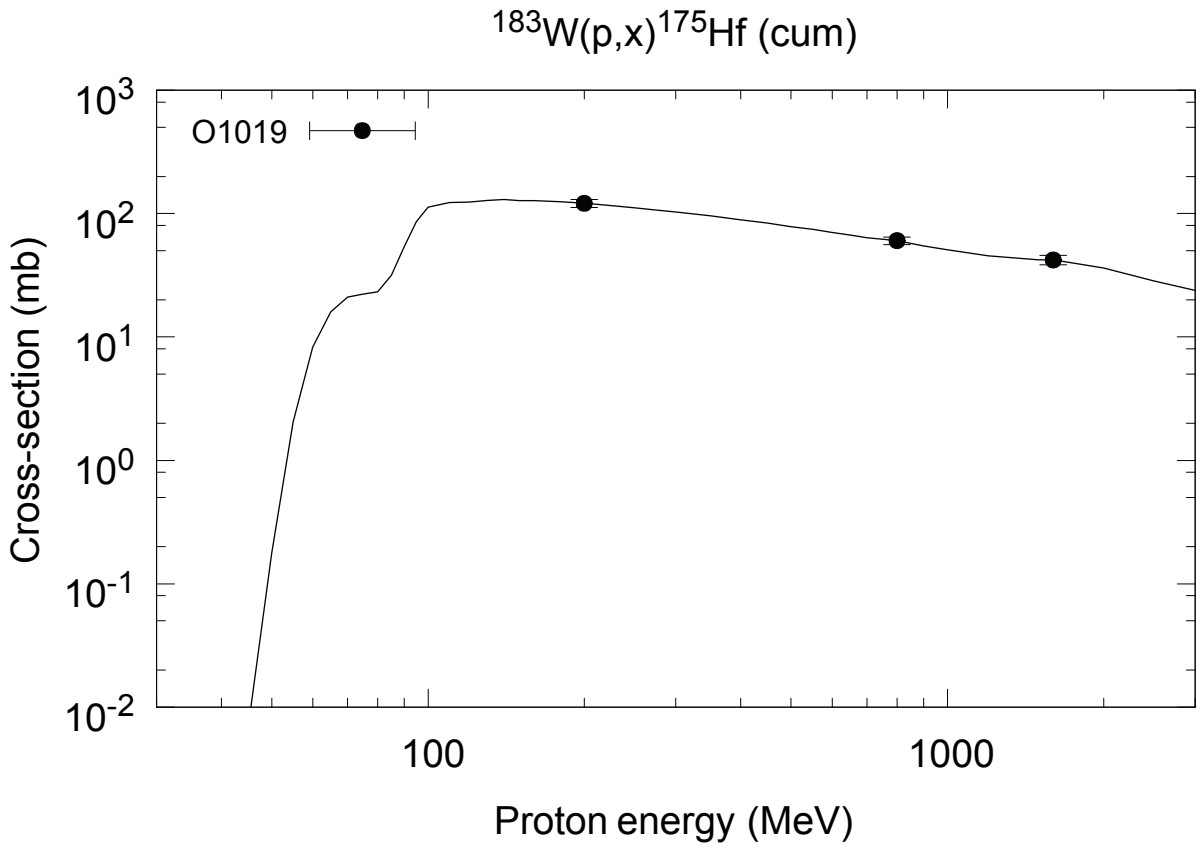

^{183}W(p,x)^{173}Lu (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

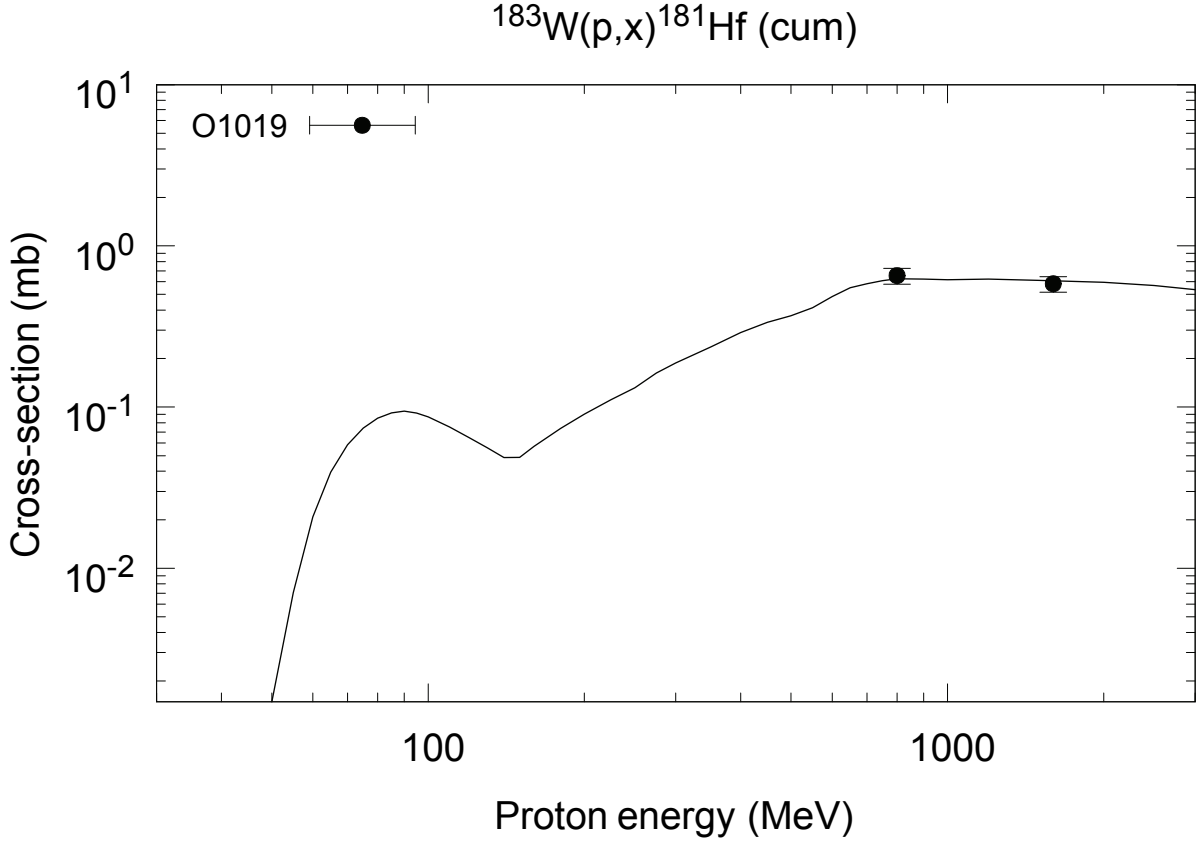

^{183}W(p,x)^{170}Hf (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

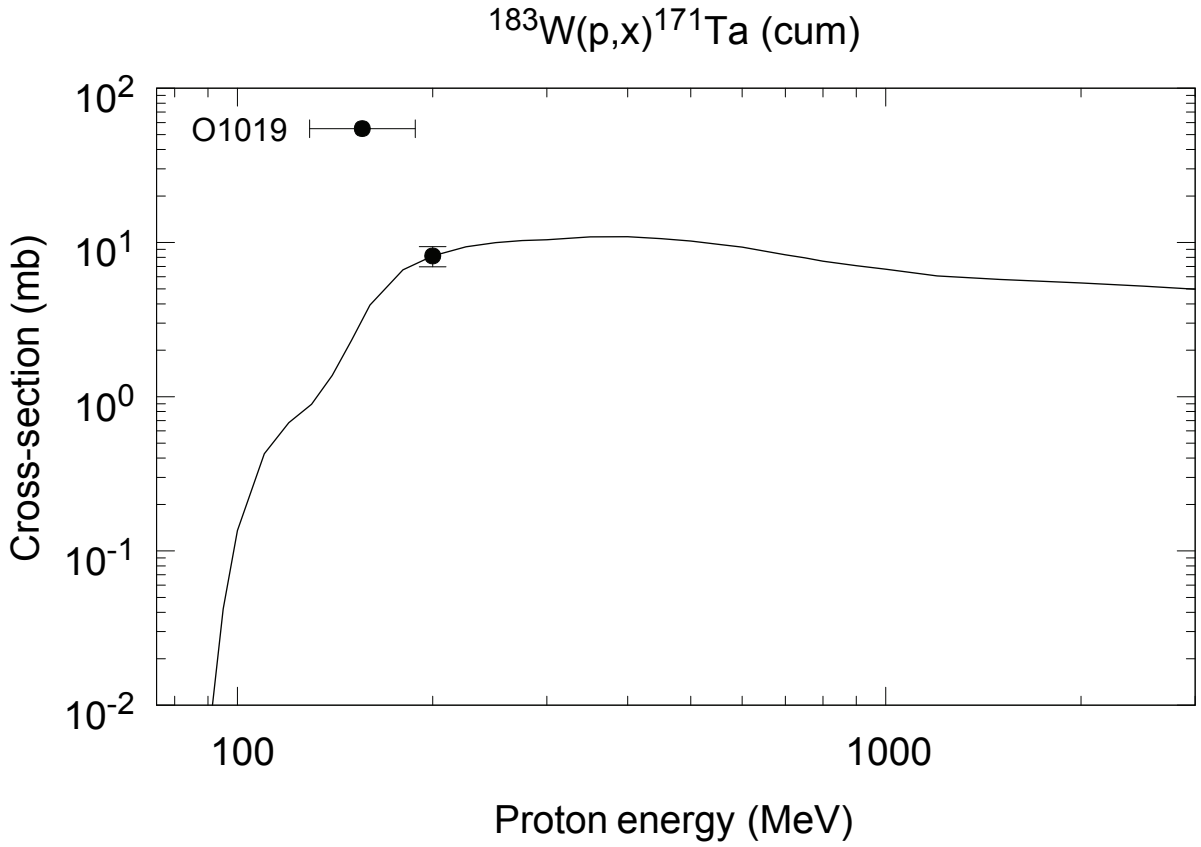

^{183}W(p,x)^{171}Hf (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

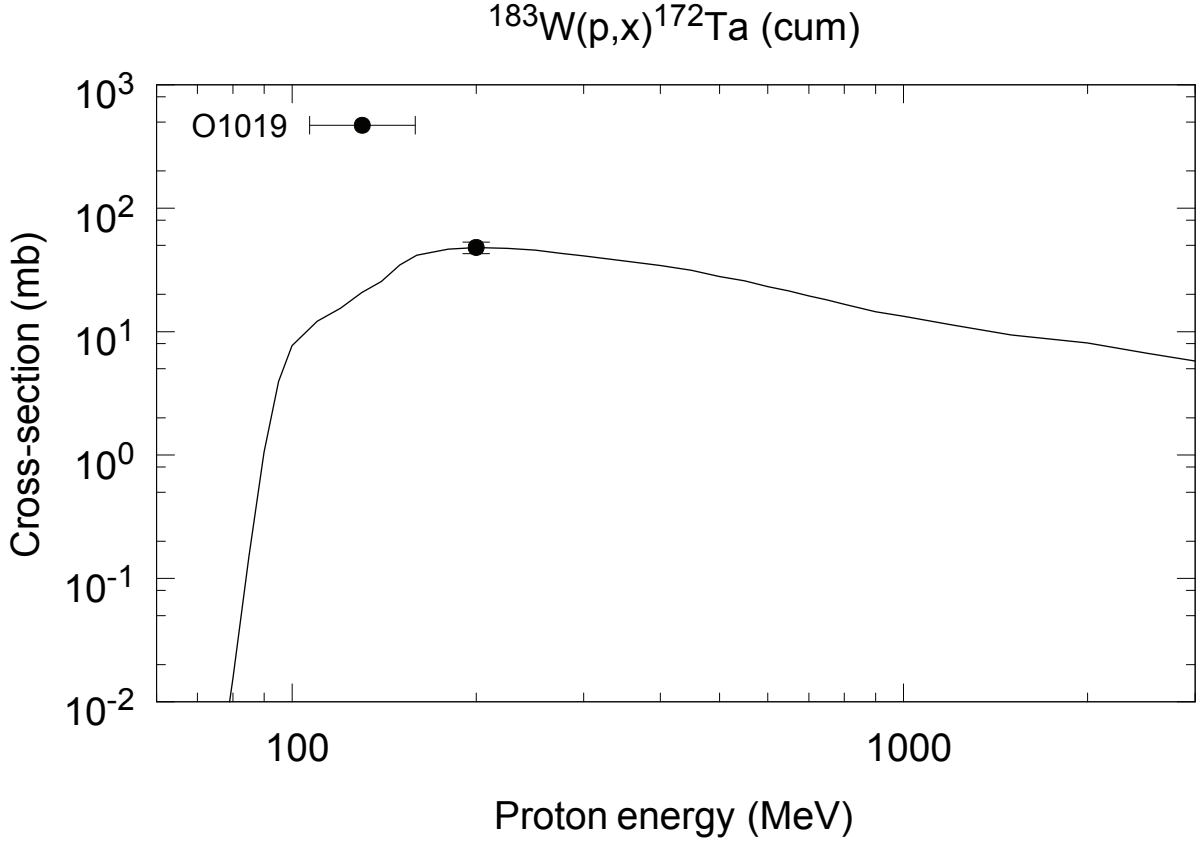

^{183}W(p,x)^{172}Hf (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

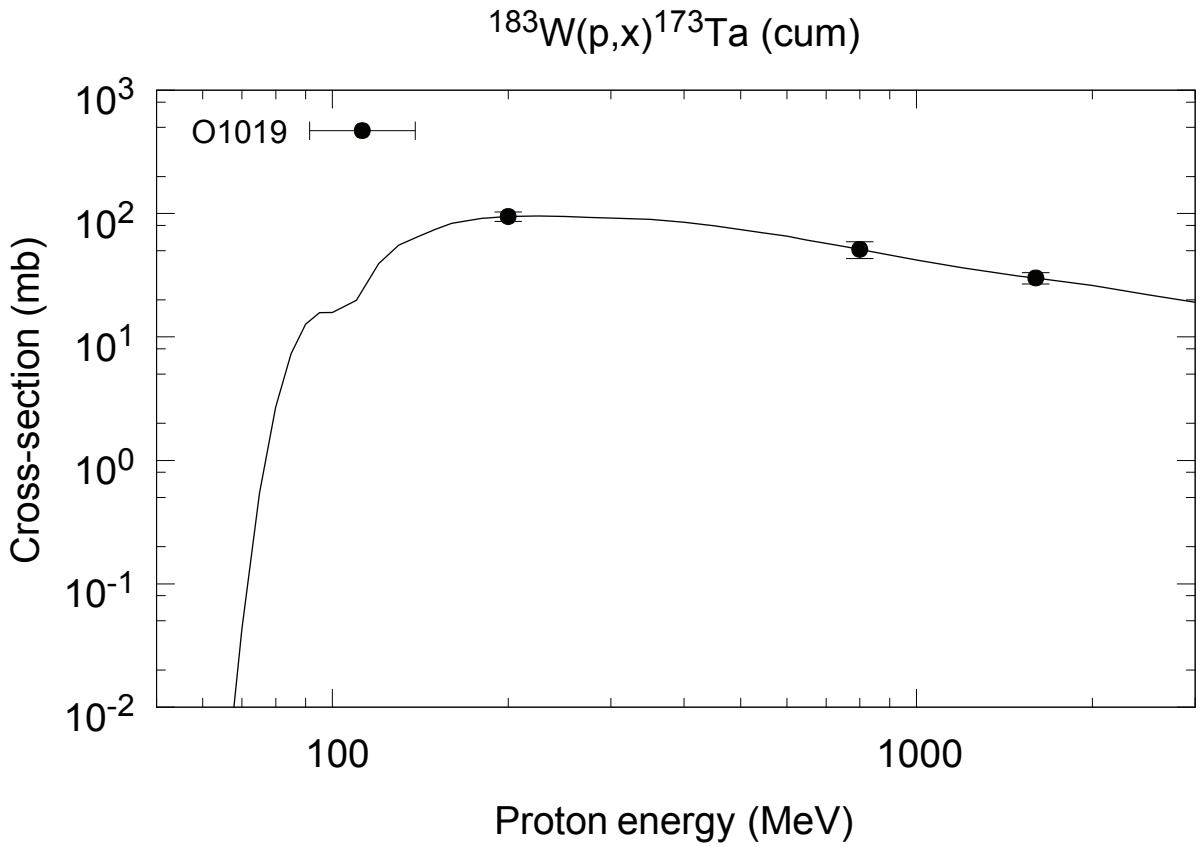

^{183}W(p,x)^{173}Hf (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

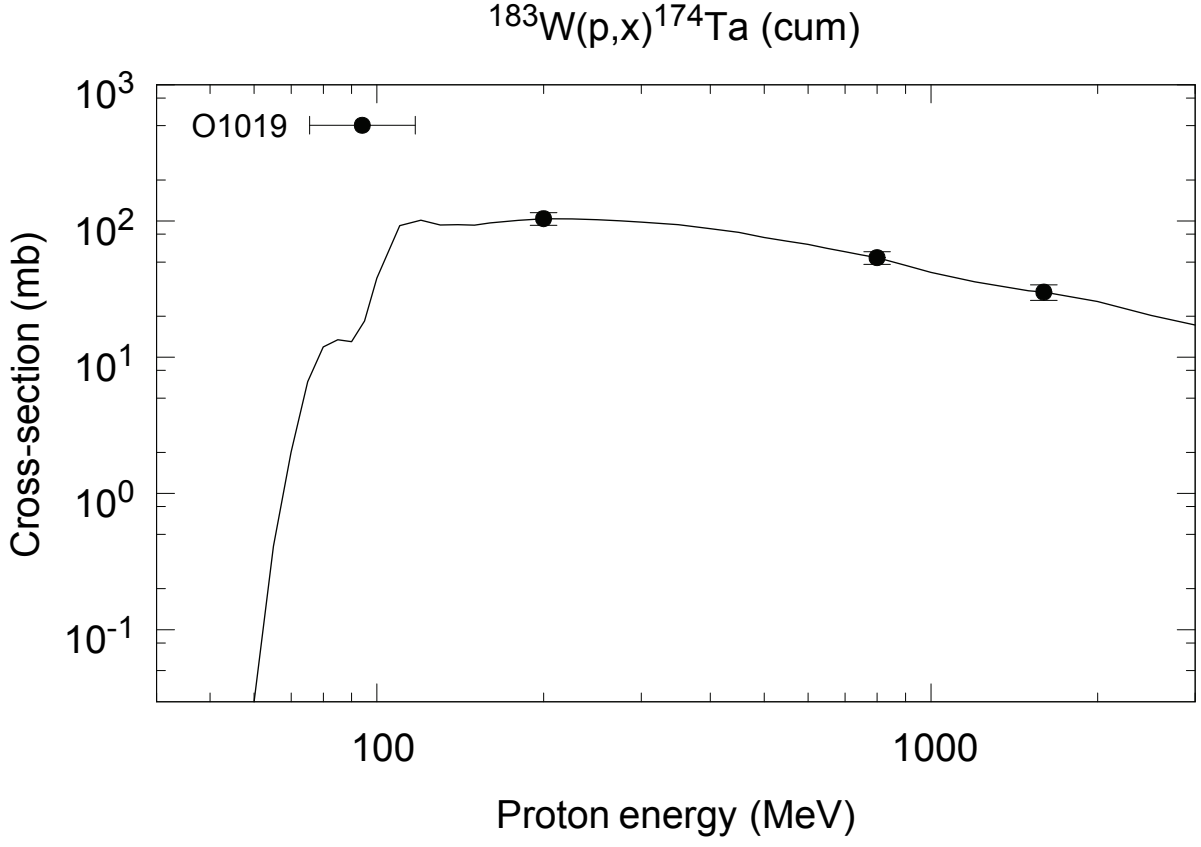

^{183}W(p,x)^{175}Hf (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

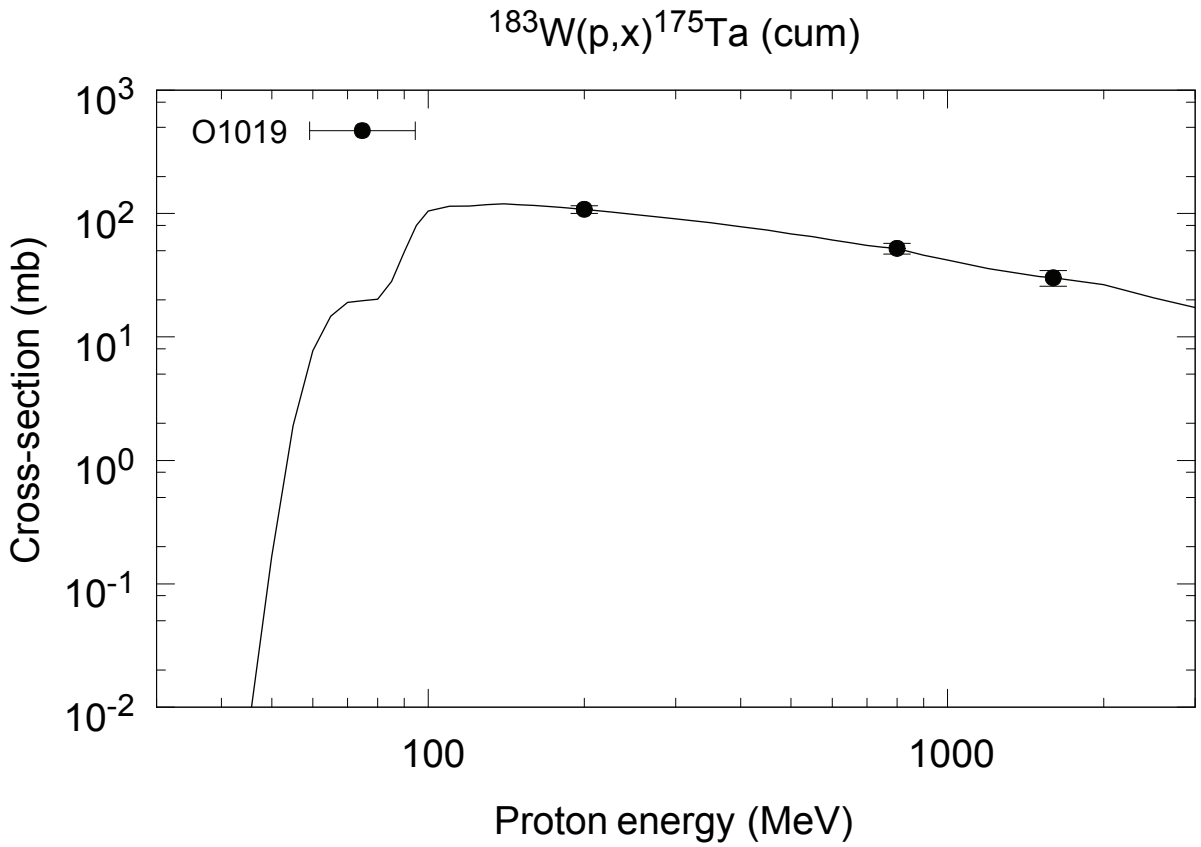

^{183}W(p,x)^{181}Hf (cum)
O1019
Cross-section (mb)
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

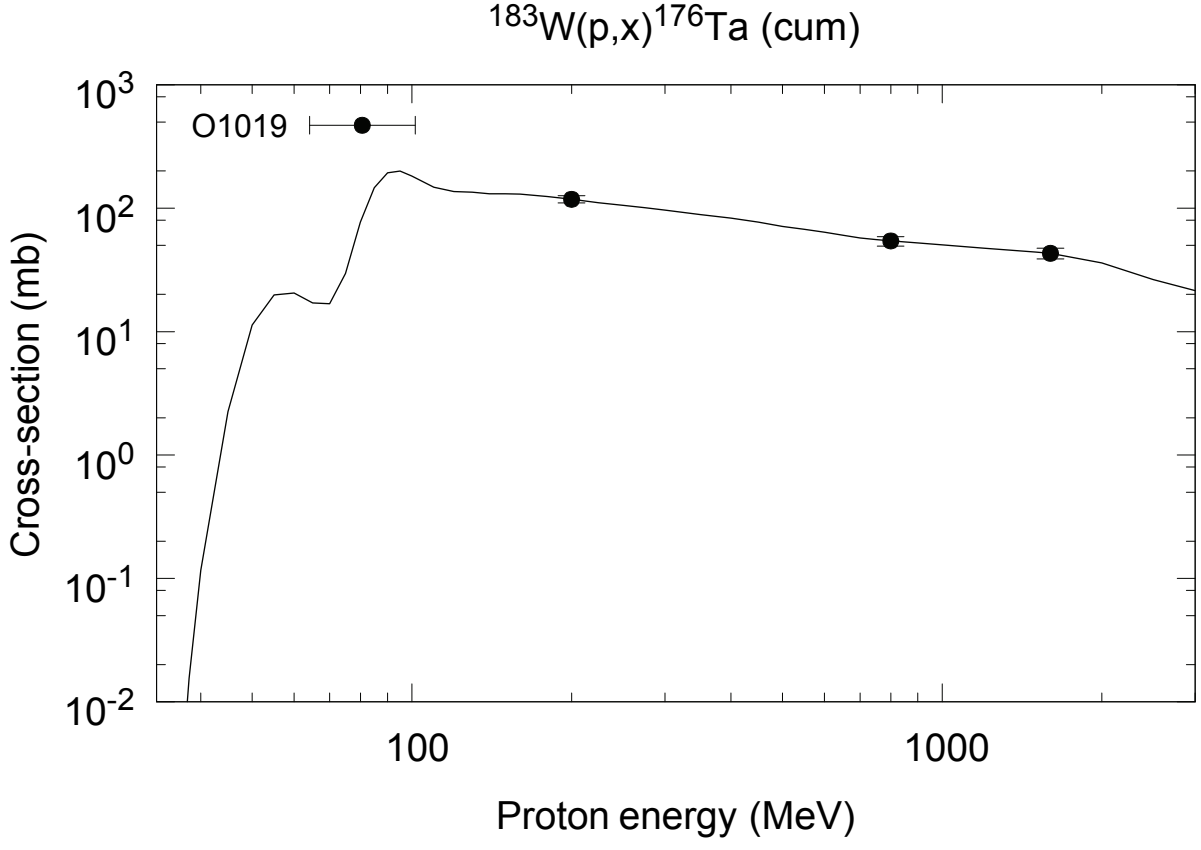

183W(p,x)171Ta (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

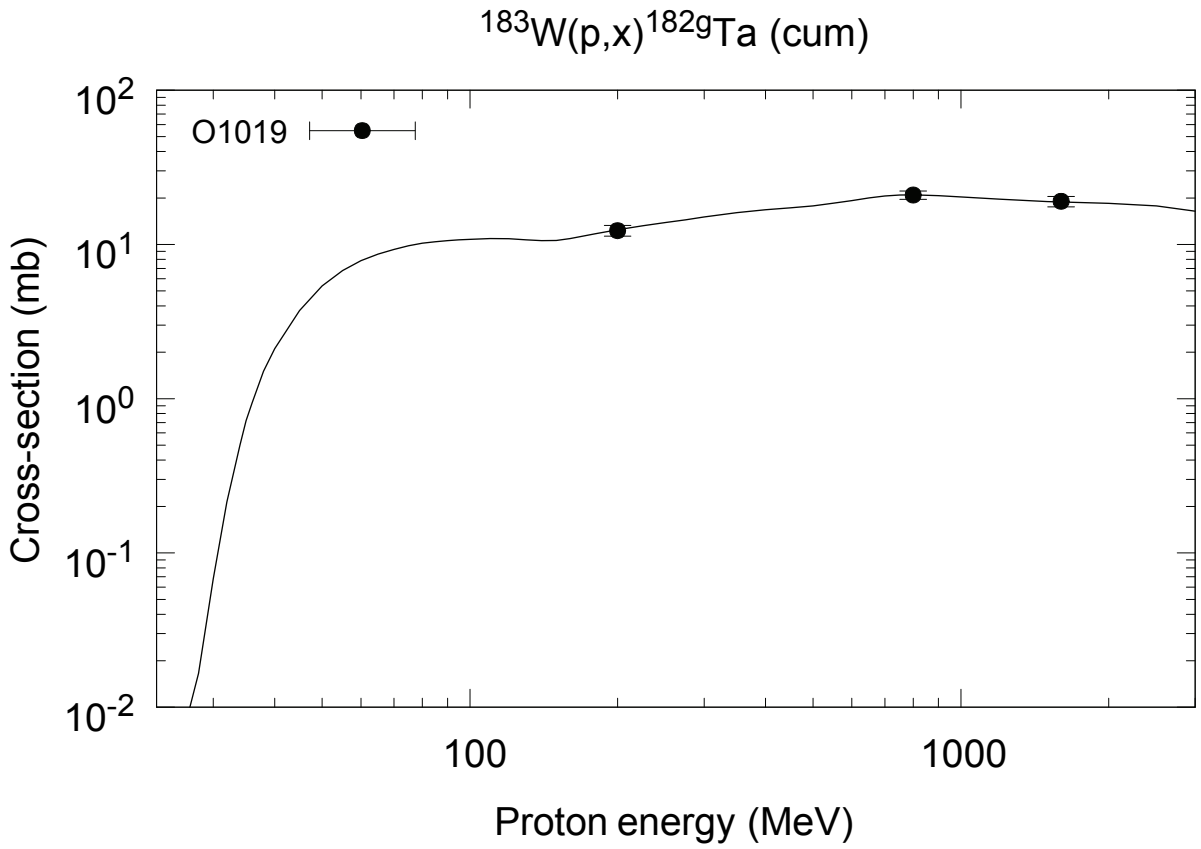

183W(p,x)172Ta (cum)
O1019
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

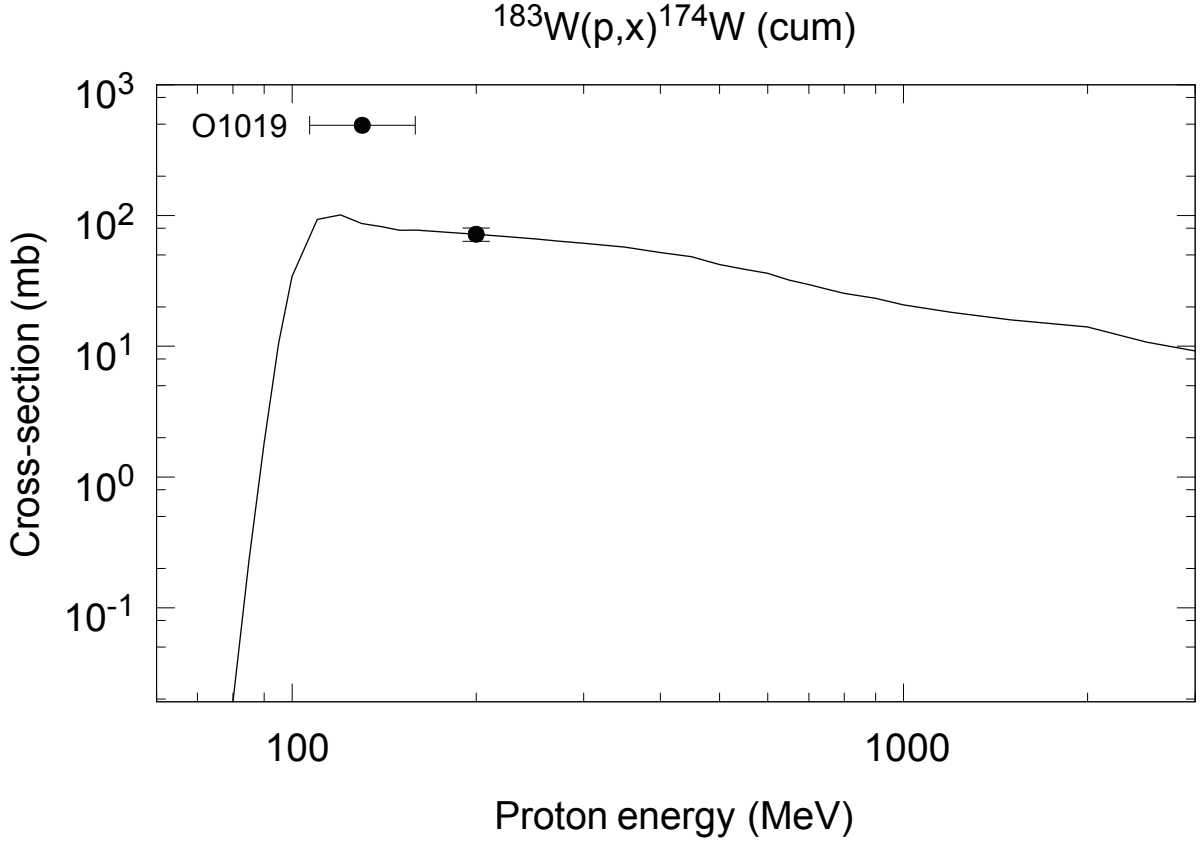

^{183}W(p,x)^{173}Ta (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

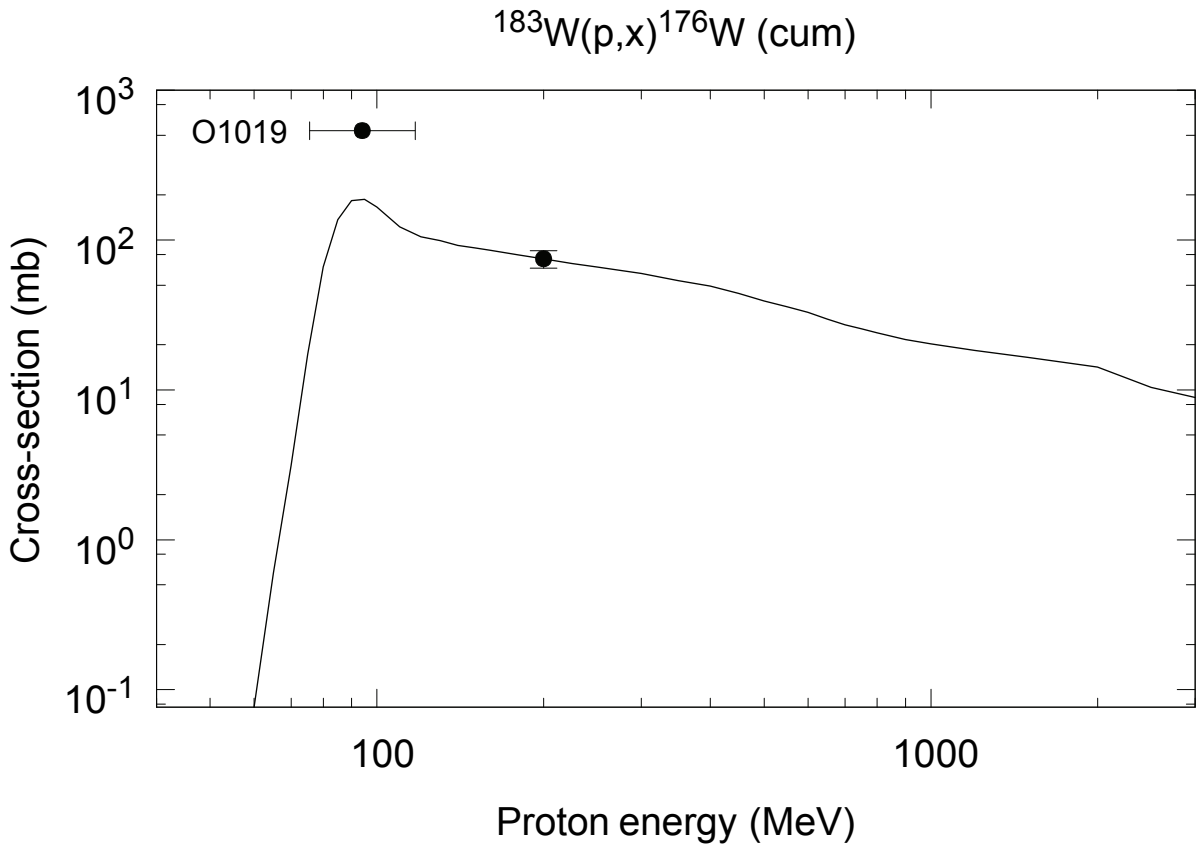

^{183}W(p,x)^{174}Ta (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

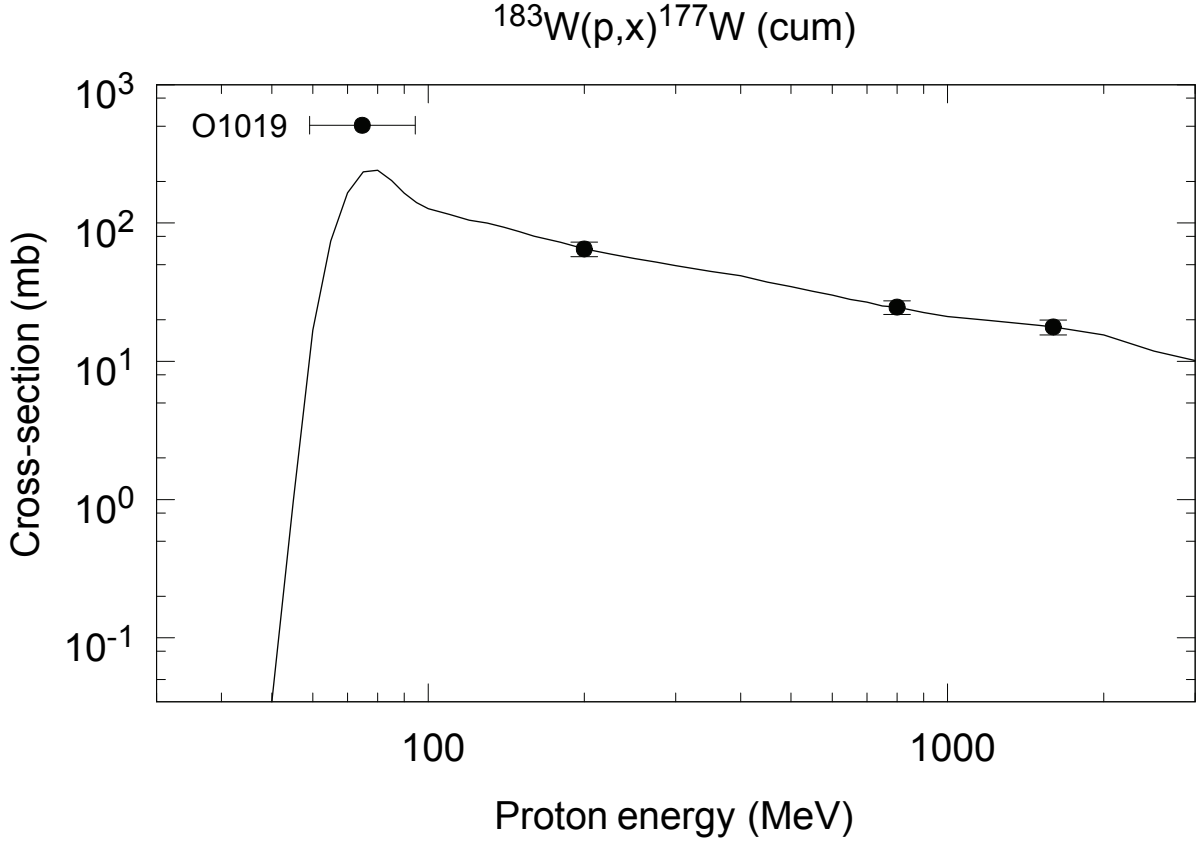

^{183}W(p,x)^{175}Ta (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

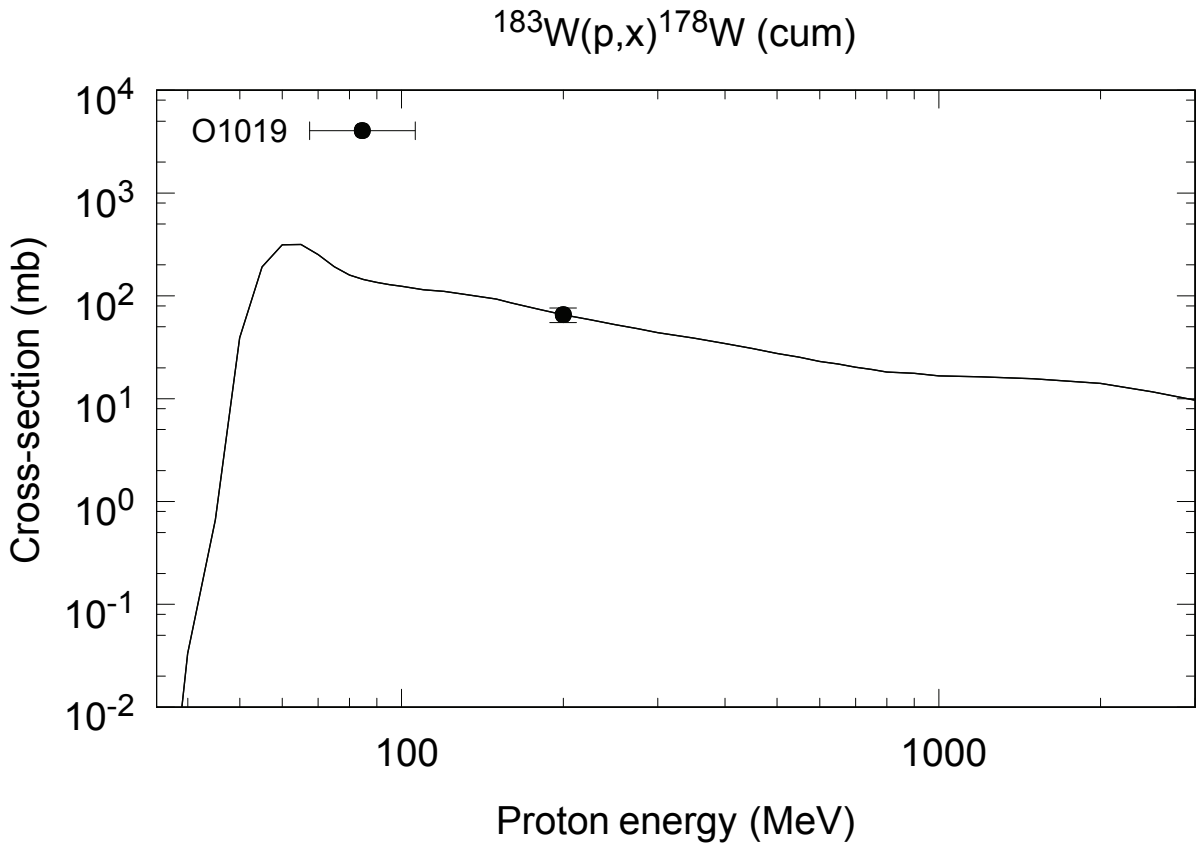

^{183}W(p,x)^{176}Ta (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

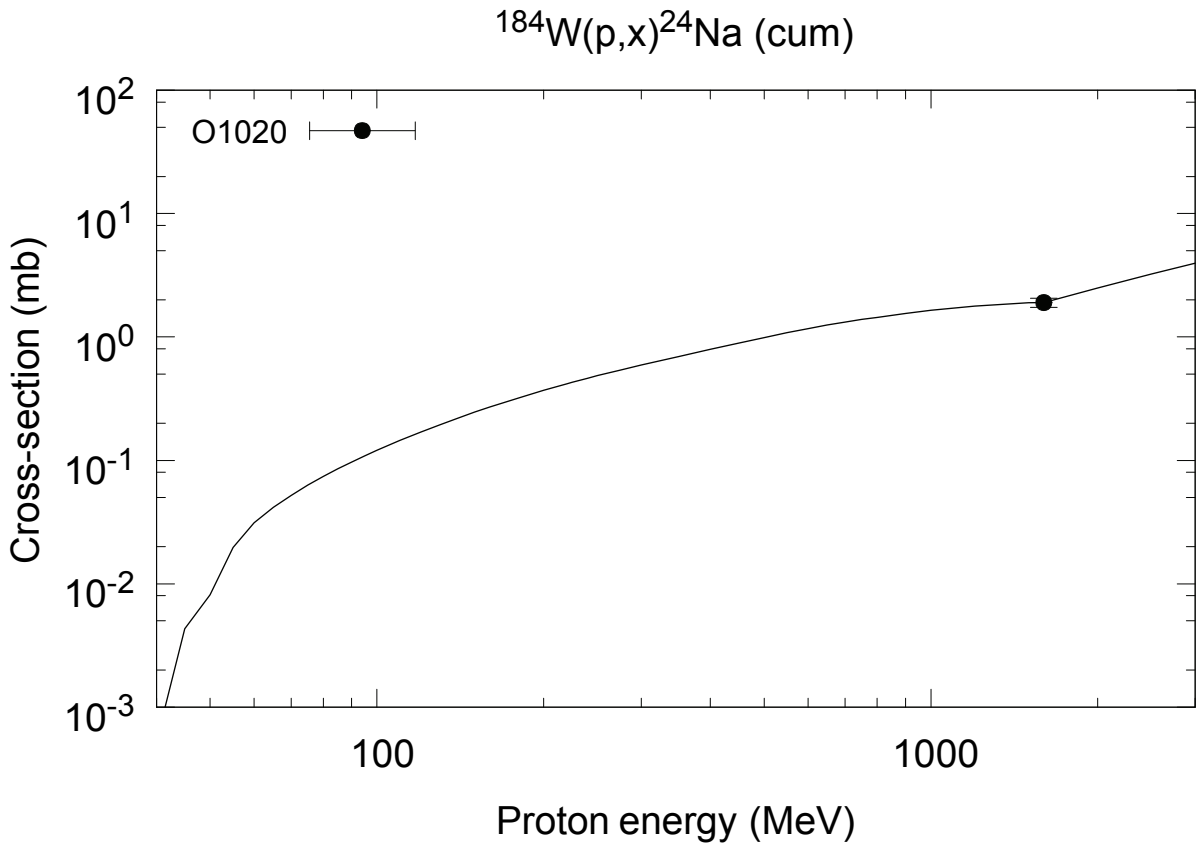

^{183}W(p,x)^{182g}Ta (cum)
O1019
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

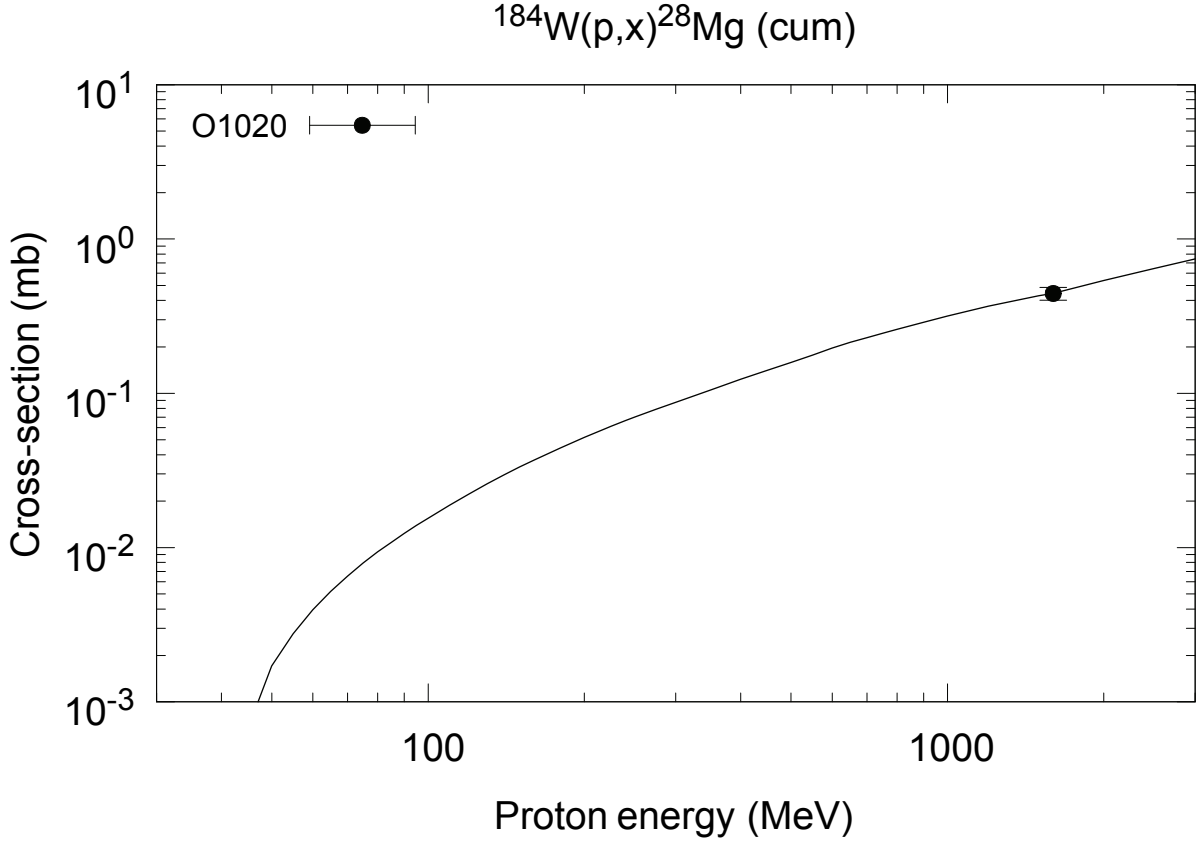

^{183}W(p,x)^{174}W (cum)
O1019
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
100
1000
Proton energy (MeV)

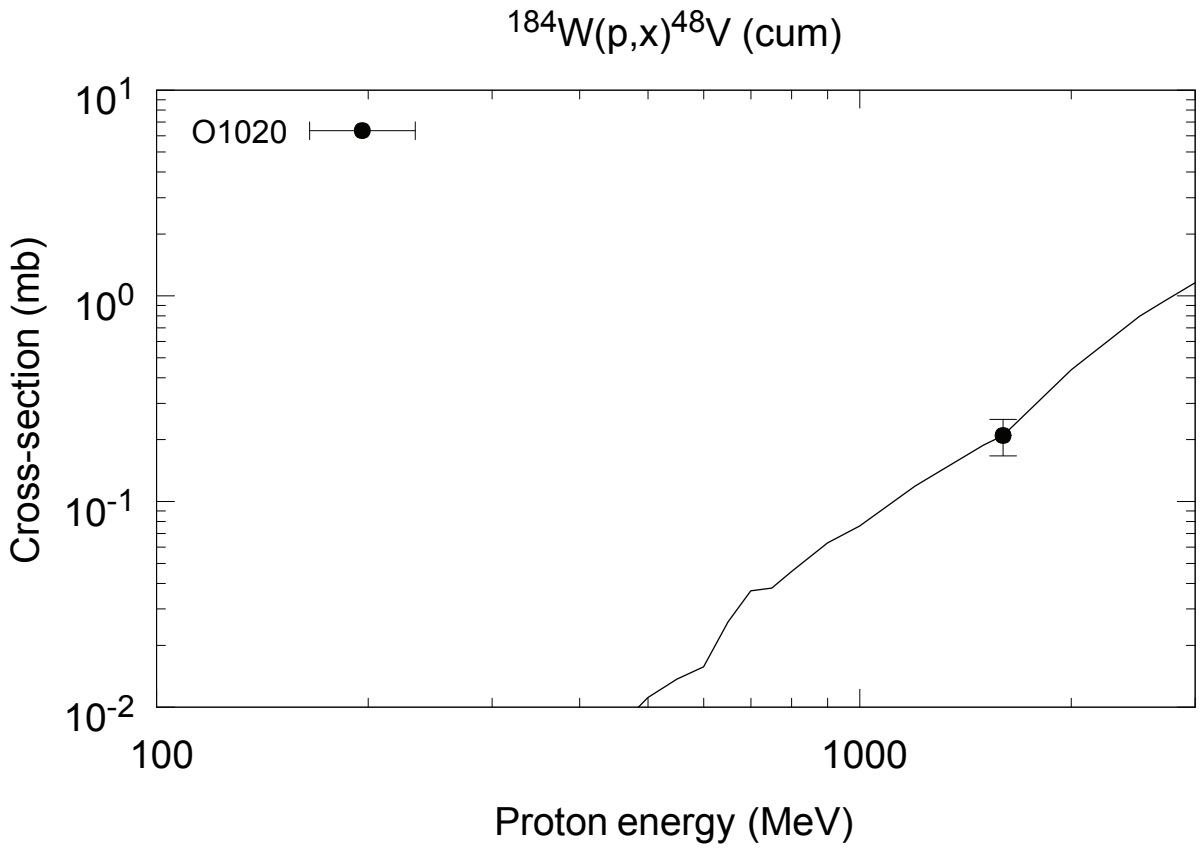

^{183}W(p,x)^{176}W (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

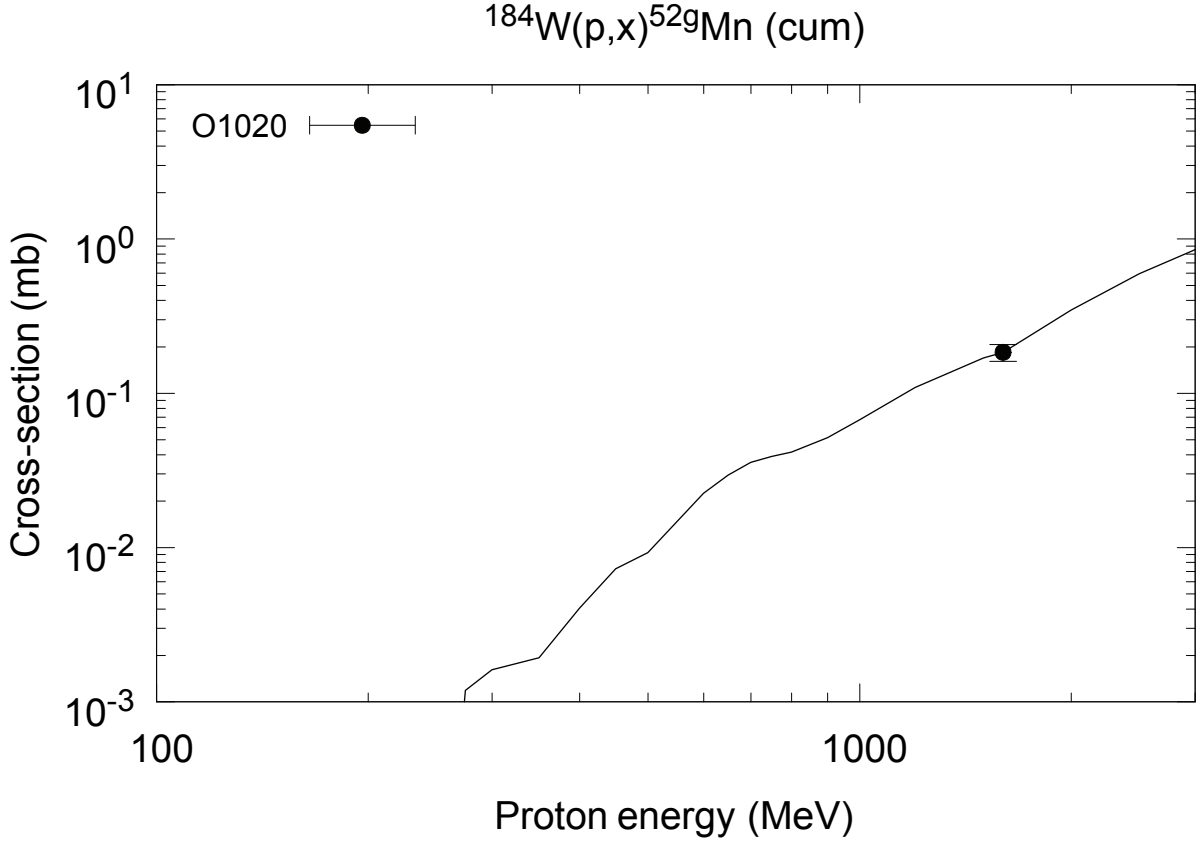

^{183}W(p,x)^{177}W (cum)
O1019
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

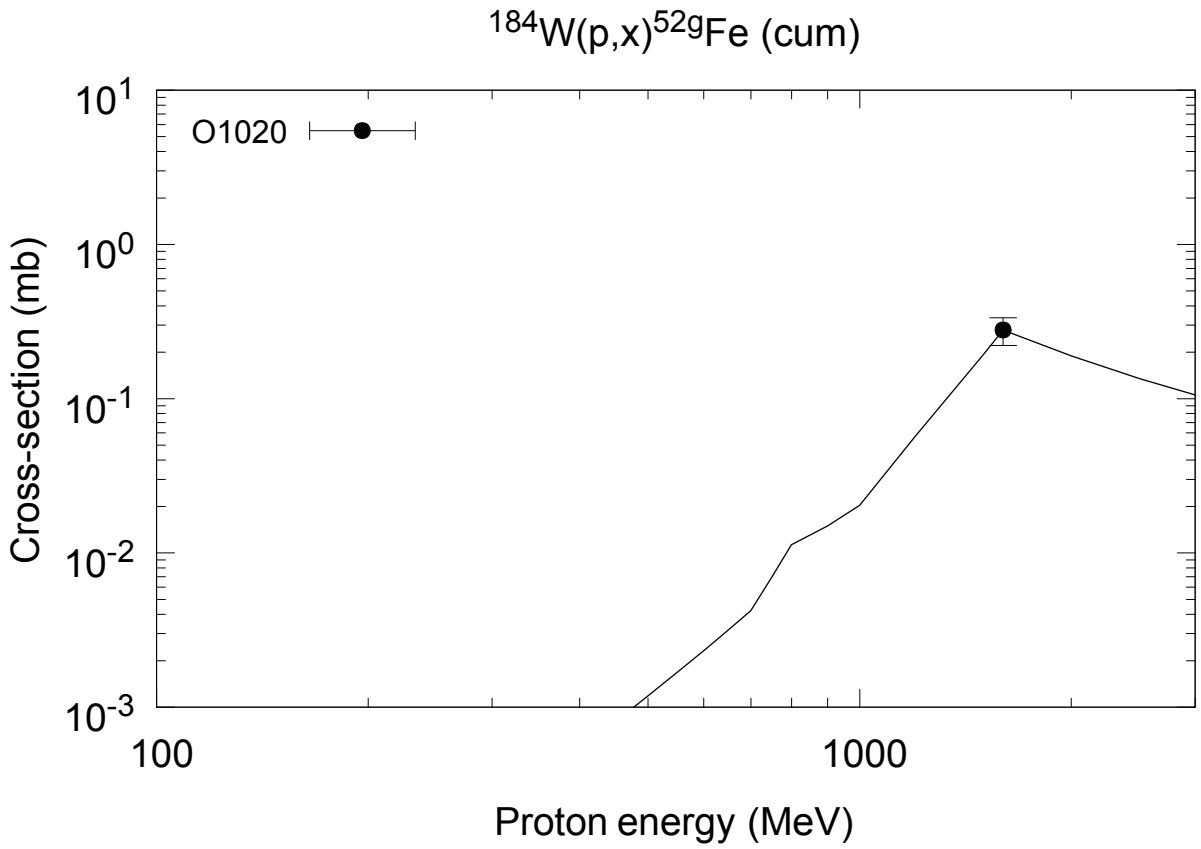

183W(p,x)178W (cum)
O1019
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

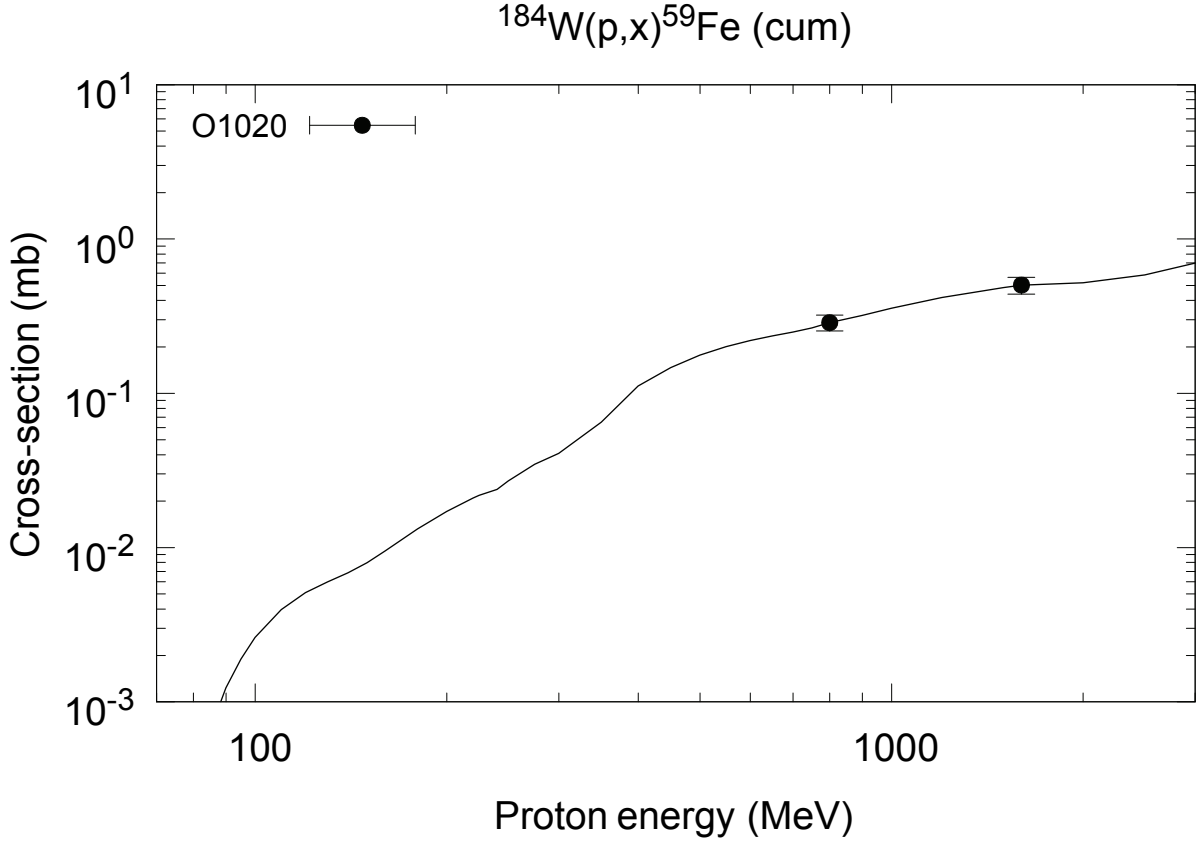

^{184}W(p,x)^{24}Na (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

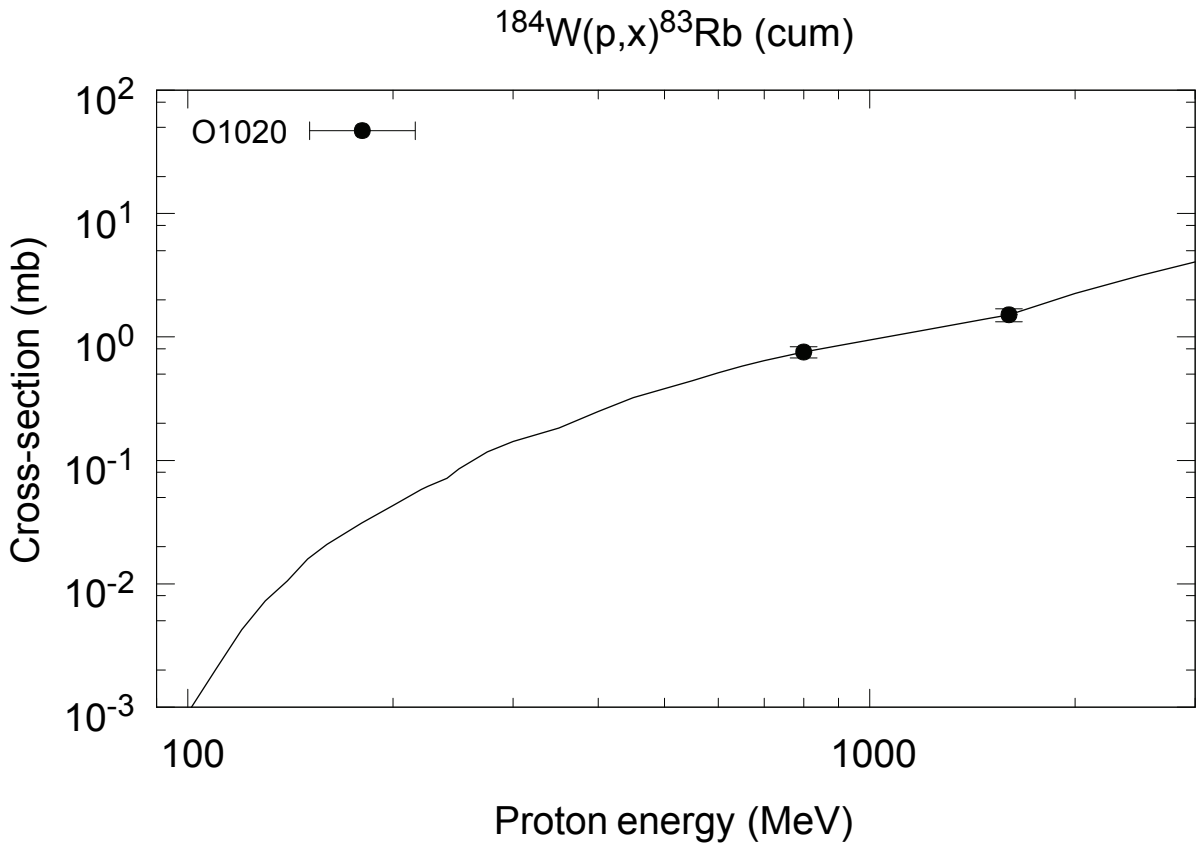

^{184}W(p,x)^{28}Mg (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

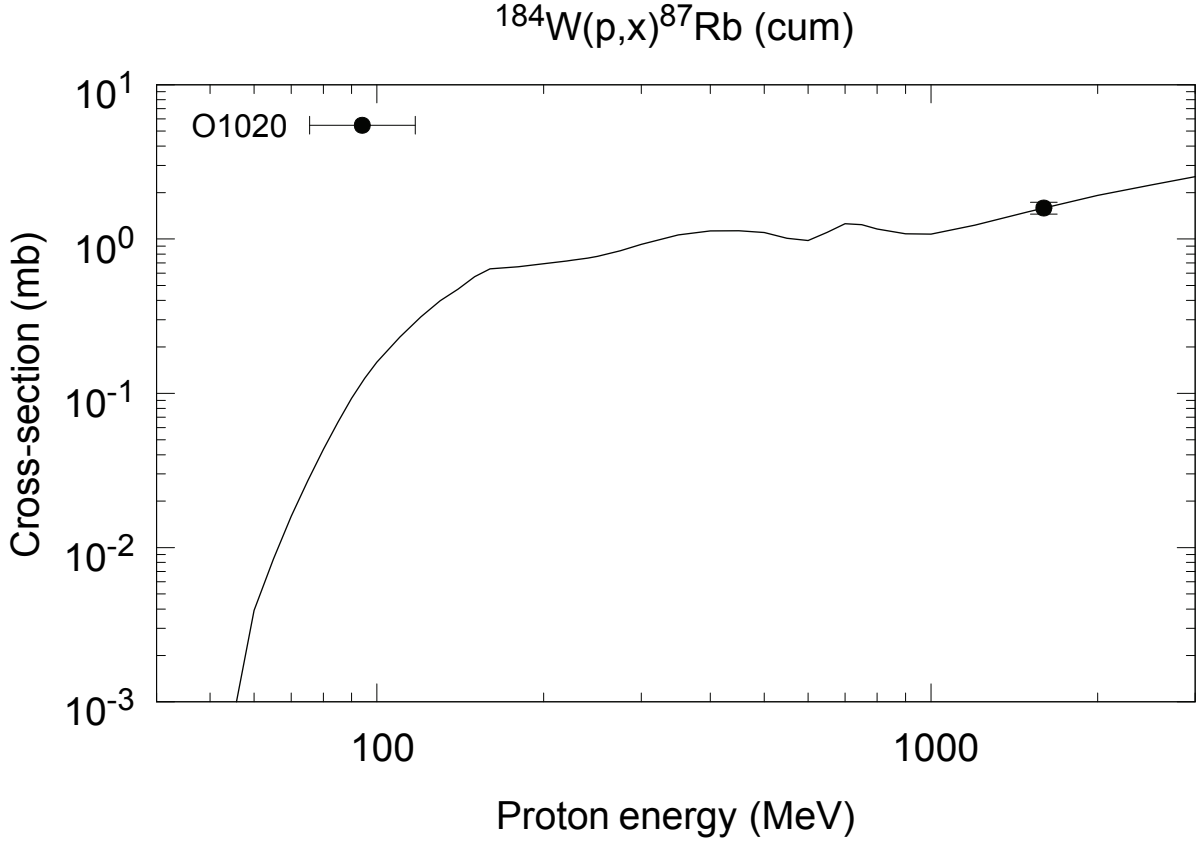

^{184}W(p,x)^{48}V (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

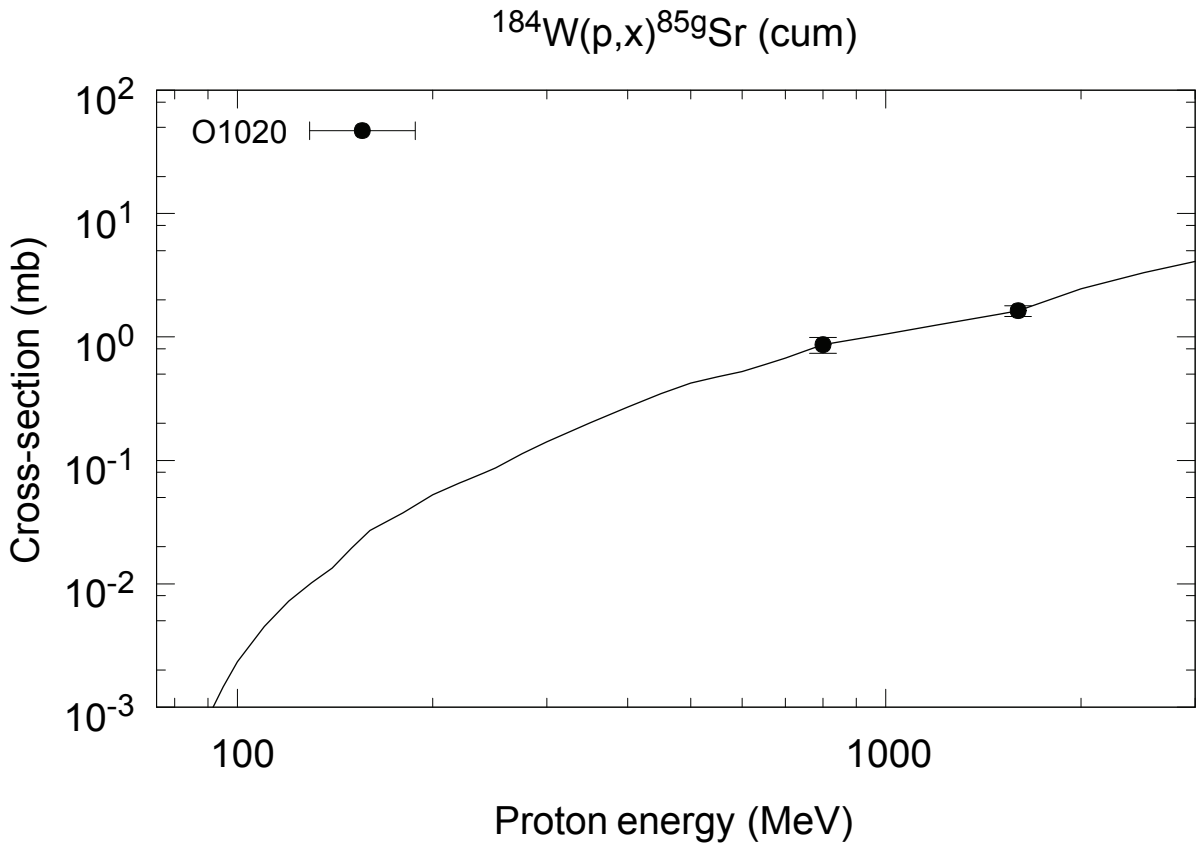

^{184}W(p,x)^{52g}Mn (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

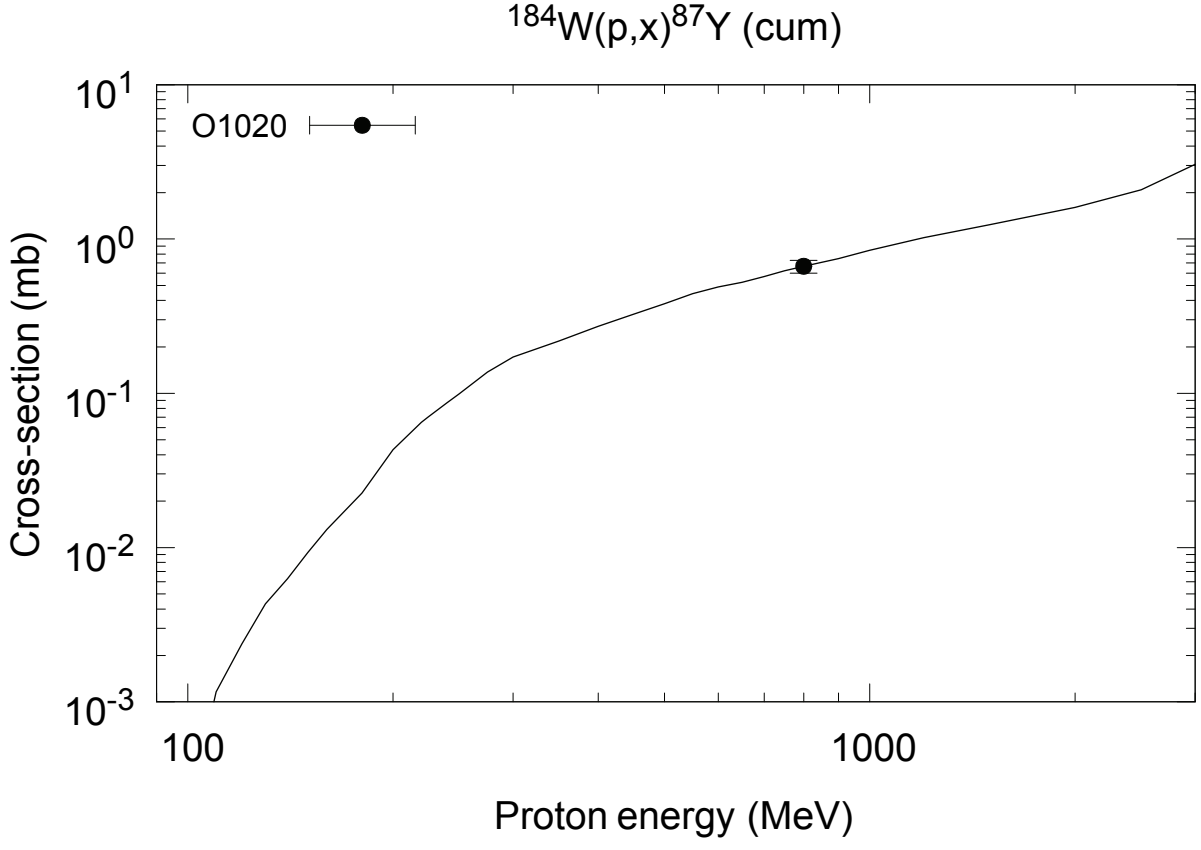

^{184}W(p,x)^{52g}Fe (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

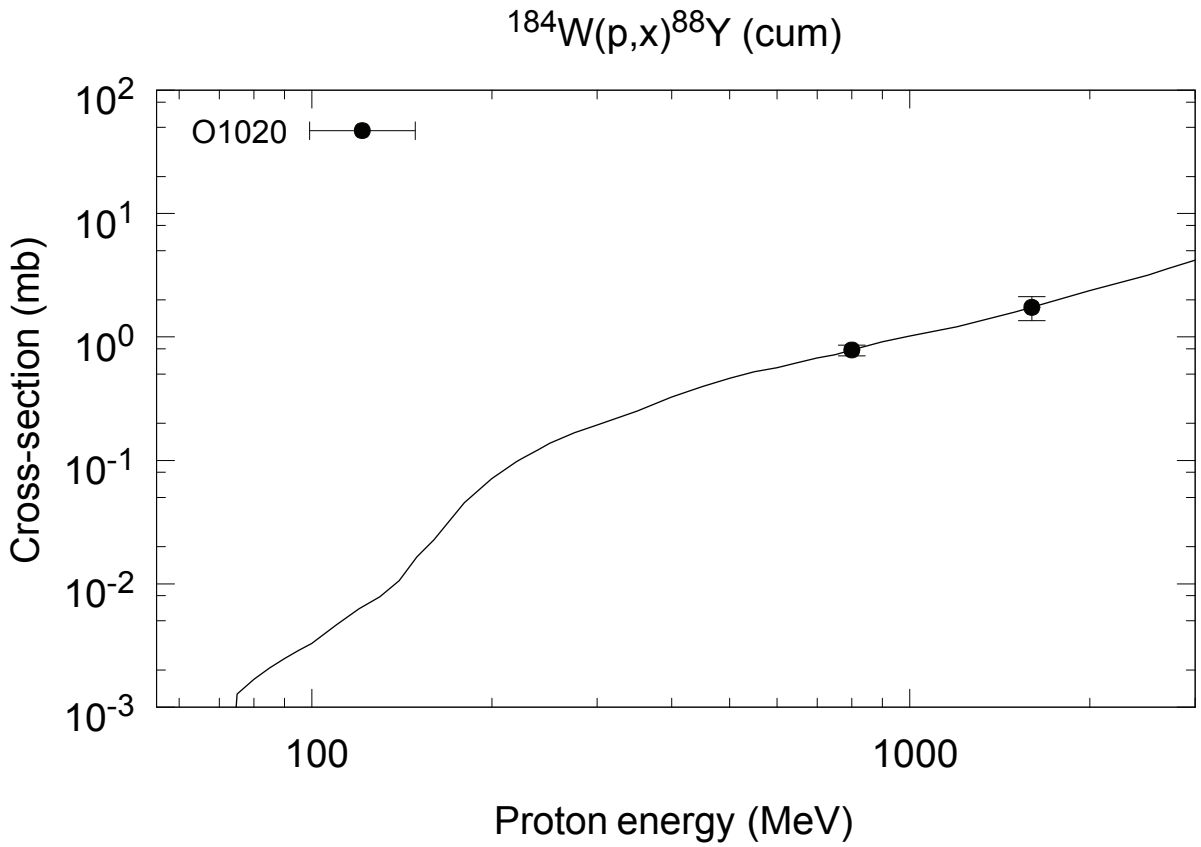

^{184}W(p,x)^{59}Fe (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

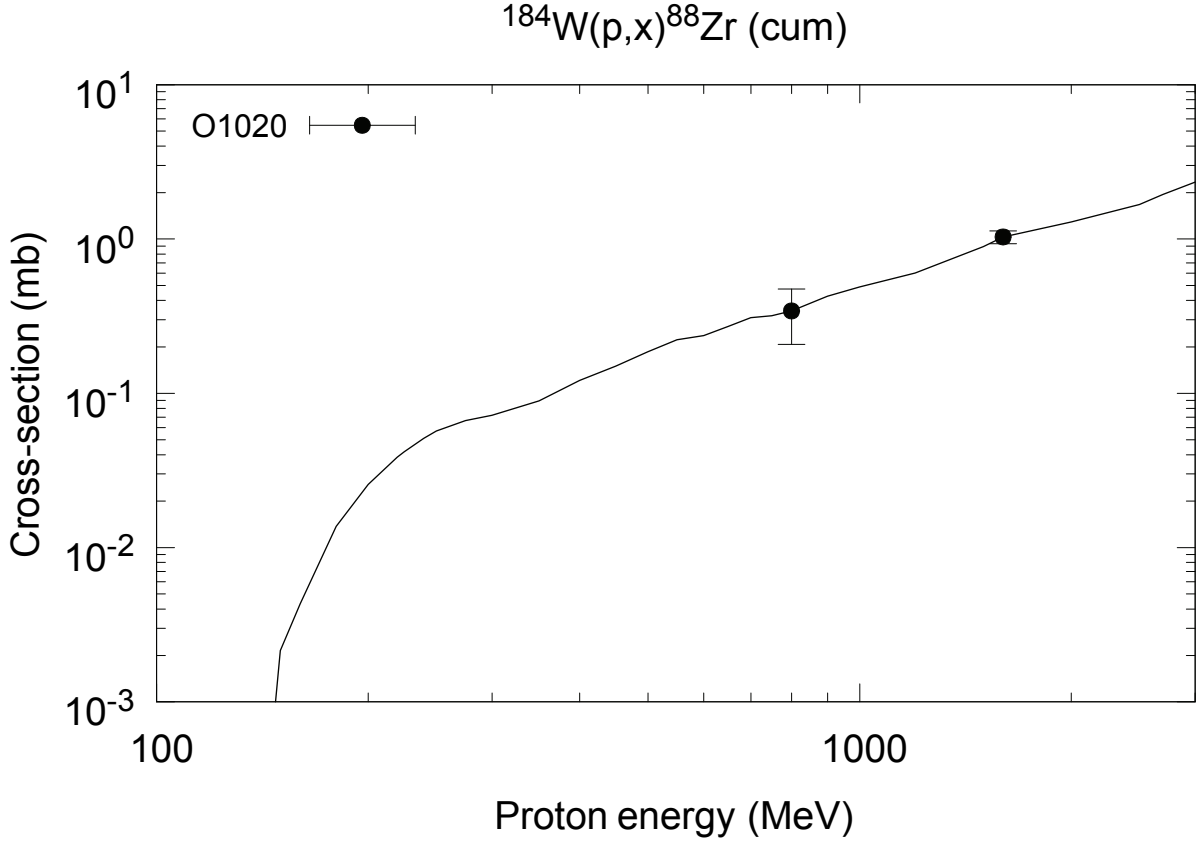

^{184}W(p,x)^{83}Rb (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

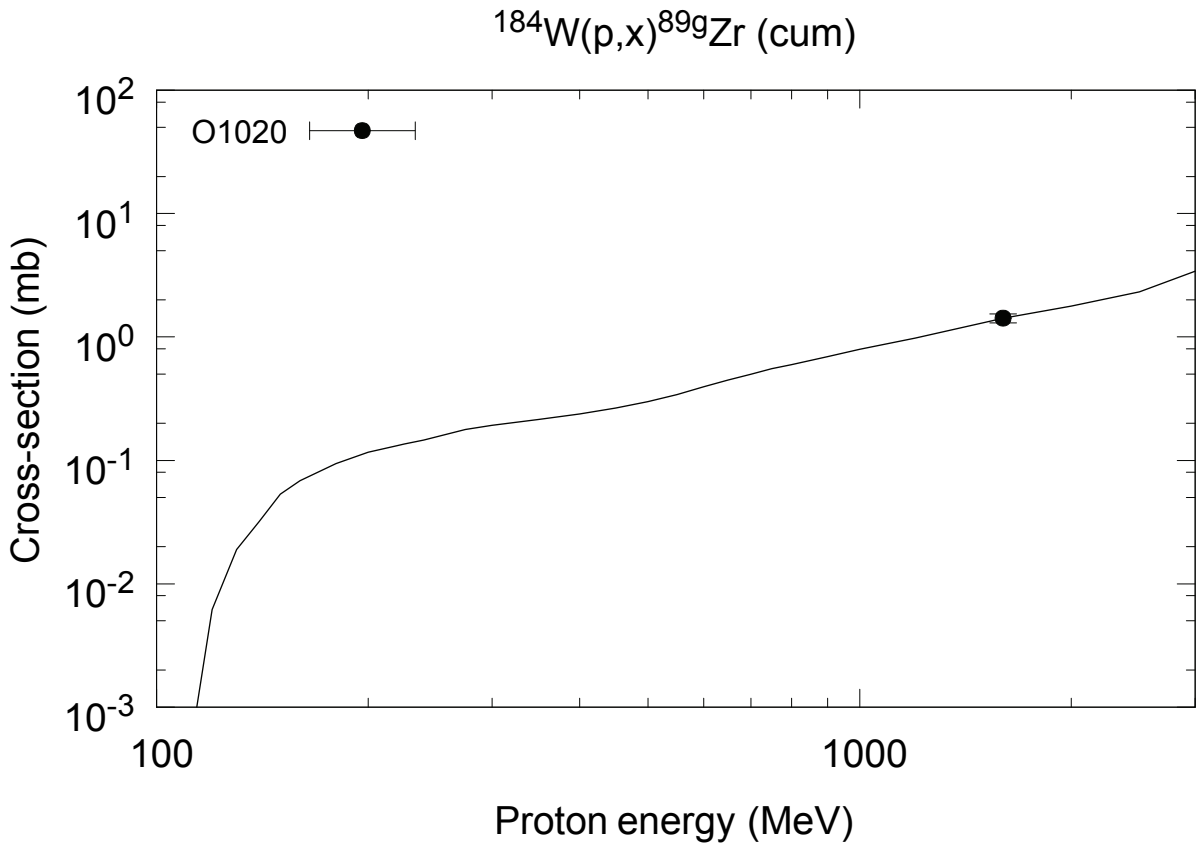

^{184}W(p,x)^{87}Rb (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

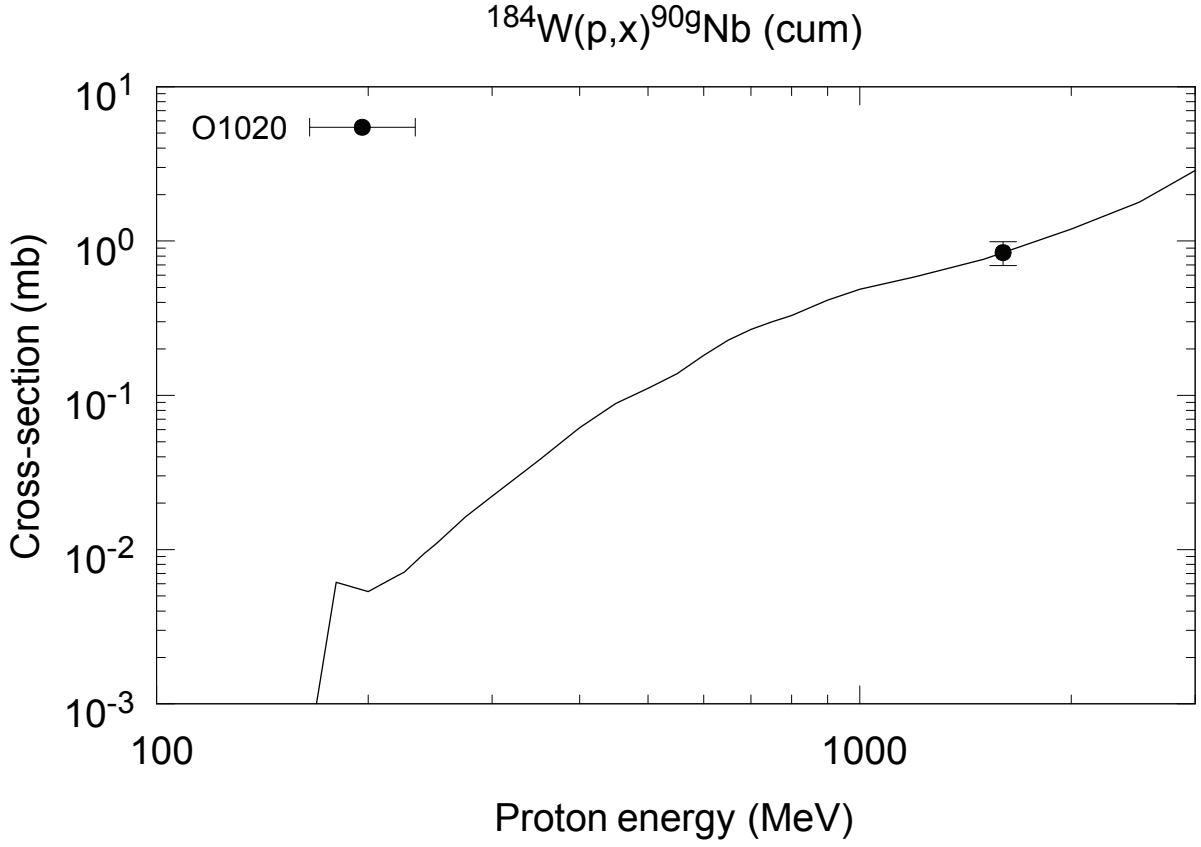

^{184}W(p,x)^{85g}Sr (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

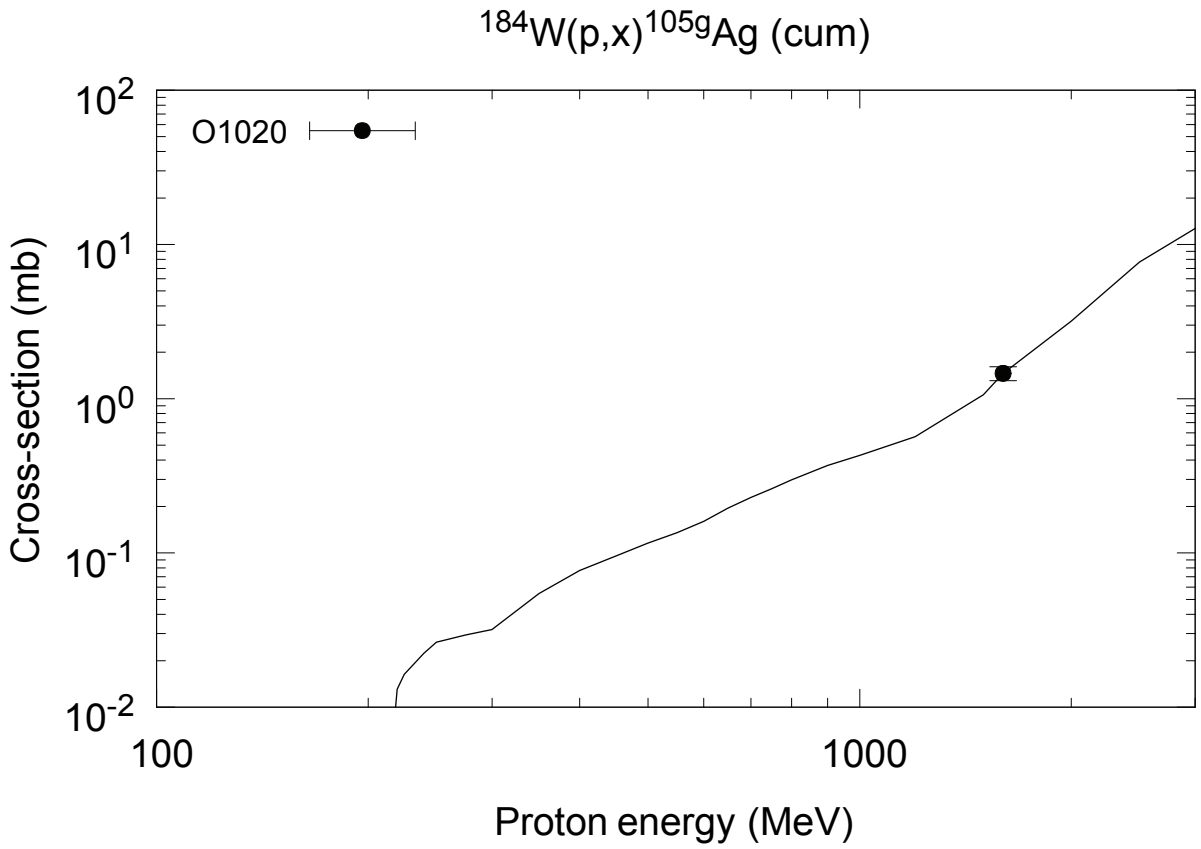

^{184}W(p,x)^{87}Y (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

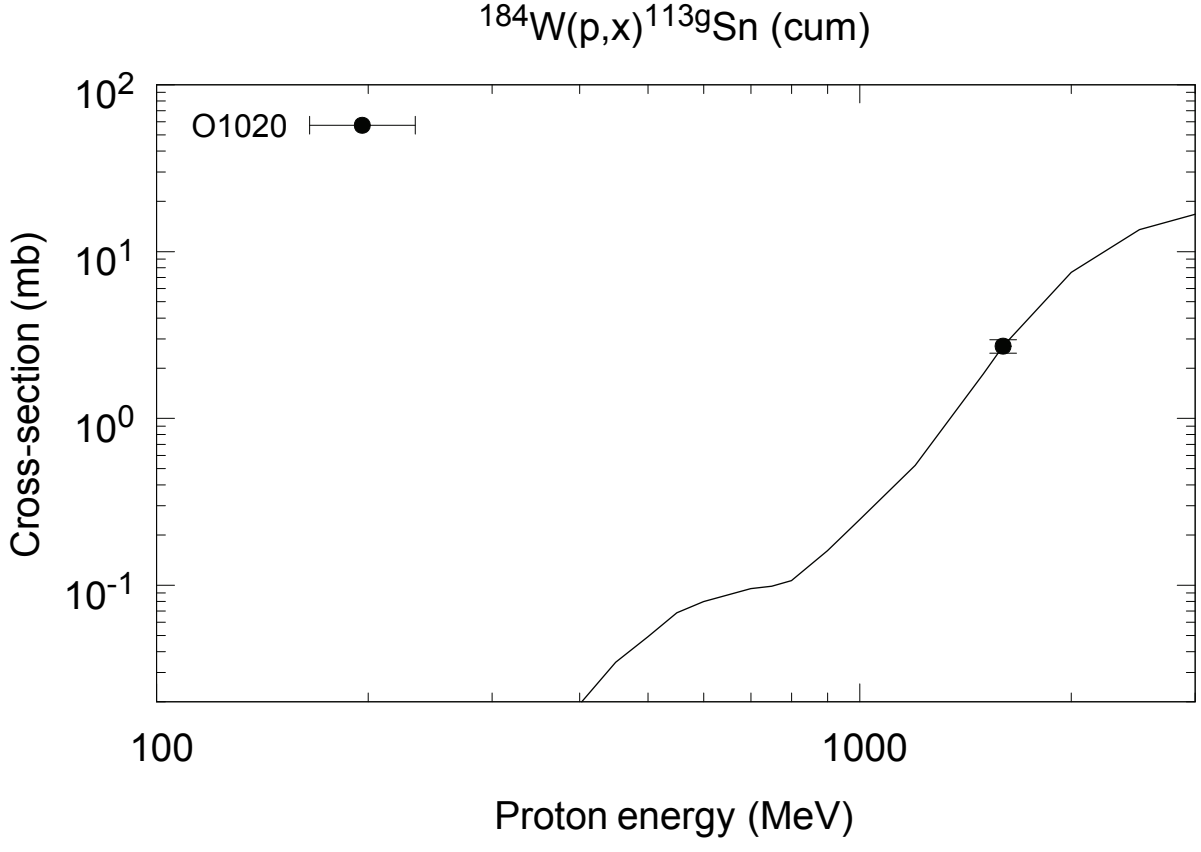

^{184}W(p,x)^{88}Y (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

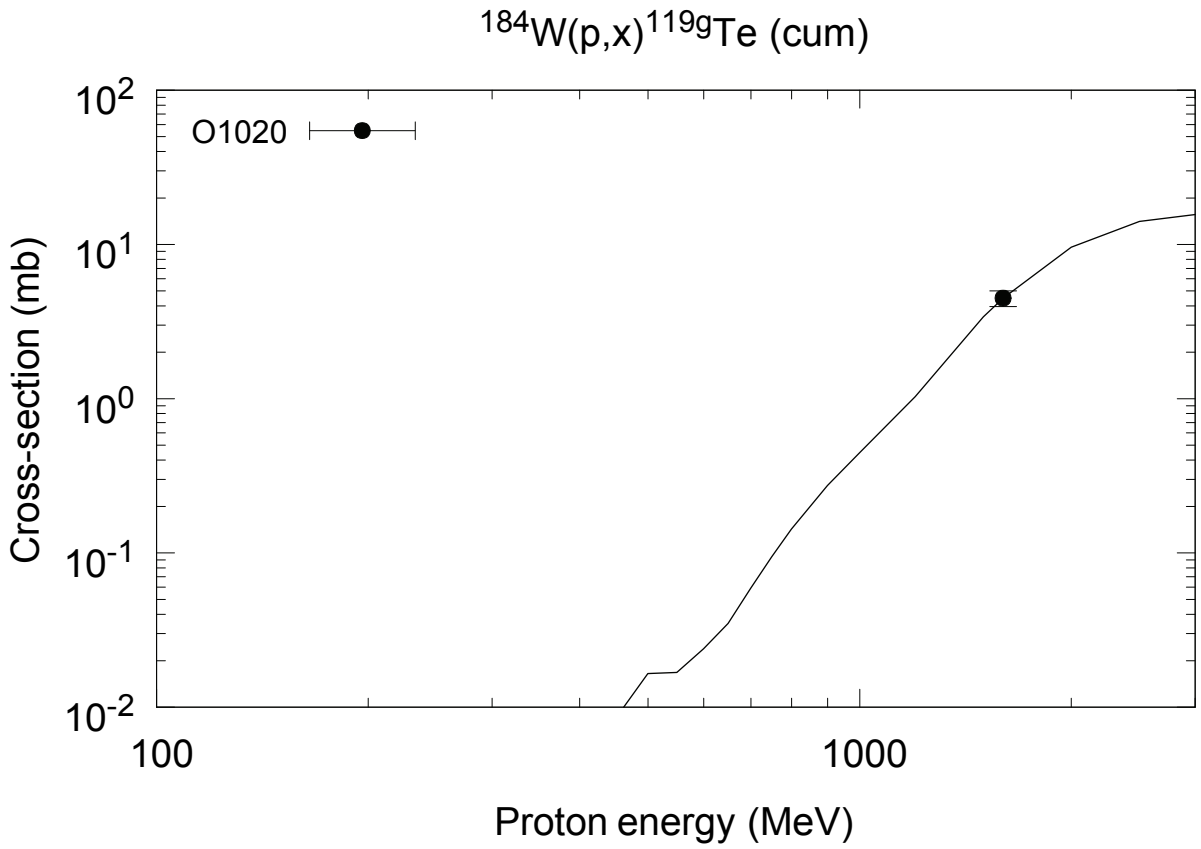

^{184}W(p,x)^{88}Zr (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

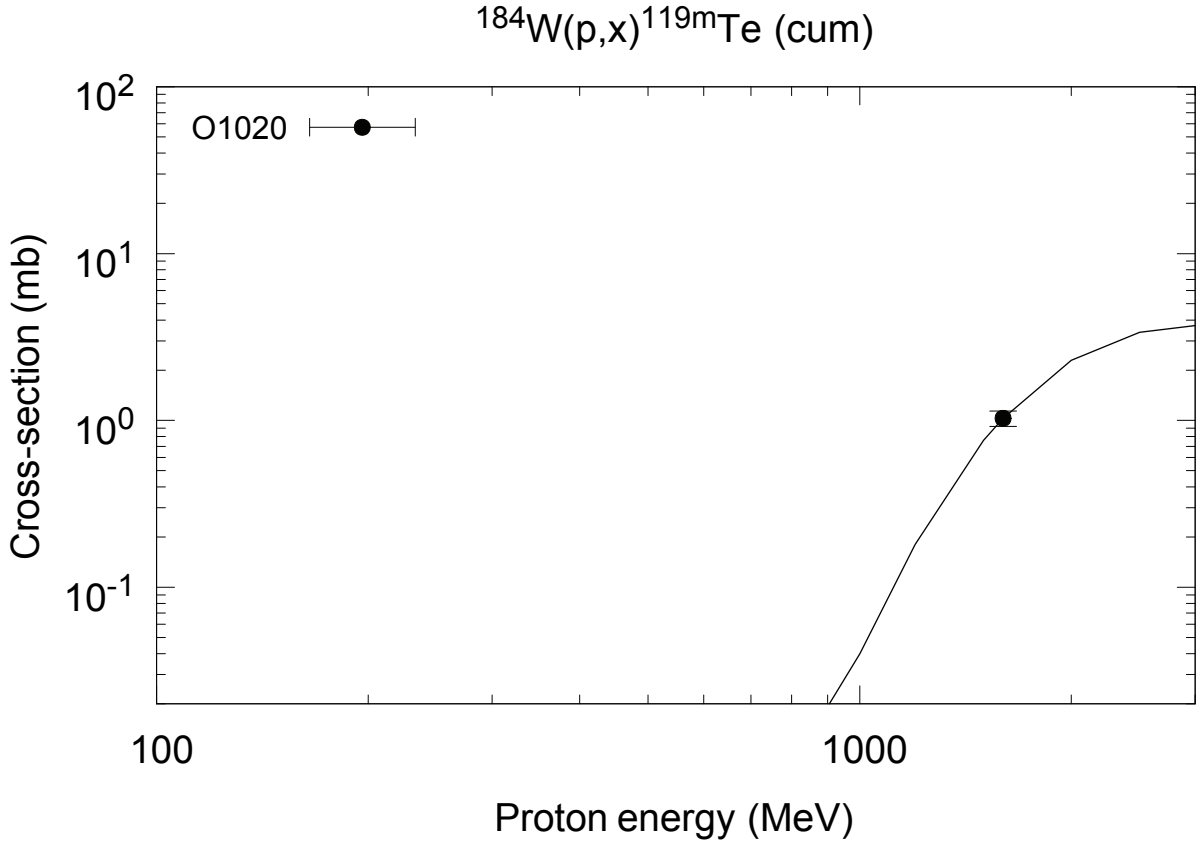

^{184}W(p,x)^{89g}Zr (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

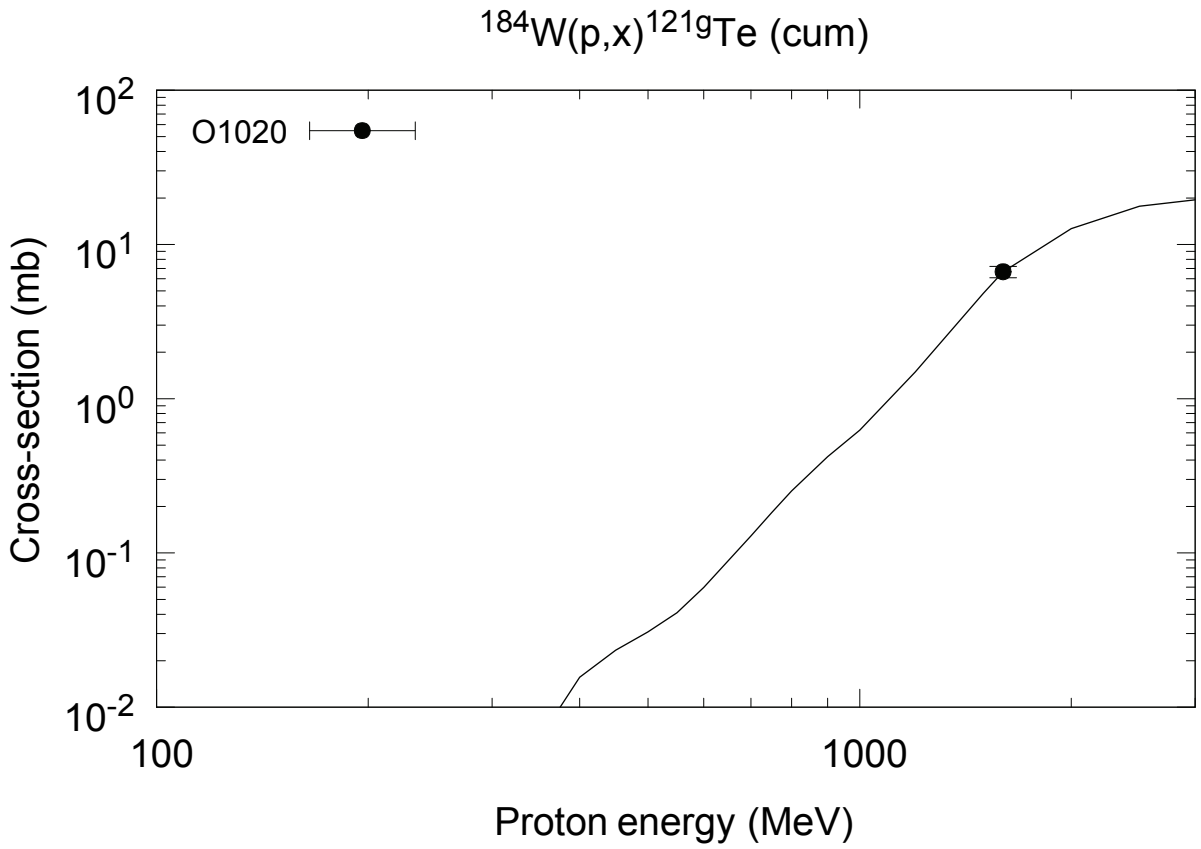

^{184}W(p,x)^{90g}Nb (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

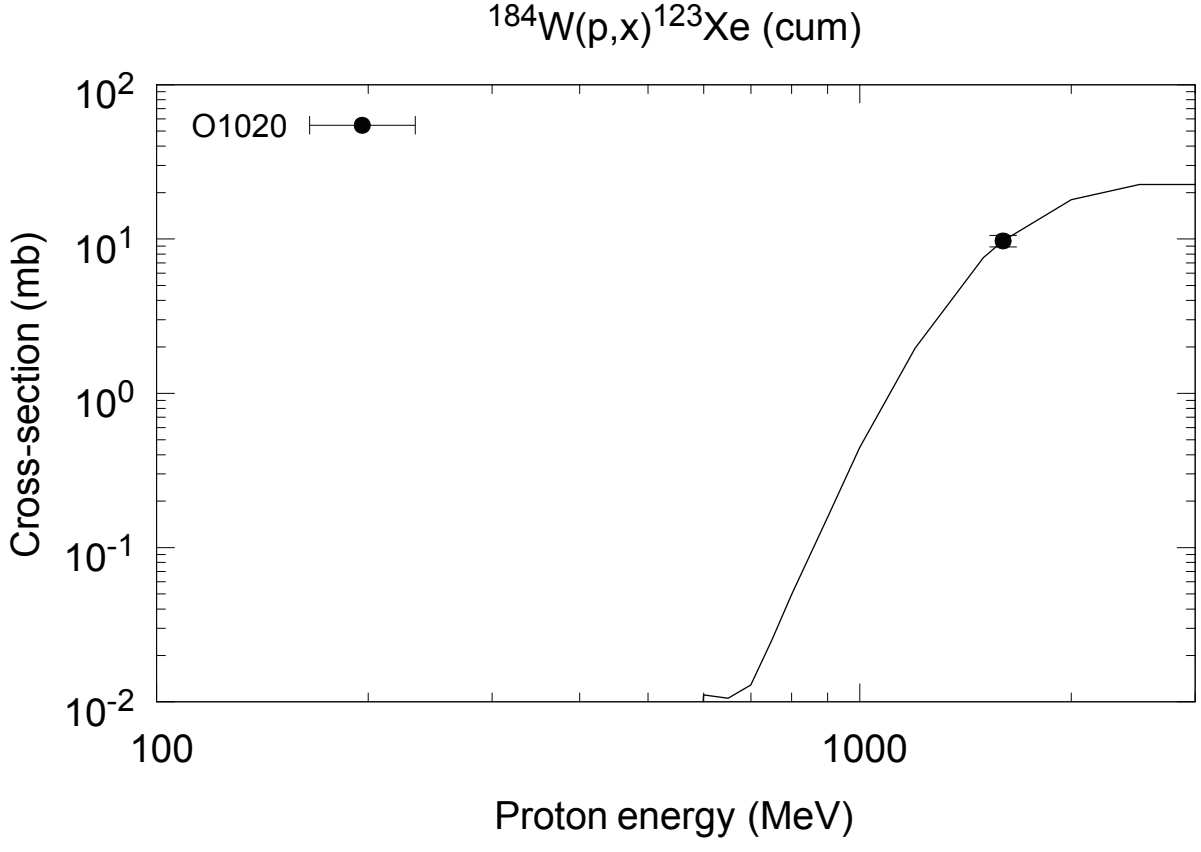

^{184}W(p,x)^{105g}Ag (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

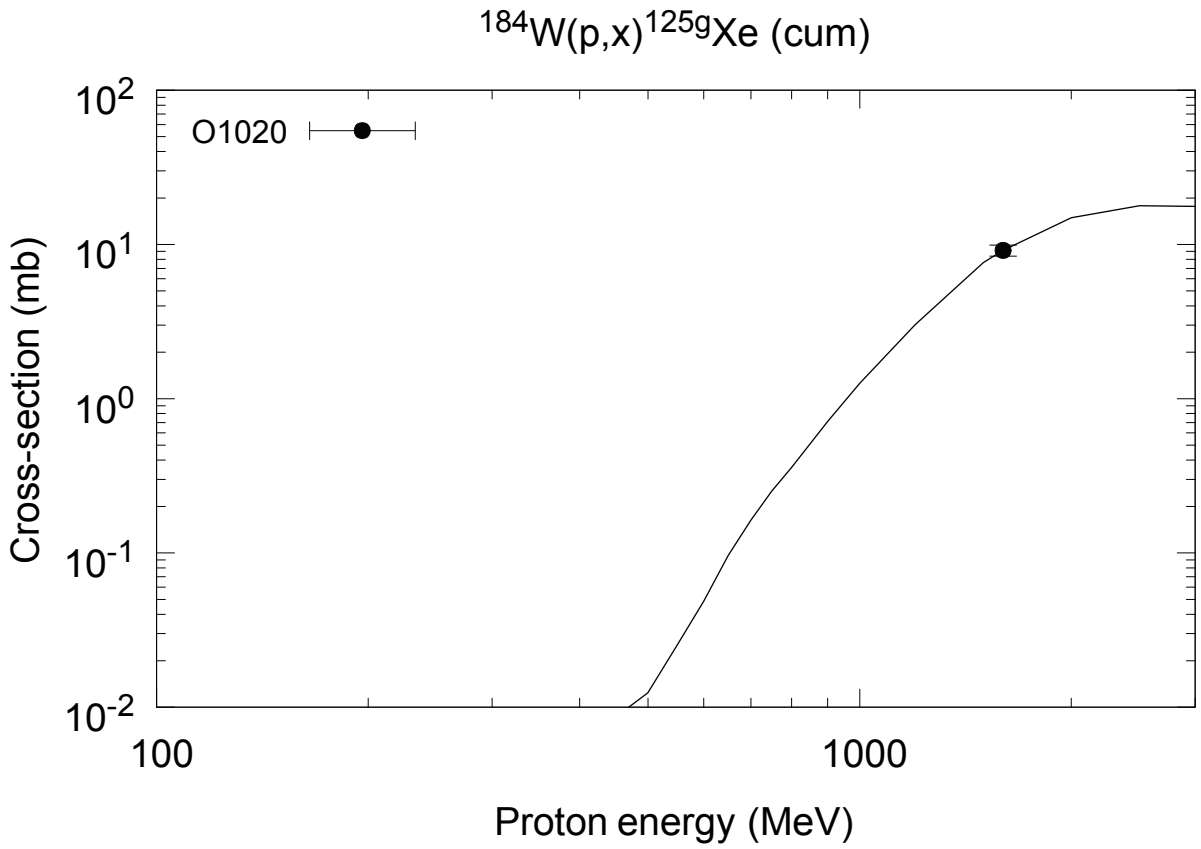

^{184}W(p,x)^{113g}Sn (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

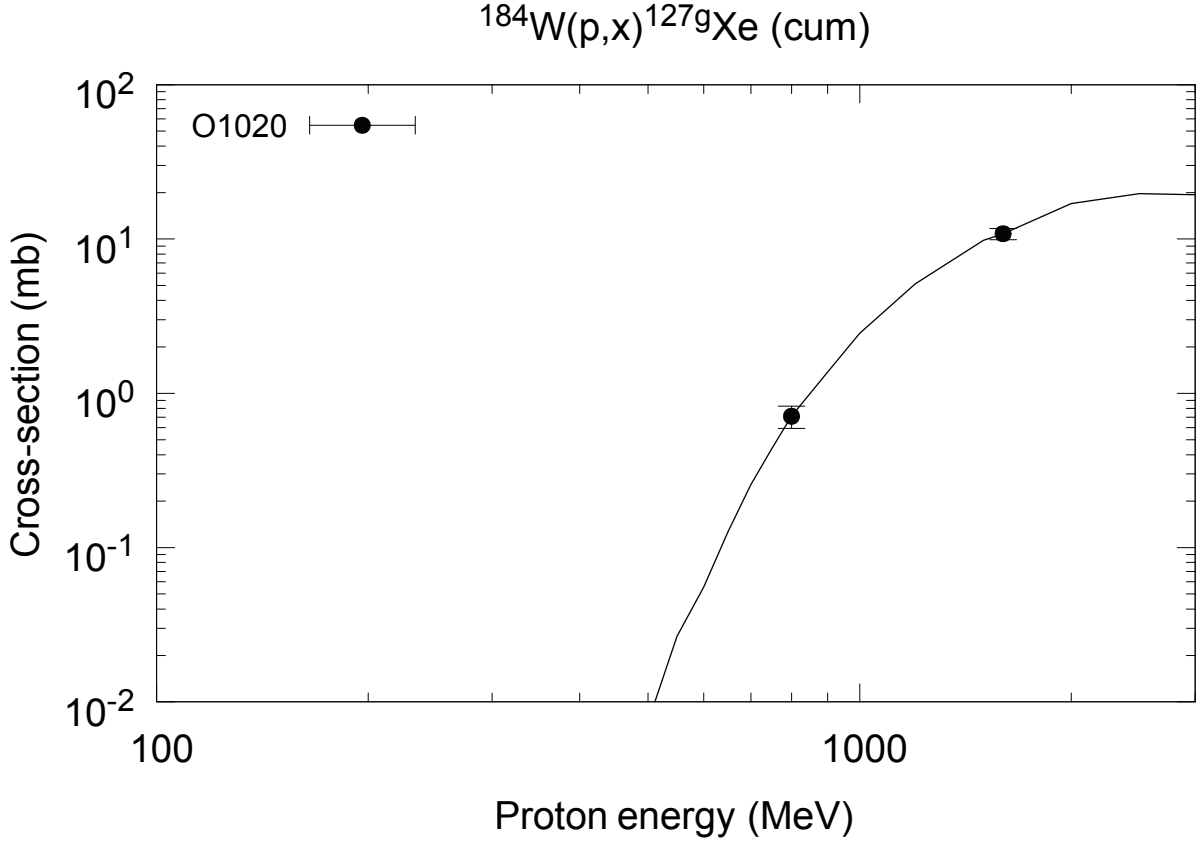

^{184}W(p,x)^{119g}Te (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

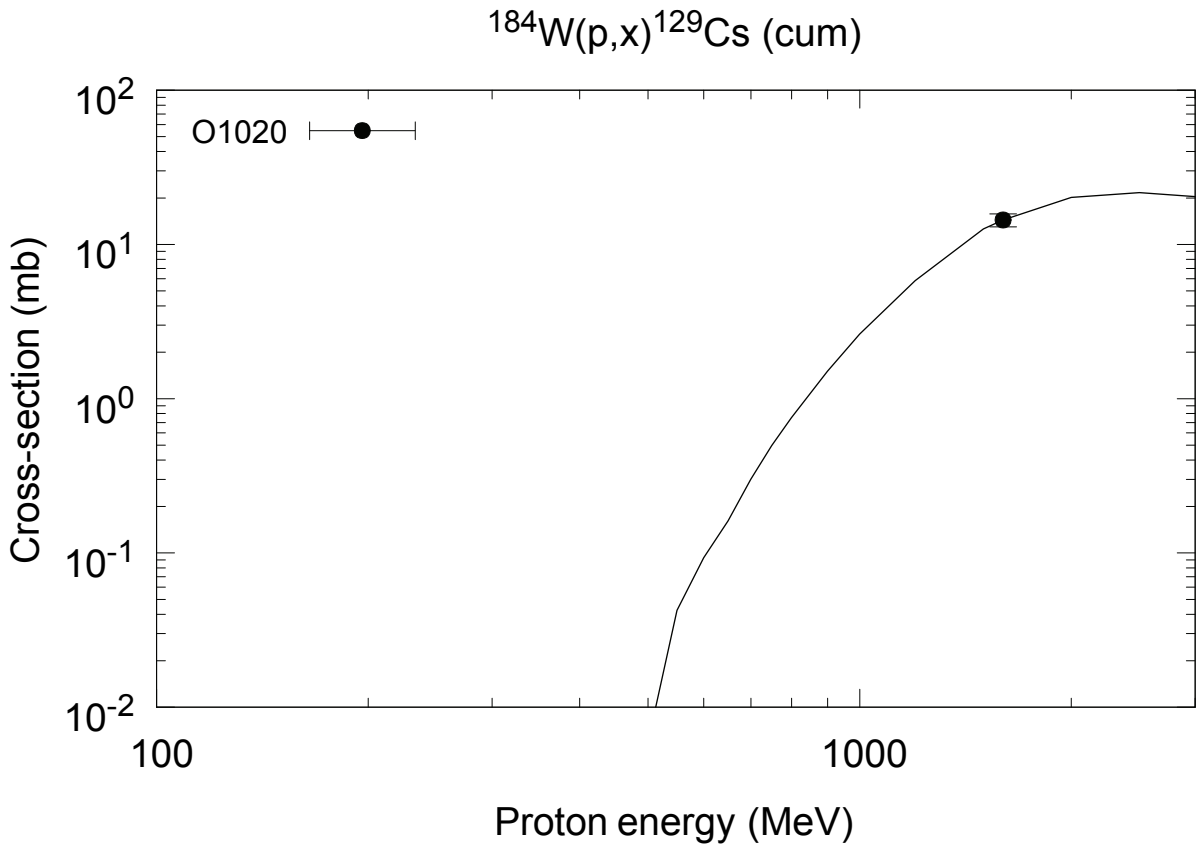

^{184}W(p,x)^{119m}Te (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

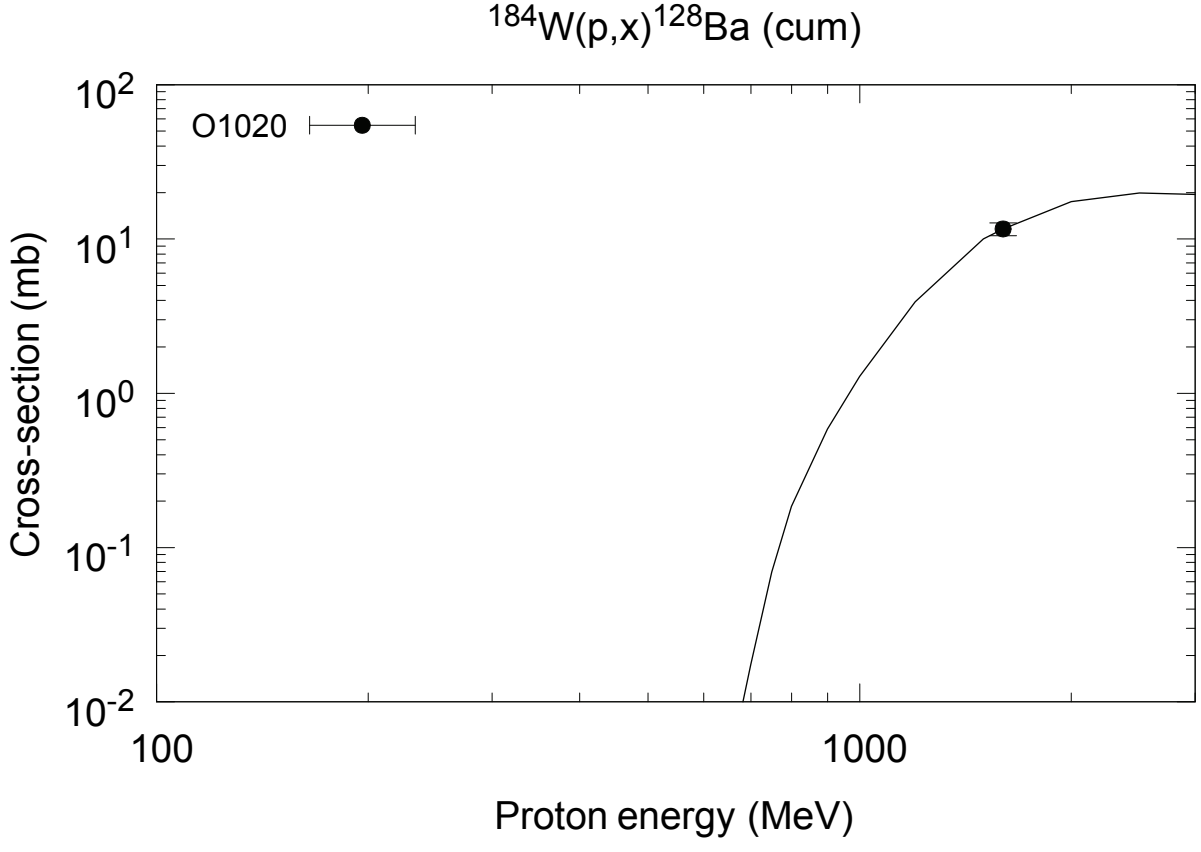

^{184}W(p,x)^{121g}Te (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

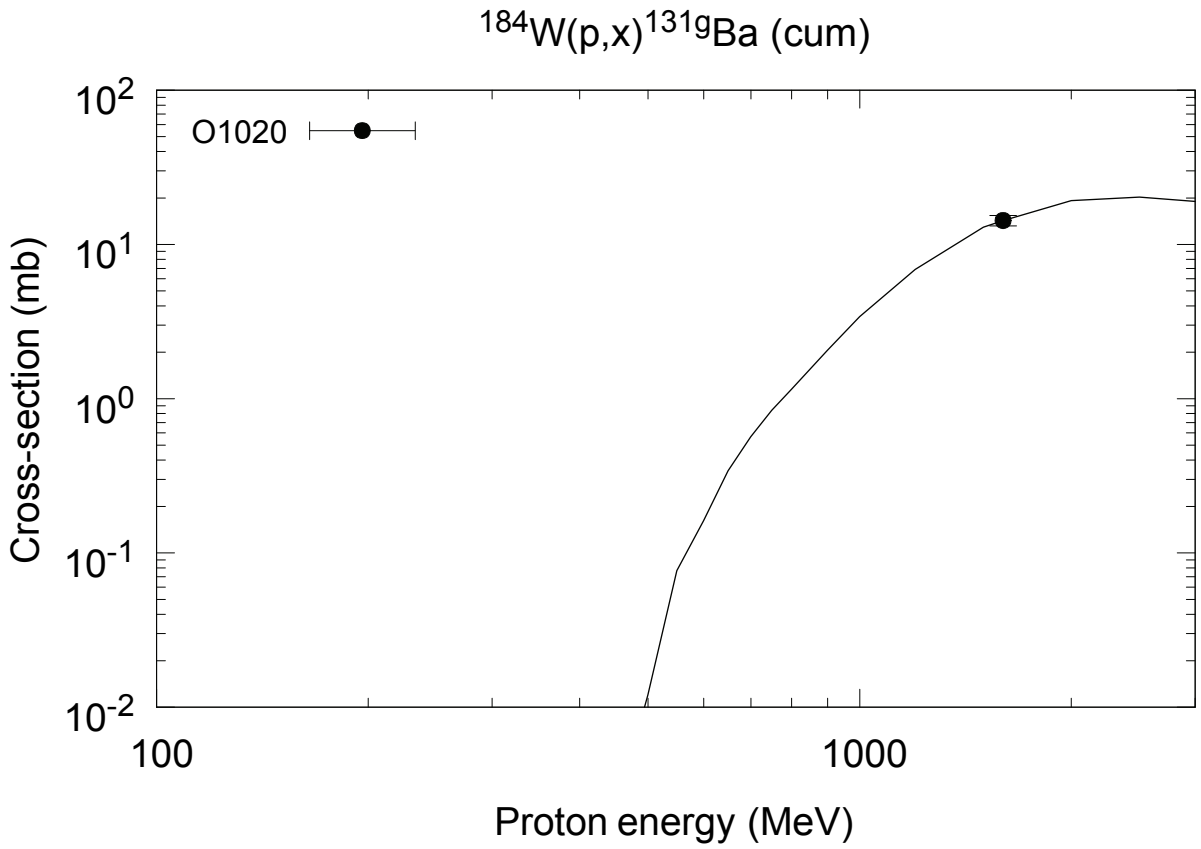

^{184}W(p,x)^{123}Xe (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

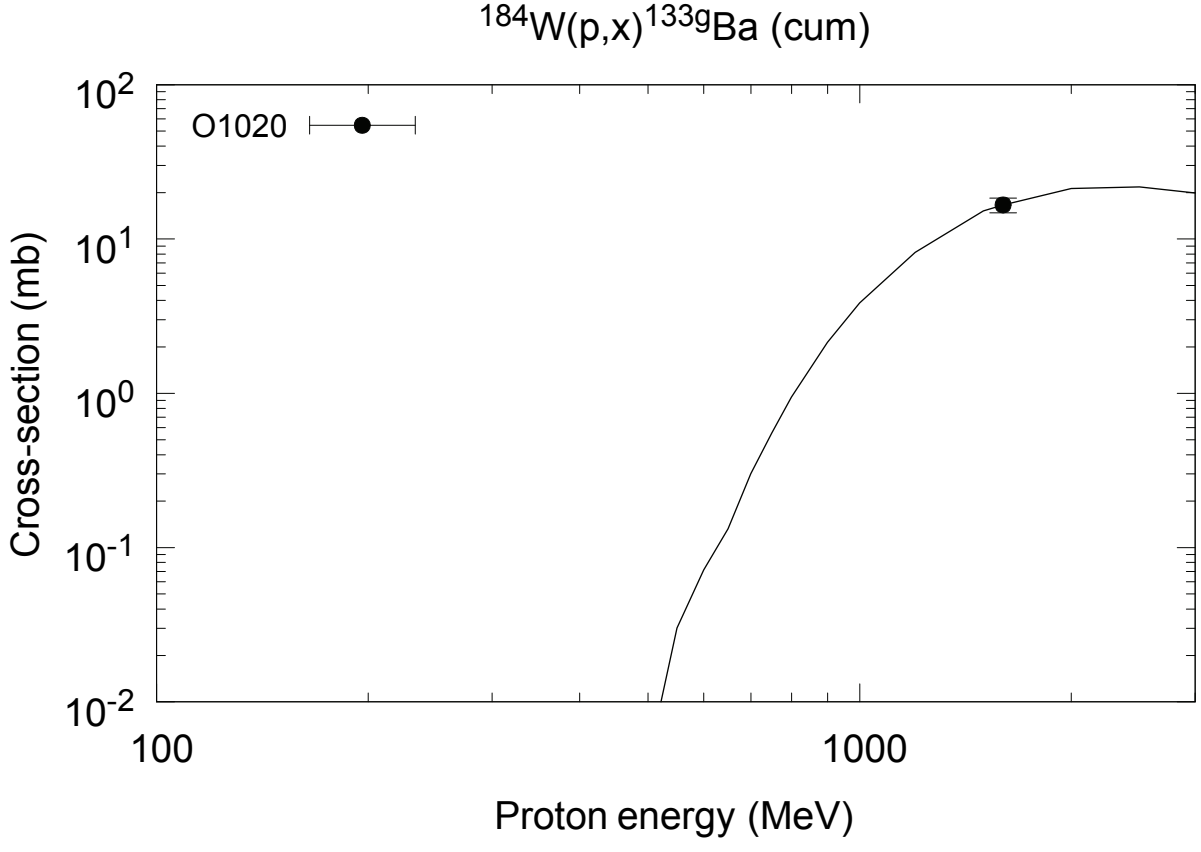

^{184}W(p,x)^{125g}Xe (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

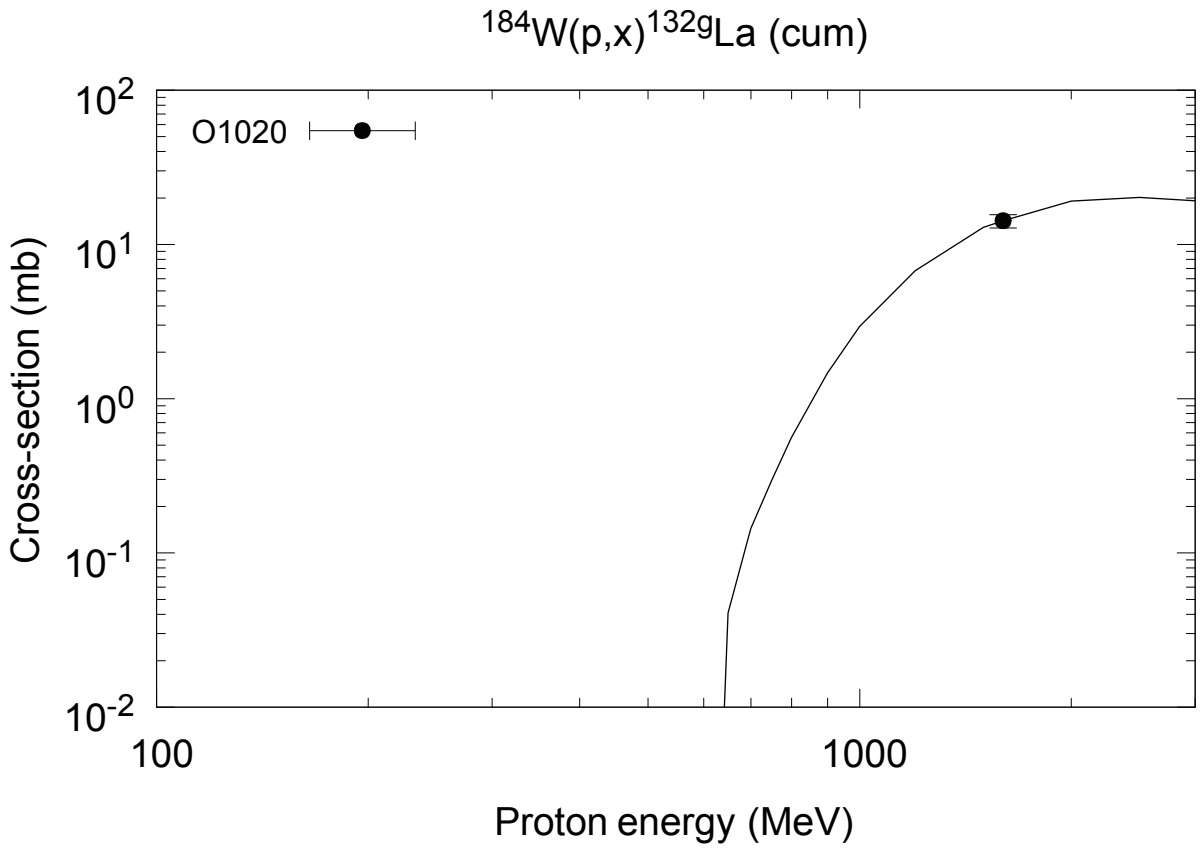

^{184}W(p,x)^{127g}Xe (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

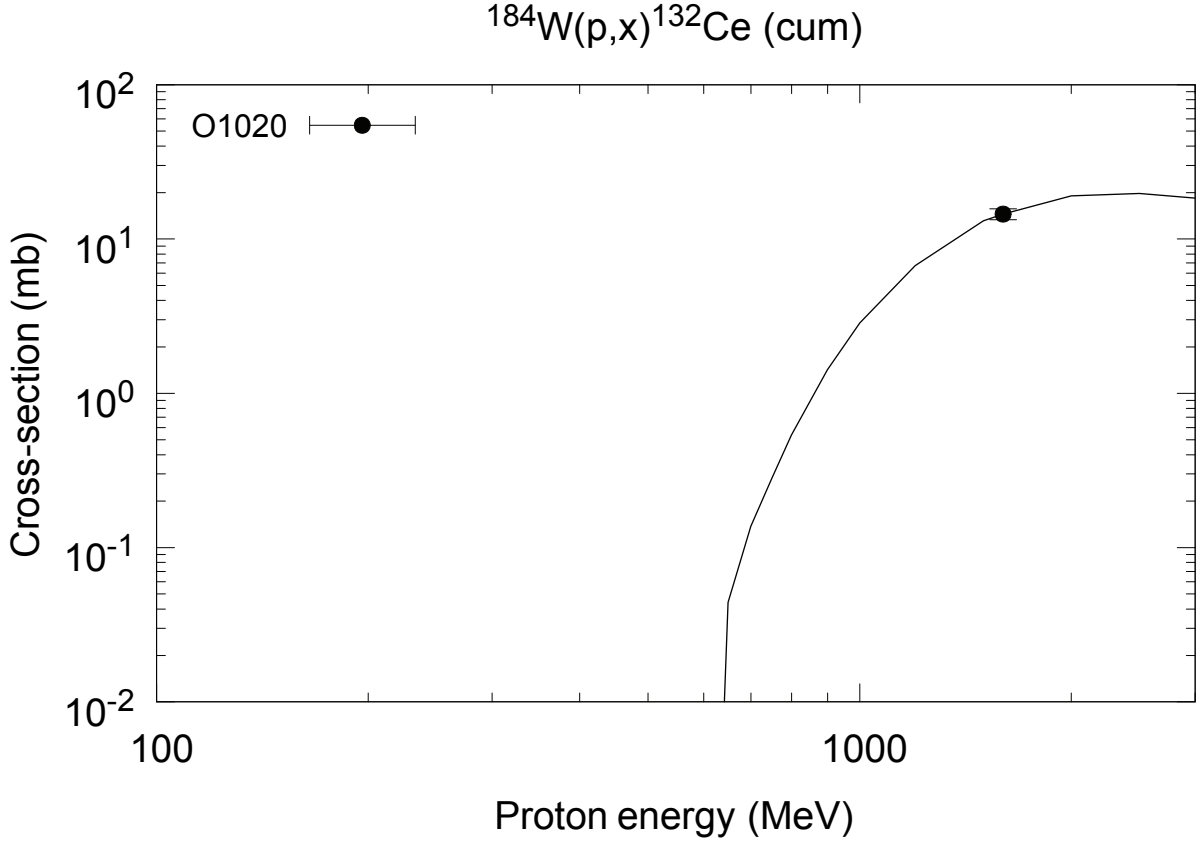

^{184}W(p,x)^{129}Cs (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

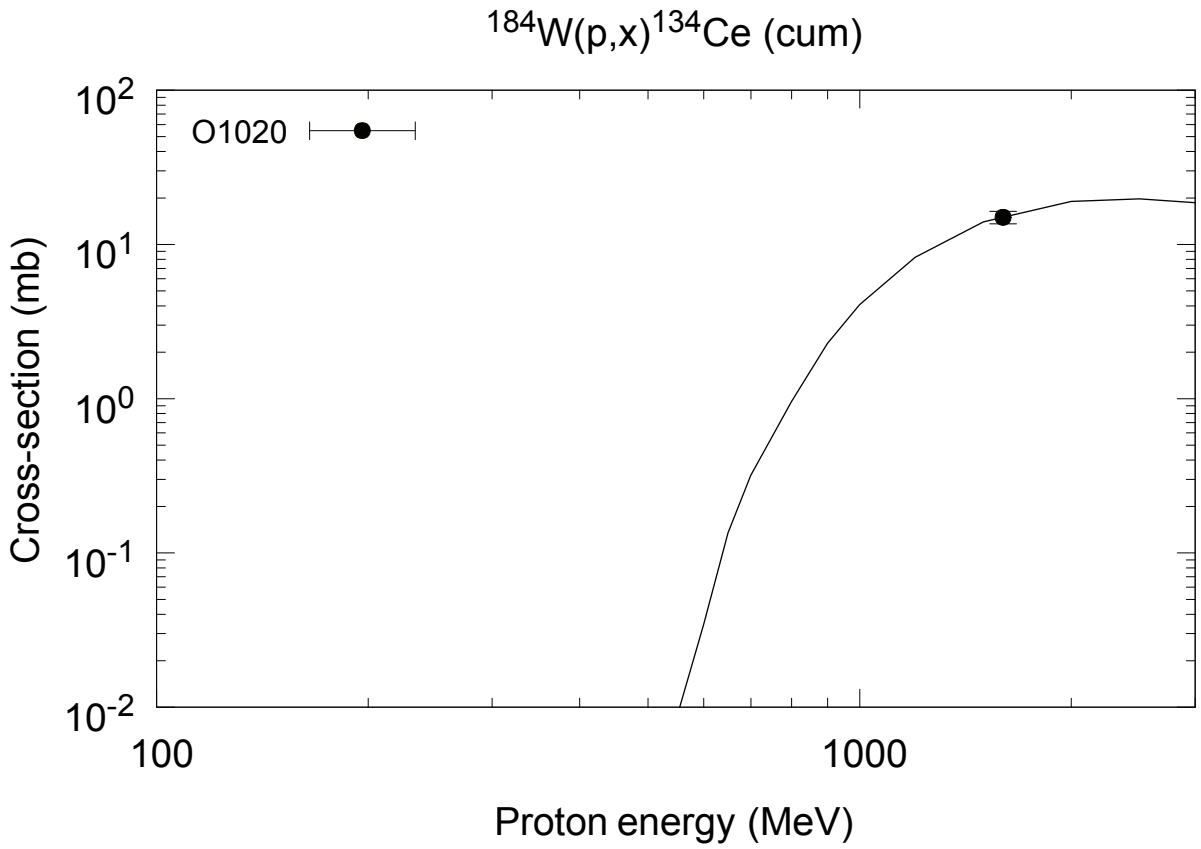

^{184}W(p,x)^{128}Ba (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

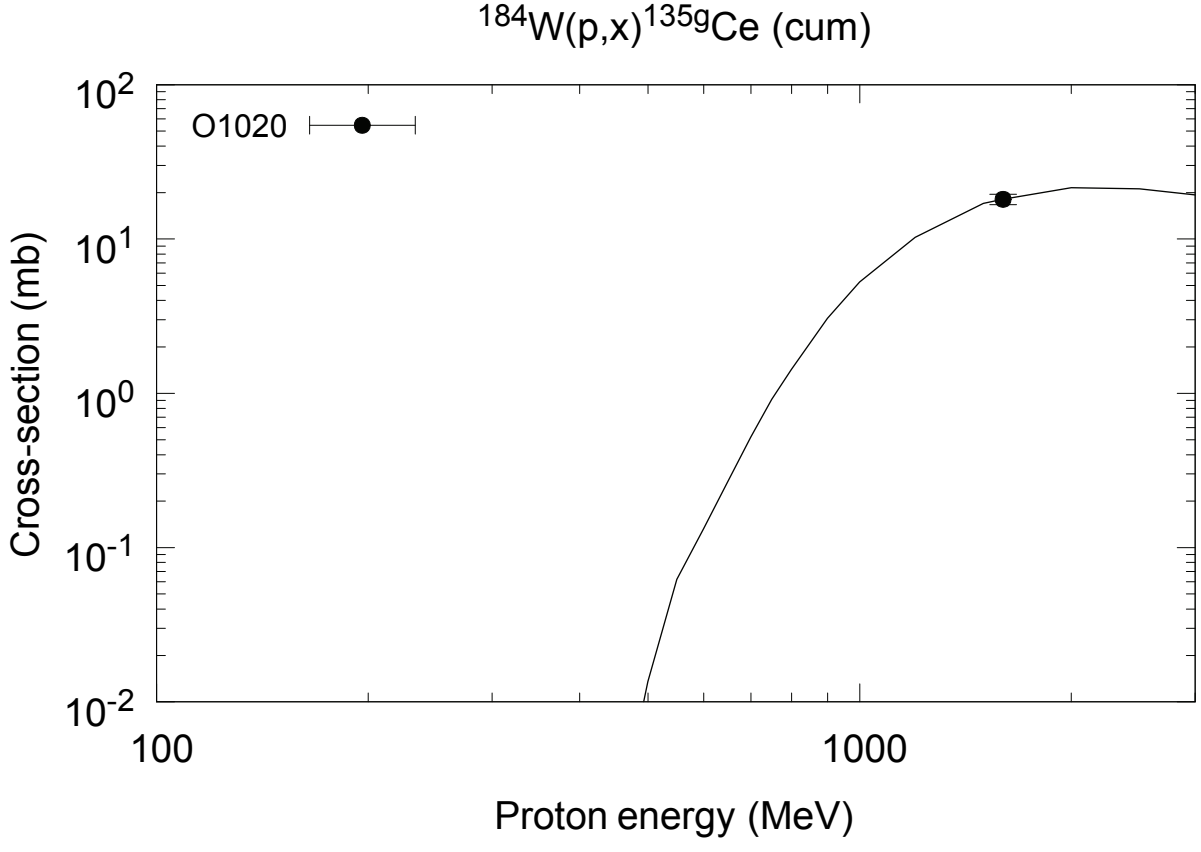

^{184}W(p,x)^{131g}Ba (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

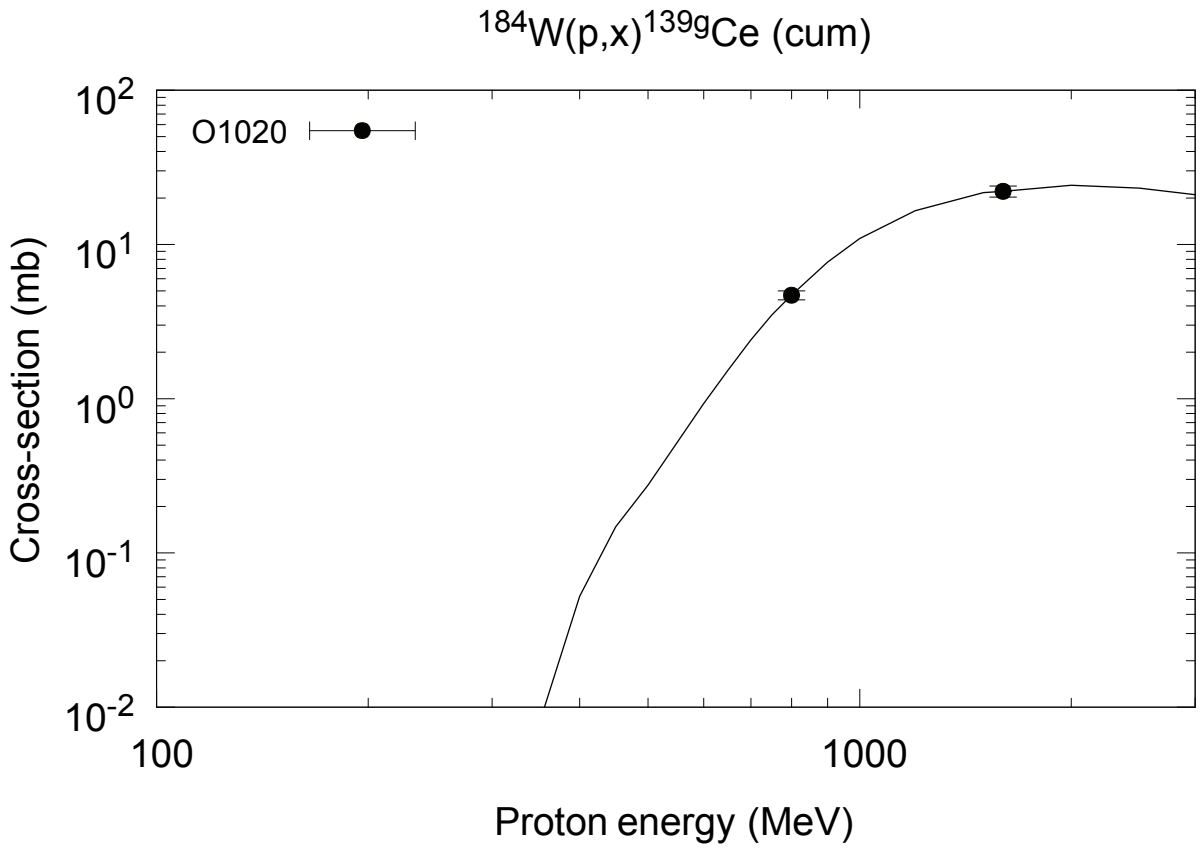

^{184}W(p,x)^{133g}Ba (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

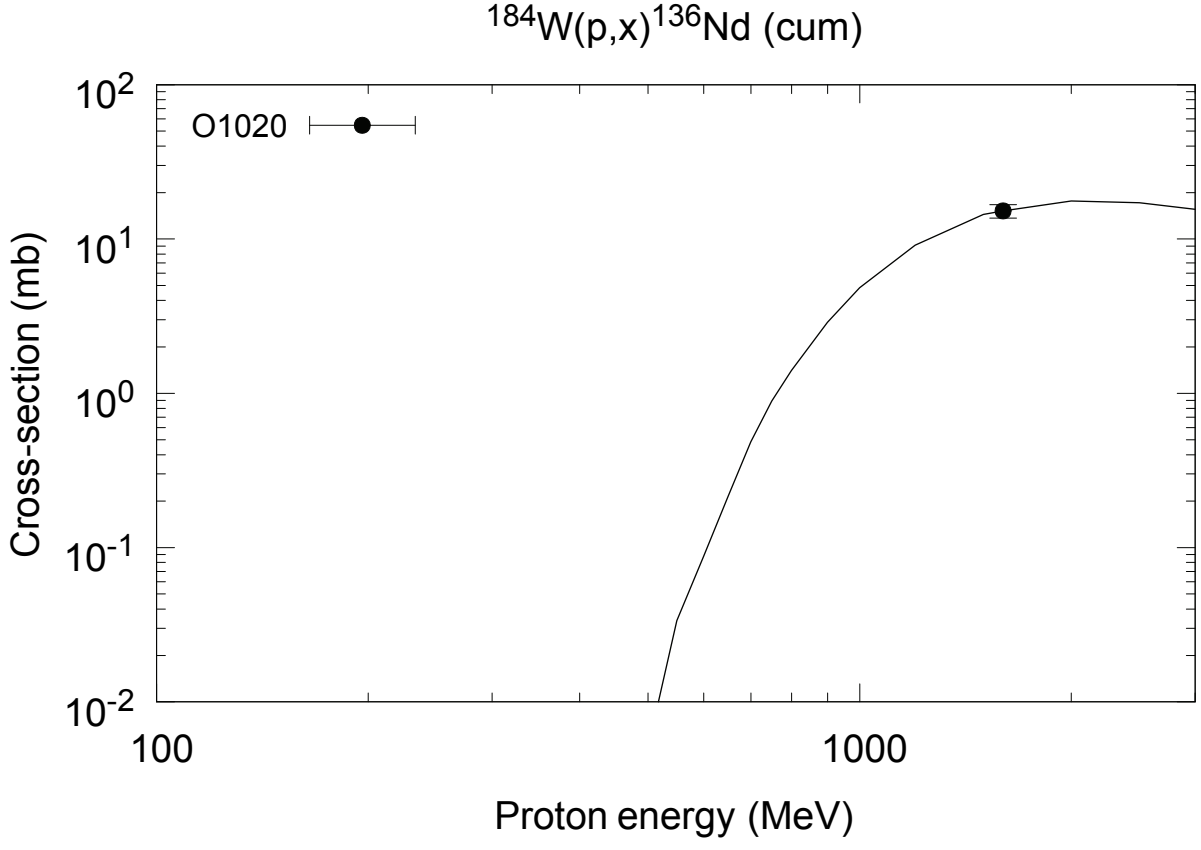

184W(p,x)132gLa (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

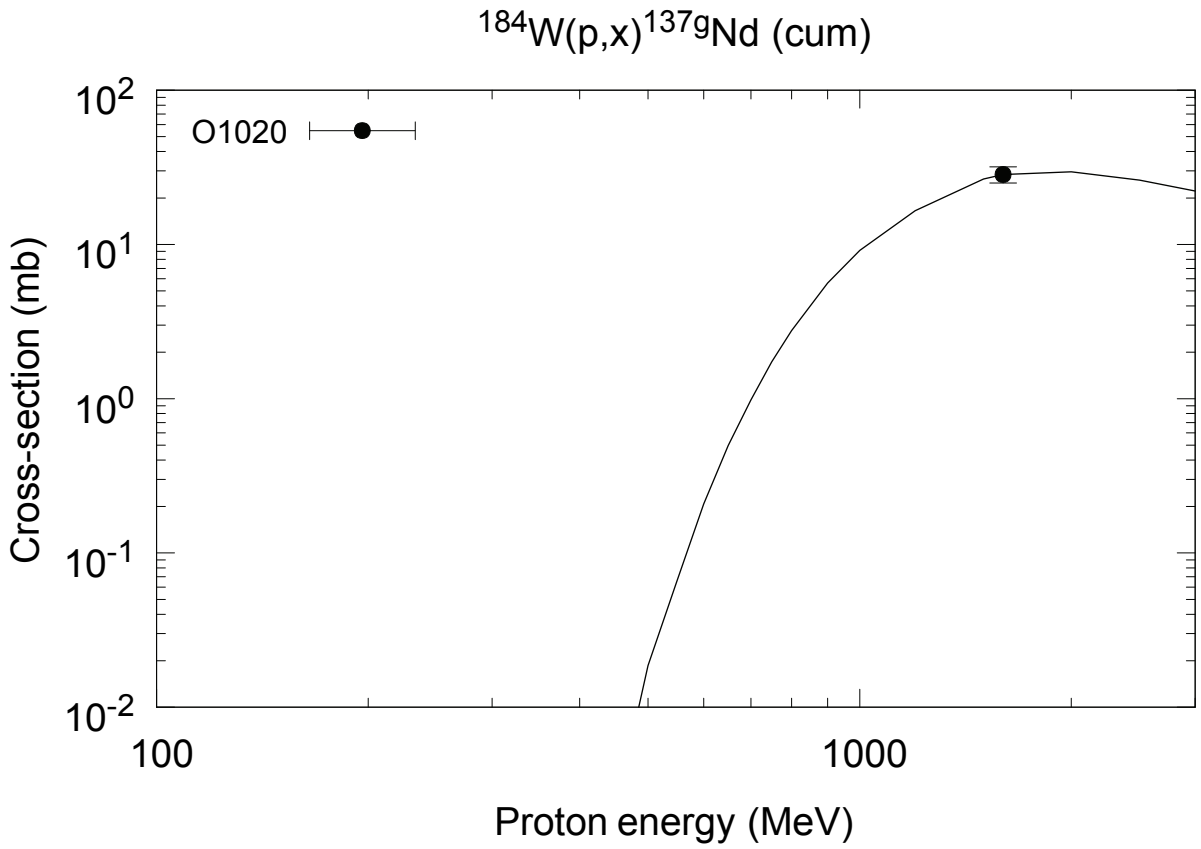

184W(p,x)132Ce (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

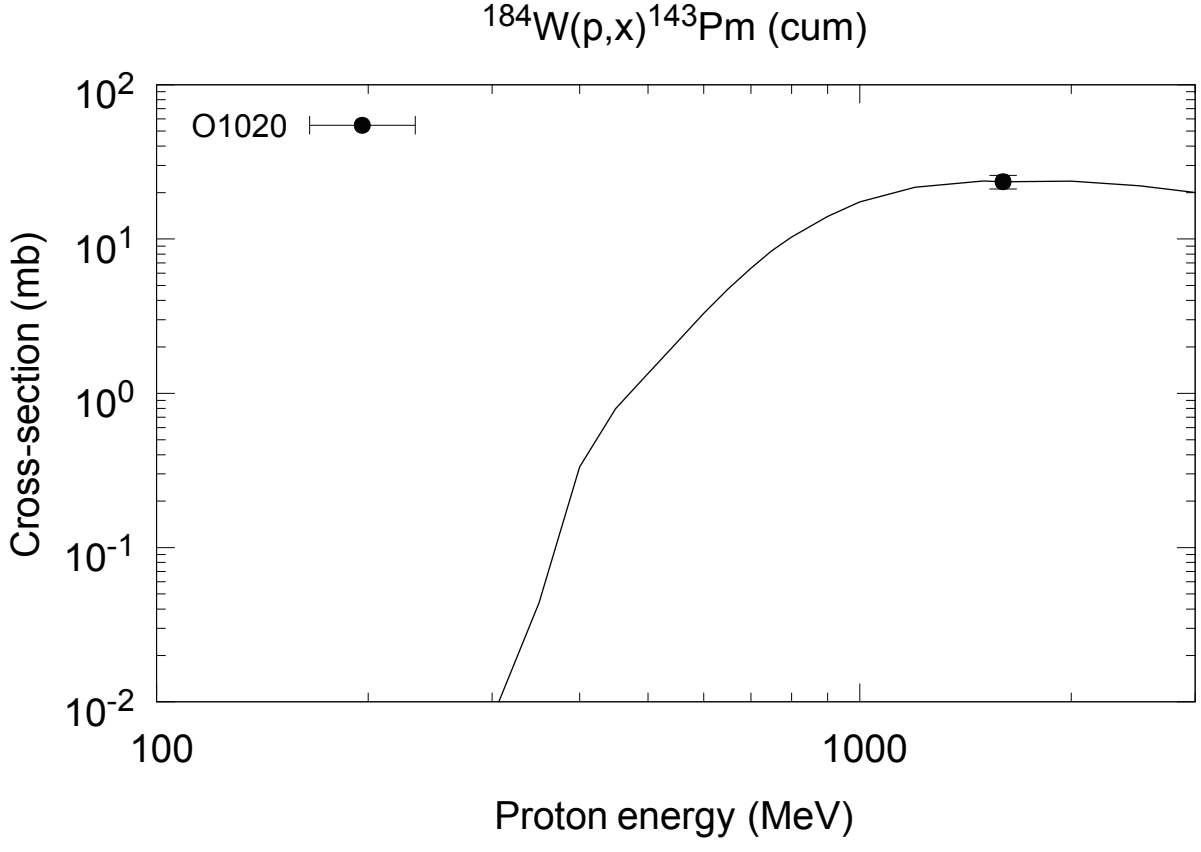

^{184}W(p,x)^{134}Ce (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

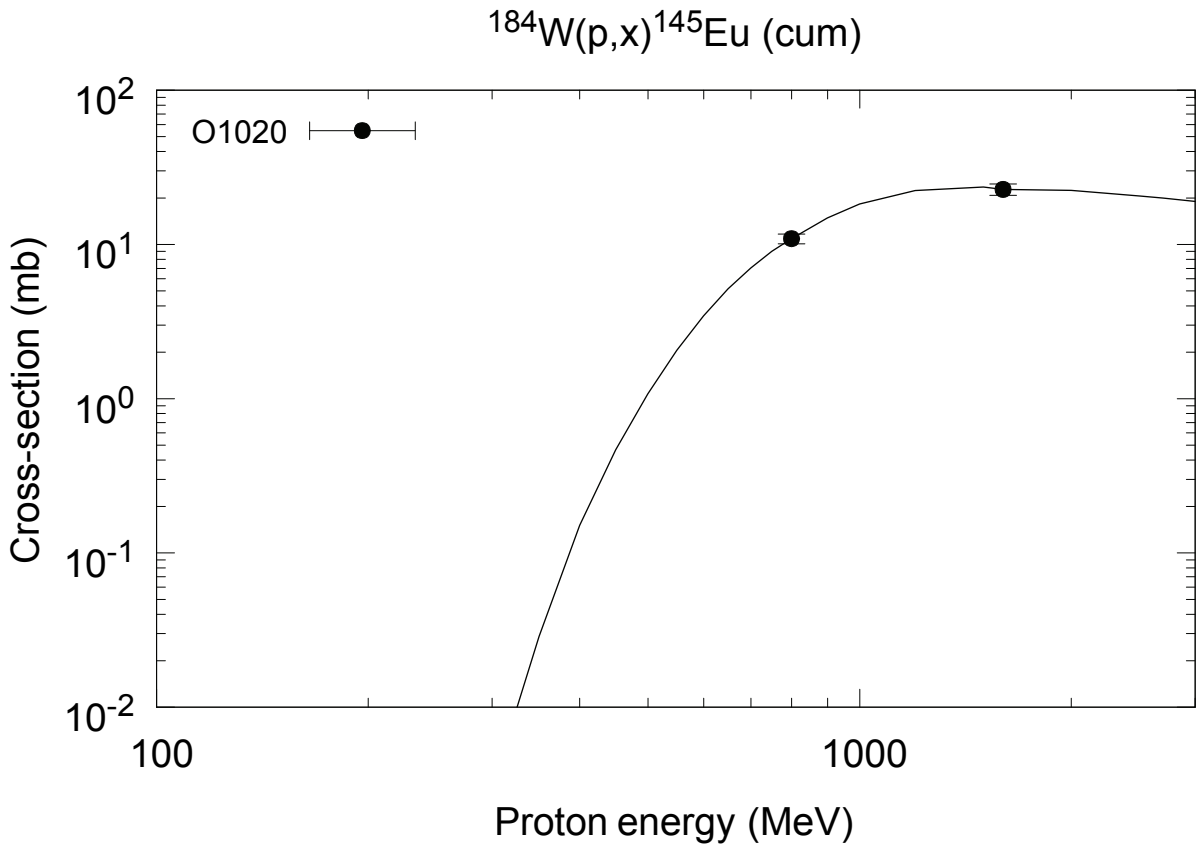

^{184}W(p,x)^{135g}Ce (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

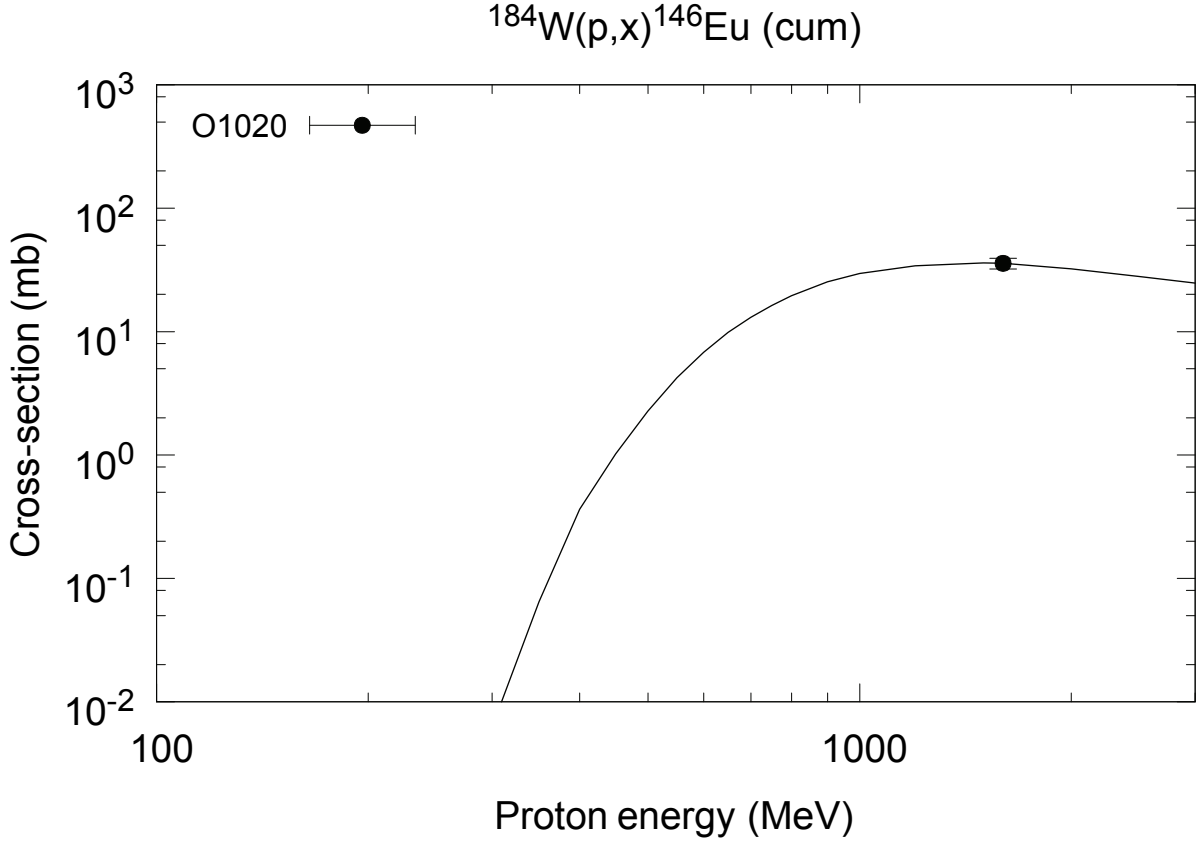

^{184}W(p,x)^{139g}Ce (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

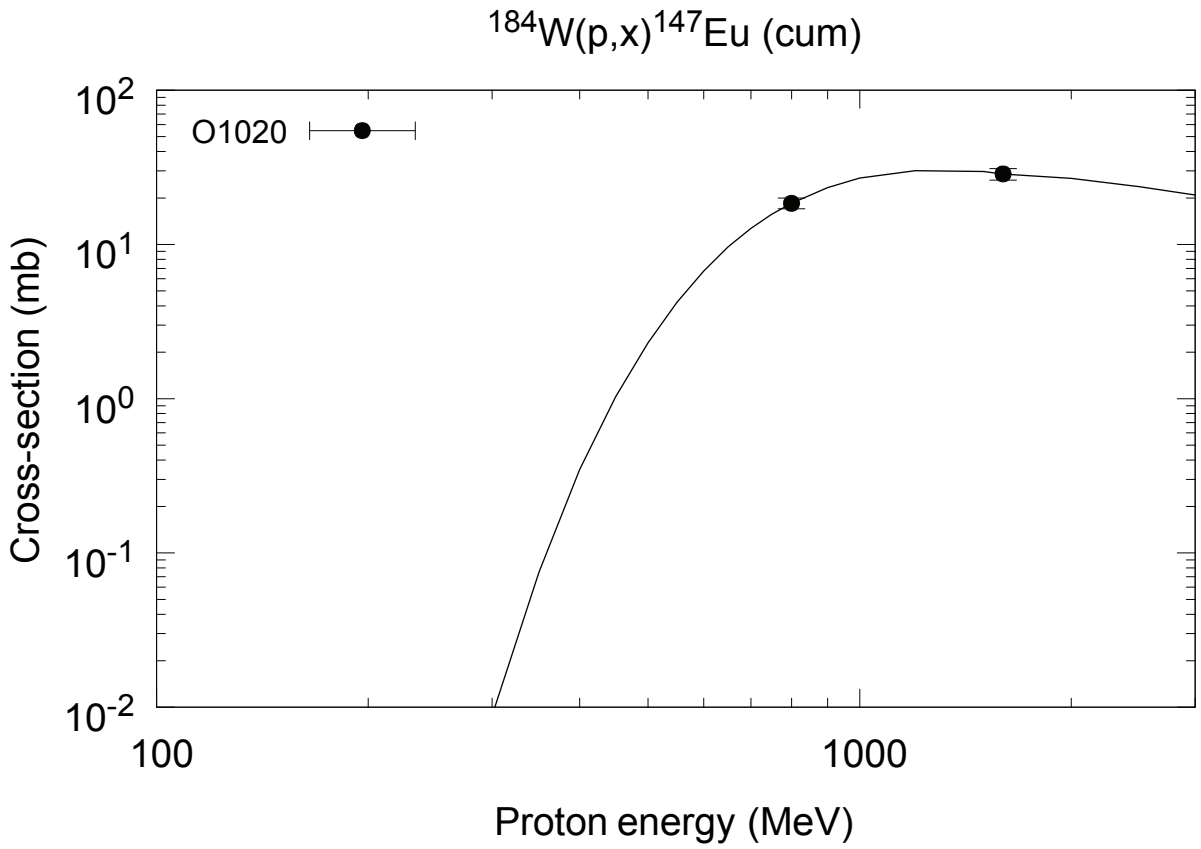

^{184}W(p,x)^{136}Nd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

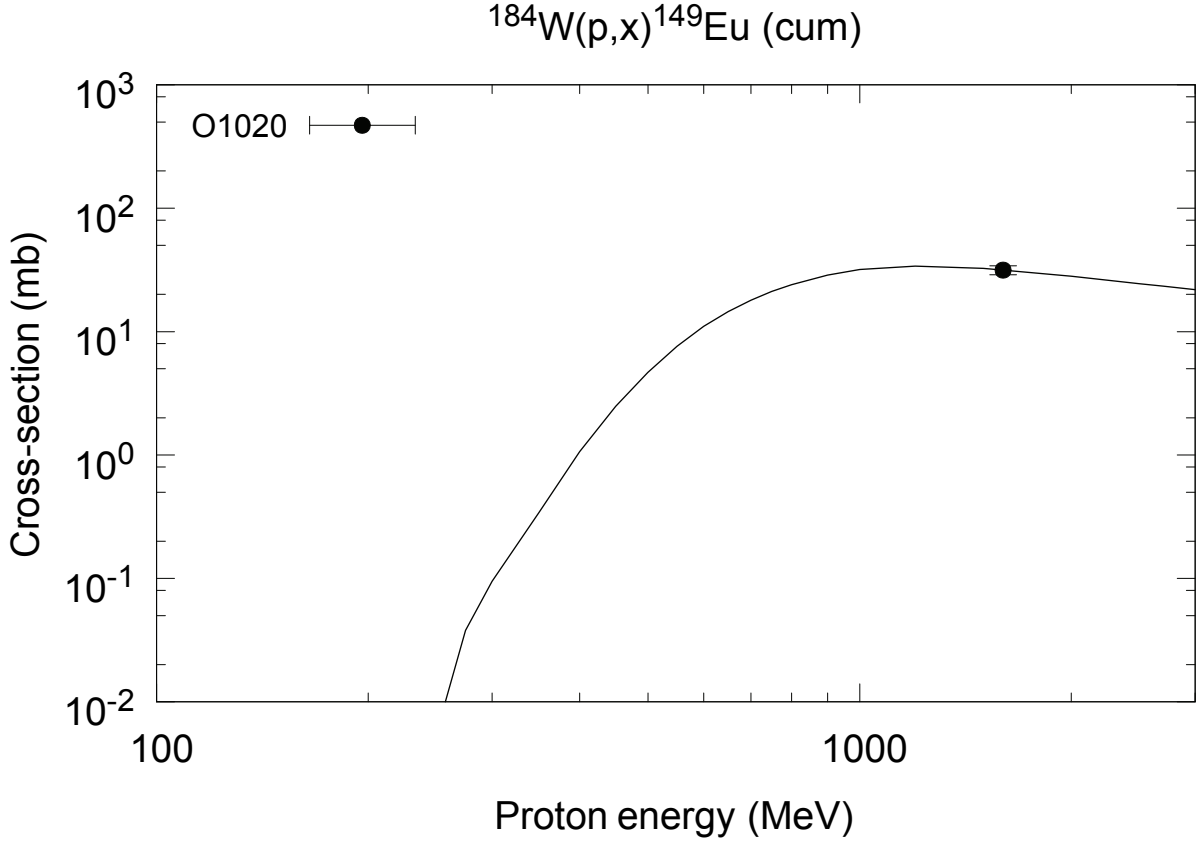

^{184}W(p,x)^{137g}Nd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

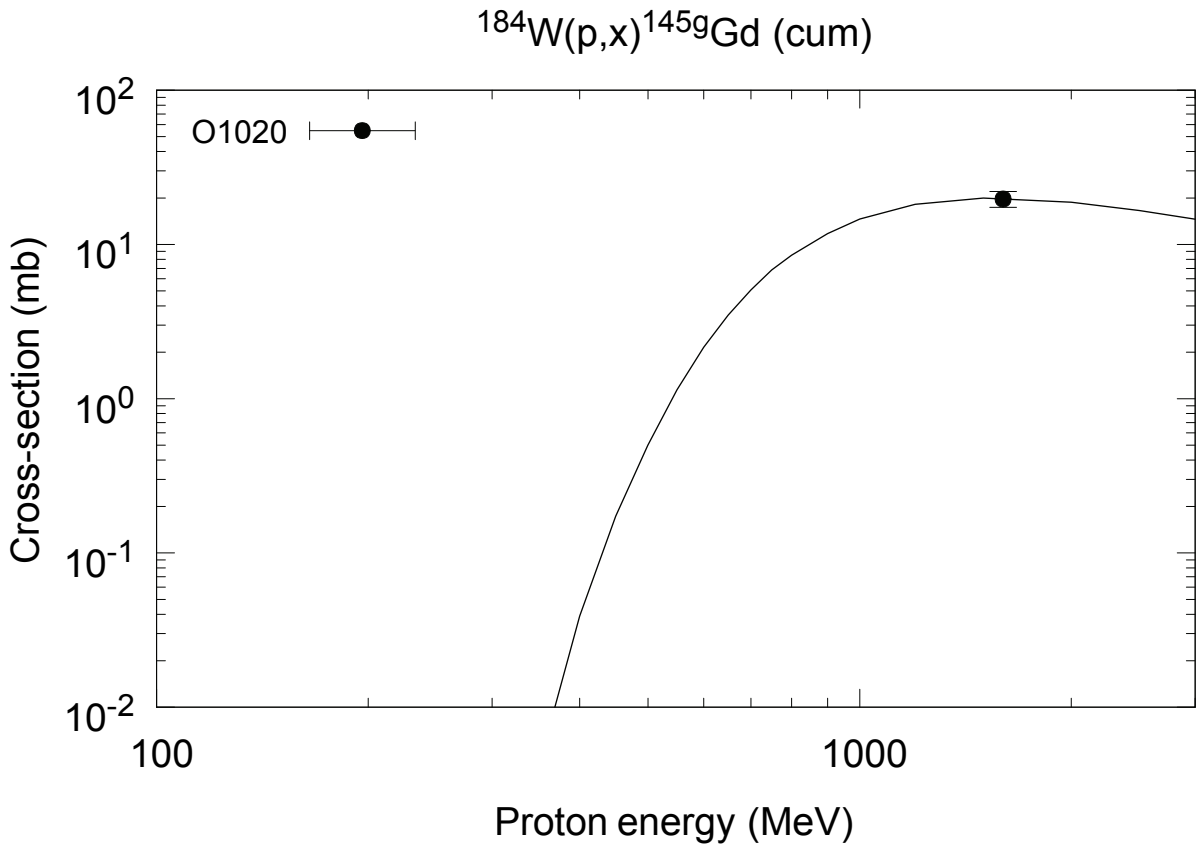

^{184}W(p,x)^{143}Pm (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

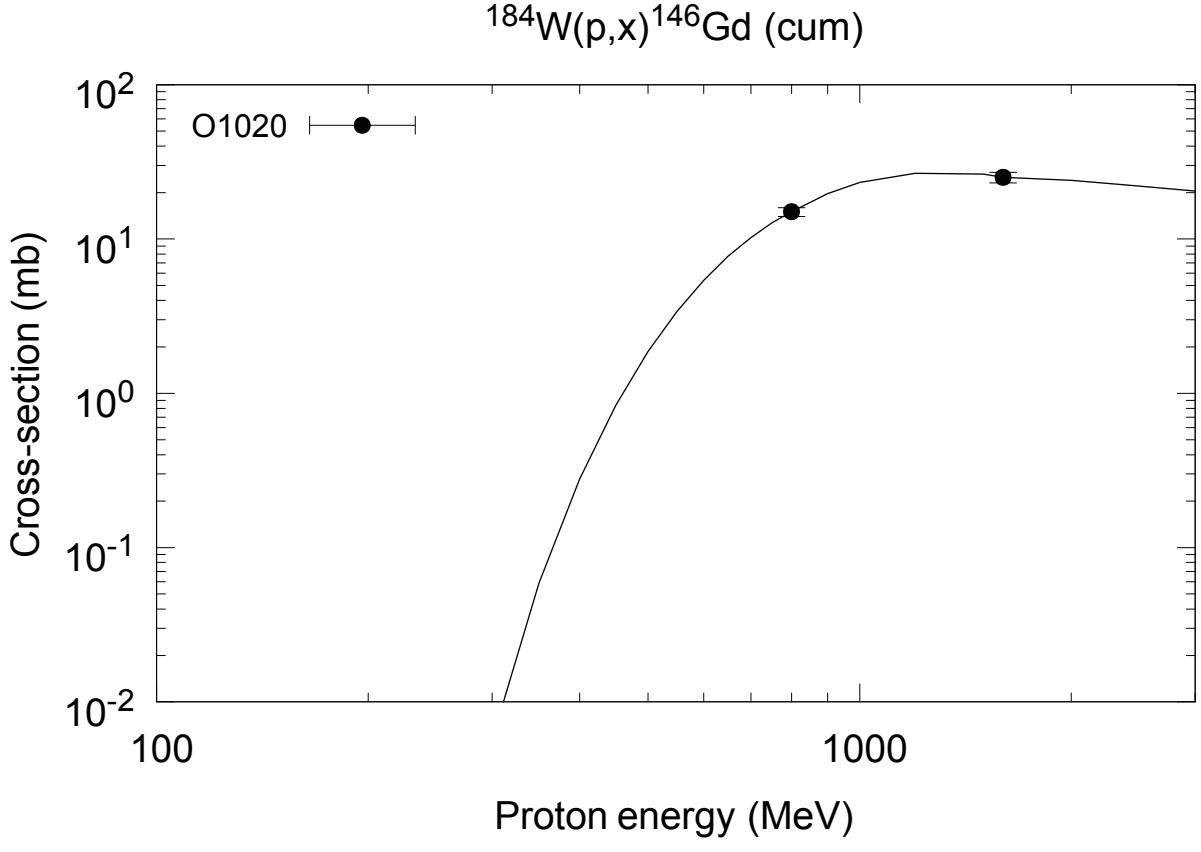

^{184}W(p,x)^{145}Eu (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

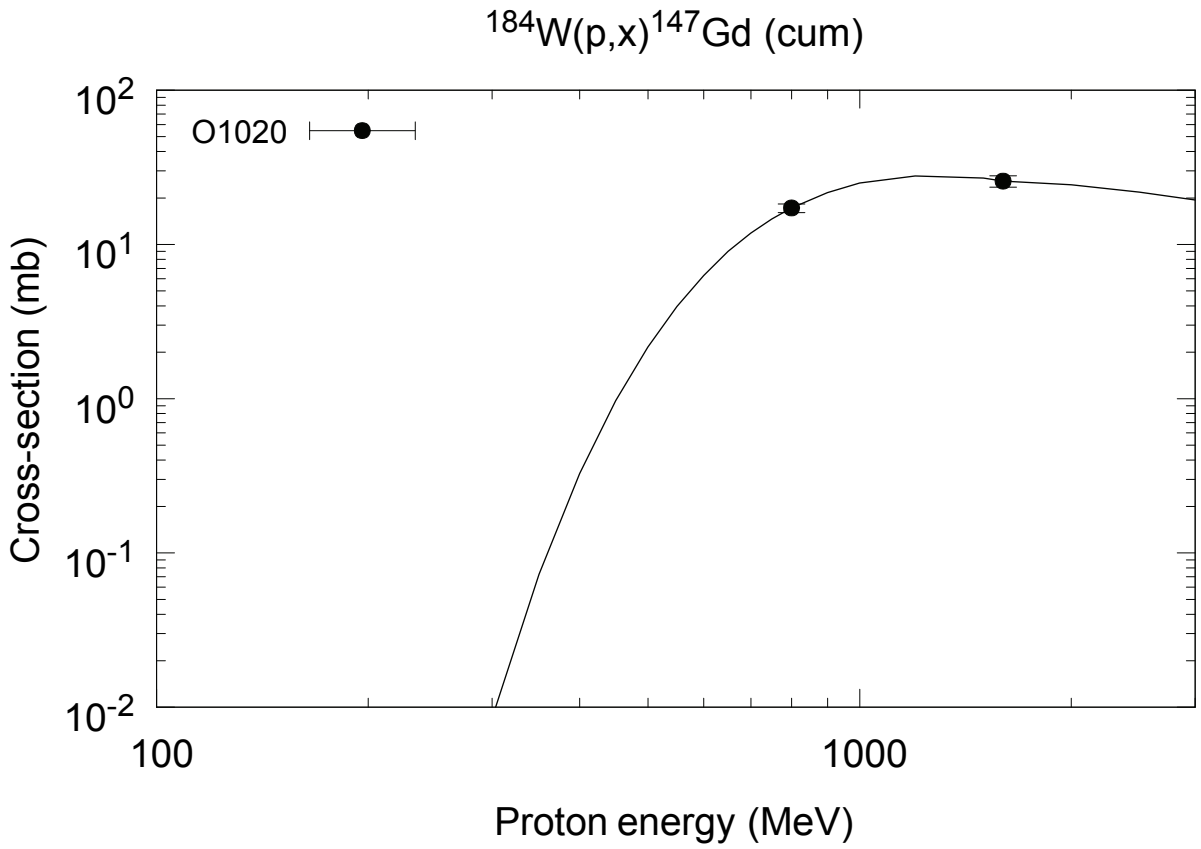

^{184}W(p,x)^{146}Eu (cum)
O1020
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

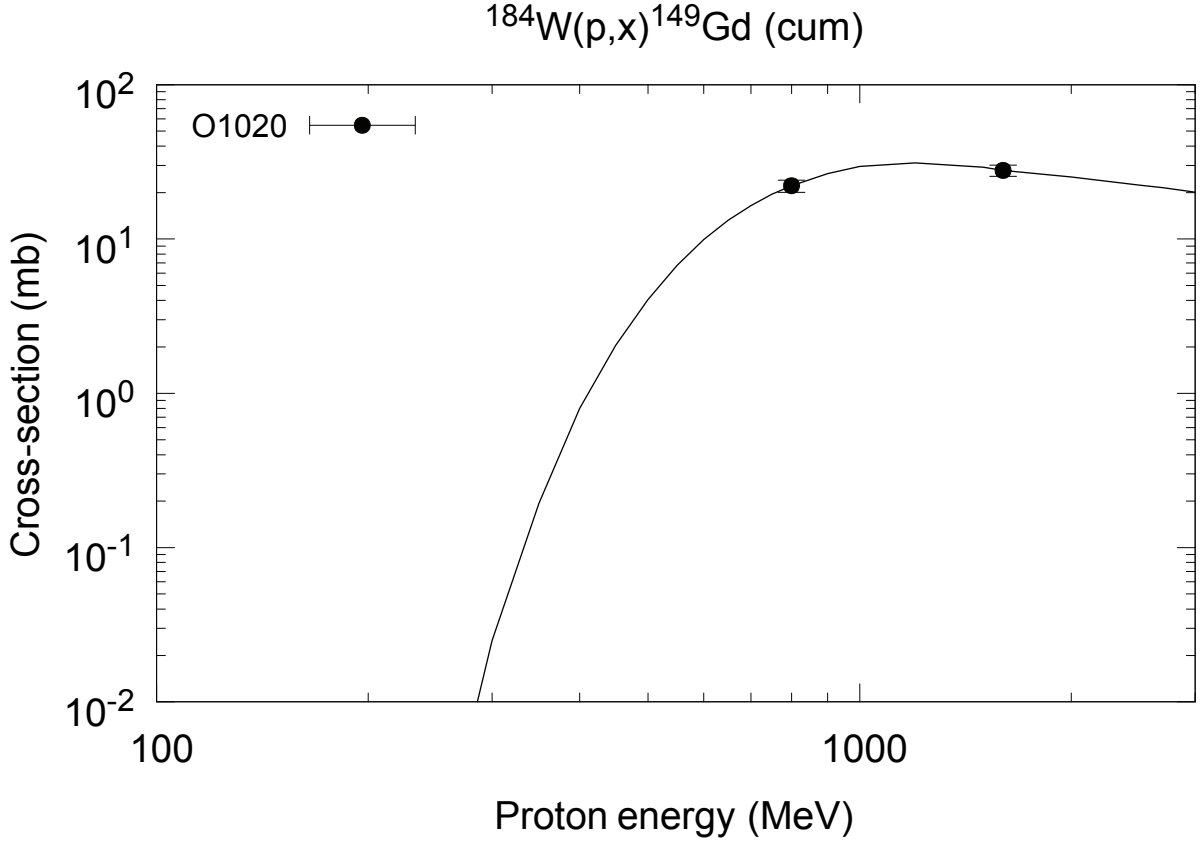

^{184}W(p,x)^{147}Eu (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

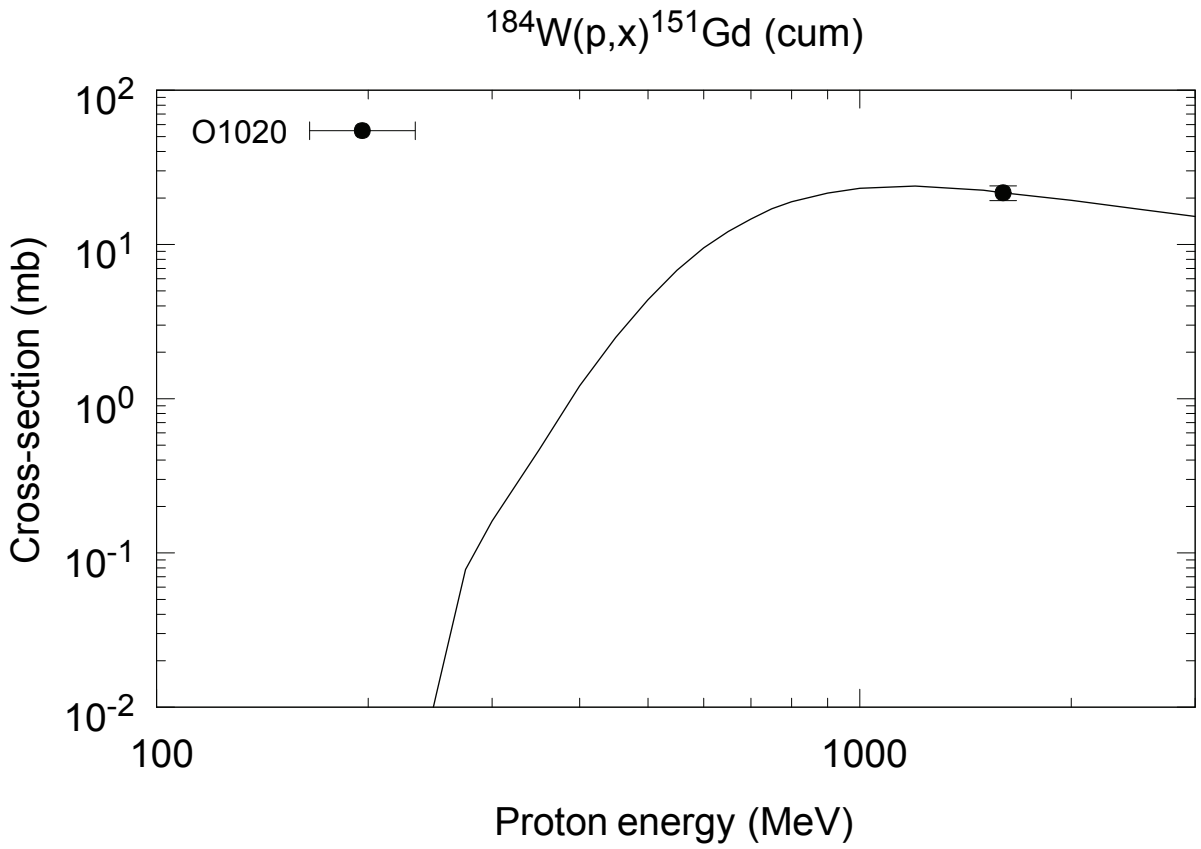

^{184}W(p,x)^{149}Eu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

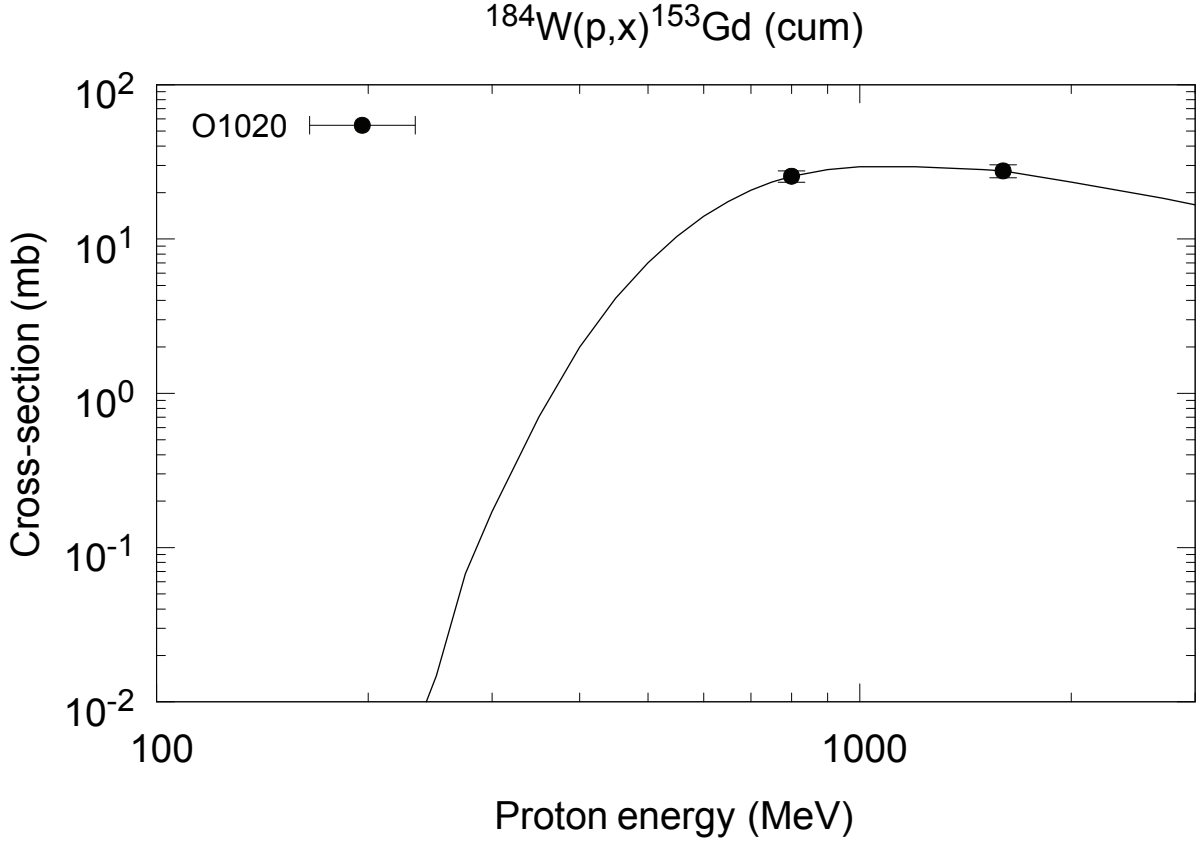

^{184}W(p,x)^{145g}Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

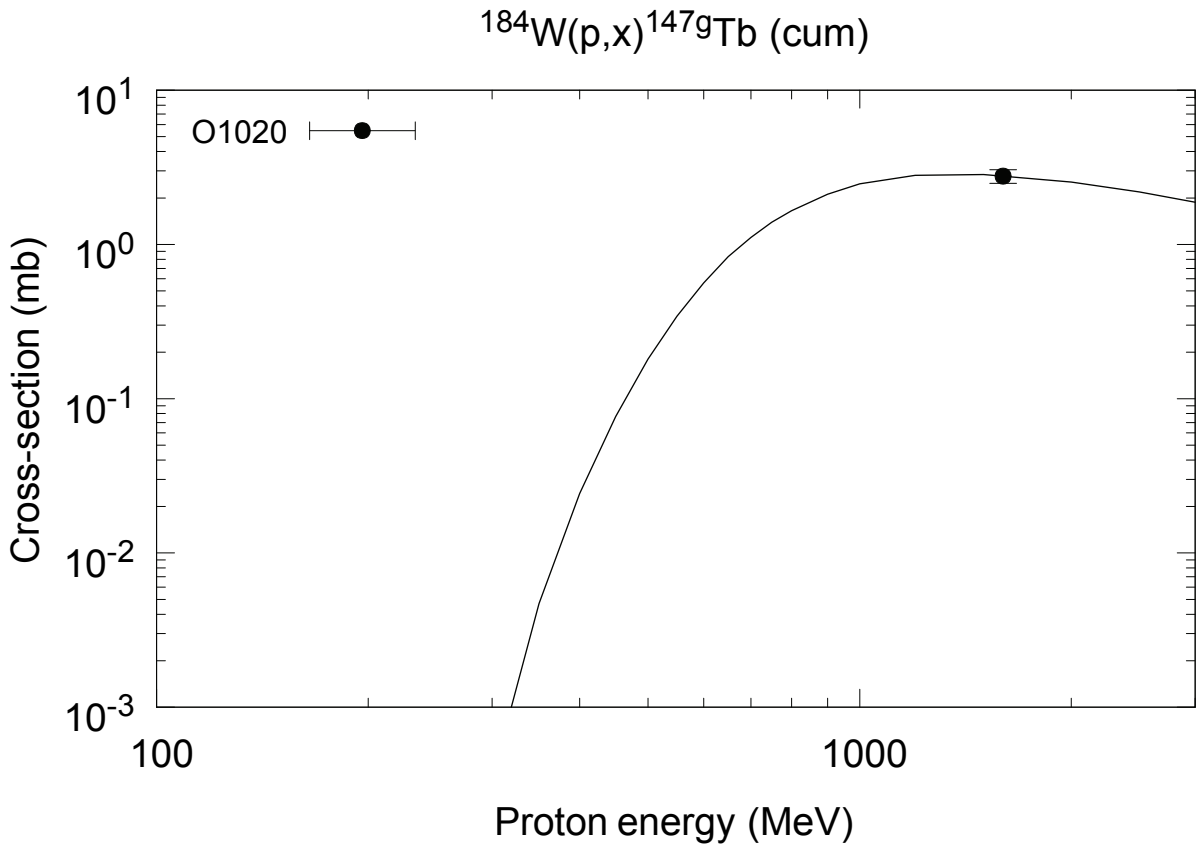

^{184}W(p,x)^{146}Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

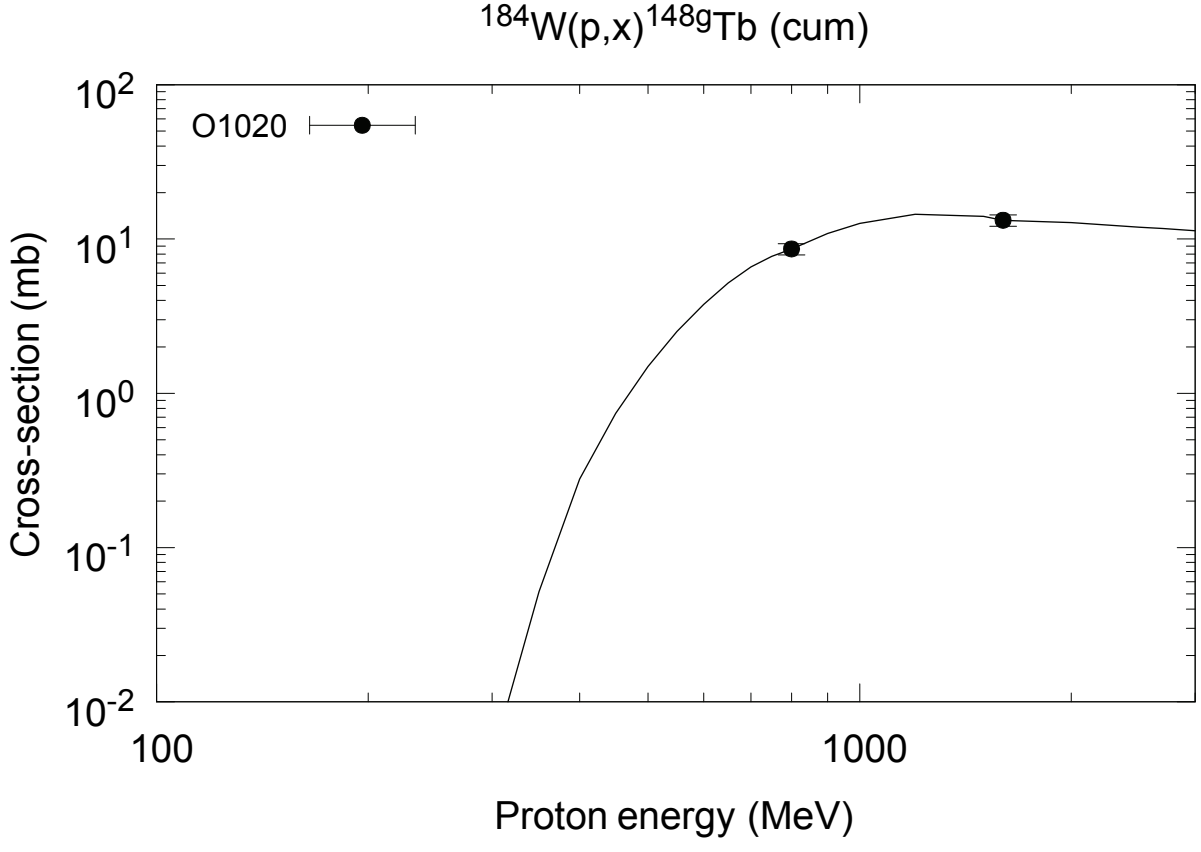

^{184}W(p,x)^{147}Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

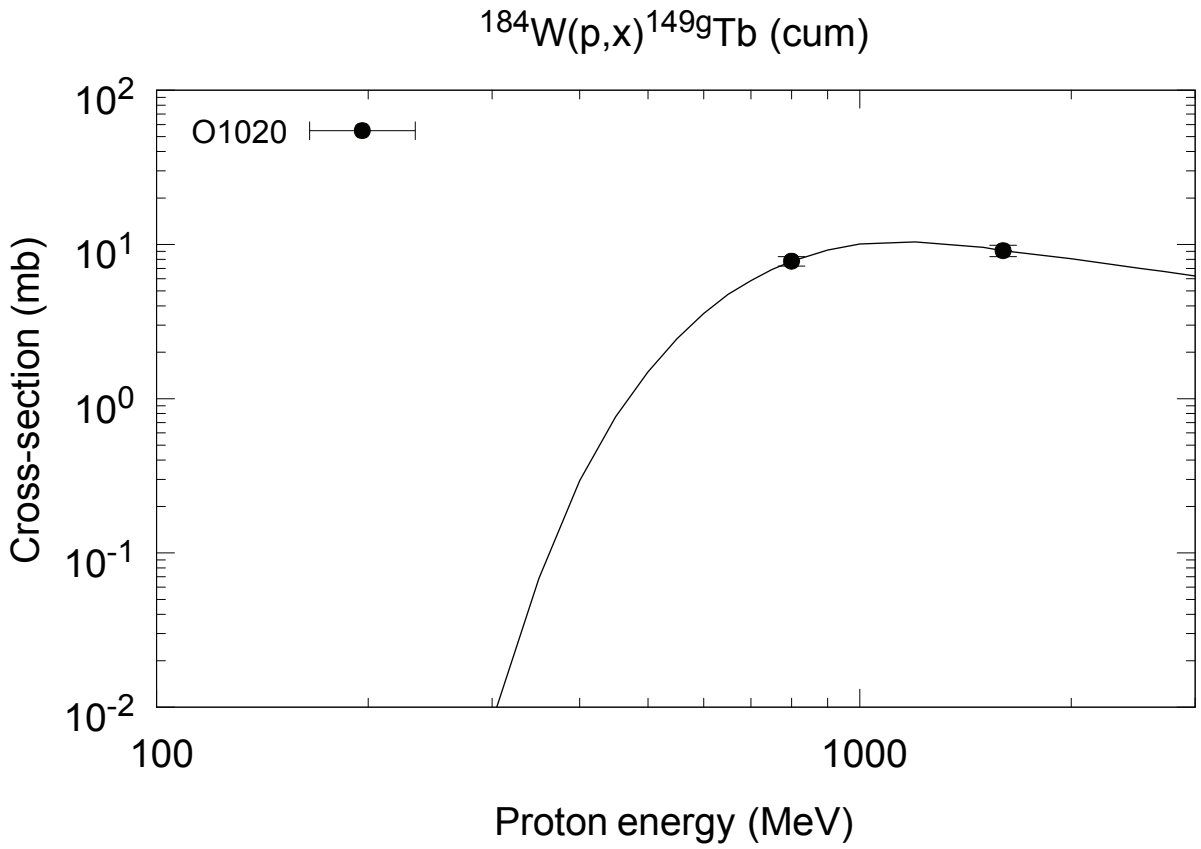

^{184}W(p,x)^{149}Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

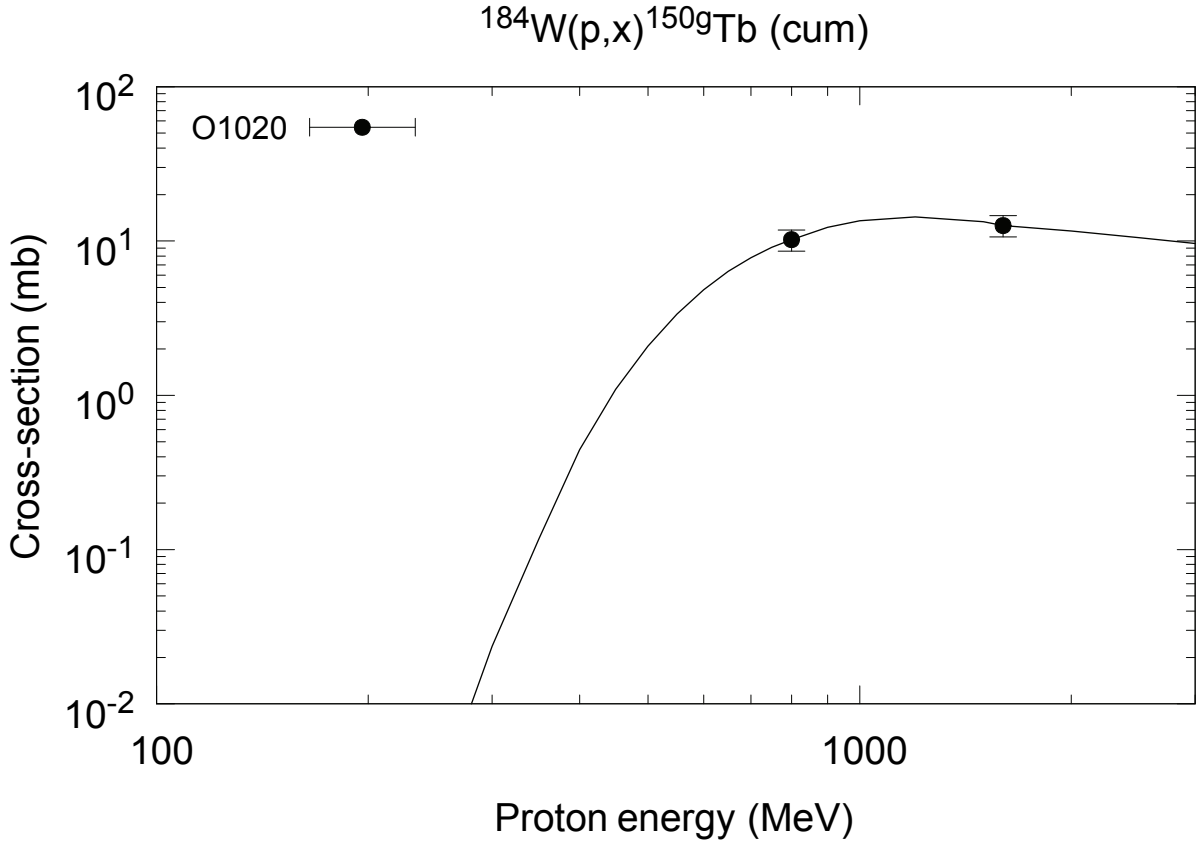

184W(p,x)151Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

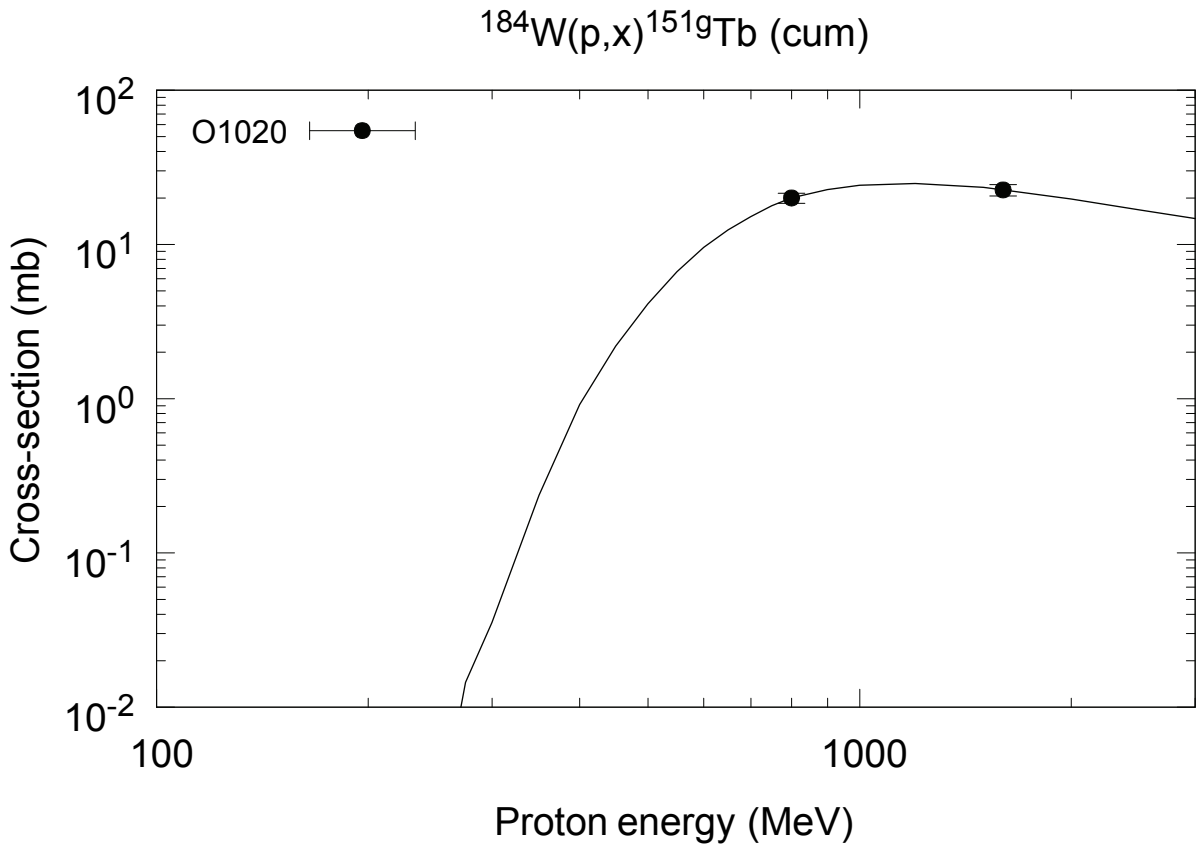

184W(p,x)153Gd (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^-1
10^-2
100
1000
Proton energy (MeV)

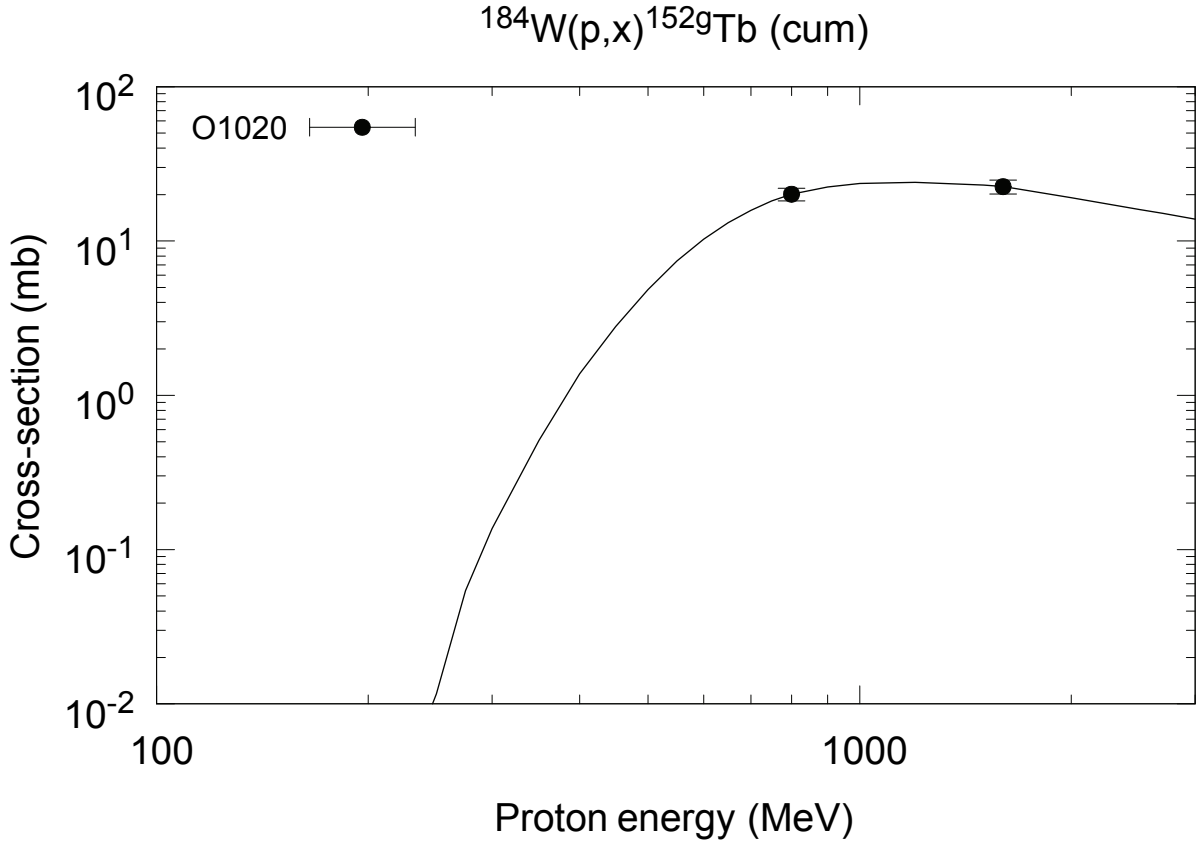

^{184}W(p,x)^{147g}Tb (cum)
O1020
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

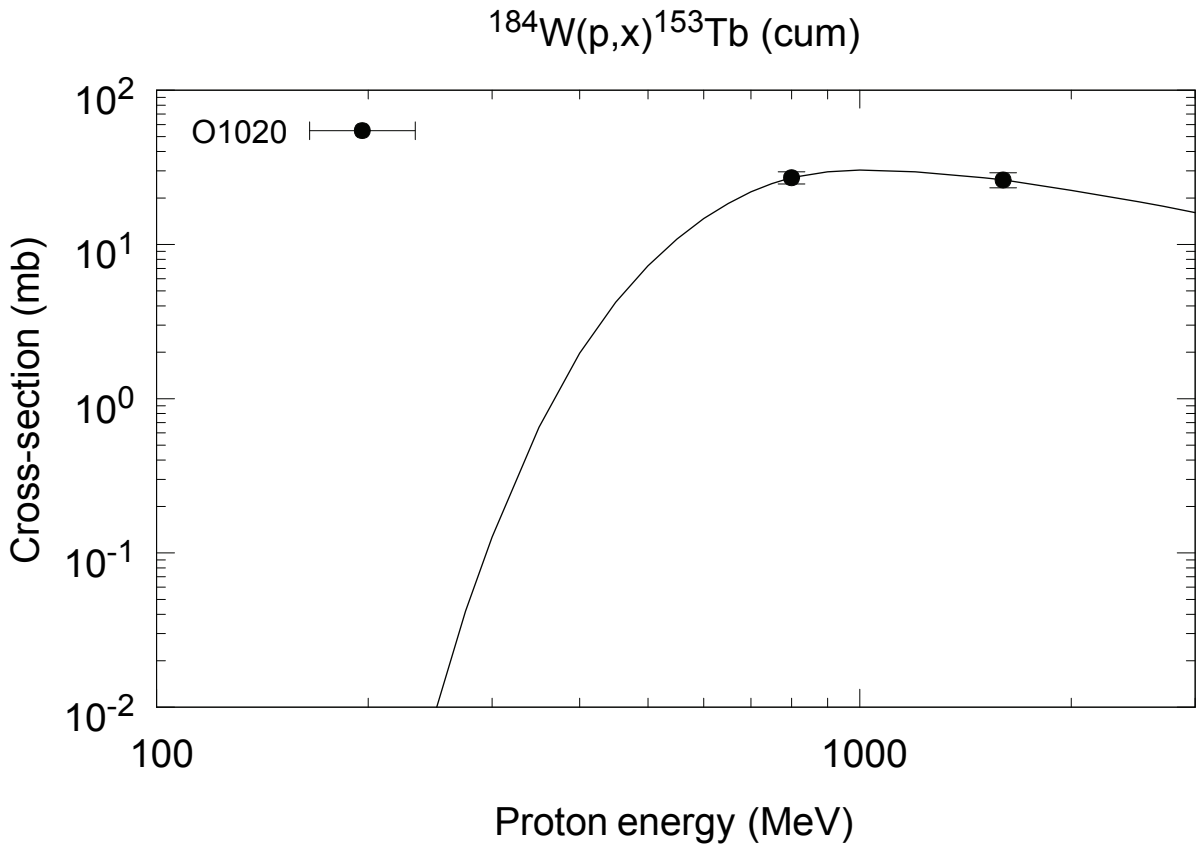

^{184}W(p,x)^{148g}Tb (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

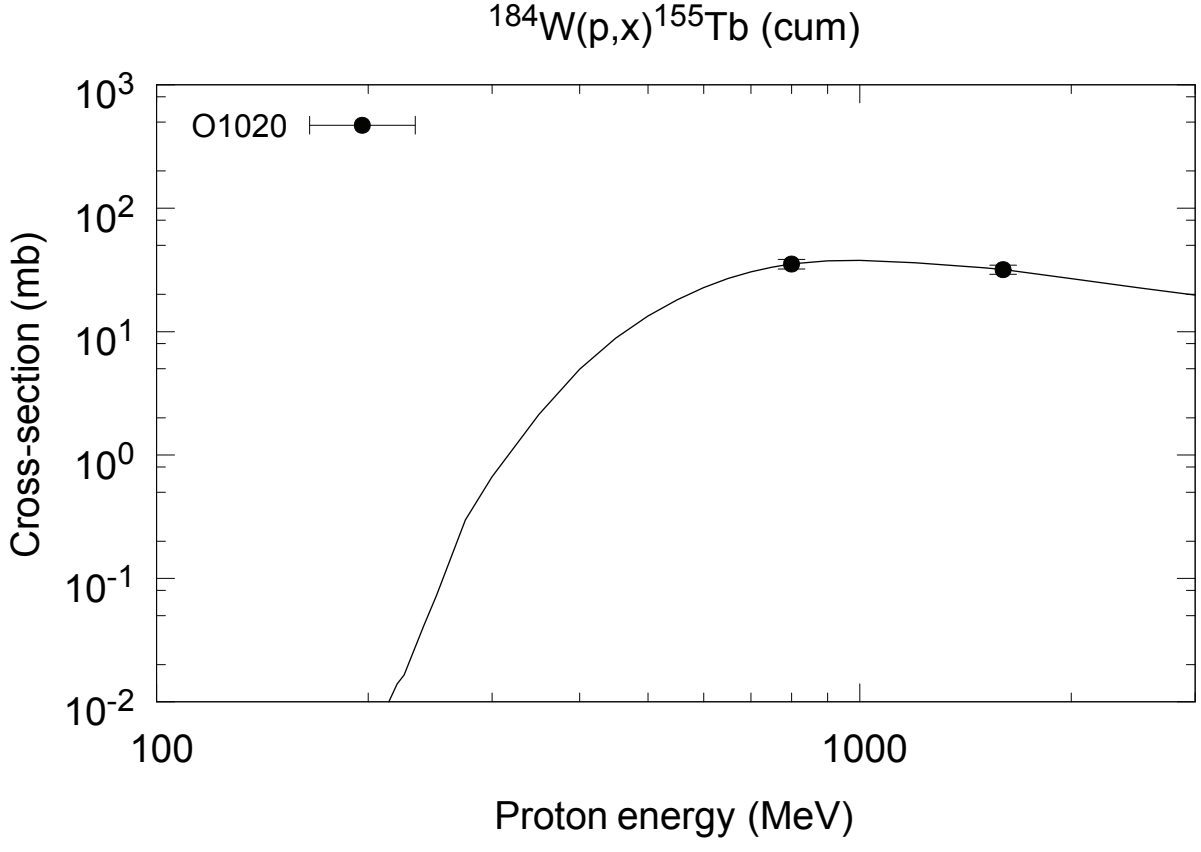

^{184}W(p,x)^{149g}Tb (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

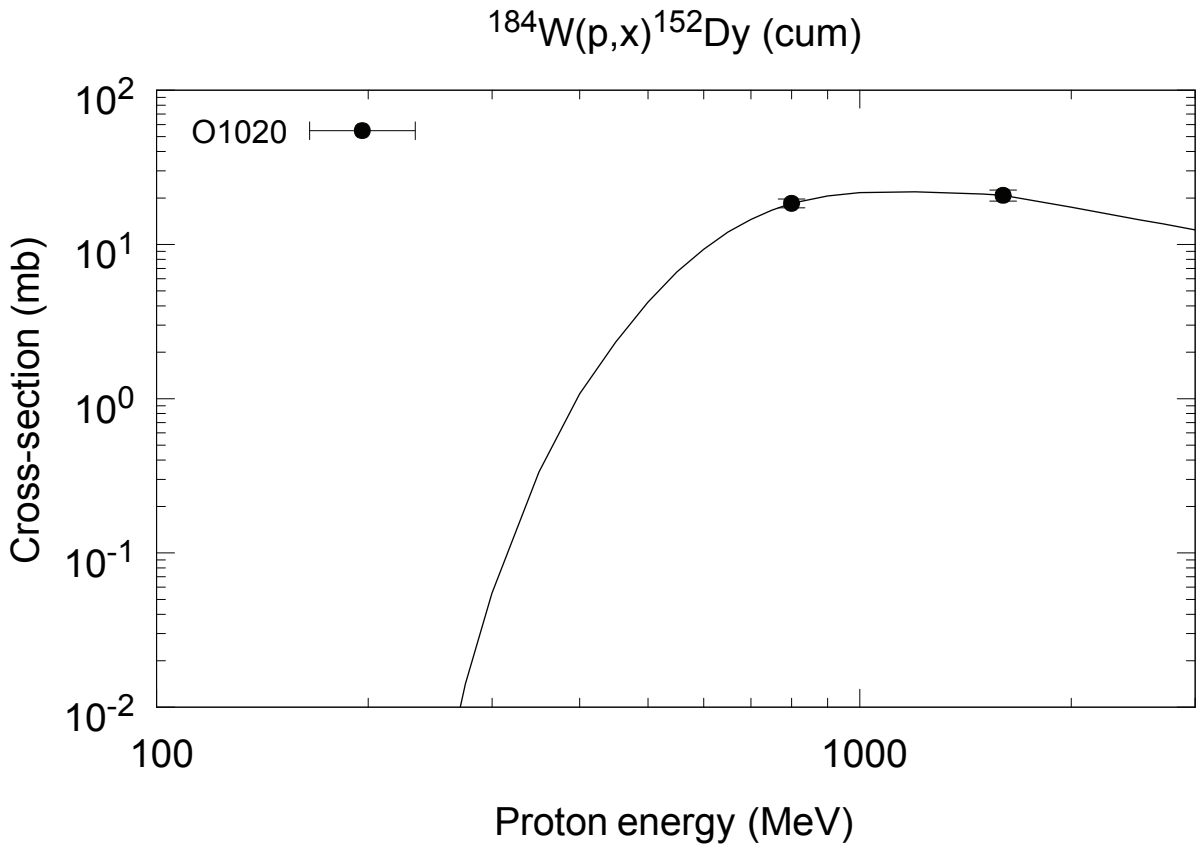

^{184}W(p,x)^{150g}Tb (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

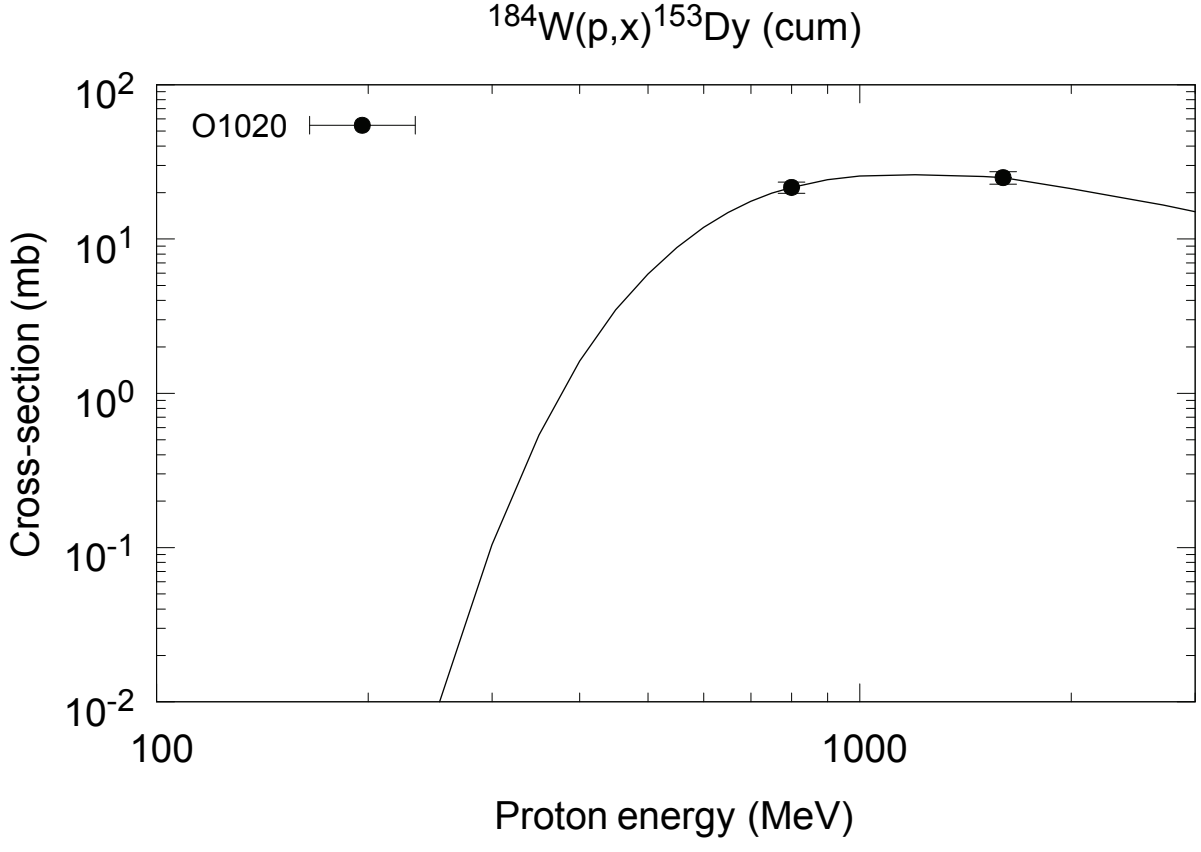

^{184}W(p,x)^{151g}Tb (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

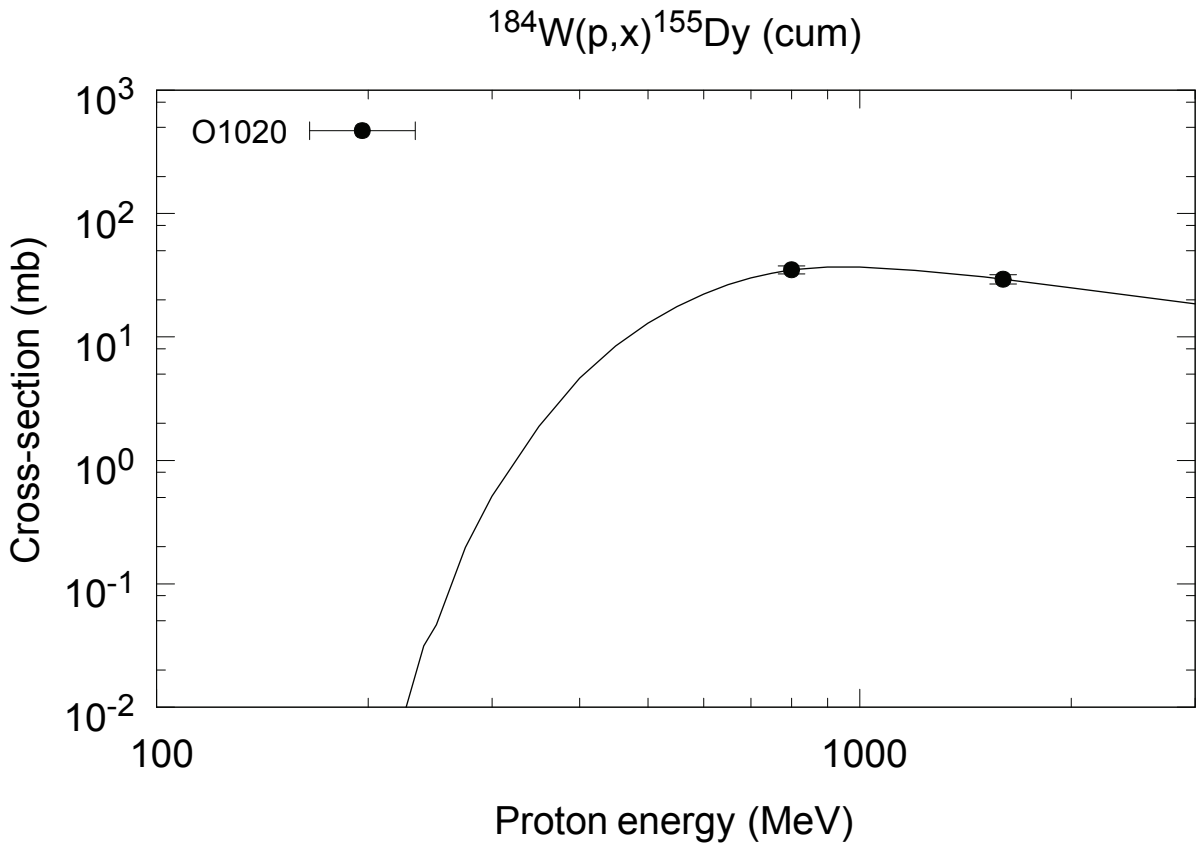

^{184}W(p,x)^{152g}Tb (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

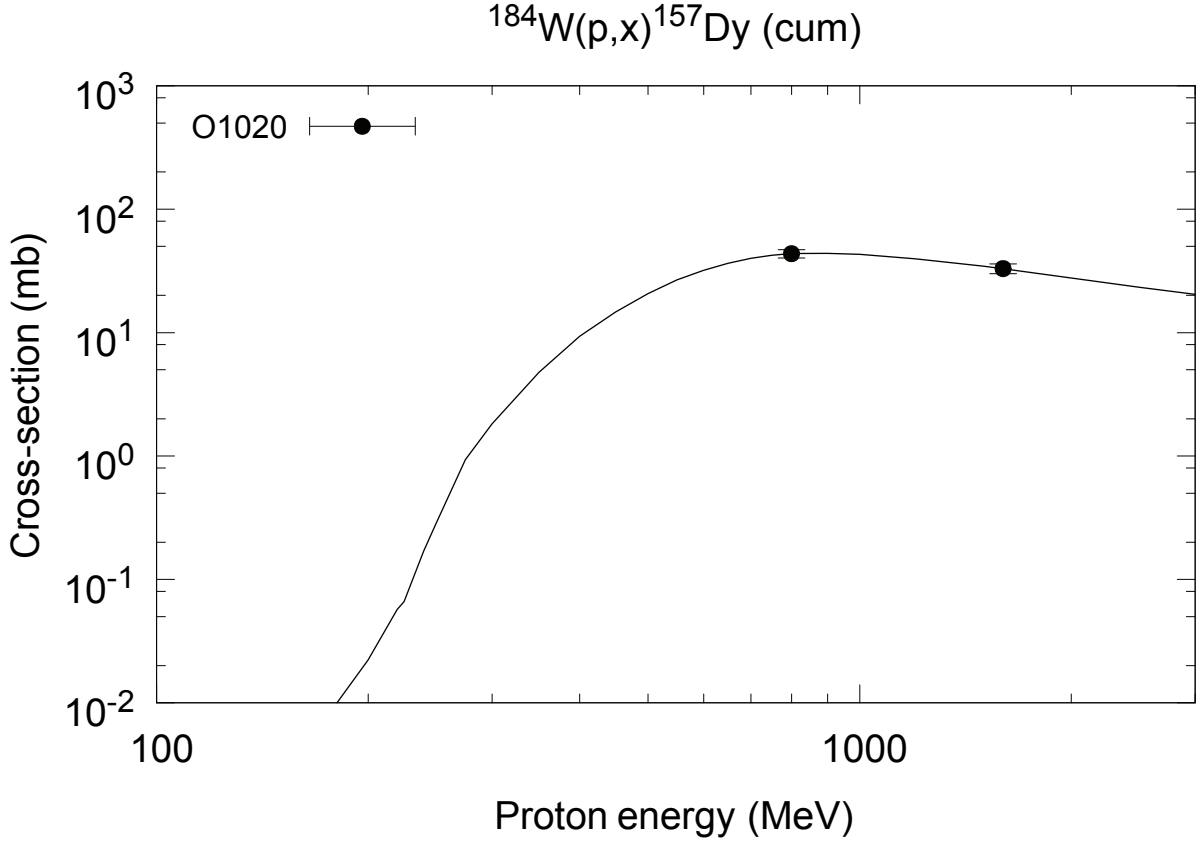

184W(p,x)153Tb (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

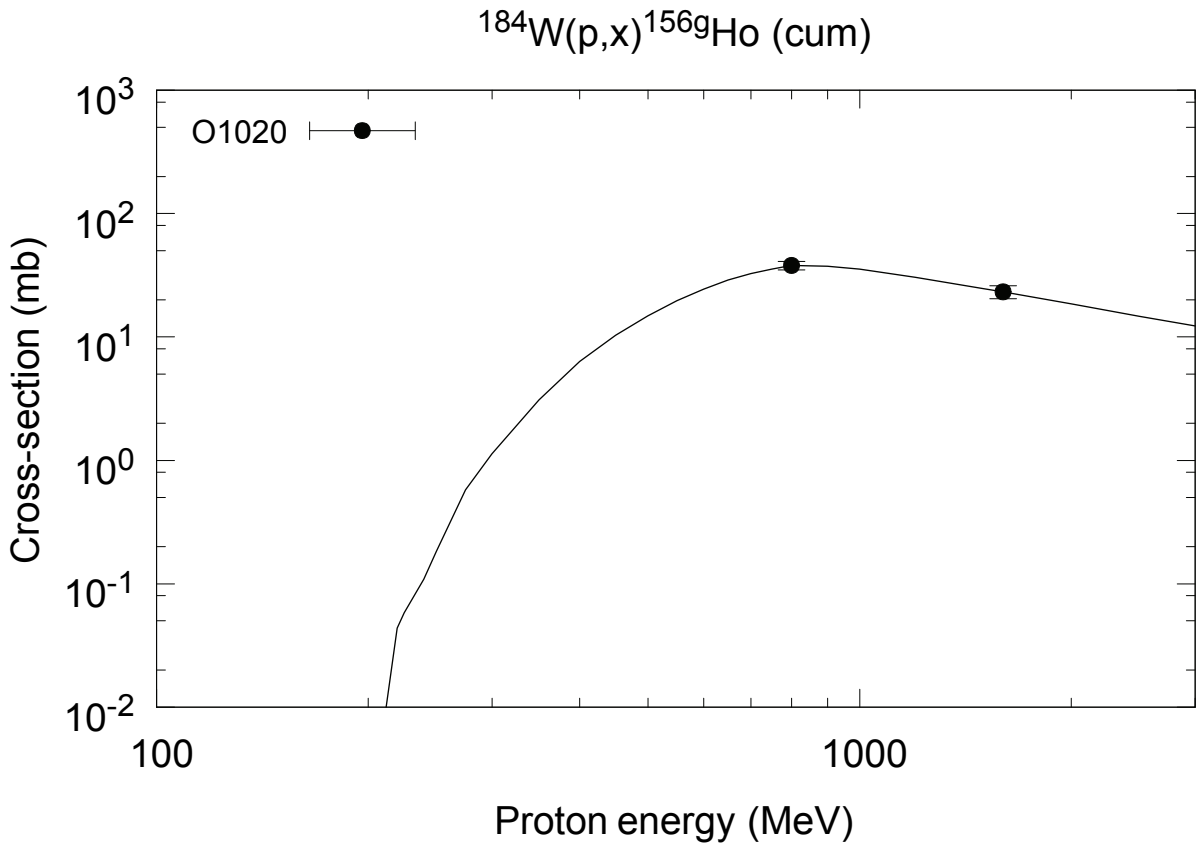

184W(p,x)155Tb (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

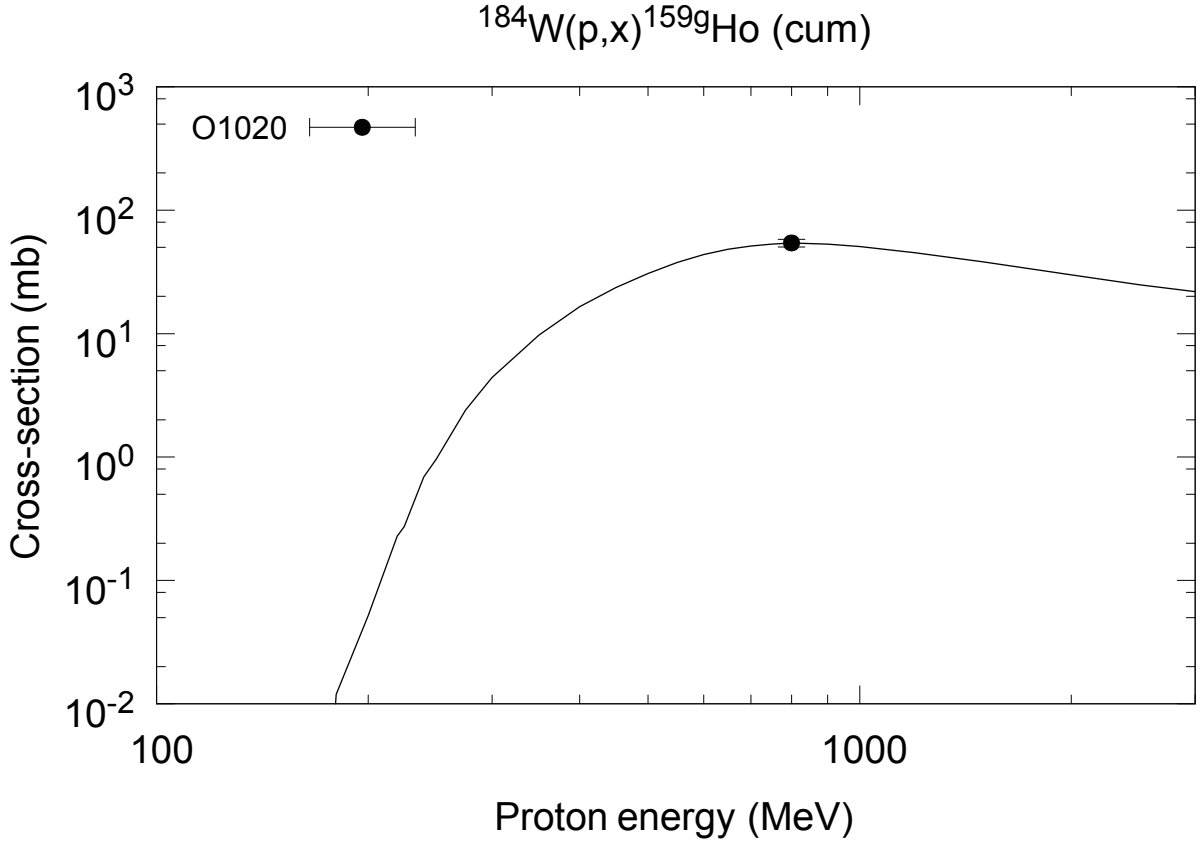

184W(p,x)152Dy (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

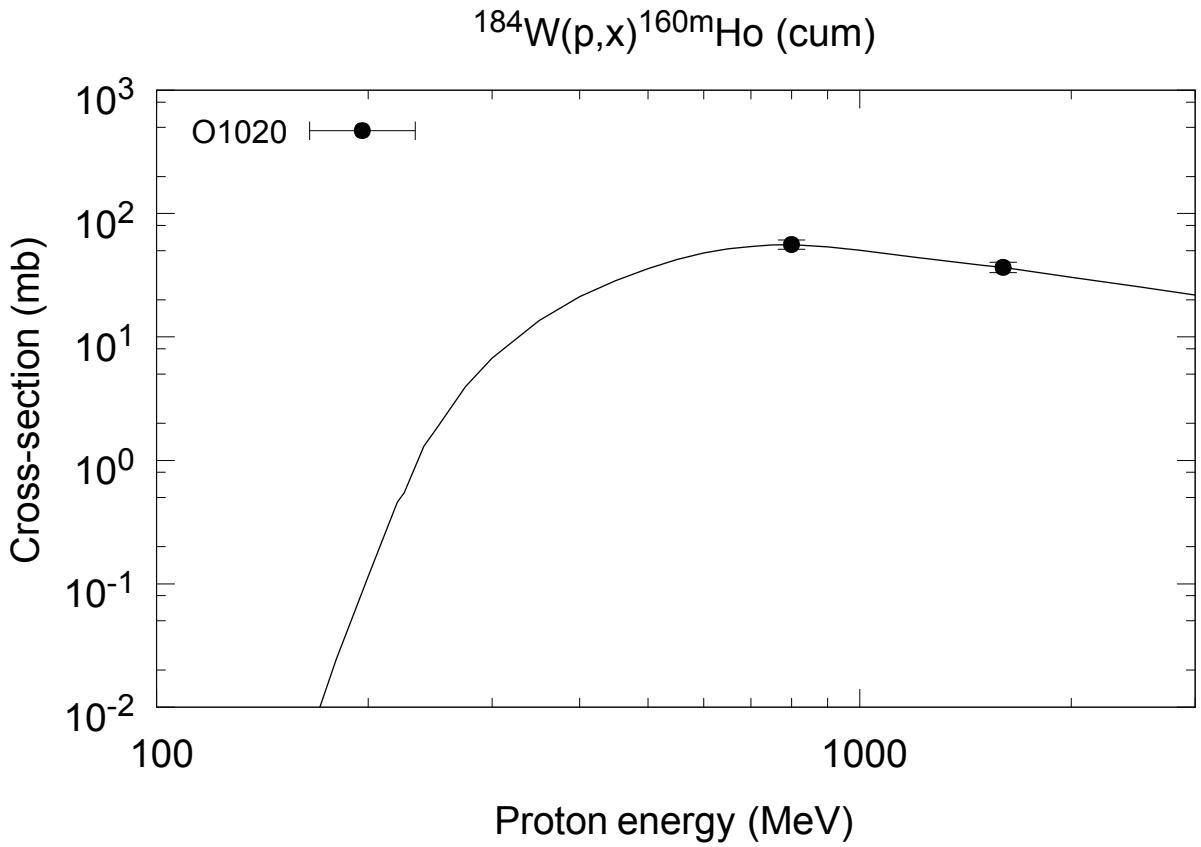

184W(p,x)153Dy (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^-1
10^-2
100
1000

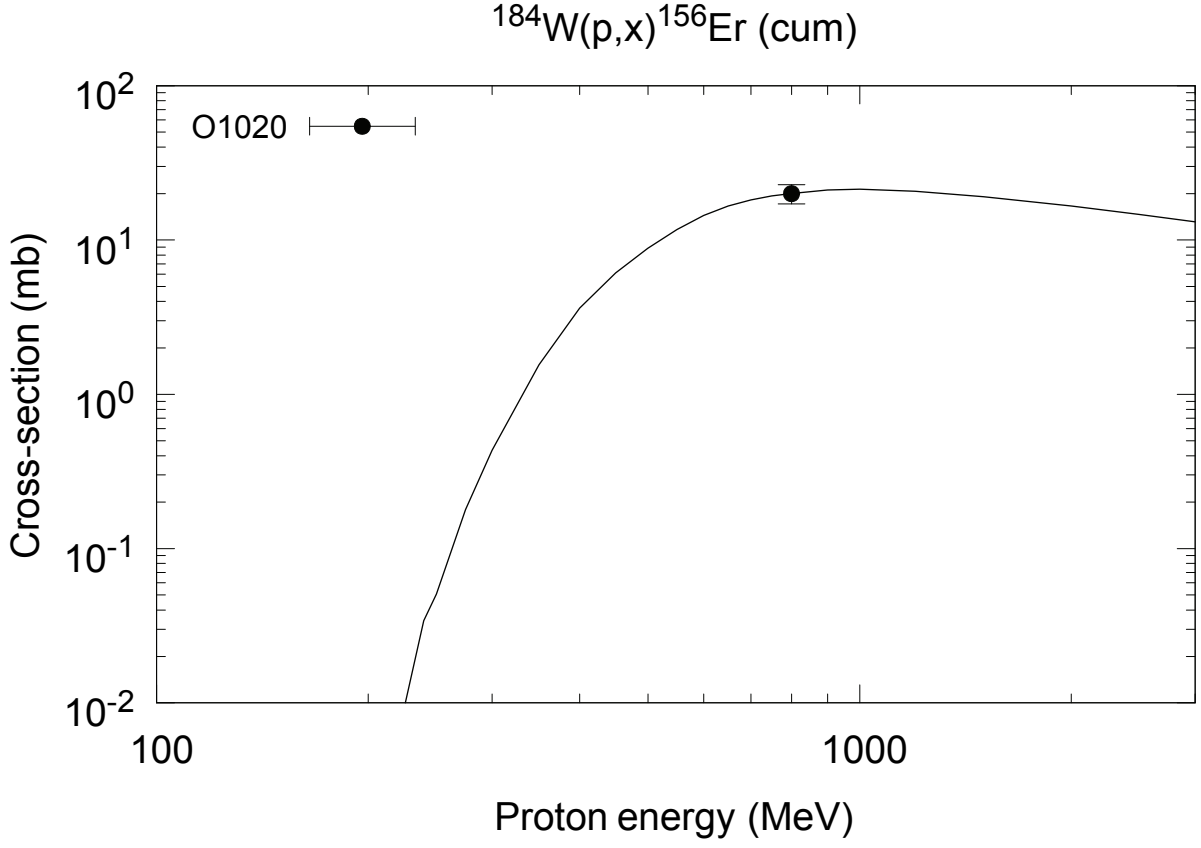

^{184}W(p,x)^{155}Dy (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

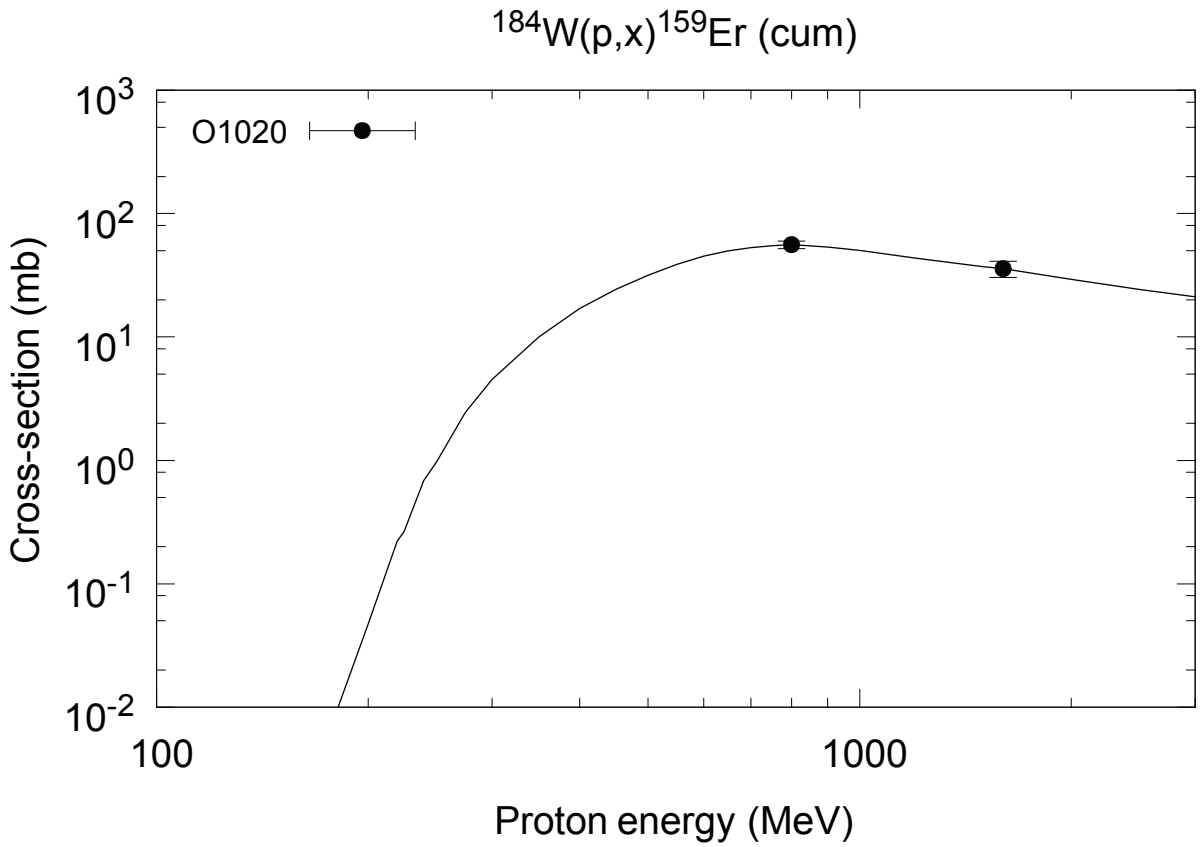

^{184}W(p,x)^{157}Dy (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

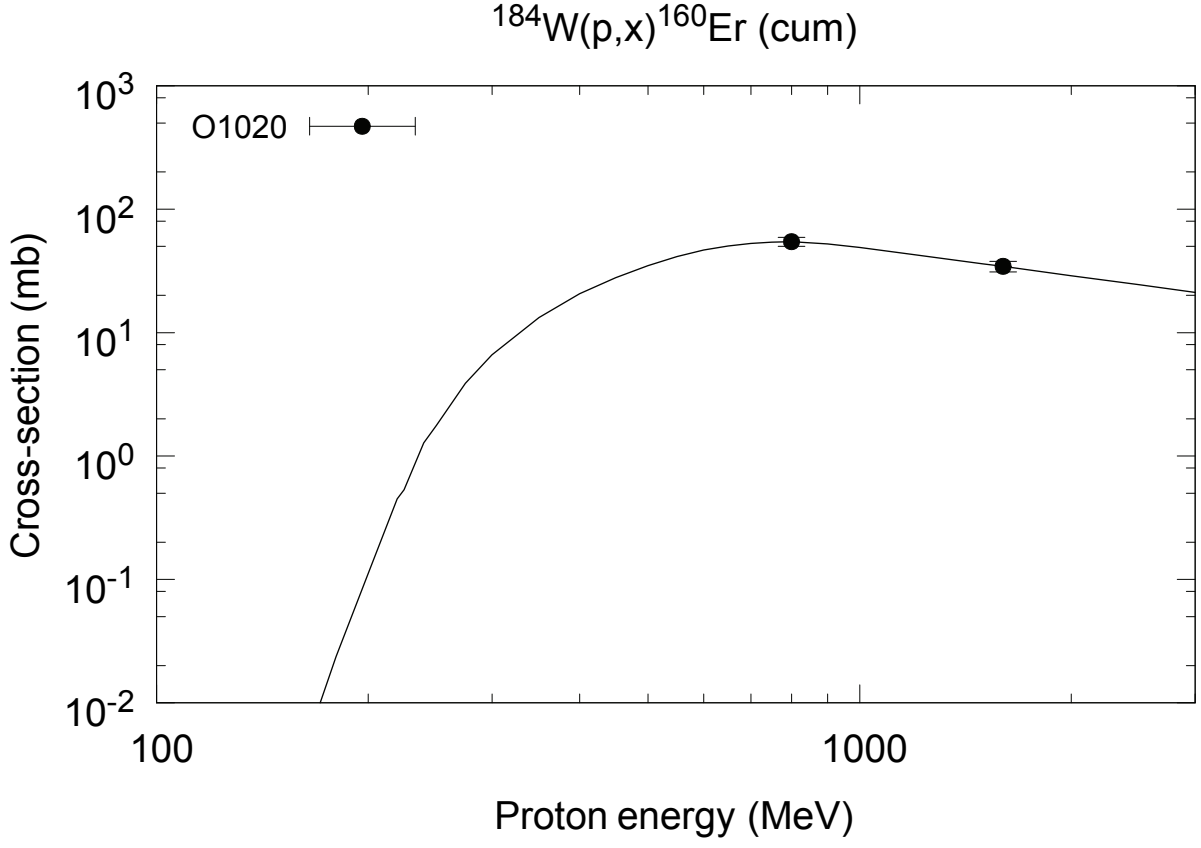

^{184}W(p,x)^{156g}Ho (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

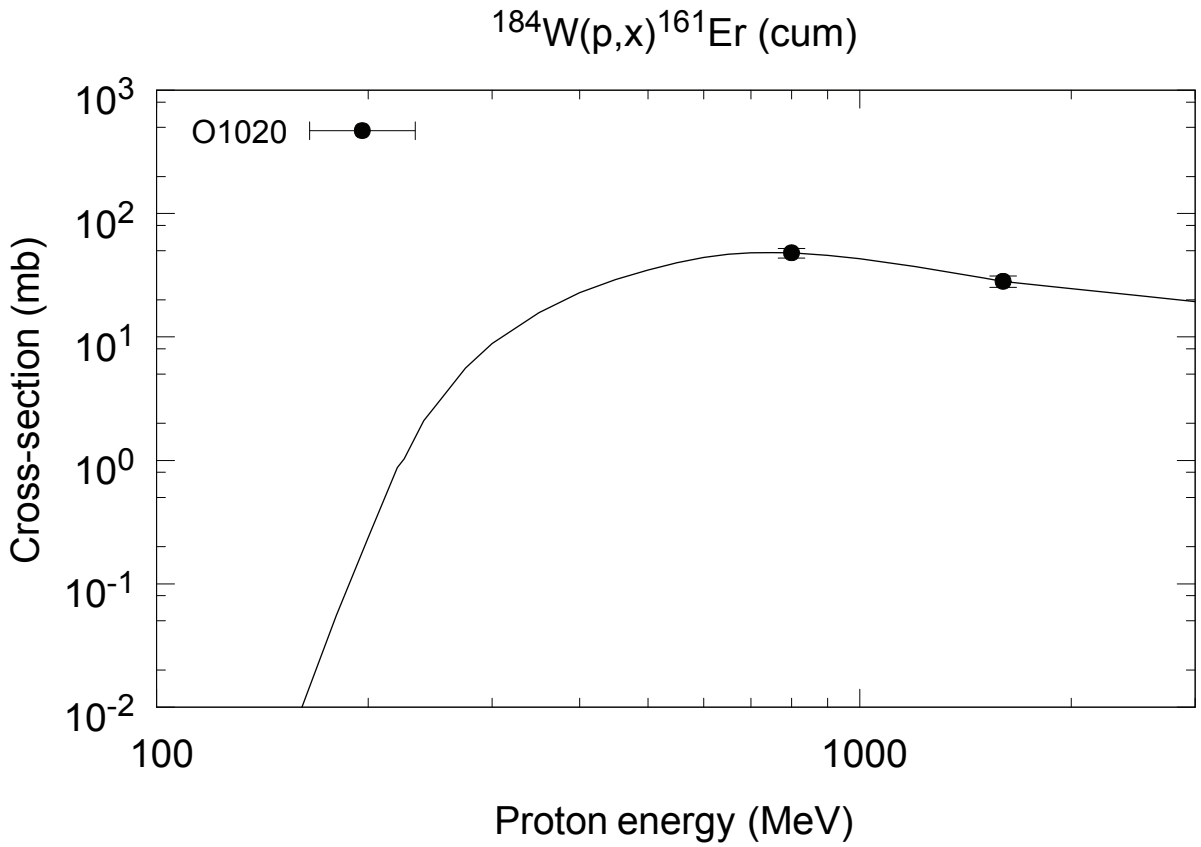

^{184}W(p,x)^{159g}Ho (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

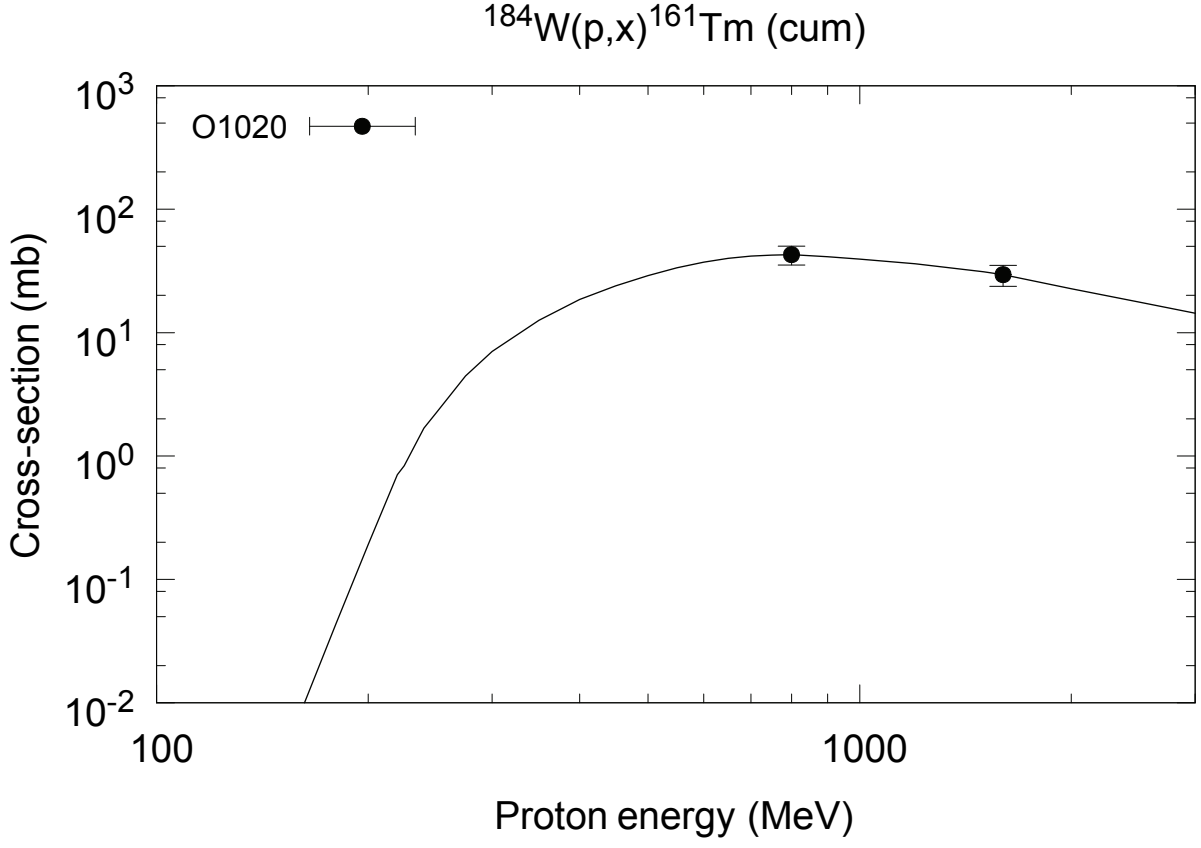

^{184}W(p,x)^{160m}Ho (cum)
O1020
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

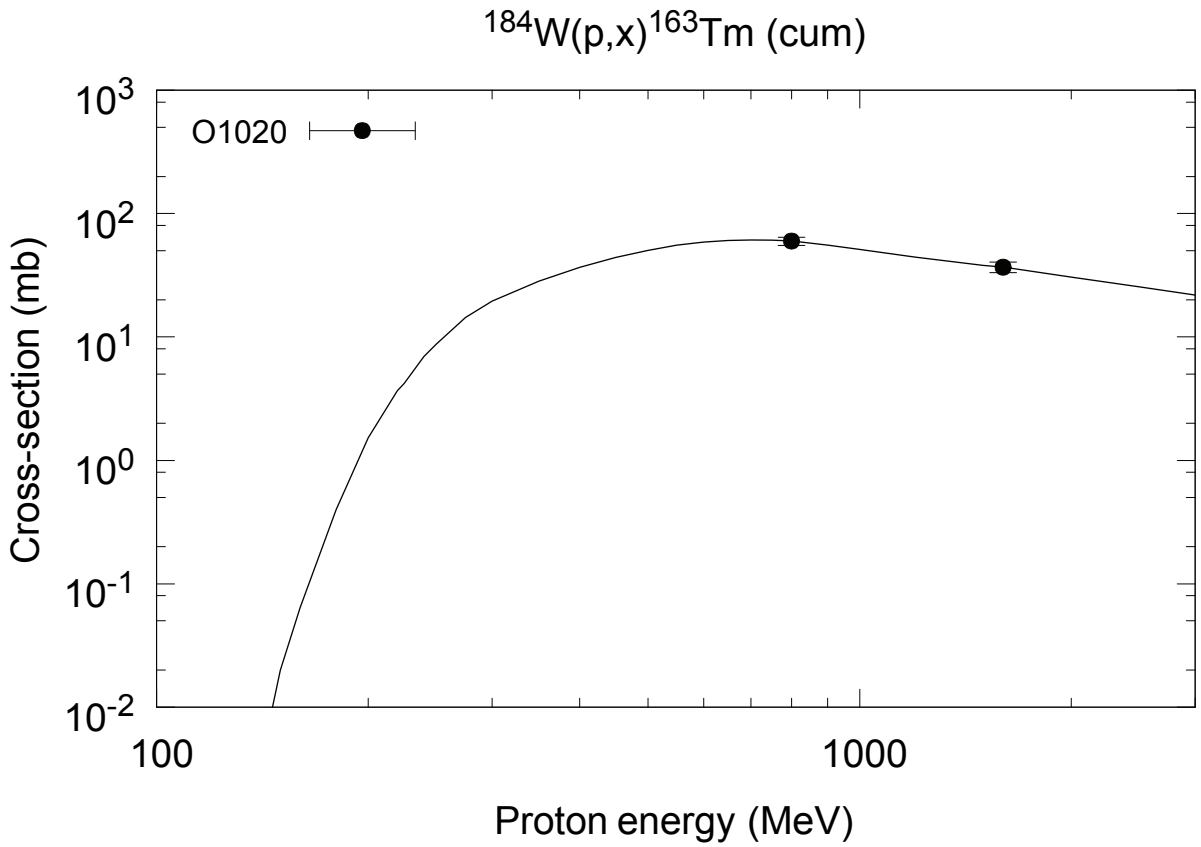

^{184}W(p,x)^{156}Er (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

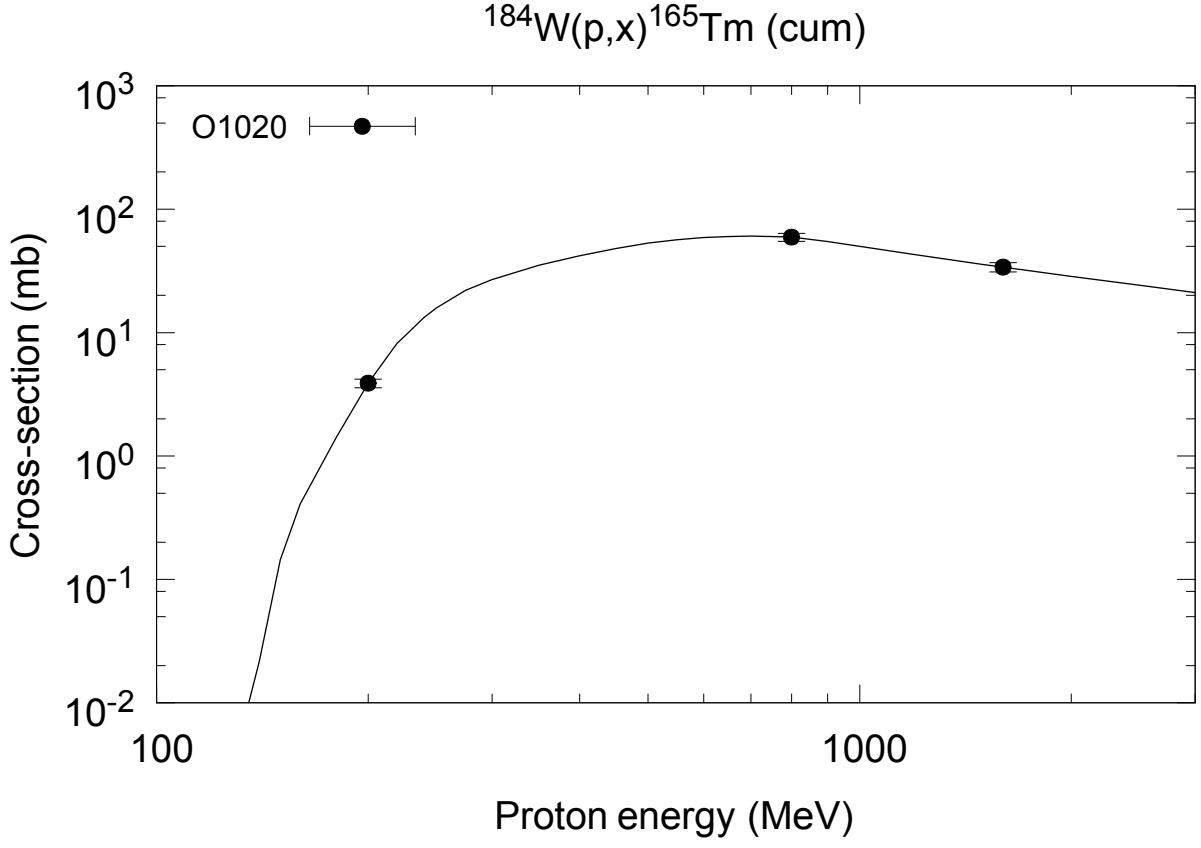

^{184}W(p,x)^{159}Er (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

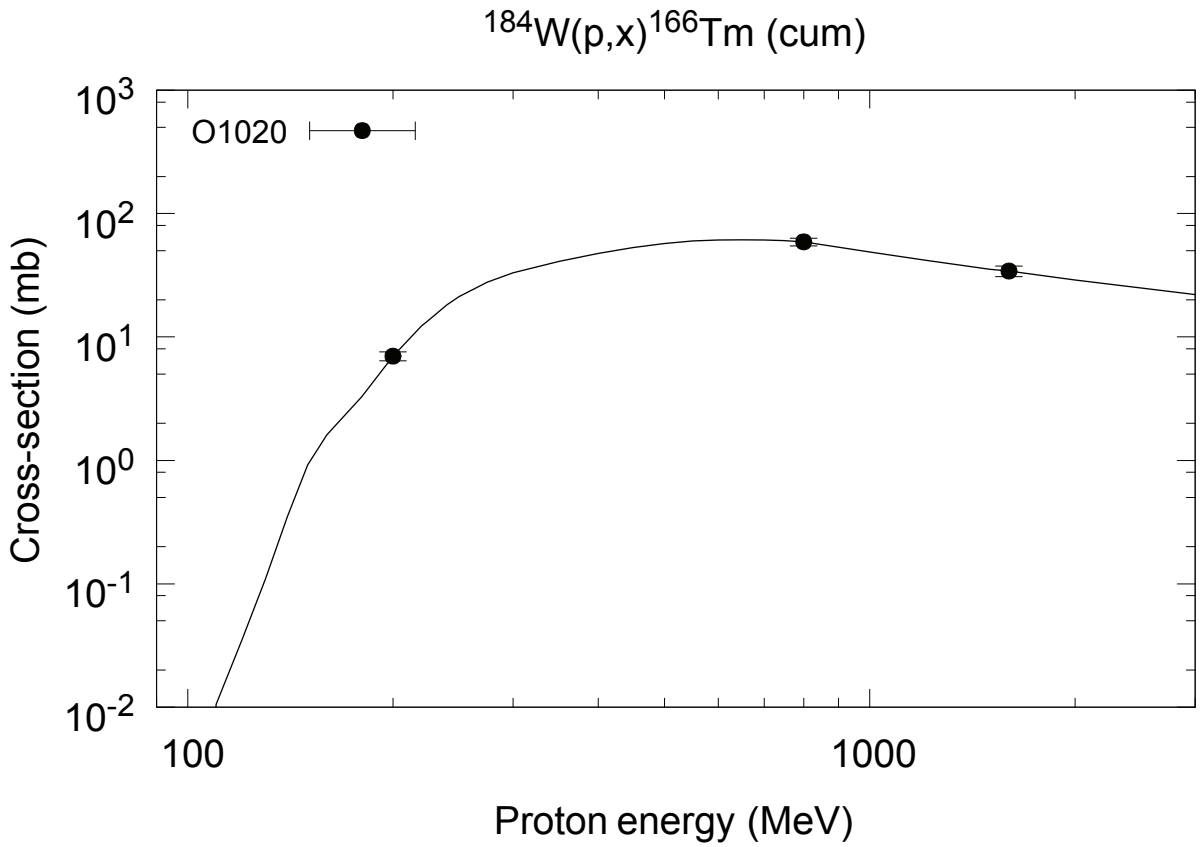

^{184}W(p,x)^{160}Er (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

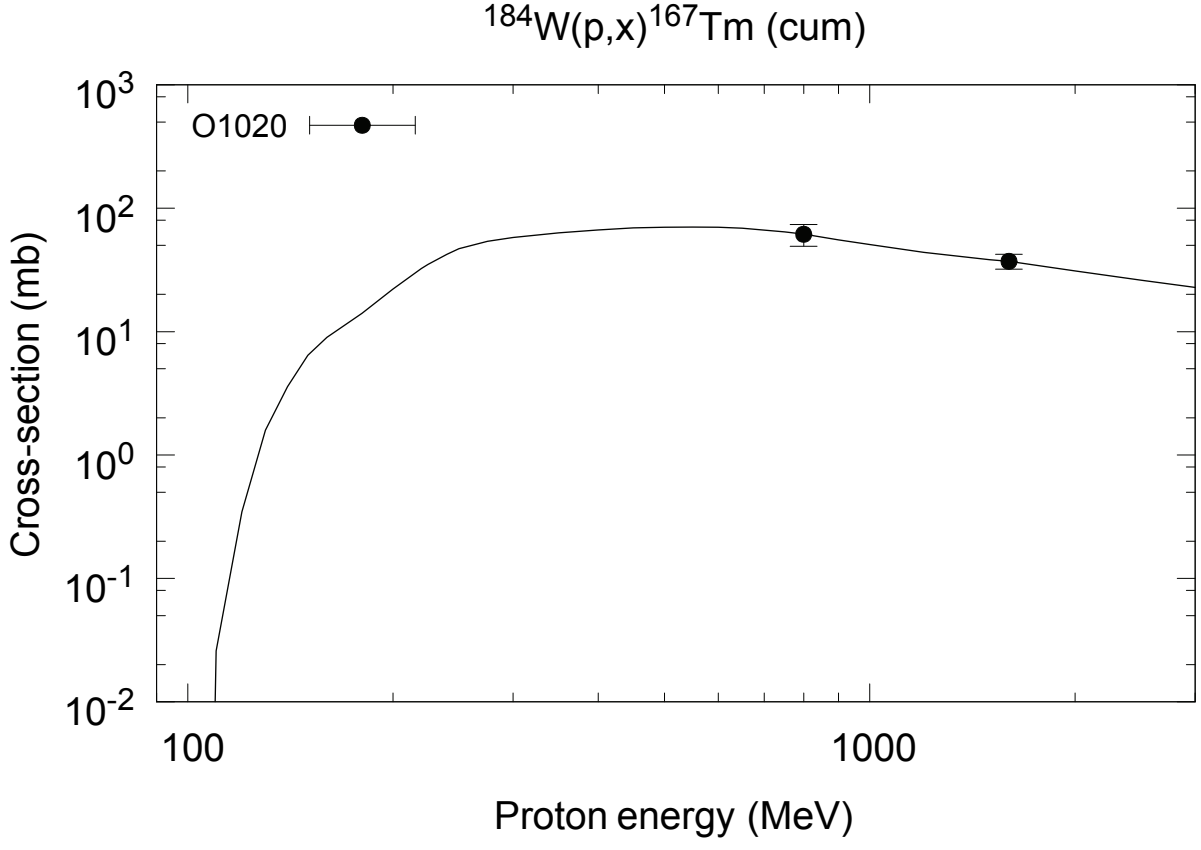

^{184}W(p,x)^{161}Er (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

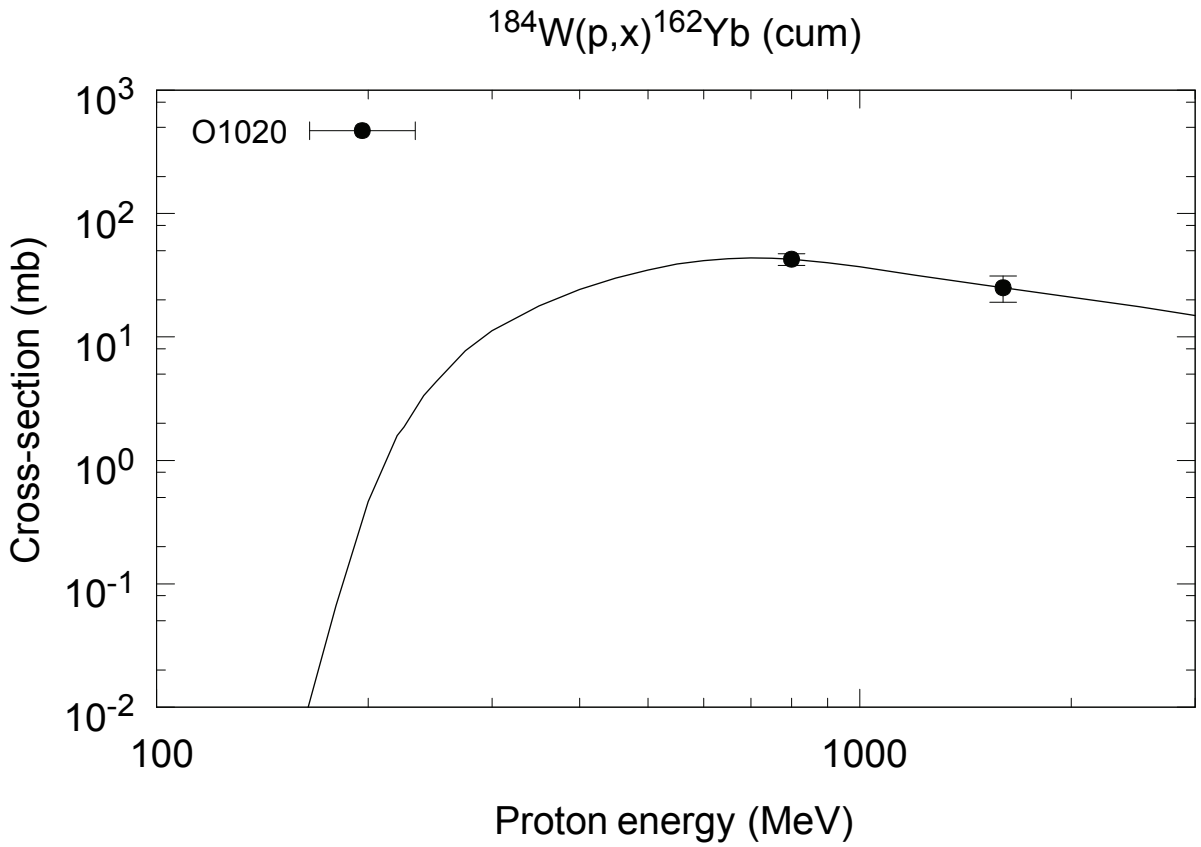

^{184}W(p,x)^{161}Tm (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

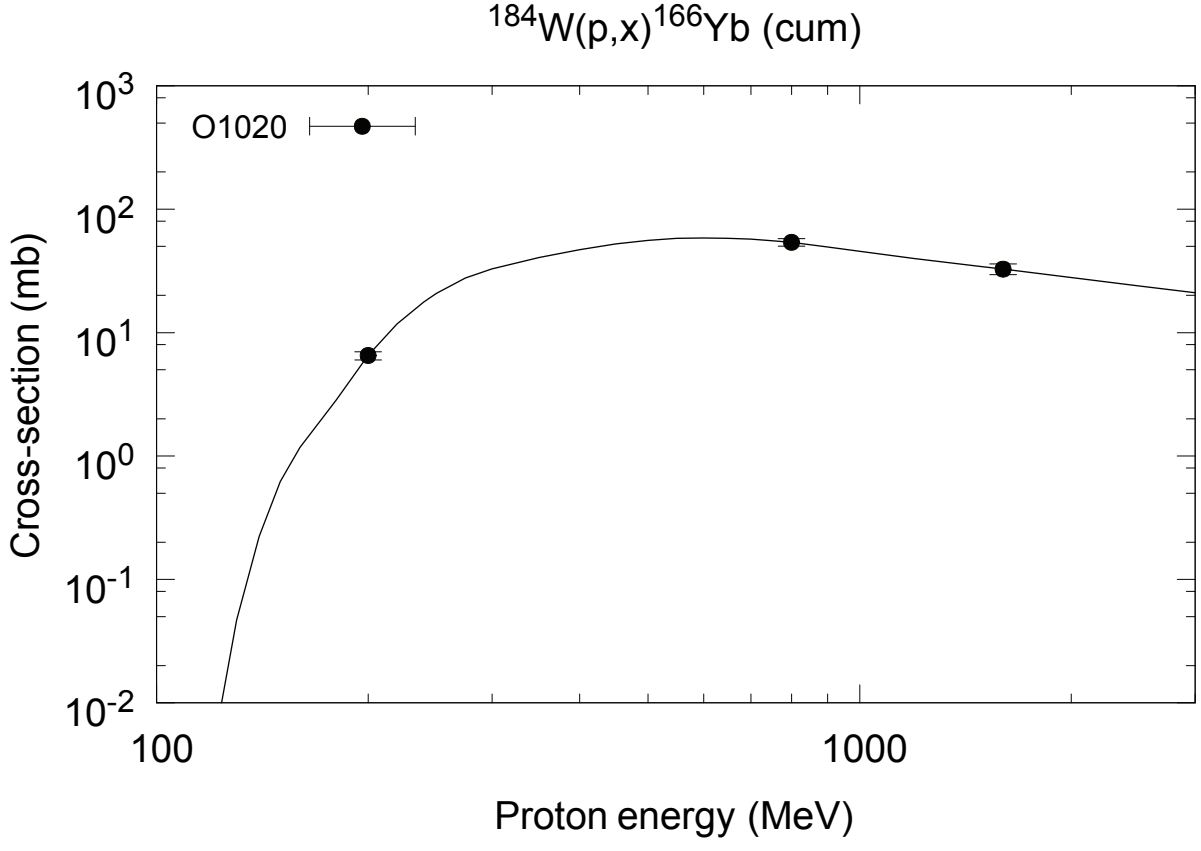

^{184}W(p,x)^{163}Tm (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

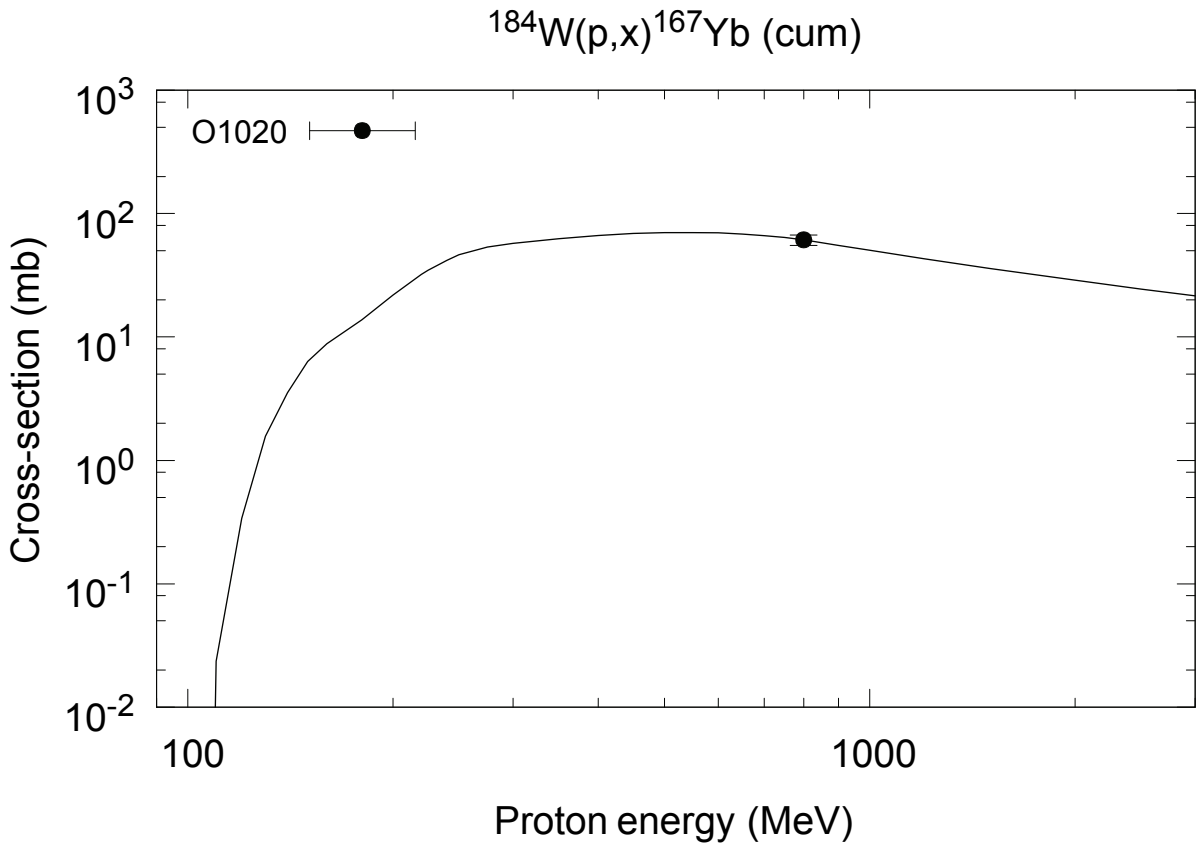

^{184}W(p,x)^{165}Tm (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

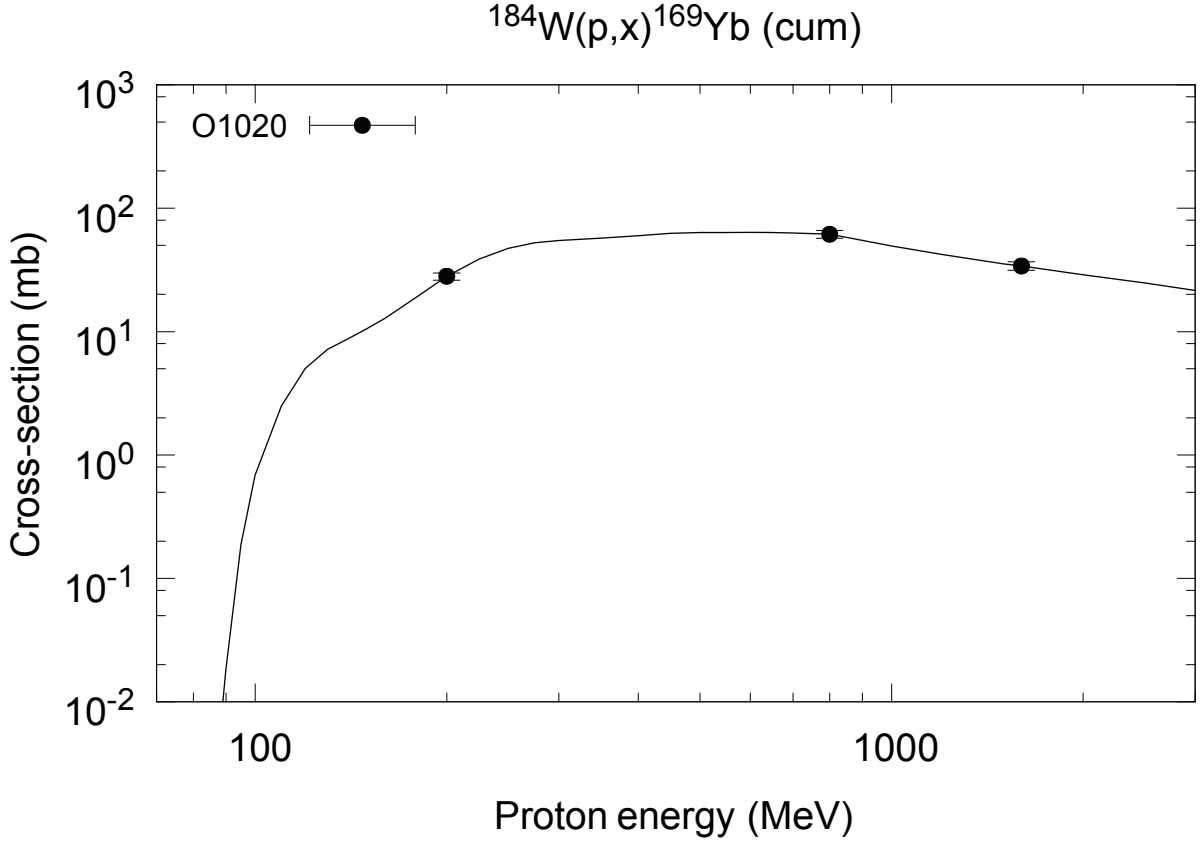

^{184}W(p,x)^{166}Tm (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

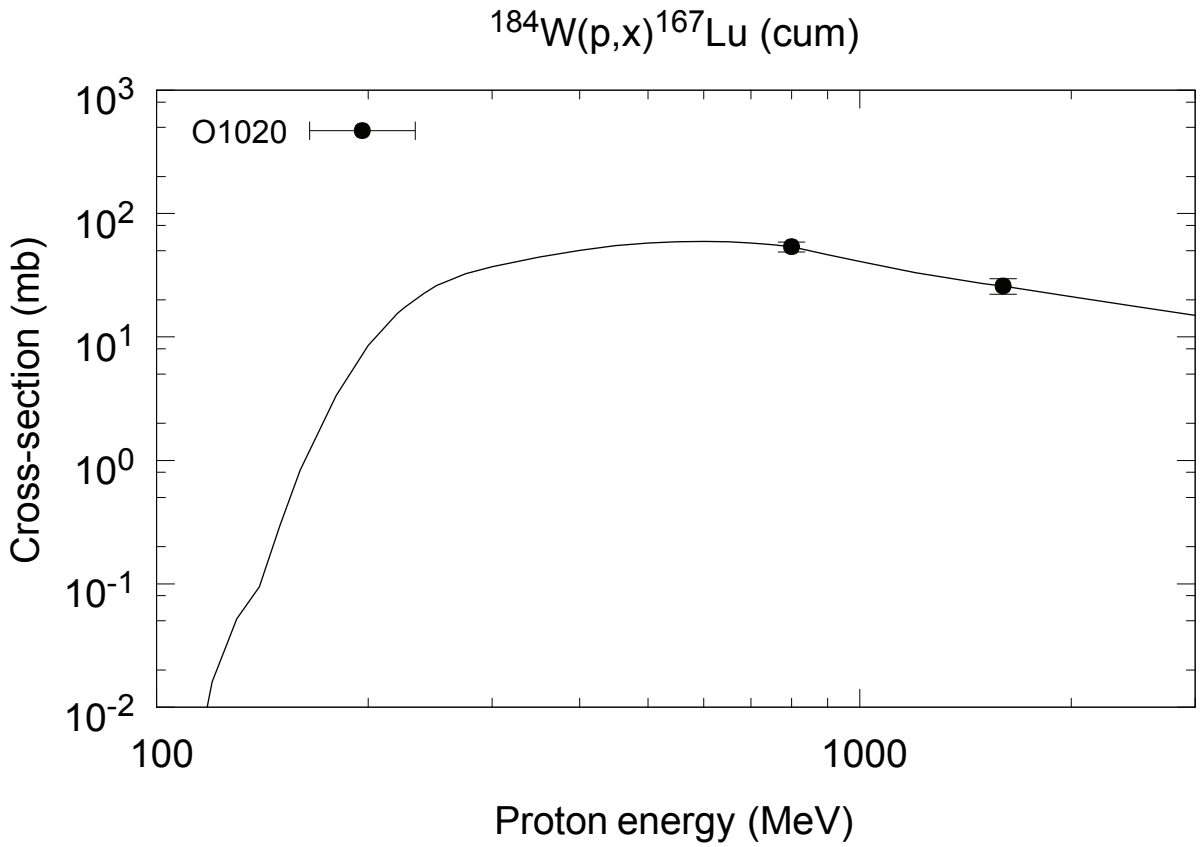

^{184}W(p,x)^{167}Tm (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

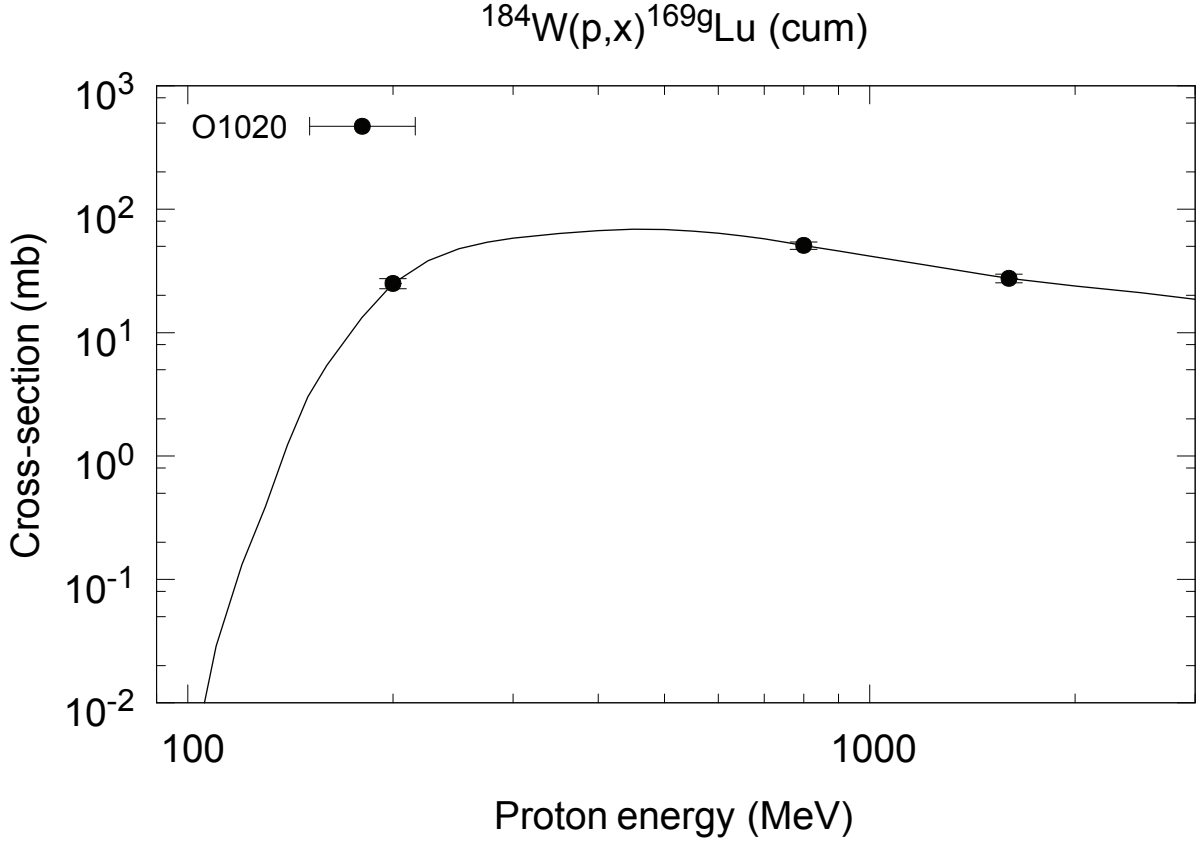

^{184}W(p,x)^{162}Yb (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

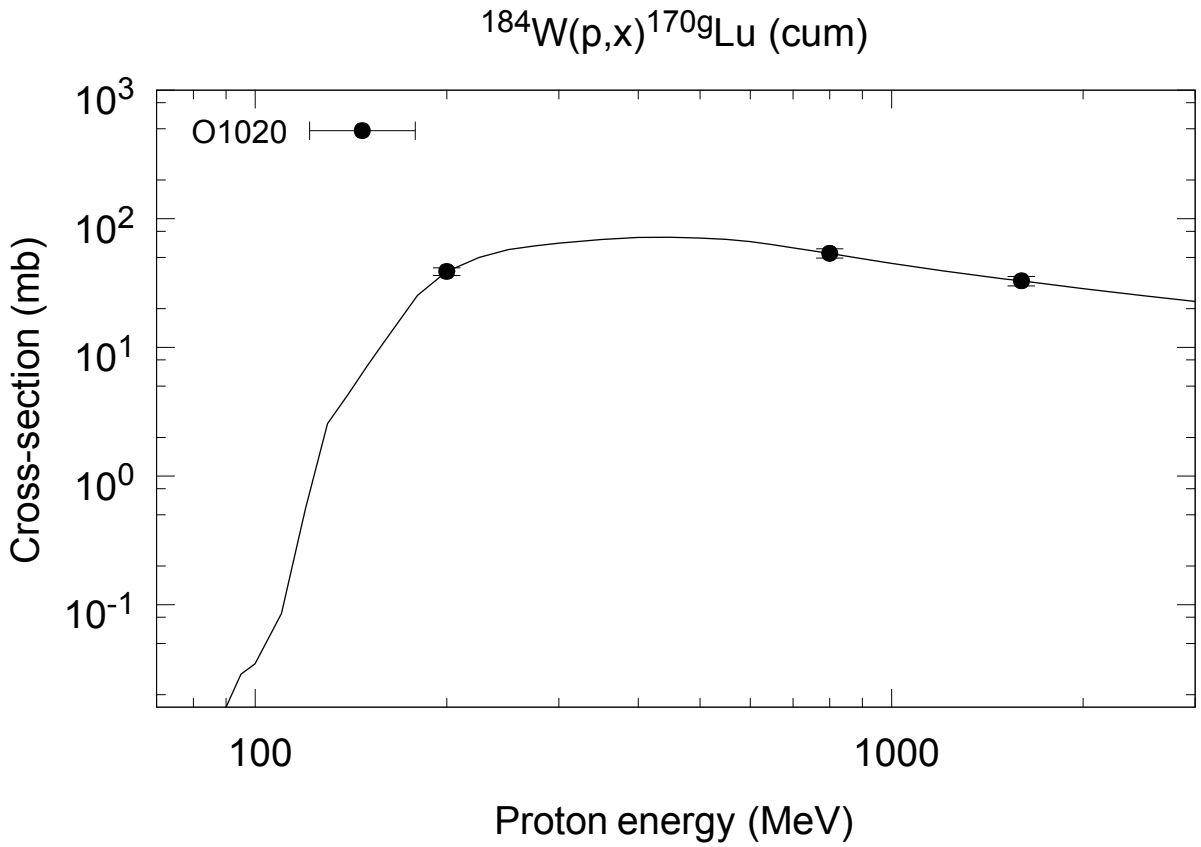

^{184}W(p,x)^{166}Yb (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

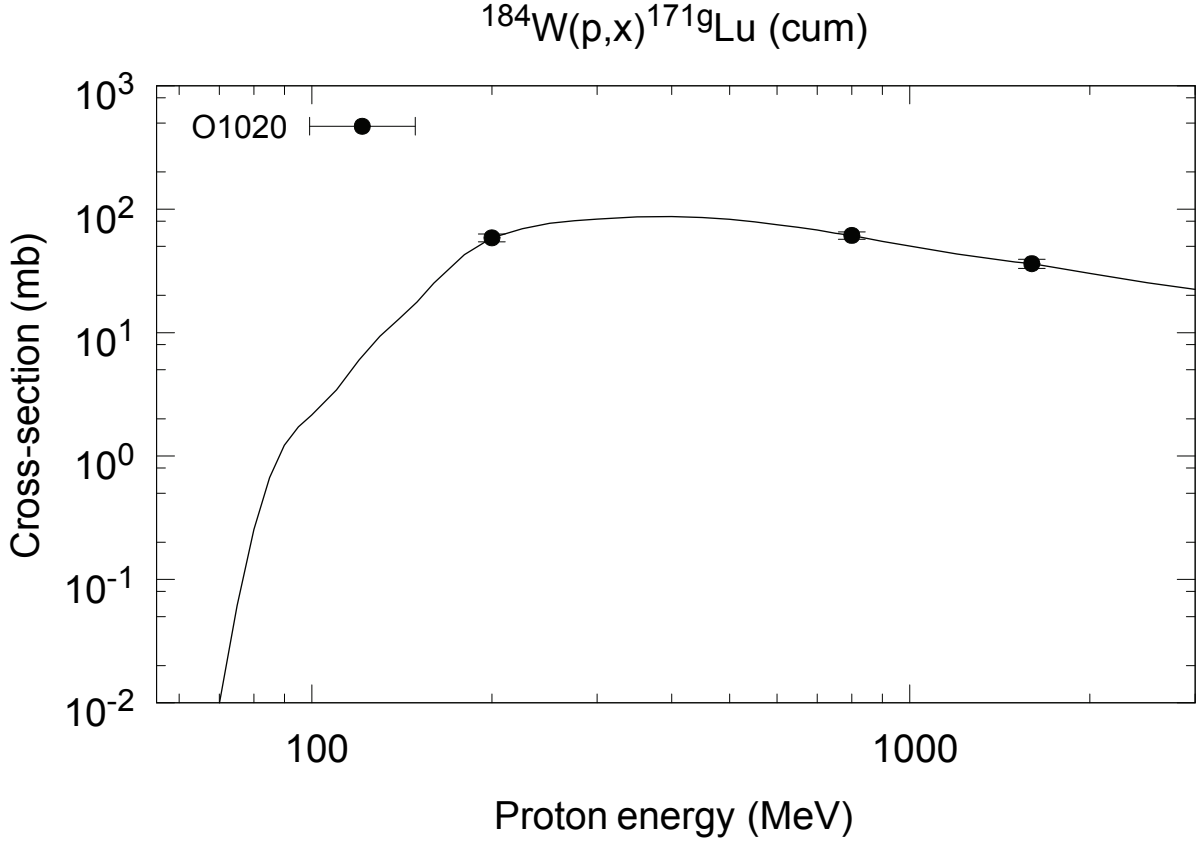

^{184}W(p,x)^{167}Yb (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

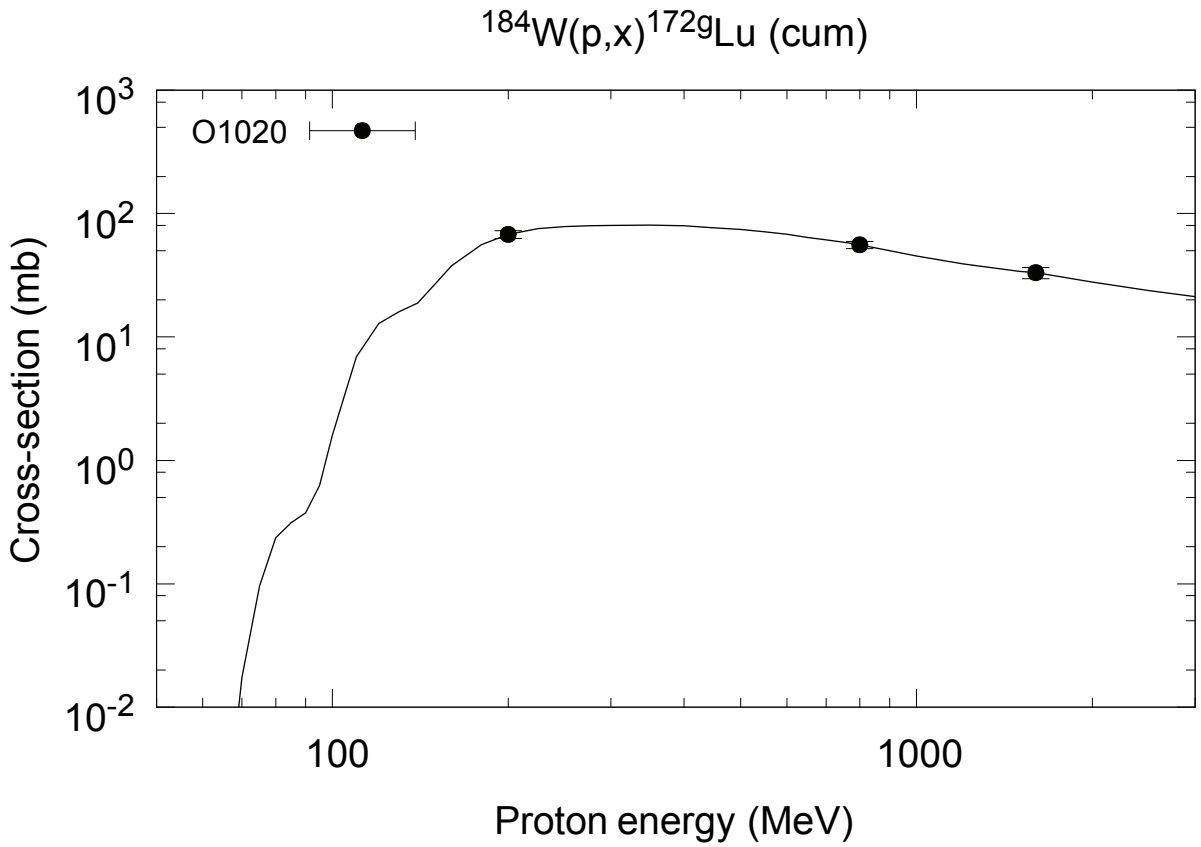

^{184}W(p,x)^{169}Yb (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

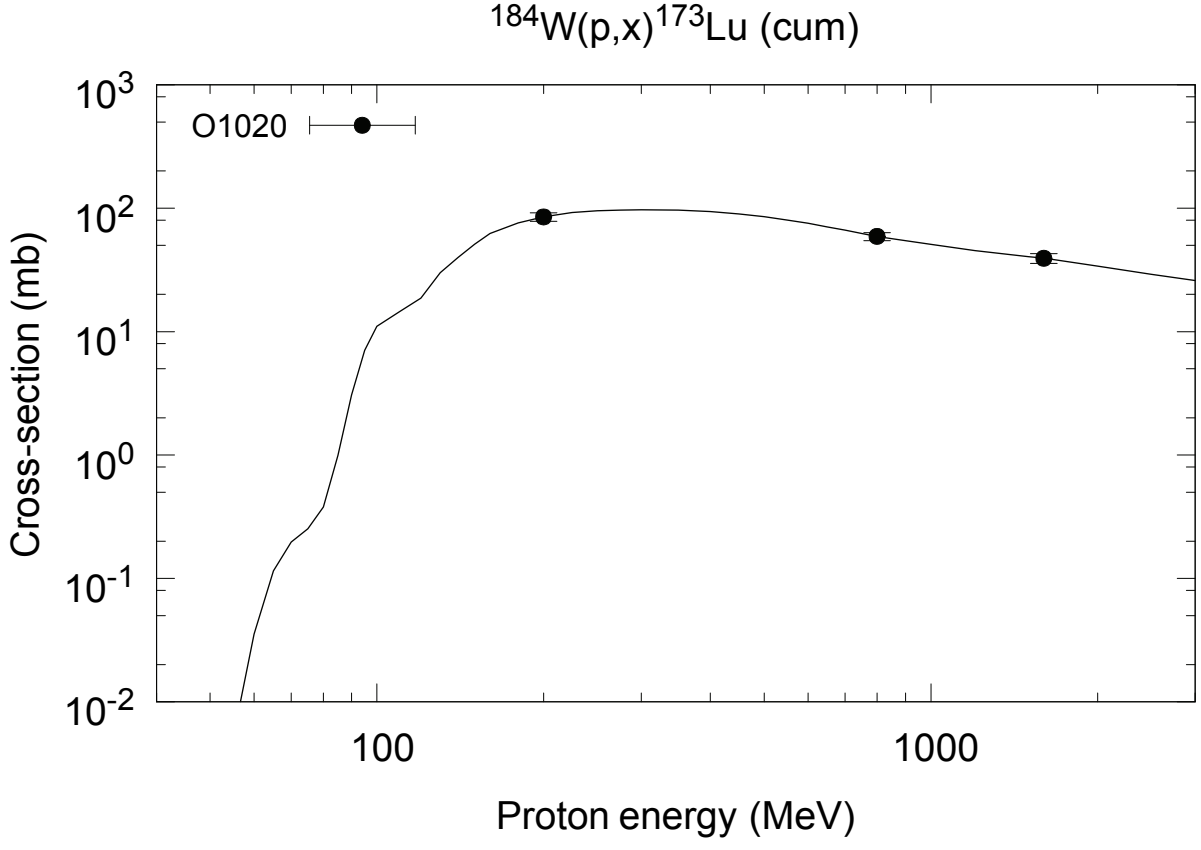

^{184}W(p,x)^{167}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

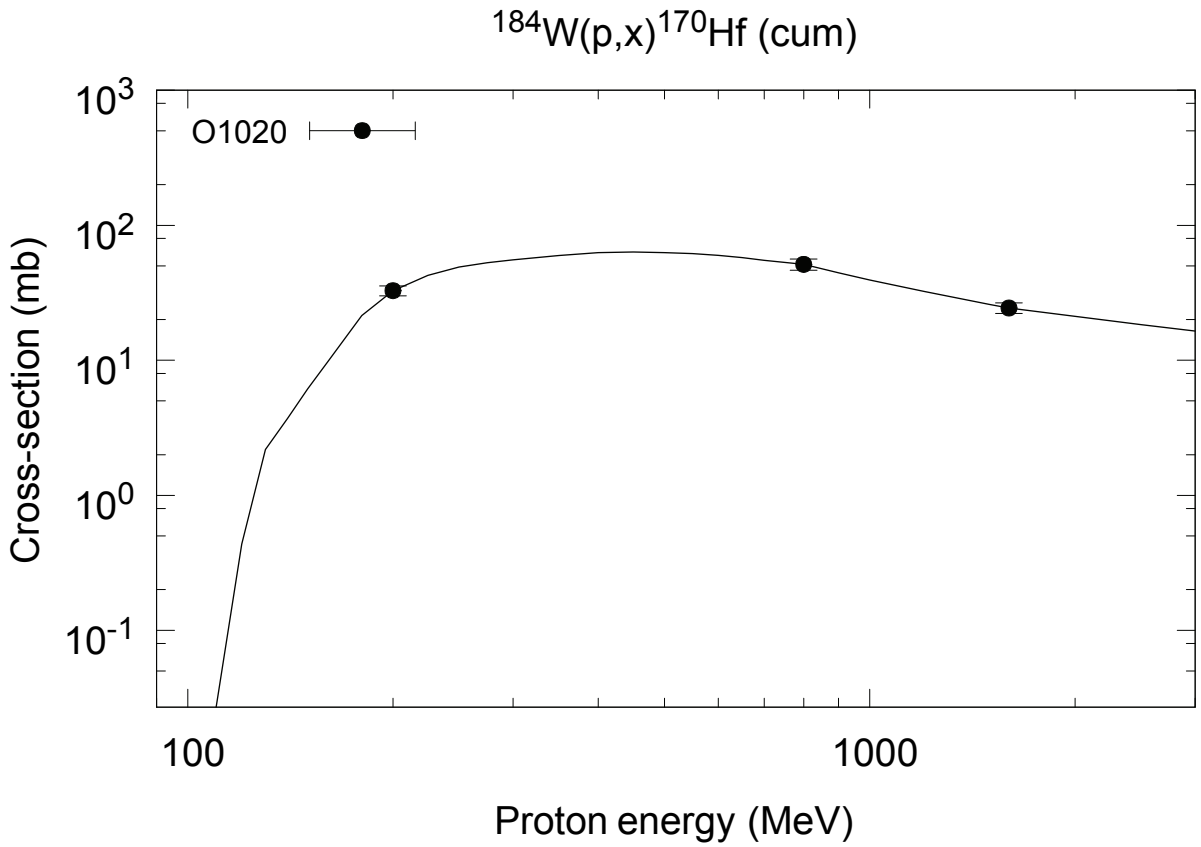

^{184}W(p,x)^{169g}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

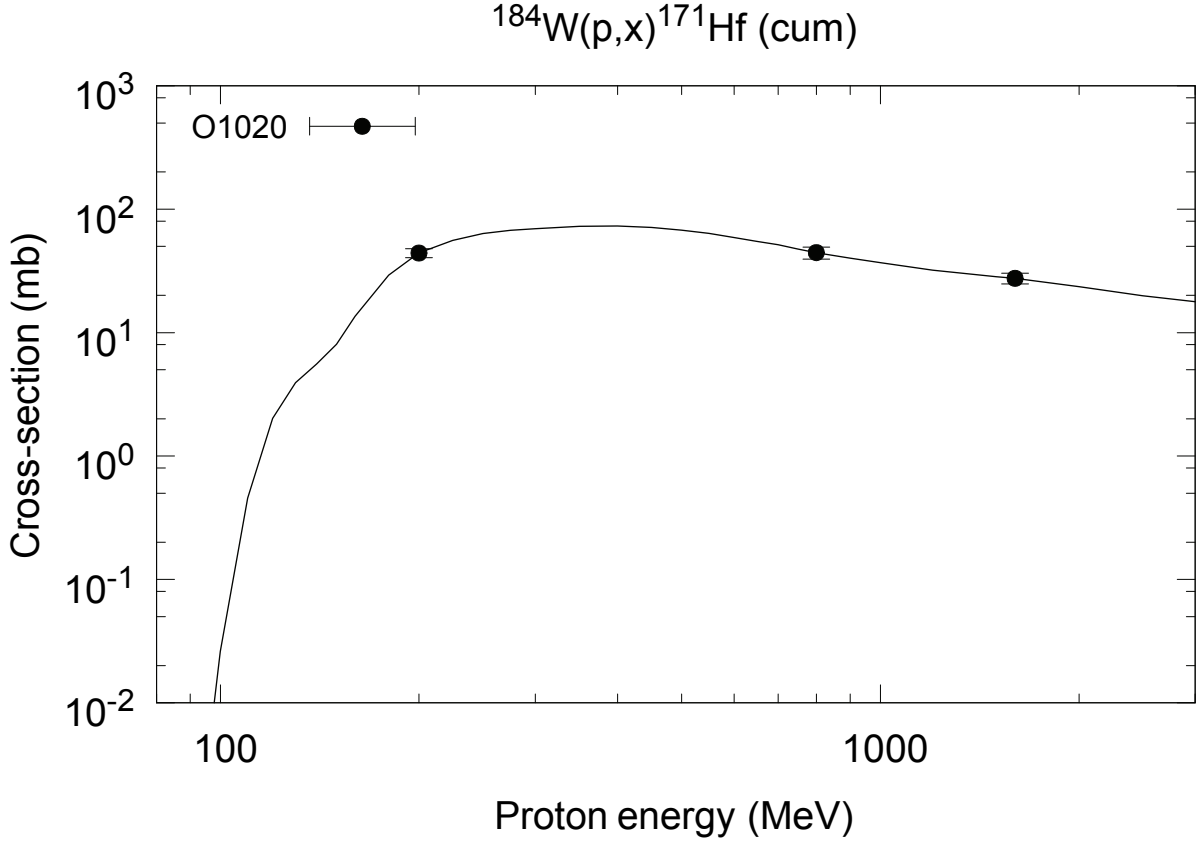

^{184}W(p,x)^{170g}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

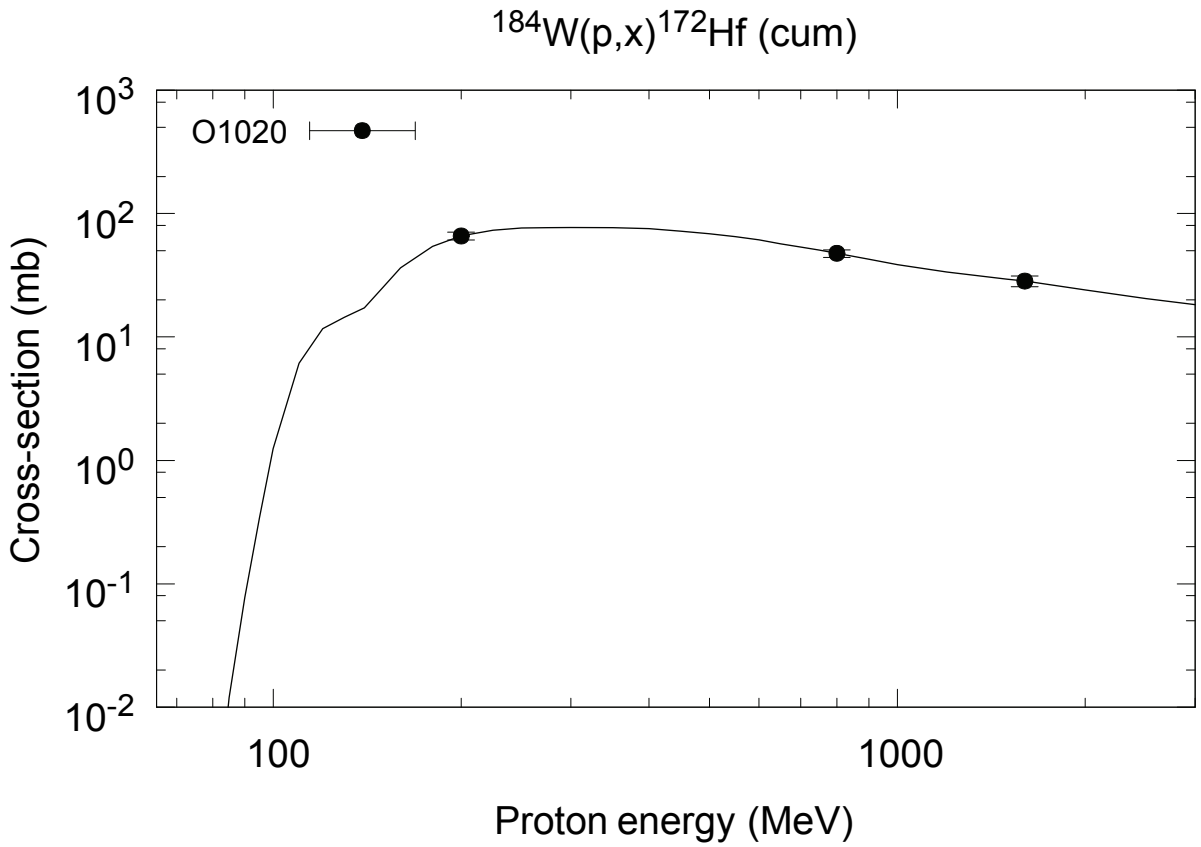

^{184}W(p,x)^{171g}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

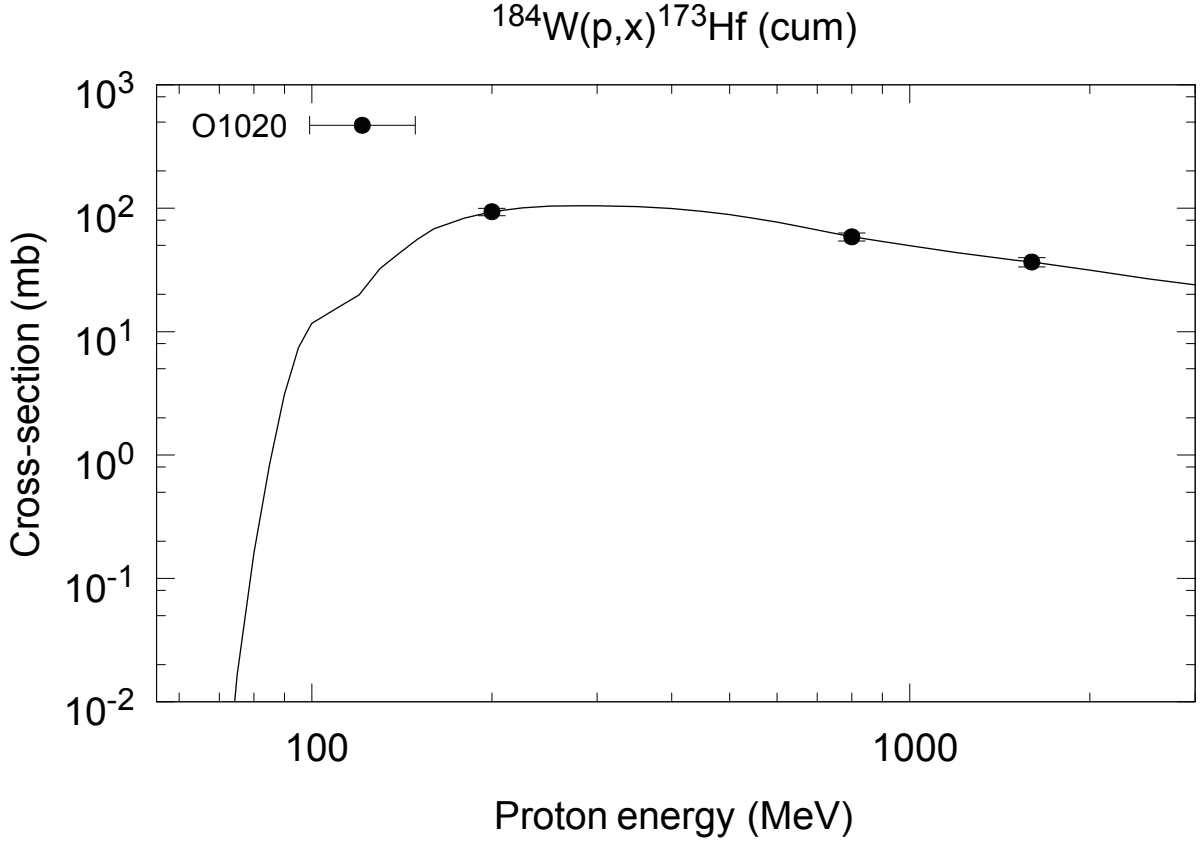

^{184}W(p,x)^{172g}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

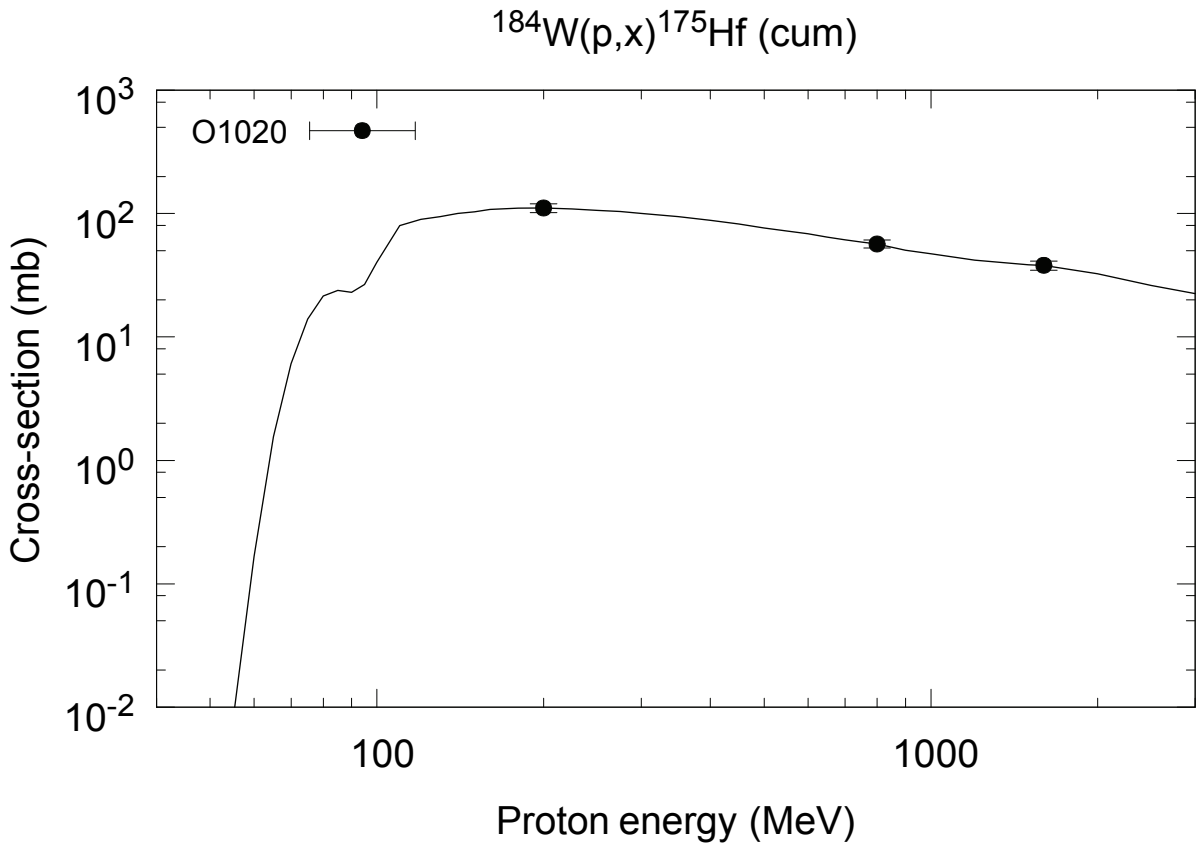

^{184}W(p,x)^{173}Lu (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

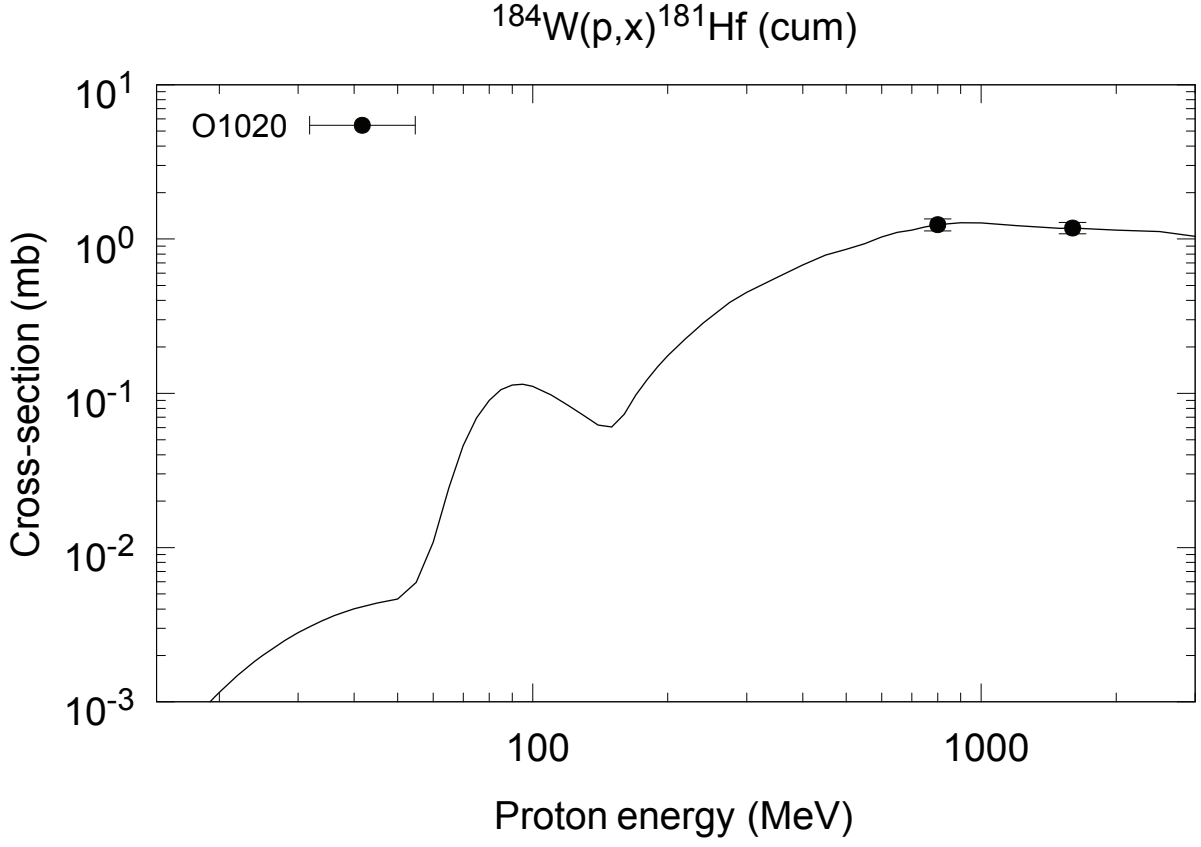

^{184}W(p,x)^{170}Hf (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

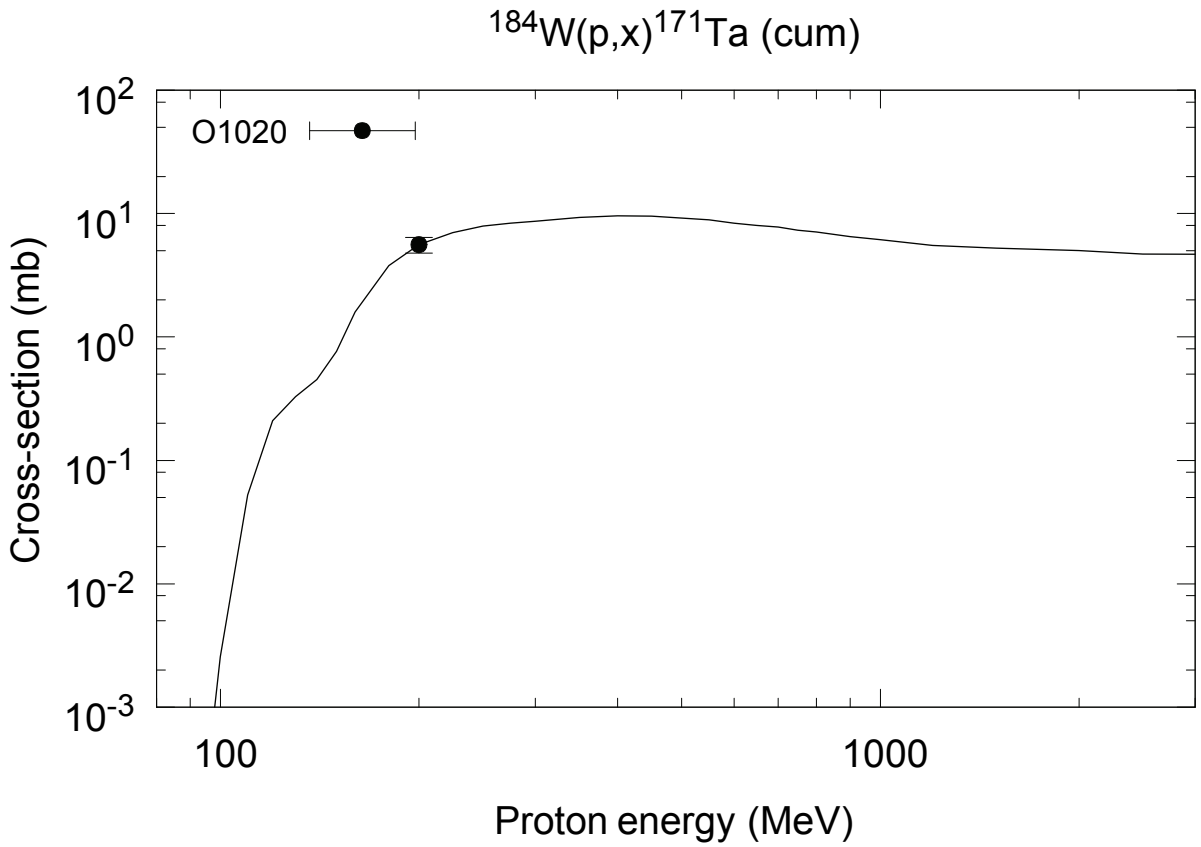

^{184}W(p,x)^{171}Hf (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

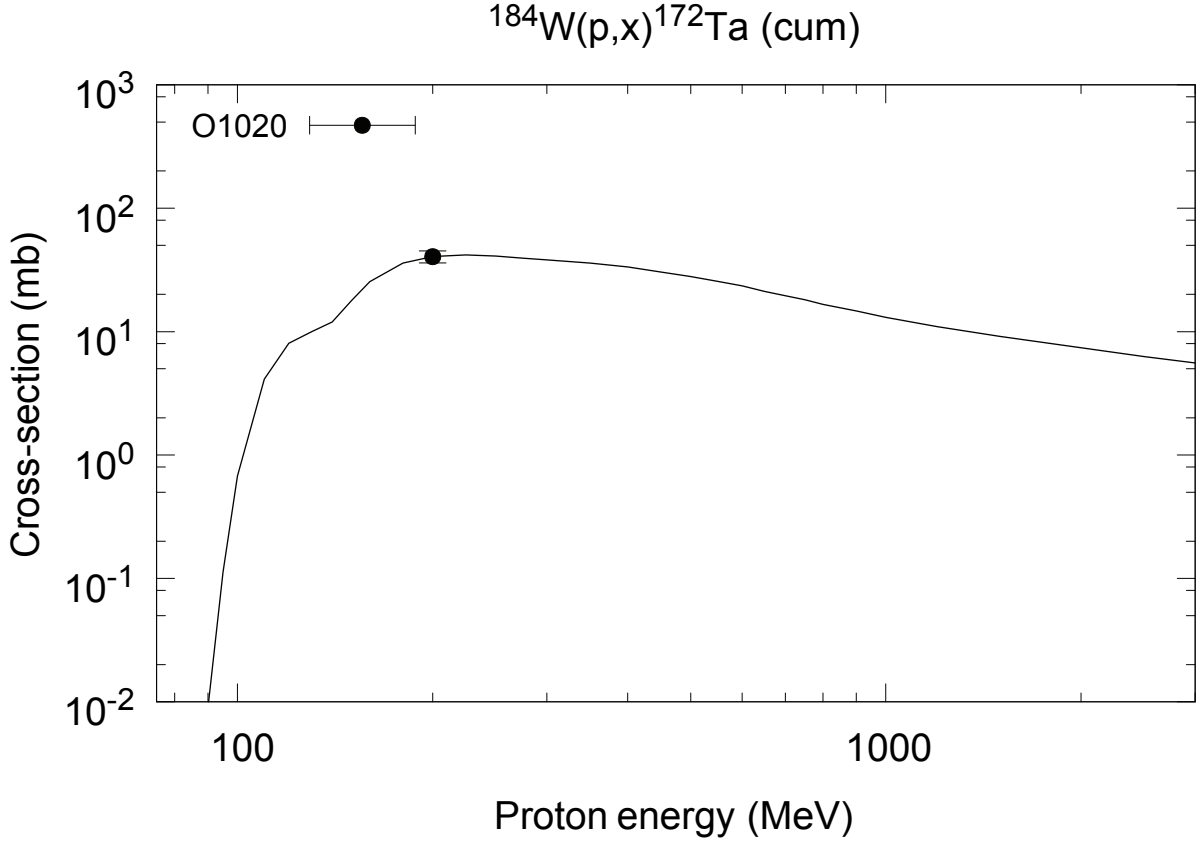

^{184}W(p,x)^{172}Hf (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

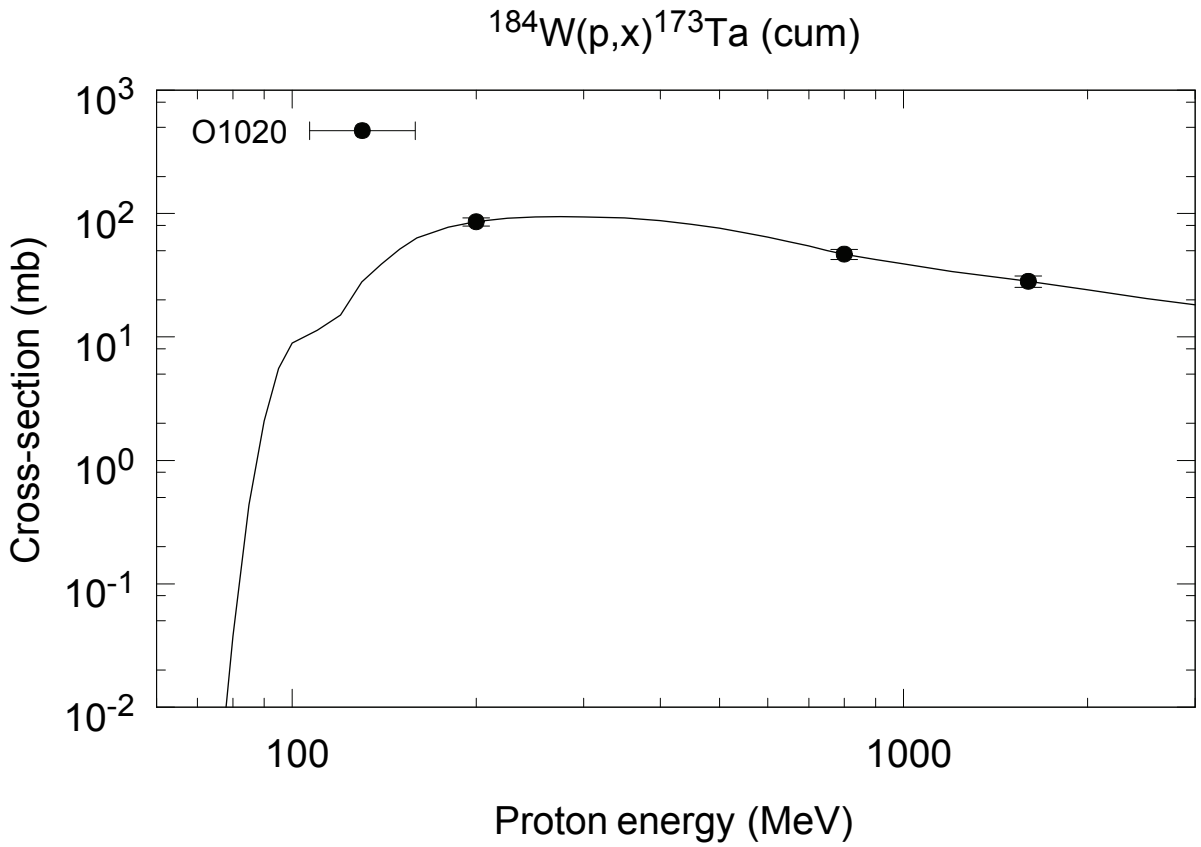

^{184}W(p,x)^{173}Hf (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

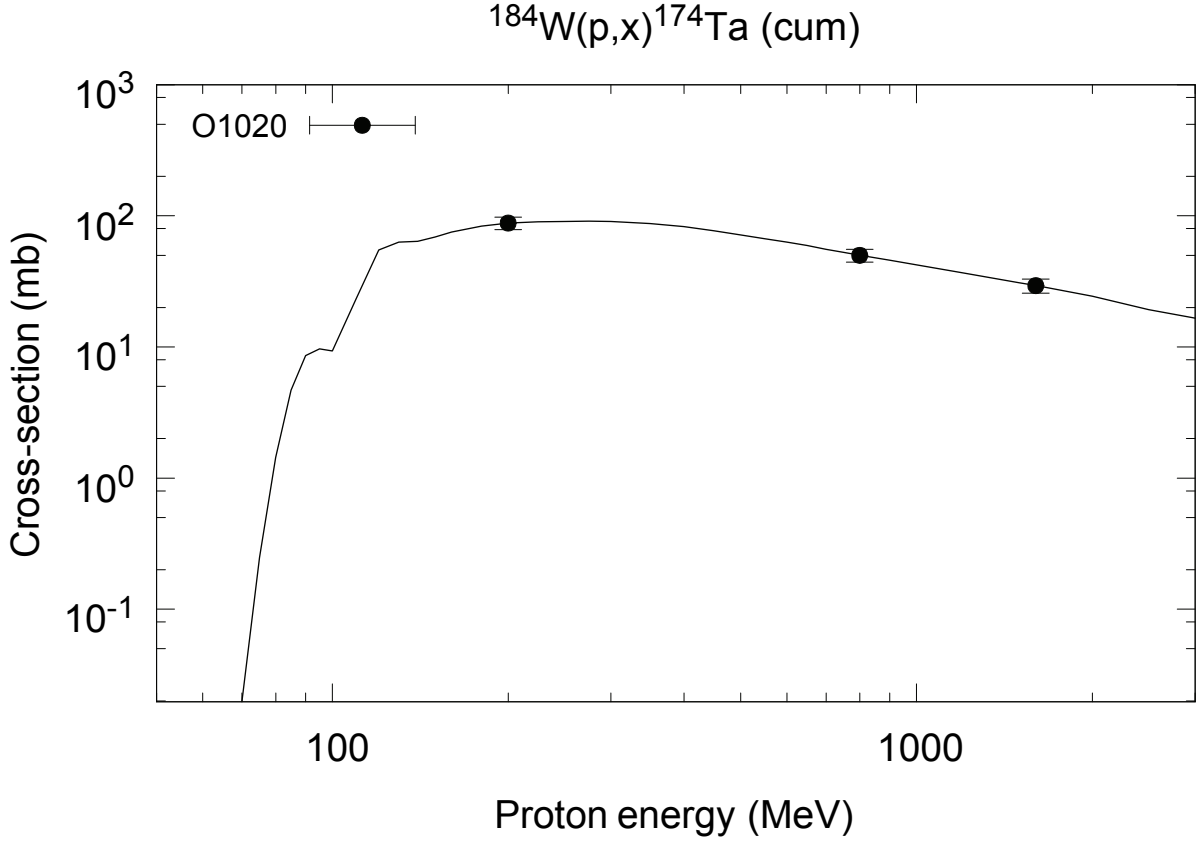

^{184}W(p,x)^{175}Hf (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000

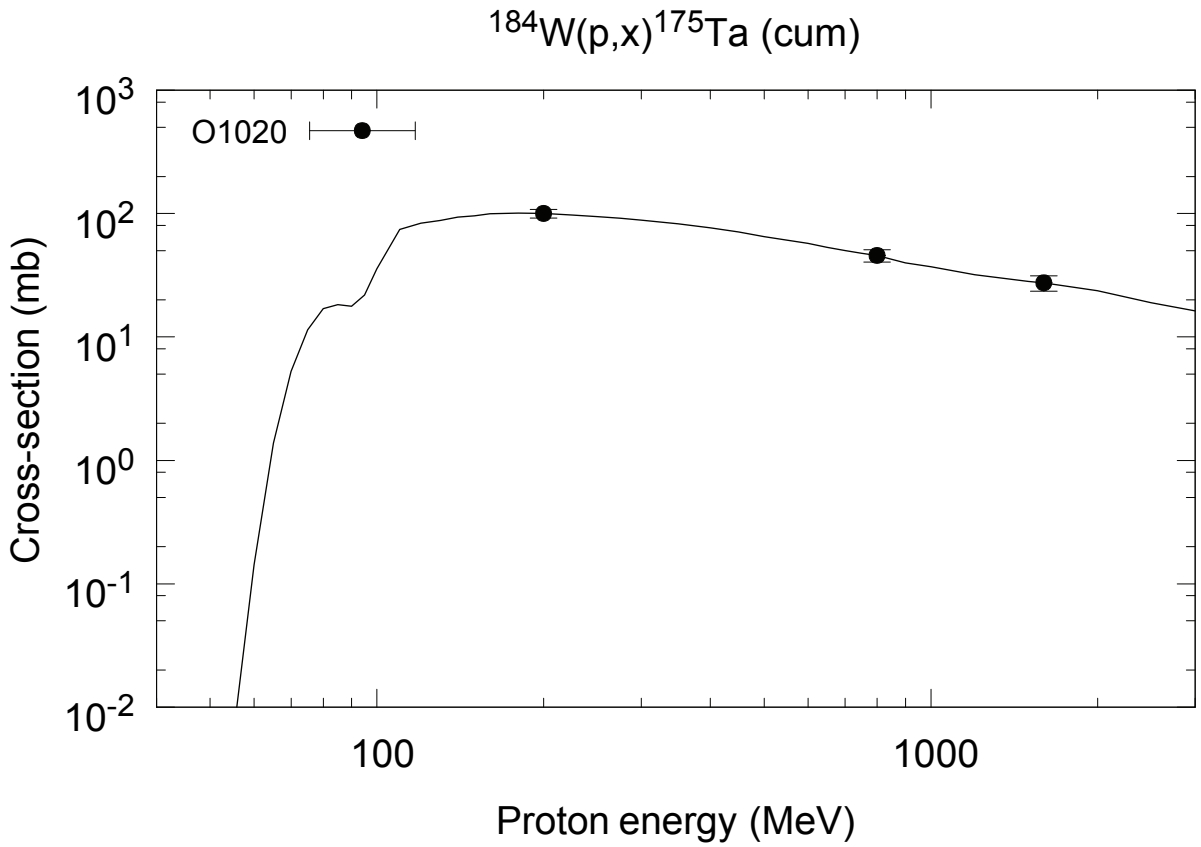

^{184}W(p,x)^{181}Hf (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
100
1000

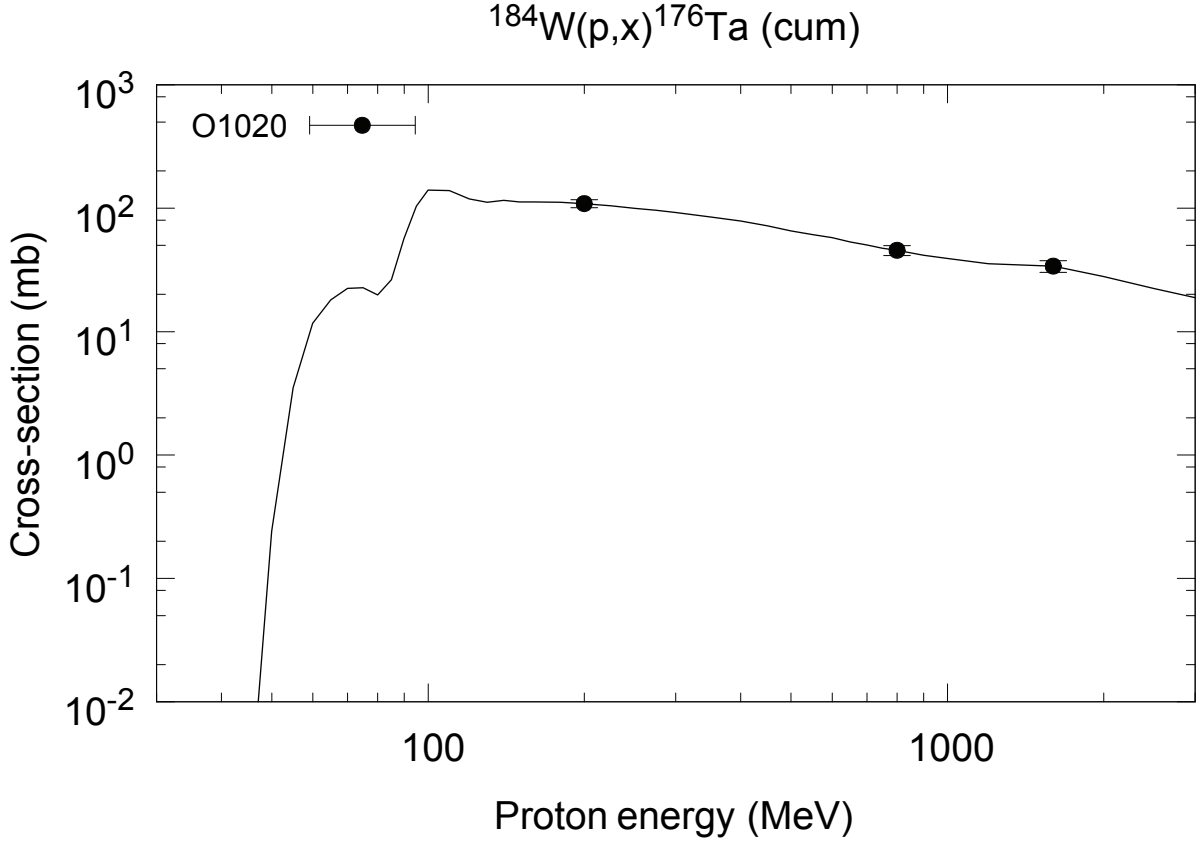

^{184}W(p,x)^{171}Ta (cum)
O1020
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

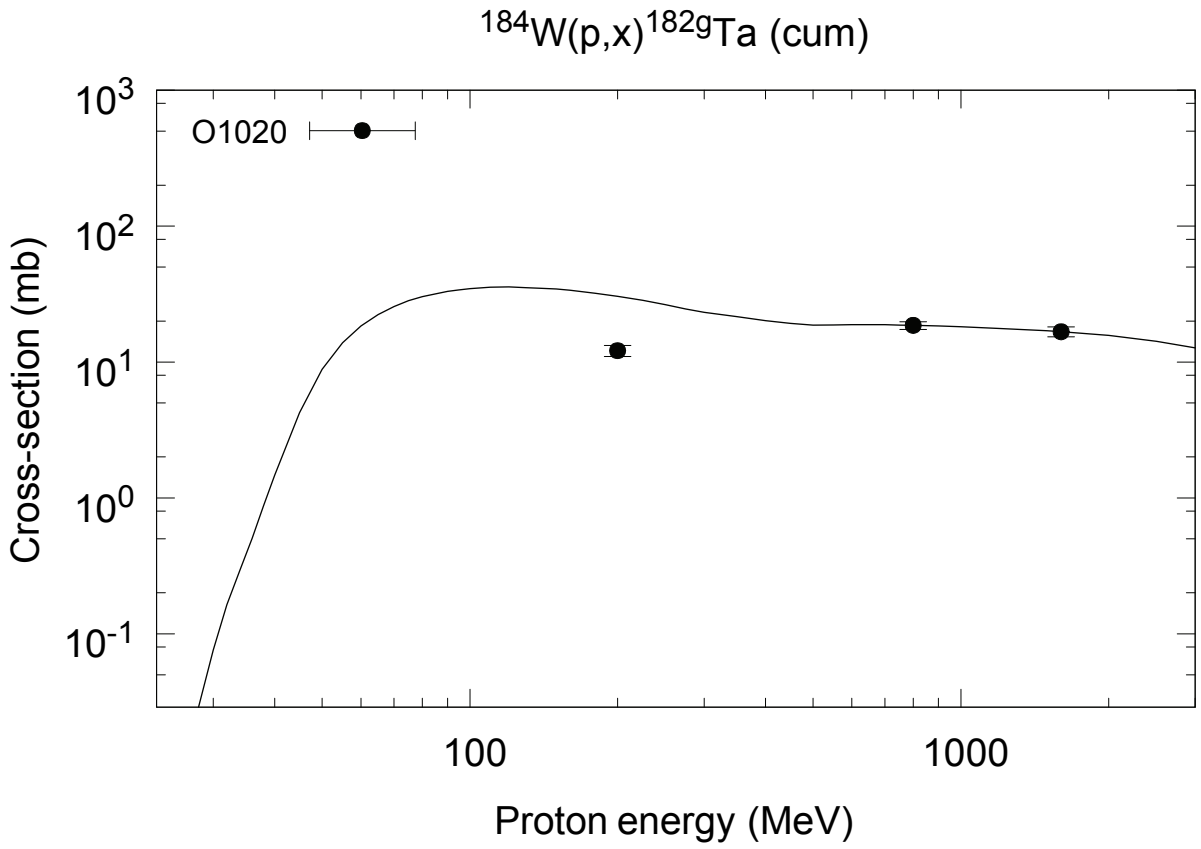

^{184}W(p,x)^{172}Ta (cum)
O1020
Cross-section (mb)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

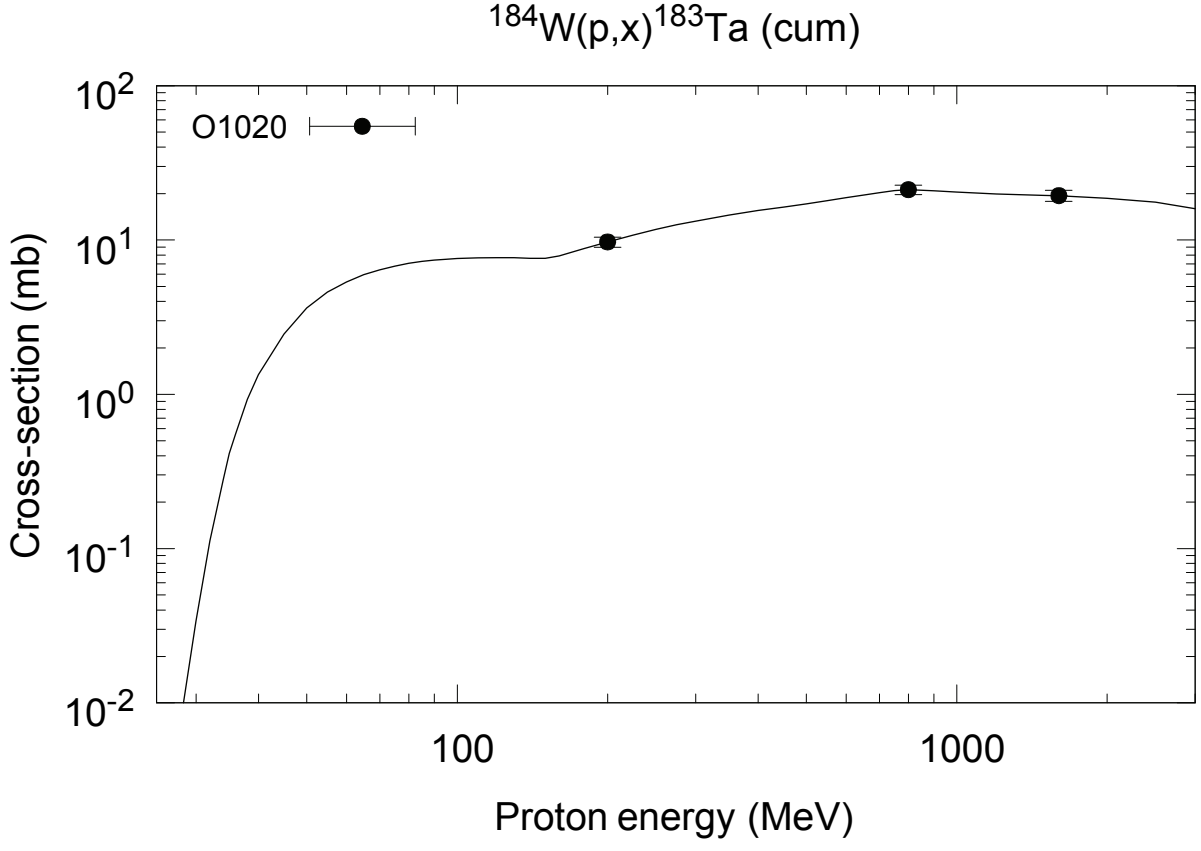

^{184}W(p,x)^{173}Ta (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

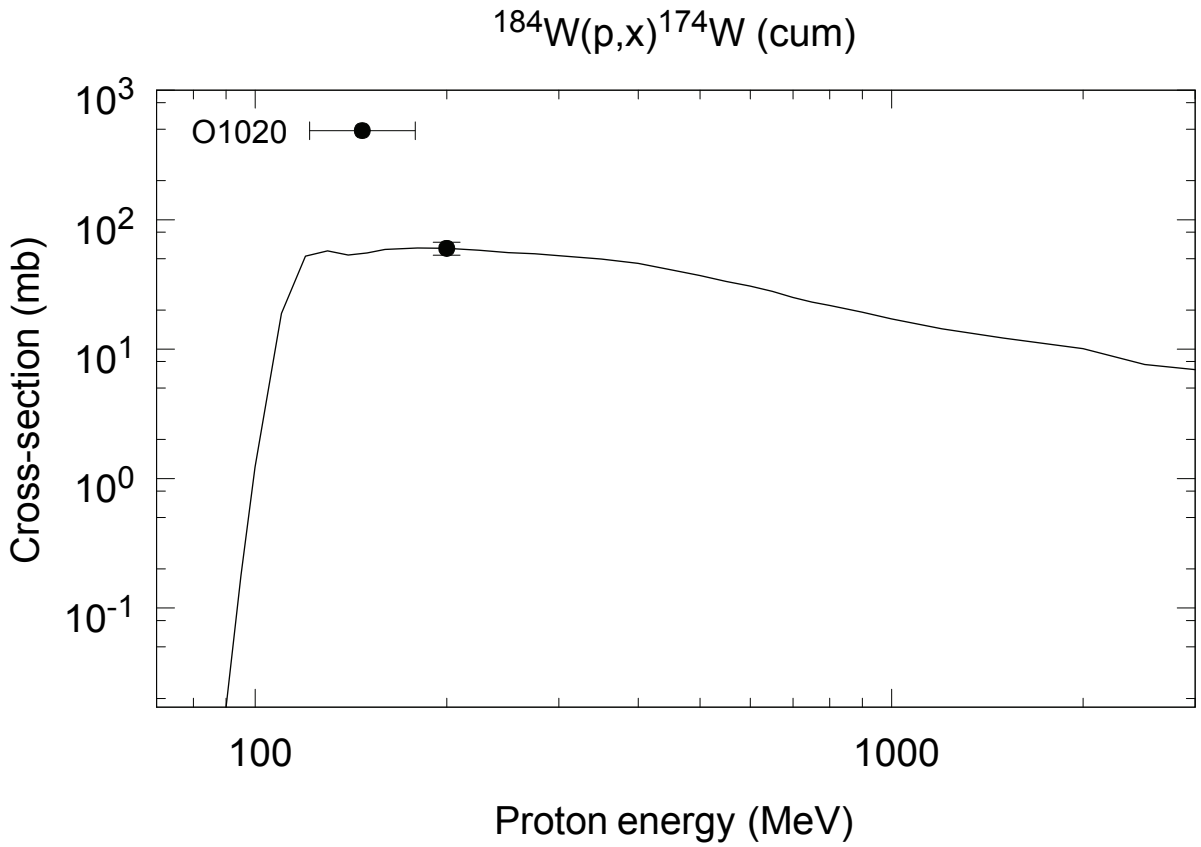

^{184}W(p,x)^{174}Ta (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

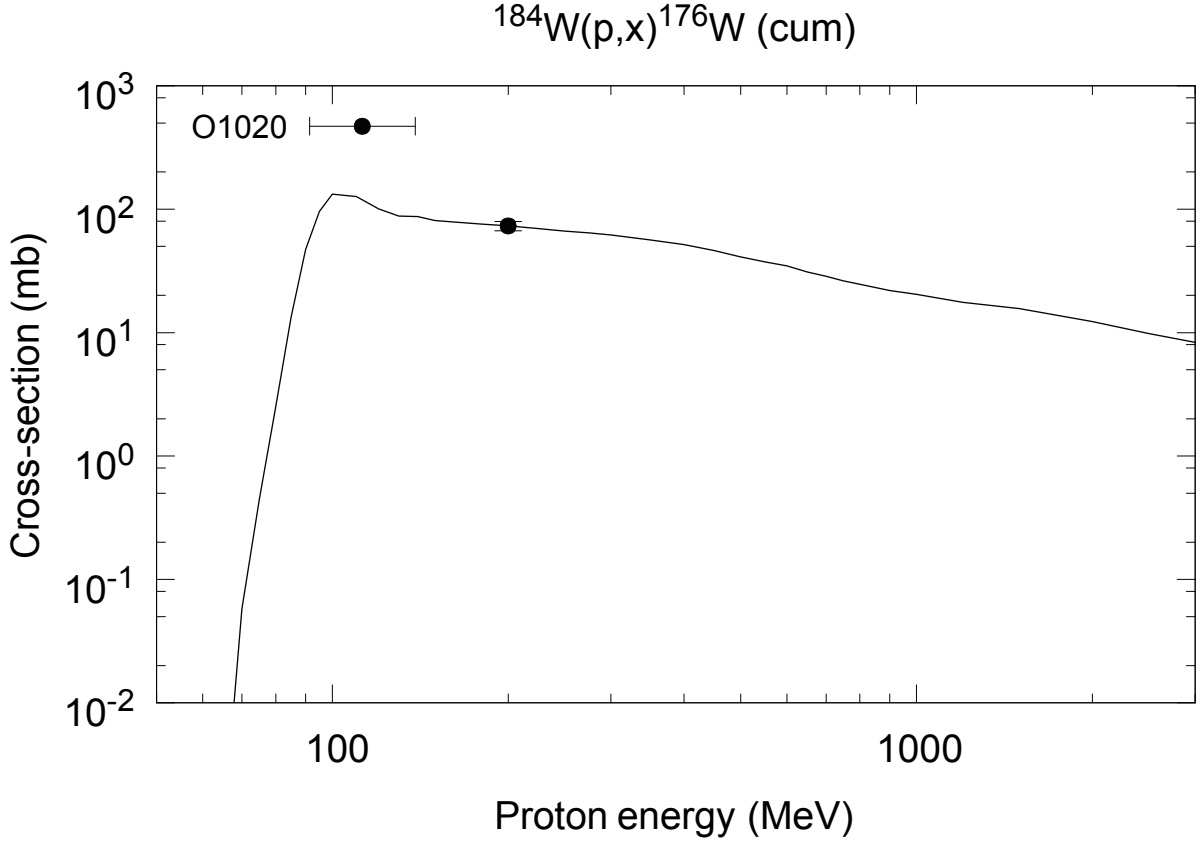

184W(p,x)175Ta (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

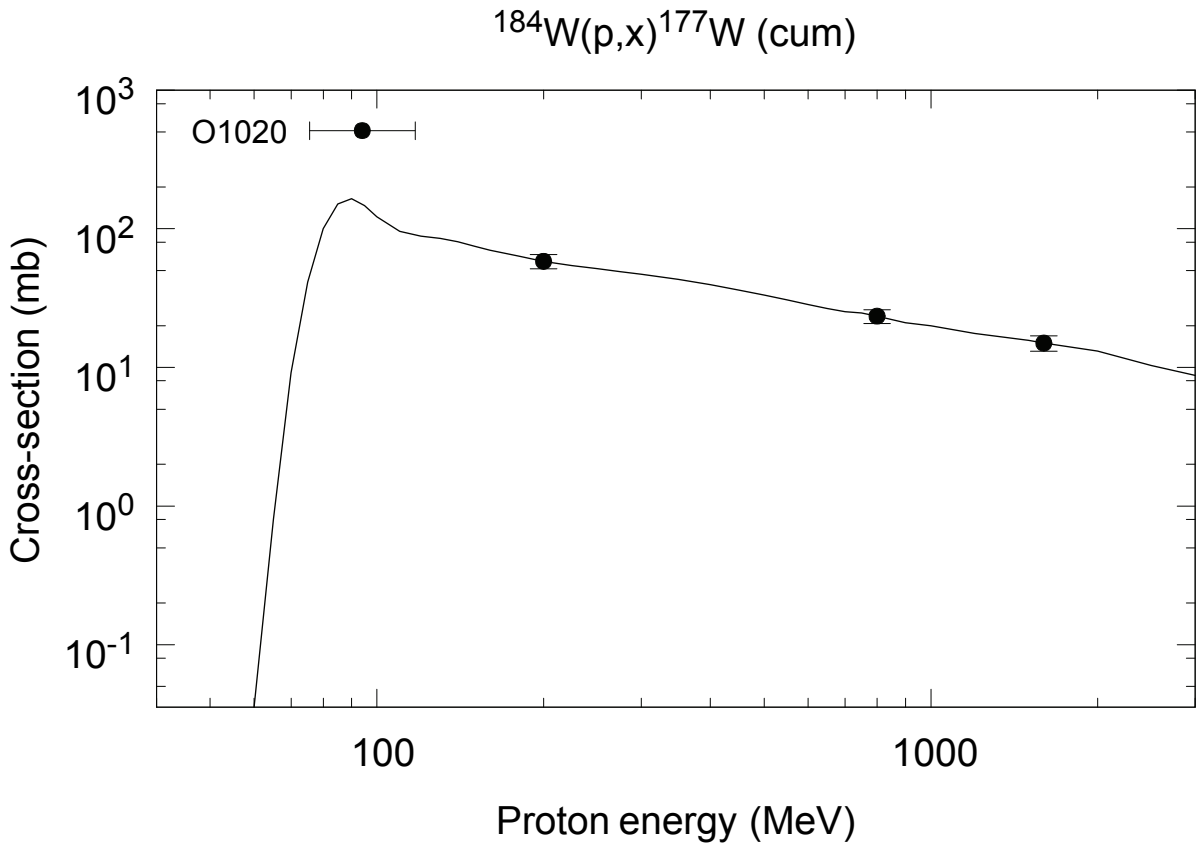

184W(p,x)176Ta (cum)
O1020
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^-1
10^-2
100
1000

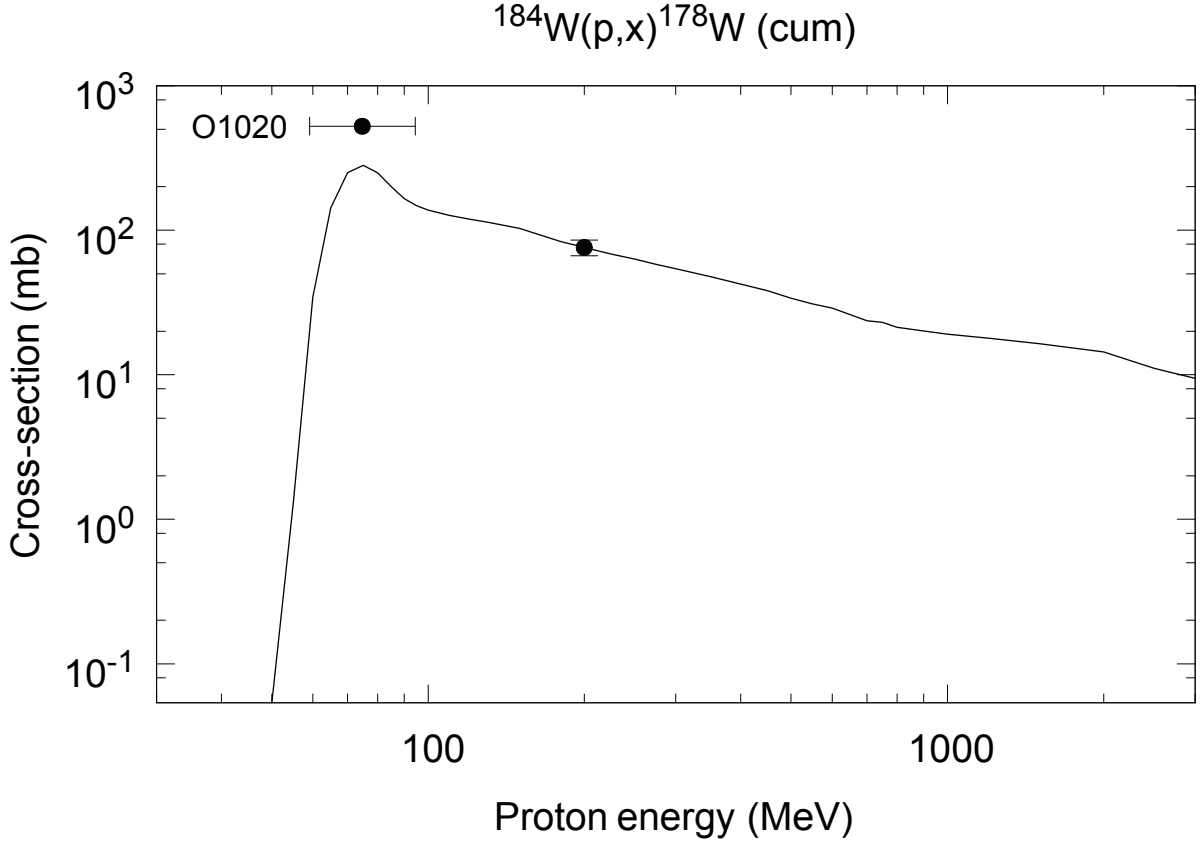

^{184}W(p,x)^{182g}Ta (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

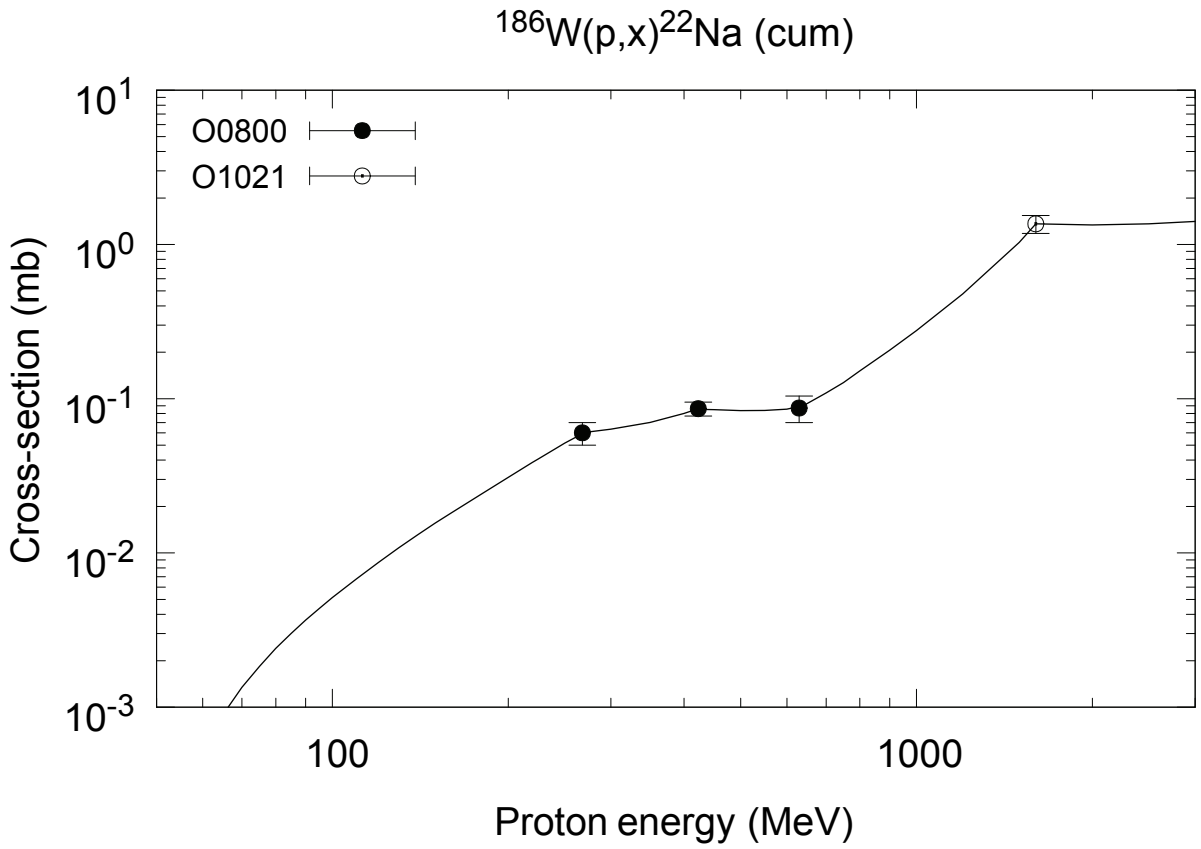

^{184}W(p,x)^{183}Ta (cum)
O1020
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

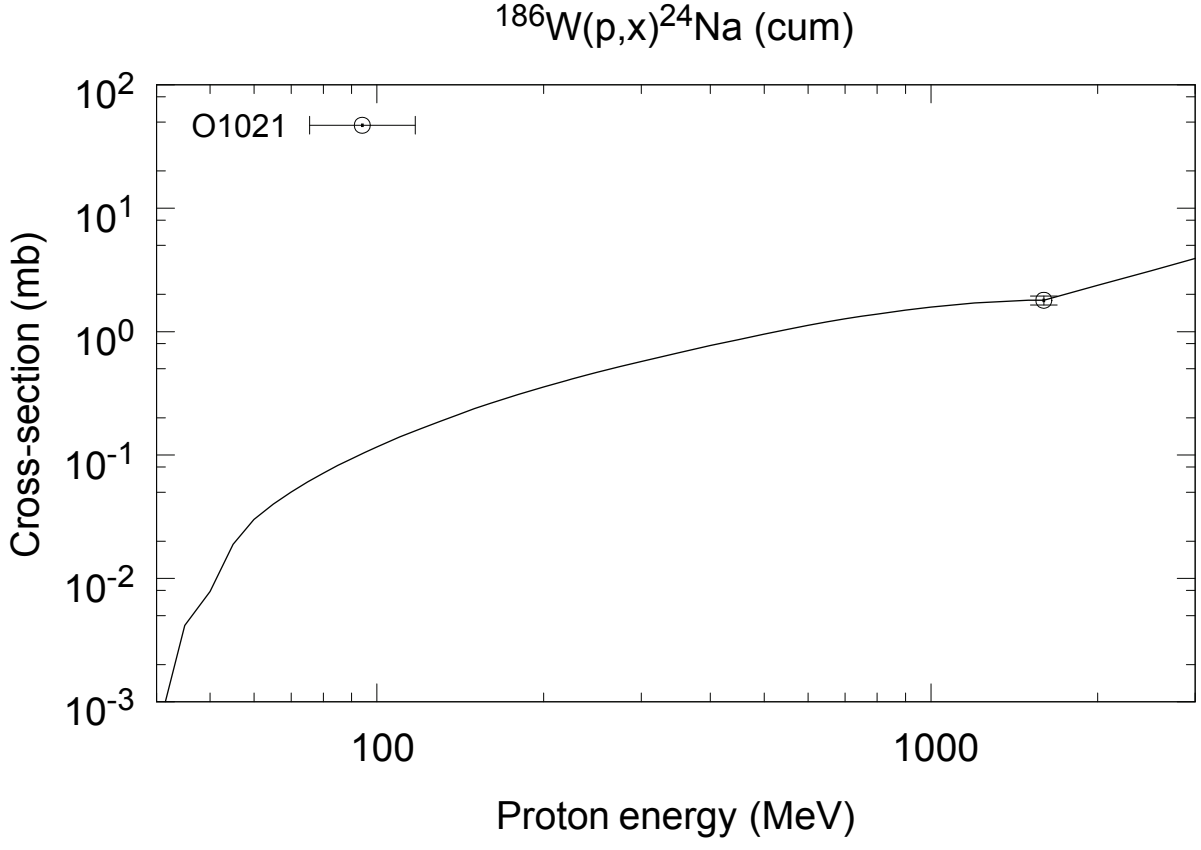

^{184}W(p,x)^{174}W (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

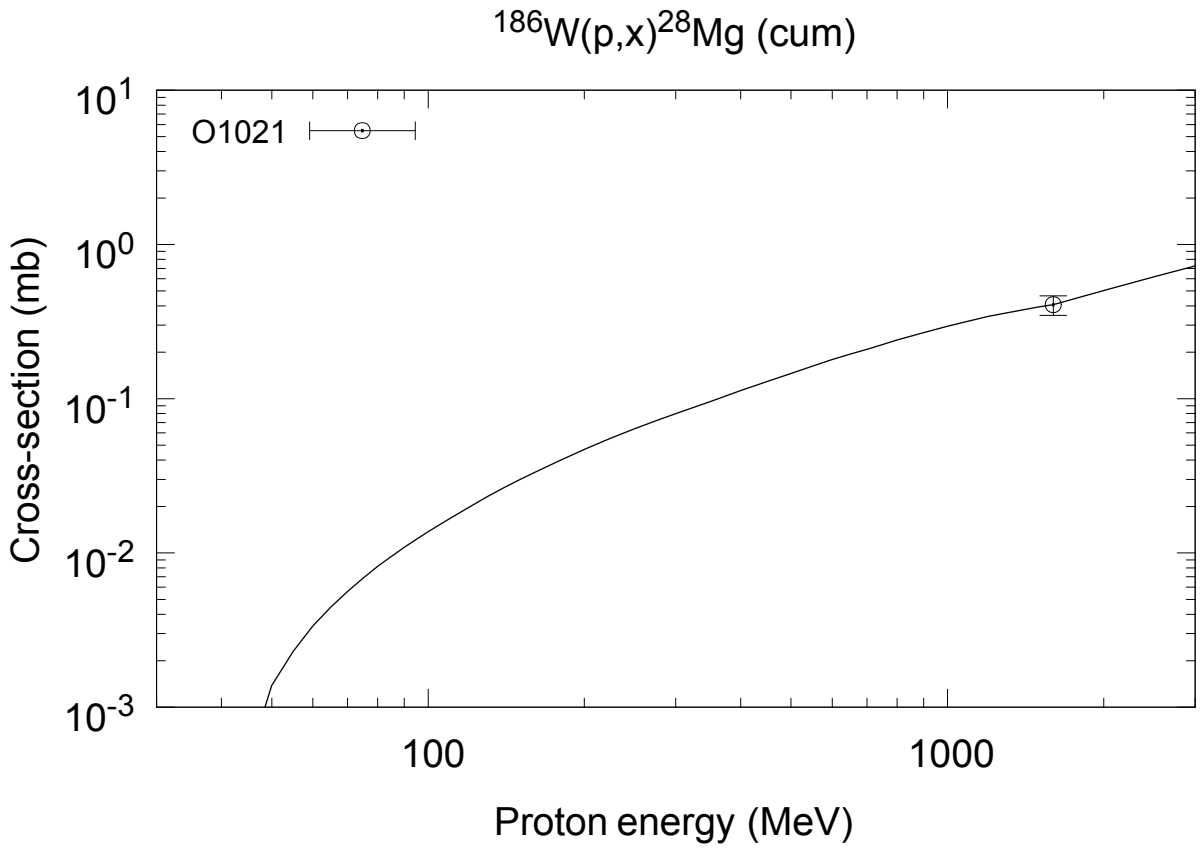

^{184}W(p,x)^{176}W (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

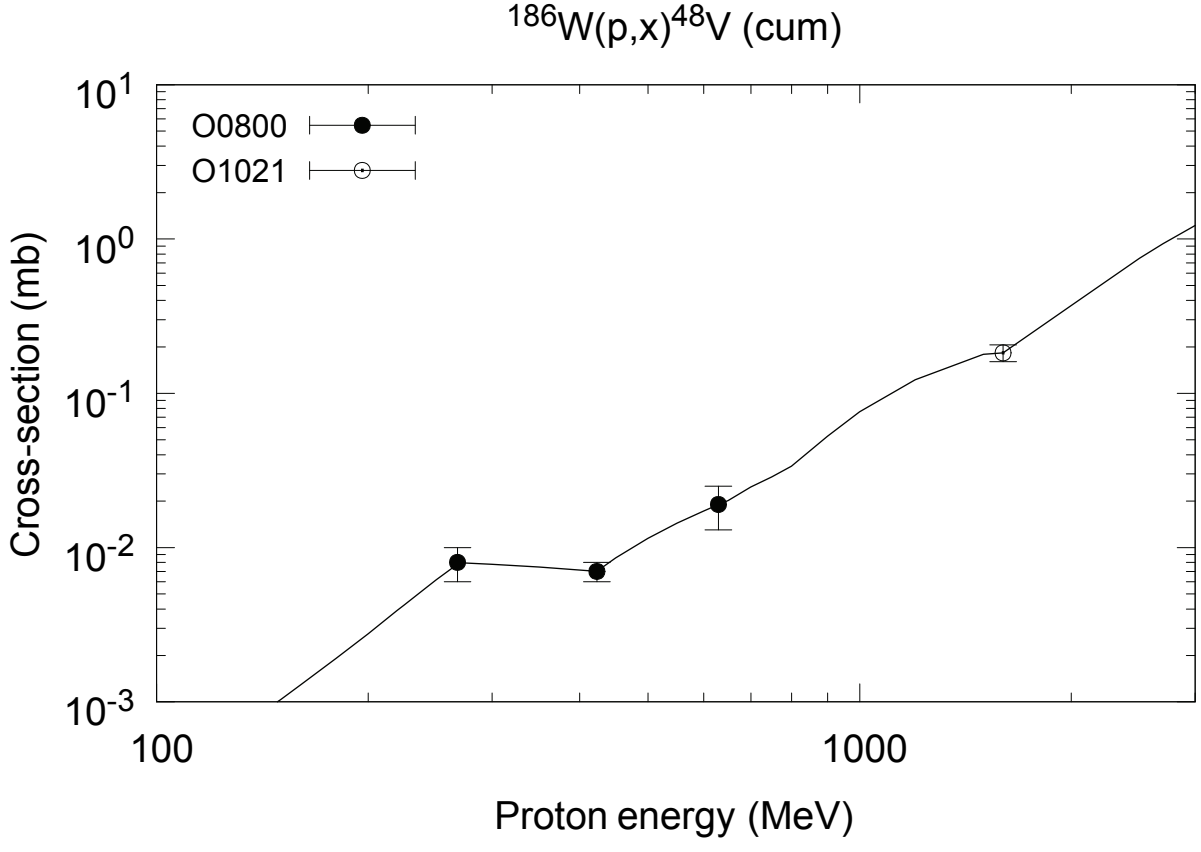

^{184}W(p,x)^{177}W (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

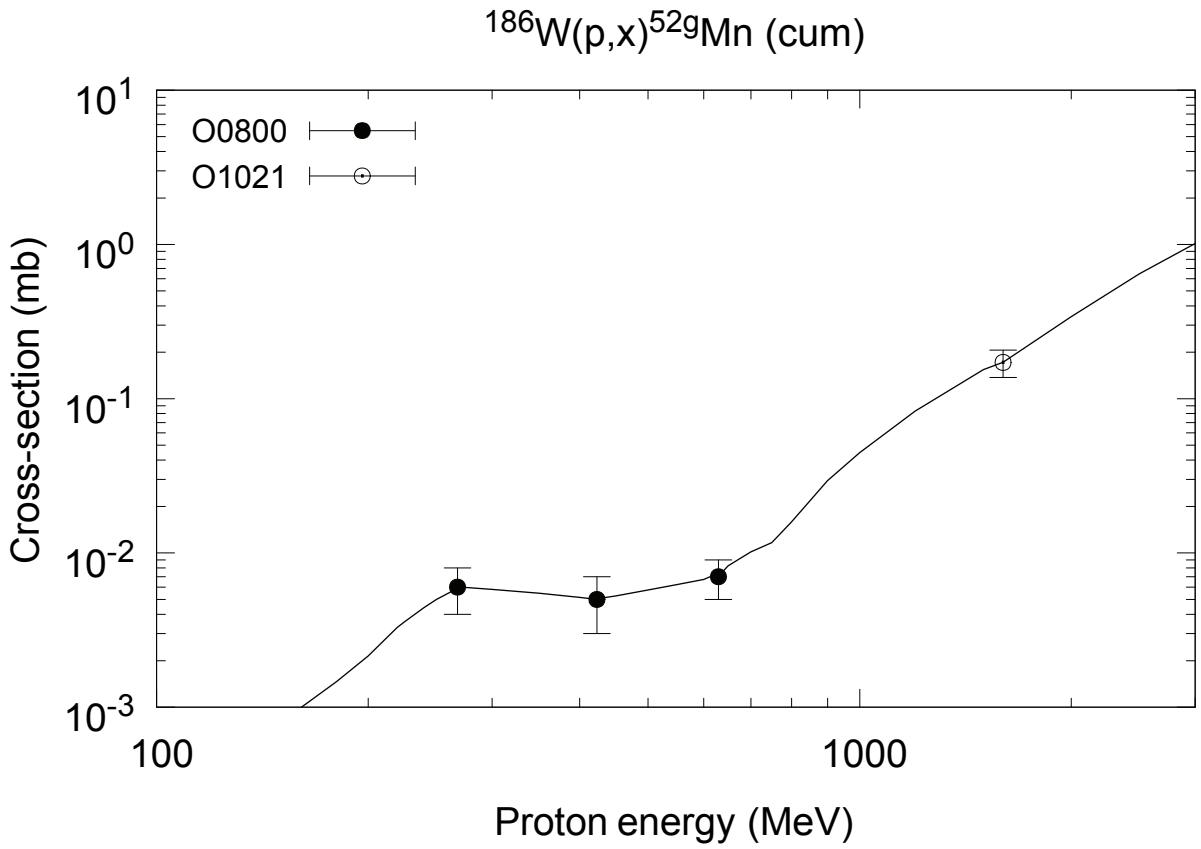

^{184}W(p,x)^{178}W (cum)
O1020
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

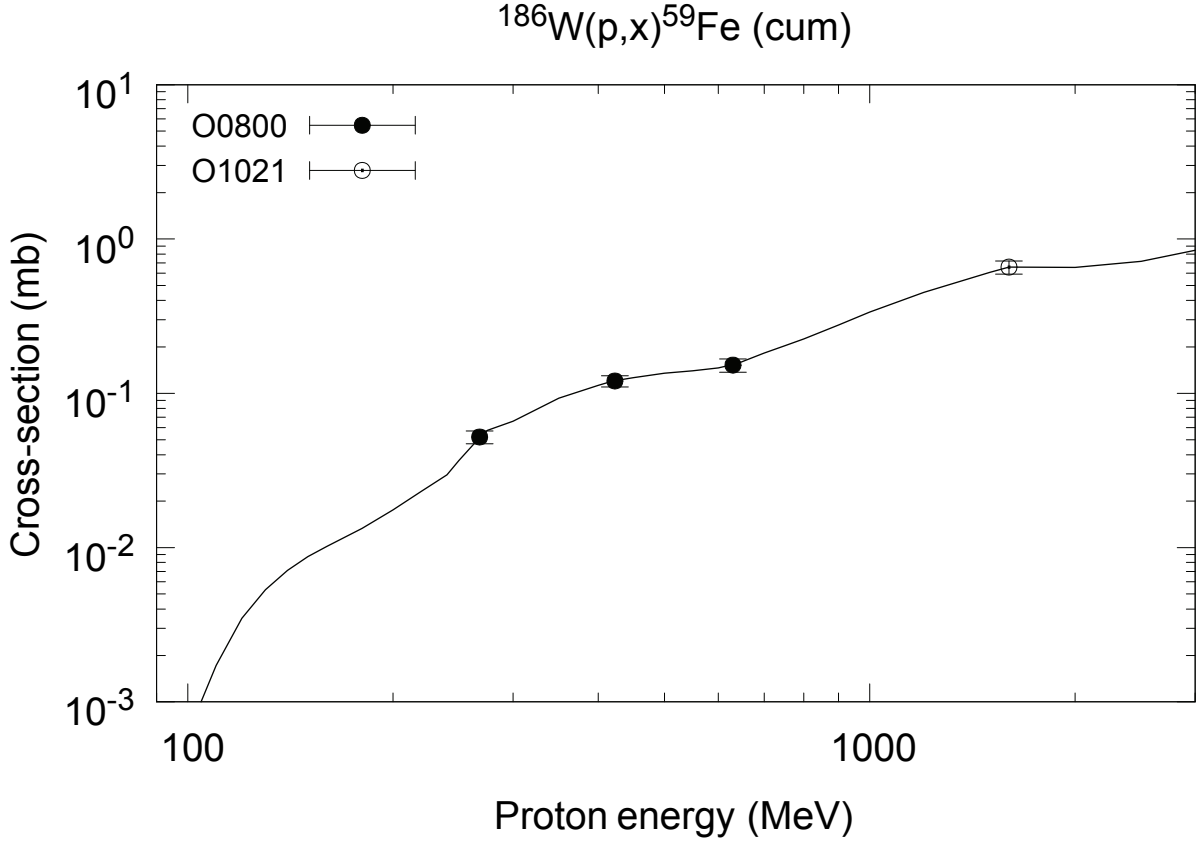

^{186}W(p,x)^{22}Na (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

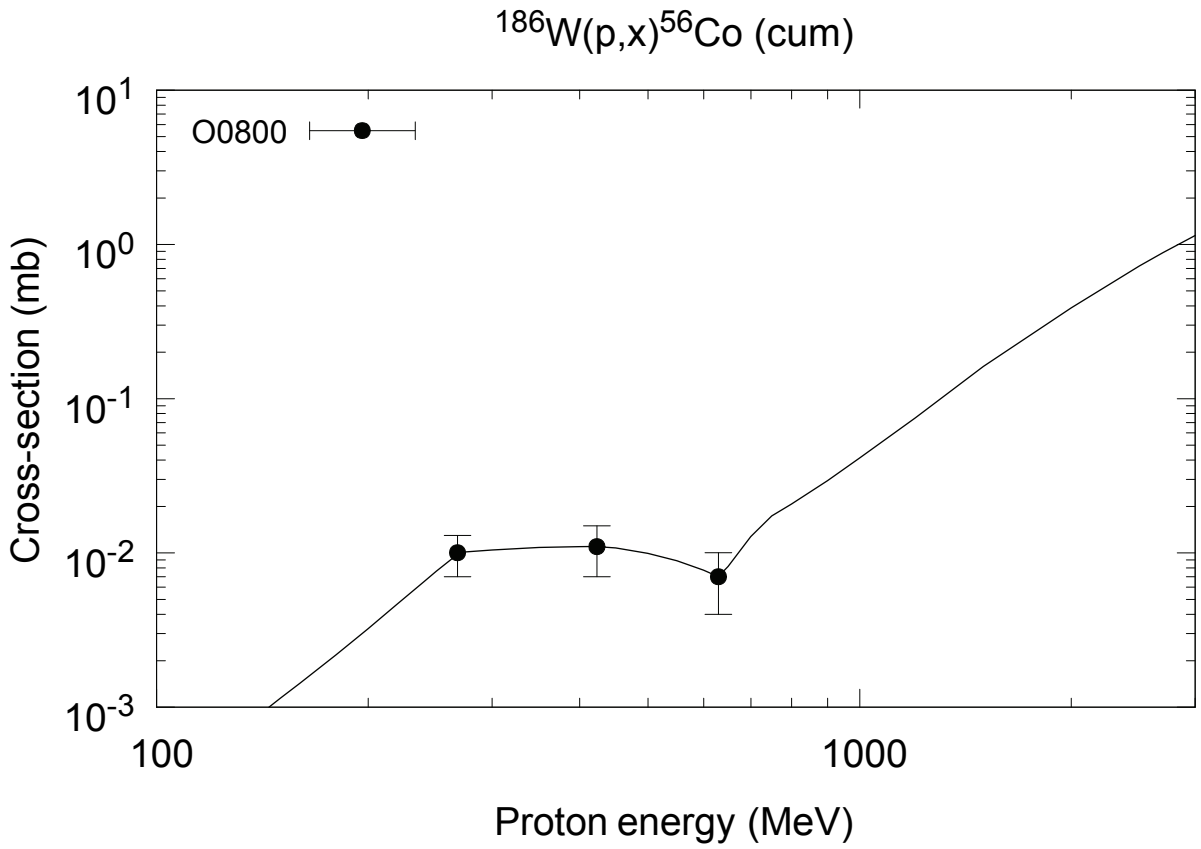

^{186}W(p,x)^{24}Na (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

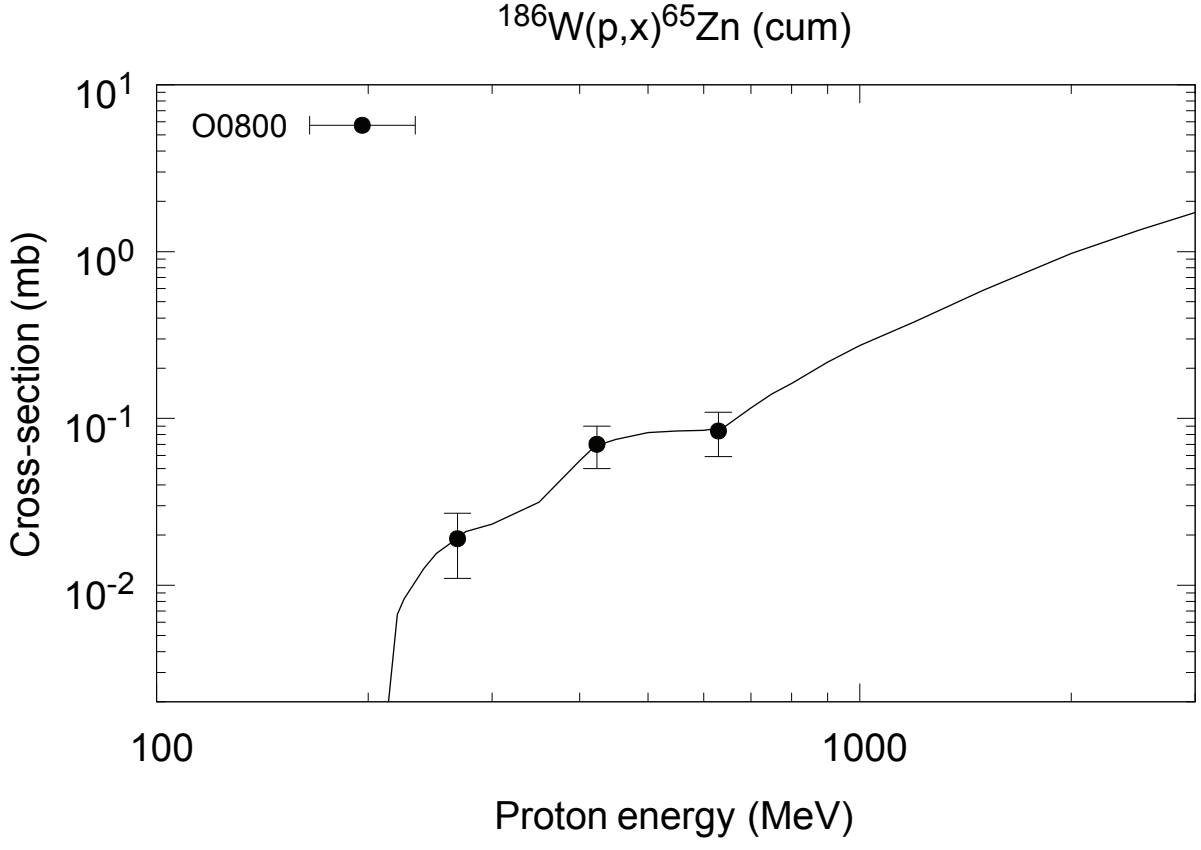

^{186}W(p,x)^{28}Mg (cum)
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

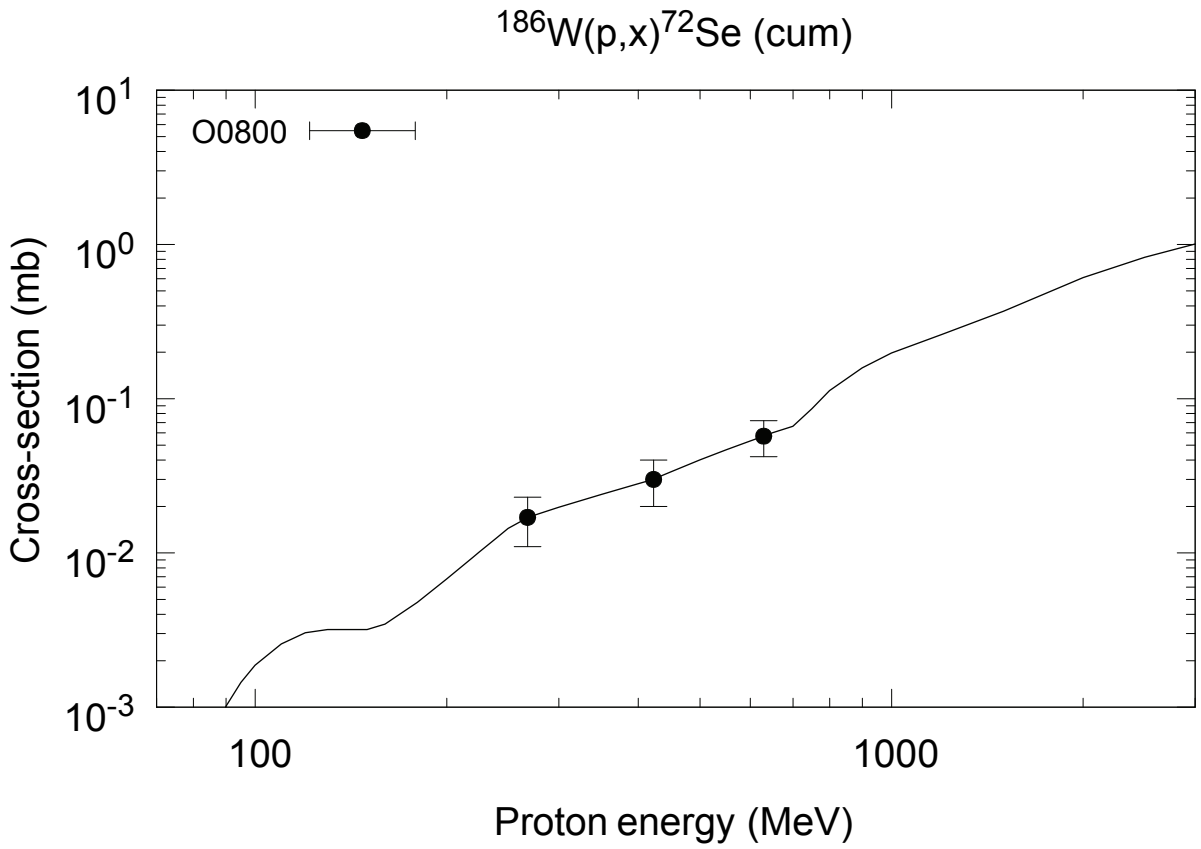

^{186}W(p,x)^{48}V (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

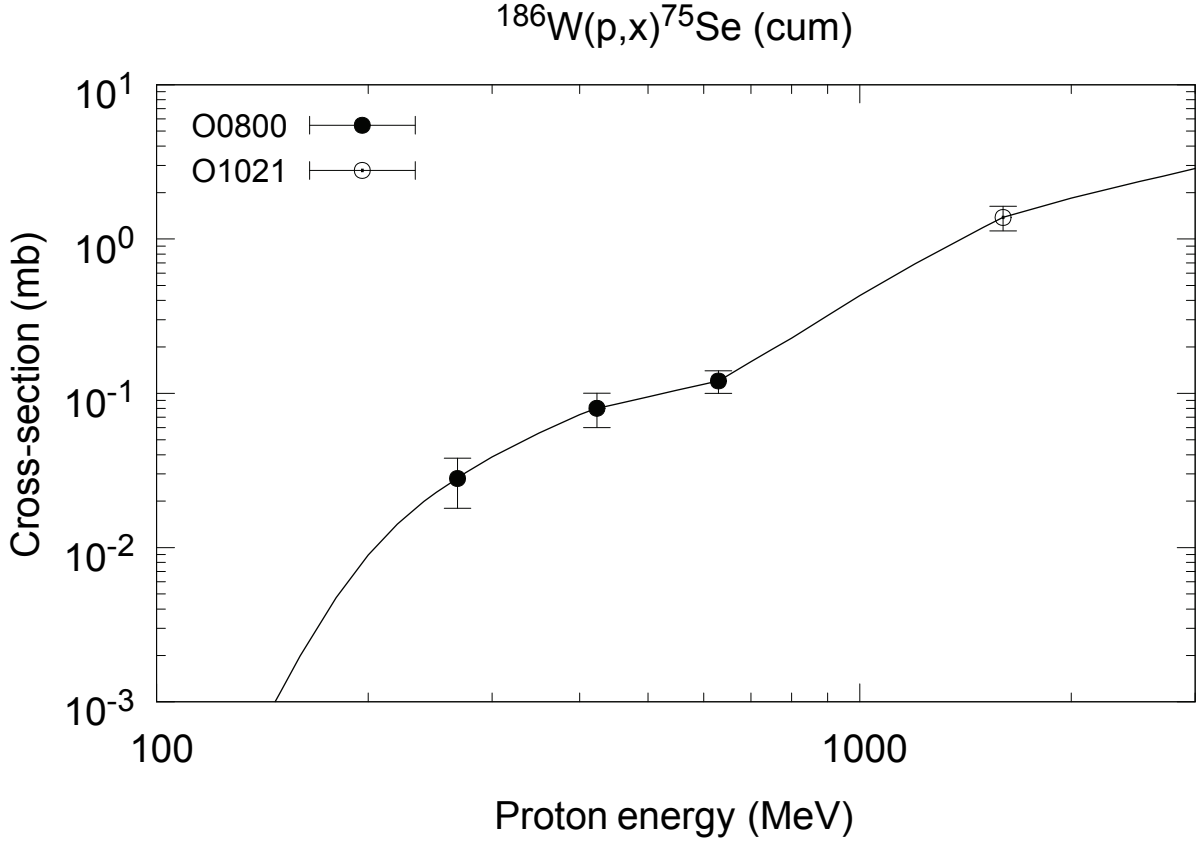

^{186}W(p,x)^{52g}Mn (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

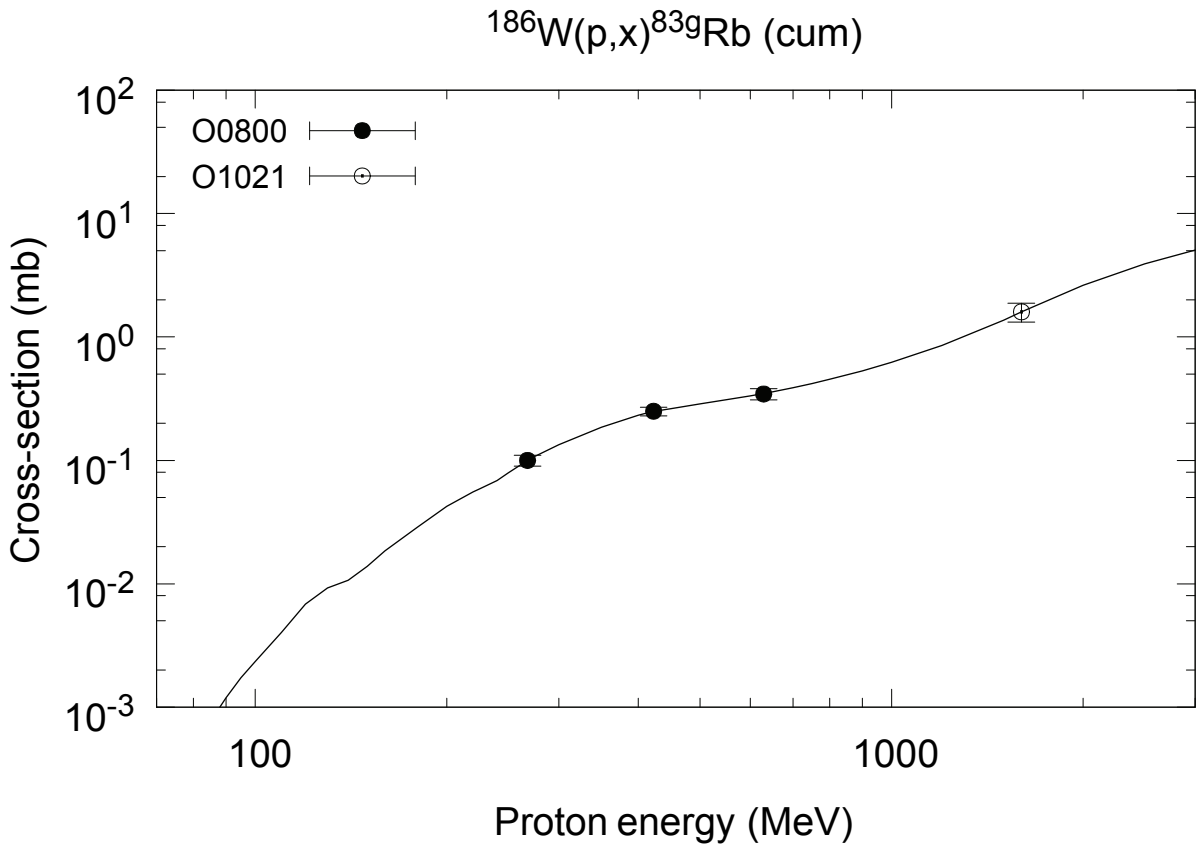

^{186}W(p,x)^{59}Fe (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

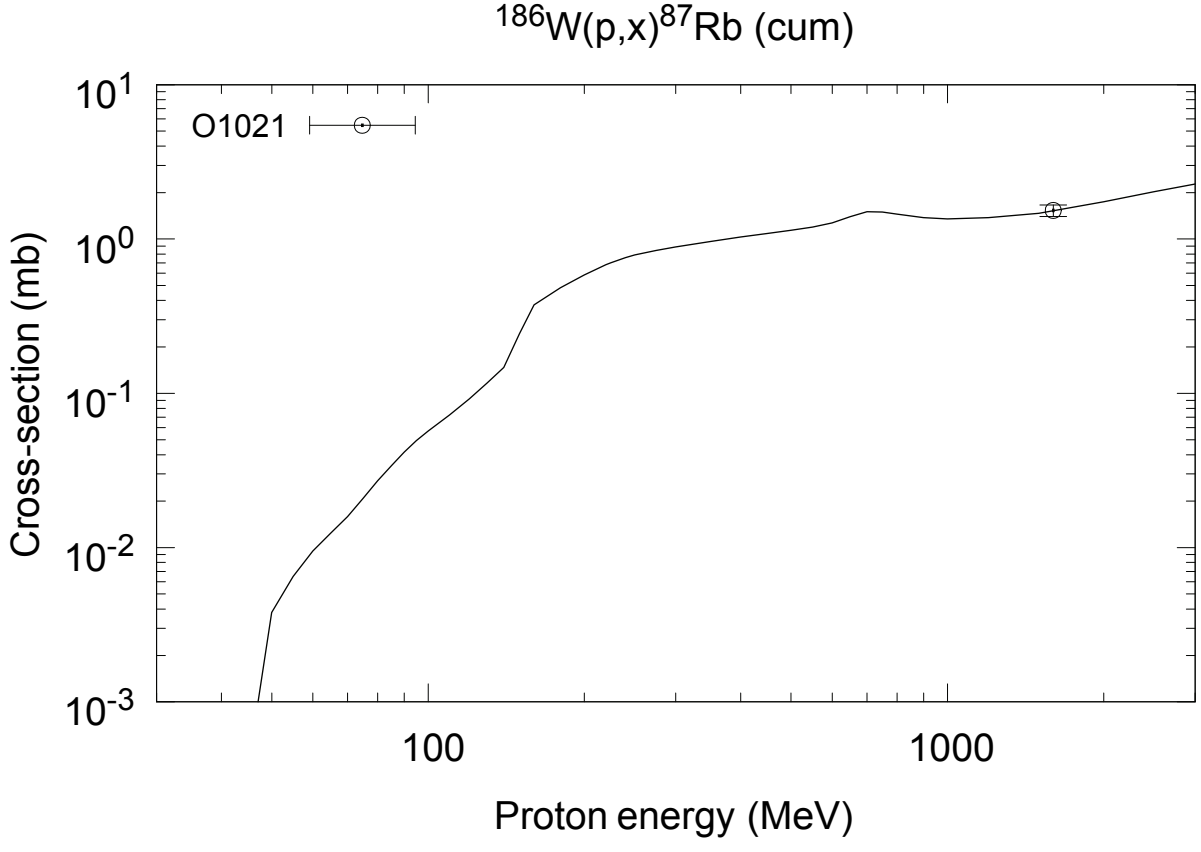

$^{186}W(p,x)^{56}Co$ (cum)
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

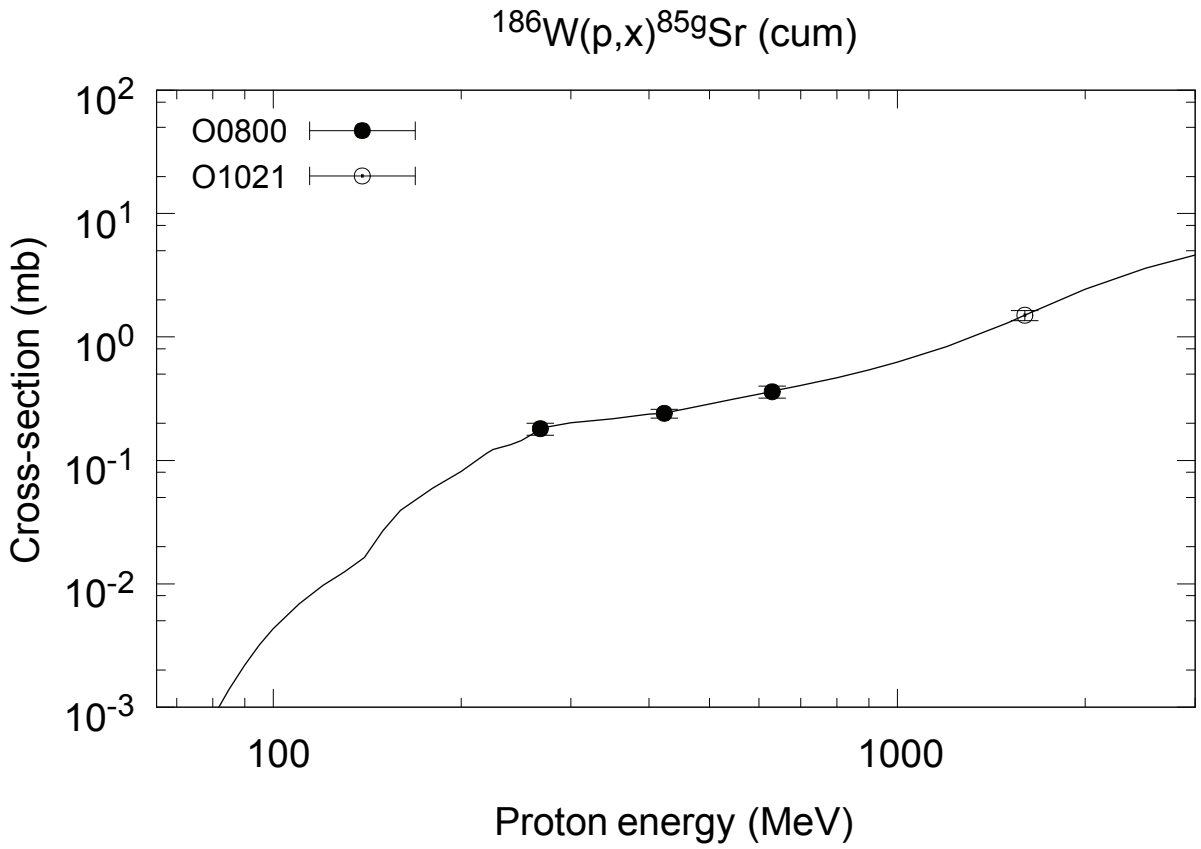

$^{186}W(p,x)^{65}Zn$ (cum)
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

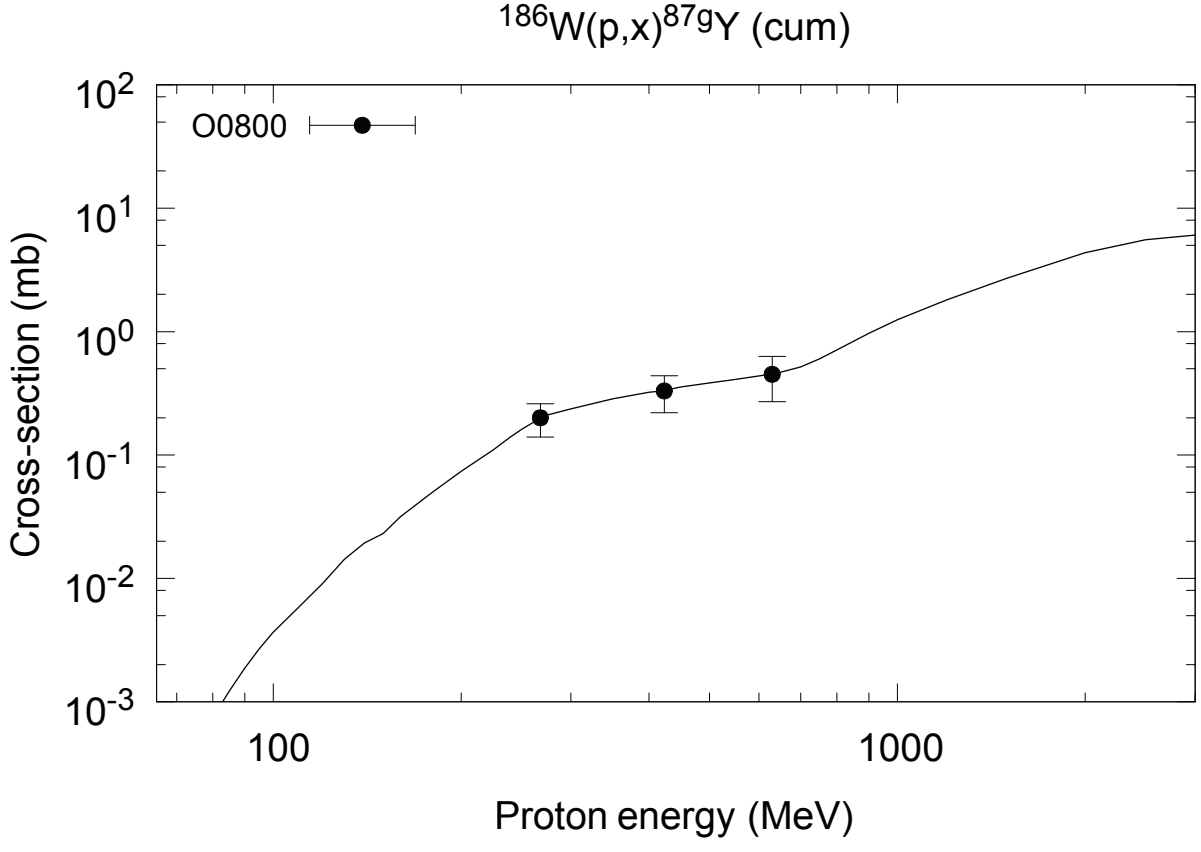

^{186}W(p,x)^{72}Se (cum)
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

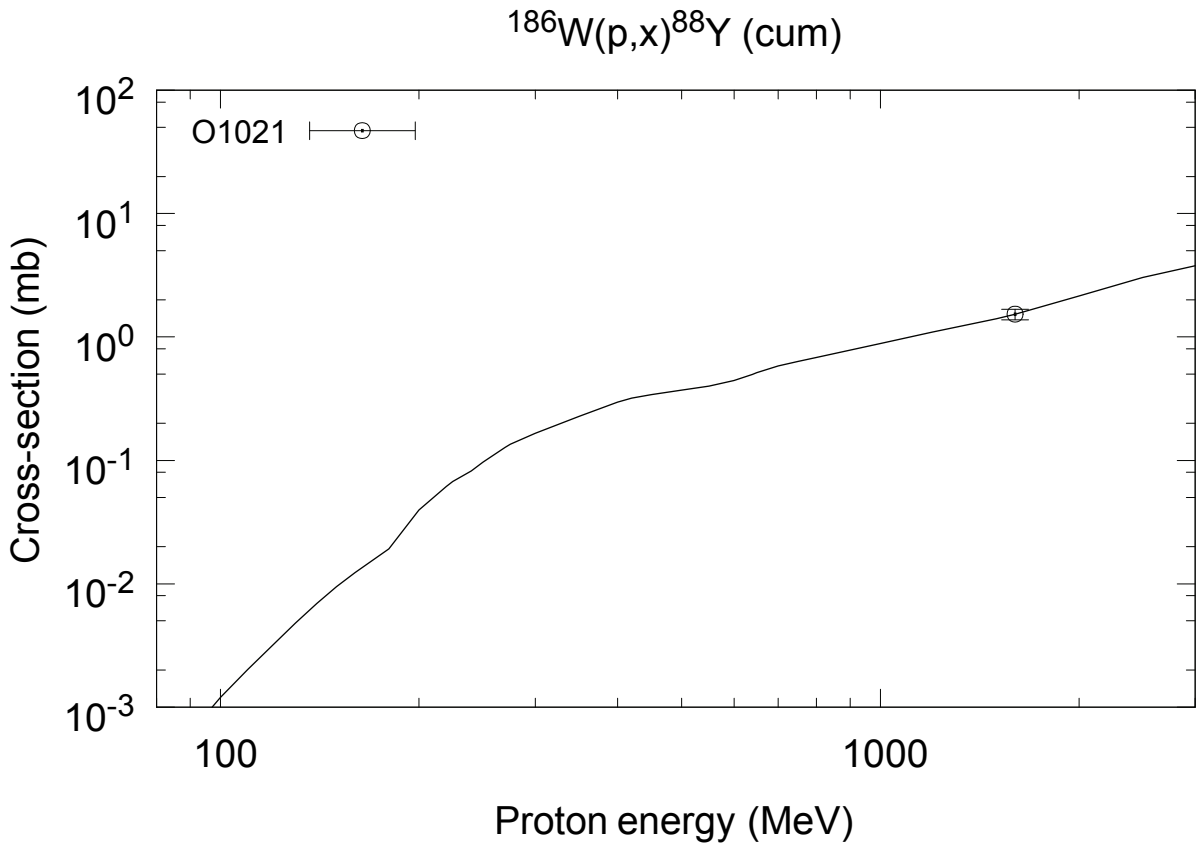

^{186}W(p,x)^{75}Se (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

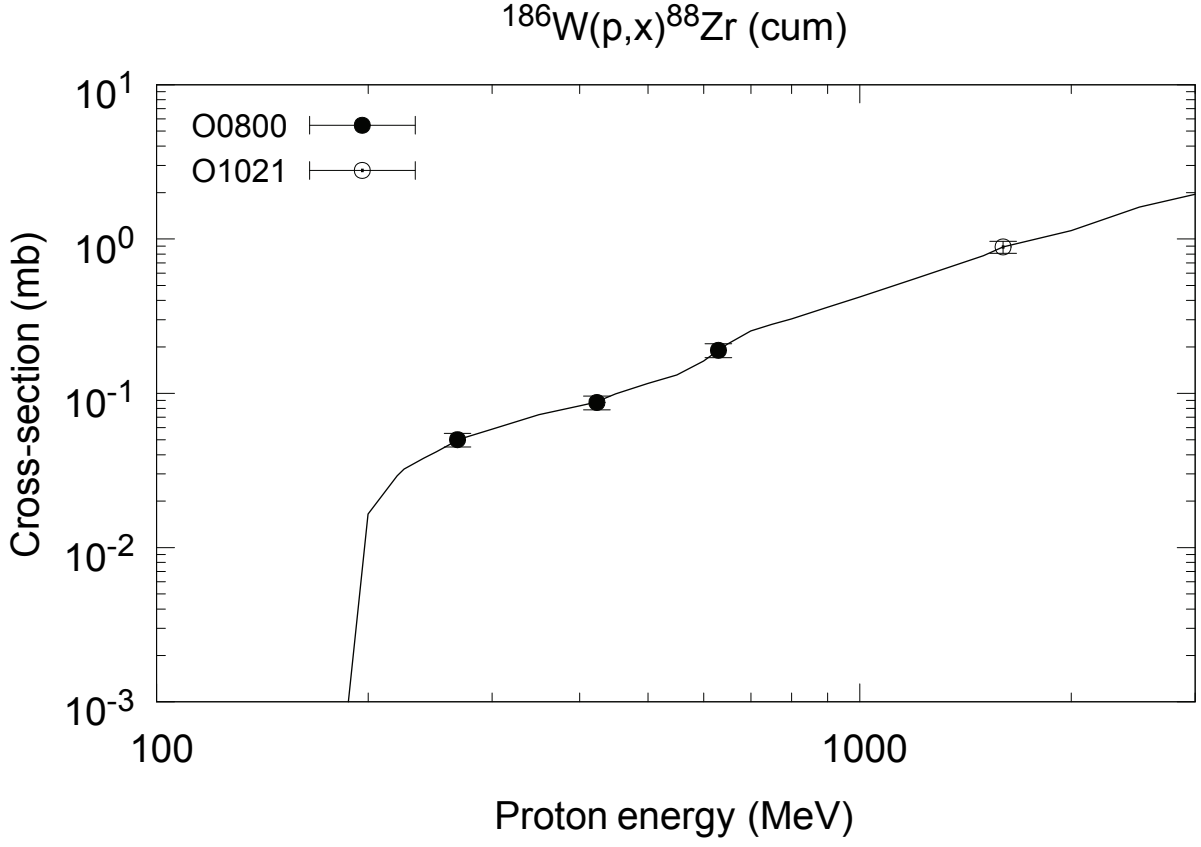

^{186}W(p,x)^{83g}Rb (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

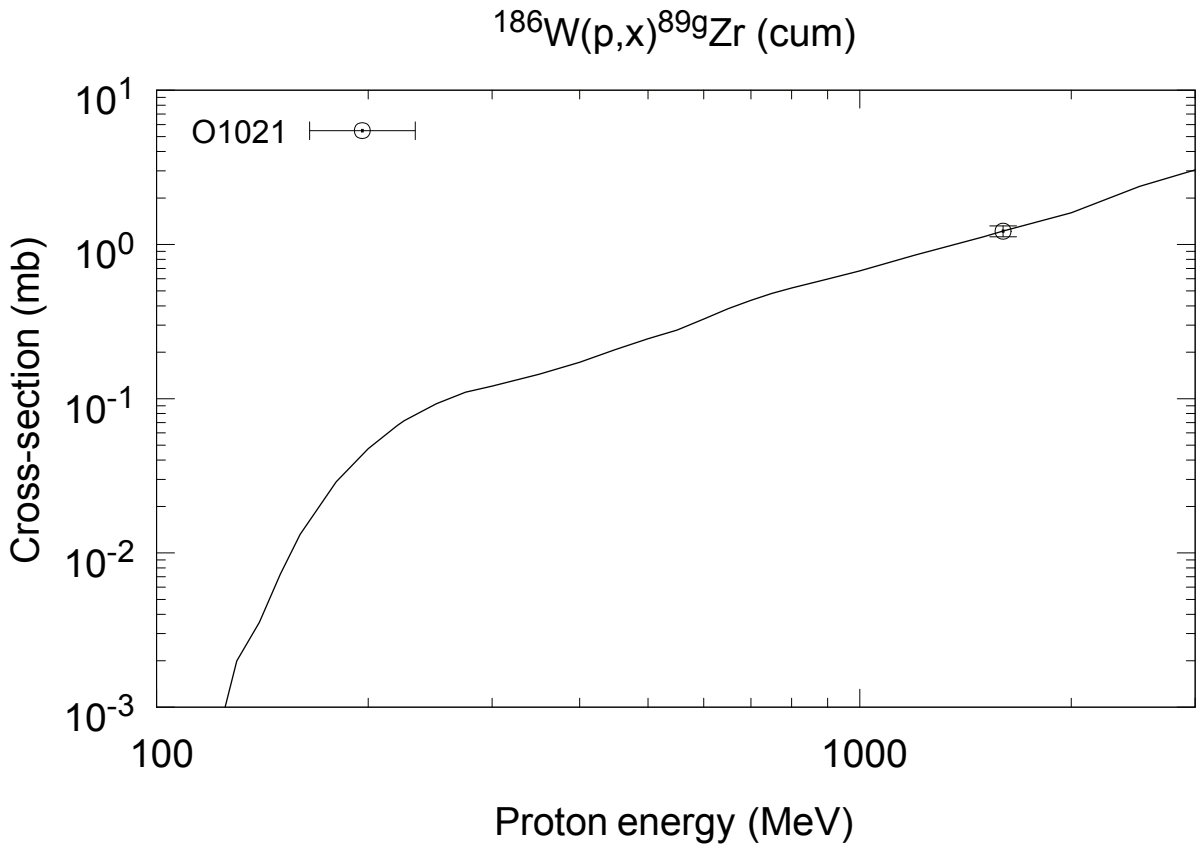

^{186}W(p,x)^{87}Rb (cum)
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

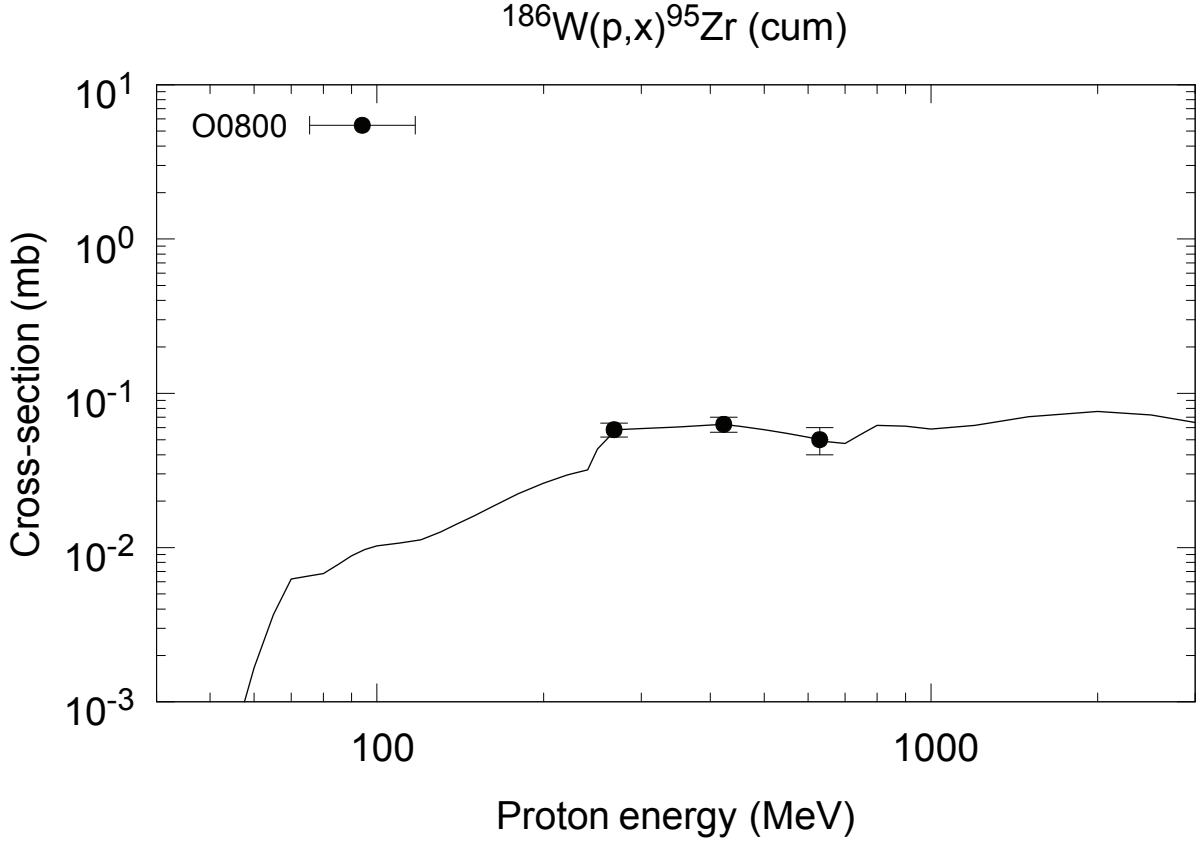

^{186}W(p,x)^{85g}Sr (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

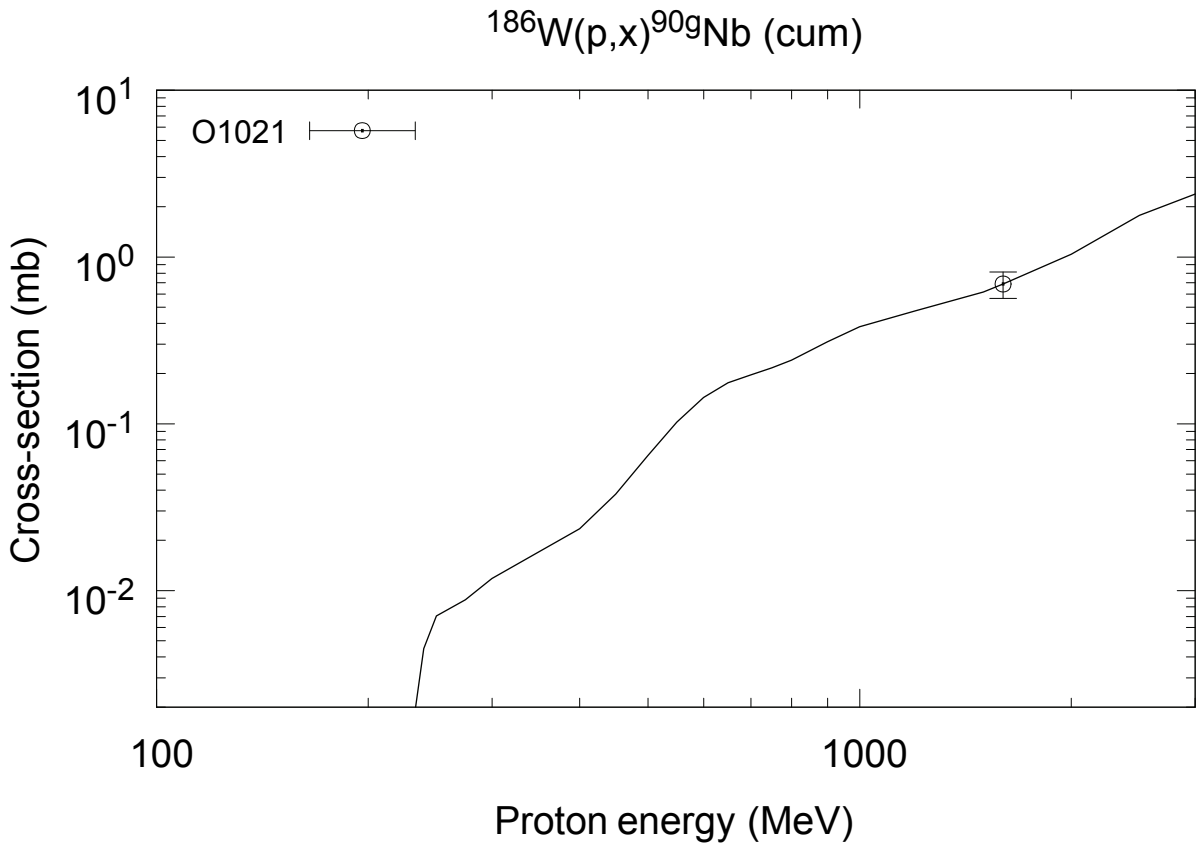

^{186}W(p,x)^{87g}Y (cum)
O0800
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

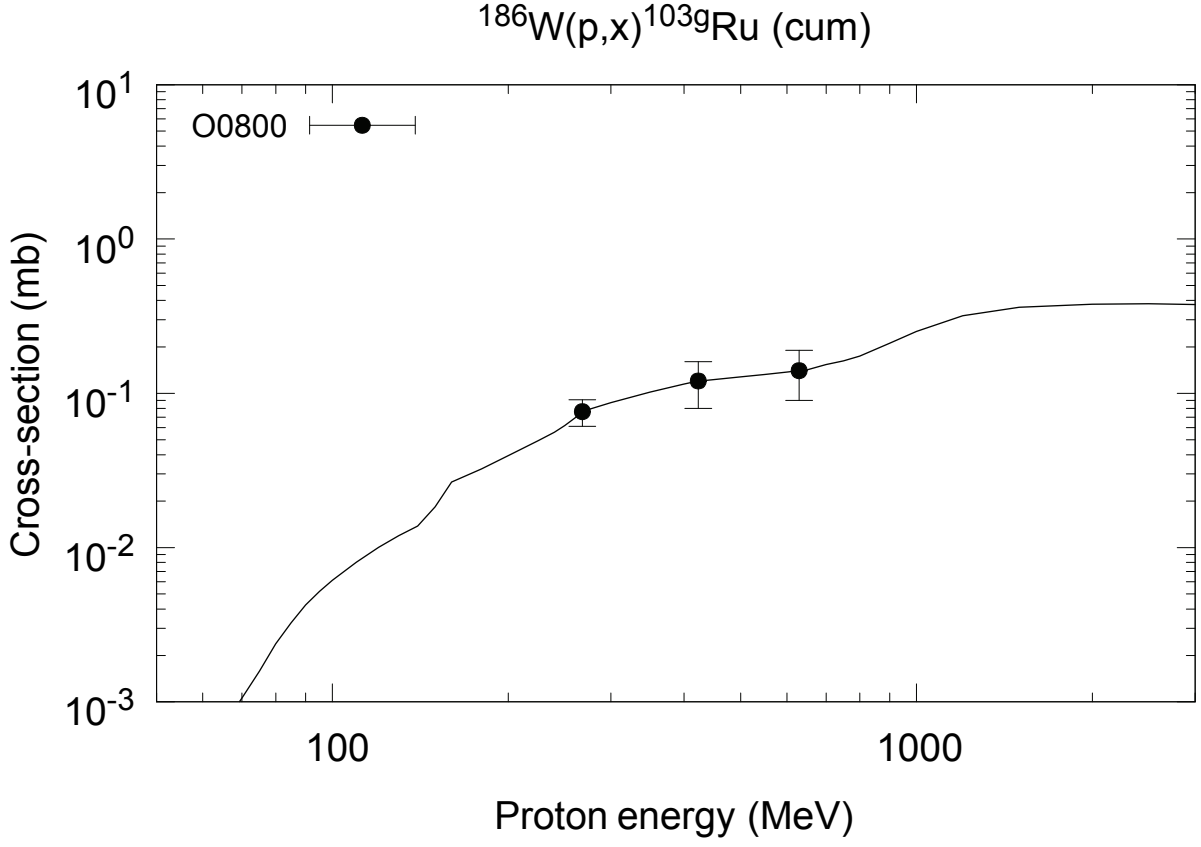

^{186}W(p,x)^{88}Y (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

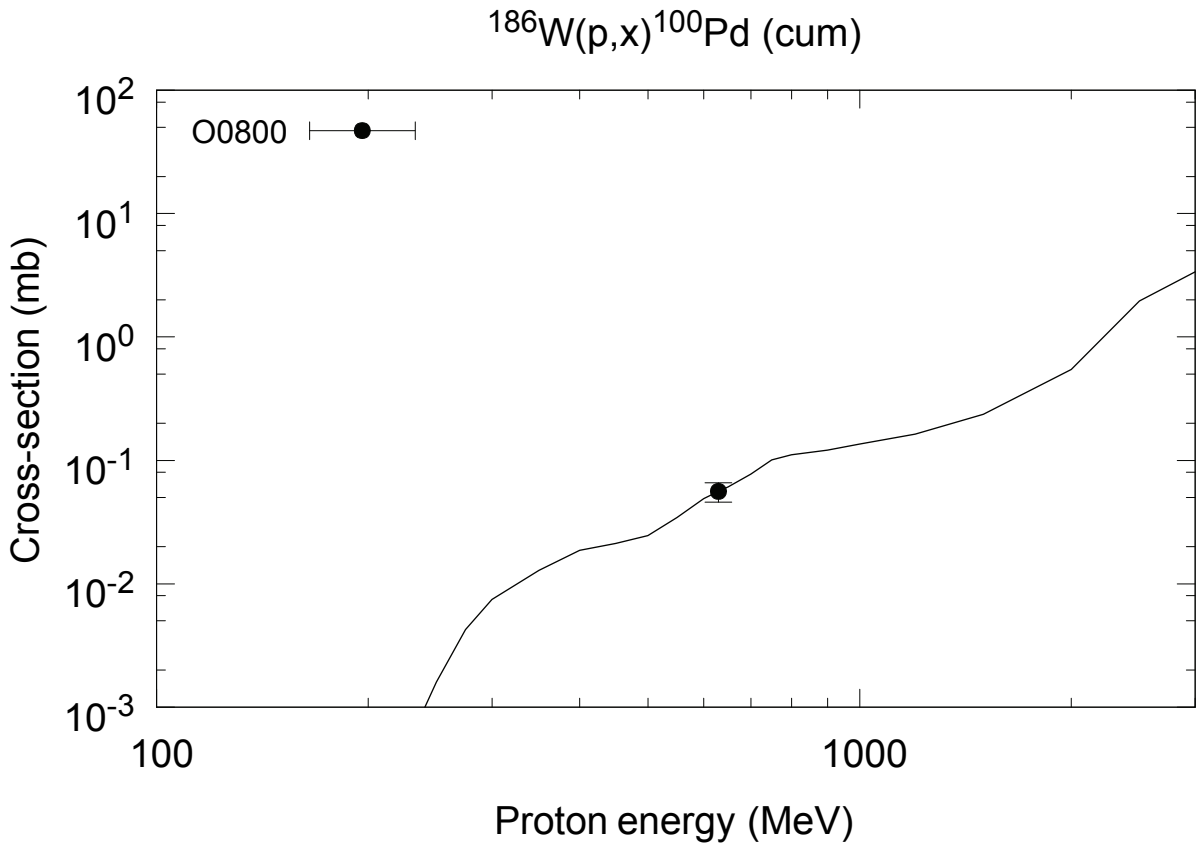

^{186}W(p,x)^{88}Zr (cum)
O0800
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

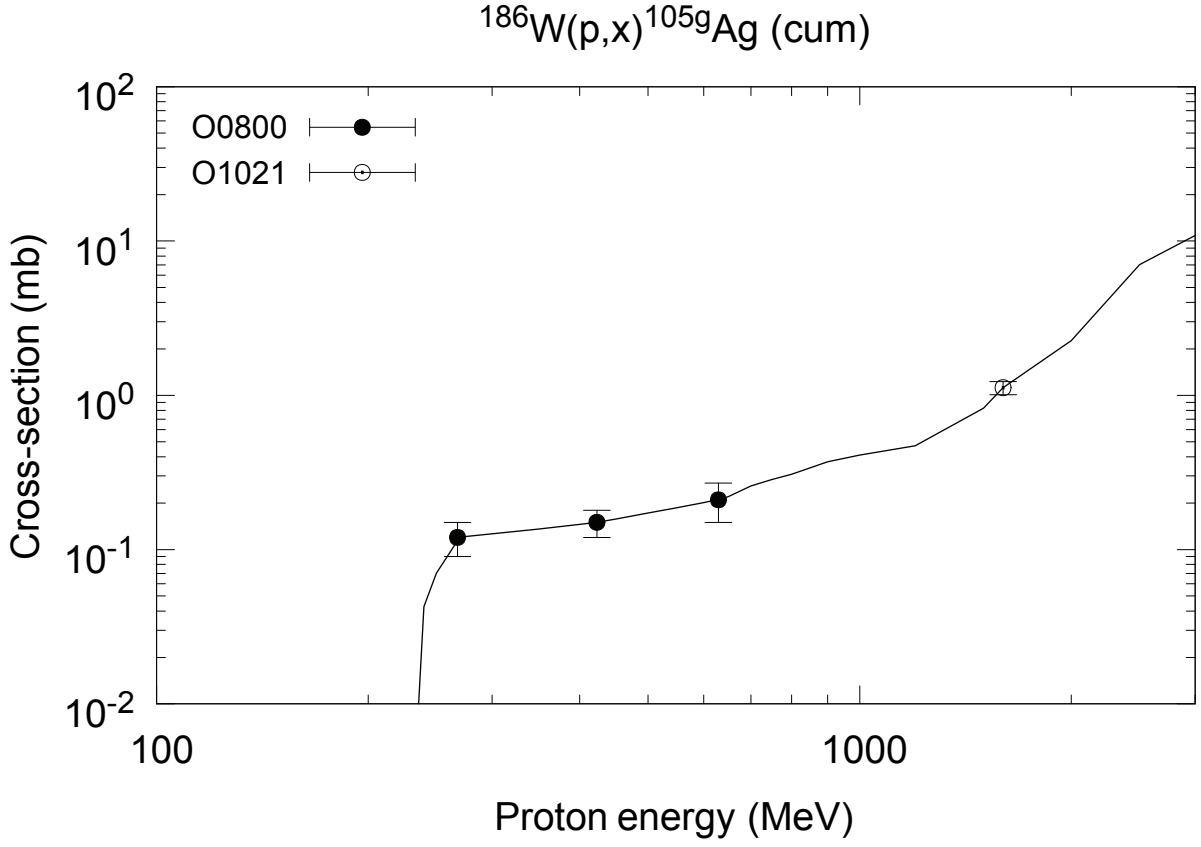

^{186}W(p,x)^{89g}Zr (cum)
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

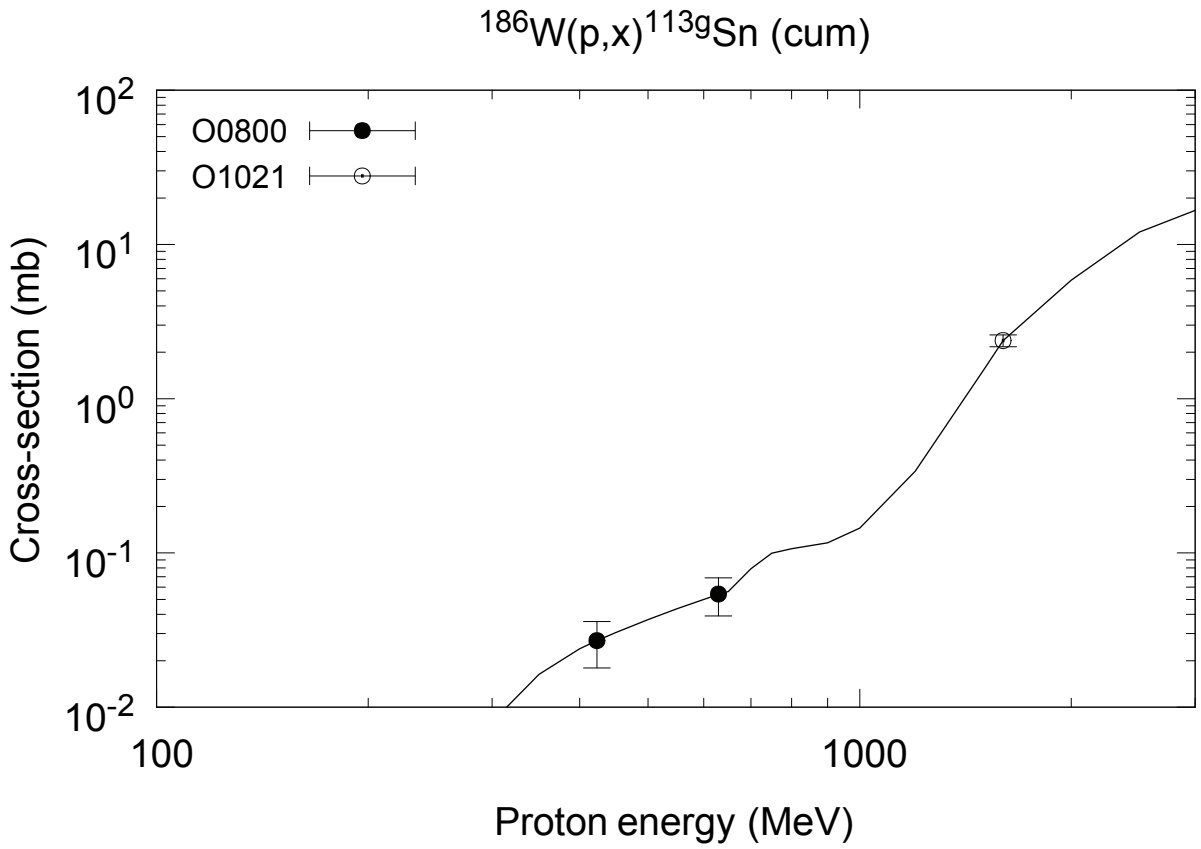

^{186}W(p,x)^{95}Zr (cum)
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

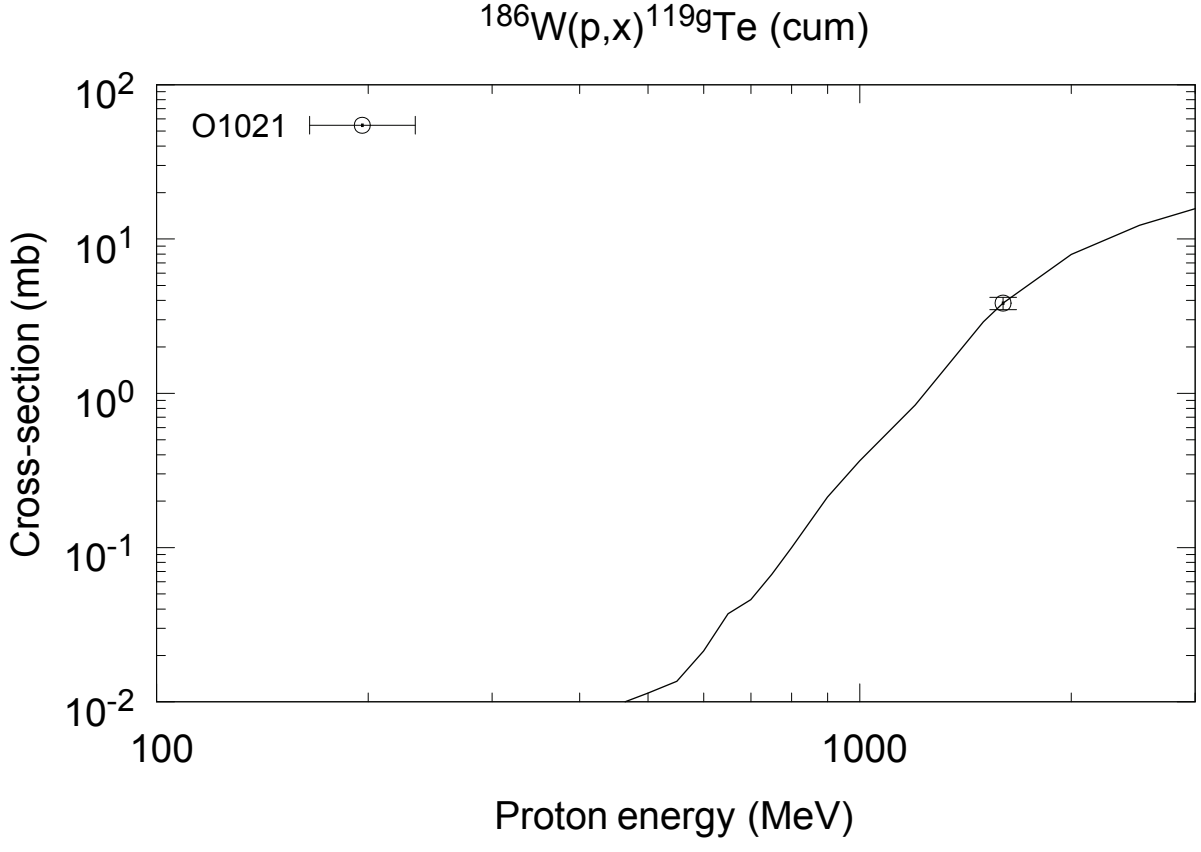

^{186}W(p,x)^{90g}Nb (cum)
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

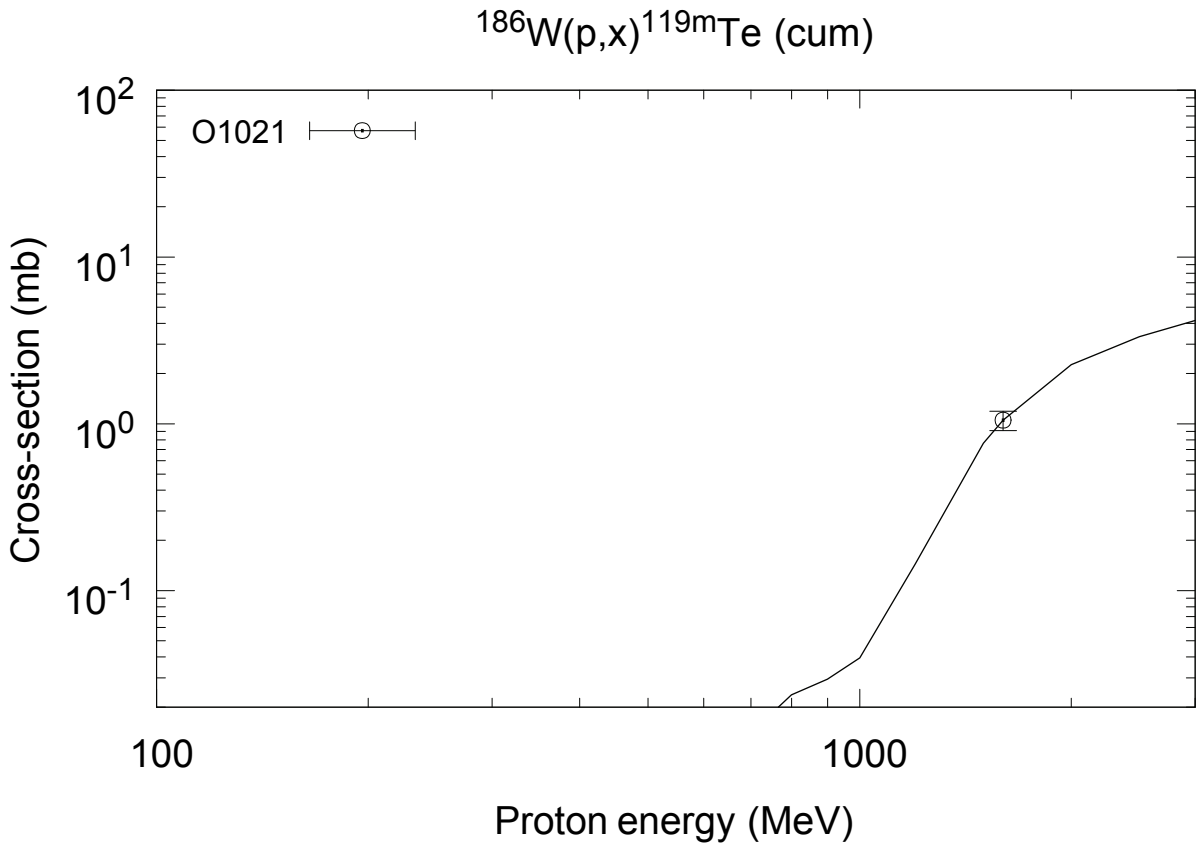

^{186}W(p,x)^{103g}Ru (cum)
O0800
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

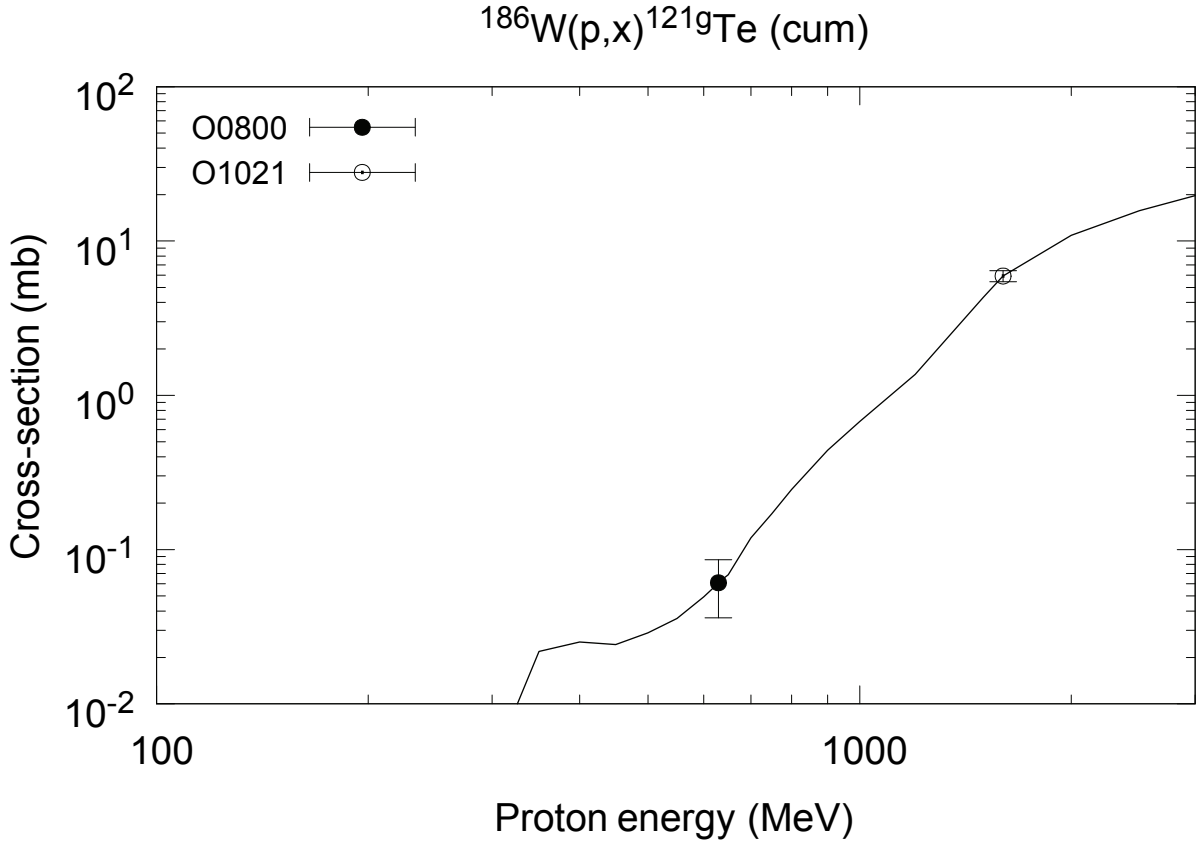

^{186}W(p,x)^{100}Pd (cum)
O0800
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

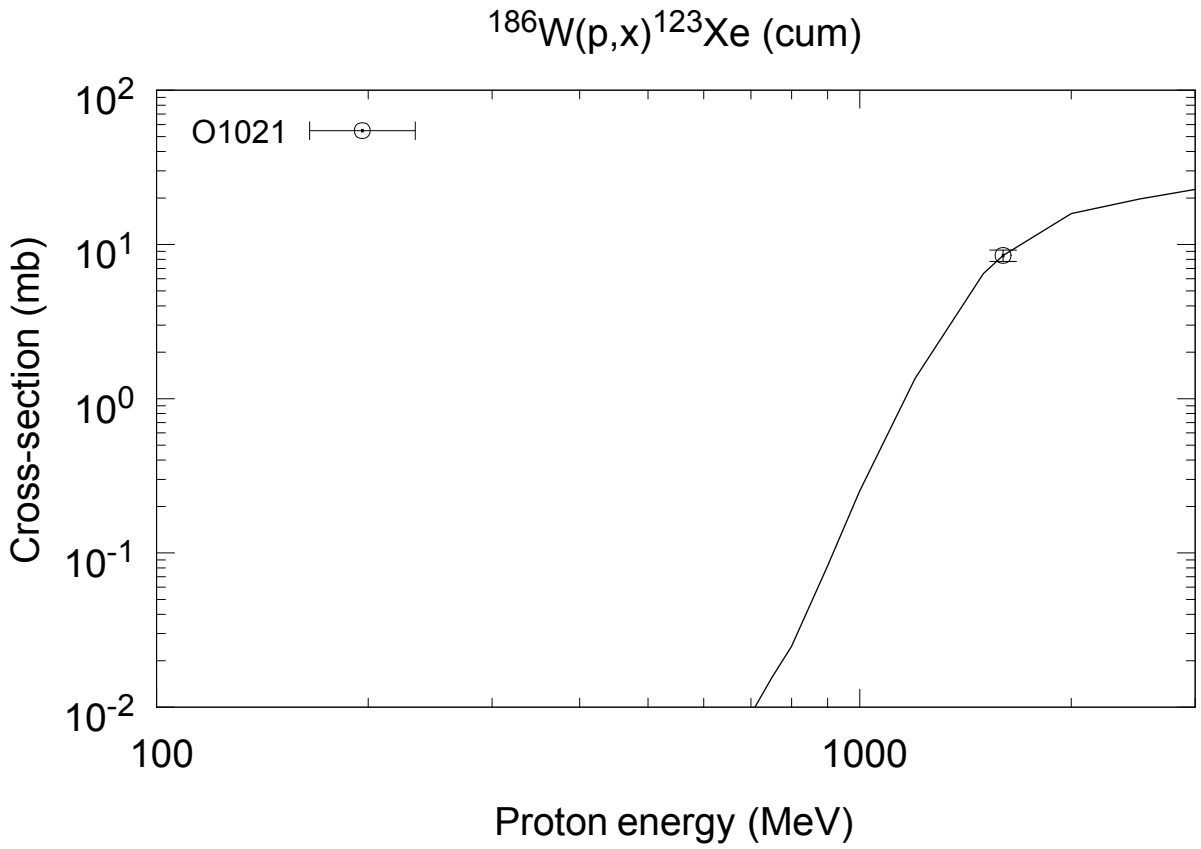

^{186}W(p,x)^{105g}Ag (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

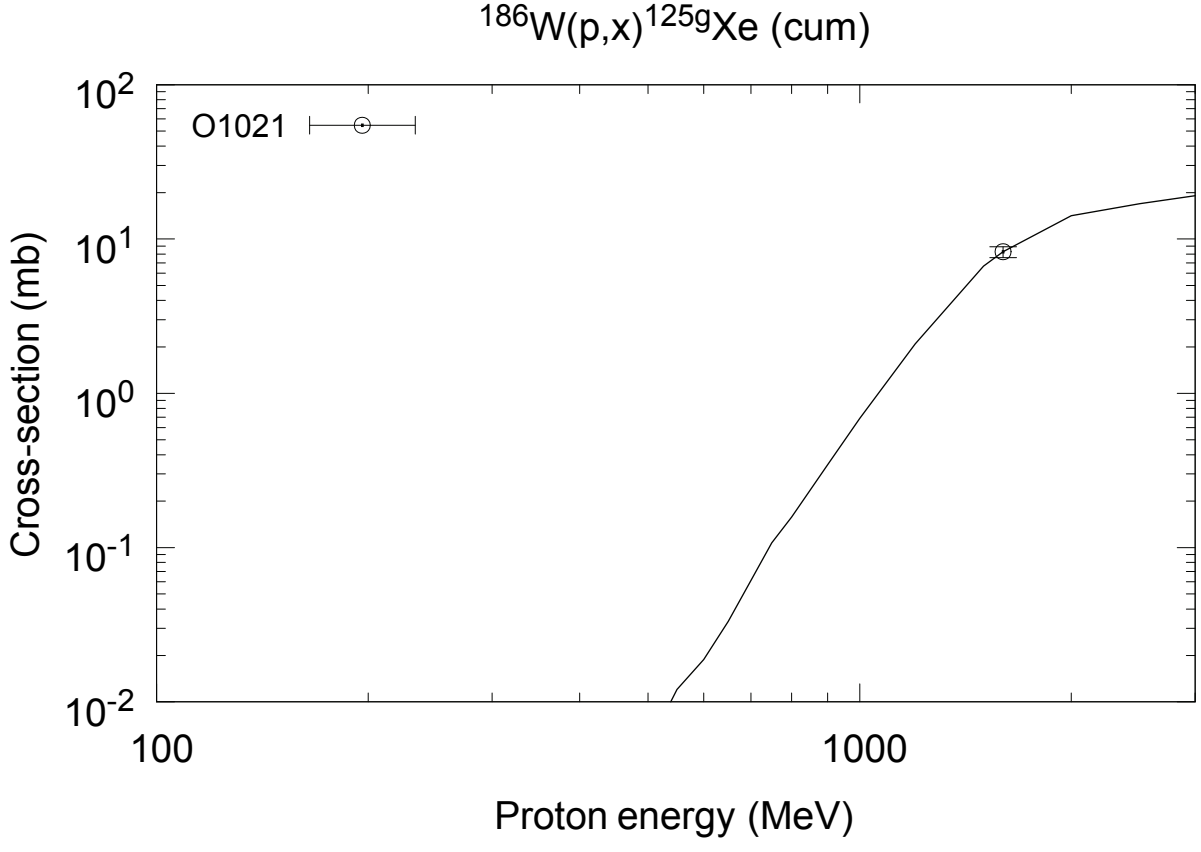

^{186}W(p,x)^{113g}Sn (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

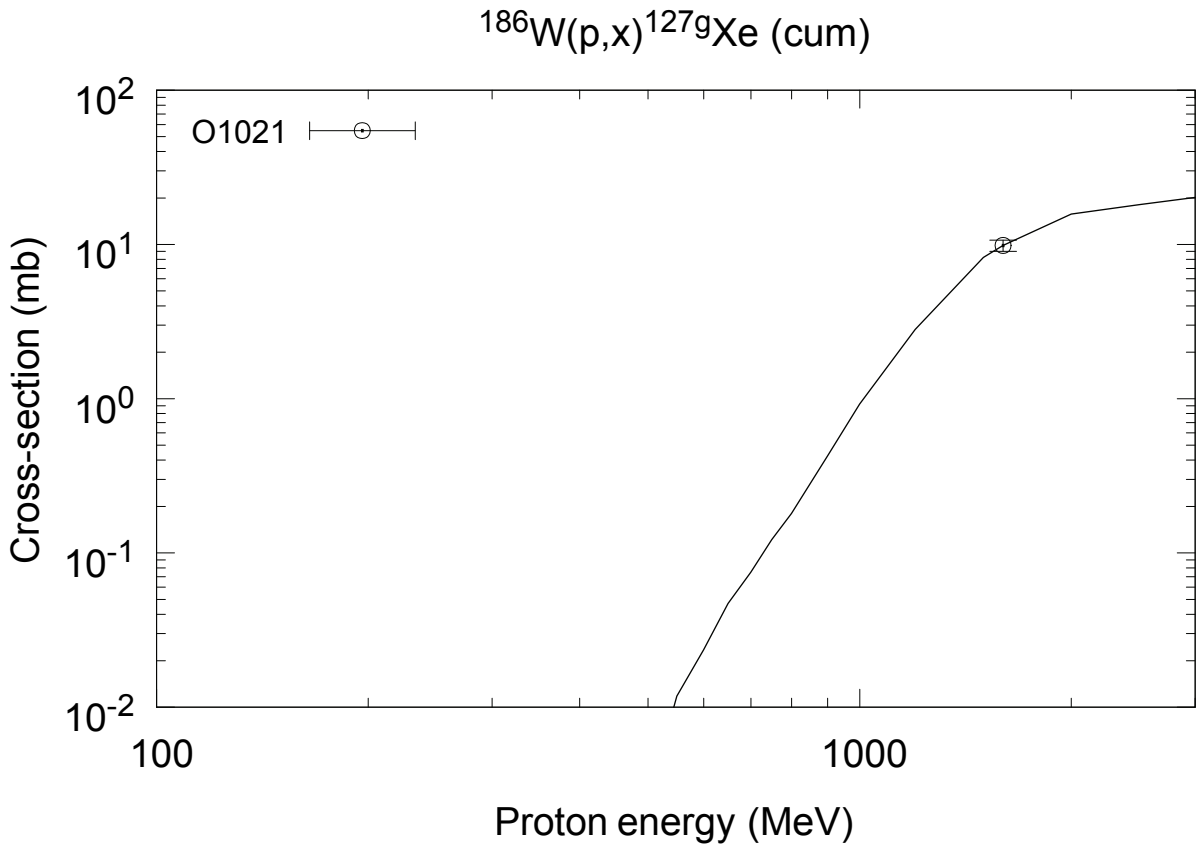

^{186}W(p,x)^{119g}Te (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

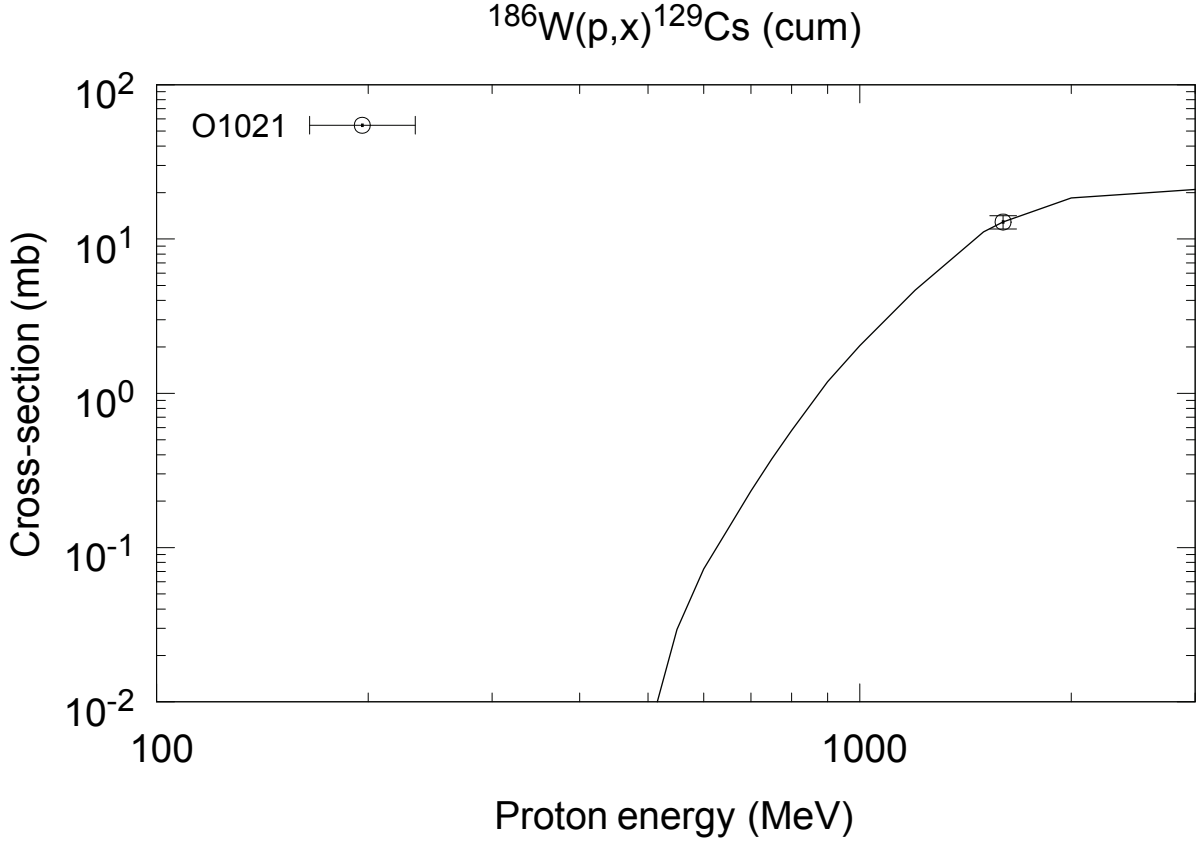

^{186}W(p,x)^{119m}Te (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

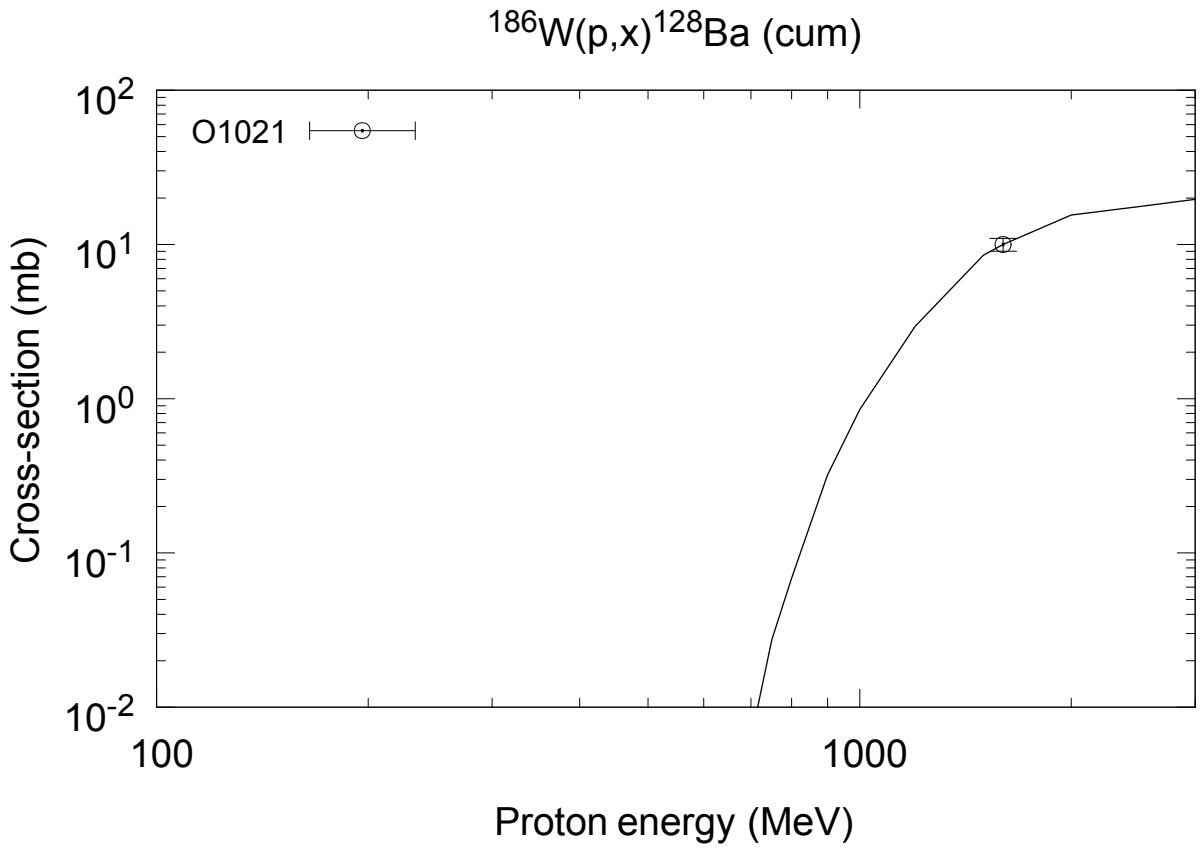

^{186}W(p,x)^{121g}Te (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

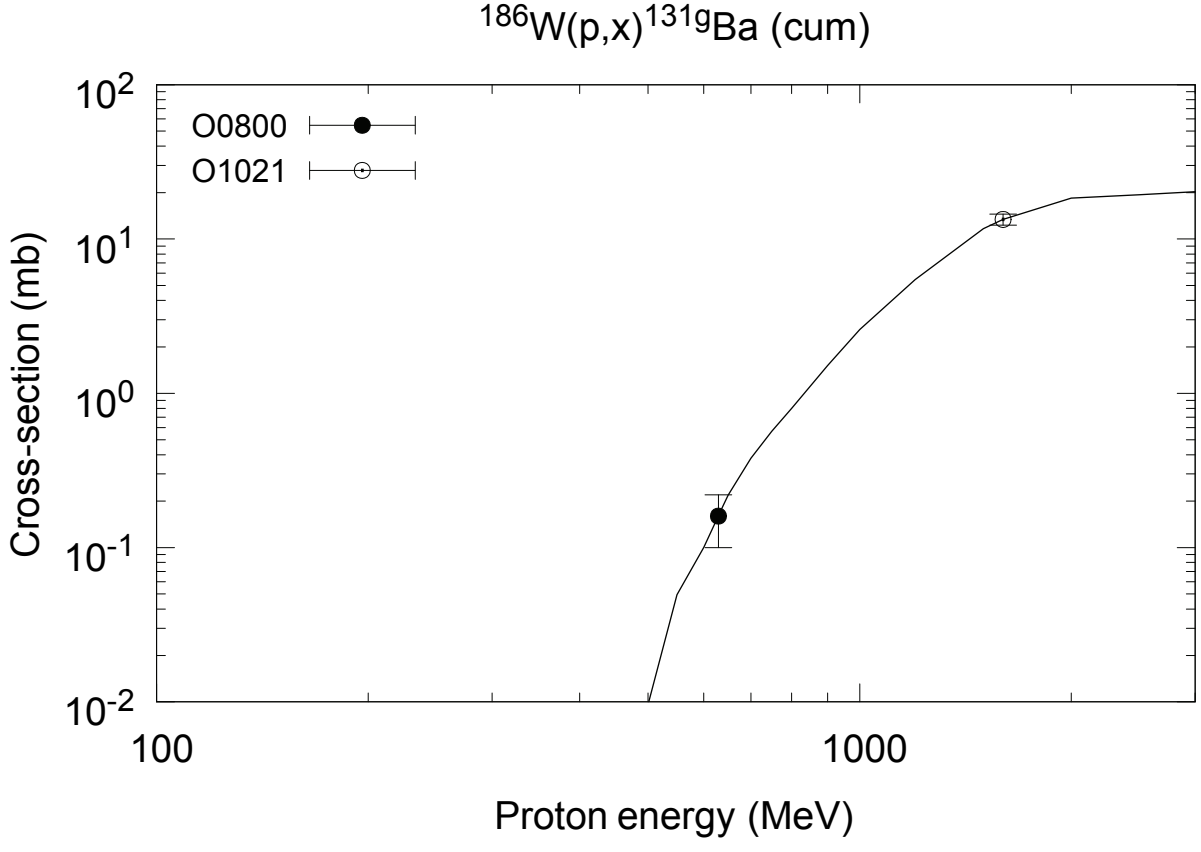

^{186}W(p,x)^{123}Xe (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

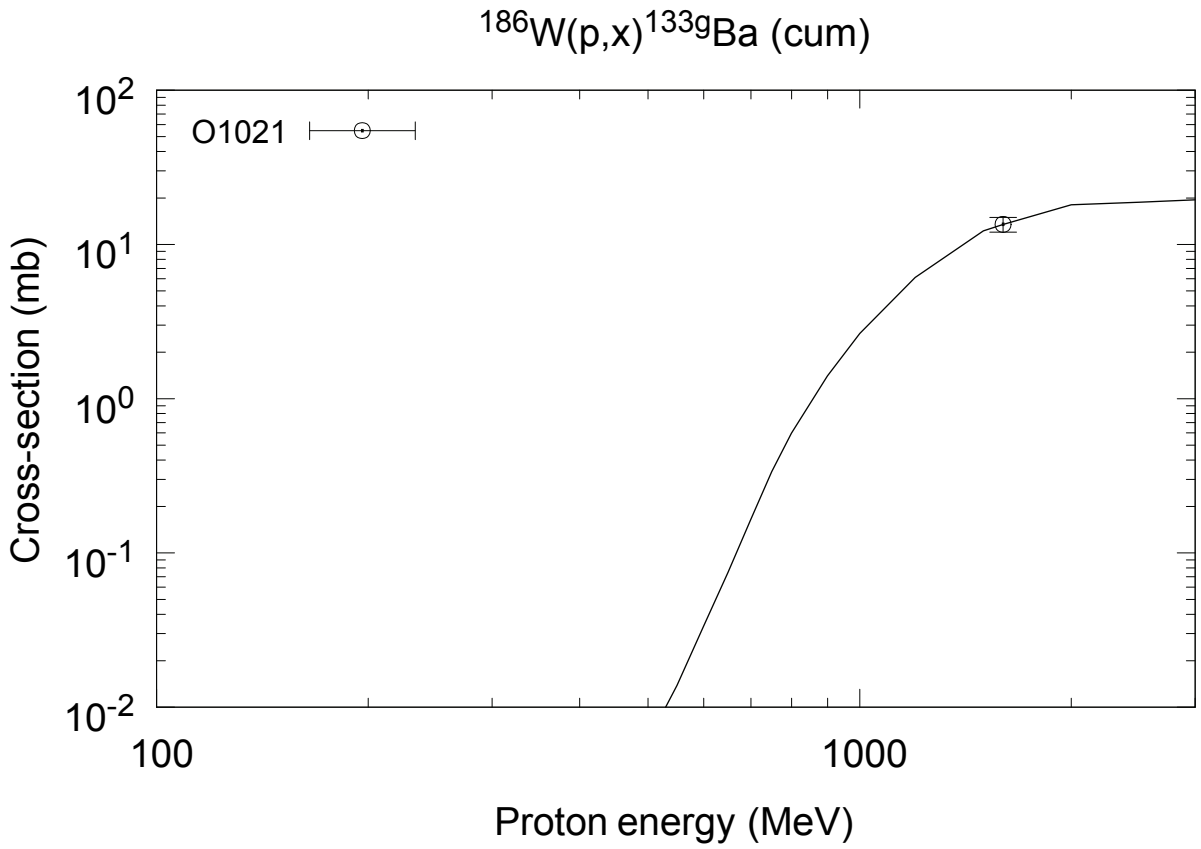

^{186}W(p,x)^{125g}Xe (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

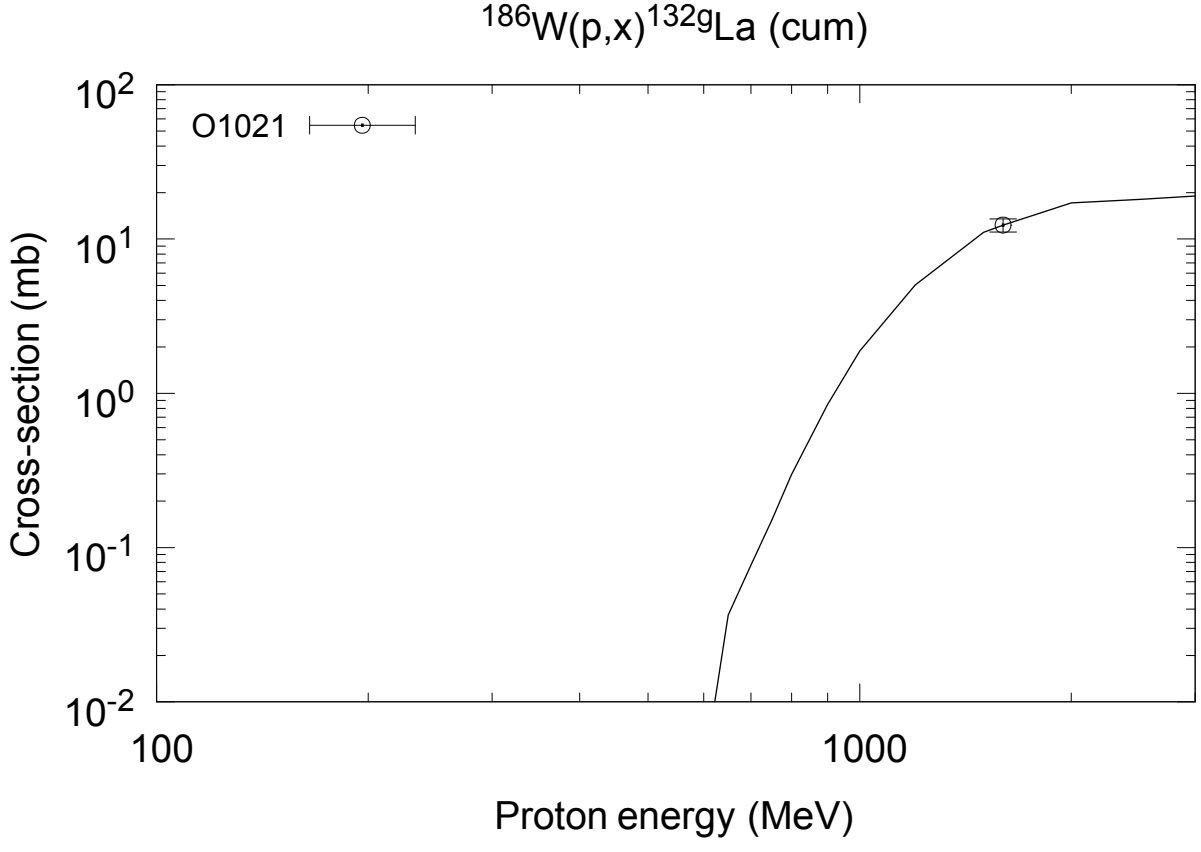

^{186}W(p,x)^{127g}Xe (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

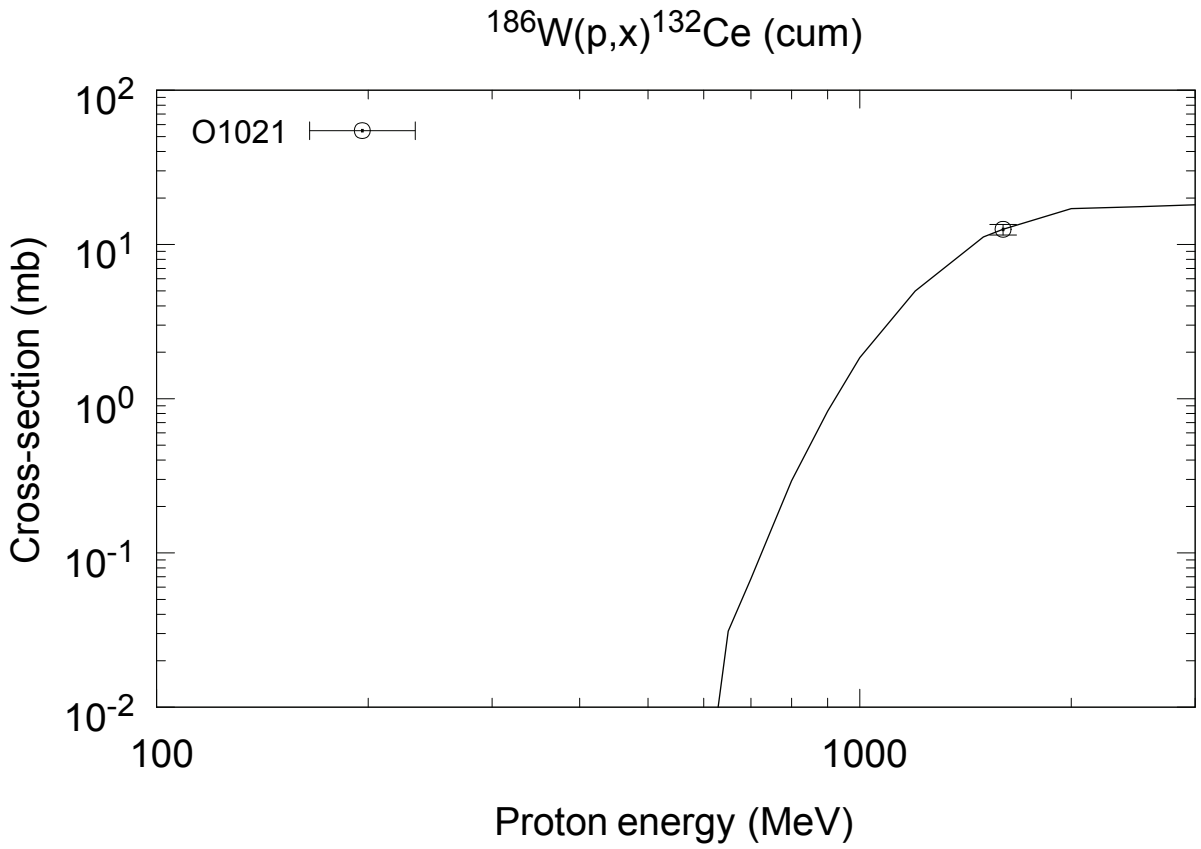

^{186}W(p,x)^{129}Cs (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

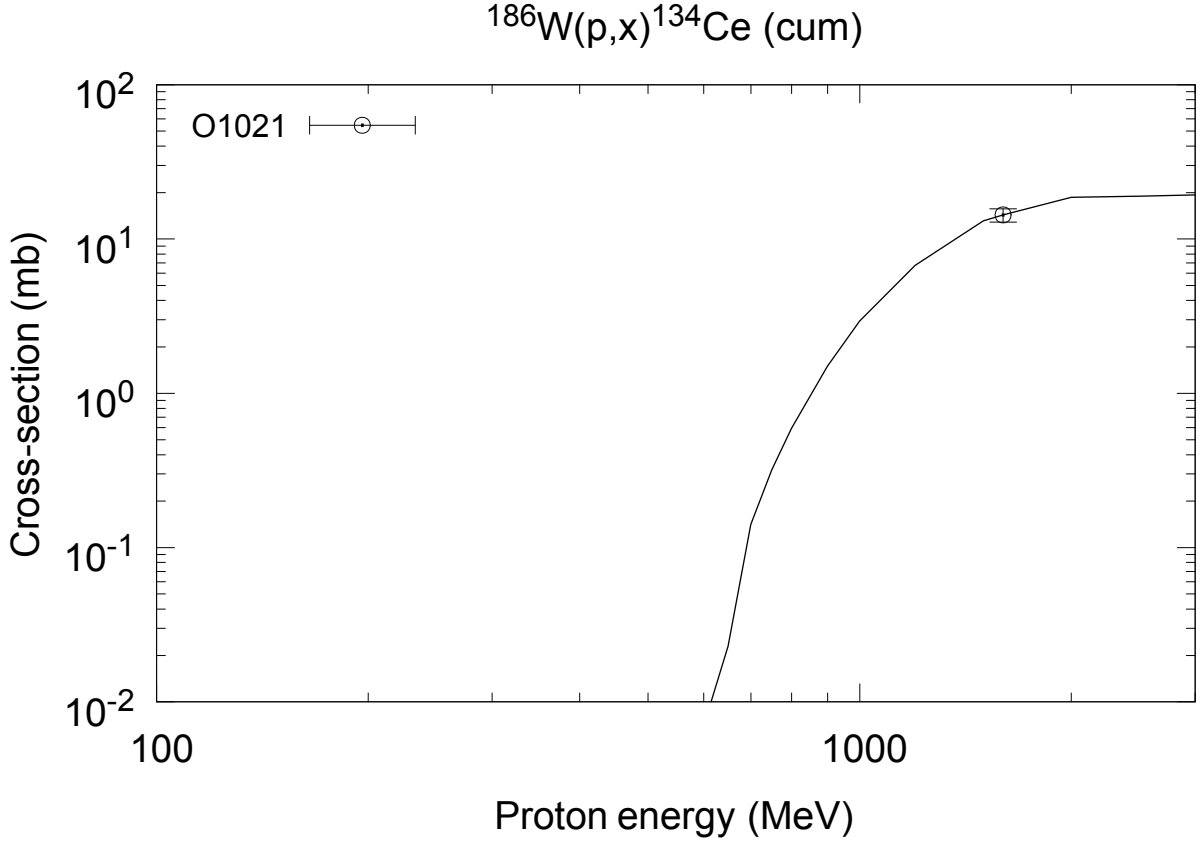

^{186}W(p,x)^{128}Ba (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

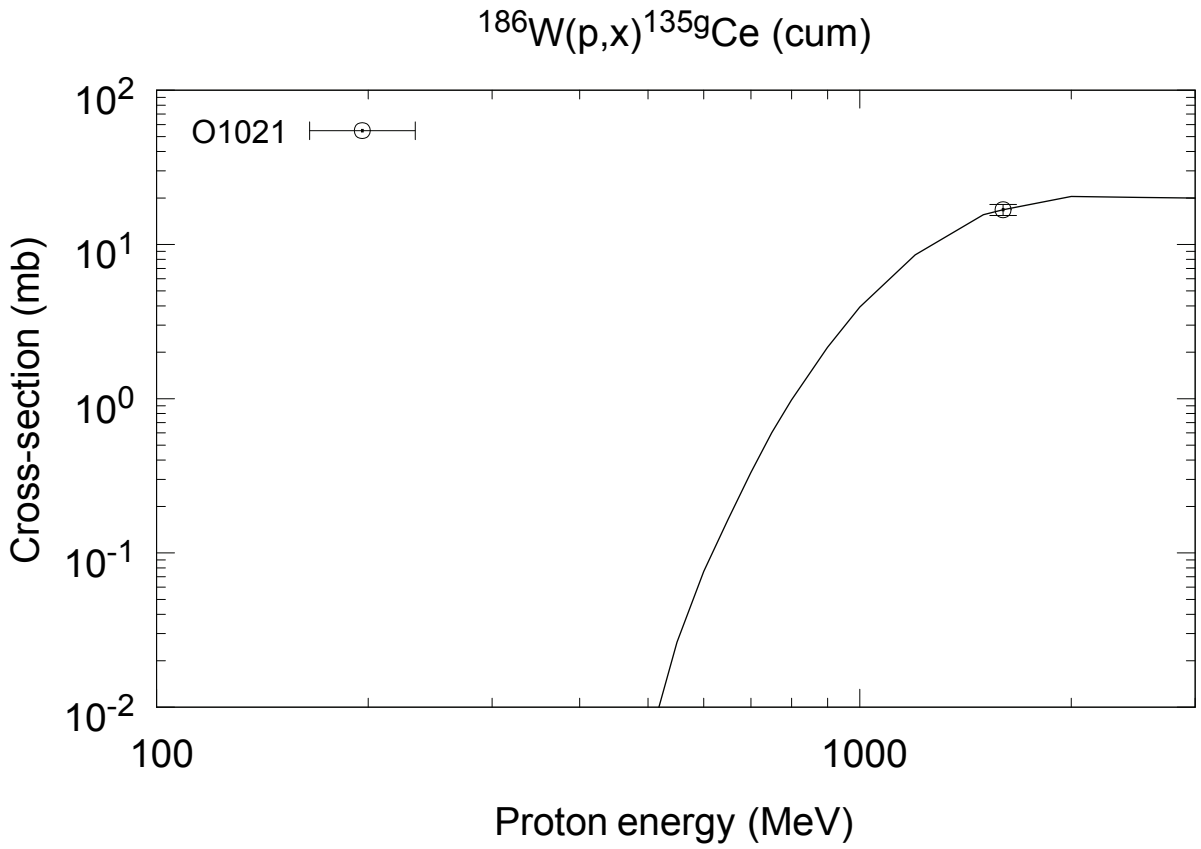

^{186}W(p,x)^{131g}Ba (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

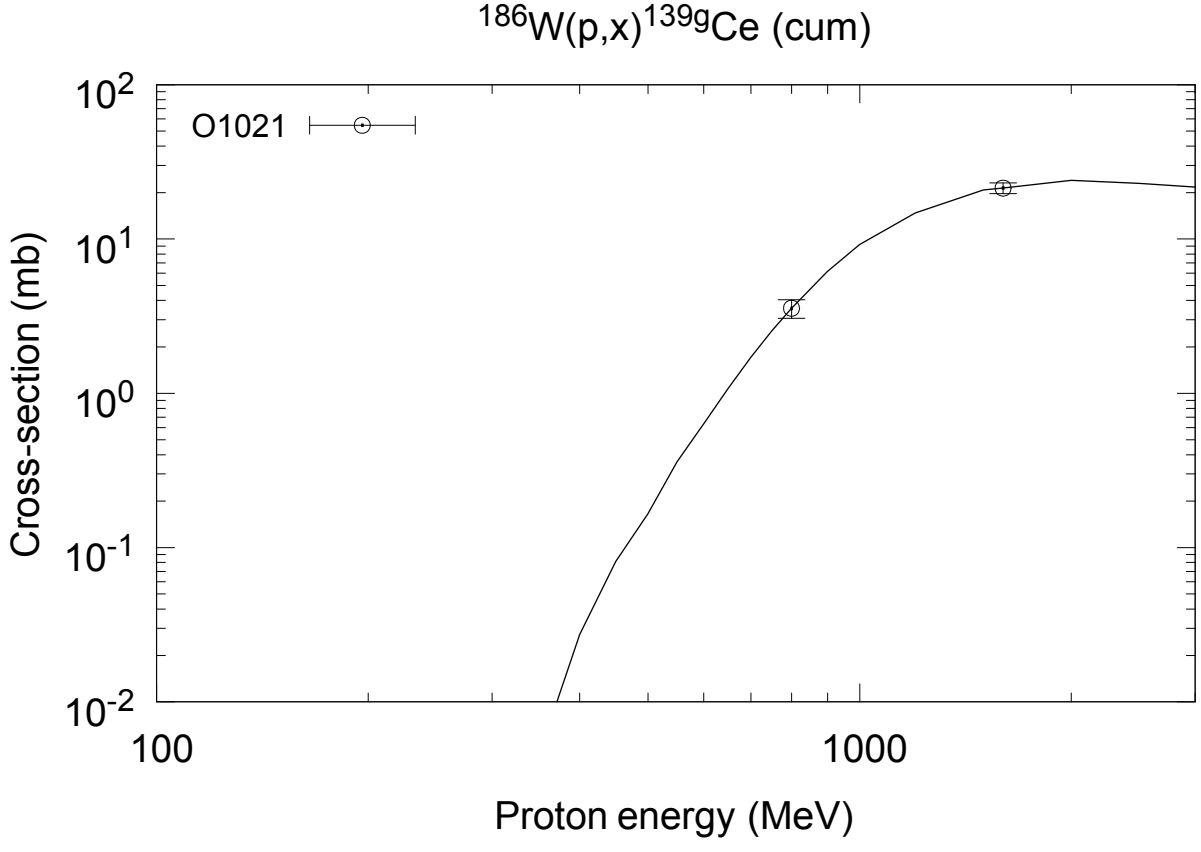

^{186}W(p,x)^{133g}Ba (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

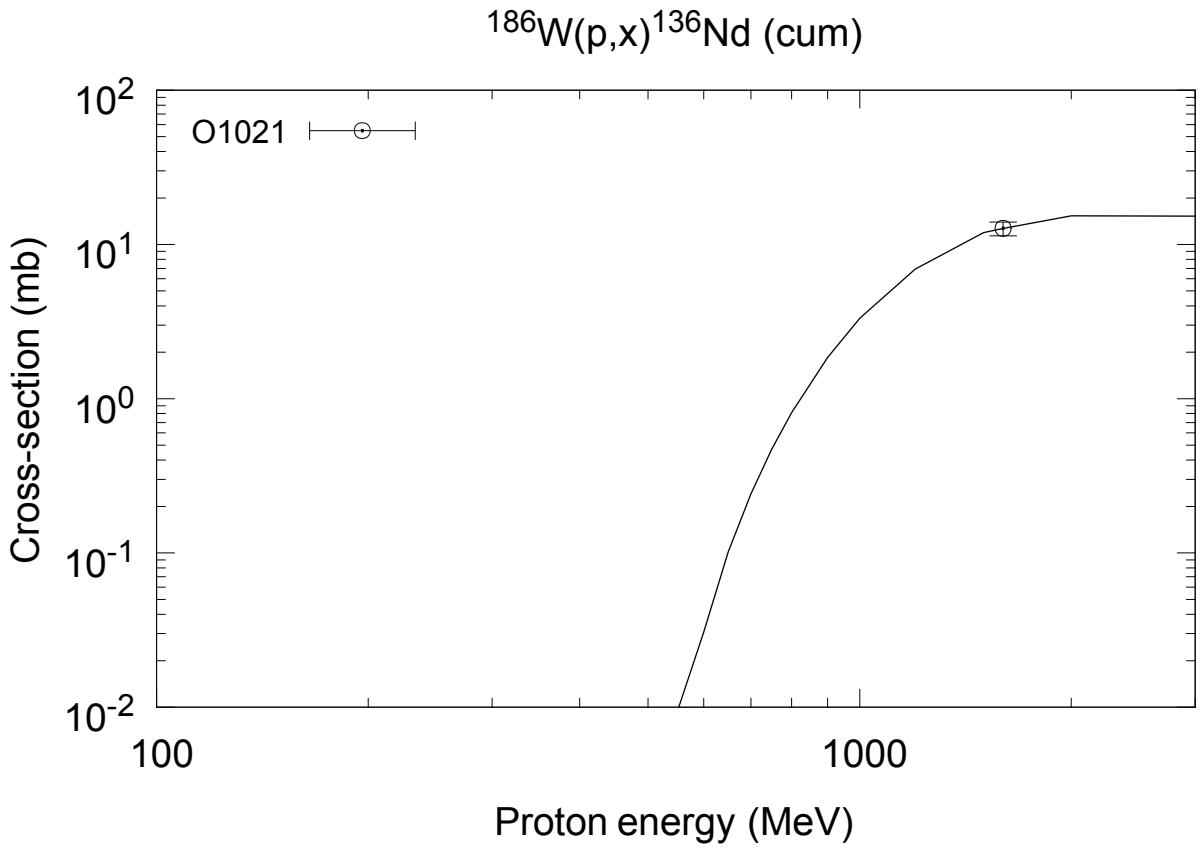

^{186}W(p,x)^{132g}La (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

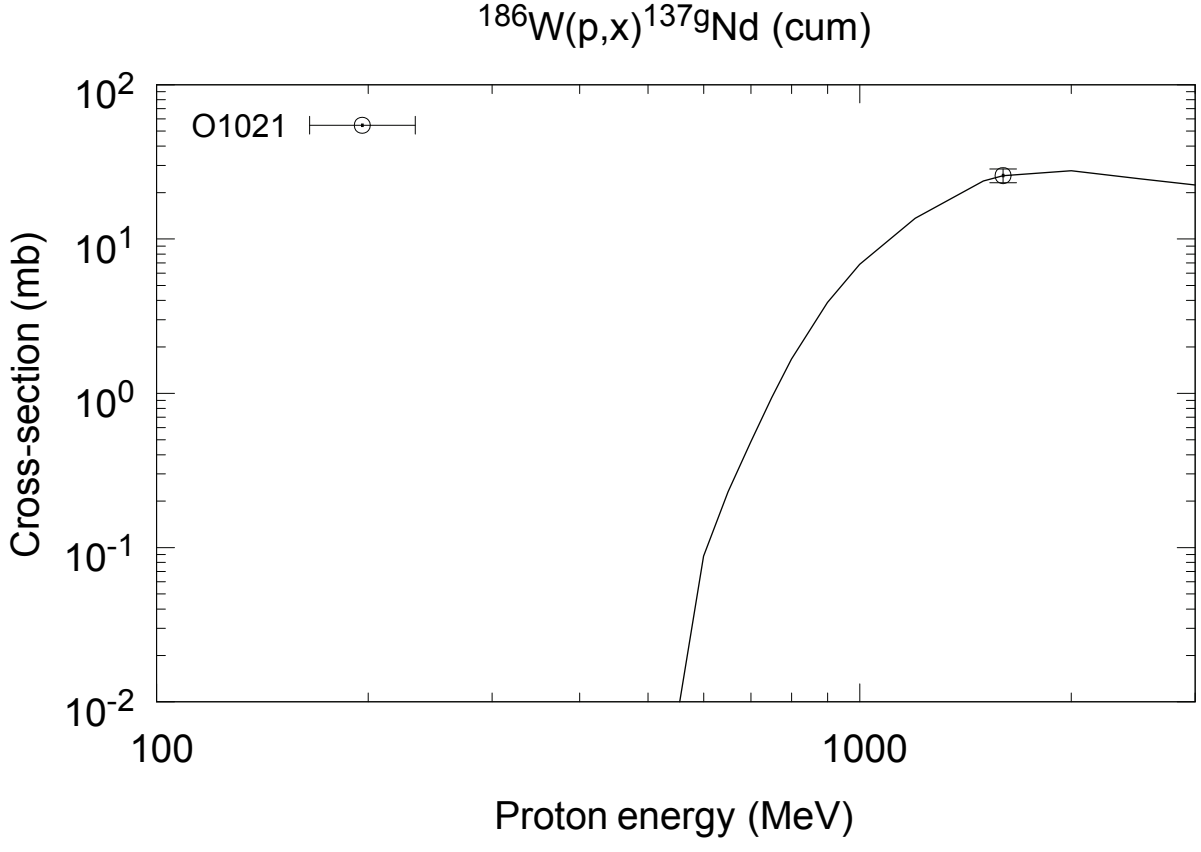

^{186}W(p,x)^{132}Ce (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

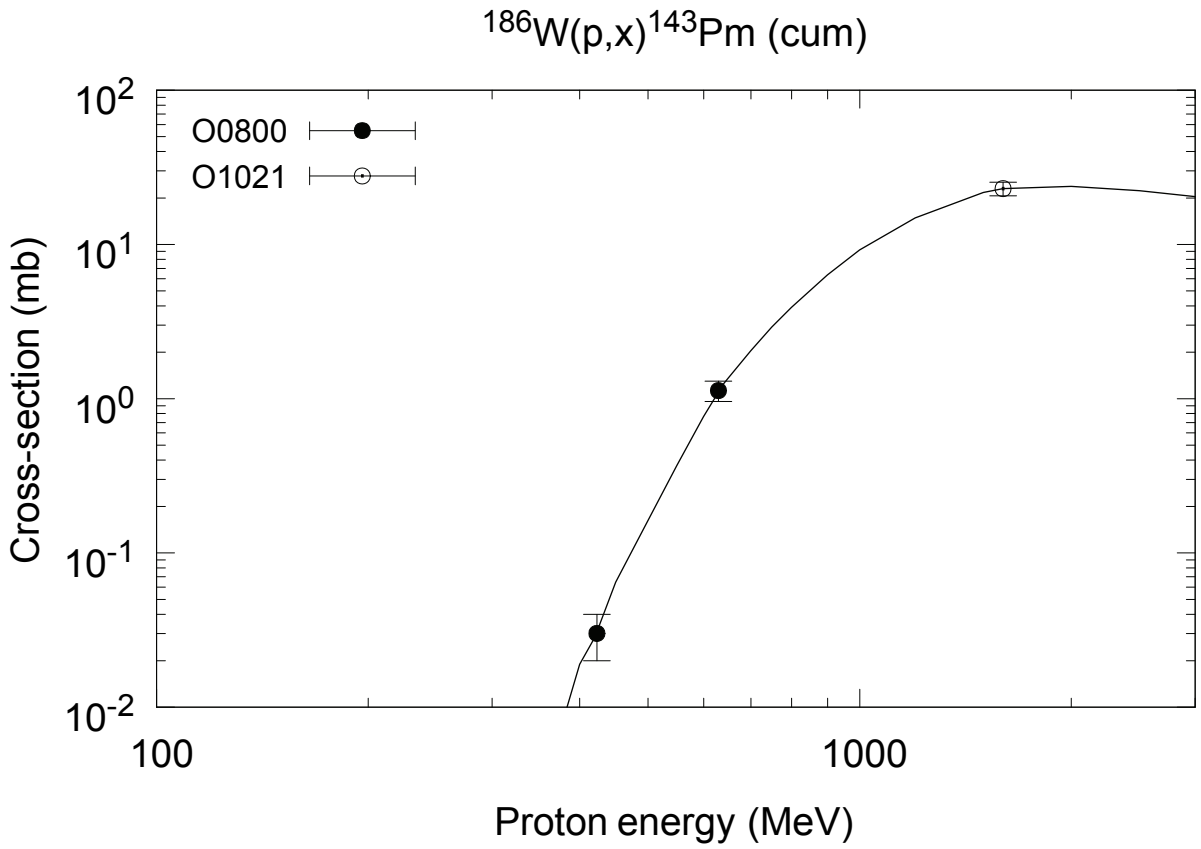

^{186}W(p,x)^{134}Ce (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

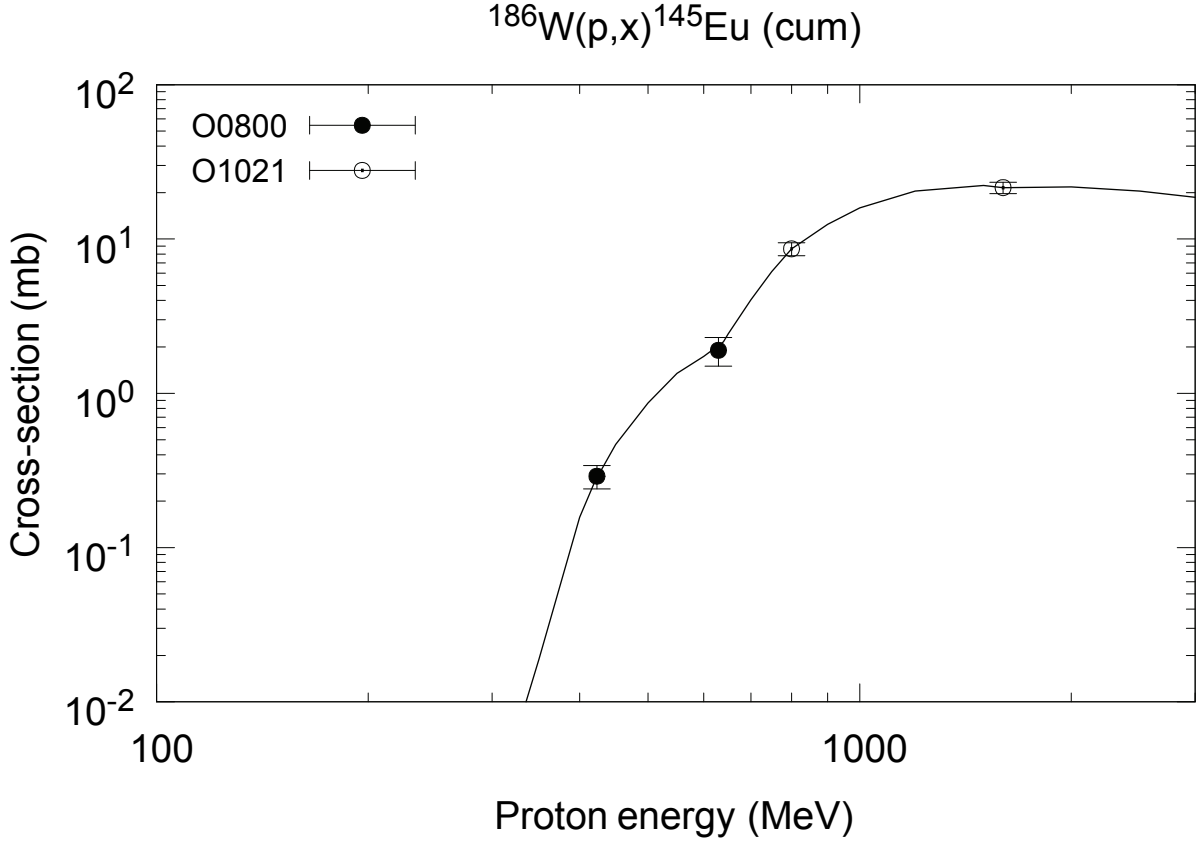

^{186}W(p,x)^{135g}Ce (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

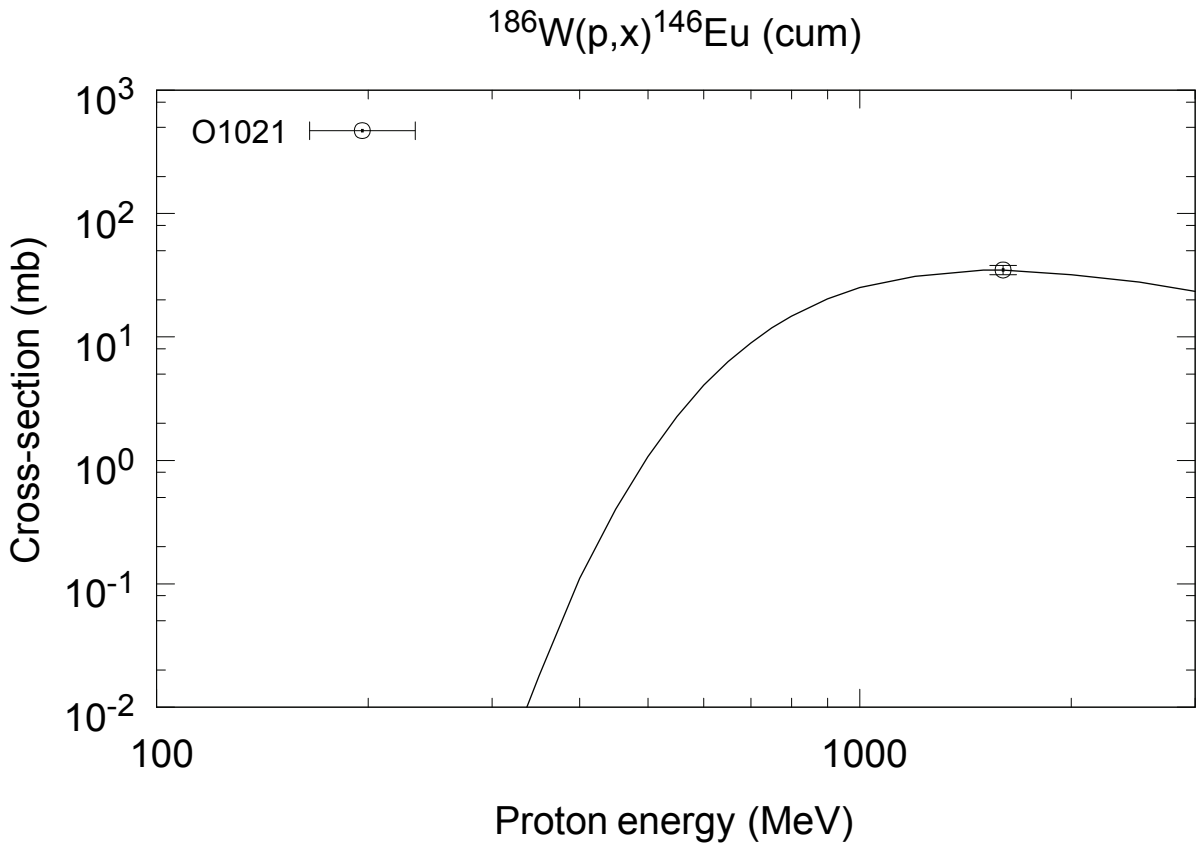

^{186}W(p,x)^{139g}Ce (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

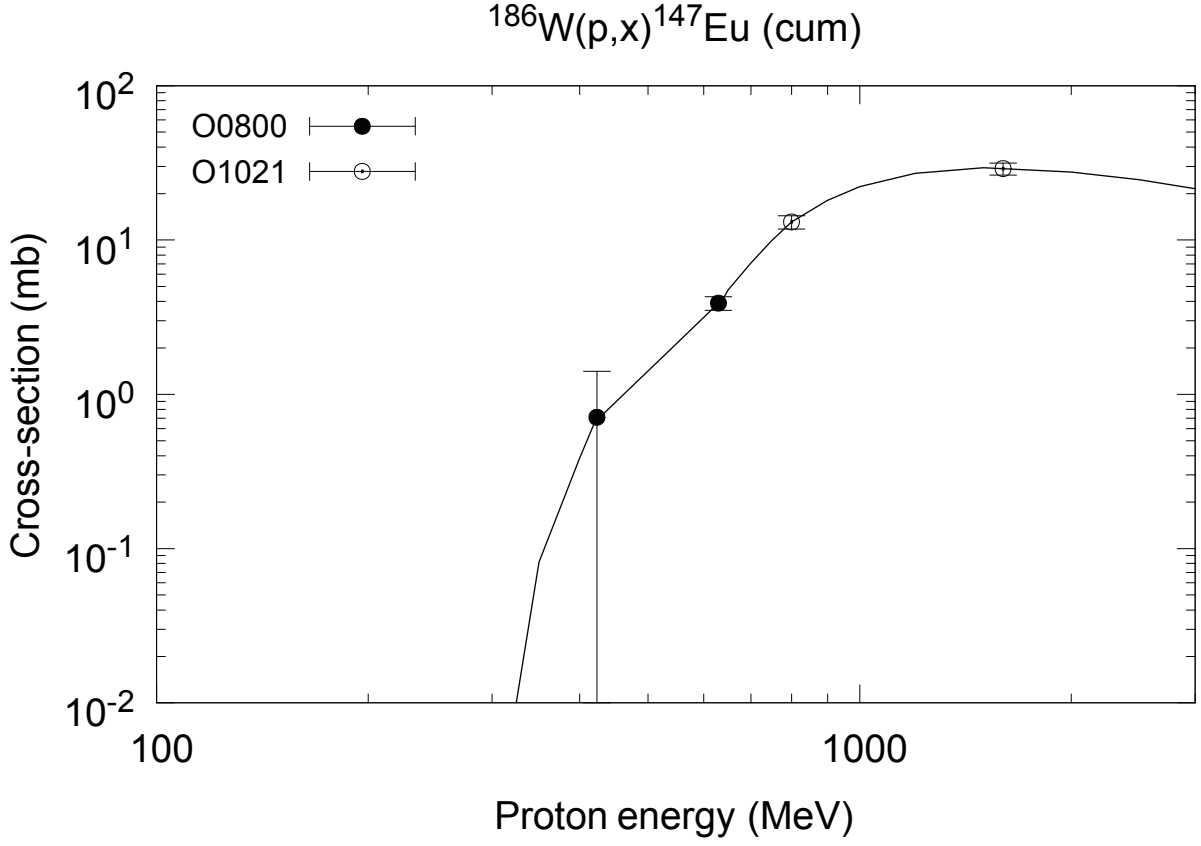

^{186}W(p,x)^{136}Nd (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

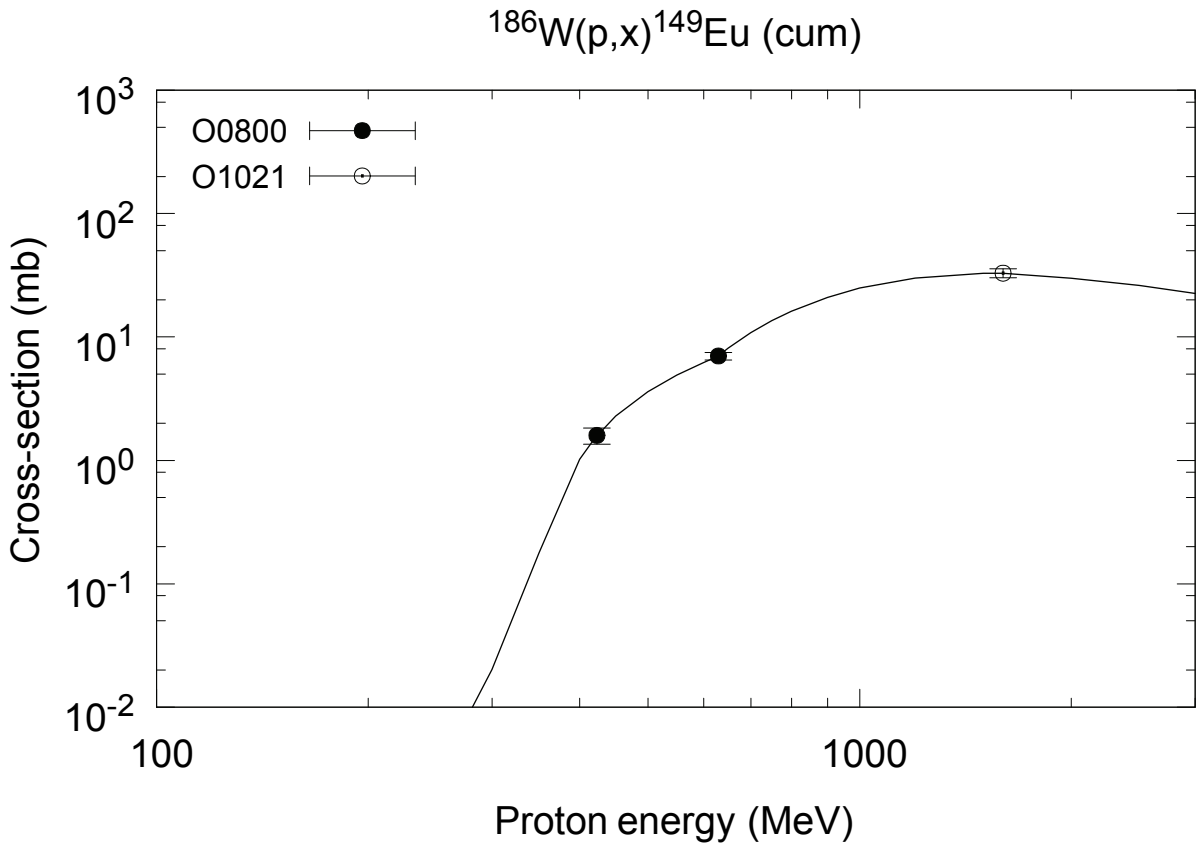

^{186}W(p,x)^{137g}Nd (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

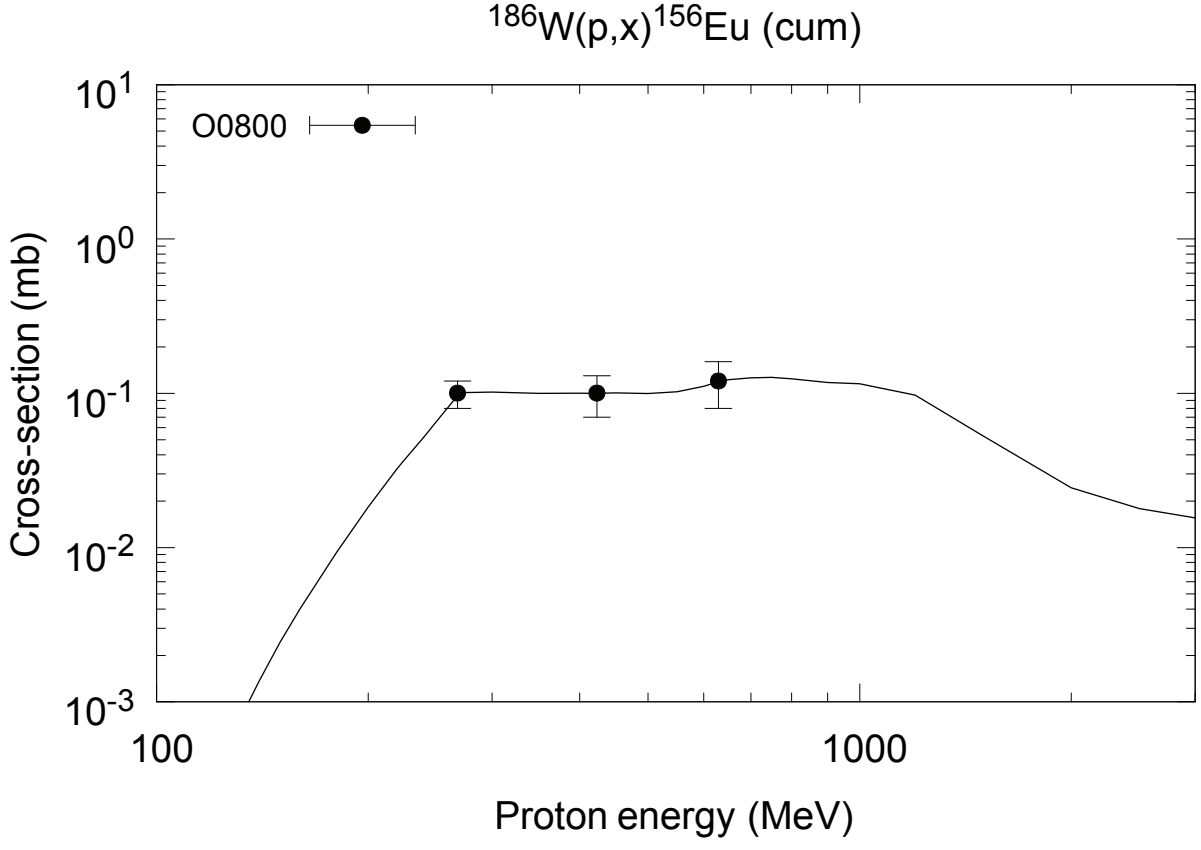

^{186}W(p,x)^{143}Pm (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

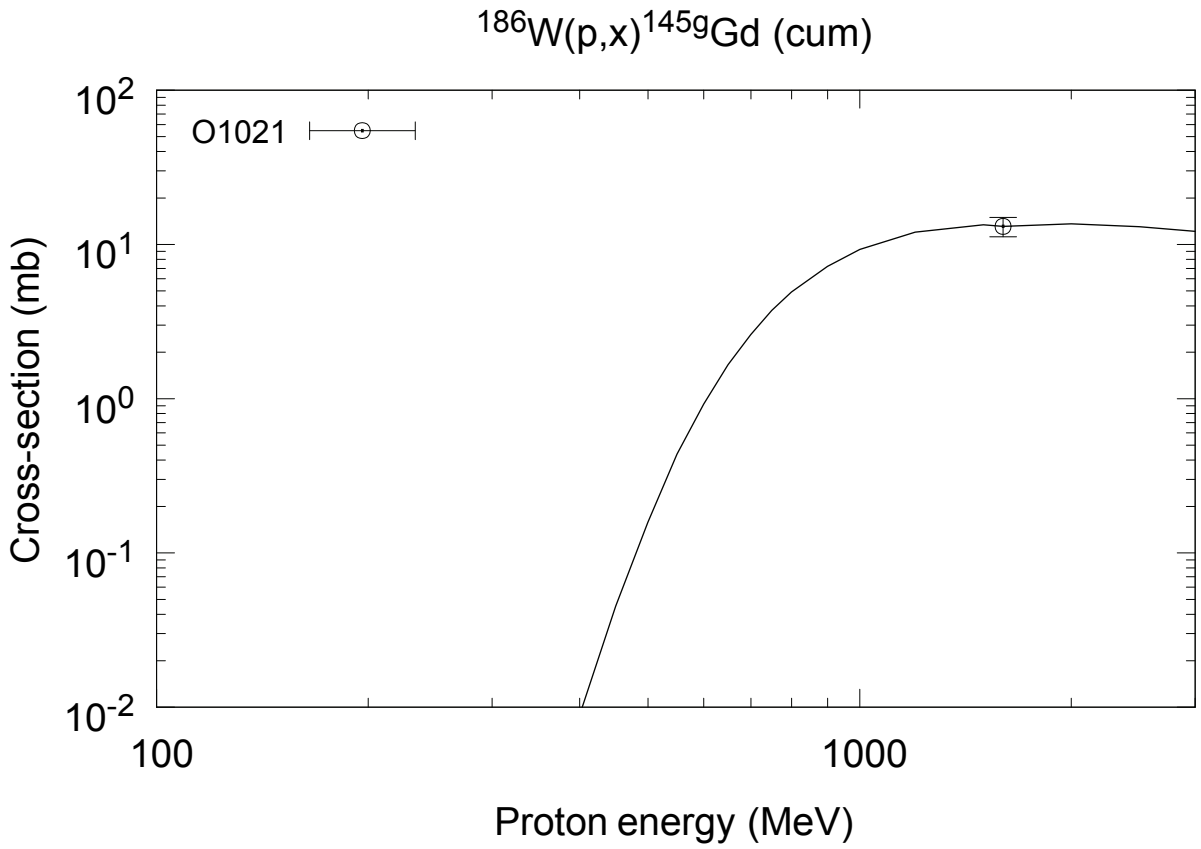

^{186}W(p,x)^{145}Eu (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

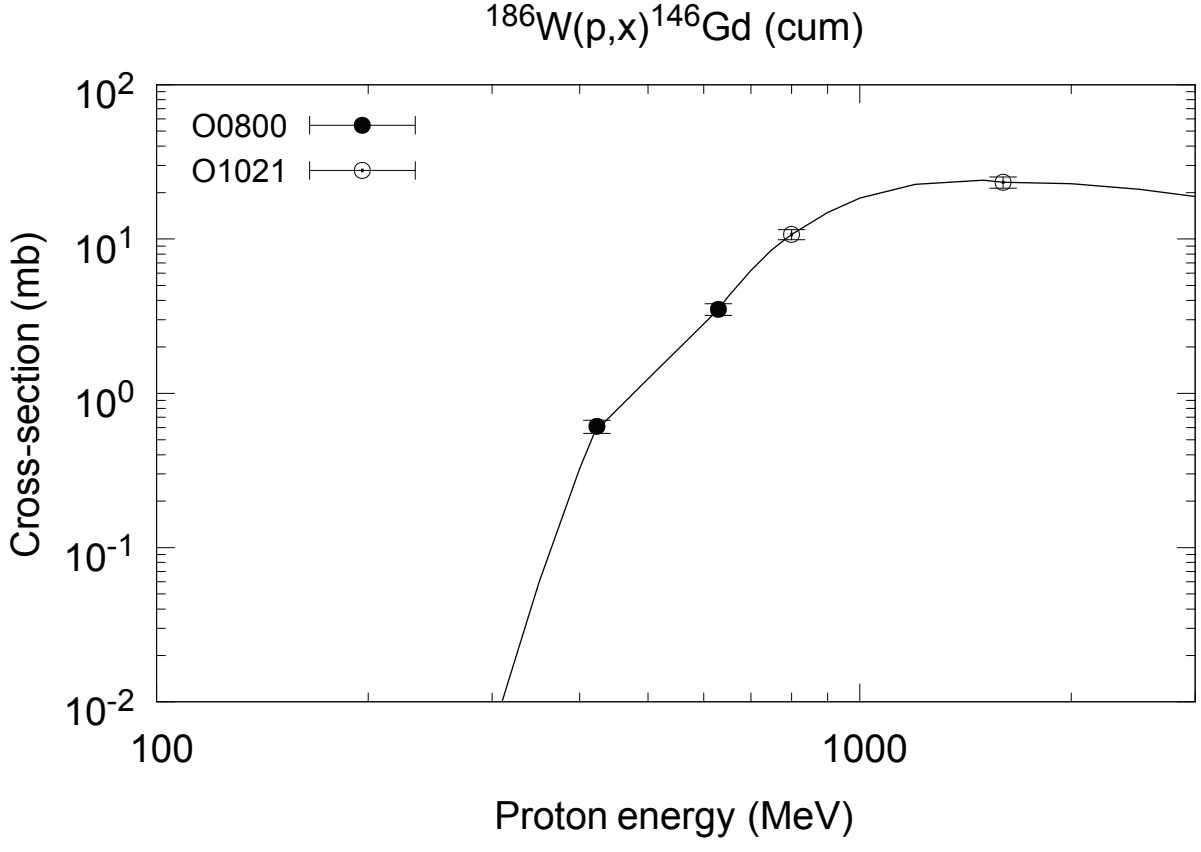

^{186}W(p,x)^{146}Eu (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

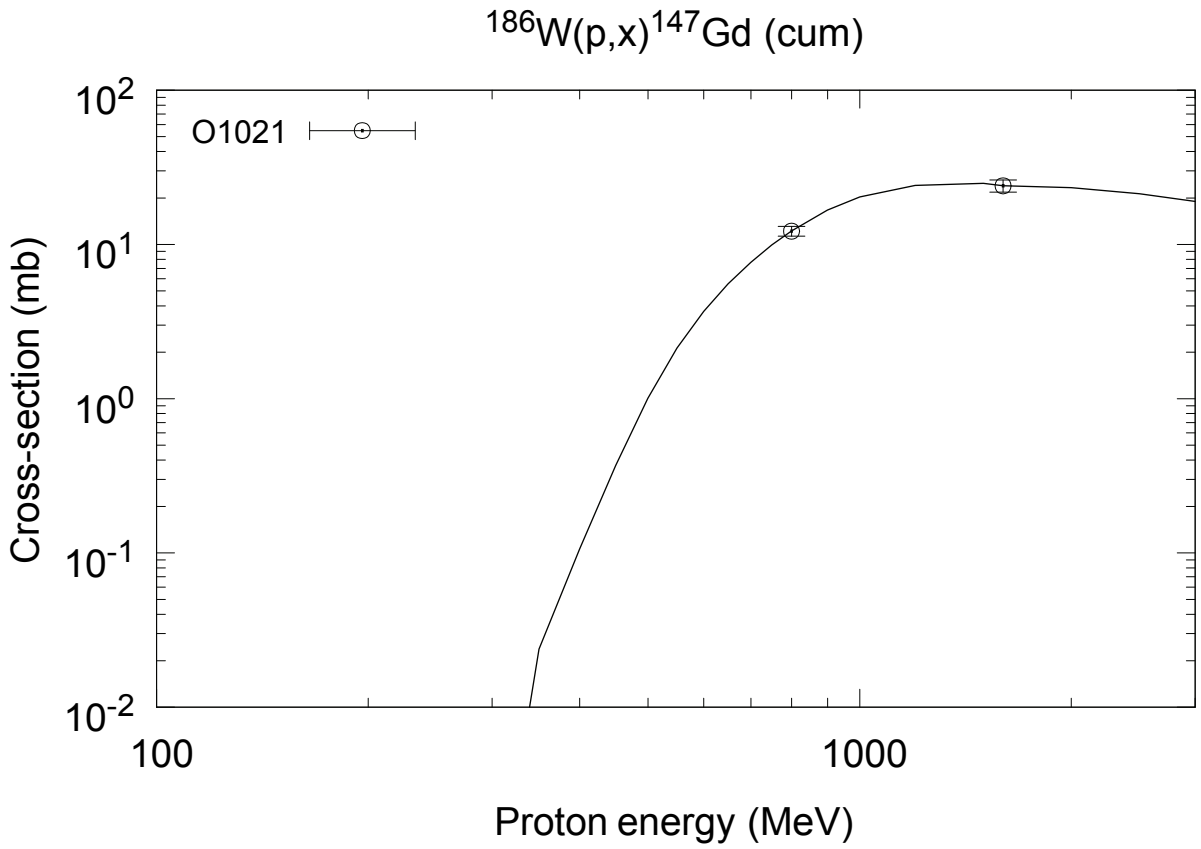

^{186}W(p,x)^{147}Eu (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

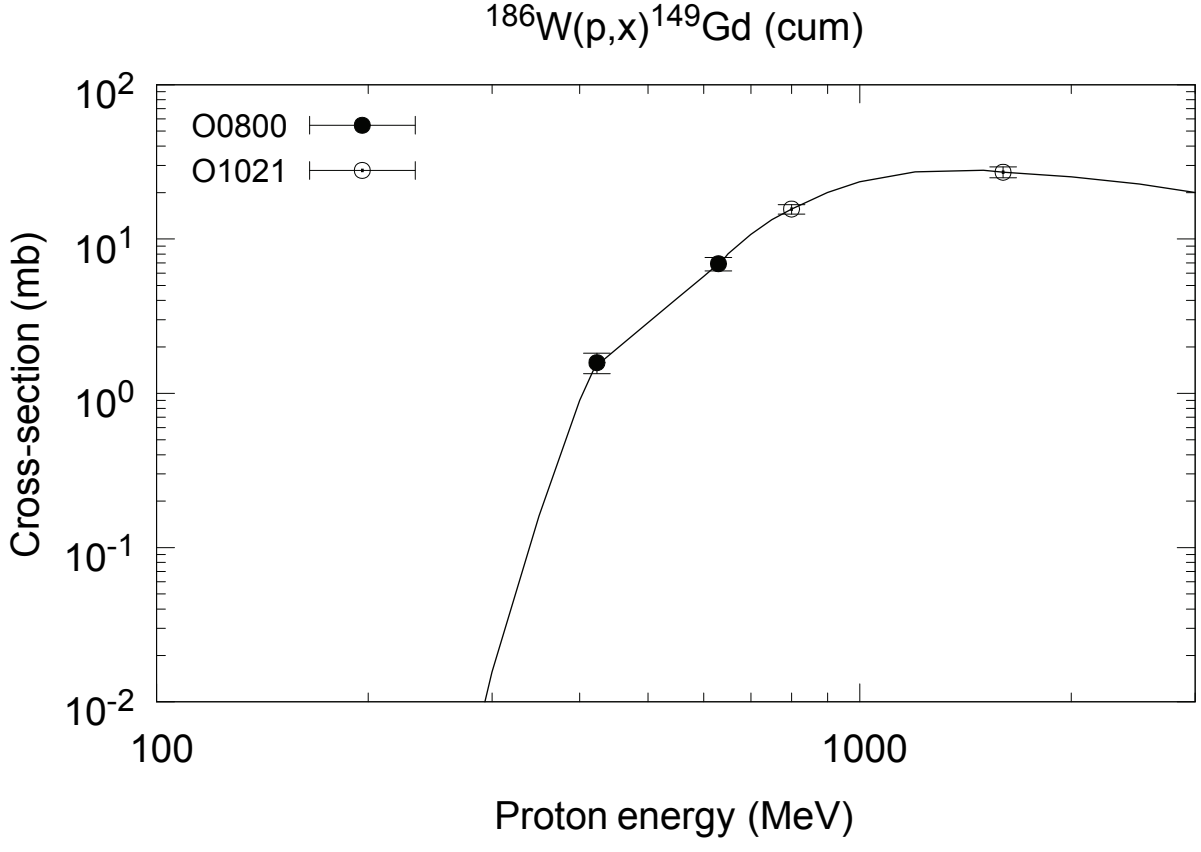

^{186}W(p,x)^{149}Eu (cum)
O0800
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

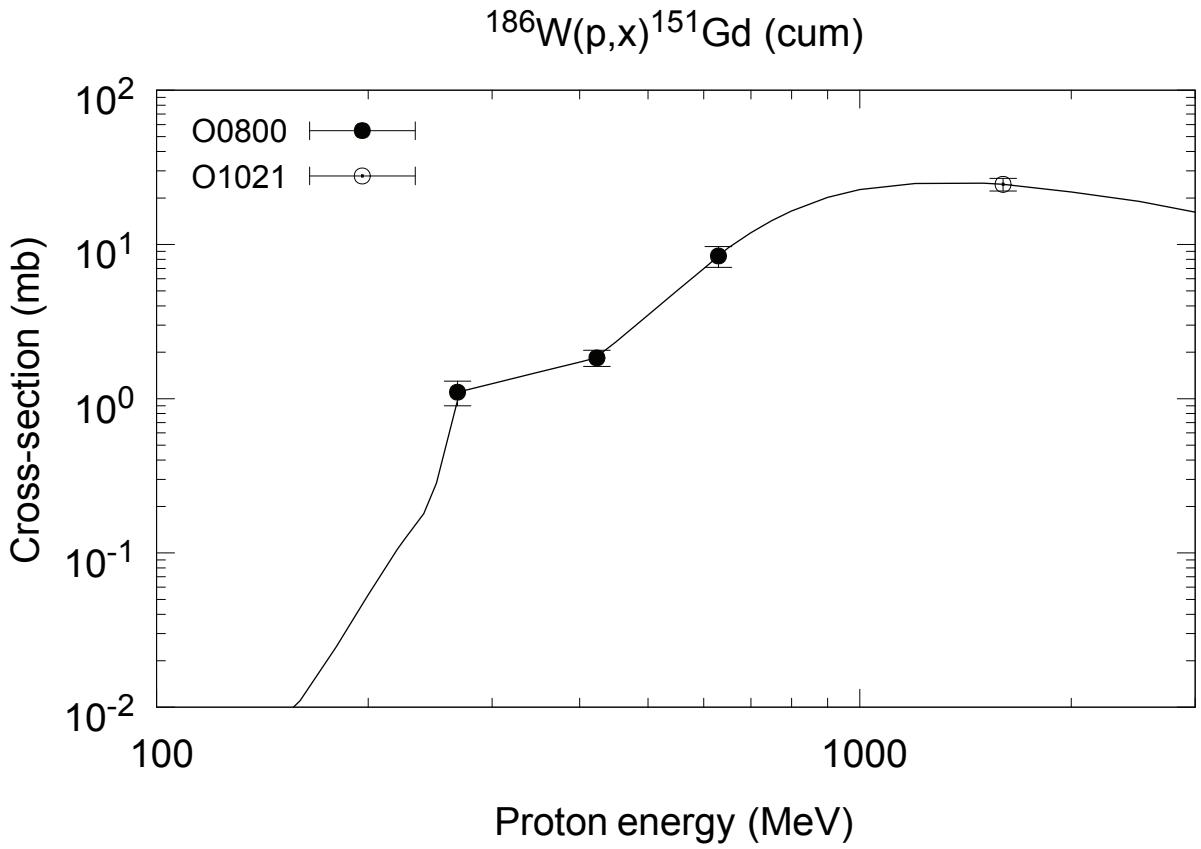

^{186}W(p,x)^{156}Eu (cum)
O0800
Cross-section (mb)
10^1
10^0
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

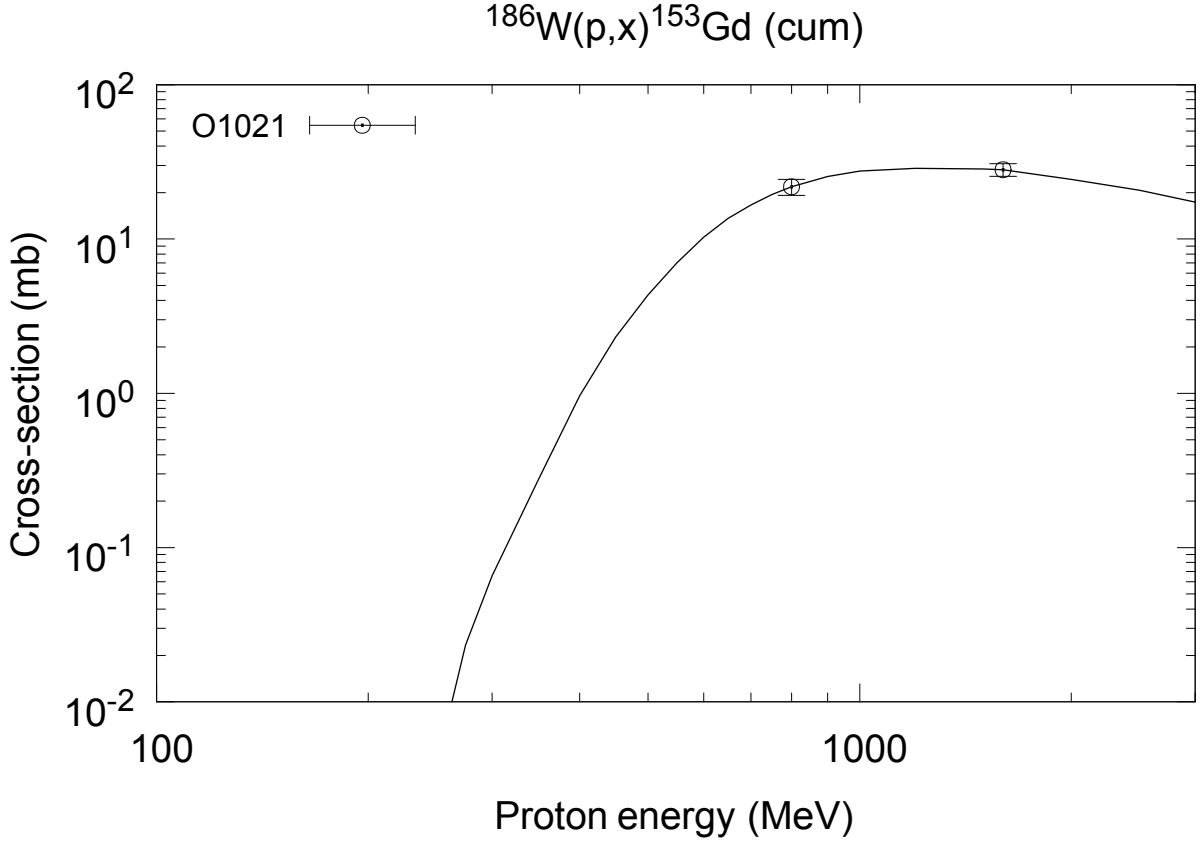

^{186}W(p,x)^{145g}Gd (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

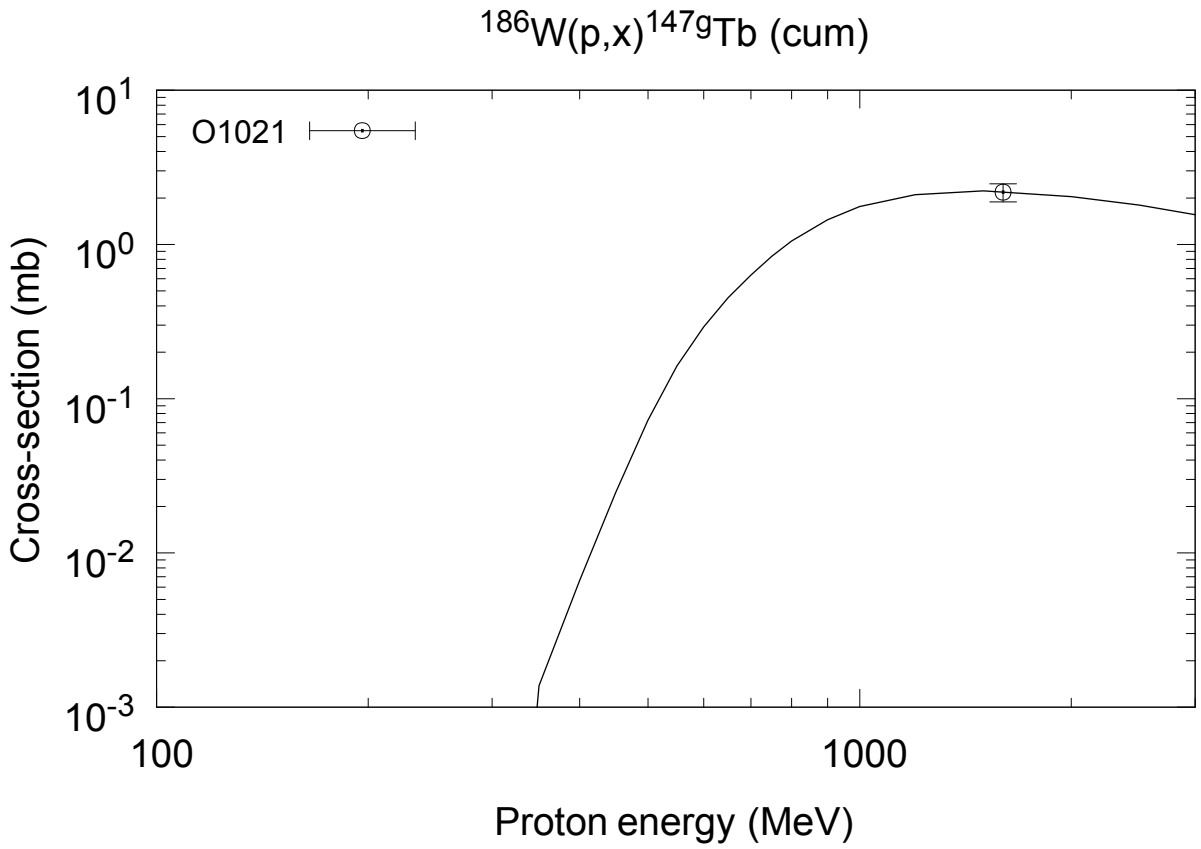

^{186}W(p,x)^{146}Gd (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

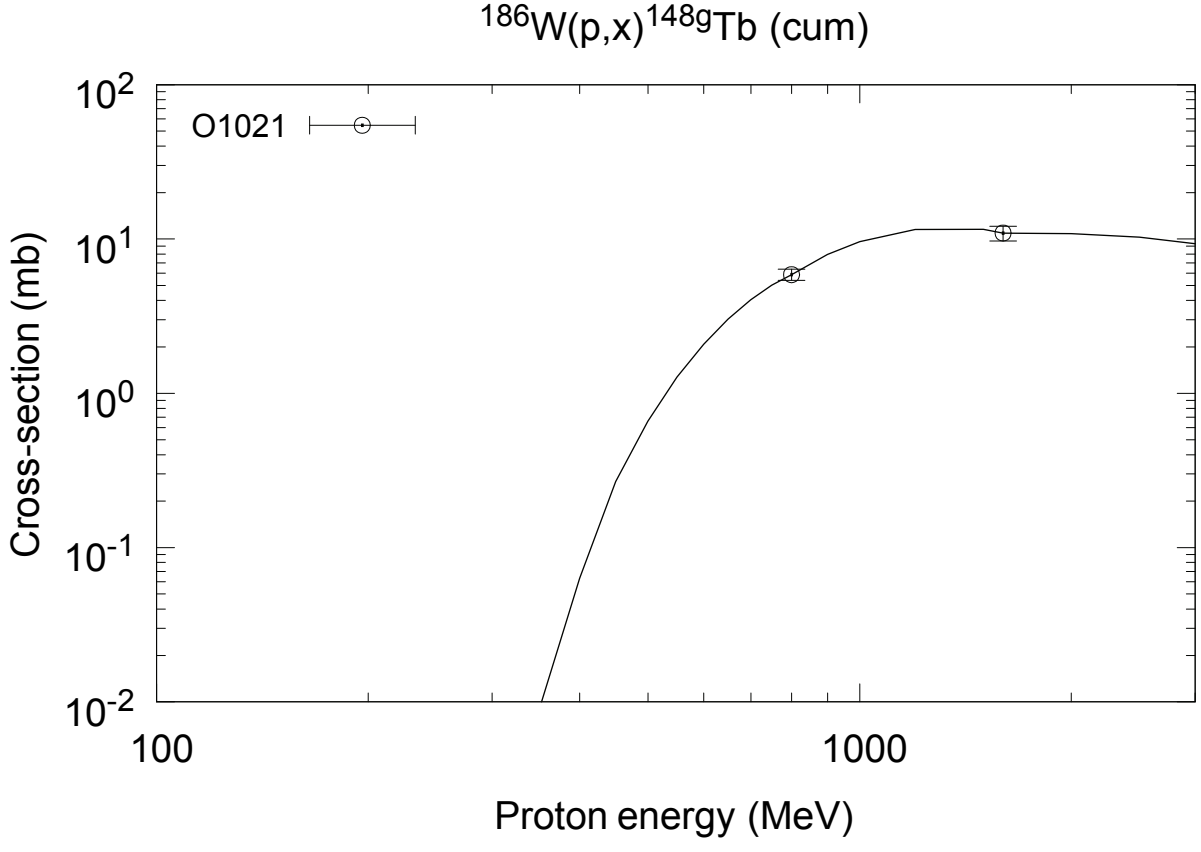

^{186}W(p,x)^{147}Gd (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

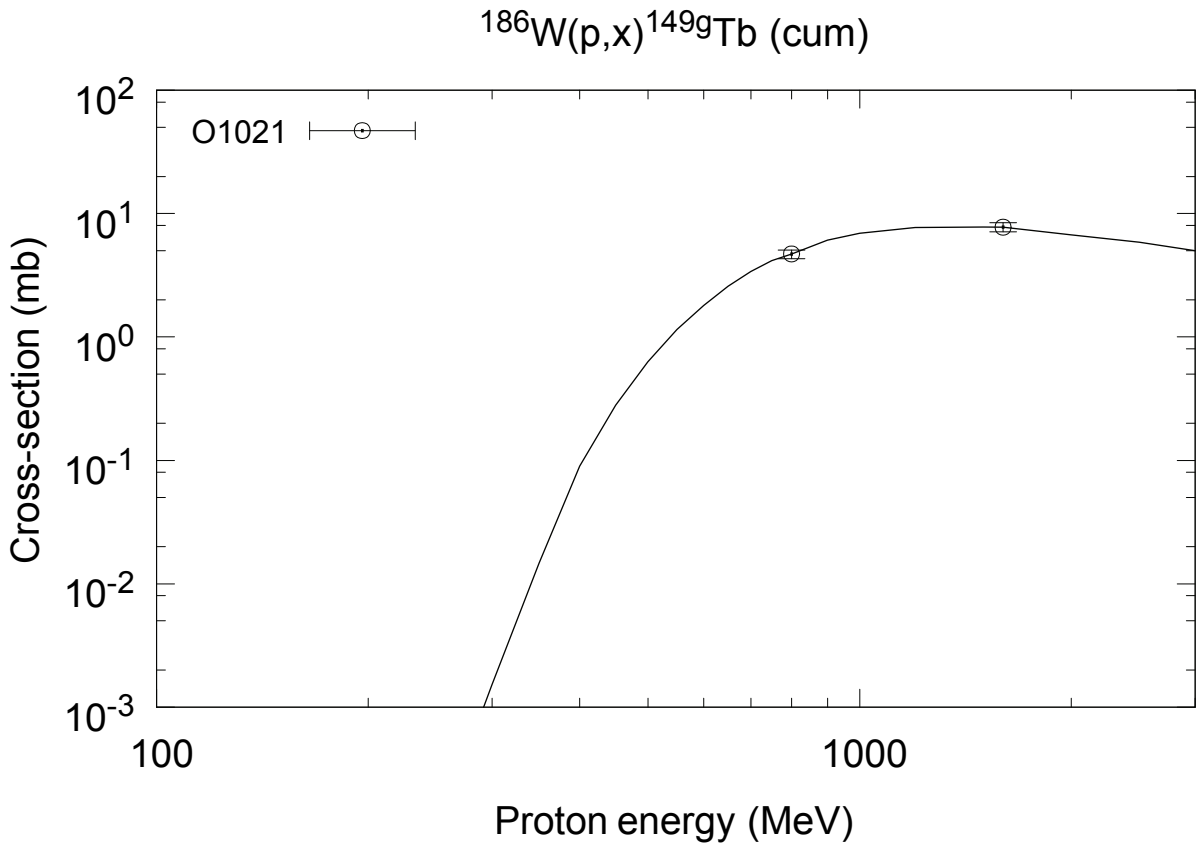

^{186}W(p,x)^{149}Gd (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

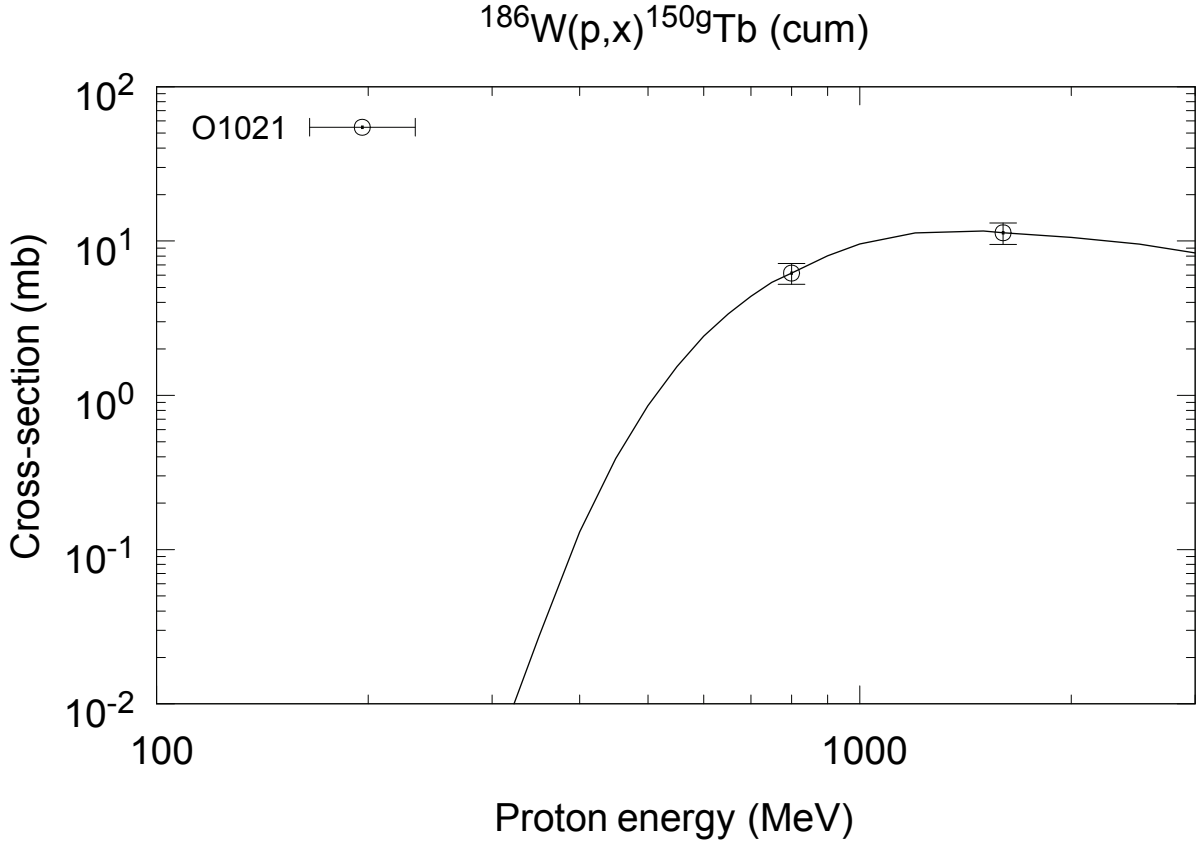

^{186}W(p,x)^{151}Gd (cum)
O0800
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

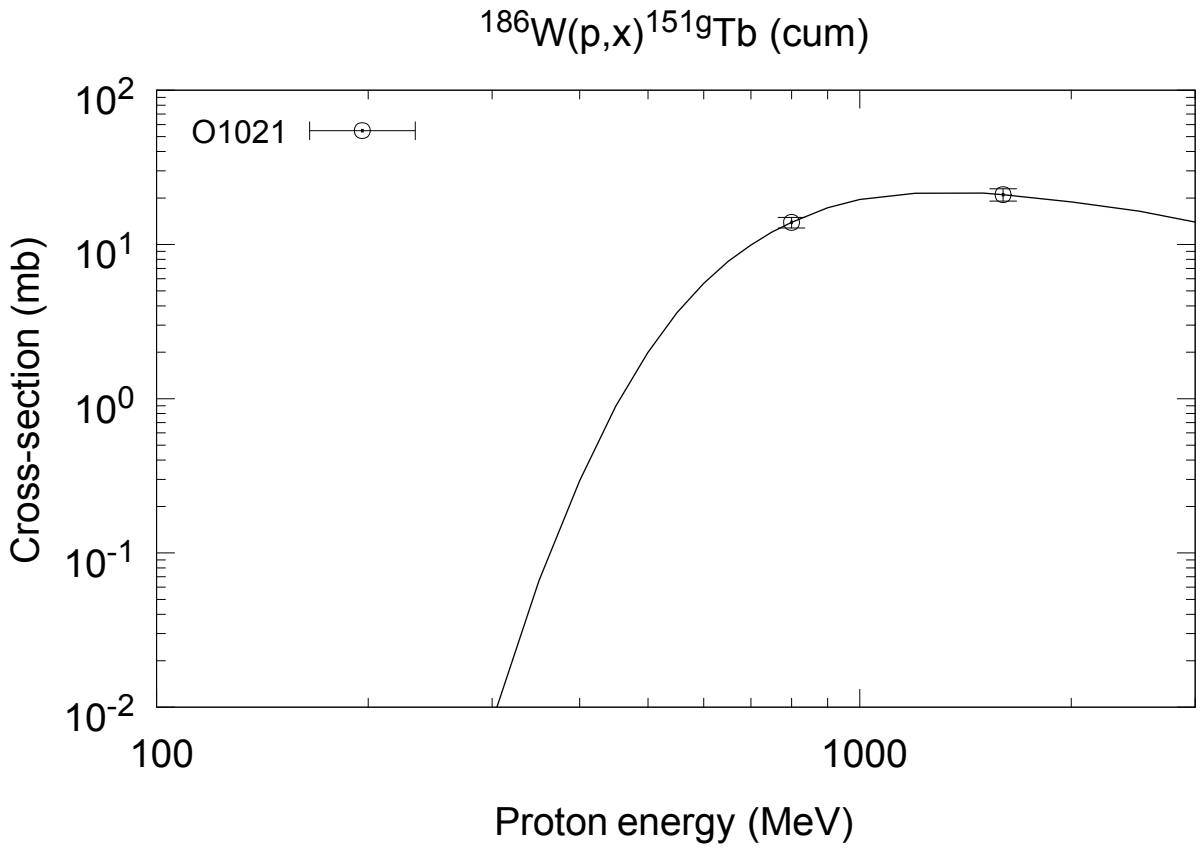

^{186}W(p,x)^{153}Gd (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

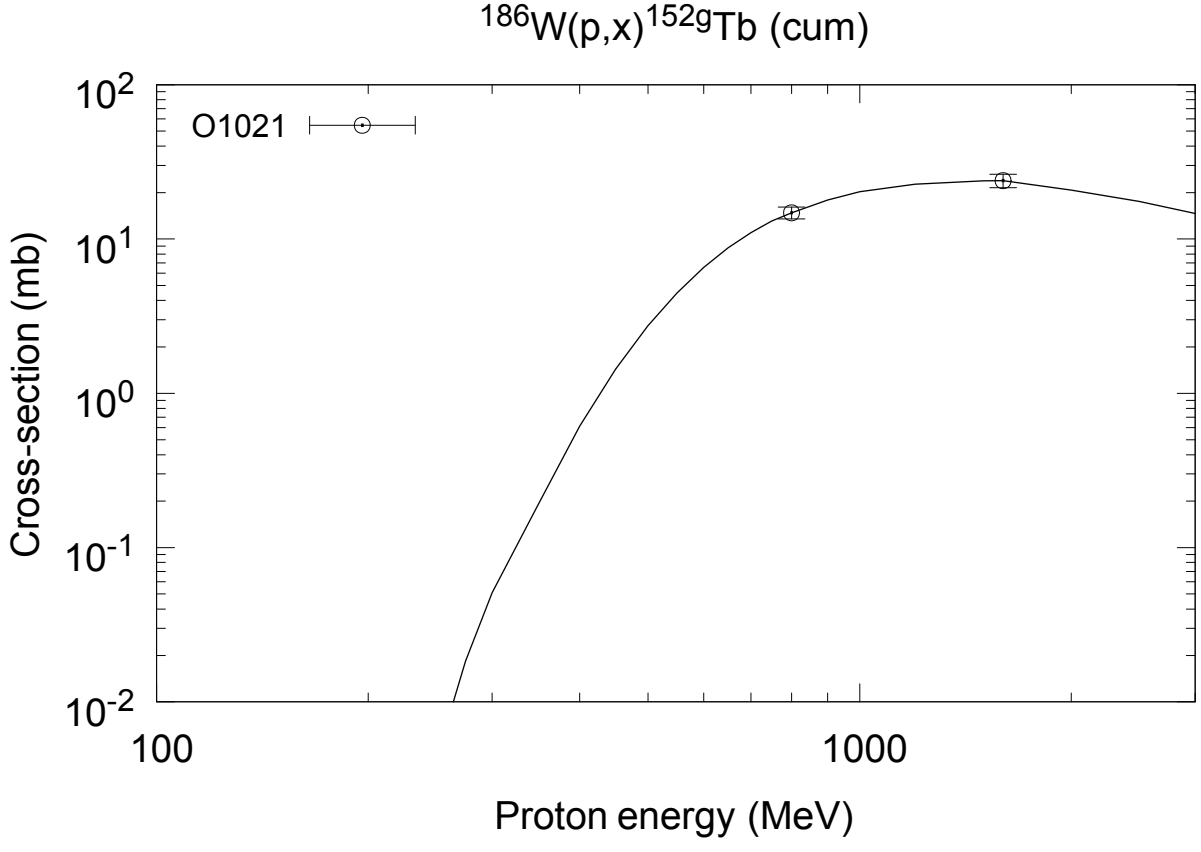

^{186}W(p,x)^{147g}Tb (cum)
O1021
Cross-section (mb)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

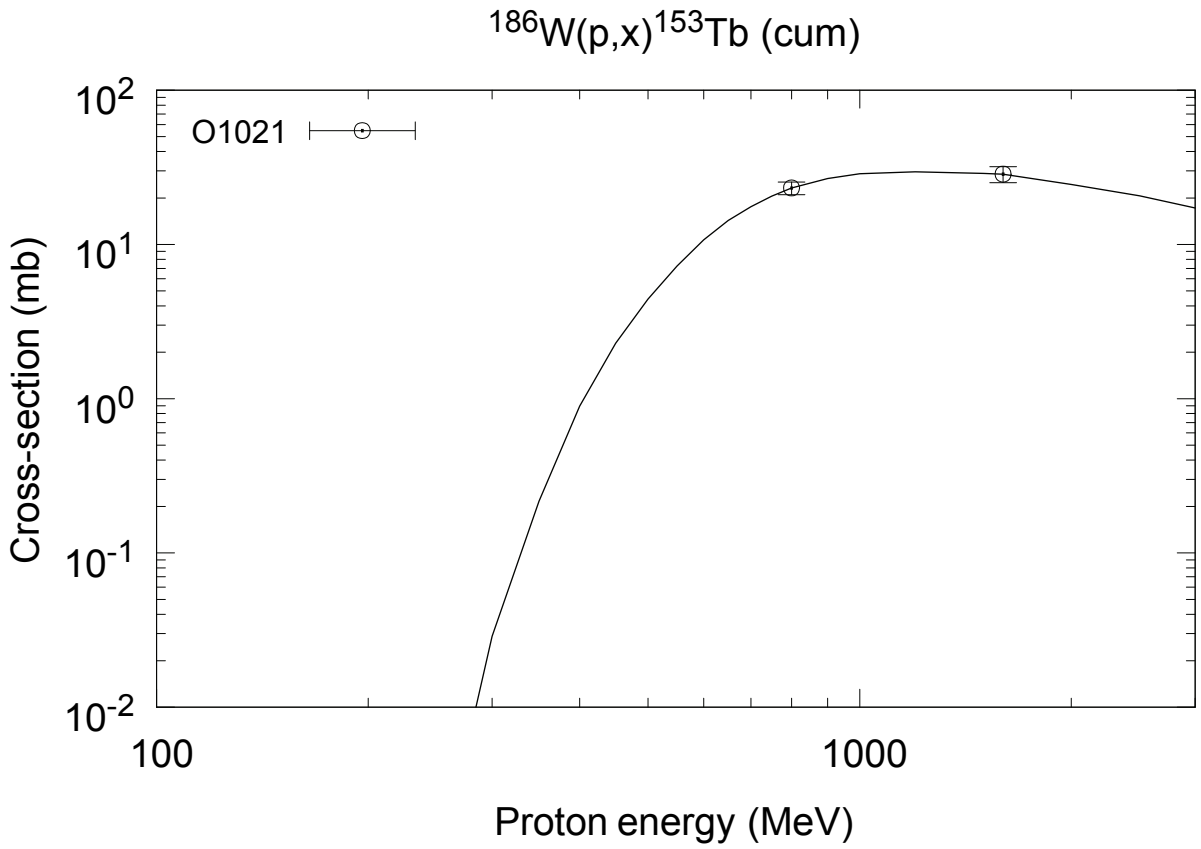

^{186}W(p,x)^{148g}Tb (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

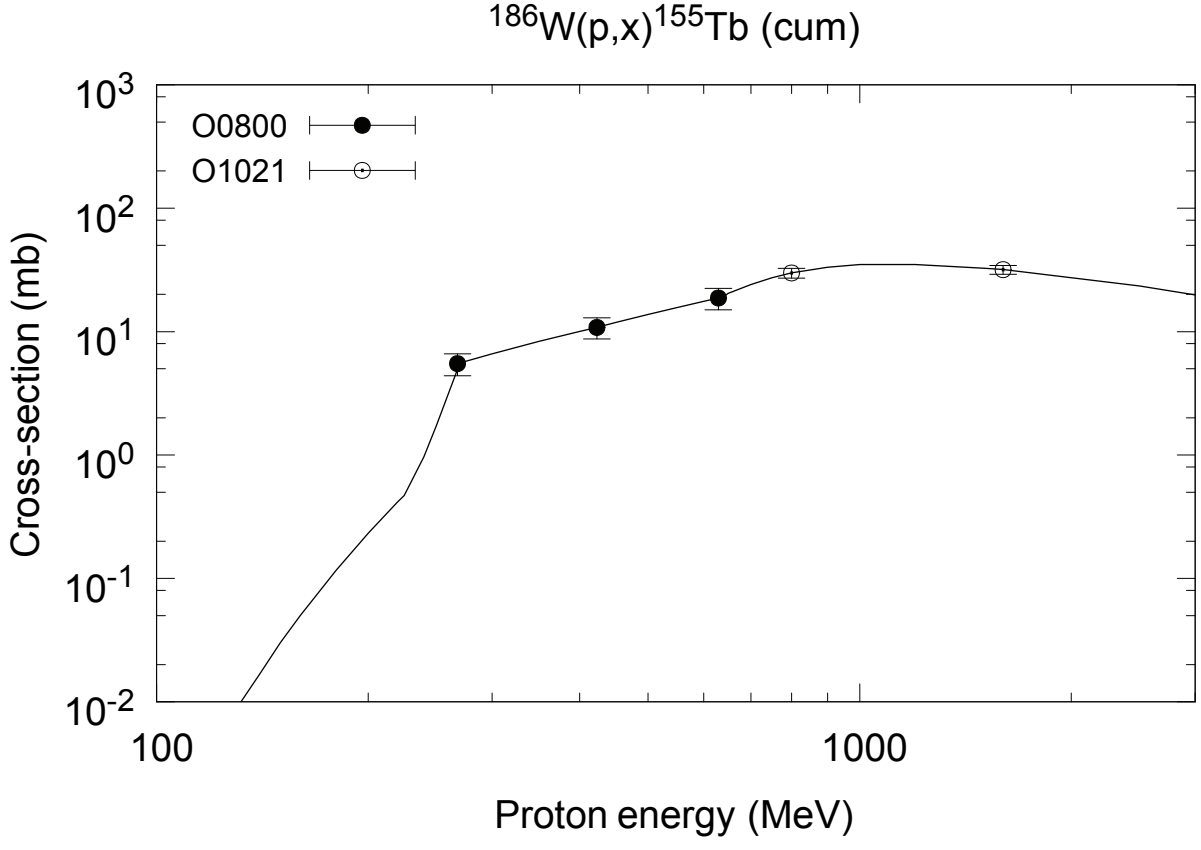

^{186}W(p,x)^{149g}Tb (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

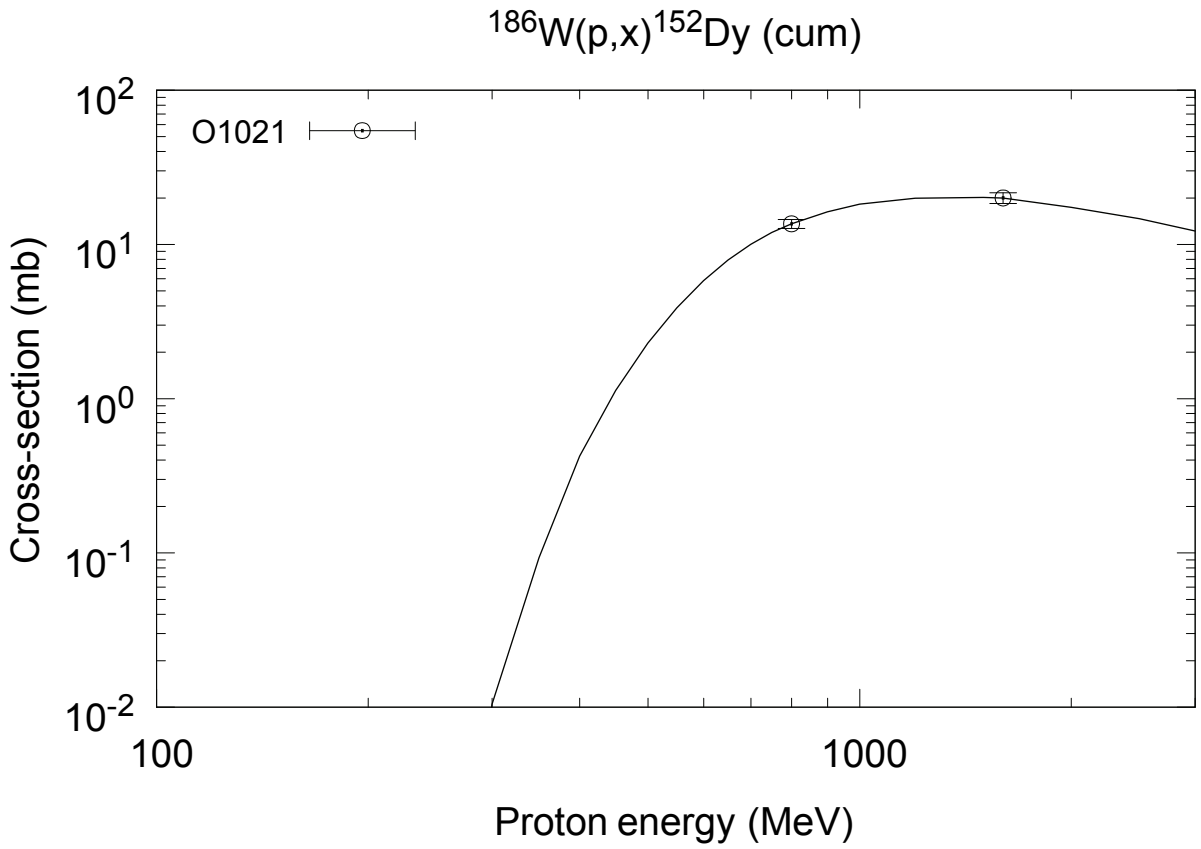

^{186}W(p,x)^{150g}Tb (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

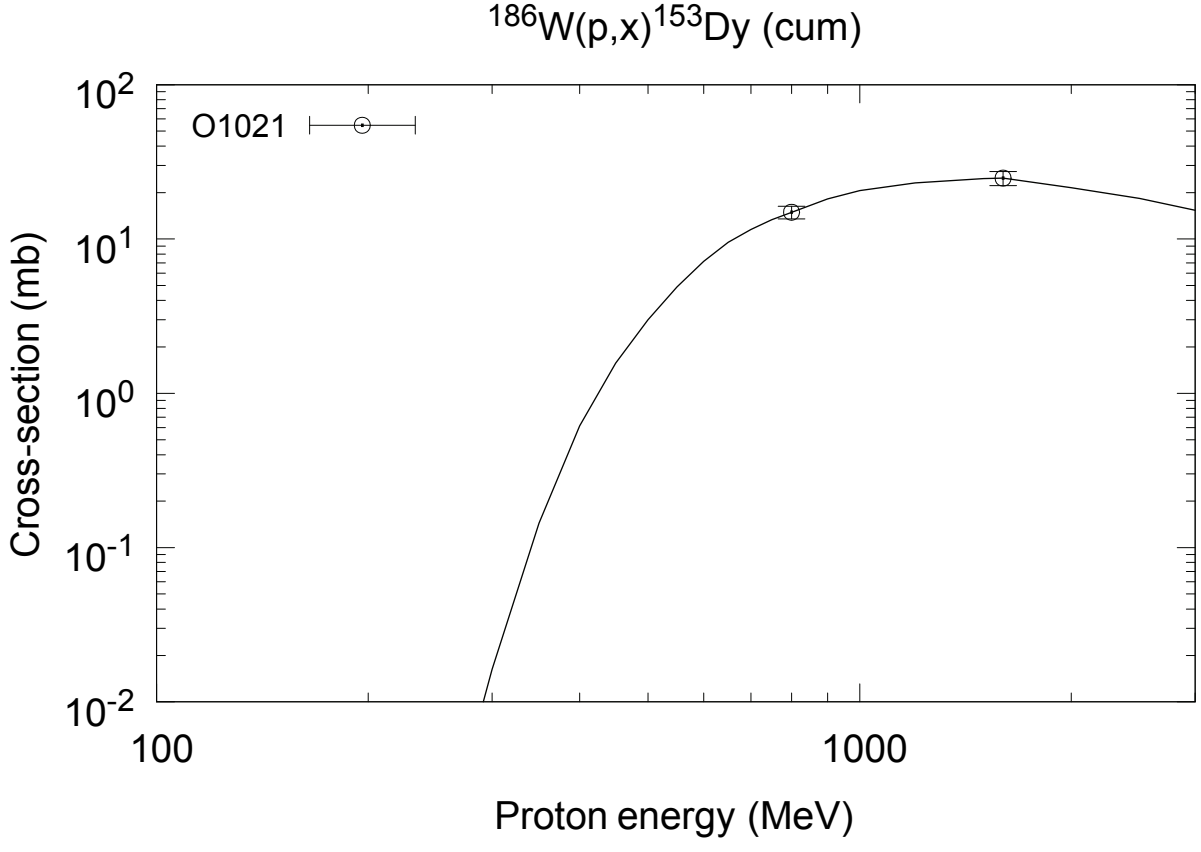

^{186}W(p,x)^{151g}Tb (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

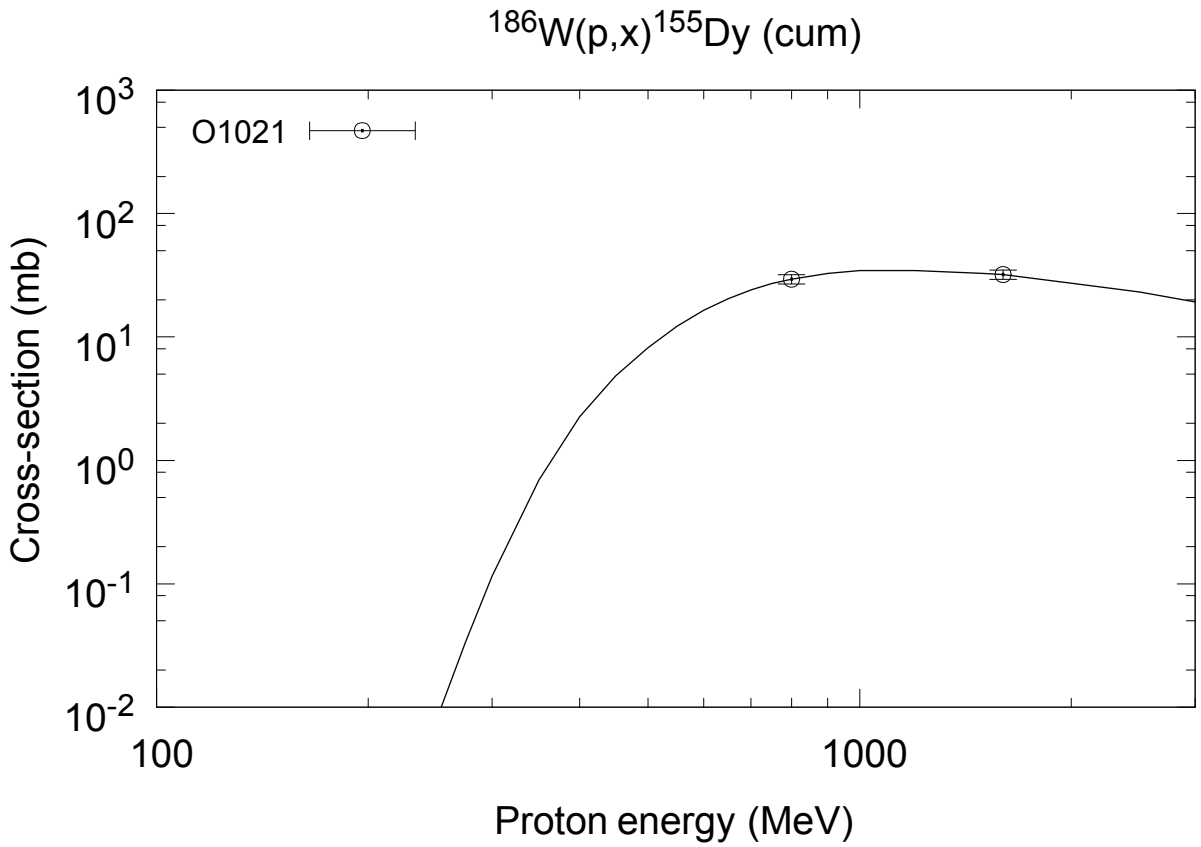

^{186}W(p,x)^{152g}Tb (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

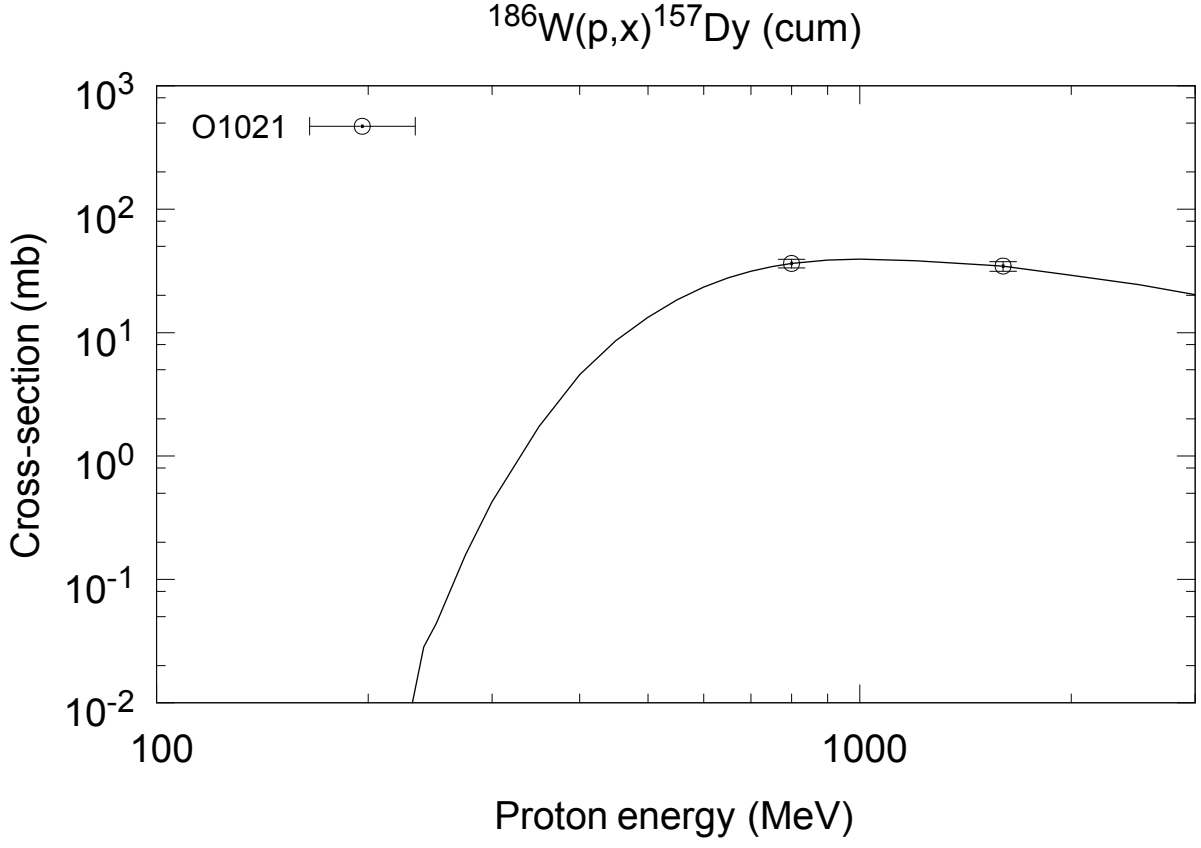

^{186}W(p,x)^{153}Tb (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

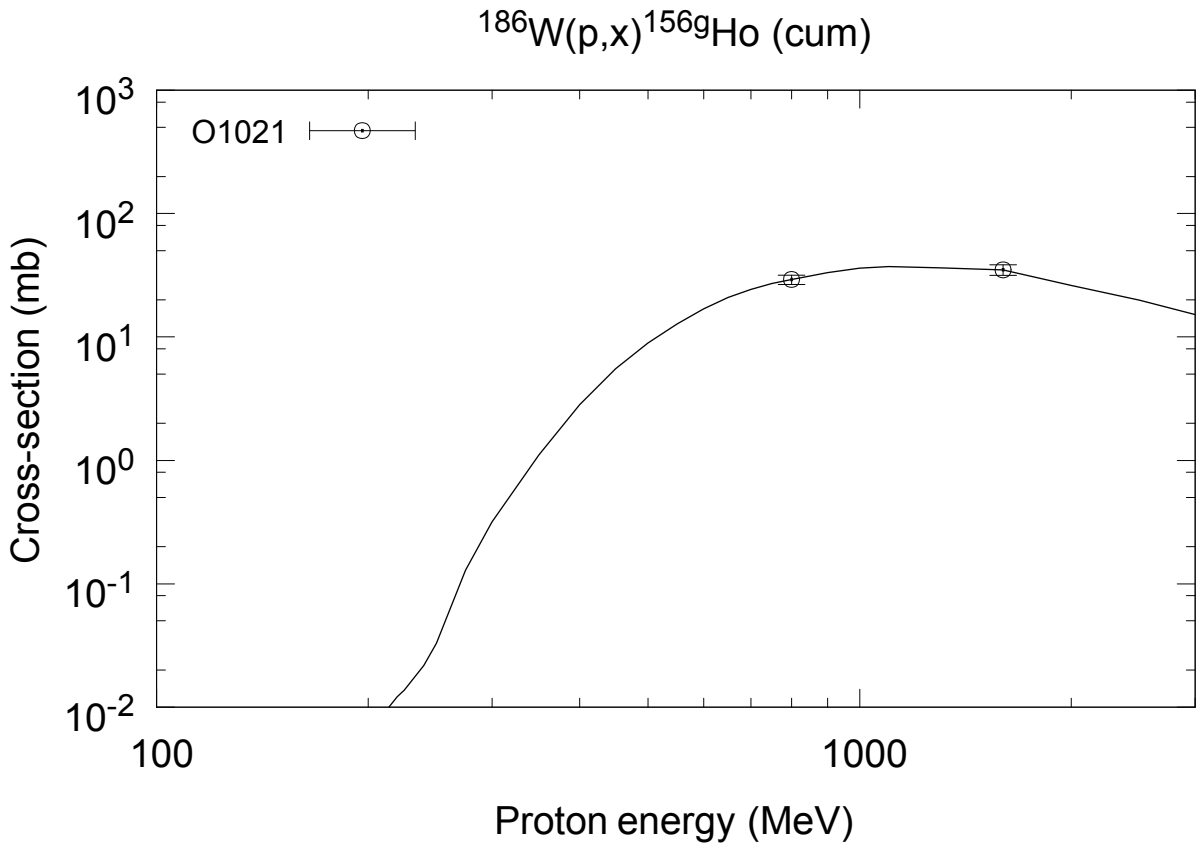

^{186}W(p,x)^{155}Tb (cum)
O0800
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

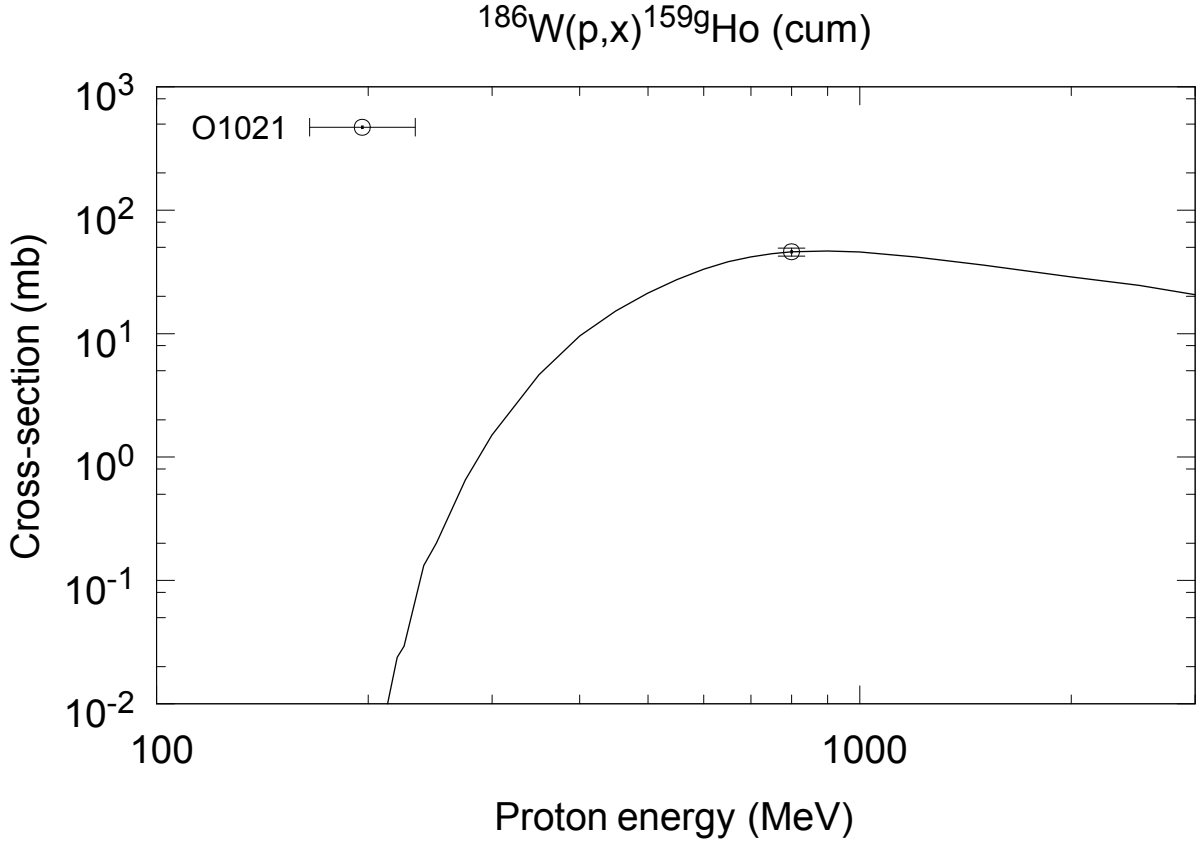

^{186}W(p,x)^{152}Dy (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

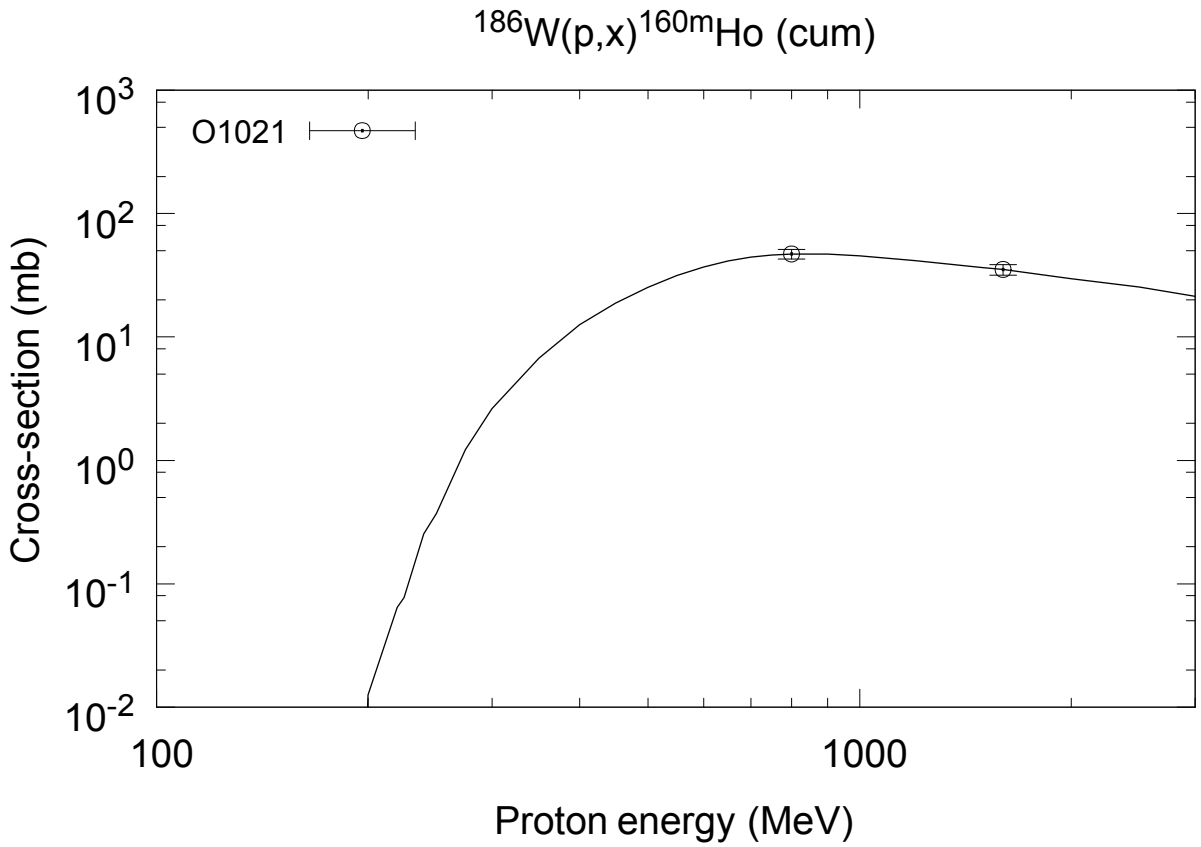

^{186}W(p,x)^{153}Dy (cum)
O1021
Cross-section (mb)
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

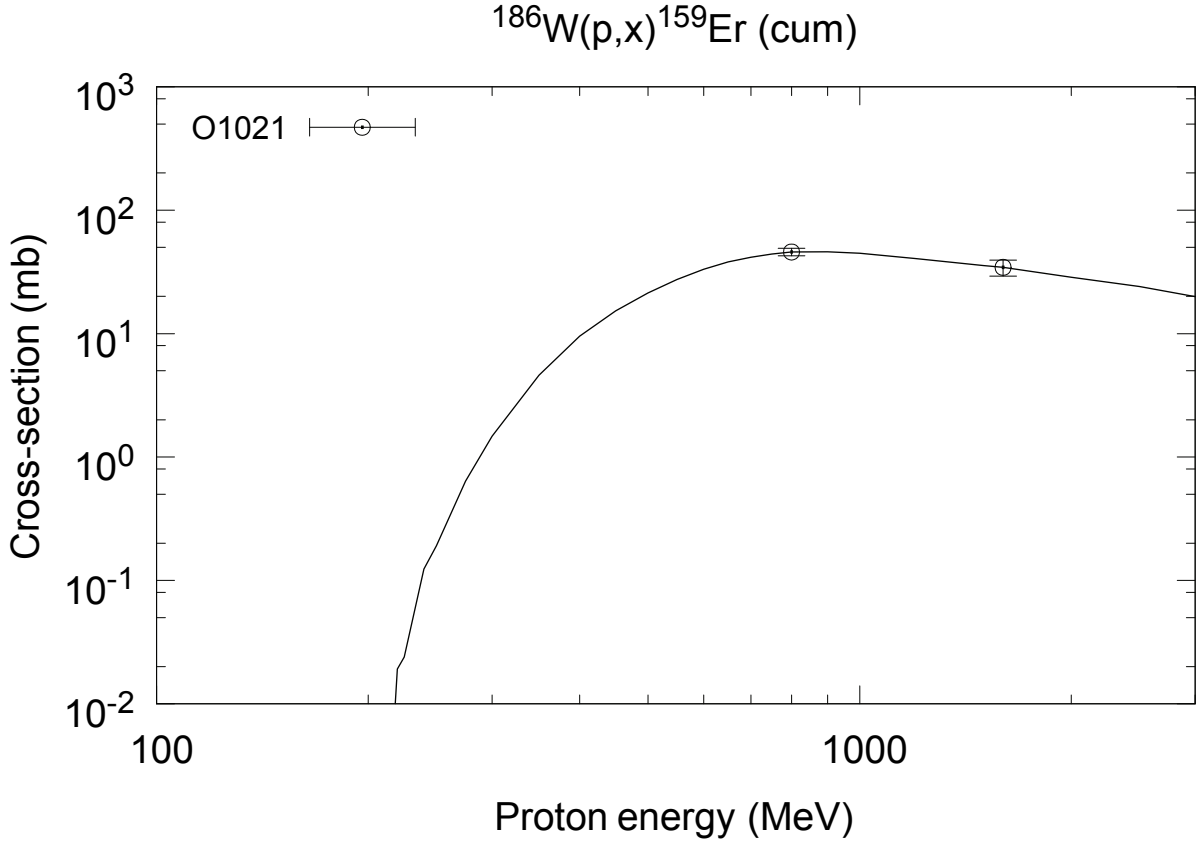

^{186}W(p,x)^{155}Dy (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

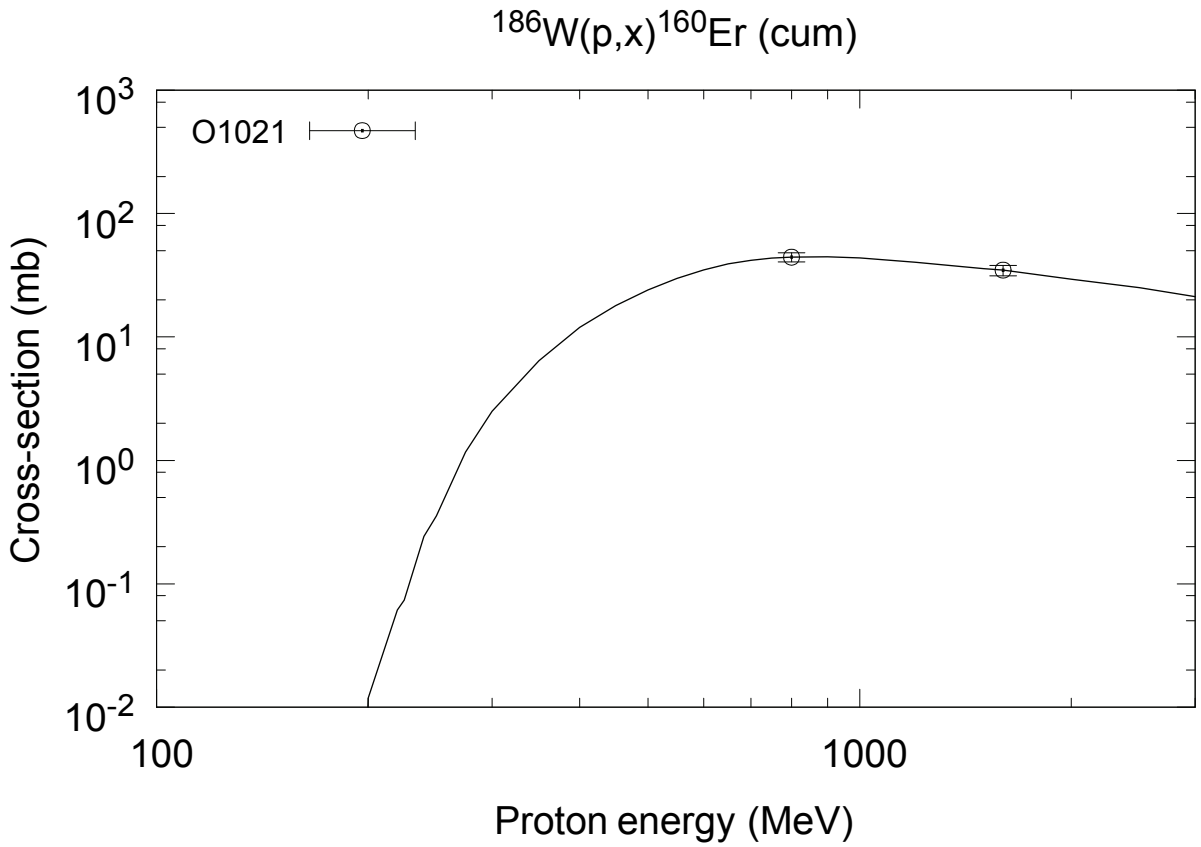

^{186}W(p,x)^{157}Dy (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

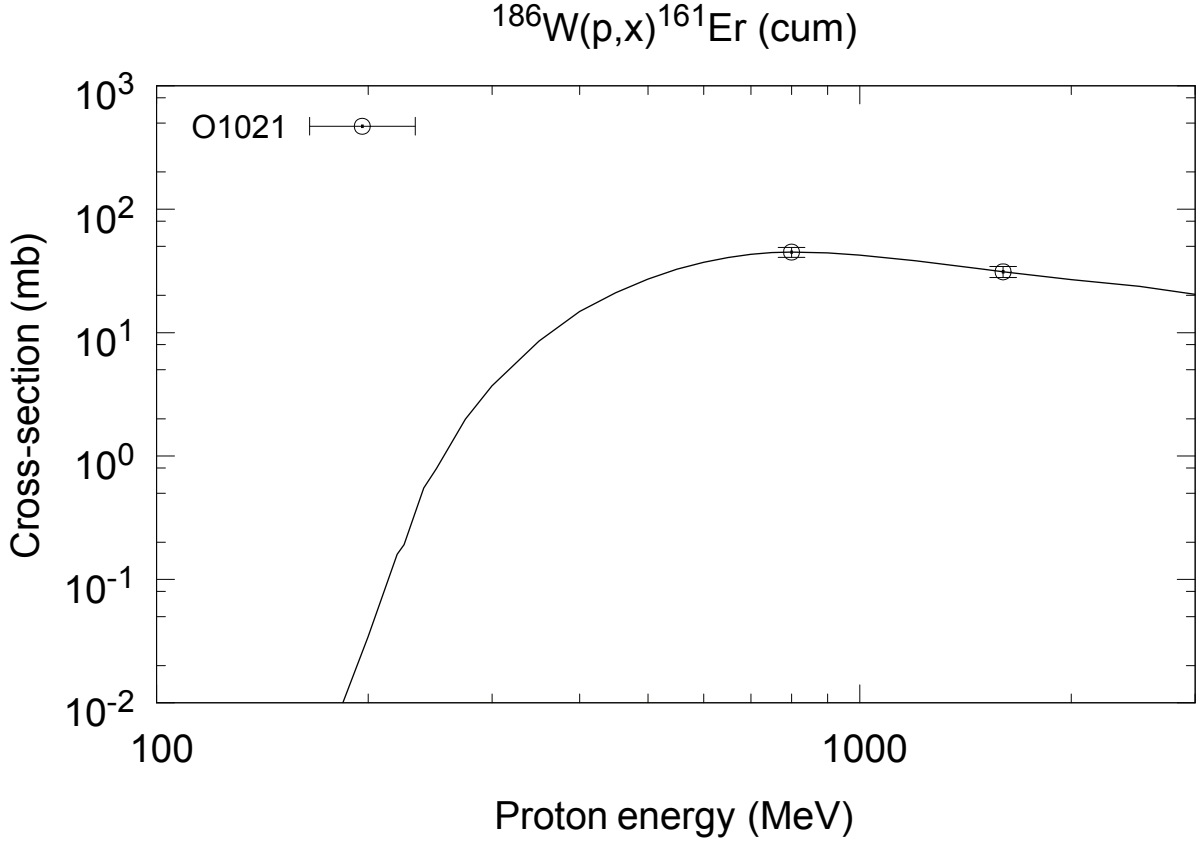

^{186}W(p,x)^{156g}Ho (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

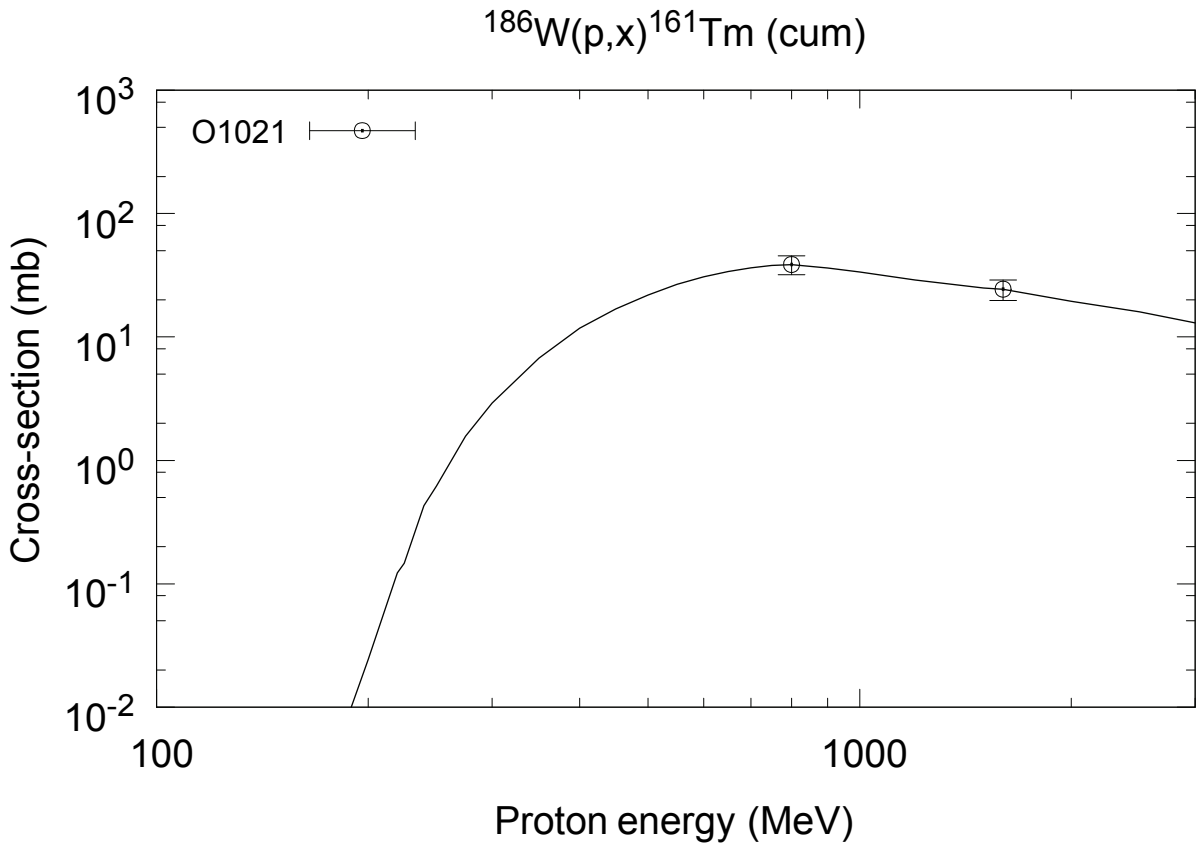

^{186}W(p,x)^{159g}Ho (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

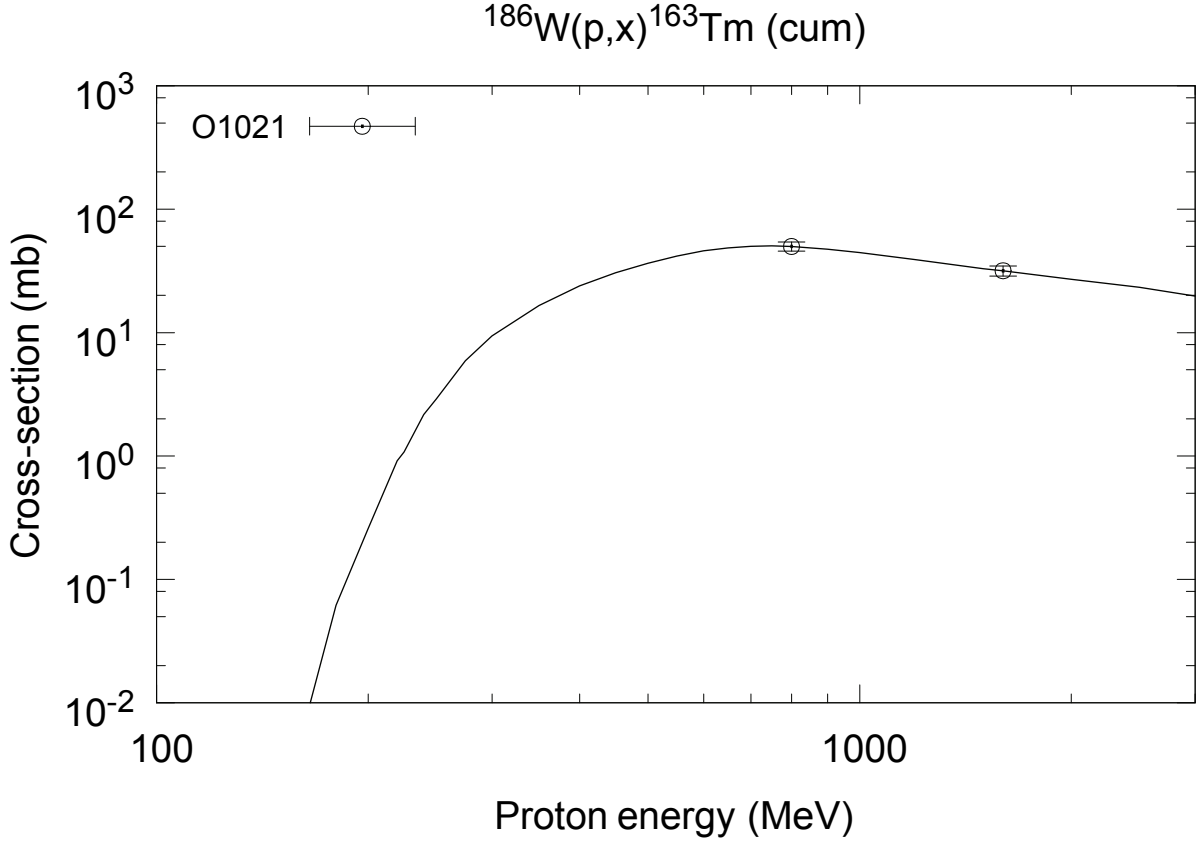

^{186}W(p,x)^{160m}Ho (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

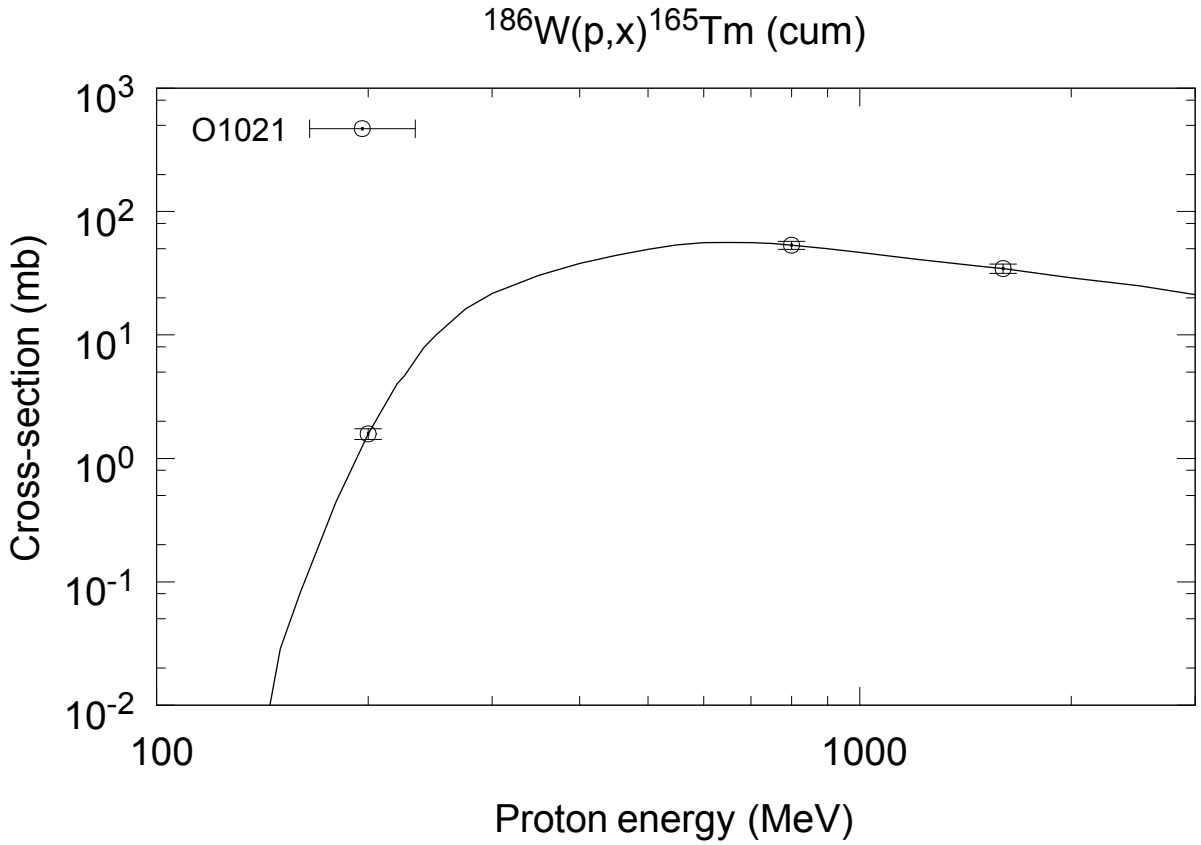

^{186}W(p,x)^{159}Er (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

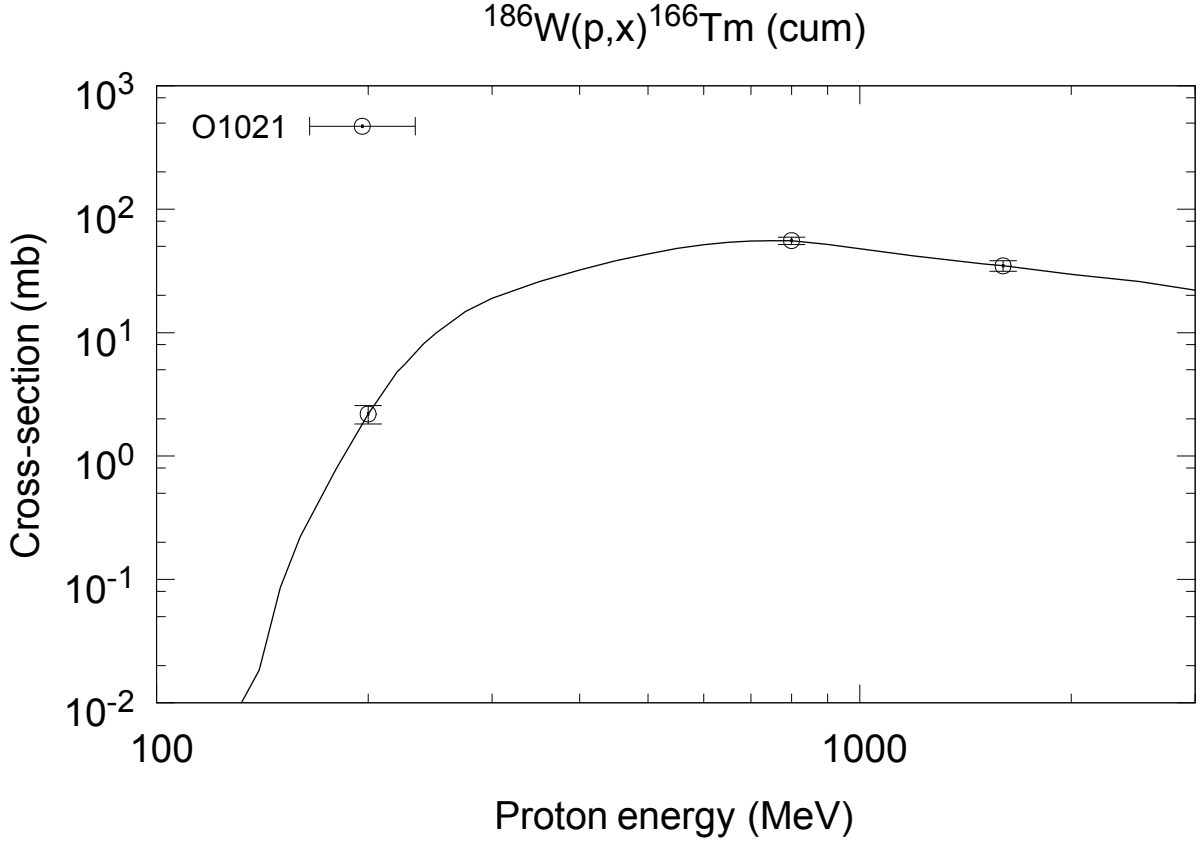

^{186}W(p,x)^{160}Er (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

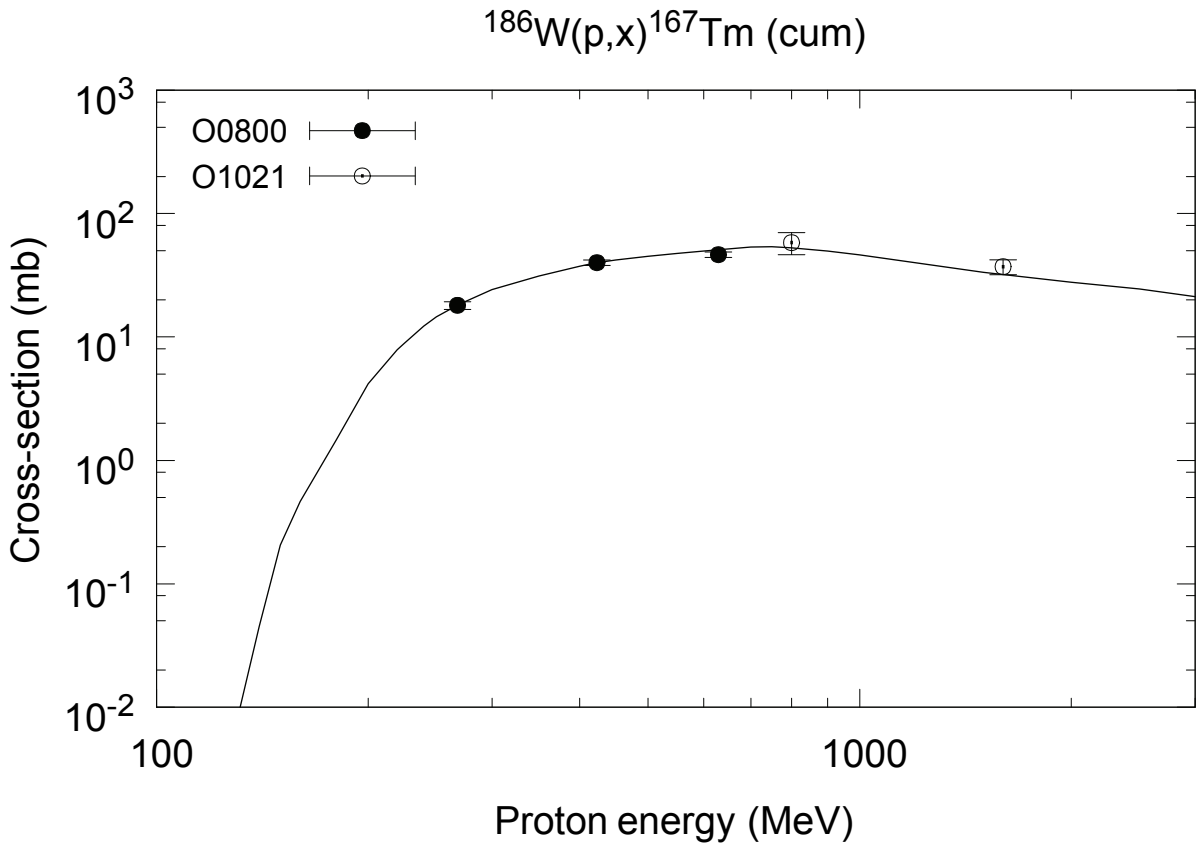

^{186}W(p,x)^{161}Er (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

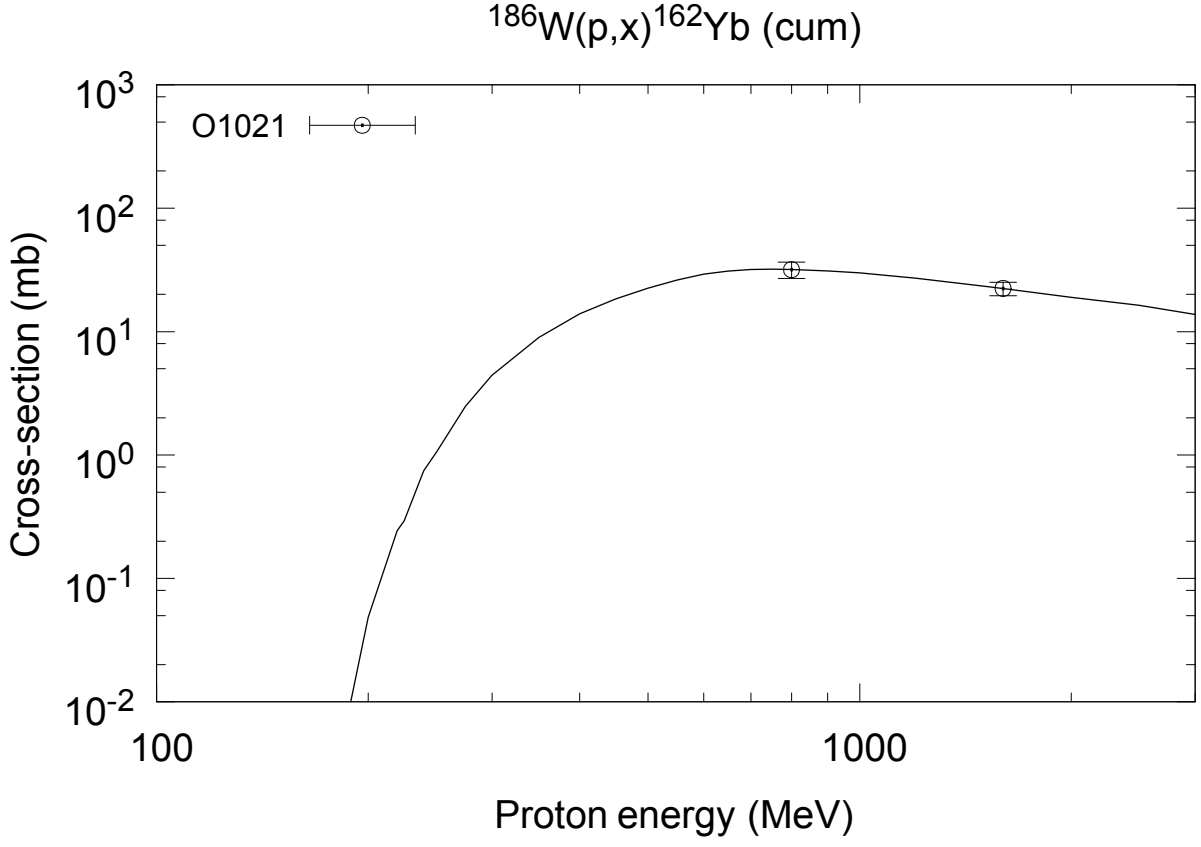

^{186}W(p,x)^{161}Tm (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

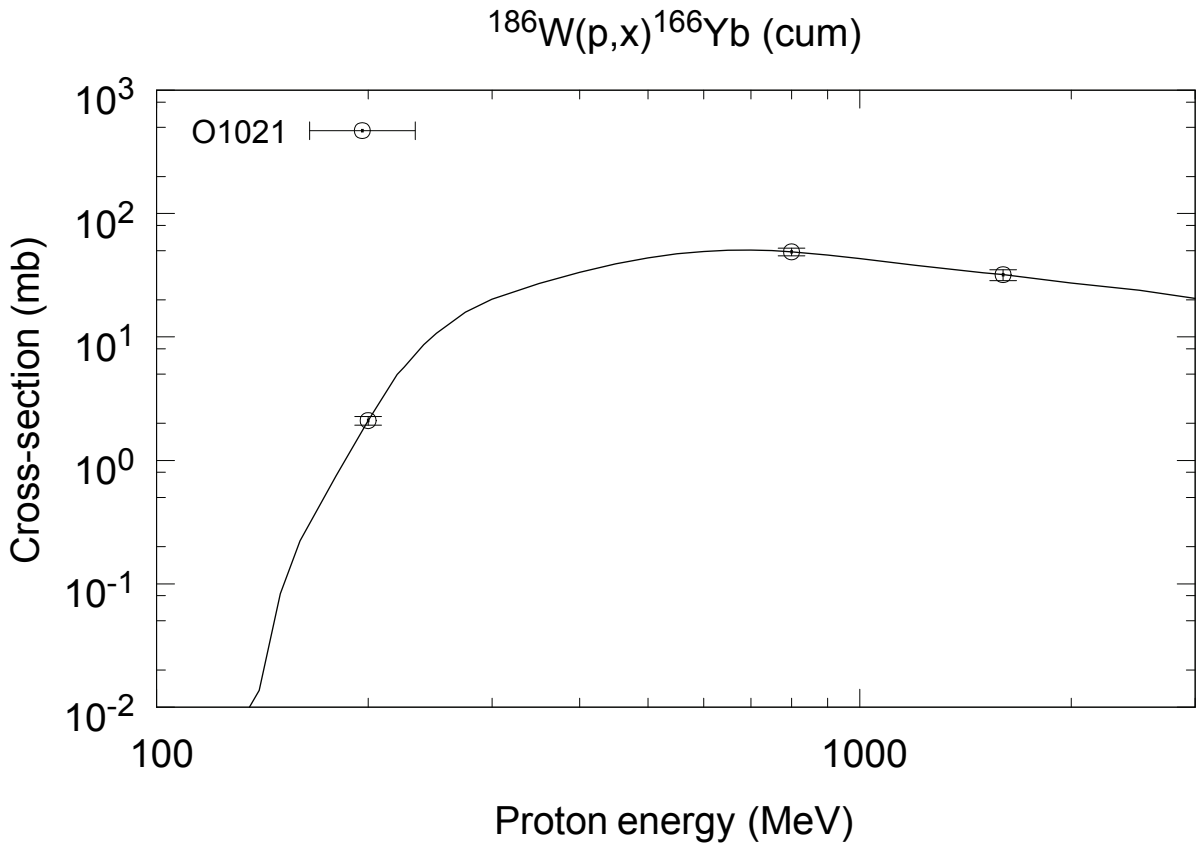

^{186}W(p,x)^{163}Tm (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

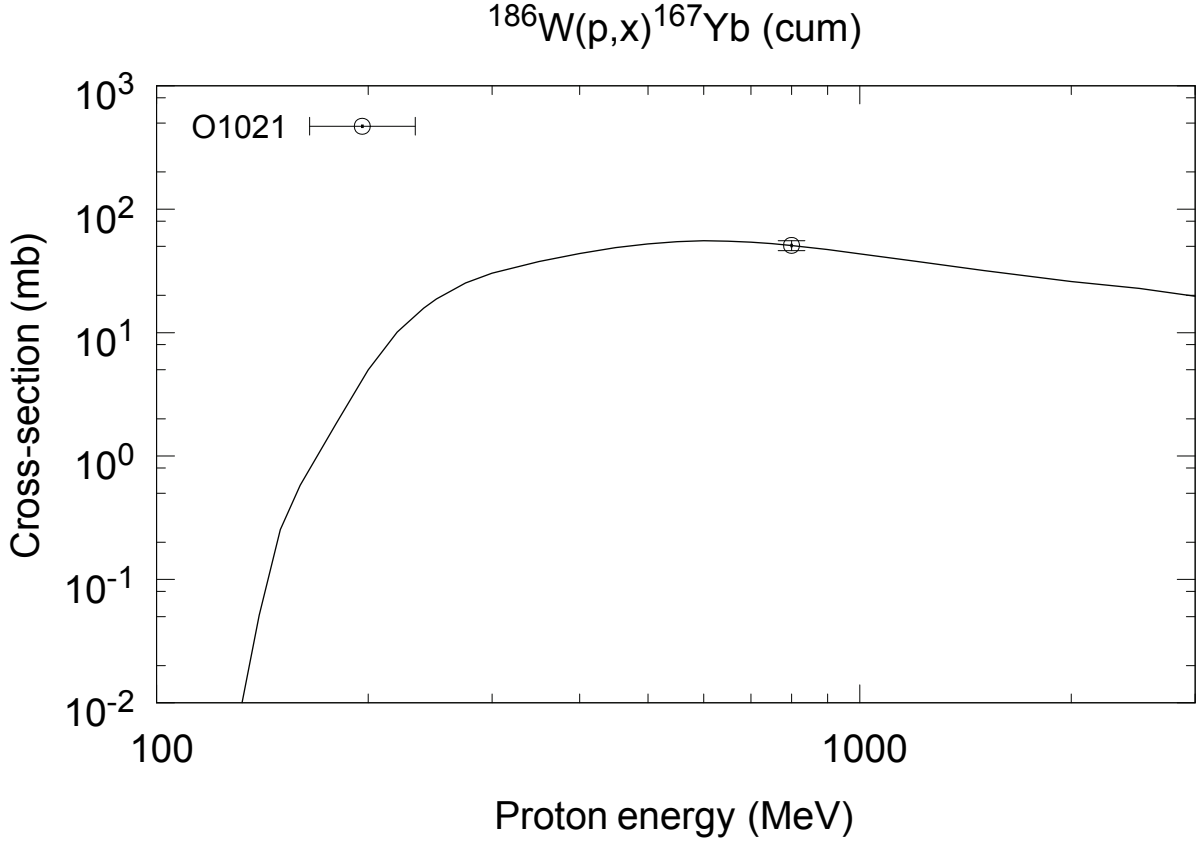

$^{186}W(p,x)^{165}Tm$ (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

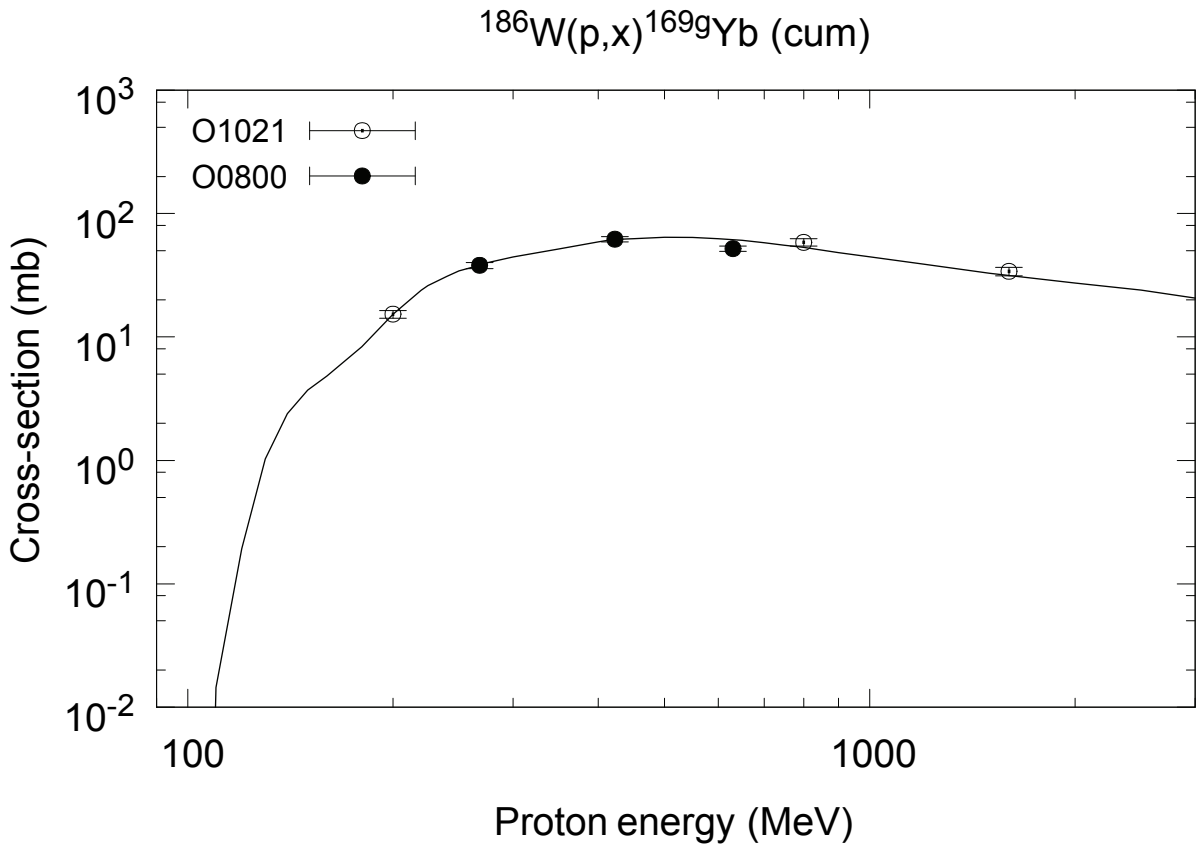

$^{186}W(p,x)^{166}Tm$ (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

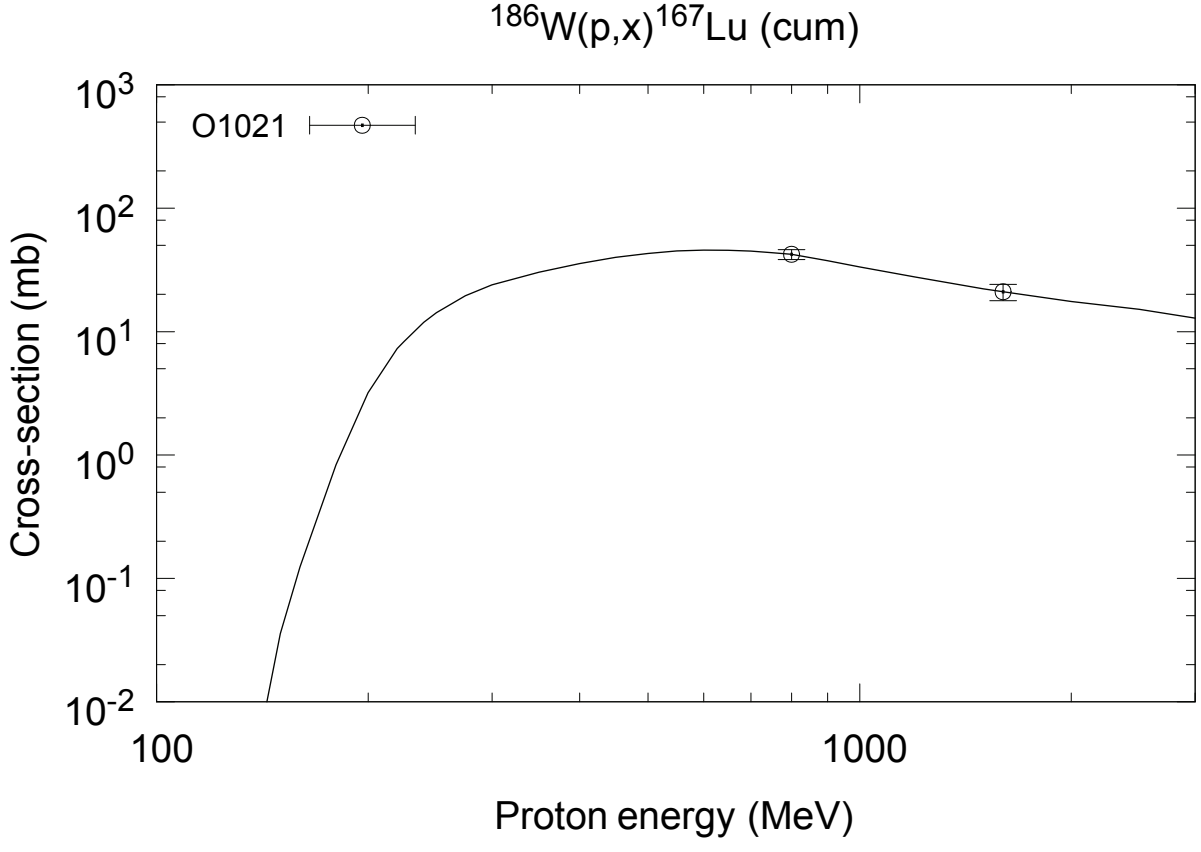

^{186}W(p,x)^{167}Tm (cum)
O0800
O1021
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000

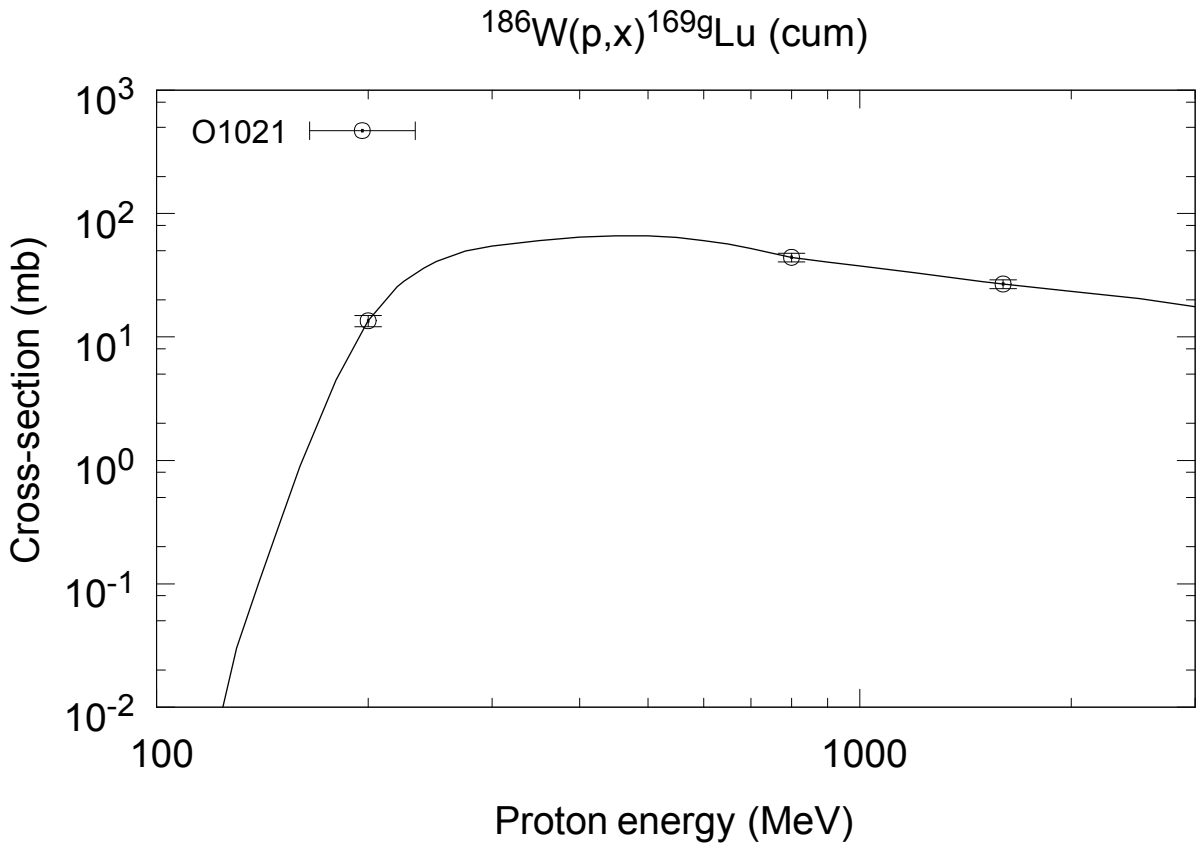

^{186}W(p,x)^{162}Yb (cum)
O1021
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000

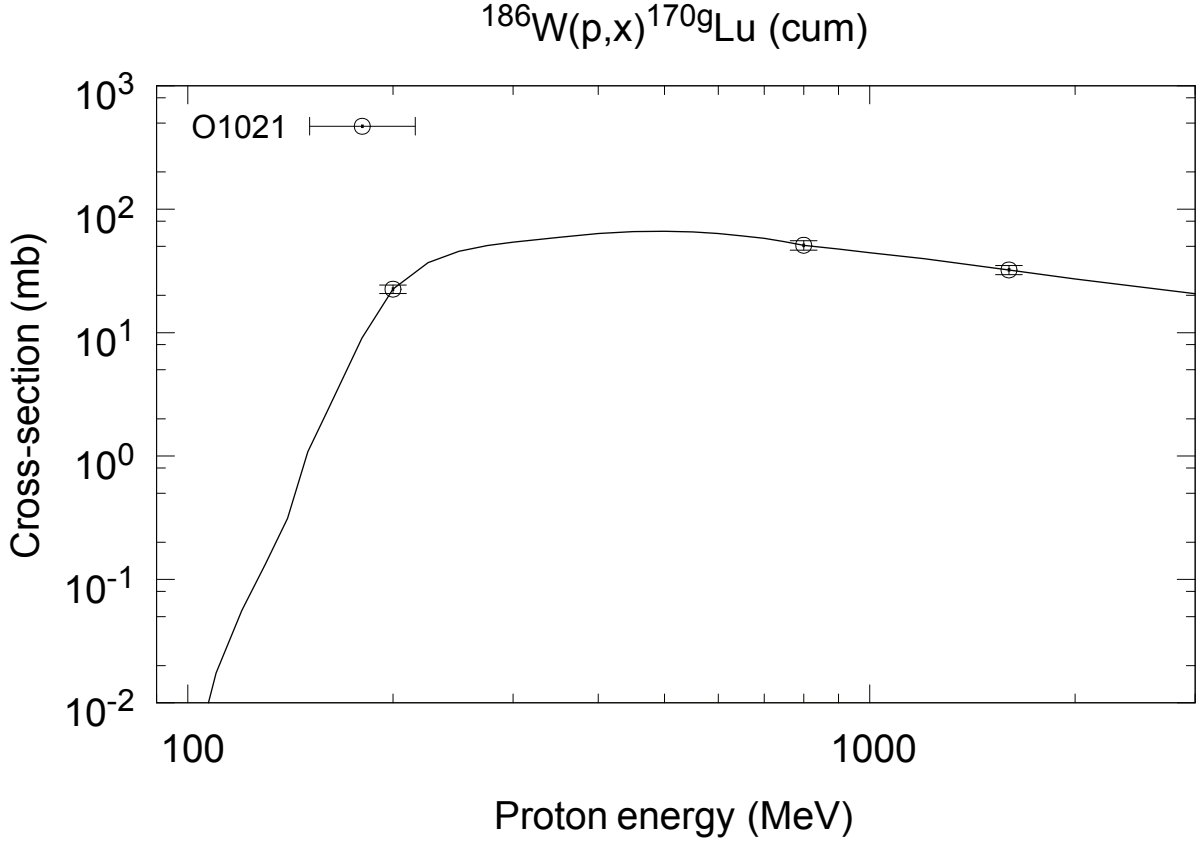

^{186}W(p,x)^{166}Yb (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

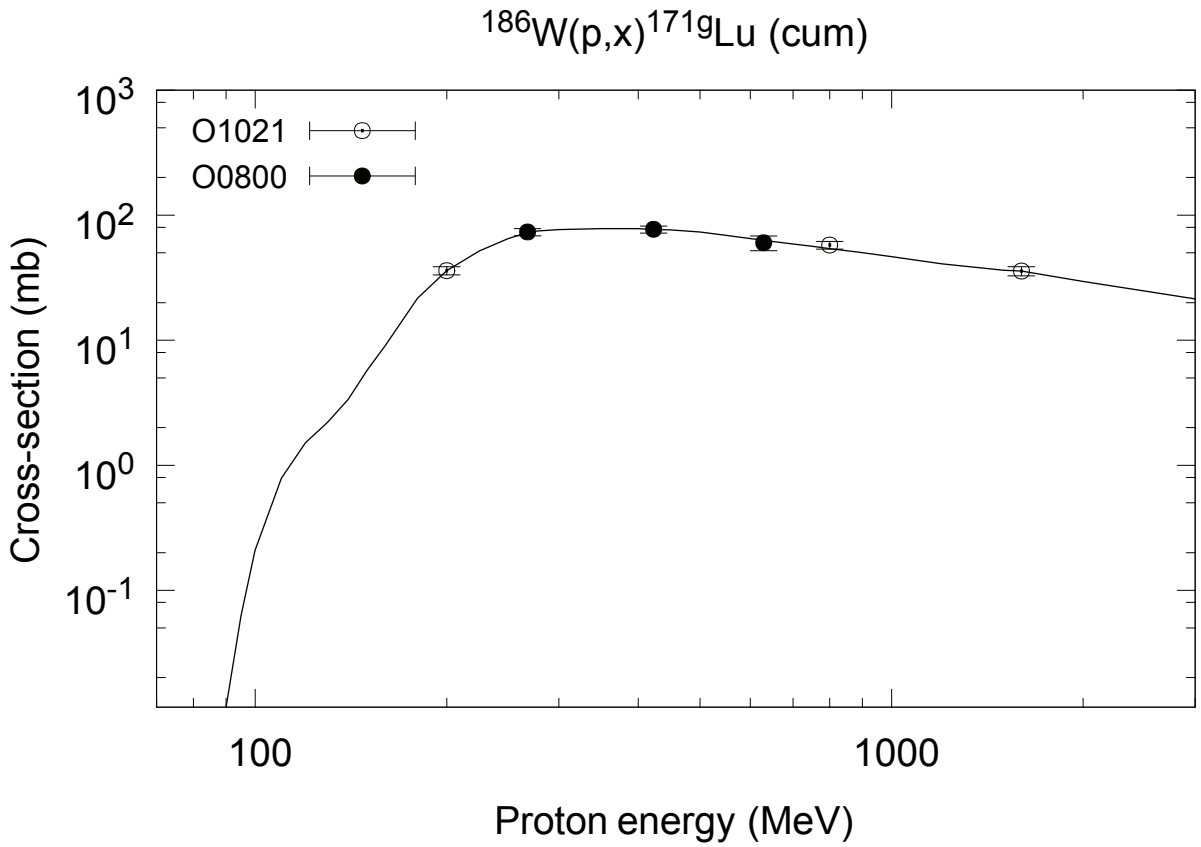

^{186}W(p,x)^{167}Yb (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

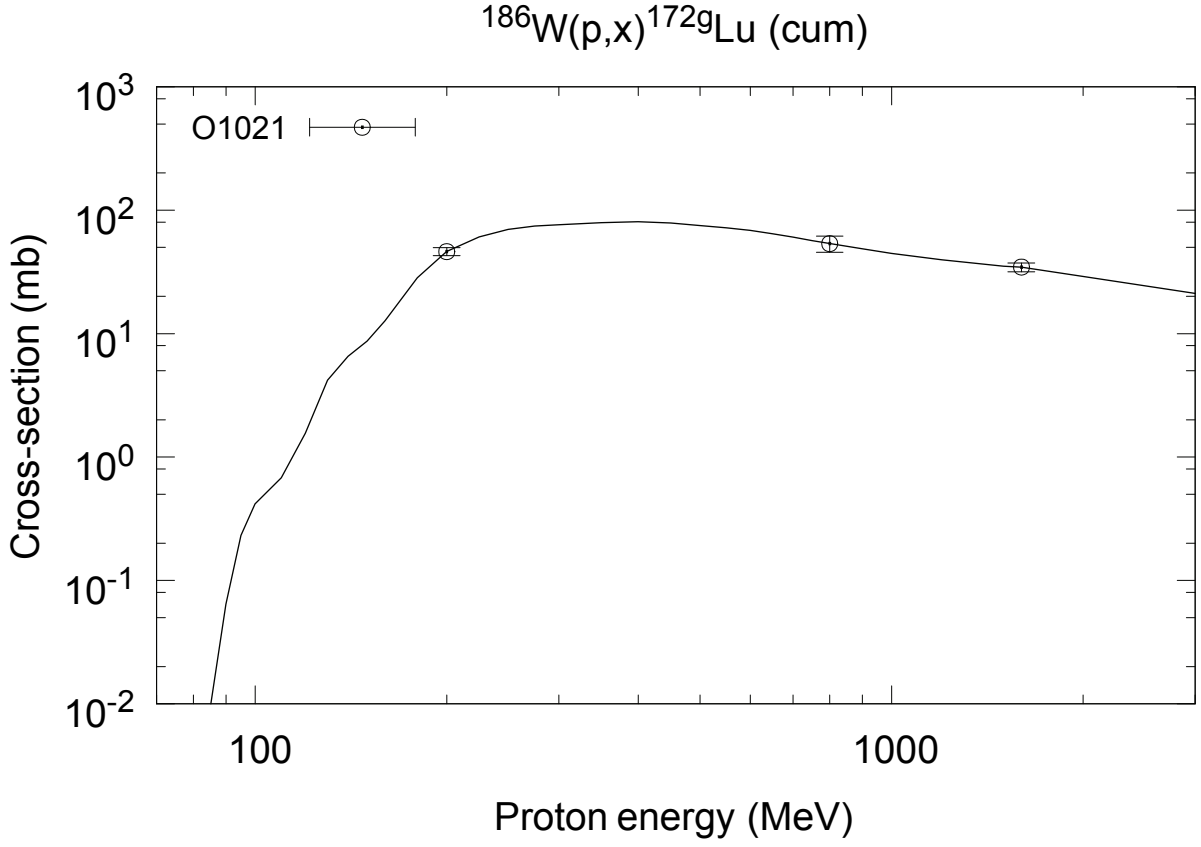

^{186}W(p,x)^{169g}Yb (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

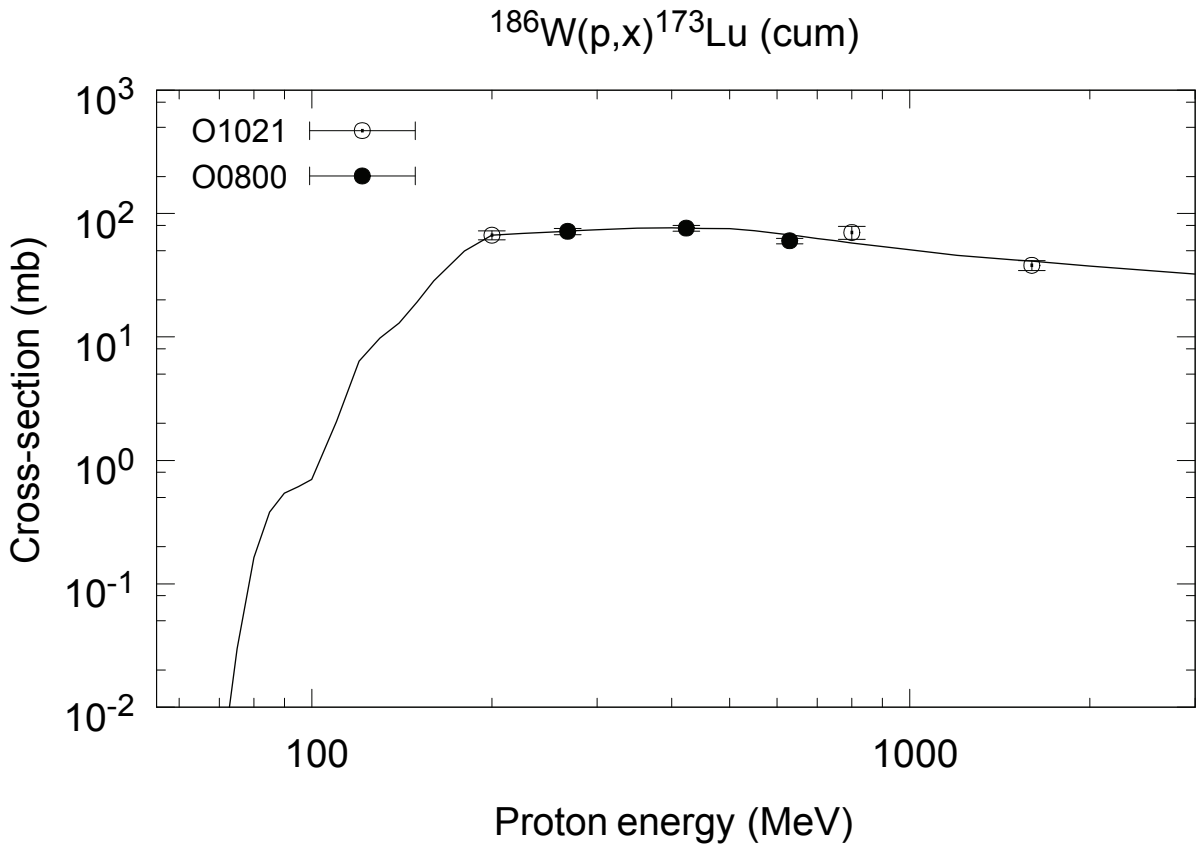

^{186}W(p,x)^{167}Lu (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

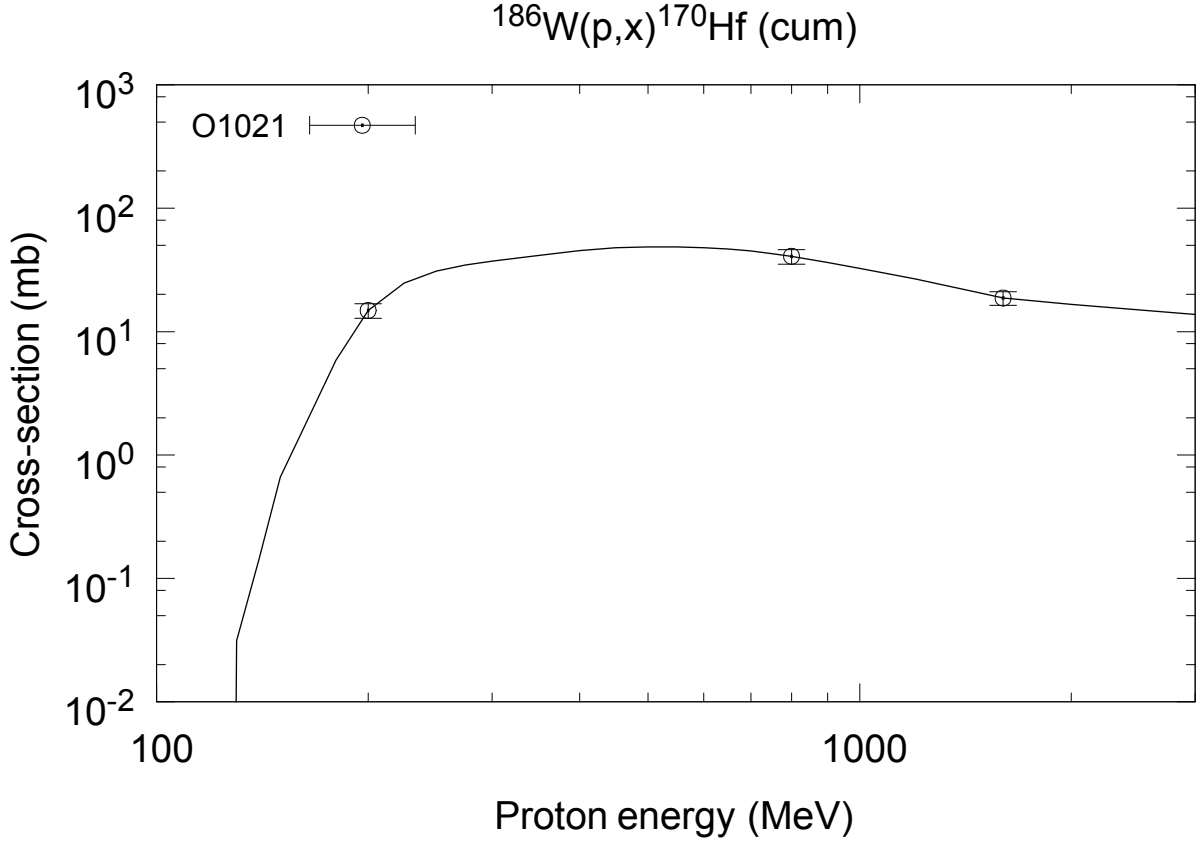

^{186}W(p,x)^{169g}Lu (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

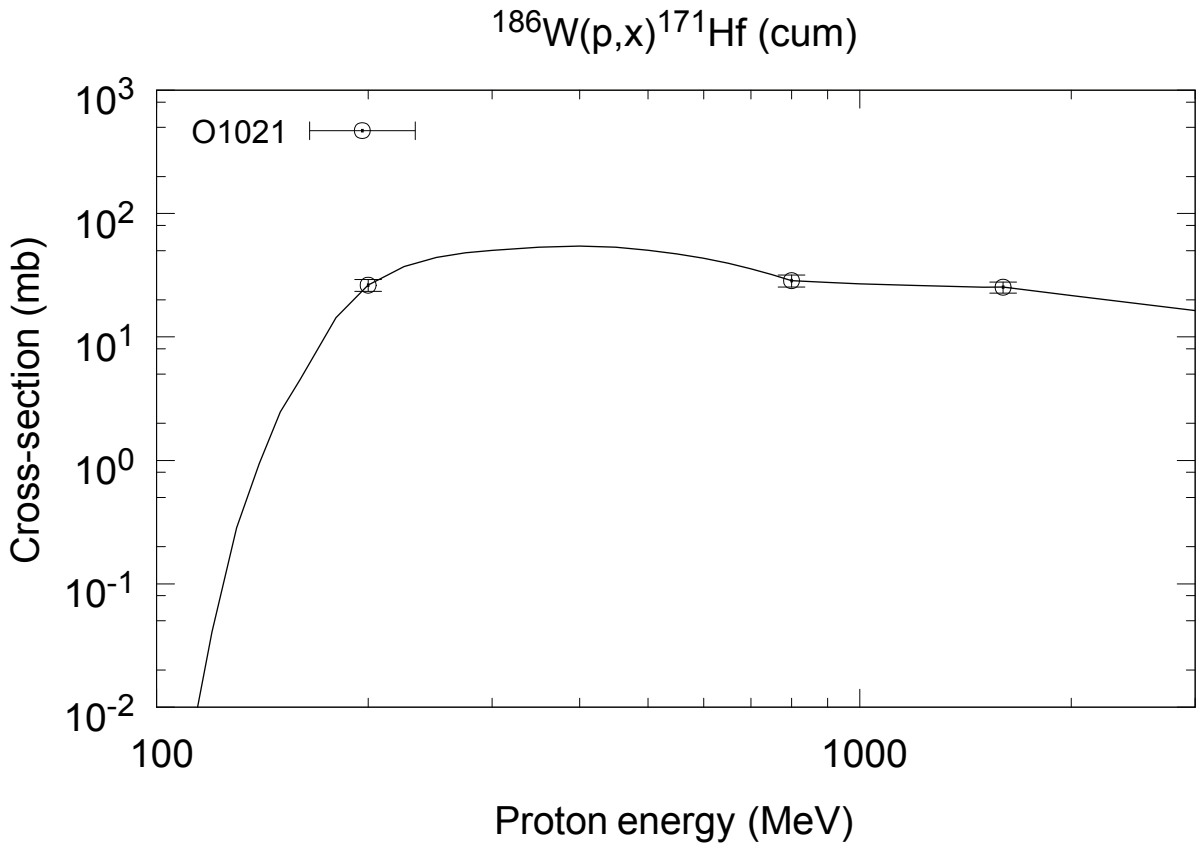

^{186}W(p,x)^{170g}Lu (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

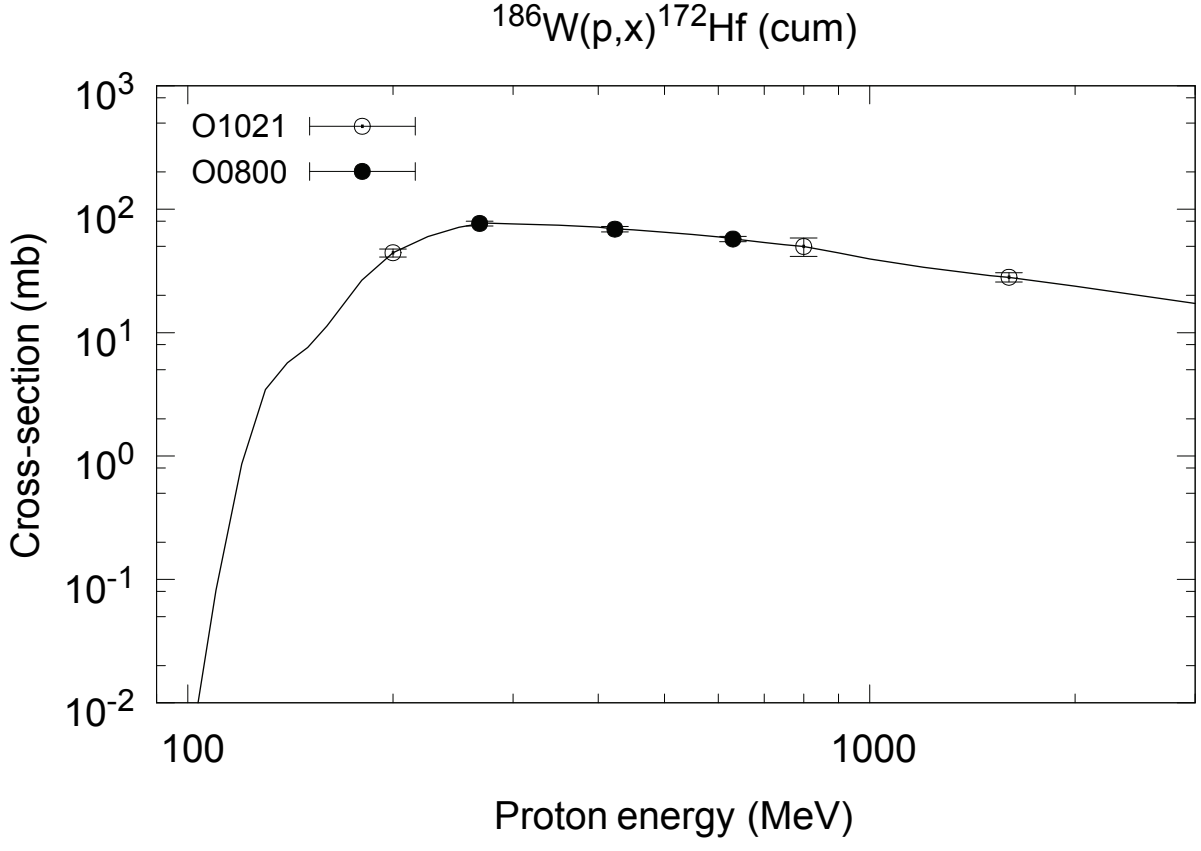

^{186}W(p,x)^{171g}Lu (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

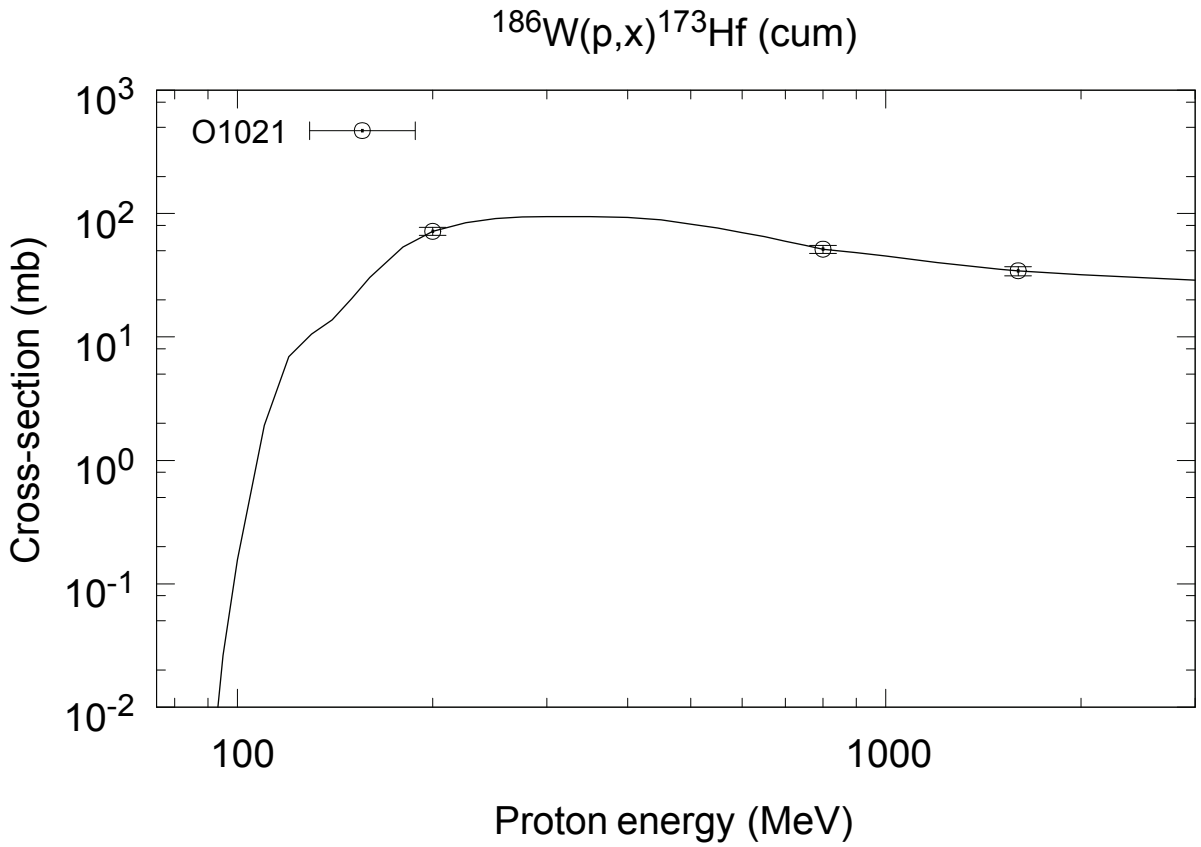

^{186}W(p,x)^{172g}Lu (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

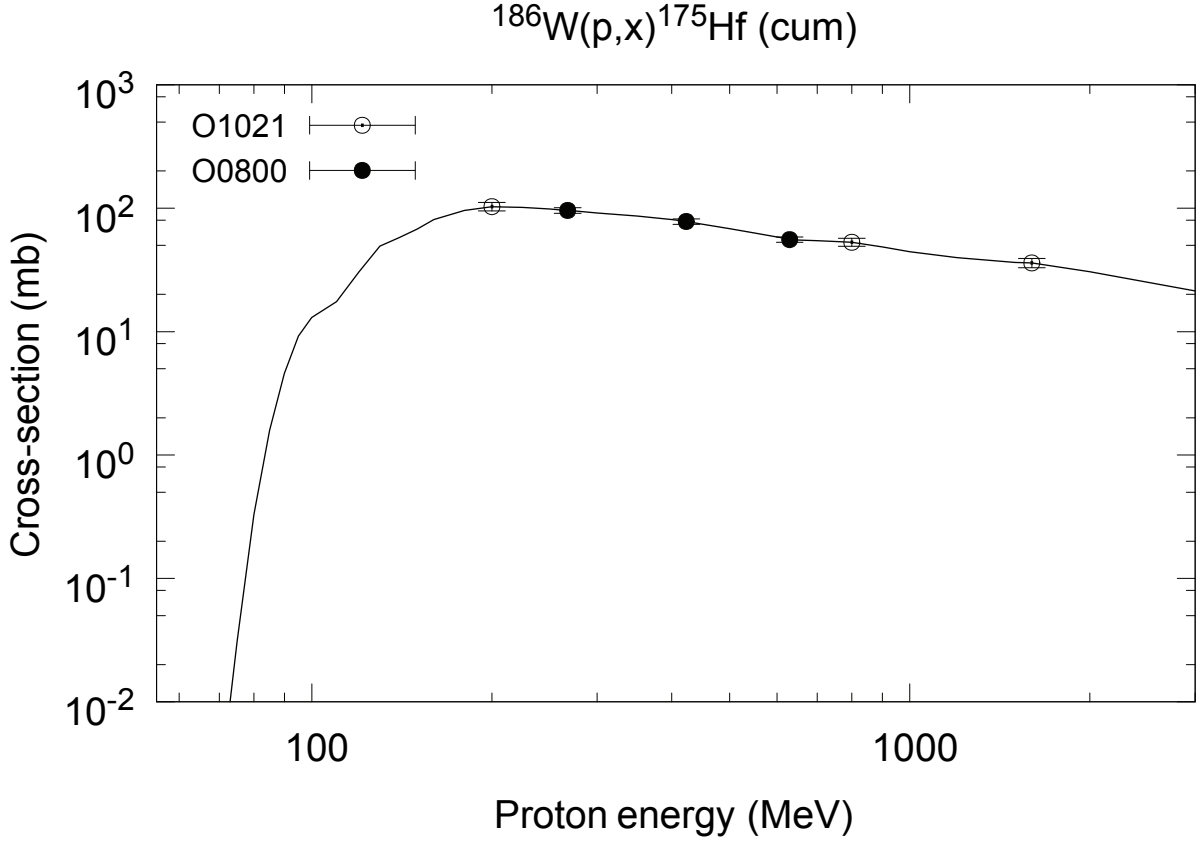

^{186}W(p,x)^{173}Lu (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

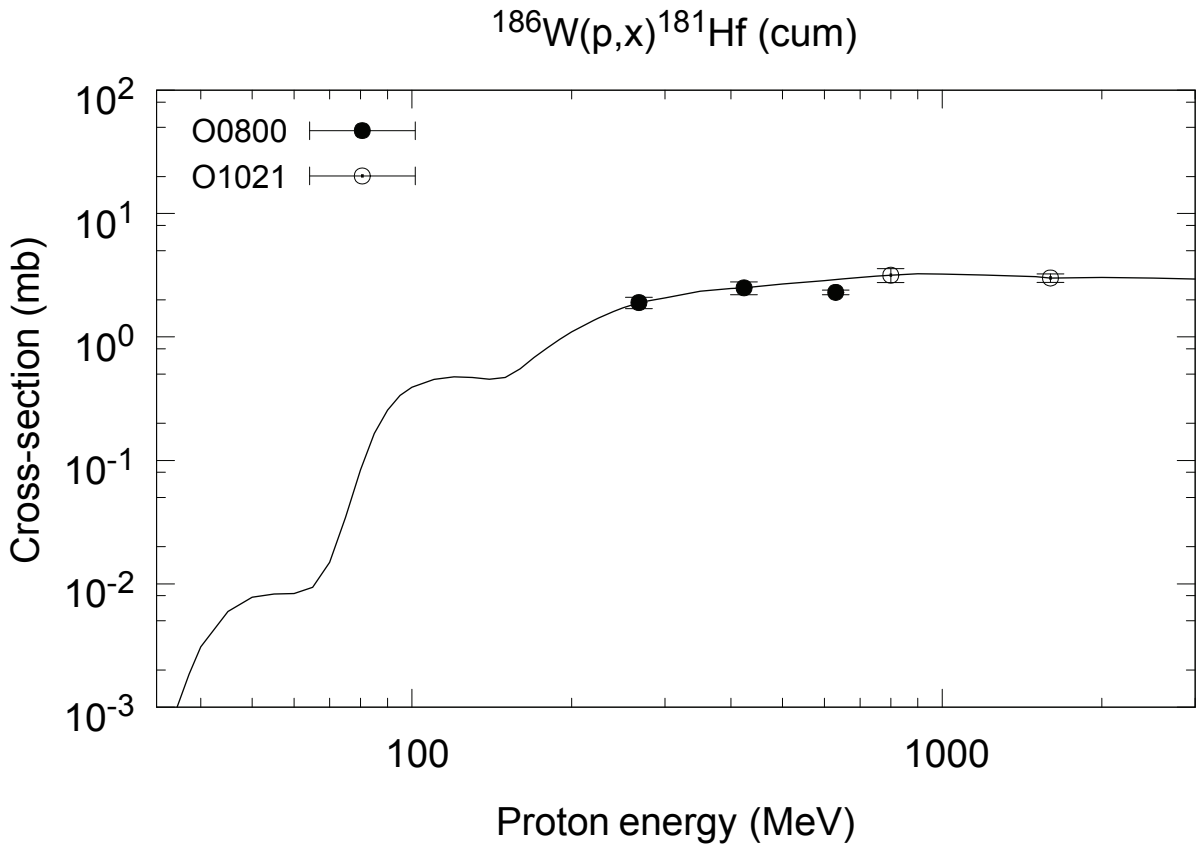

^{186}W(p,x)^{170}Hf (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

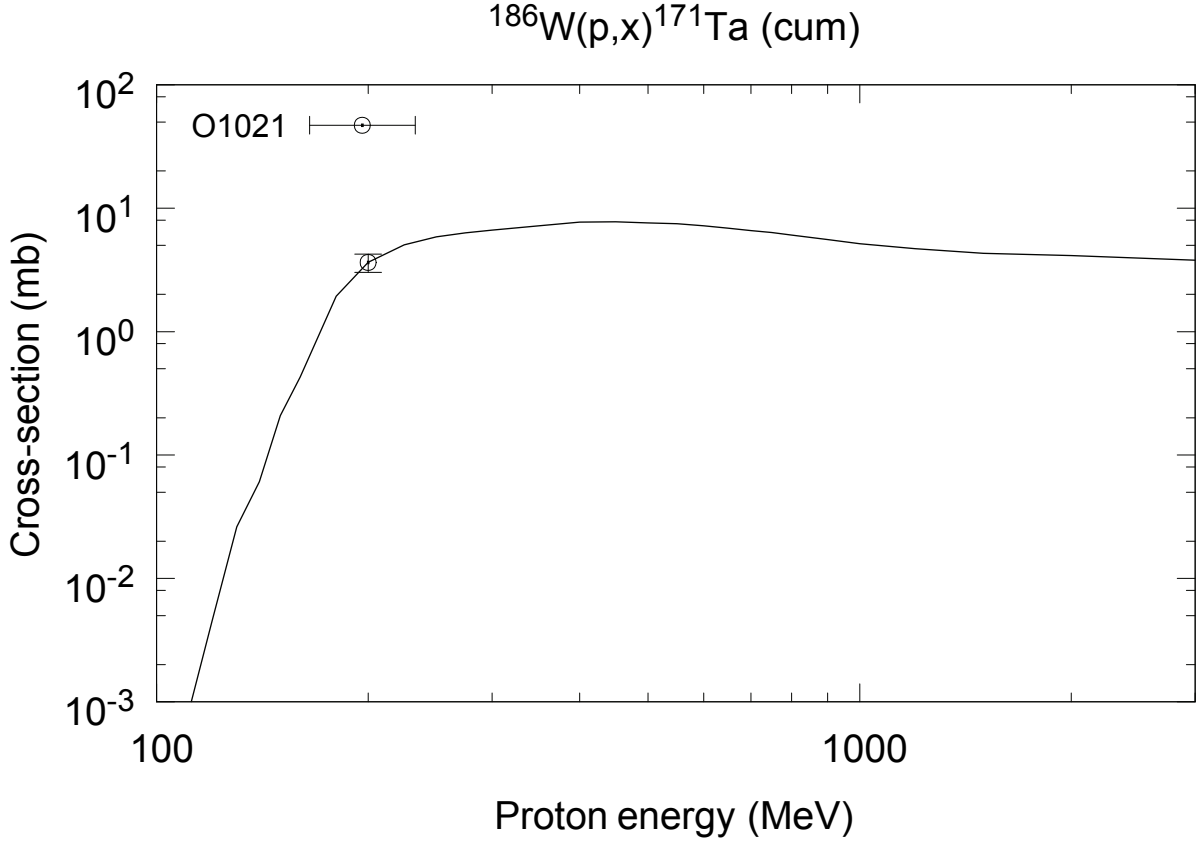

^{186}W(p,x)^{171}Hf (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

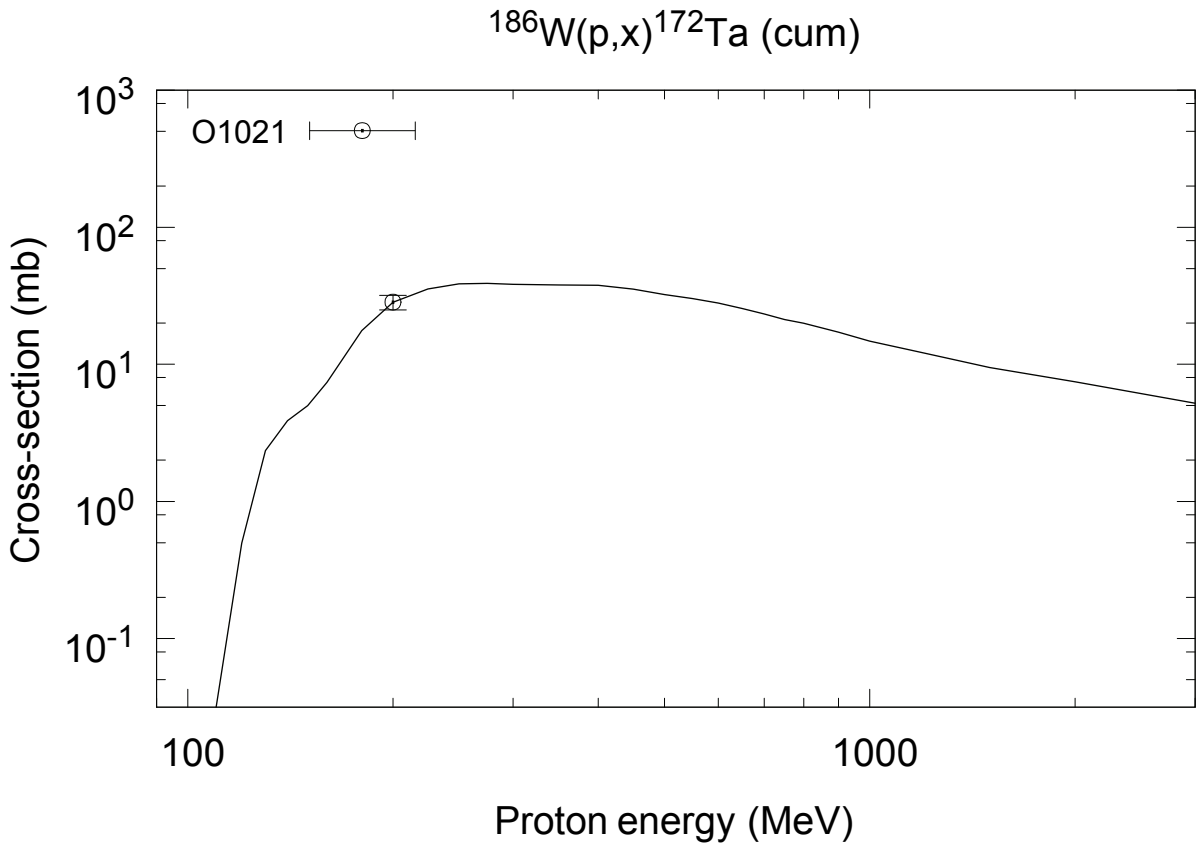

^{186}W(p,x)^{172}Hf (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

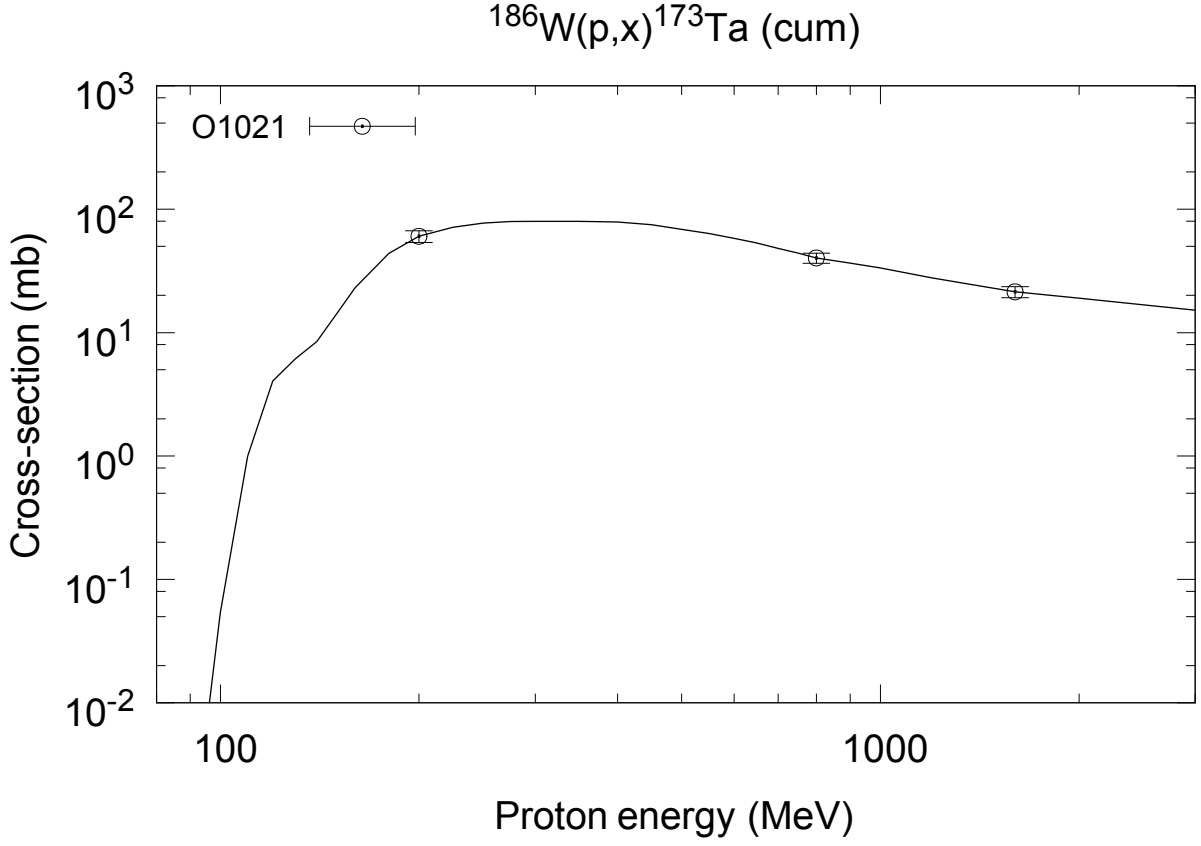

^{186}W(p,x)^{173}Hf (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

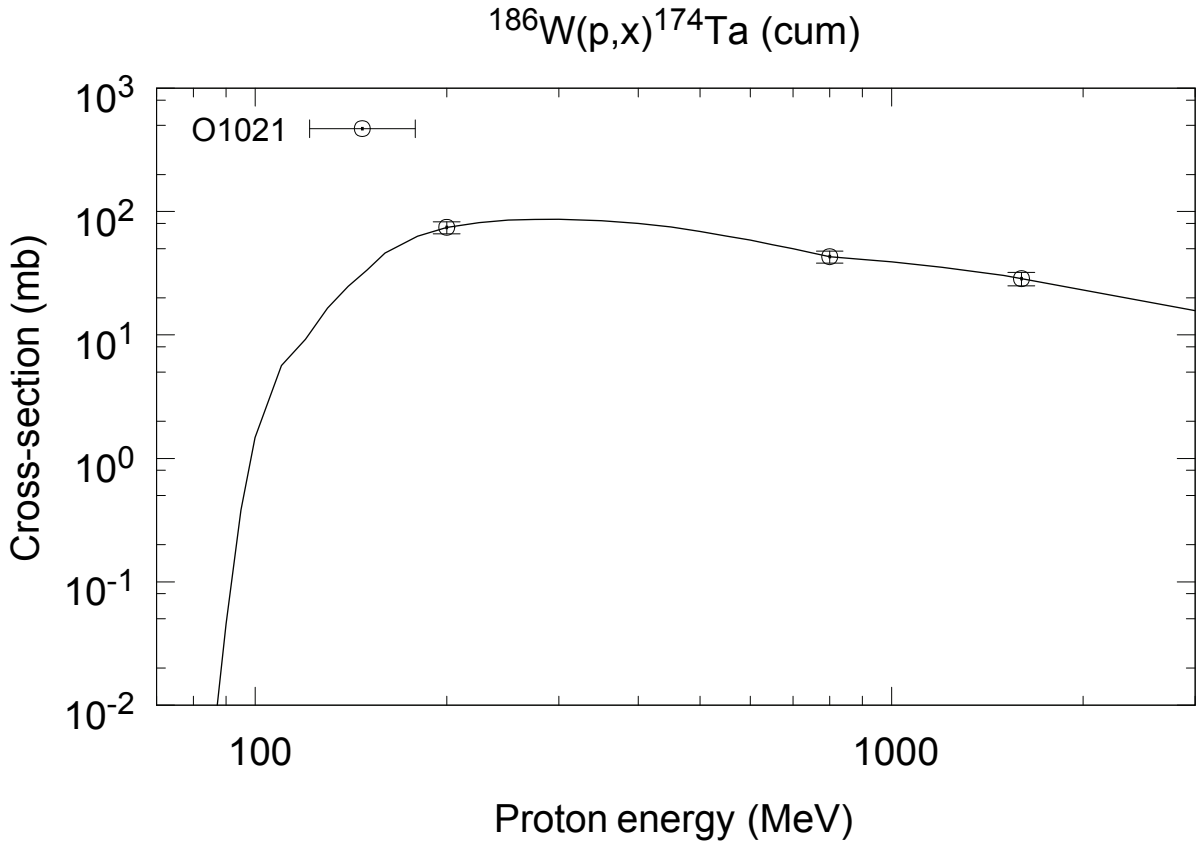

^{186}W(p,x)^{175}Hf (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

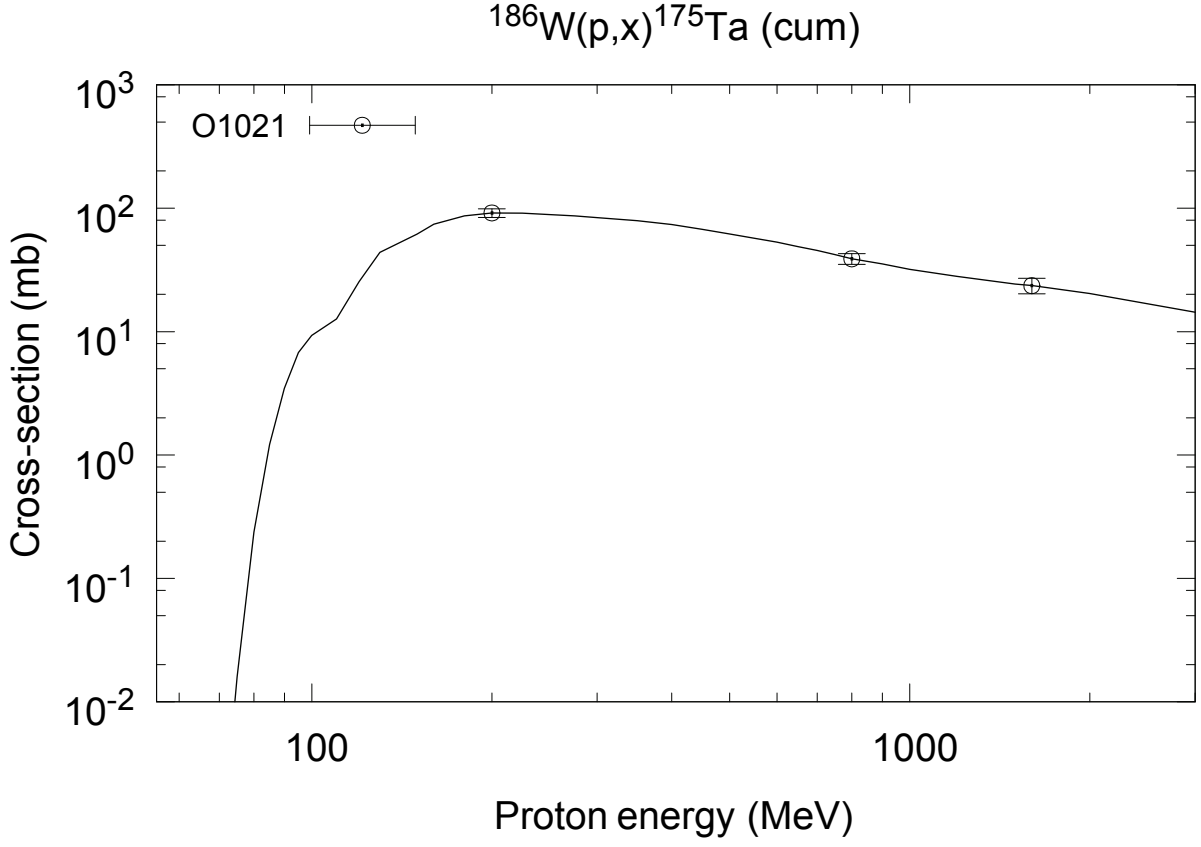

^{186}W(p,x)^{181}Hf (cum)
O0800
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

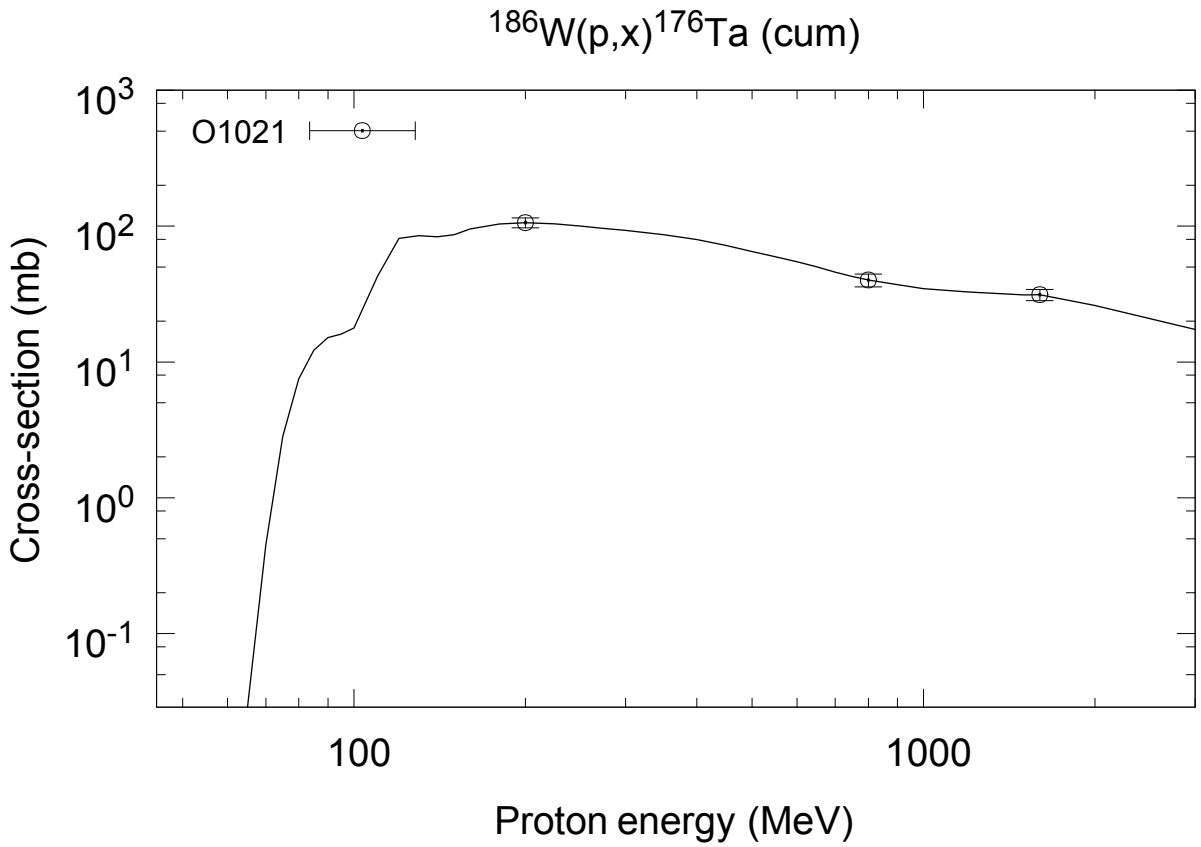

^{186}W(p,x)^{171}Ta (cum)
O1021
Cross-section (mb)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
100
1000
Proton energy (MeV)

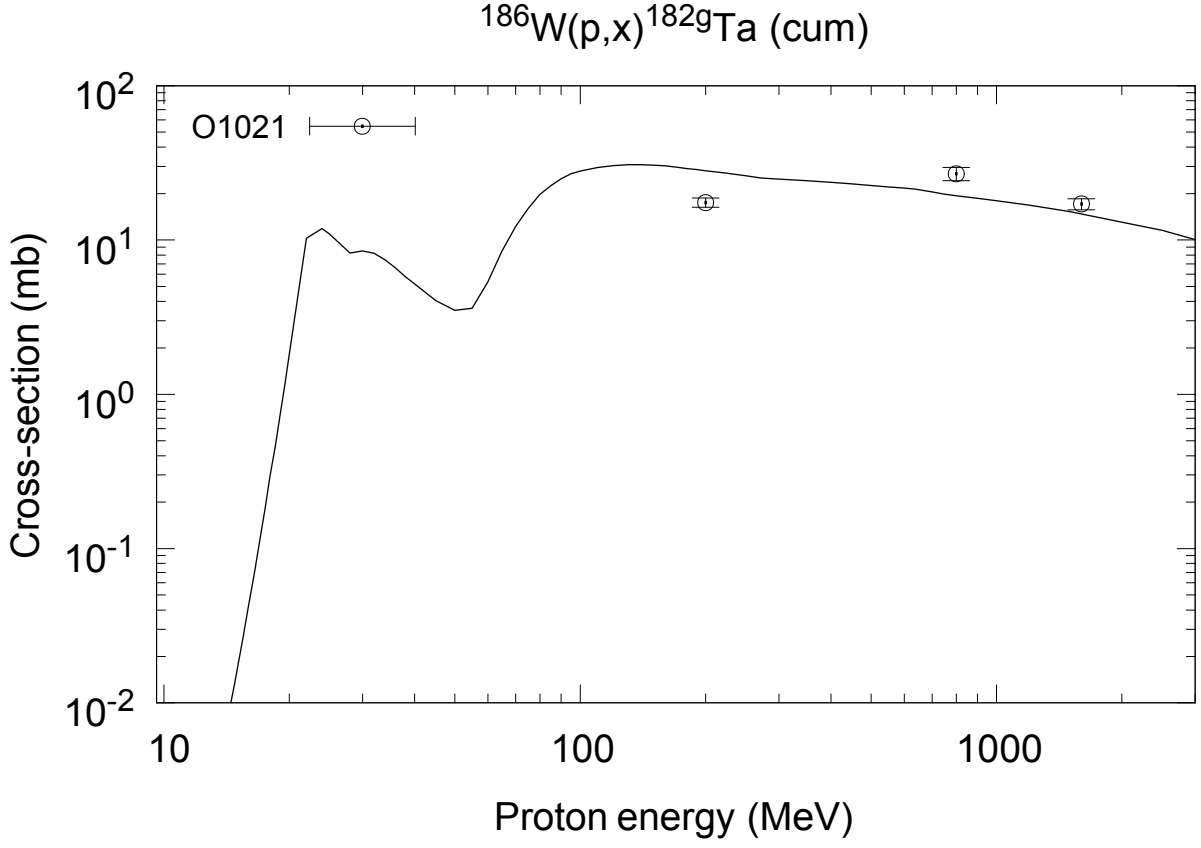

^{186}W(p,x)^{172}Ta (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)

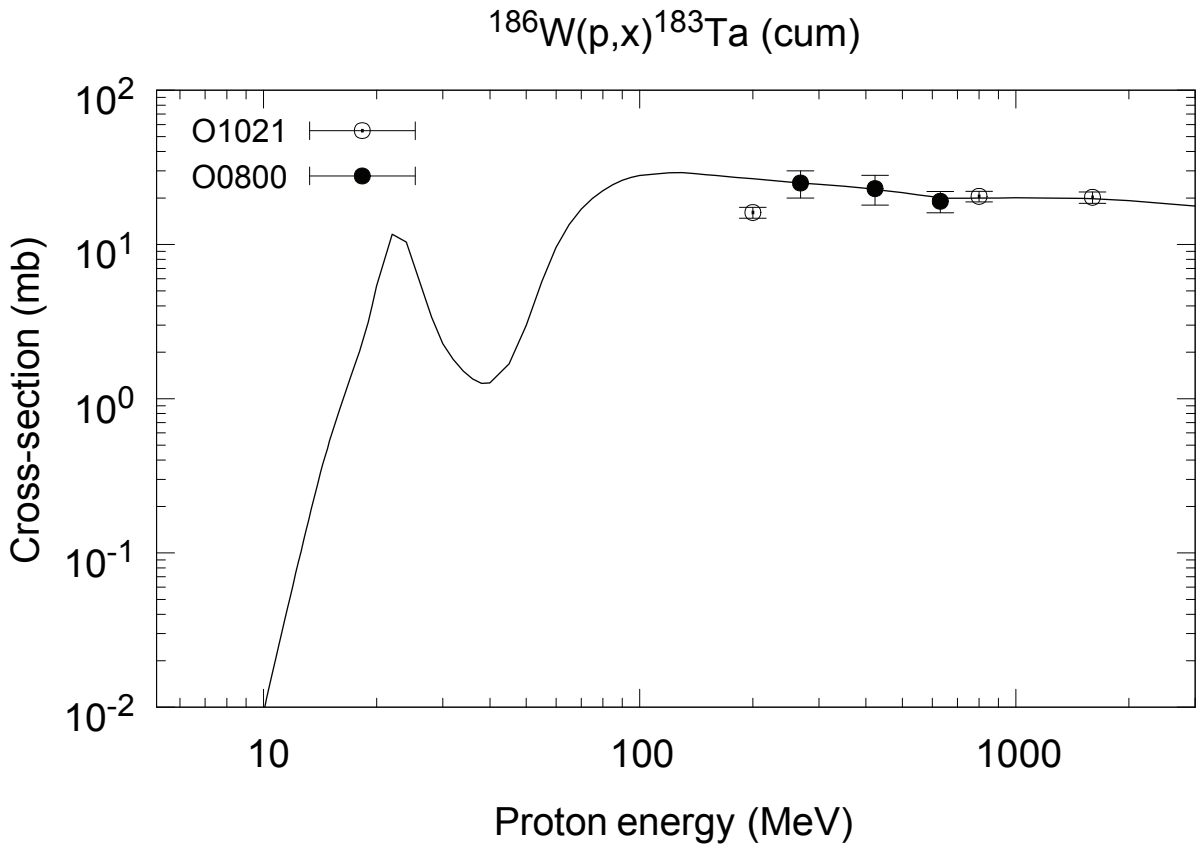

^{186}W(p,x)^{173}Ta (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

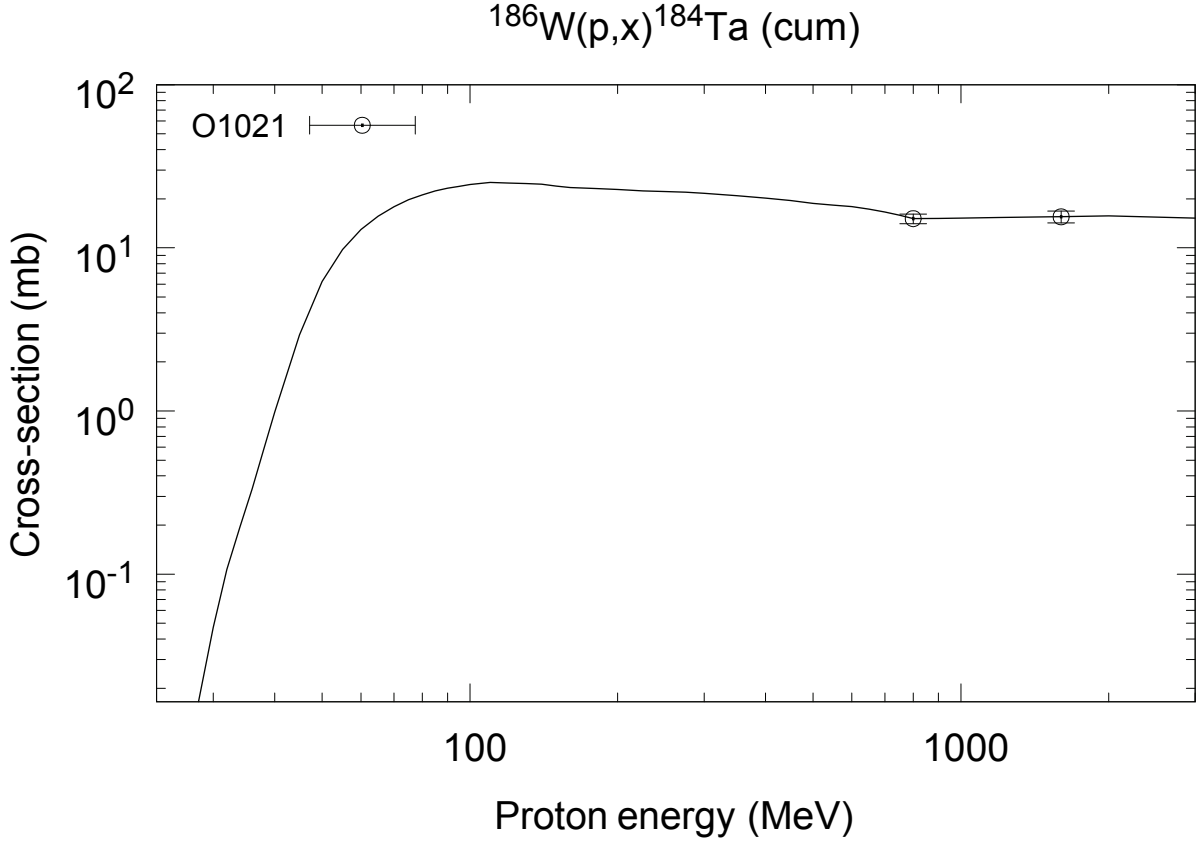

^{186}W(p,x)^{174}Ta (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

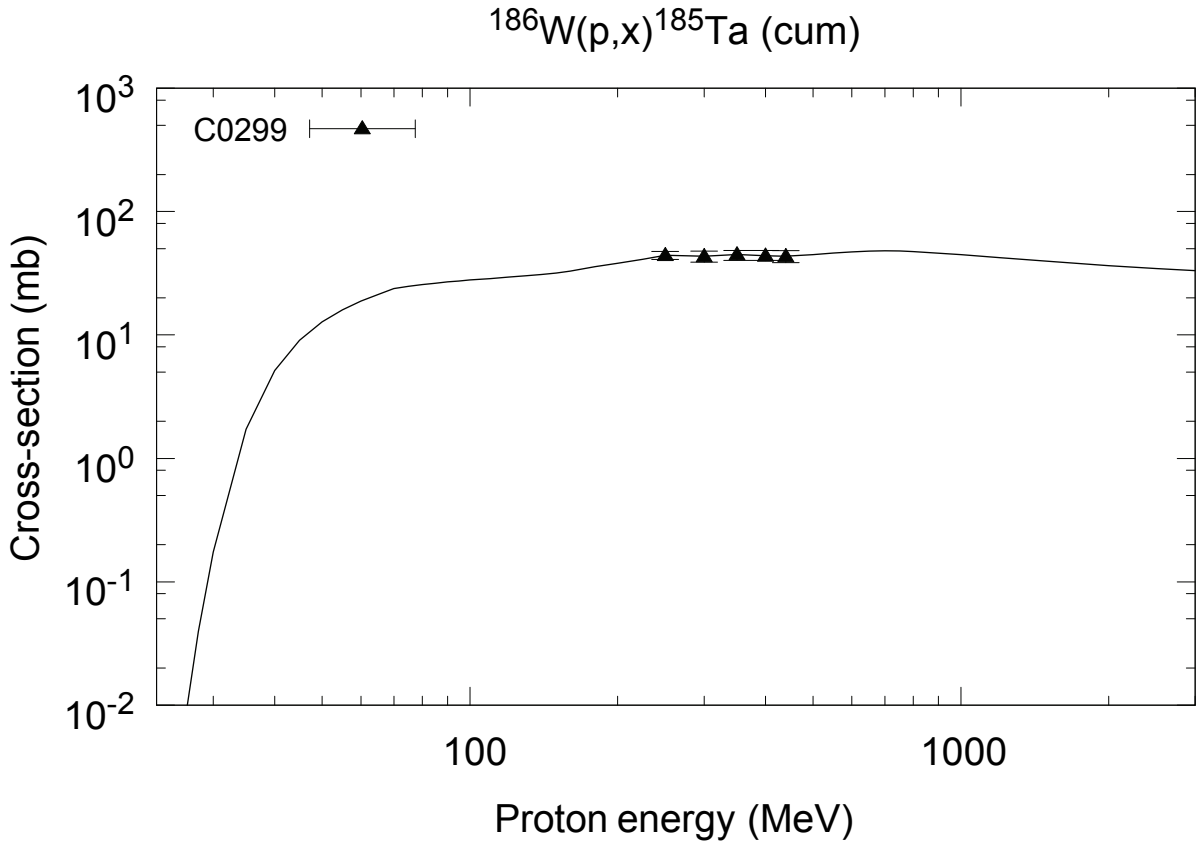

^{186}W(p,x)^{175}Ta (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

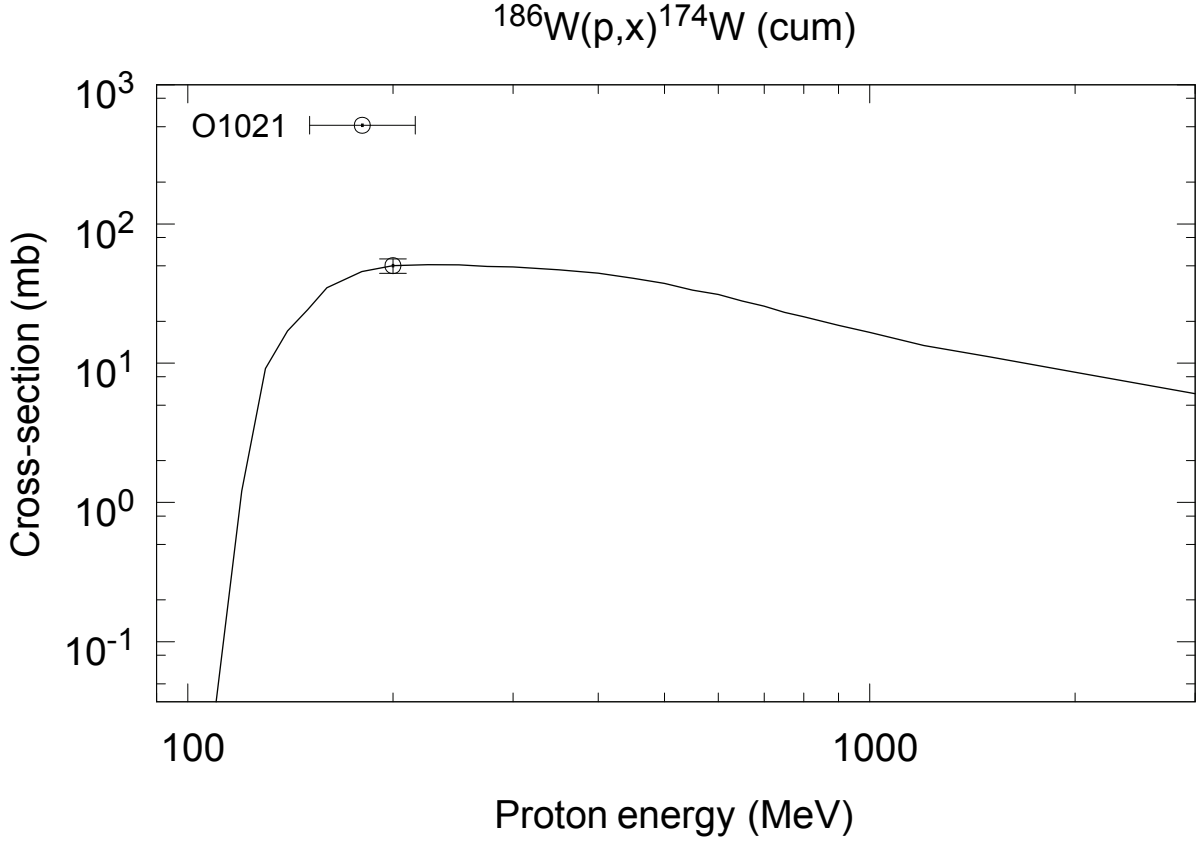

^{186}W(p,x)^{176}Ta (cum)
O1021
Cross-section (mb)
Proton energy (MeV)
10^3
10^2
10^1
10^0
10^{-1}
100
1000

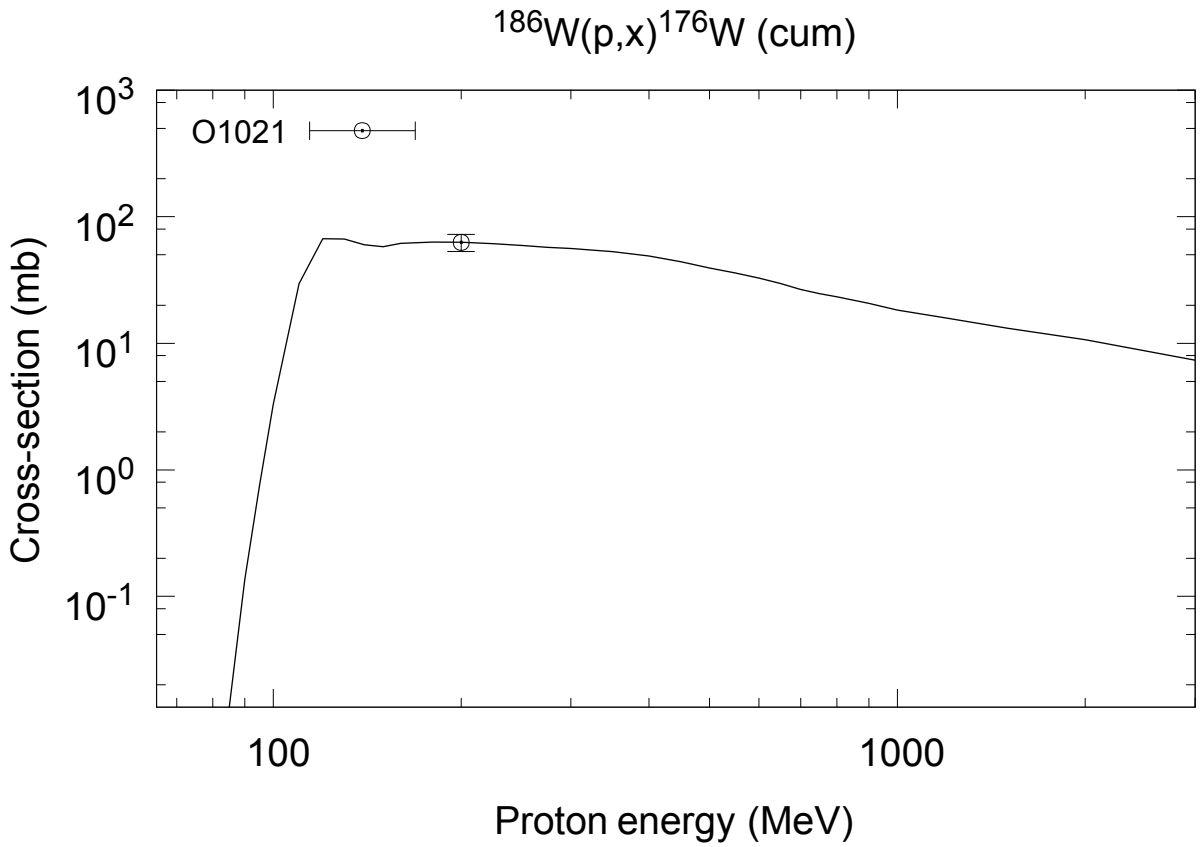

^{186}W(p,x)^{182g}Ta (cum)
O1021
Cross-section (mb)
Proton energy (MeV)
10^2
10^1
10^0
10^{-1}
10^{-2}
10
100
1000

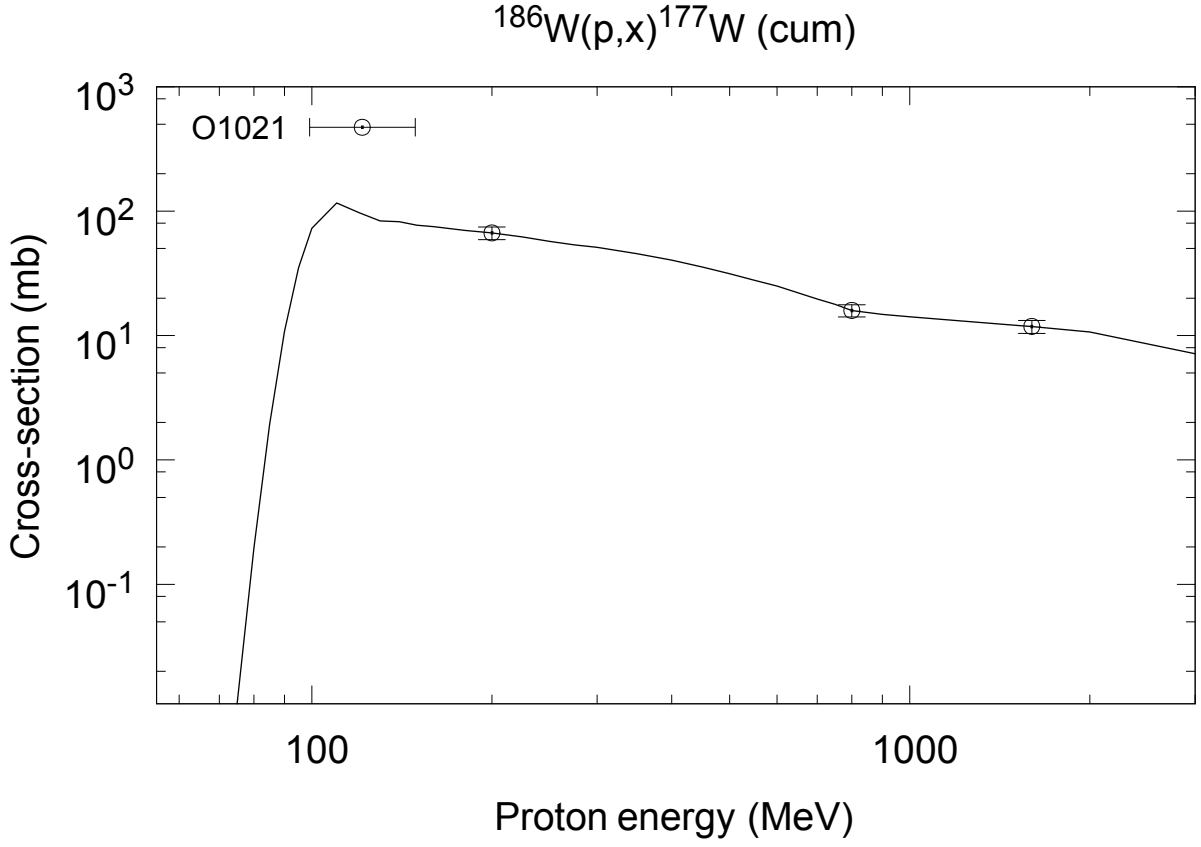

^{186}W(p,x)^{183}Ta (cum)
O1021
O0800
Cross-section (mb)
Proton energy (MeV)

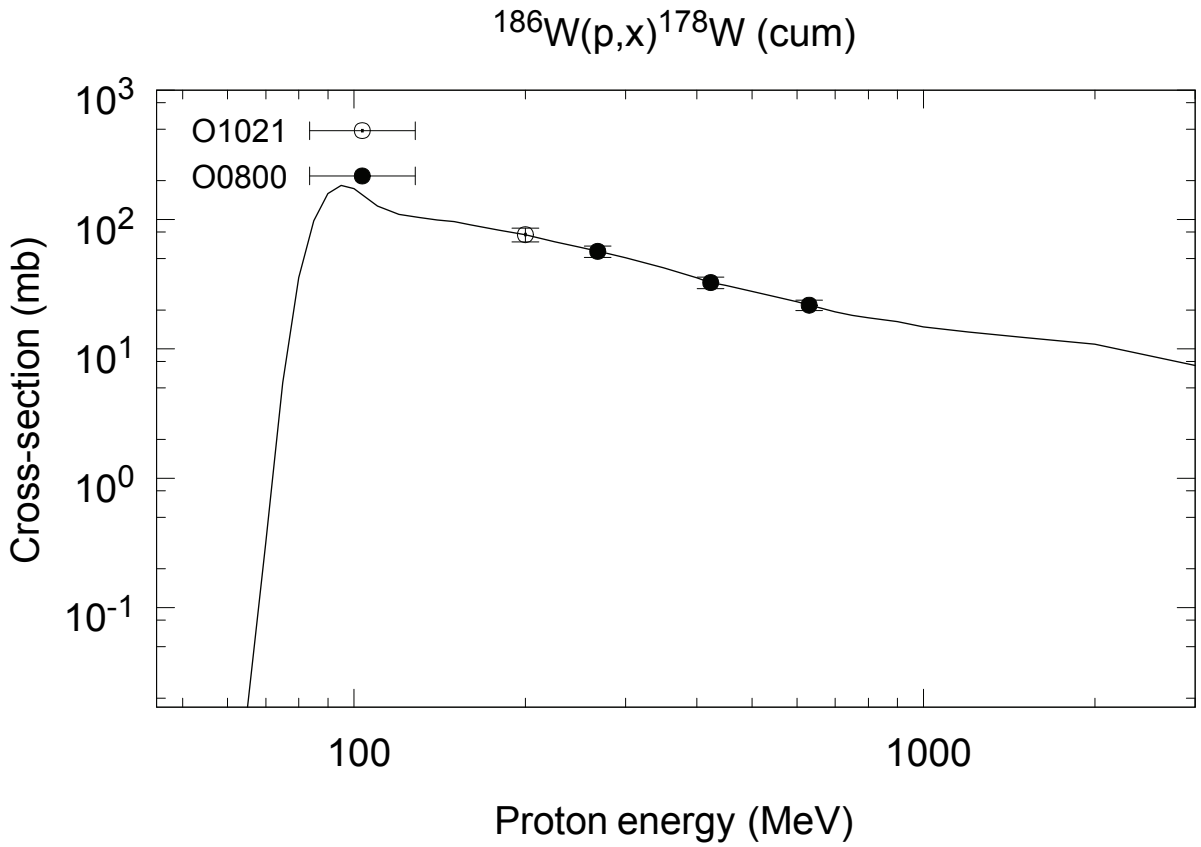

^{186}W(p,x)^{184}Ta (cum)
O1021
Cross-section (mb)
Proton energy (MeV)

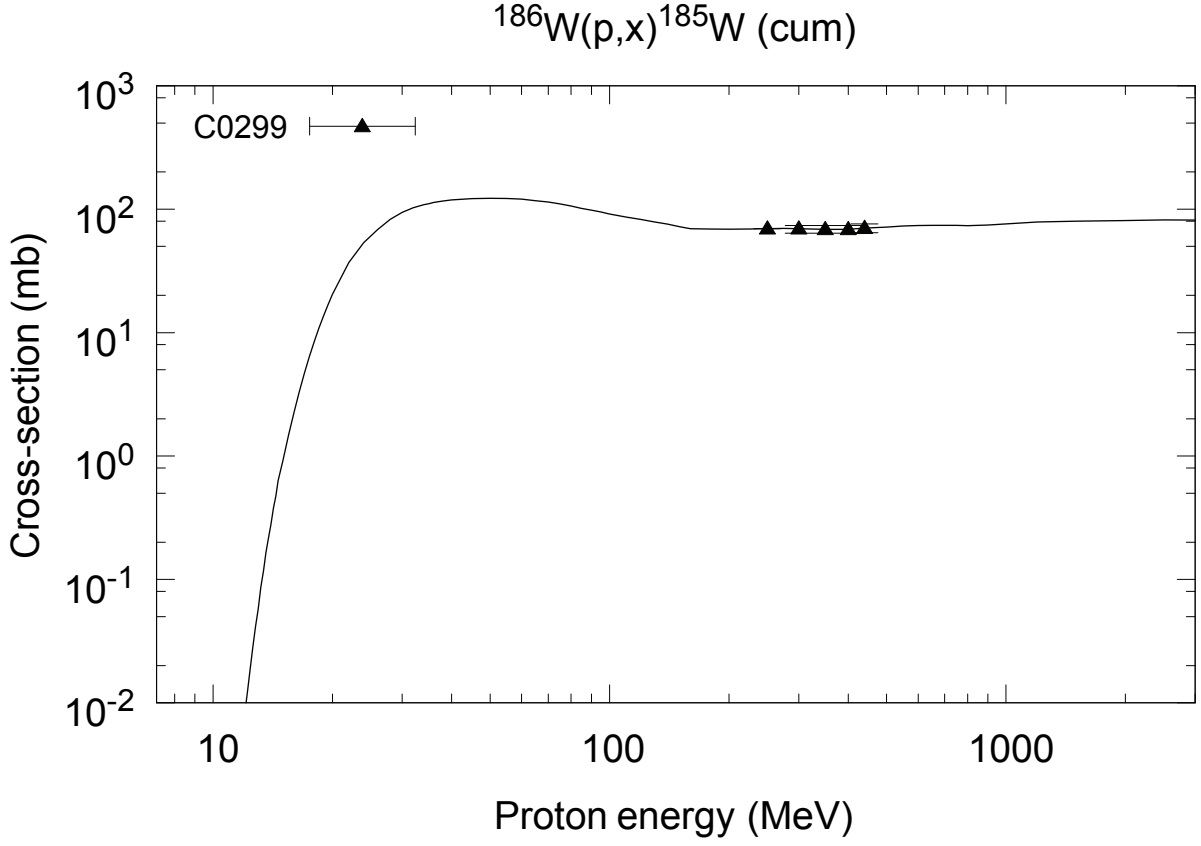

^{186}W(p,x)^{185}Ta (cum)
C0299
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

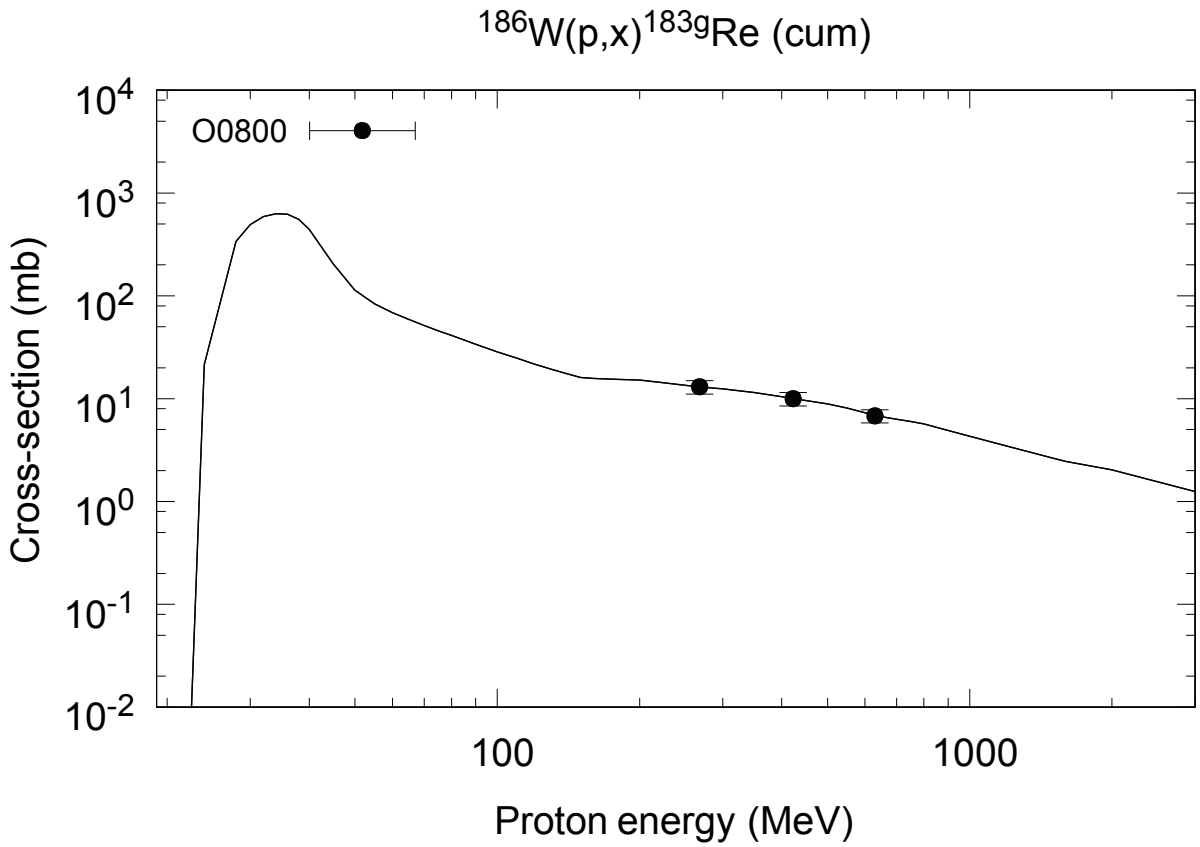

^{186}W(p,x)^{174}W (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)


^{186}W(p,x)^{176}W (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)


^{186}W(p,x)^{177}W (cum)
O1021
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)


^{186}W(p,x)^{178}W (cum)
O1021
O0800
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
100
1000
Proton energy (MeV)


^{186}W(p,x)^{185}W (cum)
C0299
Cross-section (mb)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10
100
1000
Proton energy (MeV)


^{186}W(p,x)^{183g}Re (cum)
O0800
Cross-section (mb)
10^4
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
100
1000
Proton energy (MeV)

Appendix C: Index of nuclear reactions available

The information for each reaction includes the mass number of target isotope, the name of residual nucleus, the mass number of the residual, the lowest energy (MeV) of primary protons appeared in the evaluated data files with the non-zero reaction cross-section, the energy of projectile (MeV) corresponding to the maximal value of cross-sections observed below 3 GeV, the maximal value of cross-section (mb), and the brief information about the origin of the cross-section: "O" - results of calculations using nuclear models including general correction of energy dependence of the cross-section; "I" - the measured independent yields of residuals and results of calculations were used for the evaluation; "C" - the available experimental information about cumulative yields and results of calculations were used for the evaluation of reaction cross-section; "N" - measured independent yields of residual nucleus for natural tungsten and calculated cross-sections were applied to get evaluated data; "M" - experimental data, systematics, and results of calculations were used for the evaluation.

180	H - 1	3.0	3000.0	1.41E+04	M	180	C - 14	100.0	3000.0	1.73E+00	O
180	H - 2	6.5	3000.0	3.47E+03	M	180	C - 15	100.0	3000.0	3.62E-01	O
180	H - 3	9.0	3000.0	1.98E+03	M	180	C - 16	100.0	3000.0	1.02E-01	O
180	He- 3	8.5	3000.0	4.28E+02	M	180	N - 12	100.0	3000.0	1.49E-01	O
180	He- 4	3.0	3000.0	2.93E+03	M	180	N - 13	100.0	3000.0	5.80E-01	O
180	He- 5	10.0	3000.0	1.70E+01	O	180	N - 14	40.0	3000.0	1.60E+00	O
180	He- 6	10.0	3000.0	3.55E+01	O	180	N - 15	35.0	3000.0	3.92E+00	O
180	He- 7	17.0	3000.0	2.13E+00	O	180	N - 16	50.0	3000.0	1.11E+00	O
180	He- 8	22.0	3000.0	2.36E-01	O	180	N - 17	100.0	3000.0	6.44E-01	O
180	He- 9	32.0	3000.0	1.25E-02	O	180	N - 18	100.0	3000.0	1.98E-01	O
180	He- 10	38.0	3000.0	3.93E-04	O	180	N - 19	100.0	3000.0	1.08E-01	O
180	He- 11	55.0	3000.0	5.22E-06	O	180	O - 13	100.0	3000.0	4.83E-02	O
180	He- 12	65.0	3000.0	3.63E-08	O	180	O - 14	100.0	3000.0	3.85E-01	O
180	He- 13	85.0	3000.0	1.36E-10	O	180	O - 15	50.0	3000.0	2.13E+00	O
180	Li- 5	30.0	3000.0	1.15E+01	O	180	O - 16	40.0	3000.0	9.04E+00	O
180	Li- 6	35.0	3000.0	6.84E+00	O	180	O - 17	40.0	3000.0	4.86E+00	O
180	Li- 7	35.0	3000.0	6.67E+00	O	180	O - 18	40.0	3000.0	5.95E+00	O
180	Li- 8	40.0	3000.0	2.19E+00	O	180	O - 19	50.0	3000.0	2.95E+00	O
180	Li- 9	50.0	3000.0	1.29E+00	O	180	O - 20	50.0	3000.0	3.25E+00	O
180	Li- 10	100.0	3000.0	2.13E-01	O	180	O - 21	50.0	3000.0	1.45E+00	O
180	Li- 11	100.0	3000.0	5.04E-02	O	180	O - 22	50.0	3000.0	1.35E+00	O
180	Be- 7	50.0	3000.0	8.98E+00	O	180	F - 15	100.0	3000.0	1.42E-02	O
180	Be- 8	30.0	3000.0	2.42E+01	O	180	F - 16	100.0	3000.0	8.85E-02	O
180	Be- 9	35.0	3000.0	1.73E+01	O	180	F - 17	100.0	3000.0	3.52E-01	O
180	Be- 10	35.0	3000.0	1.58E+01	O	180	F - 18	100.0	3000.0	8.86E-01	O
180	Be- 11	50.0	3000.0	4.60E+00	O	180	F - 19	50.0	3000.0	1.03E+00	O
180	Be- 12	50.0	3000.0	2.38E+00	O	180	F - 20	100.0	3000.0	6.70E-01	O
180	Be- 13	100.0	3000.0	2.38E-01	O	180	F - 21	50.0	3000.0	1.02E+00	O
180	B - 10	40.0	3000.0	8.63E+00	O	180	F - 22	100.0	3000.0	2.19E-01	O
180	B - 11	35.0	3000.0	1.74E+01	O	180	F - 23	100.0	3000.0	3.25E-01	O
180	B - 12	40.0	3000.0	7.56E+00	O	180	F - 24	100.0	3000.0	1.03E-01	O
180	B - 13	50.0	3000.0	5.34E+00	O	180	Ne- 16	100.0	3000.0	8.74E-03	O
180	B - 14	50.0	3000.0	1.48E+00	O	180	Ne- 17	100.0	3000.0	3.24E-02	O
180	B - 15	100.0	3000.0	3.78E-01	O	180	Ne- 18	100.0	3000.0	1.73E-01	O
180	C - 10	100.0	3000.0	5.32E-01	O	180	Ne- 19	100.0	3000.0	4.47E-01	O
180	C - 11	100.0	3000.0	2.87E+00	O	180	Ne- 20	50.0	3000.0	3.71E+00	O
180	C - 12	35.0	3000.0	1.21E+00	O	180	Ne- 21	50.0	3000.0	2.03E+00	O
180	C - 13	100.0	3000.0	3.17E+00	O	180	Ne- 22	40.0	3000.0	7.76E+00	O

180	Ne- 23	50.0	3000.0	3.62E+00	O	180	P - 29	100.0	3000.0	1.08E-01	O
180	Ne- 24	40.0	3000.0	4.87E+00	O	180	P - 30	100.0	3000.0	5.58E-01	O
180	Ne- 25	50.0	3000.0	2.52E+00	O	180	P - 31	50.0	3000.0	1.06E+00	O
180	Ne- 26	50.0	3000.0	2.03E+00	O	180	P - 32	50.0	3000.0	1.00E+00	O
180	Na- 19	100.0	3000.0	1.04E-02	O	180	P - 33	100.0	3000.0	1.03E+00	O
180	Na- 20	100.0	3000.0	6.39E-02	O	180	P - 34	100.0	3000.0	3.95E-01	O
180	Na- 21	100.0	3000.0	2.70E-01	O	180	P - 35	100.0	3000.0	2.71E-01	O
180	Na- 22	100.0	3000.0	7.07E-01	O	180	P - 36	100.0	3000.0	1.34E-01	O
180	Na- 23	50.0	3000.0	1.68E+00	O	180	P - 37	100.0	3000.0	1.87E-01	O
180	Na- 24g	100.0	3000.0	3.52E-01	O	180	P - 38	100.0	3000.0	9.59E-02	O
180	Na- 24m	100.0	3000.0	3.52E-01	O	180	S - 27	100.0	3000.0	1.34E-04	O
180	Na- 25	40.0	3000.0	1.88E+00	O	180	S - 28	100.0	3000.0	7.74E-04	O
180	Na- 26	50.0	3000.0	1.18E+00	O	180	S - 29	100.0	3000.0	3.20E-03	O
180	Na- 27	50.0	3000.0	1.25E+00	O	180	S - 30	100.0	3000.0	2.61E-02	O
180	Na- 28	100.0	3000.0	2.67E-01	O	180	S - 31	100.0	3000.0	1.15E-01	O
180	Mg- 19	100.0	3000.0	2.11E-04	O	180	S - 32	100.0	3000.0	4.72E-01	O
180	Mg- 20	100.0	3000.0	1.09E-03	O	180	S - 33	50.0	3000.0	1.37E+00	O
180	Mg- 21	100.0	3000.0	4.83E-03	O	180	S - 34	40.0	3000.0	1.96E+00	O
180	Mg- 22	100.0	3000.0	3.29E-02	O	180	S - 35	40.0	3000.0	1.76E+00	O
180	Mg- 23	100.0	3000.0	2.36E-01	O	180	S - 36	35.0	3000.0	3.01E+00	O
180	Mg- 24	100.0	3000.0	8.17E-01	O	180	S - 37	40.0	3000.0	2.02E+00	O
180	Mg- 25	100.0	3000.0	1.67E+00	O	180	S - 38	35.0	3000.0	2.82E+00	O
180	Mg- 26	40.0	3000.0	1.11E+00	O	180	S - 39	40.0	3000.0	1.78E+00	O
180	Mg- 27	100.0	3000.0	6.57E-01	O	180	S - 40	40.0	3000.0	2.30E+00	O
180	Mg- 28	40.0	3000.0	1.07E+00	O	180	S - 41	100.0	3000.0	4.83E-01	O
180	Mg- 29	100.0	3000.0	3.18E-01	O	180	Cl- 30	100.0	3000.0	4.47E-05	O
180	Mg- 30	100.0	3000.0	2.83E-01	O	180	Cl- 31	100.0	3000.0	5.85E-04	O
180	Mg- 31	100.0	3000.0	1.31E-01	O	180	Cl- 32	100.0	3000.0	4.80E-03	O
180	Al- 20	100.0	3000.0	3.00E-06	O	180	Cl- 33	100.0	3000.0	5.44E-02	O
180	Al- 21	100.0	3000.0	6.79E-05	O	180	Cl- 34g	100.0	3000.0	1.39E-01	O
180	Al- 22	100.0	3000.0	1.63E-04	O	180	Cl- 34m	100.0	3000.0	2.46E-01	O
180	Al- 23	100.0	3000.0	2.08E-03	O	180	Cl- 35	50.0	3000.0	1.08E+00	O
180	Al- 24g	100.0	3000.0	9.82E-03	O	180	Cl- 36	50.0	3000.0	1.25E+00	O
180	Al- 24m	100.0	3000.0	9.82E-03	O	180	Cl- 37	100.0	3000.0	1.37E+00	O
180	Al- 25	100.0	3000.0	1.65E-01	O	180	Cl- 38g	100.0	3000.0	2.59E-01	O
180	Al- 26g	100.0	3000.0	4.05E-01	O	180	Cl- 38m	100.0	3000.0	2.59E-01	O
180	Al- 26m	100.0	3000.0	2.14E-01	O	180	Cl- 39	100.0	3000.0	3.40E-01	O
180	Al- 27	100.0	3000.0	1.62E+00	O	180	Cl- 40	100.0	3000.0	1.92E-01	O
180	Al- 28	100.0	3000.0	1.26E+00	O	180	Cl- 41	100.0	3000.0	3.37E-01	O
180	Al- 29	100.0	3000.0	5.74E-01	O	180	Cl- 42	100.0	3000.0	1.77E-01	O
180	Al- 30	100.0	3000.0	2.24E-01	O	180	Ar- 31	100.0	3000.0	1.21E-04	O
180	Al- 31	100.0	3000.0	1.67E-01	O	180	Ar- 32	100.0	3000.0	6.38E-04	O
180	Al- 32	100.0	3000.0	7.54E-02	O	180	Ar- 33	100.0	3000.0	2.41E-03	O
180	Al- 33	100.0	3000.0	9.39E-02	O	180	Ar- 34	100.0	3000.0	1.32E-02	O
180	Al- 34	100.0	3000.0	4.22E-02	O	180	Ar- 35	100.0	3000.0	6.09E-02	O
180	Si- 23	100.0	3000.0	4.17E-05	O	180	Ar- 36	100.0	3000.0	3.78E-01	O
180	Si- 24	100.0	3000.0	1.82E-04	O	180	Ar- 37	50.0	3000.0	1.14E+00	O
180	Si- 25	100.0	3000.0	1.33E-03	O	180	Ar- 38	40.0	3000.0	1.15E+00	O
180	Si- 26	100.0	3000.0	1.60E-02	O	180	Ar- 39	40.0	3000.0	1.26E+00	O
180	Si- 27	100.0	3000.0	1.34E-01	O	180	Ar- 40	35.0	3000.0	1.72E+00	O
180	Si- 28	100.0	3000.0	6.29E-01	O	180	Ar- 41	35.0	3000.0	1.49E+00	O
180	Si- 29	100.0	3000.0	1.56E+00	O	180	Ar- 42	30.0	3000.0	2.49E+00	O
180	Si- 30	100.0	3000.0	1.47E+00	O	180	Ar- 43	35.0	3000.0	1.64E+00	O
180	Si- 31	100.0	3000.0	7.87E-01	O	180	Ar- 44	35.0	3000.0	1.84E+00	O
180	Si- 32	100.0	3000.0	3.85E-01	O	180	Ar- 45	40.0	3000.0	1.15E+00	O
180	Si- 33	100.0	3000.0	1.77E-01	O	180	K - 37	100.0	3000.0	2.20E-02	O
180	Si- 34	100.0	3000.0	1.56E-01	O	180	K - 38g	100.0	3000.0	1.34E-01	O
180	Si- 35	100.0	3000.0	1.01E-01	O	180	K - 38m	100.0	3000.0	1.34E-01	O
180	P - 24	100.0	3000.0	2.02E-06	O	180	K - 39	200.0	3000.0	1.24E+00	O
180	P - 25	100.0	3000.0	3.05E-05	O	180	K - 40	180.0	3000.0	1.13E+00	O
180	P - 26	100.0	3000.0	8.36E-05	O	180	K - 41	100.0	3000.0	1.72E+00	O
180	P - 27	100.0	3000.0	1.13E-03	O	180	K - 42	100.0	3000.0	9.31E-01	O
180	P - 28	100.0	3000.0	1.01E-02	O	180	K - 43	100.0	3000.0	3.53E-01	O

180	K - 44	100.0	3000.0	1.37E-01	O	180	Cr- 57	100.0	3000.0	1.74E-02	O
180	K - 45	100.0	3000.0	3.70E-02	O	180	Cr- 59	100.0	1000.0	8.98E-04	O
180	K - 46	100.0	3000.0	1.05E-02	O	180	Mn- 50g	100.0	2700.0	1.80E-02	O
180	Ca- 39	100.0	3000.0	1.35E-02	O	180	Mn- 50m	100.0	2700.0	2.71E-02	O
180	Ca- 40	100.0	3000.0	1.95E-01	O	180	Mn- 51	100.0	3000.0	3.76E-01	O
180	Ca- 41	100.0	3000.0	8.28E-01	O	180	Mn- 52g	140.0	3000.0	1.30E+00	O
180	Ca- 42	200.0	3000.0	1.18E+00	O	180	Mn- 52m	100.0	3000.0	5.32E-01	O
180	Ca- 43	100.0	3000.0	2.08E+00	O	180	Mn- 53	140.0	3000.0	2.41E+00	O
180	Ca- 44	100.0	3000.0	1.37E+00	O	180	Mn- 54	100.0	2500.0	1.43E+00	O
180	Ca- 45	100.0	3000.0	4.98E-01	O	180	Mn- 55	100.0	3000.0	2.15E+00	O
180	Ca- 46	100.0	3000.0	2.35E-01	O	180	Mn- 56	100.0	3000.0	8.44E-01	O
180	Ca- 47	100.0	3000.0	6.40E-02	O	180	Mn- 57	100.0	3000.0	4.14E-01	O
180	Ca- 48	100.0	3000.0	1.93E-02	O	180	Mn- 58g	100.0	3000.0	2.63E-02	O
180	Ca- 49	100.0	1000.0	2.34E-03	O	180	Mn- 58m	100.0	3000.0	9.33E-02	O
180	Sc- 41	100.0	3000.0	1.19E-02	O	180	Mn- 59	100.0	3000.0	2.56E-02	O
180	Sc- 42g	100.0	3000.0	7.51E-02	O	180	Mn- 60g	100.0	3000.0	2.09E-03	O
180	Sc- 42m	100.0	3000.0	5.84E-02	O	180	Mn- 60m	100.0	3000.0	9.27E-03	O
180	Sc- 43	100.0	3000.0	6.49E-01	O	180	Mn- 61	100.0	1000.0	1.45E-03	O
180	Sc- 44g	160.0	3000.0	1.01E+00	O	180	Fe- 51	100.0	3000.0	2.76E-03	O
180	Sc- 44m	100.0	3000.0	6.41E-01	O	180	Fe- 52g	100.0	3000.0	1.38E-02	O
180	Sc- 45g	100.0	3000.0	1.22E+00	O	180	Fe- 52m	100.0	3000.0	1.38E-02	O
180	Sc- 45m	100.0	3000.0	1.22E+00	O	180	Fe- 53g	100.0	3000.0	1.26E-01	O
180	Sc- 46g	100.0	3000.0	1.25E+00	O	180	Fe- 53m	100.0	3000.0	1.26E-01	O
180	Sc- 46m	100.0	3000.0	2.61E-01	O	180	Fe- 54	200.0	3000.0	1.67E+00	O
180	Sc- 47	100.0	3000.0	8.18E-01	O	180	Fe- 55	140.0	3000.0	2.25E+00	O
180	Sc- 48	100.0	3000.0	3.45E-01	O	180	Fe- 56	120.0	2500.0	1.32E+00	O
180	Sc- 49	100.0	3000.0	1.44E-01	O	180	Fe- 57	100.0	3000.0	2.49E+00	O
180	Sc- 50g	100.0	3000.0	1.02E-02	O	180	Fe- 58	100.0	3000.0	1.37E+00	O
180	Sc- 50m	100.0	3000.0	1.02E-02	O	180	Fe- 59	100.0	3000.0	4.17E-01	O
180	Sc- 51	100.0	1200.0	5.09E-03	O	180	Fe- 60	100.0	3000.0	1.69E-01	O
180	Ti- 43	100.0	3000.0	7.91E-03	O	180	Fe- 61	100.0	3000.0	3.23E-02	O
180	Ti- 44	100.0	3000.0	9.18E-02	O	180	Fe- 62	100.0	3000.0	1.25E-02	O
180	Ti- 45	100.0	3000.0	5.84E-01	O	180	Fe- 63	100.0	1000.0	2.27E-03	O
180	Ti- 46	225.0	3000.0	1.49E+00	O	180	Co- 54g	100.0	3000.0	1.47E-02	O
180	Ti- 47	120.0	2500.0	1.47E+00	O	180	Co- 54m	100.0	3000.0	1.71E-02	O
180	Ti- 48	100.0	3000.0	2.12E+00	O	180	Co- 55	100.0	3000.0	2.57E-01	O
180	Ti- 49	100.0	3000.0	8.93E-01	O	180	Co- 56	160.0	3000.0	1.94E+00	O
180	Ti- 50	100.0	3000.0	4.10E-01	O	180	Co- 57	160.0	2500.0	2.13E+00	O
180	Ti- 51	100.0	3000.0	6.99E-02	O	180	Co- 58g	90.0	2500.0	1.03E+00	O
180	Ti- 52	100.0	3000.0	3.80E-02	O	180	Co- 58m	100.0	3000.0	1.99E+00	O
180	Ti- 53	100.0	3000.0	5.28E-03	O	180	Co- 59	80.0	2500.0	9.95E-01	O
180	V - 45	100.0	3000.0	7.31E-03	O	180	Co- 60g	100.0	3000.0	1.10E+00	O
180	V - 46g	100.0	3000.0	5.28E-02	O	180	Co- 60m	100.0	3000.0	4.46E-01	O
180	V - 46m	100.0	3000.0	5.28E-02	O	180	Co- 61	100.0	3000.0	8.78E-01	O
180	V - 47	100.0	3000.0	5.11E-01	O	180	Co- 62g	100.0	3000.0	1.47E-01	O
180	V - 48	140.0	3000.0	1.93E+00	O	180	Co- 62m	100.0	3000.0	1.12E-01	O
180	V - 49	140.0	3000.0	1.59E+00	O	180	Co- 63	100.0	3000.0	1.18E-01	O
180	V - 50	120.0	3000.0	1.37E+00	O	180	Co- 64	100.0	3000.0	1.88E-02	O
180	V - 51	100.0	3000.0	1.38E+00	O	180	Co- 65	100.0	750.0	8.95E-03	O
180	V - 52	100.0	3000.0	4.49E-01	O	180	Co- 66	100.0	250.0	1.11E-03	O
180	V - 53	100.0	3000.0	1.58E-01	O	180	Ni- 56	100.0	3000.0	2.02E-02	O
180	V - 54	100.0	3000.0	2.70E-02	O	180	Ni- 57	100.0	2500.0	1.92E-01	O
180	V - 55	100.0	3000.0	1.20E-02	O	180	Ni- 58	250.0	3000.0	1.24E+00	O
180	V - 56	100.0	1000.0	2.27E-03	O	180	Ni- 59	160.0	2500.0	2.30E+00	O
180	Cr- 48	100.0	3000.0	5.85E-02	O	180	Ni- 60	110.0	2500.0	2.23E+00	O
180	Cr- 49	100.0	3000.0	4.88E-01	O	180	Ni- 61	110.0	2500.0	1.69E+00	O
180	Cr- 50	160.0	3000.0	1.55E+00	O	180	Ni- 62	100.0	3000.0	3.02E+00	O
180	Cr- 51	160.0	3000.0	1.89E+00	O	180	Ni- 63	100.0	3000.0	1.05E+00	O
180	Cr- 52	80.0	3000.0	1.11E+00	O	180	Ni- 64	100.0	3000.0	5.92E-01	O
180	Cr- 53	100.0	3000.0	1.51E+00	O	180	Ni- 65	100.0	3000.0	1.69E-01	O
180	Cr- 54	100.0	3000.0	6.69E-01	O	180	Ni- 66	100.0	3000.0	5.47E-02	O
180	Cr- 55	100.0	3000.0	2.12E-01	O	180	Ni- 67	100.0	600.0	9.42E-03	O
180	Cr- 56	100.0	3000.0	7.32E-02	O	180	Ni- 68	100.0	900.0	3.77E-03	O

180	Ni- 69g	100.0	1200.0	4.76E-04	O
180	Ni- 69m	100.0	1200.0	4.76E-04	O
180	Cu- 58	100.0	2500.0	9.60E-03	O
180	Cu- 59	100.0	2500.0	8.42E-02	O
180	Cu- 60	100.0	3000.0	5.04E-01	O
180	Cu- 61	200.0	3000.0	1.60E+00	O
180	Cu- 62	140.0	2500.0	2.36E+00	O
180	Cu- 63	90.0	2500.0	1.87E+00	O
180	Cu- 64	70.0	2500.0	1.25E+00	O
180	Cu- 65	100.0	3000.0	1.51E+00	O
180	Cu- 66	100.0	3000.0	5.64E-01	O
180	Cu- 67	100.0	3000.0	2.79E-01	O
180	Cu- 68g	100.0	3000.0	1.52E-02	O
180	Cu- 68m	100.0	3000.0	3.18E-02	O
180	Cu- 69	100.0	3000.0	1.24E-02	O
180	Cu- 70g	100.0	1000.0	8.71E-04	O
180	Cu- 70m	100.0	1000.0	1.51E-03	O
180	Cu- 70m2	100.0	1000.0	2.38E-06	O
180	Cu- 71	100.0	750.0	8.72E-04	O
180	Cu- 72	100.0	1000.0	4.30E-04	O
180	Zn- 61g	100.0	2500.0	7.66E-03	O
180	Zn- 61m	100.0	2500.0	7.66E-03	O
180	Zn- 61m2	100.0	2500.0	7.66E-03	O
180	Zn- 61m3	100.0	2500.0	7.66E-03	O
180	Zn- 62	100.0	3000.0	3.43E-01	O
180	Zn- 63	100.0	3000.0	1.27E+00	O
180	Zn- 64	160.0	2500.0	1.45E+00	O
180	Zn- 65	100.0	2500.0	1.59E+00	O
180	Zn- 66	90.0	2500.0	1.14E+00	O
180	Zn- 67	100.0	3000.0	1.98E+00	O
180	Zn- 68	100.0	3000.0	1.30E+00	O
180	Zn- 69g	100.0	3000.0	7.05E-02	O
180	Zn- 69m	100.0	3000.0	3.52E-01	O
180	Zn- 70	100.0	3000.0	1.08E-01	O
180	Zn- 71g	100.0	2000.0	1.19E-02	O
180	Zn- 71m	100.0	2000.0	7.29E-03	O
180	Zn- 72	100.0	3000.0	6.96E-03	O
180	Zn- 73g	100.0	3000.0	6.39E-04	O
180	Zn- 73m	100.0	3000.0	6.39E-04	O
180	Zn- 73m2	100.0	3000.0	6.39E-04	O
180	Zn- 75	100.0	200.0	2.86E-04	O
180	Ga- 62	100.0	2500.0	2.97E-03	O
180	Ga- 63	100.0	2500.0	3.10E-02	O
180	Ga- 64	100.0	2500.0	1.69E-01	O
180	Ga- 65	100.0	3000.0	8.71E-01	O
180	Ga- 66	160.0	3000.0	1.59E+00	O
180	Ga- 67	110.0	2500.0	1.95E+00	O
180	Ga- 68	70.0	2500.0	1.56E+00	O
180	Ga- 69	100.0	3000.0	2.50E+00	O
180	Ga- 70	100.0	3000.0	1.47E+00	O
180	Ga- 71	100.0	3000.0	4.16E-01	O
180	Ga- 72g	100.0	3000.0	6.16E-02	O
180	Ga- 72m	100.0	3000.0	6.16E-02	O
180	Ga- 73	100.0	3000.0	4.44E-02	O
180	Ga- 74g	100.0	1000.0	4.29E-03	O
180	Ga- 74m	100.0	1000.0	3.04E-03	O
180	Ga- 75	100.0	900.0	1.73E-03	O
180	Ga- 76	100.0	200.0	7.50E-04	O
180	Ga- 77	100.0	500.0	3.50E-04	O
180	Ge- 65	100.0	2500.0	1.67E-02	O
180	Ge- 66	100.0	2500.0	1.06E-01	O
180	Ge- 67	100.0	3000.0	6.02E-01	O
180	Ge- 68	100.0	3000.0	2.58E+00	O
180	Ge- 69	160.0	3000.0	1.42E+00	O
180	Ge- 70	90.0	2500.0	1.56E+00	O
180	Ge- 71g	100.0	3000.0	1.51E+00	O
180	Ge- 71m	100.0	3000.0	1.51E+00	O
180	Ge- 72	100.0	3000.0	2.14E+00	O
180	Ge- 73g	100.0	3000.0	2.96E-01	O
180	Ge- 73m	100.0	3000.0	2.96E-01	O
180	Ge- 74	100.0	3000.0	2.97E-01	O
180	Ge- 75g	100.0	3000.0	8.90E-03	O
180	Ge- 75m	100.0	3000.0	5.21E-02	O
180	Ge- 76	100.0	3000.0	3.57E-02	O
180	Ge- 77g	100.0	3000.0	6.28E-03	O
180	Ge- 77m	100.0	3000.0	5.60E-04	O
180	Ge- 78	100.0	750.0	3.74E-03	O
180	As- 67	100.0	2500.0	8.09E-03	O
180	As- 68	100.0	2500.0	6.41E-02	O
180	As- 69	100.0	3000.0	4.61E-01	O
180	As- 70	100.0	3000.0	1.75E+00	O
180	As- 71	120.0	3000.0	1.45E+00	O
180	As- 72	90.0	3000.0	1.55E+00	O
180	As- 73	80.0	2000.0	1.07E+00	O
180	As- 74	100.0	3000.0	2.05E+00	O
180	As- 75g	100.0	3000.0	5.87E-01	O
180	As- 75m	100.0	3000.0	5.87E-01	O
180	As- 76	100.0	3000.0	3.84E-01	O
180	As- 77	100.0	3000.0	1.79E-01	O
180	As- 78	100.0	3000.0	3.59E-02	O
180	As- 79	100.0	2500.0	1.43E-02	O
180	As- 80	100.0	800.0	4.38E-03	O
180	As- 81	100.0	500.0	7.00E-04	O
180	Se- 69	100.0	2500.0	6.29E-03	O
180	Se- 70	100.0	2500.0	5.92E-02	O
180	Se- 71	100.0	2000.0	2.53E-01	O
180	Se- 72	100.0	3000.0	1.51E+00	O
180	Se- 73g	100.0	3000.0	1.80E+00	O
180	Se- 73m	100.0	3000.0	1.97E+00	O
180	Se- 74	140.0	3000.0	1.74E+00	O
180	Se- 75	90.0	3000.0	1.30E+00	O
180	Se- 76	100.0	3000.0	2.80E+00	O
180	Se- 77g	100.0	3000.0	1.07E-01	O
180	Se- 77m	100.0	3000.0	8.52E-01	O
180	Se- 78	100.0	3000.0	6.06E-01	O
180	Se- 79g	100.0	3000.0	1.64E-01	O
180	Se- 79m	100.0	3000.0	1.10E-02	O
180	Se- 80	100.0	3000.0	6.18E-02	O
180	Se- 81g	100.0	1000.0	2.40E-03	O
180	Se- 81m	100.0	900.0	1.09E-02	O
180	Se- 82	100.0	3000.0	6.32E-03	O
180	Se- 83g	100.0	220.0	5.75E-04	O
180	Se- 83m	100.0	220.0	4.09E-04	O
180	Br- 72g	100.0	2500.0	9.90E-03	O
180	Br- 72m	100.0	2500.0	2.43E-02	O
180	Br- 73	100.0	2500.0	1.61E-01	O
180	Br- 74g	100.0	3000.0	4.73E-01	O
180	Br- 74m	100.0	3000.0	6.55E-01	O
180	Br- 75	160.0	3000.0	1.19E+00	O
180	Br- 76g	100.0	3000.0	2.20E+00	O
180	Br- 76m	100.0	3000.0	2.86E+00	O
180	Br- 77g	100.0	3000.0	5.27E-01	O
180	Br- 77m	90.0	3000.0	1.10E+00	O
180	Br- 78	100.0	3000.0	2.83E+00	O
180	Br- 79g	100.0	3000.0	7.68E-01	O
180	Br- 79m	100.0	3000.0	1.01E+00	O

180	Br- 80g	100.0	3000.0	3.49E-01	O	180	Sr- 86	100.0	3000.0	2.71E+00	O
180	Br- 80m	100.0	3000.0	4.69E-01	O	180	Sr- 87g	100.0	3000.0	1.03E+00	O
180	Br- 81	100.0	3000.0	4.54E-01	O	180	Sr- 87m	100.0	3000.0	1.13E-01	O
180	Br- 82g	100.0	3000.0	6.68E-02	O	180	Sr- 88	100.0	3000.0	6.10E-01	O
180	Br- 82m	100.0	3000.0	2.54E-02	O	180	Sr- 89	100.0	3000.0	8.73E-02	O
180	Br- 83	100.0	3000.0	4.30E-02	O	180	Sr- 90	100.0	3000.0	4.21E-02	O
180	Br- 84g	100.0	3000.0	1.46E-03	O	180	Sr- 91	100.0	3000.0	1.55E-02	O
180	Br- 84m	100.0	3000.0	6.22E-03	O	180	Sr- 92	100.0	2000.0	3.46E-03	O
180	Br- 85	100.0	300.0	1.82E-03	O	180	Sr- 93	100.0	140.0	5.96E-04	O
180	Kr- 73	100.0	2500.0	2.50E-03	O	180	Y - 79	100.0	3000.0	1.54E-03	O
180	Kr- 74	100.0	2500.0	2.30E-02	O	180	Y - 80g	100.0	3000.0	7.10E-03	O
180	Kr- 75	100.0	2500.0	1.30E-01	O	180	Y - 80m	100.0	3000.0	4.53E-03	O
180	Kr- 76	100.0	2500.0	6.94E-01	O	180	Y - 81	100.0	2500.0	3.18E-02	O
180	Kr- 77	180.0	3000.0	1.17E+00	O	180	Y - 82	100.0	2500.0	1.40E-01	O
180	Kr- 78	140.0	3000.0	1.54E+00	O	180	Y - 83g	100.0	2500.0	2.70E-01	O
180	Kr- 79g	100.0	3000.0	9.13E-01	O	180	Y - 83m	100.0	2500.0	2.61E-01	O
180	Kr- 79m	100.0	3000.0	1.17E+00	O	180	Y - 84g	100.0	2500.0	6.33E-01	O
180	Kr- 80	70.0	3000.0	1.17E+00	O	180	Y - 84m	100.0	2500.0	6.33E-01	O
180	Kr- 81g	100.0	3000.0	1.95E+00	O	180	Y - 85g	100.0	3000.0	3.84E-01	O
180	Kr- 81m	100.0	3000.0	9.21E-02	O	180	Y - 85m	120.0	3000.0	1.56E+00	O
180	Kr- 82	100.0	3000.0	1.63E+00	O	180	Y - 86g	90.0	3000.0	1.06E+00	O
180	Kr- 83g	100.0	3000.0	4.30E-01	O	180	Y - 86m	90.0	3000.0	1.08E+00	O
180	Kr- 83m	100.0	3000.0	3.23E-02	O	180	Y - 87g	100.0	3000.0	3.84E-01	O
180	Kr- 84	100.0	3000.0	2.09E-01	O	180	Y - 87m	80.0	3000.0	1.51E+00	O
180	Kr- 85g	100.0	3000.0	5.18E-02	O	180	Y - 88g	10.0	3000.0	1.02E+00	O
180	Kr- 85m	100.0	3000.0	1.83E-02	O	180	Y - 88m	10.0	3000.0	1.02E+00	O
180	Kr- 86	100.0	2500.0	1.60E-02	O	180	Y - 89g	100.0	3000.0	1.46E-01	O
180	Kr- 87	100.0	300.0	2.18E-03	O	180	Y - 89m	100.0	3000.0	1.28E+00	O
180	Kr- 88	100.0	3000.0	2.96E-03	O	180	Y - 90g	100.0	3000.0	1.08E-01	O
180	Rb- 75	100.0	3000.0	2.03E-03	O	180	Y - 90m	100.0	3000.0	2.62E-01	O
180	Rb- 76	100.0	2500.0	1.28E-02	O	180	Y - 91g	100.0	3000.0	7.52E-02	O
180	Rb- 77	100.0	2000.0	6.83E-02	O	180	Y - 91m	100.0	3000.0	1.04E-01	O
180	Rb- 78g	100.0	2500.0	1.69E-01	O	180	Y - 92	100.0	2000.0	5.32E-02	O
180	Rb- 78m	100.0	2500.0	1.69E-01	O	180	Y - 93g	100.0	2500.0	1.14E-02	O
180	Rb- 79	100.0	2500.0	1.07E+00	O	180	Y - 93m	100.0	2500.0	1.14E-02	O
180	Rb- 80	160.0	3000.0	1.36E+00	O	180	Y - 94	100.0	1000.0	2.25E-03	O
180	Rb- 81g	100.0	3000.0	7.30E-01	O	180	Zr- 82	100.0	3000.0	3.90E-03	O
180	Rb- 81m	110.0	3000.0	1.25E+00	O	180	Zr- 83	100.0	2500.0	2.21E-02	O
180	Rb- 82g	100.0	3000.0	4.99E-01	O	180	Zr- 84	100.0	2500.0	1.45E-01	O
180	Rb- 82m	90.0	3000.0	1.12E+00	O	180	Zr- 85g	100.0	2500.0	3.45E-01	O
180	Rb- 83g	100.0	3000.0	1.30E+00	O	180	Zr- 85m	100.0	2500.0	1.71E-01	O
180	Rb- 83m	100.0	3000.0	1.30E+00	O	180	Zr- 86	180.0	3000.0	1.18E+00	O
180	Rb- 84g	100.0	3000.0	6.70E-01	O	180	Zr- 87g	160.0	3000.0	1.96E+00	O
180	Rb- 84m	100.0	3000.0	8.20E-01	O	180	Zr- 87m	100.0	2500.0	9.16E-02	O
180	Rb- 85	100.0	3000.0	8.53E-01	O	180	Zr- 88	110.0	3000.0	2.86E+00	O
180	Rb- 86g	100.0	3000.0	7.40E-02	O	180	Zr- 89g	90.0	3000.0	1.75E+00	O
180	Rb- 86m	100.0	3000.0	2.54E-01	O	180	Zr- 89m	100.0	3000.0	4.62E-01	O
180	Rb- 87	100.0	3000.0	1.64E-01	O	180	Zr- 90g	100.0	3000.0	2.13E+00	O
180	Rb- 88	100.0	3000.0	1.71E-02	O	180	Zr- 90m	100.0	3000.0	2.13E+00	O
180	Rb- 89	100.0	1000.0	2.65E-03	O	180	Zr- 91	100.0	3000.0	1.42E+00	O
180	Rb- 90g	100.0	900.0	4.14E-04	O	180	Zr- 92	100.0	2500.0	9.37E-01	O
180	Rb- 90m	100.0	900.0	4.55E-04	O	180	Zr- 93	100.0	3000.0	3.56E-01	O
180	Sr- 77	100.0	2500.0	1.00E-03	O	180	Zr- 94	100.0	2500.0	1.54E-01	O
180	Sr- 78	100.0	2500.0	7.76E-03	O	180	Zr- 95	100.0	3000.0	4.04E-02	O
180	Sr- 79	100.0	2500.0	4.54E-02	O	180	Zr- 96	100.0	2500.0	1.01E-02	O
180	Sr- 80	100.0	2500.0	3.05E-01	O	180	Zr- 97	100.0	800.0	3.61E-03	O
180	Sr- 81	100.0	2500.0	9.06E-01	O	180	Nb- 85g	100.0	2500.0	7.20E-03	O
180	Sr- 82	120.0	3000.0	1.67E+00	O	180	Nb- 85m	100.0	2500.0	7.20E-03	O
180	Sr- 83g	140.0	3000.0	1.66E+00	O	180	Nb- 86g	100.0	2500.0	3.23E-02	O
180	Sr- 83m	100.0	3000.0	7.71E-01	O	180	Nb- 86m	100.0	2500.0	3.23E-02	O
180	Sr- 84	100.0	3000.0	1.89E+00	O	180	Nb- 87g	100.0	2500.0	5.07E-02	O
180	Sr- 85g	70.0	3000.0	1.17E+00	O	180	Nb- 87m	100.0	2500.0	1.91E-01	O
180	Sr- 85m	100.0	3000.0	2.66E-01	O	180	Nb- 88g	100.0	2500.0	3.84E-01	O

```
180  Nb- 88m  100.0 2500.0 3.84E-01 O
180  Nb- 89g  120.0 3000.0 2.11E+00 O
180  Nb- 89m  100.0 2500.0 1.57E-01 O
180  Nb- 90g  100.0 3000.0 2.72E+00 O
180  Nb- 90m  100.0 3000.0 6.95E-01 O
180  Nb- 90m2 100.0 3000.0 4.89E-03 O
180  Nb- 91g   60.0 3000.0 1.47E+00 O
180  Nb- 91m  100.0 3000.0 1.18E+00 O
180  Nb- 92g  100.0 3000.0 1.61E+00 O
180  Nb- 92m  100.0 3000.0 5.21E-01 O
180  Nb- 93g  100.0 3000.0 1.33E+00 O
180  Nb- 93m  100.0 3000.0 1.14E-01 O
180  Nb- 94g  100.0 3000.0 5.30E-01 O
180  Nb- 94m  100.0 3000.0 1.64E-01 O
180  Nb- 95g  100.0 2500.0 3.56E-01 O
180  Nb- 95m  100.0 2500.0 1.24E-02 O
180  Nb- 96   100.0 3000.0 1.43E-01 O
180  Nb- 97g  100.0 3000.0 4.97E-02 O
180  Nb- 97m  100.0 3000.0 1.26E-02 O
180  Nb- 98g  100.0 3000.0 8.66E-03 O
180  Nb- 98m  100.0 3000.0 2.86E-03 O
180  Nb- 99g  100.0 3000.0 1.38E-03 O
180  Nb- 99m  100.0 3000.0 1.08E-03 O
180  Nb-100g  100.0  800.0 7.73E-04 O
180  Nb-100m  100.0  800.0 1.35E-04 O
180  Mo- 87   100.0 3000.0 6.72E-03 O
180  Mo- 88   100.0 2500.0 3.64E-02 O
180  Mo- 89g  100.0 2500.0 1.01E-01 O
180  Mo- 89m  100.0 2500.0 1.01E-01 O
180  Mo- 90   100.0 3000.0 8.43E-01 O
180  Mo- 91g  160.0 3000.0 2.42E+00 O
180  Mo- 91m  100.0 3000.0 3.59E-01 O
180  Mo- 92   100.0 3000.0 3.86E+00 O
180  Mo- 93g  100.0 3000.0 2.36E+00 O
180  Mo- 93m  100.0 3000.0 2.36E+00 O
180  Mo- 94   100.0 3000.0 3.43E+00 O
180  Mo- 95   100.0 3000.0 1.97E+00 O
180  Mo- 96   100.0 2500.0 1.26E+00 O
180  Mo- 97   100.0 3000.0 4.94E-01 O
180  Mo- 98   100.0 2500.0 2.32E-01 O
180  Mo- 99   100.0 3000.0 7.29E-02 O
180  Mo-100   100.0 2000.0 2.74E-02 O
180  Mo-101   100.0 1500.0 6.88E-03 O
180  Mo-102   100.0 2000.0 5.33E-03 O
180  Mo-103   100.0  900.0 3.55E-04 O
180  Mo-104   100.0  900.0 1.10E-04 O
180  Tc- 88g  100.0 3000.0 7.51E-04 O
180  Tc- 88m  100.0 3000.0 7.51E-04 O
180  Tc- 90g  100.0 2500.0 1.34E-02 O
180  Tc- 90m  100.0 2500.0 1.34E-02 O
180  Tc- 91g  100.0 2500.0 9.22E-02 O
180  Tc- 91m  100.0 2500.0 1.13E-02 O
180  Tc- 92   200.0 3000.0 1.13E+00 O
180  Tc- 93g  160.0 3000.0 3.50E+00 O
180  Tc- 93m  100.0 3000.0 2.43E-01 O
180  Tc- 94g  110.0 3000.0 2.26E+00 O
180  Tc- 94m  100.0 2500.0 1.12E-01 O
180  Tc- 95g   90.0 3000.0 1.49E+00 O
180  Tc- 95m  100.0 2500.0 1.70E-01 O
180  Tc- 96g  100.0 3000.0 2.58E+00 O
180  Tc- 96m  100.0 3000.0 3.69E-01 O
180  Tc- 97g  100.0 2500.0 1.71E+00 O
180  Tc- 97m  100.0 2500.0 9.84E-02 O
180  Tc- 98   100.0 3000.0 1.05E+00 O
180  Tc- 99g  100.0 3000.0 3.87E-01 O
180  Tc- 99m  100.0 3000.0 1.61E-01 O
180  Tc-100   100.0 3000.0 2.19E-01 O
180  Tc-101   100.0 3000.0 9.21E-02 O
180  Tc-102g  100.0 2000.0 1.50E-02 O
180  Tc-102m  100.0 2000.0 1.50E-02 O
180  Tc-103   100.0 2500.0 1.31E-02 O
180  Tc-104   100.0 1000.0 1.82E-03 O
180  Tc-105   100.0  700.0 6.50E-04 O
180  Ru- 92   100.0 3000.0 1.64E-02 O
180  Ru- 93g  100.0 3000.0 1.11E-01 O
180  Ru- 93m  100.0 3000.0 1.09E-02 O
180  Ru- 94   200.0 3000.0 2.90E+00 O
180  Ru- 95   180.0 3000.0 3.59E+00 O
180  Ru- 96   140.0 3000.0 3.17E+00 O
180  Ru- 97   110.0 3000.0 2.55E+00 O
180  Ru- 98   100.0 3000.0 1.46E+00 O
180  Ru- 99   100.0 2500.0 3.07E+00 O
180  Ru-100   100.0 2500.0 2.08E+00 O
180  Ru-101   100.0 3000.0 8.82E-01 O
180  Ru-102   100.0 2000.0 4.94E-01 O
180  Ru-103g  100.0 2000.0 6.76E-02 O
180  Ru-103m  100.0 2000.0 6.76E-02 O
180  Ru-104   100.0 2000.0 6.11E-02 O
180  Ru-105   100.0 2000.0 1.41E-02 O
180  Ru-106   100.0 3000.0 6.75E-03 O
180  Ru-107   100.0 3000.0 1.94E-03 O
180  Rh- 94g  100.0 3000.0 4.85E-03 O
180  Rh- 94m  100.0 3000.0 4.85E-03 O
180  Rh- 95g  100.0 3000.0 4.28E-01 O
180  Rh- 95m  100.0 3000.0 2.56E-02 O
180  Rh- 96g  180.0 3000.0 1.84E+00 O
180  Rh- 96m  100.0 3000.0 2.39E-01 O
180  Rh- 97g  140.0 3000.0 3.06E+00 O
180  Rh- 97m  100.0 3000.0 6.92E-02 O
180  Rh- 98g  110.0 3000.0 1.83E+00 O
180  Rh- 98m  110.0 3000.0 1.83E+00 O
180  Rh- 99g  100.0 2500.0 3.99E-01 O
180  Rh- 99m  110.0 3000.0 2.60E+00 O
180  Rh-100g  110.0 3000.0 1.02E+00 O
180  Rh-100m  110.0 3000.0 1.02E+00 O
180  Rh-101g  100.0 2500.0 3.27E-01 O
180  Rh-101m   60.0 3000.0 1.09E+00 O
180  Rh-102g  100.0 3000.0 1.20E+00 O
180  Rh-102m  100.0 3000.0 1.05E+00 O
180  Rh-103g  100.0 2500.0 2.36E-01 O
180  Rh-103m  100.0 2500.0 1.22E+00 O
180  Rh-104g  100.0 2000.0 3.19E-01 O
180  Rh-104m  100.0 2000.0 3.46E-01 O
180  Rh-105g  100.0 2000.0 2.64E-01 O
180  Rh-105m  100.0 2000.0 8.69E-02 O
180  Rh-106g  100.0 2500.0 3.01E-02 O
180  Rh-106m  100.0 2000.0 7.68E-02 O
180  Rh-107   100.0 2500.0 5.19E-02 O
180  Rh-108g  100.0 1500.0 5.69E-03 O
180  Rh-108m  100.0 1500.0 5.69E-03 O
180  Rh-109   100.0 1200.0 7.65E-03 O
180  Rh-110g  100.0 1000.0 3.13E-04 O
180  Rh-110m  100.0 1000.0 3.13E-04 O
180  Pd- 96   100.0 3000.0 4.86E-02 O
180  Pd- 97   100.0 3000.0 5.09E-01 O
180  Pd- 98   250.0 3000.0 2.42E+00 O
```

```
180  Pd- 99   160.0 3000.0 4.03E+00 O
180  Pd-100   160.0 3000.0 4.75E+00 O
180  Pd-101   140.0 3000.0 4.42E+00 O
180  Pd-102   100.0 3000.0 3.36E+00 O
180  Pd-103    80.0 3000.0 1.84E+00 O
180  Pd-104    80.0 3000.0 1.01E+00 O
180  Pd-105   100.0 2000.0 1.32E+00 O
180  Pd-106   100.0 2500.0 7.75E-01 O
180  Pd-107g  100.0 3000.0 1.36E-01 O
180  Pd-107m  100.0 2000.0 1.68E-01 O
180  Pd-108   100.0 2500.0 1.51E-01 O
180  Pd-109g  100.0 2000.0 1.93E-02 O
180  Pd-109m  100.0 2000.0 2.16E-02 O
180  Pd-110   100.0 1500.0 1.74E-02 O
180  Pd-111g  100.0 1000.0 1.97E-03 O
180  Pd-111m  100.0 1000.0 9.69E-04 O
180  Pd-112   100.0 1000.0 1.11E-03 O
180  Ag- 97   100.0 3000.0 1.43E-03 O
180  Ag- 98   100.0 3000.0 4.25E-02 O
180  Ag- 99g  100.0 3000.0 1.44E-01 O
180  Ag- 99m  100.0 3000.0 3.16E-03 O
180  Ag-100g  225.0 3000.0 1.39E+00 O
180  Ag-100m  100.0 3000.0 1.35E-01 O
180  Ag-101g  250.0 3000.0 2.91E+00 O
180  Ag-101m  100.0 3000.0 1.87E-01 O
180  Ag-102g  160.0 3000.0 3.90E+00 O
180  Ag-102m  100.0 3000.0 3.11E-01 O
180  Ag-103g  140.0 3000.0 4.40E+00 O
180  Ag-103m  100.0 3000.0 2.03E-01 O
180  Ag-104g  110.0 3000.0 3.25E+00 O
180  Ag-104m  100.0 2500.0 5.05E-01 O
180  Ag-105g  100.0 2500.0 1.47E-01 O
180  Ag-105m   80.0 3000.0 2.41E+00 O
180  Ag-106g  100.0 2500.0 2.30E-01 O
180  Ag-106m   60.0 3000.0 1.26E+00 O
180  Ag-107g  100.0 2500.0 9.19E-02 O
180  Ag-107m  100.0 2500.0 1.12E+00 O
180  Ag-108g  100.0 2500.0 4.23E-01 O
180  Ag-108m  100.0 2500.0 2.91E-01 O
180  Ag-109g  100.0 3000.0 1.70E-01 O
180  Ag-109m  100.0 2500.0 2.04E-01 O
180  Ag-110g  100.0 2000.0 9.80E-02 O
180  Ag-110m  100.0 2000.0 5.58E-02 O
180  Ag-111g  100.0 1500.0 2.48E-02 O
180  Ag-111m  100.0 1500.0 4.59E-02 O
180  Ag-112   100.0 3000.0 2.37E-02 O
180  Ag-113g  100.0 3000.0 3.43E-03 O
180  Ag-113m  100.0 3000.0 4.37E-03 O
180  Ag-114g  100.0 1000.0 9.49E-04 O
180  Ag-114m  100.0 1000.0 9.49E-04 O
180  Ag-115g  100.0 2000.0 6.57E-04 O
180  Ag-115m  100.0 2000.0 1.97E-04 O
180  Ag-116g  100.0 1000.0 1.67E-04 O
180  Ag-116m  100.0 1000.0 6.04E-05 O
180  Cd- 99   100.0 3000.0 4.07E-03 O
180  Cd-100   100.0 3000.0 1.29E-02 O
180  Cd-101   100.0 3000.0 1.50E-01 O
180  Cd-102   350.0 3000.0 1.67E+00 O
180  Cd-103   275.0 3000.0 3.81E+00 O
180  Cd-104   200.0 3000.0 5.88E+00 O
180  Cd-105   160.0 3000.0 6.61E+00 O
180  Cd-106   160.0 3000.0 5.64E+00 O
180  Cd-107   140.0 3000.0 4.16E+00 O
180  Cd-108    80.0 3000.0 2.59E+00 O
180  Cd-109    70.0 3000.0 1.45E+00 O
180  Cd-110   100.0 2000.0 1.83E+00 O
180  Cd-111g  100.0 3000.0 1.34E-01 O
180  Cd-111m  100.0 2000.0 6.81E-01 O
180  Cd-112   100.0 2000.0 5.17E-01 O
180  Cd-113g  100.0 2000.0 8.76E-02 O
180  Cd-113m  100.0 2000.0 8.33E-02 O
180  Cd-114   100.0 2000.0 7.73E-02 O
180  Cd-115g  100.0 1500.0 1.47E-02 O
180  Cd-115m  100.0 1500.0 2.87E-03 O
180  Cd-116   100.0 3000.0 3.48E-03 O
180  In-101g  100.0  750.0 2.33E-05 O
180  In-101m  100.0  750.0 2.33E-05 O
180  In-102   100.0 2500.0 6.44E-04 O
180  In-103g  100.0 3000.0 4.78E-02 O
180  In-103m  100.0 3000.0 5.33E-04 O
180  In-104g  100.0 3000.0 3.08E-01 O
180  In-104m  100.0 3000.0 3.79E-02 O
180  In-105g  300.0 3000.0 1.16E+00 O
180  In-105m  300.0 3000.0 1.18E+00 O
180  In-106g  225.0 3000.0 1.47E+00 O
180  In-106m  225.0 3000.0 3.37E+00 O
180  In-107g  200.0 3000.0 5.22E+00 O
180  In-107m  200.0 3000.0 1.03E+00 O
180  In-108g  180.0 3000.0 3.12E+00 O
180  In-108m  180.0 3000.0 3.62E+00 O
180  In-109g  160.0 3000.0 4.90E+00 O
180  In-109m  100.0 3000.0 4.09E-01 O
180  In-109m2 100.0 2500.0 3.81E-03 O
180  In-110g  110.0 3000.0 1.59E+00 O
180  In-110m  110.0 3000.0 2.50E+00 O
180  In-111g  140.0 3000.0 2.20E+00 O
180  In-111m  100.0 2500.0 1.39E-01 O
180  In-112g  100.0 2500.0 2.67E-01 O
180  In-112m  100.0 2500.0 9.02E-01 O
180  In-113g  100.0 2500.0 6.45E-01 O
180  In-113m  100.0 2500.0 7.80E-02 O
180  In-114g  100.0 2500.0 2.05E-02 O
180  In-114m  100.0 2000.0 3.75E-01 O
180  In-114m2 100.0 2000.0 3.95E-04 O
180  In-115g  100.0 3000.0 1.30E-01 O
180  In-115m  100.0 3000.0 7.23E-02 O
180  In-116g  100.0 2500.0 3.77E-03 O
180  In-116m  100.0 2500.0 1.15E-02 O
180  In-116m2 100.0 2500.0 5.38E-02 O
180  In-117g  100.0 3000.0 2.09E-02 O
180  In-117m  100.0 3000.0 1.18E-02 O
180  In-118g  100.0 3000.0 1.02E-03 O
180  In-118m  100.0 3000.0 1.67E-03 O
180  In-118m2 100.0 3000.0 8.11E-03 O
180  In-119g  100.0 3000.0 3.91E-03 O
180  In-119m  100.0 3000.0 7.09E-04 O
180  Sn-104   100.0 3000.0 1.43E-03 O
180  Sn-105   100.0 3000.0 2.22E-02 O
180  Sn-106   100.0 3000.0 1.71E-01 O
180  Sn-107   275.0 3000.0 1.90E+00 O
180  Sn-108   225.0 3000.0 4.33E+00 O
180  Sn-109   200.0 3000.0 7.07E+00 O
180  Sn-110   160.0 3000.0 1.00E+01 O
180  Sn-111   140.0 3000.0 9.38E+00 O
180  Sn-112   100.0 3000.0 9.05E+00 O
180  Sn-113g  100.0 3000.0 2.05E-01 O
```

180	Sn-113m	80.0	3000.0	5.52E+00	O
180	Sn-114	80.0	3000.0	3.55E+00	O
180	Sn-115	70.0	3000.0	1.72E+00	O
180	Sn-116	100.0	2000.0	7.19E-01	O
180	Sn-117g	100.0	3000.0	7.28E-02	O
180	Sn-117m	100.0	3000.0	2.87E-01	O
180	Sn-118	100.0	2000.0	1.38E-01	O
180	Sn-119g	100.0	2500.0	2.56E-02	O
180	Sn-119m	100.0	2500.0	1.43E-02	O
180	Sn-120	100.0	3000.0	2.55E-02	O
180	Sn-121g	100.0	2000.0	8.79E-04	O
180	Sn-121m	100.0	2000.0	9.07E-03	O
180	Sn-122	100.0	2000.0	1.57E-03	O
180	Sb-108	100.0	3000.0	8.24E-03	O
180	Sb-109	100.0	3000.0	4.22E-02	O
180	Sb-110	100.0	2500.0	1.64E-01	O
180	Sb-111	400.0	3000.0	2.77E+00	O
180	Sb-112	225.0	3000.0	4.68E+00	O
180	Sb-113	250.0	3000.0	6.94E+00	O
180	Sb-114	140.0	3000.0	7.09E+00	O
180	Sb-115	80.0	3000.0	5.51E+00	O
180	Sb-116g	100.0	3000.0	1.21E+00	O
180	Sb-116m	100.0	3000.0	2.44E+00	O
180	Sb-117	90.0	3000.0	1.99E+00	O
180	Sb-118g	100.0	2500.0	3.15E-01	O
180	Sb-118m	100.0	2500.0	5.99E-01	O
180	Sb-119g	100.0	2500.0	2.53E-01	O
180	Sb-119m	100.0	2500.0	2.53E-01	O
180	Sb-120g	100.0	2000.0	8.83E-02	O
180	Sb-120m	100.0	2000.0	8.83E-02	O
180	Sb-121	100.0	3000.0	7.43E-02	O
180	Sb-122g	100.0	1200.0	8.23E-03	O
180	Sb-122m	100.0	1500.0	2.14E-02	O
180	Sb-123	100.0	3000.0	1.46E-02	O
180	Sb-124g	100.0	1000.0	1.11E-03	O
180	Sb-124m	100.0	1000.0	9.13E-04	O
180	Sb-124m2	100.0	1000.0	1.52E-03	O
180	Sb-125	100.0	1500.0	6.75E-04	O
180	Te-110	100.0	2500.0	2.92E-03	O
180	Te-111	100.0	2500.0	1.71E-02	O
180	Te-112	100.0	2500.0	9.90E-02	O
180	Te-113	300.0	3000.0	1.14E+00	O
180	Te-114	400.0	3000.0	2.95E+00	O
180	Te-115g	180.0	3000.0	5.38E+00	O
180	Te-115m	100.0	2500.0	1.26E-01	O
180	Te-116	140.0	3000.0	7.31E+00	O
180	Te-117g	120.0	3000.0	3.30E+00	O
180	Te-117m	120.0	3000.0	3.30E+00	O
180	Te-118	100.0	3000.0	5.21E+00	O
180	Te-119g	100.0	2500.0	5.24E-01	O
180	Te-119m	120.0	3000.0	2.21E+00	O
180	Te-120	90.0	3000.0	1.50E+00	O
180	Te-121g	100.0	2000.0	7.46E-02	O
180	Te-121m	100.0	2000.0	5.82E-01	O
180	Te-122	100.0	2000.0	3.70E-01	O
180	Te-123g	100.0	1500.0	5.83E-02	O
180	Te-123m	100.0	1500.0	6.43E-02	O
180	Te-124	100.0	2000.0	5.73E-02	O
180	Te-125g	100.0	1200.0	6.95E-03	O
180	Te-125m	100.0	1200.0	8.19E-03	O
180	Te-126	100.0	2000.0	1.49E-02	O
180	I -113	100.0	2500.0	4.80E-03	O
180	I -114g	100.0	3000.0	4.50E-02	O
180	I -114m	100.0	3000.0	7.93E-03	O
180	I -115	100.0	3000.0	3.36E-01	O
180	I -116	225.0	3000.0	2.63E+00	O
180	I -117	275.0	3000.0	5.47E+00	O
180	I -118g	140.0	3000.0	3.07E+00	O
180	I -118m	140.0	3000.0	3.07E+00	O
180	I -119	180.0	3000.0	7.01E+00	O
180	I -120g	100.0	3000.0	2.68E+00	O
180	I -120m	100.0	3000.0	2.68E+00	O
180	I -121	160.0	3000.0	3.59E+00	O
180	I -122	160.0	3000.0	1.84E+00	O
180	I -123	140.0	3000.0	1.01E+00	O
180	I -124	100.0	2000.0	6.58E-01	O
180	I -125	100.0	1500.0	4.10E-01	O
180	I -126	100.0	2000.0	1.29E-01	O
180	I -127	100.0	3000.0	6.38E-02	O
180	I -128	100.0	2500.0	5.35E-03	O
180	I -129	100.0	1500.0	9.01E-03	O
180	Xe-115	100.0	3000.0	4.80E-03	O
180	Xe-116	100.0	2500.0	6.74E-02	O
180	Xe-117	100.0	2500.0	2.19E-01	O
180	Xe-118	300.0	3000.0	3.00E+00	O
180	Xe-119	250.0	3000.0	5.78E+00	O
180	Xe-120	180.0	3000.0	8.27E+00	O
180	Xe-121	250.0	3000.0	8.52E+00	O
180	Xe-122	160.0	3000.0	6.97E+00	O
180	Xe-123	140.0	3000.0	4.91E+00	O
180	Xe-124	120.0	2500.0	2.84E+00	O
180	Xe-125g	100.0	2500.0	4.05E-01	O
180	Xe-125m	100.0	2500.0	4.83E-01	O
180	Xe-126	100.0	2500.0	5.25E-01	O
180	Xe-127g	100.0	2500.0	5.21E-02	O
180	Xe-127m	100.0	2500.0	1.39E-01	O
180	Xe-128	100.0	2000.0	1.04E-01	O
180	Xe-129g	100.0	2500.0	1.62E-02	O
180	Xe-129m	100.0	2500.0	1.24E-02	O
180	Xe-130	100.0	1000.0	1.15E-02	O
180	Xe-131g	100.0	3000.0	1.17E-03	O
180	Xe-131m	100.0	3000.0	1.15E-03	O
180	Xe-133g	100.0	750.0	1.27E-05	O
180	Xe-133m	100.0	750.0	1.77E-04	O
180	Cs-117g	100.0	2500.0	3.04E-02	O
180	Cs-117m	100.0	2500.0	6.18E-03	O
180	Cs-118g	100.0	2500.0	6.18E-02	O
180	Cs-118m	100.0	2500.0	6.18E-02	O
180	Cs-119g	100.0	2500.0	2.38E-01	O
180	Cs-119m	100.0	2500.0	2.38E-01	O
180	Cs-120g	500.0	3000.0	1.02E+00	O
180	Cs-120m	500.0	3000.0	1.02E+00	O
180	Cs-121g	350.0	3000.0	1.37E+00	O
180	Cs-121m	350.0	3000.0	2.95E+00	O
180	Cs-122g	180.0	3000.0	2.09E+00	O
180	Cs-122m	180.0	3000.0	4.47E+00	O
180	Cs-122m2	100.0	2500.0	4.68E-03	O
180	Cs-123g	225.0	3000.0	4.24E+00	O
180	Cs-123m	225.0	3000.0	3.36E+00	O
180	Cs-124g	275.0	3000.0	3.59E+00	O
180	Cs-124m	275.0	3000.0	3.59E+00	O
180	Cs-125g	225.0	2500.0	2.66E+00	O
180	Cs-125m	225.0	2500.0	2.66E+00	O
180	Cs-126	180.0	3000.0	3.51E+00	O
180	Cs-127	300.0	2500.0	1.80E+00	O
180	Cs-128	100.0	2000.0	6.32E-01	O

180	Cs-129	100.0	2000.0	3.15E-01	O
180	Cs-130g	100.0	2000.0	7.71E-02	O
180	Cs-130m	100.0	2000.0	4.66E-02	O
180	Cs-131	100.0	1000.0	5.29E-02	O
180	Cs-132	100.0	1200.0	2.19E-02	O
180	Cs-133	100.0	3000.0	6.69E-03	O
180	Cs-134g	100.0	3000.0	4.44E-04	O
180	Cs-134m	100.0	3000.0	1.00E-03	O
180	Ba-119	100.0	2500.0	1.94E-03	O
180	Ba-120	100.0	3000.0	1.89E-02	O
180	Ba-121	100.0	2500.0	9.97E-02	O
180	Ba-122	650.0	2500.0	1.48E+00	O
180	Ba-123	550.0	3000.0	3.81E+00	O
180	Ba-124	250.0	3000.0	7.06E+00	O
180	Ba-125	250.0	3000.0	7.82E+00	O
180	Ba-126	140.0	3000.0	9.06E+00	O
180	Ba-127g	140.0	2500.0	3.76E+00	O
180	Ba-127m	140.0	2500.0	2.89E+00	O
180	Ba-128	90.0	3000.0	4.82E+00	O
180	Ba-129g	100.0	2000.0	5.05E-01	O
180	Ba-129m	110.0	3000.0	2.10E+00	O
180	Ba-130g	100.0	1500.0	8.66E-01	O
180	Ba-130m	100.0	1500.0	8.66E-01	O
180	Ba-131g	100.0	1500.0	1.85E-01	O
180	Ba-131m	100.0	1500.0	5.23E-01	O
180	Ba-132	100.0	2000.0	3.87E-01	O
180	Ba-133g	100.0	1500.0	9.61E-02	O
180	Ba-133m	100.0	1500.0	4.08E-02	O
180	Ba-134	100.0	1500.0	6.99E-02	O
180	Ba-135g	100.0	3000.0	1.94E-03	O
180	Ba-135m	100.0	3000.0	1.81E-02	O
180	Ba-136g	100.0	2000.0	8.29E-04	O
180	Ba-136m	100.0	2000.0	8.29E-04	O
180	La-120	100.0	3000.0	1.34E-03	O
180	La-121	100.0	2500.0	6.68E-04	O
180	La-122	100.0	2500.0	1.01E-02	O
180	La-123	100.0	2700.0	5.94E-02	O
180	La-124g	100.0	2500.0	1.28E-01	O
180	La-124m	100.0	2500.0	1.28E-01	O
180	La-125g	600.0	3000.0	1.38E+00	O
180	La-125m	600.0	3000.0	1.38E+00	O
180	La-126g	600.0	3000.0	2.69E+00	O
180	La-126m	600.0	3000.0	2.69E+00	O
180	La-127g	600.0	2500.0	5.59E+00	O
180	La-127m	600.0	2500.0	1.91E+00	O
180	La-128g	250.0	2500.0	4.06E+00	O
180	La-128m	250.0	2500.0	4.06E+00	O
180	La-129g	500.0	2500.0	3.73E+00	O
180	La-129m	500.0	2500.0	3.73E+00	O
180	La-130	550.0	2500.0	4.80E+00	O
180	La-131	275.0	2500.0	3.00E+00	O
180	La-132g	100.0	2000.0	8.60E-01	O
180	La-132m	100.0	2000.0	8.14E-01	O
180	La-133	100.0	1200.0	8.76E-01	O
180	La-134	100.0	2000.0	4.18E-01	O
180	La-135	100.0	1500.0	2.02E-01	O
180	La-136g	100.0	1200.0	4.30E-02	O
180	La-136m	100.0	1200.0	4.30E-02	O
180	La-137	100.0	1500.0	3.60E-02	O
180	Ce-123	100.0	3000.0	1.41E-03	O
180	Ce-124	100.0	2500.0	4.10E-03	O
180	Ce-125	100.0	2500.0	3.10E-02	O
180	Ce-126	100.0	2500.0	2.30E-01	O
180	Ce-127g	500.0	3000.0	1.09E+00	O
180	Ce-127m	500.0	3000.0	1.09E+00	O
180	Ce-128	600.0	2500.0	4.98E+00	O
180	Ce-129	500.0	2500.0	6.66E+00	O
180	Ce-130	225.0	2500.0	1.10E+01	O
180	Ce-131g	110.0	2500.0	4.17E+00	O
180	Ce-131m	110.0	2500.0	4.17E+00	O
180	Ce-132g	450.0	2000.0	3.69E+00	O
180	Ce-132m	450.0	2000.0	3.69E+00	O
180	Ce-133g	450.0	2000.0	1.11E+00	O
180	Ce-133m	450.0	2500.0	3.47E+00	O
180	Ce-134	500.0	2000.0	2.72E+00	O
180	Ce-135g	500.0	2000.0	1.04E+00	O
180	Ce-135m	100.0	2000.0	1.59E-01	O
180	Ce-136	100.0	1200.0	7.47E-01	O
180	Ce-137g	100.0	1000.0	2.96E-02	O
180	Ce-137m	100.0	1000.0	2.90E-01	O
180	Ce-138g	100.0	1000.0	7.53E-02	O
180	Ce-138m	100.0	1000.0	7.53E-02	O
180	Ce-139g	100.0	1000.0	2.72E-02	O
180	Ce-139m	100.0	1000.0	2.04E-02	O
180	Pr-126	100.0	3000.0	2.97E-03	O
180	Pr-127g	100.0	2500.0	6.23E-03	O
180	Pr-127m	100.0	2500.0	6.23E-03	O
180	Pr-128	100.0	2500.0	1.23E-01	O
180	Pr-129g	100.0	2500.0	3.27E-01	O
180	Pr-129m	100.0	2500.0	3.27E-01	O
180	Pr-130g	550.0	2500.0	1.55E+00	O
180	Pr-130m	550.0	2500.0	1.55E+00	O
180	Pr-131g	450.0	2500.0	1.43E+00	O
180	Pr-131m	450.0	2500.0	4.89E+00	O
180	Pr-132g	160.0	2000.0	4.07E+00	O
180	Pr-132m	160.0	2000.0	4.07E+00	O
180	Pr-133	450.0	2000.0	8.84E+00	O
180	Pr-134g	400.0	2000.0	3.96E+00	O
180	Pr-134m	400.0	2000.0	3.96E+00	O
180	Pr-135	450.0	2000.0	5.76E+00	O
180	Pr-136	400.0	2000.0	3.52E+00	O
180	Pr-137	450.0	2000.0	1.59E+00	O
180	Pr-138g	100.0	2000.0	2.40E-01	O
180	Pr-138m	100.0	2000.0	2.86E-01	O
180	Pr-139	100.0	1500.0	2.82E-01	O
180	Pr-140	100.0	1200.0	1.16E-01	O
180	Pr-141	100.0	1200.0	3.87E-02	O
180	Pr-142g	100.0	3000.0	2.57E-03	O
180	Pr-142m	100.0	3000.0	8.22E-03	O
180	Pr-143	100.0	3000.0	4.42E-03	O
180	Nd-129	100.0	2000.0	5.33E-02	O
180	Nd-130	100.0	1200.0	3.02E-01	O
180	Nd-131	600.0	2500.0	1.03E+00	O
180	Nd-132	550.0	2500.0	3.36E+00	O
180	Nd-133g	500.0	2000.0	3.66E+00	O
180	Nd-133m	500.0	2000.0	2.30E+00	O
180	Nd-134	450.0	2000.0	9.68E+00	O
180	Nd-135g	400.0	2000.0	7.73E+00	O
180	Nd-135m	400.0	2000.0	2.29E+00	O
180	Nd-136	400.0	2000.0	1.06E+01	O
180	Nd-137g	350.0	2000.0	4.27E+00	O
180	Nd-137m	350.0	2000.0	3.57E+00	O
180	Nd-138	400.0	2000.0	4.65E+00	O
180	Nd-139g	100.0	1000.0	9.57E-01	O
180	Nd-139m	450.0	2000.0	2.10E+00	O
180	Nd-140	100.0	1000.0	3.53E+00	O

180	Nd-141g	100.0	800.0	7.94E-01	O
180	Nd-141m	100.0	800.0	6.26E-01	O
180	Nd-142	100.0	1000.0	7.05E-01	O
180	Nd-143	100.0	1200.0	1.83E-01	O
180	Nd-144	100.0	3000.0	7.14E-02	O
180	Nd-145	1200.0	2500.0	2.79E-03	O
180	Nd-146	100.0	1200.0	2.23E-02	O
180	Nd-147	100.0	1200.0	9.81E-03	O
180	Pm-131	100.0	2500.0	2.62E-03	O
180	Pm-132	100.0	2000.0	1.63E-02	O
180	Pm-133g	100.0	2000.0	7.25E-02	O
180	Pm-133m	100.0	2000.0	7.25E-02	O
180	Pm-134g	100.0	2000.0	1.47E-01	O
180	Pm-134m	100.0	2000.0	1.47E-01	O
180	Pm-135g	450.0	2000.0	2.03E+00	O
180	Pm-135m	450.0	2000.0	2.03E+00	O
180	Pm-136g	450.0	2000.0	3.20E+00	O
180	Pm-136m	450.0	2000.0	3.20E+00	O
180	Pm-137g	400.0	2000.0	3.96E+00	O
180	Pm-137m	400.0	2000.0	3.96E+00	O
180	Pm-138g	350.0	2000.0	4.17E+00	O
180	Pm-138m	350.0	2000.0	4.65E+00	O
180	Pm-139g	350.0	1500.0	4.48E+00	O
180	Pm-139m	350.0	1500.0	4.48E+00	O
180	Pm-140g	400.0	1500.0	2.81E+00	O
180	Pm-140m	400.0	1500.0	2.81E+00	O
180	Pm-141	350.0	1500.0	2.53E+00	O
180	Pm-142g	100.0	1000.0	2.23E+00	O
180	Pm-142m	100.0	1000.0	2.23E+00	O
180	Pm-143	100.0	1000.0	2.63E+00	O
180	Pm-144	100.0	800.0	9.32E-01	O
180	Pm-145	100.0	1000.0	4.60E-01	O
180	Pm-146	100.0	900.0	1.44E-01	O
180	Pm-147	400.0	1500.0	2.65E-03	O
180	Pm-148g	1500.0	2000.0	1.85E-03	O
180	Pm-148m	1500.0	2000.0	6.53E-04	O
180	Pm-149	2500.0	3000.0	2.69E-03	O
180	Sm-133	100.0	1500.0	2.60E-03	O
180	Sm-134	100.0	2000.0	4.27E-02	O
180	Sm-135g	100.0	2000.0	7.67E-02	O
180	Sm-135m	100.0	2000.0	7.67E-02	O
180	Sm-136	500.0	2000.0	1.94E+00	O
180	Sm-137g	400.0	2000.0	2.54E+00	O
180	Sm-137m	400.0	2000.0	2.54E+00	O
180	Sm-138	400.0	2000.0	8.45E+00	O
180	Sm-139g	400.0	2000.0	5.43E+00	O
180	Sm-139m	400.0	2000.0	5.73E+00	O
180	Sm-140	350.0	1500.0	1.37E+01	O
180	Sm-141g	350.0	1500.0	1.31E+00	O
180	Sm-141m	350.0	1500.0	1.04E+01	O
180	Sm-142	300.0	1500.0	8.49E+00	O
180	Sm-143g	300.0	1500.0	2.57E+00	O
180	Sm-143m	300.0	1500.0	1.20E+00	O
180	Sm-143m2	100.0	1000.0	5.78E-03	O
180	Sm-144	250.0	1500.0	1.30E+00	O
180	Sm-145	100.0	1000.0	1.81E+00	O
180	Sm-146	100.0	1000.0	1.01E+00	O
180	Sm-147	100.0	1000.0	3.07E-01	O
180	Sm-148	100.0	800.0	1.40E-01	O
180	Sm-149	400.0	1200.0	5.52E-03	O
180	Sm-150	600.0	3000.0	5.27E-03	O
180	Sm-151	450.0	450.0	1.50E-03	O
180	Sm-152	2000.0	2000.0	2.35E-03	O
180	Eu-135	100.0	3000.0	1.77E-03	O
180	Eu-136g	100.0	3000.0	2.26E-03	O
180	Eu-136m	100.0	3000.0	2.26E-03	O
180	Eu-137	100.0	2500.0	5.83E-02	O
180	Eu-138	100.0	2500.0	2.37E-01	O
180	Eu-139	400.0	1500.0	2.99E+00	O
180	Eu-140g	350.0	1500.0	2.32E+00	O
180	Eu-140m	350.0	1500.0	2.32E+00	O
180	Eu-141g	350.0	1500.0	2.44E+00	O
180	Eu-141m	350.0	1500.0	6.79E+00	O
180	Eu-142g	275.0	1500.0	6.30E+00	O
180	Eu-142m	275.0	1500.0	6.30E+00	O
180	Eu-143	300.0	1500.0	1.34E+01	O
180	Eu-144	350.0	1500.0	1.02E+01	O
180	Eu-145	275.0	1200.0	3.49E+00	O
180	Eu-146	275.0	1200.0	1.39E+00	O
180	Eu-147	100.0	1000.0	2.49E+00	O
180	Eu-148	100.0	800.0	9.98E-01	O
180	Eu-149	100.0	700.0	4.64E-01	O
180	Eu-150g	100.0	800.0	7.29E-02	O
180	Eu-150m	100.0	800.0	9.44E-02	O
180	Eu-151	275.0	2000.0	1.73E-02	O
180	Eu-152g	550.0	2000.0	3.89E-03	O
180	Eu-152m	600.0	2000.0	2.28E-03	O
180	Eu-152m2	500.0	2000.0	6.15E-06	O
180	Eu-153	500.0	500.0	3.08E-03	O
180	Eu-154g	100.0	1200.0	1.81E-03	O
180	Eu-154m	100.0	1200.0	1.81E-03	O
180	Eu-155	100.0	3000.0	2.07E-03	O
180	Eu-156	100.0	1200.0	1.35E-03	O
180	Gd-136	130.0	800.0	6.11E-05	O
180	Gd-138	100.0	3000.0	2.18E-03	O
180	Gd-139g	100.0	2500.0	9.10E-03	O
180	Gd-139m	100.0	2500.0	9.10E-03	O
180	Gd-140	100.0	2000.0	3.55E-01	O
180	Gd-141g	100.0	1500.0	3.62E-01	O
180	Gd-141m	100.0	1500.0	3.40E-01	O
180	Gd-142	400.0	1500.0	5.58E+00	O
180	Gd-143g	300.0	1500.0	4.88E+00	O
180	Gd-143m	300.0	1500.0	4.50E+00	O
180	Gd-144	300.0	1500.0	1.26E+01	O
180	Gd-145g	300.0	1200.0	1.03E+01	O
180	Gd-145m	300.0	1200.0	5.46E+00	O
180	Gd-146	275.0	1200.0	1.03E+01	O
180	Gd-147	275.0	1200.0	4.44E+00	O
180	Gd-148	250.0	1200.0	2.32E+00	O
180	Gd-149	275.0	1200.0	1.50E+00	O
180	Gd-150	100.0	1000.0	1.94E+00	O
180	Gd-151	100.0	1000.0	7.42E-01	O
180	Gd-152	100.0	1000.0	3.85E-01	O
180	Gd-153	250.0	2500.0	3.56E-02	O
180	Gd-154	300.0	2000.0	1.13E-02	O
180	Gd-155g	300.0	2000.0	2.19E-03	O
180	Gd-155m	300.0	2000.0	2.19E-03	O
180	Gd-156	750.0	2000.0	3.21E-03	O
180	Gd-158	3000.0	3000.0	2.69E-03	O
180	Tb-140	110.0	750.0	1.79E-04	O
180	Tb-141g	100.0	2500.0	2.01E-03	O
180	Tb-141m	100.0	2500.0	2.01E-03	O
180	Tb-142g	100.0	1500.0	1.82E-02	O
180	Tb-142m	100.0	1500.0	1.82E-02	O
180	Tb-143g	100.0	1500.0	1.82E-01	O
180	Tb-143m	100.0	1500.0	1.82E-01	O

180	Tb-144g	100.0	1500.0	1.21E-01	O
180	Tb-144m	300.0	1500.0	3.74E+00	O
180	Tb-145g	300.0	1200.0	3.93E+00	O
180	Tb-145m	300.0	1200.0	3.93E+00	O
180	Tb-146g	300.0	1200.0	4.51E+00	O
180	Tb-146m	300.0	1200.0	4.51E+00	O
180	Tb-146m2	300.0	1200.0	4.51E+00	O
180	Tb-147g	225.0	1200.0	5.48E+00	O
180	Tb-147m	225.0	1200.0	6.57E+00	O
180	Tb-148g	275.0	1200.0	1.32E+00	O
180	Tb-148m	275.0	1200.0	5.78E+00	O
180	Tb-149g	100.0	1200.0	1.39E+00	O
180	Tb-149m	225.0	1200.0	5.18E+00	O
180	Tb-150g	100.0	1000.0	3.84E-01	O
180	Tb-150m	225.0	1000.0	3.50E+00	O
180	Tb-151g	200.0	1200.0	1.12E+00	O
180	Tb-151m	100.0	1000.0	2.20E+00	O
180	Tb-152g	100.0	1000.0	4.03E-01	O
180	Tb-152m	225.0	1000.0	1.08E+00	O
180	Tb-153	100.0	1000.0	1.65E+00	O
180	Tb-154g	100.0	1200.0	2.47E-01	O
180	Tb-154m	100.0	1200.0	2.47E-01	O
180	Tb-154m2	100.0	1200.0	2.47E-01	O
180	Tb-155	100.0	1200.0	4.12E-01	O
180	Tb-156g	225.0	3000.0	5.10E-02	O
180	Tb-156m	200.0	3000.0	5.00E-03	O
180	Tb-156m2	225.0	3000.0	5.60E-05	O
180	Tb-157	300.0	900.0	8.91E-03	O
180	Tb-158g	500.0	2000.0	6.40E-03	O
180	Tb-158m	500.0	2000.0	7.11E-04	O
180	Tb-159	650.0	3000.0	2.64E-03	O
180	Tb-160	130.0	130.0	2.00E-08	O
180	Tb-161	10.0	1200.0	6.97E-03	O
180	Dy-142	130.0	1500.0	1.07E-03	O
180	Dy-143g	110.0	2000.0	2.25E-03	O
180	Dy-143m	110.0	2000.0	2.25E-03	O
180	Dy-144	100.0	1500.0	4.43E-02	O
180	Dy-145g	100.0	1500.0	4.55E-02	O
180	Dy-145m	100.0	1500.0	3.11E-01	O
180	Dy-146g	350.0	1200.0	1.94E+00	O
180	Dy-146m	350.0	1200.0	1.94E+00	O
180	Dy-147g	160.0	1200.0	9.24E+00	O
180	Dy-147m	160.0	1200.0	3.50E+00	O
180	Dy-148	225.0	1200.0	1.63E+01	O
180	Dy-149g	250.0	1200.0	7.70E+00	O
180	Dy-149m	250.0	1200.0	7.70E+00	O
180	Dy-150	250.0	1000.0	1.26E+01	O
180	Dy-151	200.0	1000.0	1.00E+01	O
180	Dy-152	225.0	1000.0	6.83E+00	O
180	Dy-153	200.0	1000.0	3.84E+00	O
180	Dy-154	180.0	1000.0	2.38E+00	O
180	Dy-155	160.0	1000.0	1.17E+00	O
180	Dy-156	180.0	1000.0	5.85E-01	O
180	Dy-157g	180.0	1500.0	1.18E-01	O
180	Dy-157m	180.0	1500.0	1.18E-01	O
180	Dy-158	225.0	2000.0	9.00E-02	O
180	Dy-159	225.0	2000.0	4.06E-02	O
180	Dy-160	225.0	3000.0	1.32E-02	O
180	Dy-161	100.0	1200.0	2.75E-02	O
180	Dy-162	85.0	95.0	4.00E-08	O
180	Dy-163	80.0	95.0	4.00E-08	O
180	Dy-164	10.0	1200.0	6.81E-03	O
180	Dy-165g	100.0	1200.0	6.59E-04	O
180	Dy-165m	100.0	1200.0	3.45E-04	O
180	Ho-145g	120.0	2000.0	6.58E-04	O
180	Ho-145m	120.0	2000.0	6.58E-04	O
180	Ho-146	110.0	2500.0	9.80E-03	O
180	Ho-147	100.0	1500.0	1.25E-01	O
180	Ho-148g	100.0	1200.0	2.24E-01	O
180	Ho-148m	100.0	1200.0	2.24E-01	O
180	Ho-148m2	100.0	1200.0	2.24E-01	O
180	Ho-149g	250.0	1000.0	6.67E+00	O
180	Ho-149m	250.0	1200.0	2.75E+00	O
180	Ho-150g	225.0	900.0	1.52E+00	O
180	Ho-150m	225.0	1000.0	8.20E+00	O
180	Ho-151g	225.0	1000.0	6.47E+00	O
180	Ho-151m	225.0	1000.0	3.19E+00	O
180	Ho-152g	160.0	1000.0	4.98E-01	O
180	Ho-152m	160.0	1000.0	1.00E+01	O
180	Ho-153g	180.0	900.0	6.66E+00	O
180	Ho-153m	180.0	900.0	4.94E+00	O
180	Ho-154g	180.0	900.0	4.30E+00	O
180	Ho-154m	180.0	900.0	4.30E+00	O
180	Ho-155	160.0	900.0	6.15E+00	O
180	Ho-156g	160.0	900.0	5.07E-01	O
180	Ho-156m	160.0	900.0	3.66E+00	O
180	Ho-156m2	160.0	900.0	4.17E-03	O
180	Ho-157	150.0	900.0	2.05E+00	O
180	Ho-158g	160.0	900.0	3.78E-01	O
180	Ho-158m	160.0	900.0	3.47E-01	O
180	Ho-158m2	160.0	900.0	4.07E-01	O
180	Ho-159g	150.0	1000.0	4.06E-01	O
180	Ho-159m	150.0	1000.0	1.07E-01	O
180	Ho-160g	130.0	3000.0	2.11E-01	O
180	Ho-160m	130.0	800.0	1.66E-02	O
180	Ho-160m2	130.0	3000.0	2.27E-04	O
180	Ho-161g	130.0	3000.0	7.24E-02	O
180	Ho-161m	130.0	3000.0	2.12E-02	O
180	Ho-162g	130.0	3000.0	1.46E-02	O
180	Ho-162m	130.0	3000.0	2.81E-02	O
180	Ho-163g	130.0	3000.0	2.47E-02	O
180	Ho-163m	130.0	3000.0	4.57E-03	O
180	Ho-164g	60.0	3000.0	3.14E-03	O
180	Ho-164m	60.0	3000.0	2.24E-03	O
180	Ho-165	70.0	130.0	6.95E-07	O
180	Ho-166g	100.0	1200.0	2.72E-03	O
180	Ho-166m	100.0	1200.0	2.50E-03	O
180	Ho-167	100.0	1200.0	2.23E-03	O
180	Er-146	160.0	1200.0	4.09E-05	O
180	Er-147g	150.0	900.0	8.80E-04	O
180	Er-147m	150.0	900.0	8.80E-04	O
180	Er-148	130.0	1500.0	4.31E-02	O
180	Er-149g	120.0	1200.0	4.02E-02	O
180	Er-149m	120.0	1200.0	1.15E-01	O
180	Er-150	275.0	1000.0	5.62E+00	O
180	Er-151g	250.0	1000.0	4.07E+00	O
180	Er-151m	250.0	1000.0	4.07E+00	O
180	Er-152	225.0	1000.0	1.09E+01	O
180	Er-153	225.0	900.0	1.63E+01	O
180	Er-154	200.0	900.0	1.66E+01	O
180	Er-155	160.0	800.0	1.52E+01	O
180	Er-156	180.0	800.0	1.34E+01	O
180	Er-157g	160.0	800.0	4.74E+00	O
180	Er-157m	160.0	800.0	4.74E+00	O
180	Er-158	140.0	800.0	7.05E+00	O
180	Er-159	140.0	800.0	3.91E+00	O

180	Er-160	130.0	900.0	2.34E+00	O
180	Er-161	140.0	1000.0	1.15E+00	O
180	Er-162	120.0	800.0	5.02E-01	O
180	Er-163	110.0	2000.0	2.43E-01	O
180	Er-164	100.0	1500.0	1.24E-01	O
180	Er-165	90.0	2500.0	5.01E-02	O
180	Er-166	55.0	1500.0	3.12E-02	O
180	Er-167g	50.0	3000.0	1.41E-02	O
180	Er-167m	50.0	3000.0	4.68E-03	O
180	Er-168	50.0	2500.0	5.01E-03	O
180	Er-169	120.0	2000.0	2.54E-03	O
180	Er-170	100.0	1500.0	2.58E-03	O
180	Er-171	100.0	1200.0	1.95E-03	O
180	Tm-148	180.0	800.0	1.90E-05	O
180	Tm-149	180.0	3000.0	1.35E-03	O
180	Tm-150g	150.0	2500.0	2.79E-03	O
180	Tm-150m	150.0	2500.0	2.79E-03	O
180	Tm-150m2	150.0	2500.0	2.79E-03	O
180	Tm-151g	140.0	1000.0	1.60E-01	O
180	Tm-151m	140.0	1000.0	1.60E-01	O
180	Tm-152g	250.0	1000.0	1.02E+00	O
180	Tm-152m	250.0	1000.0	1.02E+00	O
180	Tm-153g	225.0	1000.0	3.28E+00	O
180	Tm-153m	225.0	1000.0	1.73E+00	O
180	Tm-154g	200.0	900.0	4.35E+00	O
180	Tm-154m	200.0	900.0	4.35E+00	O
180	Tm-155g	200.0	800.0	9.77E+00	O
180	Tm-155m	200.0	900.0	9.86E-01	O
180	Tm-156	180.0	750.0	1.44E+01	O
180	Tm-157	160.0	750.0	1.59E+01	O
180	Tm-158	140.0	700.0	1.50E+01	O
180	Tm-159	140.0	750.0	1.33E+01	O
180	Tm-160g	140.0	700.0	8.48E+00	O
180	Tm-160m	140.0	700.0	1.23E+00	O
180	Tm-161g	130.0	750.0	3.40E+00	O
180	Tm-161m	130.0	750.0	3.40E+00	O
180	Tm-162g	110.0	800.0	2.12E+00	O
180	Tm-162m	110.0	800.0	2.12E+00	O
180	Tm-163	95.0	800.0	2.48E+00	O
180	Tm-164g	95.0	900.0	6.74E-01	O
180	Tm-164m	95.0	900.0	6.74E-01	O
180	Tm-165	80.0	250.0	8.95E-01	O
180	Tm-166g	65.0	250.0	3.01E-01	O
180	Tm-166m	65.0	250.0	3.01E-01	O
180	Tm-167	60.0	275.0	2.37E-01	O
180	Tm-168	28.0	2500.0	1.10E-01	O
180	Tm-169	28.0	2500.0	5.45E-02	O
180	Tm-170	75.0	3000.0	3.48E-02	O
180	Tm-171	75.0	3000.0	1.86E-02	O
180	Tm-172	100.0	1500.0	1.10E-02	O
180	Tm-173	100.0	140.0	3.32E-03	O
180	Tm-174	100.0	120.0	1.93E-03	O
180	Tm-175	100.0	100.0	1.14E-03	O
180	Yb-151g	180.0	1000.0	3.24E-03	O
180	Yb-151m	180.0	1000.0	3.24E-03	O
180	Yb-152	180.0	900.0	1.87E-01	O
180	Yb-153	250.0	1000.0	9.97E-01	O
180	Yb-154	225.0	800.0	2.71E+00	O
180	Yb-155	200.0	750.0	4.86E+00	O
180	Yb-156	180.0	800.0	9.67E+00	O
180	Yb-157	180.0	800.0	1.32E+01	O
180	Yb-158	180.0	700.0	1.84E+01	O
180	Yb-159	160.0	650.0	1.96E+01	O
180	Yb-160	150.0	650.0	2.19E+01	O
180	Yb-161	140.0	650.0	1.97E+01	O
180	Yb-162	130.0	650.0	1.55E+01	O
180	Yb-163	120.0	650.0	1.16E+01	O
180	Yb-164	110.0	600.0	8.15E+00	O
180	Yb-165	100.0	650.0	4.85E+00	O
180	Yb-166	85.0	800.0	3.06E+00	O
180	Yb-167	80.0	225.0	3.02E+00	O
180	Yb-168	70.0	225.0	1.63E+00	O
180	Yb-169g	60.0	250.0	2.76E+00	O
180	Yb-169m	60.0	250.0	2.06E+00	O
180	Yb-170	55.0	275.0	5.08E+00	O
180	Yb-171g	50.0	400.0	1.15E+00	O
180	Yb-171m	50.0	400.0	1.15E+00	O
180	Yb-172	15.0	250.0	1.99E-01	O
180	Yb-173	75.0	2500.0	8.81E-02	O
180	Yb-174	75.0	3000.0	5.08E-02	O
180	Yb-175g	100.0	3000.0	9.15E-03	O
180	Yb-175m	100.0	3000.0	9.15E-03	O
180	Yb-176g	100.0	100.0	6.94E-03	O
180	Yb-176m	100.0	100.0	1.14E-03	O
180	Lu-153g	180.0	3000.0	6.60E-04	O
180	Lu-153m	180.0	3000.0	6.60E-04	O
180	Lu-154g	180.0	900.0	2.47E-03	O
180	Lu-154m	180.0	900.0	2.47E-03	O
180	Lu-155g	160.0	800.0	2.33E-02	O
180	Lu-155m	160.0	800.0	2.33E-02	O
180	Lu-155m2	160.0	800.0	2.33E-02	O
180	Lu-156g	150.0	800.0	1.17E-01	O
180	Lu-156m	150.0	800.0	1.17E-01	O
180	Lu-157g	140.0	750.0	2.37E-01	O
180	Lu-157m	200.0	750.0	1.55E+00	O
180	Lu-158	160.0	700.0	5.23E+00	O
180	Lu-159g	160.0	650.0	4.07E+00	O
180	Lu-159m	160.0	650.0	4.07E+00	O
180	Lu-160g	140.0	650.0	6.74E+00	O
180	Lu-160m	140.0	650.0	6.74E+00	O
180	Lu-161g	140.0	600.0	9.54E+00	O
180	Lu-161m	140.0	600.0	9.54E+00	O
180	Lu-162g	140.0	600.0	6.66E+00	O
180	Lu-162m	140.0	600.0	6.66E+00	O
180	Lu-162m2	140.0	600.0	6.66E+00	O
180	Lu-163	130.0	600.0	2.19E+01	O
180	Lu-164	120.0	600.0	2.17E+01	O
180	Lu-165	100.0	550.0	1.92E+01	O
180	Lu-166g	90.0	160.0	1.65E+00	O
180	Lu-166m	90.0	550.0	9.38E+00	O
180	Lu-166m2	90.0	550.0	5.27E+00	O
180	Lu-167g	75.0	600.0	5.77E+00	O
180	Lu-167m	75.0	600.0	5.77E+00	O
180	Lu-168g	65.0	180.0	4.07E+00	O
180	Lu-168m	65.0	600.0	4.52E+00	O
180	Lu-169g	60.0	650.0	1.05E+00	O
180	Lu-169m	60.0	650.0	3.67E+00	O
180	Lu-170g	45.0	750.0	1.62E+00	O
180	Lu-170m	45.0	750.0	1.62E+00	O
180	Lu-171g	32.0	160.0	1.13E+00	O
180	Lu-171m	32.0	225.0	1.43E+00	O
180	Lu-172g	11.8	750.0	6.90E-01	O
180	Lu-172m	11.8	750.0	9.21E-01	O
180	Lu-173	7.2	250.0	1.21E+00	O
180	Lu-174g	50.0	300.0	1.15E+00	O
180	Lu-174m	50.0	300.0	3.80E-01	O

180	Lu-175	50.0	2500.0	4.49E-01	O
180	Lu-176g	80.0	1000.0	1.05E-01	O
180	Lu-176m	80.0	1000.0	1.60E-01	O
180	Lu-177g	80.0	3000.0	1.09E-01	O
180	Lu-177m	80.0	3000.0	5.21E-03	O
180	Lu-177m2	80.0	3000.0	1.14E-04	O
180	Lu-178g	550.0	550.0	1.19E-03	O
180	Lu-178m	550.0	550.0	3.99E-04	O
180	Hf-154	180.0	650.0	3.54E-04	O
180	Hf-155	180.0	700.0	1.59E-03	O
180	Hf-156	180.0	700.0	1.32E-02	O
180	Hf-157	160.0	800.0	8.44E-02	O
180	Hf-158	150.0	750.0	2.18E-01	O
180	Hf-159	200.0	650.0	1.51E+00	O
180	Hf-160	180.0	650.0	3.74E+00	O
180	Hf-161	140.0	600.0	6.95E+00	O
180	Hf-162	140.0	550.0	1.30E+01	O
180	Hf-163	150.0	550.0	1.71E+01	O
180	Hf-164	140.0	550.0	2.28E+01	O
180	Hf-165	120.0	500.0	2.50E+01	O
180	Hf-166	110.0	450.0	2.90E+01	O
180	Hf-167	95.0	450.0	2.94E+01	O
180	Hf-168	85.0	400.0	3.07E+01	O
180	Hf-169	75.0	225.0	3.43E+01	O
180	Hf-170	65.0	400.0	2.74E+01	O
180	Hf-171g	60.0	450.0	1.84E+01	O
180	Hf-171m	60.0	450.0	6.62E+00	O
180	Hf-172	45.0	450.0	2.47E+01	O
180	Hf-173	40.0	250.0	7.99E+00	O
180	Hf-174	30.0	225.0	7.35E+00	O
180	Hf-175	28.0	800.0	4.90E+00	O
180	Hf-176	3.9	900.0	4.06E+00	O
180	Hf-177g	50.0	800.0	3.36E+00	O
180	Hf-177m	50.0	800.0	9.25E-02	O
180	Hf-177m2	50.0	800.0	3.46E-03	O
180	Hf-178g	50.0	900.0	1.40E+00	O
180	Hf-178m	50.0	800.0	5.17E-01	O
180	Hf-178m2	50.0	1500.0	9.80E-03	O
180	Hf-179g	300.0	1500.0	4.46E-02	O
180	Hf-179m	300.0	900.0	6.08E-03	O
180	Hf-179m2	300.0	1500.0	5.01E-05	O
180	Ta-158g	100.0	3000.0	6.73E-04	O
180	Ta-158m	100.0	3000.0	6.73E-04	O
180	Ta-159g	100.0	700.0	5.30E-03	O
180	Ta-159m	100.0	700.0	5.30E-03	O
180	Ta-160g	100.0	550.0	1.47E-02	O
180	Ta-160m	100.0	550.0	1.47E-02	O
180	Ta-161g	100.0	550.0	8.26E-02	O
180	Ta-161m	100.0	550.0	8.26E-02	O
180	Ta-162	160.0	600.0	1.51E+00	O
180	Ta-163	140.0	500.0	2.93E+00	O
180	Ta-164	120.0	400.0	5.72E+00	O
180	Ta-165	130.0	450.0	8.70E+00	O
180	Ta-166	120.0	450.0	1.10E+01	O
180	Ta-167	100.0	400.0	1.32E+01	O
180	Ta-168	95.0	200.0	1.75E+01	O
180	Ta-169	80.0	200.0	2.02E+01	O
180	Ta-170	70.0	160.0	5.22E+01	O
180	Ta-171	60.0	160.0	2.54E+01	O
180	Ta-172	50.0	150.0	4.58E+01	O
180	Ta-173	38.0	180.0	4.86E+01	O
180	Ta-174	30.0	200.0	2.74E+01	O
180	Ta-175	19.0	140.0	4.94E+01	O
180	Ta-176g	11.8	120.0	1.62E+01	O
180	Ta-176m	11.8	120.0	1.62E+01	O
180	Ta-176m2	11.8	120.0	1.62E+01	O
180	Ta-177	2.8	110.0	3.92E+01	O
180	Ta-178g	28.0	600.0	7.80E+00	O
180	Ta-178m	28.0	600.0	7.80E+00	O
180	Ta-178m2	28.0	600.0	7.80E+00	O
180	Ta-179g	24.0	800.0	1.46E+01	O
180	Ta-179m	24.0	800.0	1.46E+01	O
180	Ta-179m2	24.0	800.0	1.46E+01	O
180	Ta-180g	200.0	3000.0	3.77E-01	O
180	Ta-180m	200.0	2000.0	2.84E-01	O
180	W -160	180.0	3000.0	1.32E-03	O
180	W -161	180.0	600.0	4.93E-03	O
180	W -162	160.0	500.0	3.23E-02	O
180	W -163	150.0	500.0	1.14E-01	O
180	W -164	180.0	450.0	1.25E+00	O
180	W -165	160.0	250.0	3.27E+00	O
180	W -166	120.0	225.0	8.48E+00	O
180	W -167	130.0	400.0	1.08E+01	O
180	W -168	120.0	400.0	1.75E+01	O
180	W -169	110.0	225.0	2.61E+01	O
180	W -170	95.0	250.0	3.41E+01	O
180	W -171	85.0	275.0	3.09E+01	O
180	W -172	75.0	120.0	5.67E+01	O
180	W -173	65.0	100.0	1.18E+02	O
180	W -174	50.0	85.0	1.17E+02	O
180	W -175	45.0	70.0	2.52E+02	O
180	W -176	32.0	75.0	1.58E+02	O
180	W -177	24.0	65.0	2.36E+02	O
180	W -178	15.5	55.0	2.81E+02	O
180	W -179g	11.4	45.0	2.22E+02	O
180	W -179m	11.4	38.0	2.75E+01	O
180	W -180m	3.9	24.0	6.56E+01	O
180	W -181	180.0	180.0	2.66E-03	O
180	Re-163g	225.0	2500.0	6.38E-04	O
180	Re-163m	225.0	2500.0	6.38E-04	O
180	Re-164g	225.0	275.0	3.53E-04	O
180	Re-164m	225.0	275.0	3.53E-04	O
180	Re-165g	180.0	300.0	3.15E-03	O
180	Re-165m	180.0	300.0	6.67E-03	O
180	Re-166g	160.0	275.0	3.06E-02	O
180	Re-166m	160.0	275.0	3.06E-02	O
180	Re-167g	140.0	200.0	4.26E-01	O
180	Re-167m	140.0	200.0	4.26E-01	O
180	Re-168	140.0	650.0	3.15E-01	O
180	Re-169g	120.0	450.0	3.20E-01	O
180	Re-169m	120.0	450.0	3.20E-01	O
180	Re-170	110.0	130.0	2.68E+00	O
180	Re-171	95.0	120.0	4.31E+00	O
180	Re-172g	80.0	110.0	1.84E+01	O
180	Re-172m	80.0	110.0	1.84E+01	O
180	Re-173	70.0	95.0	2.87E+01	O
180	Re-174	60.0	80.0	1.86E+02	O
180	Re-175	50.0	60.0	5.34E+01	O
180	Re-176	40.0	60.0	3.86E+02	O
180	Re-177	30.0	45.0	7.83E+02	O
180	Re-178	22.0	30.0	1.11E+03	O
180	Re-179	12.0	22.0	1.19E+03	O
180	Re-180	4.7	17.0	6.49E+02	O
180	Re-181	2.8	17.0	1.32E+00	O
182	H - 1	3.0	3000.0	1.39E+04	M
182	H - 2	6.0	3000.0	3.51E+03	M

182	H - 3	9.0	3000.0	2.00E+03	M	182	F - 21	100.0	3000.0	4.44E-01	O
182	He- 3	8.5	3000.0	4.23E+02	M	182	F - 22	100.0	3000.0	3.23E-01	O
182	He- 4	3.0	3000.0	2.96E+03	M	182	F - 23	100.0	3000.0	3.37E-01	O
182	He- 5	10.0	3000.0	1.70E+01	O	182	F - 24	100.0	3000.0	8.03E-02	C
182	He- 6	10.0	3000.0	3.60E+01	O	182	Ne- 16	100.0	3000.0	5.63E-03	O
182	He- 7	16.0	3000.0	2.19E+00	O	182	Ne- 17	100.0	3000.0	2.41E-02	O
182	He- 8	22.0	3000.0	2.45E-01	O	182	Ne- 18	100.0	3000.0	1.46E-01	O
182	He- 9	32.0	3000.0	1.31E-02	O	182	Ne- 19	100.0	3000.0	3.46E-01	O
182	He- 10	36.0	3000.0	4.15E-04	O	182	Ne- 20	50.0	3000.0	2.87E+00	O
182	He- 11	55.0	3000.0	5.57E-06	O	182	Ne- 21	50.0	3000.0	1.71E+00	O
182	He- 12	65.0	3000.0	3.92E-08	O	182	Ne- 22	50.0	3000.0	6.59E+00	O
182	He- 13	80.0	3000.0	1.48E-10	O	182	Ne- 23	50.0	3000.0	3.28E+00	O
182	Li- 5	35.0	3000.0	9.41E+00	O	182	Ne- 24	40.0	3000.0	3.25E+00	C
182	Li- 6	35.0	3000.0	6.10E+00	O	182	Ne- 25	50.0	3000.0	2.65E+00	O
182	Li- 7	35.0	3000.0	6.26E+00	O	182	Ne- 26	50.0	3000.0	2.17E+00	O
182	Li- 8	40.0	3000.0	2.21E+00	O	182	Ne- 27	100.0	3000.0	4.89E-04	O
182	Li- 9	40.0	2800.0	3.51E+00	N	182	Na- 19	100.0	3000.0	7.91E-03	O
182	Li- 10	100.0	3000.0	2.28E-01	O	182	Na- 20	100.0	3000.0	5.08E-02	O
182	Li- 11	100.0	3000.0	5.85E-02	O	182	Na- 21	100.0	3000.0	2.25E-01	O
182	Be- 7	50.0	3000.0	7.25E+00	I	182	Na- 22	100.0	3000.0	6.84E-01	O
182	Be- 8	30.0	3000.0	2.14E+01	O	182	Na- 23	50.0	3000.0	1.34E+00	O
182	Be- 9	35.0	3000.0	1.66E+01	O	182	Na- 24g	100.0	3000.0	2.64E-01	C
182	Be- 10	35.0	3000.0	1.56E+01	O	182	Na- 24m	100.0	3000.0	2.64E-01	C
182	Be- 11	50.0	3000.0	4.78E+00	O	182	Na- 25	50.0	3000.0	1.64E+00	O
182	Be- 12	50.0	3000.0	2.60E+00	O	182	Na- 26	50.0	3000.0	1.13E+00	O
182	Be- 13	100.0	3000.0	2.76E-01	O	182	Na- 27	50.0	3000.0	1.21E+00	O
182	B - 10	50.0	3000.0	7.53E+00	O	182	Na- 28	100.0	3000.0	2.43E-01	C
182	B - 11	40.0	3000.0	1.58E+01	O	182	Mg- 19	100.0	3000.0	1.21E-04	O
182	B - 12	40.0	3000.0	7.34E+00	O	182	Mg- 20	100.0	3000.0	6.77E-04	O
182	B - 13	50.0	3000.0	5.39E+00	O	182	Mg- 21	100.0	3000.0	3.58E-03	O
182	B - 14	50.0	3000.0	1.63E+00	O	182	Mg- 22	100.0	3000.0	3.63E-02	O
182	B - 15	100.0	3000.0	4.28E-01	O	182	Mg- 23	100.0	3000.0	1.89E-01	O
182	C - 10	100.0	3000.0	4.79E-01	O	182	Mg- 24	100.0	3000.0	7.31E-01	O
182	C - 11	100.0	3000.0	2.57E+00	O	182	Mg- 25	100.0	3000.0	1.58E+00	O
182	C - 12	35.0	3000.0	1.02E+00	O	182	Mg- 26	100.0	3000.0	1.45E+00	O
182	C - 13	100.0	3000.0	3.11E+00	O	182	Mg- 27	100.0	3000.0	6.91E-01	O
182	C - 14	100.0	3000.0	1.86E+00	O	182	Mg- 28	100.0	3000.0	4.21E-01	C
182	C - 15	100.0	3000.0	3.83E-01	O	182	Mg- 29	100.0	3000.0	3.23E-01	O
182	C - 16	100.0	3000.0	8.04E-01	N	182	Mg- 30	100.0	3000.0	2.75E-01	O
182	N - 12	100.0	3000.0	1.49E-01	O	182	Mg- 31	100.0	3000.0	1.16E-01	O
182	N - 13	100.0	3000.0	4.35E-01	O	182	Al- 20	100.0	3000.0	1.52E-06	O
182	N - 14	50.0	3000.0	1.19E+00	O	182	Al- 21	100.0	3000.0	3.68E-05	O
182	N - 15	40.0	3000.0	3.17E+00	O	182	Al- 22	100.0	3000.0	1.03E-04	O
182	N - 16	50.0	3000.0	1.02E+00	O	182	Al- 23	100.0	3000.0	1.56E-03	O
182	N - 17	100.0	2800.0	3.18E+00	N	182	Al- 24g	100.0	3000.0	7.71E-03	O
182	N - 18	100.0	3000.0	2.15E-01	O	182	Al- 24m	100.0	3000.0	7.71E-03	O
182	N - 19	100.0	3000.0	1.21E-01	O	182	Al- 25	100.0	3000.0	1.32E-01	O
182	O - 13	100.0	3000.0	3.40E-02	O	182	Al- 26g	100.0	3000.0	3.56E-01	O
182	O - 14	100.0	3000.0	2.86E-01	O	182	Al- 26m	100.0	3000.0	1.87E-01	O
182	O - 15	50.0	3000.0	1.59E+00	O	182	Al- 27	100.0	3000.0	1.49E+00	O
182	O - 16	40.0	3000.0	6.97E+00	O	182	Al- 28	100.0	3000.0	1.36E+00	O
182	O - 17	50.0	3000.0	4.20E+00	O	182	Al- 29	100.0	3000.0	6.22E-01	O
182	O - 18	40.0	3000.0	5.47E+00	O	182	Al- 30	100.0	3000.0	2.33E-01	O
182	O - 19	50.0	3000.0	2.86E+00	O	182	Al- 31	100.0	3000.0	2.36E-01	O
182	O - 20	50.0	3000.0	3.30E+00	O	182	Al- 32	100.0	3000.0	9.77E-02	O
182	O - 21	50.0	3000.0	1.58E+00	O	182	Al- 33	100.0	3000.0	7.92E-02	O
182	O - 22	50.0	3000.0	1.52E+00	O	182	Al- 34	100.0	3000.0	3.57E-02	O
182	F - 15	100.0	3000.0	1.11E-02	O	182	Si- 23	100.0	3000.0	2.20E-05	O
182	F - 16	100.0	3000.0	7.02E-02	O	182	Si- 24	100.0	3000.0	1.07E-04	O
182	F - 17	100.0	3000.0	2.81E-01	O	182	Si- 25	100.0	3000.0	9.23E-04	O
182	F - 18	100.0	3000.0	8.04E-01	O	182	Si- 26	100.0	3000.0	1.21E-02	O
182	F - 19	100.0	3000.0	1.31E+00	O	182	Si- 27	100.0	3000.0	1.03E-01	O
182	F - 20	100.0	3000.0	6.68E-01	O	182	Si- 28	100.0	3000.0	6.02E-01	O

182	Si- 29	100.0	3000.0	1.44E+00	O	182	Ar- 42	35.0	3000.0	1.67E+00	O
182	Si- 30	100.0	3000.0	1.56E+00	O	182	Ar- 43	35.0	3000.0	1.42E+00	O
182	Si- 31	100.0	3000.0	8.65E-01	O	182	Ar- 44	35.0	3000.0	2.15E+00	O
182	Si- 32	100.0	3000.0	4.04E-01	O	182	Ar- 45	35.0	3000.0	1.41E+00	O
182	Si- 33	100.0	3000.0	1.58E-01	O	182	K - 37	100.0	3000.0	1.64E-02	O
182	Si- 34	100.0	3000.0	1.83E-01	O	182	K - 38g	100.0	3000.0	1.23E-01	O
182	Si- 35	100.0	3000.0	8.20E-02	O	182	K - 38m	100.0	3000.0	1.23E-01	O
182	P - 24	100.0	3000.0	9.62E-07	O	182	K - 39	300.0	3000.0	1.16E+00	O
182	P - 25	100.0	3000.0	1.55E-05	O	182	K - 40	200.0	3000.0	1.14E+00	O
182	P - 26	100.0	3000.0	4.80E-05	O	182	K - 41	100.0	3000.0	1.83E+00	O
182	P - 27	100.0	3000.0	7.60E-04	O	182	K - 42	100.0	3000.0	1.01E+00	O
182	P - 28	100.0	3000.0	7.38E-03	O	182	K - 43	100.0	3000.0	3.95E-01	O
182	P - 29	100.0	3000.0	8.07E-02	O	182	K - 44	100.0	3000.0	1.46E-01	O
182	P - 30	100.0	3000.0	5.26E-01	O	182	K - 45	100.0	3000.0	4.03E-02	O
182	P - 31	100.0	3000.0	1.34E+00	O	182	K - 46	100.0	3000.0	1.71E-02	O
182	P - 32	100.0	3000.0	1.95E+00	O	182	K - 47	100.0	1000.0	4.22E-03	O
182	P - 33	100.0	3000.0	1.09E+00	O	182	Ca- 39	100.0	3000.0	1.12E-02	O
182	P - 34	100.0	3000.0	4.27E-01	O	182	Ca- 40	100.0	3000.0	1.83E-01	O
182	P - 35	100.0	3000.0	2.25E-01	O	182	Ca- 41	100.0	3000.0	7.08E-01	O
182	P - 36	100.0	3000.0	1.53E-01	O	182	Ca- 42	225.0	3000.0	1.15E+00	O
182	P - 37	100.0	3000.0	1.45E-01	O	182	Ca- 43	200.0	3000.0	1.11E+00	O
182	P - 38	100.0	3000.0	7.60E-02	O	182	Ca- 44	100.0	3000.0	1.50E+00	O
182	S - 27	100.0	3000.0	6.84E-05	O	182	Ca- 45	100.0	3000.0	5.88E-01	O
182	S - 28	100.0	3000.0	4.20E-04	O	182	Ca- 46	100.0	3000.0	2.36E-01	O
182	S - 29	100.0	3000.0	1.86E-03	O	182	Ca- 47	100.0	3000.0	8.08E-02	O
182	S - 30	100.0	3000.0	1.79E-02	O	182	Ca- 48	100.0	3000.0	1.82E-02	O
182	S - 31	100.0	3000.0	8.06E-02	O	182	Ca- 49	100.0	1000.0	4.99E-03	O
182	S - 32	100.0	3000.0	3.83E-01	O	182	Sc- 42g	100.0	3000.0	6.10E-02	O
182	S - 33	50.0	3000.0	1.17E+00	O	182	Sc- 42m	100.0	3000.0	4.81E-02	O
182	S - 34	50.0	3000.0	1.42E+00	O	182	Sc- 43	100.0	3000.0	5.43E-01	O
182	S - 35	50.0	3000.0	1.17E+00	O	182	Sc- 44g	100.0	3000.0	1.10E+00	N
182	S - 36	40.0	3000.0	1.97E+00	O	182	Sc- 44m	100.0	3000.0	7.33E-01	N
182	S - 37	40.0	3000.0	1.32E+00	O	182	Sc- 45g	100.0	3000.0	1.24E+00	O
182	S - 38	40.0	3000.0	1.99E+00	O	182	Sc- 45m	100.0	3000.0	1.24E+00	O
182	S - 39	40.0	3000.0	1.33E+00	O	182	Sc- 46g	100.0	3000.0	1.66E+00	N
182	S - 40	40.0	3000.0	1.75E+00	O	182	Sc- 46m	100.0	3000.0	3.46E-01	N
182	S - 41	100.0	3000.0	4.93E-01	O	182	Sc- 47	100.0	3000.0	9.05E-01	O
182	Cl- 30	100.0	3000.0	2.32E-05	O	182	Sc- 48	160.0	1600.0	4.29E-01	I
182	Cl- 31	100.0	3000.0	3.51E-04	O	182	Sc- 49	100.0	3000.0	1.13E-01	O
182	Cl- 32	100.0	3000.0	3.12E-03	O	182	Sc- 50g	100.0	3000.0	1.75E-02	O
182	Cl- 33	100.0	3000.0	3.75E-02	O	182	Sc- 50m	100.0	3000.0	1.75E-02	O
182	Cl- 34g	100.0	3000.0	1.21E-01	O	182	Sc- 51	100.0	3000.0	5.21E-03	O
182	Cl- 34m	100.0	3000.0	2.14E-01	O	182	Ti- 43	100.0	3000.0	5.19E-03	O
182	Cl- 35	50.0	3000.0	1.04E+00	O	182	Ti- 44	100.0	3000.0	8.42E-02	O
182	Cl- 36	50.0	3000.0	1.21E+00	O	182	Ti- 45	100.0	3000.0	5.00E-01	O
182	Cl- 37	100.0	3000.0	1.46E+00	O	182	Ti- 46	225.0	3000.0	1.49E+00	O
182	Cl- 38g	100.0	3000.0	2.94E-01	O	182	Ti- 47	180.0	3000.0	1.61E+00	O
182	Cl- 38m	100.0	3000.0	2.94E-01	O	182	Ti- 48	100.0	3000.0	2.29E+00	O
182	Cl- 39	100.0	3000.0	2.77E-01	O	182	Ti- 49	100.0	3000.0	9.65E-01	O
182	Cl- 40	100.0	3000.0	1.37E-01	O	182	Ti- 50	100.0	3000.0	4.40E-01	O
182	Cl- 41	100.0	3000.0	1.66E-01	O	182	Ti- 51	100.0	3000.0	1.03E-01	O
182	Cl- 42	100.0	3000.0	1.66E-01	O	182	Ti- 52	100.0	3000.0	3.25E-02	O
182	Ar- 31	100.0	3000.0	6.24E-05	O	182	Ti- 53	100.0	1200.0	7.21E-03	O
182	Ar- 32	100.0	3000.0	3.66E-04	O	182	Ti- 54	100.0	900.0	2.21E-03	O
182	Ar- 33	100.0	3000.0	1.26E-03	O	182	V - 45	100.0	3000.0	3.92E-03	O
182	Ar- 34	100.0	3000.0	7.36E-03	O	182	V - 46g	100.0	3000.0	3.75E-02	O
182	Ar- 35	100.0	3000.0	3.95E-02	O	182	V - 46m	100.0	3000.0	3.75E-02	O
182	Ar- 36	100.0	3000.0	2.92E-01	O	182	V - 47	100.0	3000.0	4.17E-01	O
182	Ar- 37	60.0	3000.0	1.00E+00	O	182	V - 48	225.0	3000.0	1.13E+00	C
182	Ar- 38	100.0	3000.0	2.06E+00	O	182	V - 49	200.0	3000.0	1.61E+00	O
182	Ar- 39	100.0	3000.0	1.67E+00	O	182	V - 50	160.0	3000.0	1.35E+00	O
182	Ar- 40	40.0	3000.0	1.15E+00	O	182	V - 51	100.0	3000.0	1.47E+00	O
182	Ar- 41	100.0	3000.0	5.22E-01	O	182	V - 52	100.0	3000.0	5.19E-01	O

182	V - 53	100.0	3000.0	1.63E-01	O	182	Co- 66	100.0	3000.0	4.08E-03	O
182	V - 54	100.0	3000.0	5.21E-02	O	182	Ni- 55	100.0	3000.0	2.95E-04	O
182	V - 55	100.0	1000.0	1.64E-02	O	182	Ni- 56	100.0	2500.0	1.32E-02	O
182	V - 56	100.0	1000.0	3.33E-03	O	182	Ni- 57	100.0	2500.0	1.53E-01	O
182	Cr- 48	100.0	3000.0	2.11E-02	C	182	Ni- 58	250.0	3000.0	1.10E+00	O
182	Cr- 49	100.0	3000.0	3.79E-01	O	182	Ni- 59	160.0	3000.0	2.16E+00	O
182	Cr- 50	250.0	3000.0	1.53E+00	O	182	Ni- 60	160.0	3000.0	2.11E+00	O
182	Cr- 51	140.0	3000.0	1.93E+00	O	182	Ni- 61	110.0	3000.0	1.57E+00	O
182	Cr- 52	160.0	3000.0	1.10E+00	O	182	Ni- 62	100.0	3000.0	3.03E+00	O
182	Cr- 53	100.0	3000.0	1.67E+00	O	182	Ni- 63	100.0	3000.0	1.08E+00	O
182	Cr- 54	100.0	3000.0	7.66E-01	O	182	Ni- 64	100.0	3000.0	6.17E-01	O
182	Cr- 55	100.0	3000.0	1.89E-01	O	182	Ni- 65	100.0	3000.0	1.73E-01	O
182	Cr- 56	100.0	3000.0	7.70E-02	O	182	Ni- 66	100.0	3000.0	8.53E-02	O
182	Cr- 57	100.0	1500.0	1.87E-02	O	182	Ni- 67	100.0	3000.0	1.18E-02	O
182	Cr- 58	100.0	2000.0	7.02E-03	O	182	Ni- 68	100.0	3000.0	2.42E-03	O
182	Mn- 49	100.0	2500.0	1.38E-03	O	182	Ni- 69g	100.0	140.0	1.20E-03	O
182	Mn- 50g	100.0	3000.0	2.70E-02	O	182	Ni- 69m	100.0	140.0	1.20E-03	O
182	Mn- 50m	100.0	3000.0	4.05E-02	O	182	Cu- 58	100.0	2500.0	5.95E-03	O
182	Mn- 51	100.0	3000.0	3.22E-01	O	182	Cu- 59	100.0	3000.0	4.19E-02	O
182	Mn- 52g	180.0	3000.0	1.30E+00	O	182	Cu- 60	100.0	3000.0	3.83E-01	O
182	Mn- 52m	100.0	3000.0	4.75E-01	O	182	Cu- 61	225.0	3000.0	1.47E+00	O
182	Mn- 53	180.0	3000.0	2.28E+00	O	182	Cu- 62	140.0	3000.0	2.24E+00	O
182	Mn- 54	100.0	2500.0	1.65E+00	I	182	Cu- 63	100.0	3000.0	1.83E+00	O
182	Mn- 55	100.0	3000.0	2.24E+00	O	182	Cu- 64	80.0	3000.0	1.31E+00	O
182	Mn- 56	100.0	3000.0	9.26E-01	O	182	Cu- 65	100.0	3000.0	1.61E+00	O
182	Mn- 57	100.0	3000.0	4.23E-01	O	182	Cu- 66	100.0	3000.0	6.30E-01	O
182	Mn- 58g	100.0	3000.0	2.67E-02	O	182	Cu- 67	100.0	3000.0	2.41E-01	O
182	Mn- 58m	100.0	3000.0	9.38E-02	O	182	Cu- 68g	100.0	3000.0	2.26E-02	O
182	Mn- 59	100.0	3000.0	4.76E-02	C	182	Cu- 68m	100.0	3000.0	4.74E-02	O
182	Mn- 60g	100.0	3000.0	2.63E-03	O	182	Cu- 69	100.0	800.0	1.98E-02	O
182	Mn- 60m	100.0	3000.0	1.17E-02	O	182	Cu- 70g	100.0	1000.0	1.38E-03	O
182	Mn- 62g	100.0	1200.0	3.91E-04	O	182	Cu- 70m	100.0	1000.0	2.38E-03	O
182	Mn- 62m	100.0	1200.0	3.91E-04	O	182	Cu- 70m2	100.0	1000.0	3.77E-06	O
182	Fe- 52g	650.0	3000.0	6.20E-01	I	182	Cu- 71	100.0	275.0	2.10E-03	O
182	Fe- 52m	100.0	3000.0	1.05E-02	O	182	Cu- 72	100.0	500.0	1.14E-03	O
182	Fe- 53g	100.0	3000.0	1.04E-01	O	182	Zn- 61g	100.0	2500.0	5.97E-03	O
182	Fe- 53m	100.0	3000.0	1.04E-01	O	182	Zn- 61m	100.0	2500.0	5.97E-03	O
182	Fe- 54	180.0	3000.0	1.67E+00	O	182	Zn- 61m2	100.0	2500.0	5.97E-03	O
182	Fe- 55	160.0	3000.0	2.16E+00	O	182	Zn- 61m3	100.0	2500.0	5.97E-03	O
182	Fe- 56	120.0	3000.0	1.34E+00	O	182	Zn- 62	100.0	3000.0	2.20E-01	O
182	Fe- 57	100.0	3000.0	2.68E+00	O	182	Zn- 63	100.0	3000.0	1.09E+00	O
182	Fe- 58	100.0	3000.0	1.45E+00	O	182	Zn- 64	160.0	3000.0	1.28E+00	O
182	Fe- 59	100.0	3000.0	5.89E-01	C	182	Zn- 65	140.0	3000.0	1.37E+00	O
182	Fe- 60	100.0	3000.0	1.97E-01	O	182	Zn- 66	110.0	2500.0	1.08E+00	O
182	Fe- 61	100.0	3000.0	3.53E-02	O	182	Zn- 67	100.0	3000.0	2.07E+00	O
182	Fe- 62	100.0	550.0	1.46E-02	O	182	Zn- 68	100.0	3000.0	1.44E+00	O
182	Fe- 63	100.0	900.0	5.15E-03	O	182	Zn- 69g	100.0	3000.0	7.67E-02	O
182	Co- 54g	100.0	3000.0	1.14E-02	O	182	Zn- 69m	80.0	1600.0	3.19E-01	I
182	Co- 54m	100.0	3000.0	1.33E-02	O	182	Zn- 70	100.0	3000.0	9.67E-02	O
182	Co- 55	100.0	3000.0	2.27E-01	O	182	Zn- 71g	100.0	3000.0	2.08E-02	O
182	Co- 56	250.0	3000.0	1.93E+00	O	182	Zn- 71m	100.0	3000.0	1.25E-02	O
182	Co- 57	120.0	3000.0	1.93E+00	O	182	Zn- 72	100.0	1500.0	1.23E-02	O
182	Co- 58g	150.0	2600.0	6.42E-01	N	182	Zn- 73g	100.0	550.0	2.12E-03	O
182	Co- 58m	100.0	3000.0	1.21E+00	N	182	Zn- 73m	100.0	550.0	2.12E-03	O
182	Co- 59	100.0	3000.0	3.63E+00	O	182	Zn- 73m2	100.0	550.0	2.12E-03	O
182	Co- 60g	100.0	3000.0	1.14E+00	N	182	Ga- 63	100.0	2500.0	2.30E-02	O
182	Co- 60m	100.0	3000.0	4.61E-01	N	182	Ga- 64	100.0	2500.0	1.08E-01	O
182	Co- 61	100.0	3000.0	9.21E-01	O	182	Ga- 65	100.0	3000.0	6.45E-01	O
182	Co- 62g	100.0	3000.0	1.73E-01	O	182	Ga- 66	160.0	3000.0	1.43E+00	O
182	Co- 62m	100.0	3000.0	1.32E-01	O	182	Ga- 67	120.0	3000.0	1.91E+00	O
182	Co- 63	100.0	3000.0	1.08E-01	O	182	Ga- 68	100.0	3000.0	1.48E+00	O
182	Co- 64	100.0	3000.0	2.56E-02	O	182	Ga- 69	100.0	3000.0	2.81E+00	O
182	Co- 65	100.0	650.0	1.03E-02	O	182	Ga- 70	100.0	3000.0	1.39E+00	O

182	Ga- 71	100.0	3000.0	4.00E-01	O	182	Se- 84	100.0	3000.0	2.90E-03	O
182	Ga- 72g	100.0	3000.0	1.72E-01	N	182	Br- 72g	100.0	2500.0	3.91E-03	O
182	Ga- 72m	100.0	3000.0	1.72E-01	N	182	Br- 72m	100.0	2500.0	9.64E-03	O
182	Ga- 73	100.0	3000.0	5.53E-02	O	182	Br- 73	100.0	2000.0	1.10E-01	O
182	Ga- 74g	100.0	3000.0	1.15E-02	O	182	Br- 74g	100.0	2500.0	2.33E-01	O
182	Ga- 74m	100.0	3000.0	8.20E-03	O	182	Br- 74m	100.0	2500.0	3.27E-01	O
182	Ga- 75	100.0	160.0	5.37E-03	O	182	Br- 75	200.0	3000.0	1.08E+00	C
182	Ga- 76	100.0	550.0	2.17E-03	O	182	Br- 76g	100.0	3000.0	2.17E+00	O
182	Ge- 65	100.0	2500.0	1.01E-02	O	182	Br- 76m	100.0	3000.0	2.84E+00	O
182	Ge- 66	100.0	2500.0	6.82E-02	O	182	Br- 77g	100.0	3000.0	5.70E-01	O
182	Ge- 67	100.0	3000.0	4.33E-01	O	182	Br- 77m	100.0	3000.0	3.95E+00	O
182	Ge- 68	100.0	3000.0	2.19E+00	O	182	Br- 78	100.0	3000.0	2.81E+00	O
182	Ge- 69	160.0	3000.0	1.28E+00	O	182	Br- 79g	100.0	3000.0	8.74E-01	O
182	Ge- 70	120.0	2500.0	1.32E+00	O	182	Br- 79m	100.0	3000.0	1.04E+00	O
182	Ge- 71g	100.0	3000.0	1.63E+00	O	182	Br- 80g	100.0	3000.0	3.18E-01	O
182	Ge- 71m	100.0	3000.0	1.63E+00	O	182	Br- 80m	100.0	3000.0	4.29E-01	O
182	Ge- 72	100.0	3000.0	2.23E+00	O	182	Br- 81	100.0	3000.0	5.30E-01	O
182	Ge- 73g	100.0	3000.0	2.97E-01	O	182	Br- 82g	100.0	3000.0	2.29E-01	N
182	Ge- 73m	100.0	3000.0	2.97E-01	O	182	Br- 82m	100.0	3000.0	8.59E-02	N
182	Ge- 74	100.0	3000.0	3.73E-01	O	182	Br- 83	100.0	3000.0	5.42E-02	O
182	Ge- 75g	100.0	3000.0	1.24E-02	O	182	Br- 84g	100.0	500.0	1.75E-03	O
182	Ge- 75m	100.0	3000.0	7.11E-02	O	182	Br- 84m	100.0	500.0	8.88E-03	O
182	Ge- 76	100.0	800.0	3.66E-02	O	182	Br- 85	100.0	3000.0	6.95E-03	O
182	Ge- 77g	100.0	350.0	7.46E-03	O	182	Kr- 73	100.0	3000.0	1.71E-03	O
182	Ge- 77m	100.0	350.0	7.24E-04	O	182	Kr- 74	100.0	2500.0	1.17E-02	O
182	Ge- 78	100.0	450.0	2.33E-03	O	182	Kr- 75	100.0	2500.0	8.89E-02	C
182	Ge- 79g	100.0	200.0	8.80E-04	O	182	Kr- 76	100.0	2500.0	4.95E-01	O
182	Ge- 79m	100.0	200.0	7.29E-04	O	182	Kr- 77	100.0	3000.0	2.37E+00	O
182	As- 67	100.0	3000.0	5.01E-03	O	182	Kr- 78	160.0	3000.0	1.30E+00	O
182	As- 68	100.0	2500.0	3.87E-02	O	182	Kr- 79g	100.0	3000.0	9.11E-01	O
182	As- 69	100.0	3000.0	3.10E-01	O	182	Kr- 79m	140.0	3000.0	1.07E+00	O
182	As- 70	100.0	3000.0	1.41E+00	O	182	Kr- 80	100.0	3000.0	1.03E+00	O
182	As- 71	160.0	3000.0	1.24E+00	O	182	Kr- 81g	100.0	3000.0	2.08E+00	O
182	As- 72	100.0	3000.0	7.14E-01	N	182	Kr- 81m	100.0	3000.0	9.65E-02	O
182	As- 73	120.0	3000.0	1.03E+00	O	182	Kr- 82	100.0	3000.0	1.88E+00	O
182	As- 74	80.0	1600.0	9.21E-01	I	182	Kr- 83g	100.0	3000.0	4.48E-01	O
182	As- 75g	100.0	3000.0	6.02E-01	O	182	Kr- 83m	100.0	3000.0	3.36E-02	O
182	As- 75m	100.0	3000.0	6.02E-01	O	182	Kr- 84	100.0	3000.0	2.41E-01	O
182	As- 76	100.0	3000.0	8.29E-01	N	182	Kr- 85g	100.0	3000.0	4.66E-02	O
182	As- 77	100.0	3000.0	2.01E-01	O	182	Kr- 85m	100.0	3000.0	1.65E-02	O
182	As- 78	100.0	3000.0	7.01E-02	O	182	Kr- 86	100.0	3000.0	2.07E-02	O
182	As- 79	100.0	3000.0	2.09E-02	O	182	Kr- 87	100.0	400.0	1.32E-01	C
182	As- 80	100.0	800.0	9.51E-03	O	182	Kr- 88	100.0	100.0	1.62E-03	O
182	As- 81	100.0	275.0	1.91E-03	O	182	Kr- 89	100.0	160.0	1.68E-03	O
182	Se- 70	100.0	2500.0	3.58E-02	O	182	Rb- 76	100.0	2500.0	7.22E-03	O
182	Se- 71	100.0	2000.0	1.65E-01	O	182	Rb- 77	100.0	2500.0	5.25E-02	O
182	Se- 72	100.0	3000.0	1.17E+00	O	182	Rb- 78g	100.0	2500.0	1.11E-01	O
182	Se- 73g	100.0	3000.0	1.50E+00	O	182	Rb- 78m	100.0	2500.0	1.11E-01	O
182	Se- 73m	100.0	3000.0	1.66E+00	O	182	Rb- 79	100.0	2500.0	7.99E-01	O
182	Se- 74	140.0	3000.0	1.48E+00	O	182	Rb- 80	100.0	3000.0	3.33E+00	O
182	Se- 75	100.0	3000.0	1.12E+00	C	182	Rb- 81g	100.0	3000.0	7.83E-01	O
182	Se- 76	100.0	3000.0	2.94E+00	O	182	Rb- 81m	140.0	3000.0	1.06E+00	O
182	Se- 77g	100.0	3000.0	1.12E-01	O	182	Rb- 82g	100.0	3000.0	5.18E-01	N
182	Se- 77m	100.0	3000.0	8.97E-01	O	182	Rb- 82m	100.0	2600.0	1.64E+00	N
182	Se- 78	100.0	3000.0	6.66E-01	O	182	Rb- 83g	100.0	3000.0	1.31E+00	C
182	Se- 79g	100.0	3000.0	1.75E-01	O	182	Rb- 83m	100.0	3000.0	1.31E+00	C
182	Se- 79m	100.0	3000.0	1.17E-02	O	182	Rb- 84g	70.0	1600.0	3.27E-01	I
182	Se- 80	100.0	3000.0	6.51E-02	O	182	Rb- 84m	70.0	1600.0	4.05E-01	I
182	Se- 81g	100.0	1000.0	2.65E-03	O	182	Rb- 85	100.0	3000.0	9.23E-01	O
182	Se- 81m	100.0	1000.0	1.23E-02	O	182	Rb- 86g	100.0	3000.0	2.72E-01	N
182	Se- 82	100.0	3000.0	1.24E-02	O	182	Rb- 86m	100.0	3000.0	9.42E-01	N
182	Se- 83g	100.0	275.0	1.45E-03	O	182	Rb- 87	100.0	3000.0	3.08E+00	C
182	Se- 83m	100.0	275.0	9.12E-04	O	182	Rb- 88	100.0	3000.0	3.31E-02	O

182	Rb- 89	100.0	3000.0	1.00E-02	O	182	Zr- 89m	100.0	3000.0	5.80E-01	C
182	Rb- 90g	100.0	275.0	1.00E-03	O	182	Zr- 90g	100.0	3000.0	2.28E+00	O
182	Rb- 90m	100.0	275.0	1.09E-03	O	182	Zr- 90m	100.0	3000.0	2.28E+00	O
182	Sr- 77	100.0	2000.0	4.21E-04	O	182	Zr- 91	100.0	3000.0	1.61E+00	O
182	Sr- 78	100.0	2500.0	5.07E-03	O	182	Zr- 92	100.0	3000.0	9.58E-01	O
182	Sr- 79	100.0	3000.0	3.16E-02	O	182	Zr- 93	100.0	3000.0	4.26E-01	O
182	Sr- 80	100.0	3000.0	2.25E-01	O	182	Zr- 94	100.0	2500.0	1.88E-01	O
182	Sr- 81	100.0	2500.0	6.95E-01	O	182	Zr- 95	100.0	3000.0	6.73E-02	O
182	Sr- 82	200.0	3000.0	1.27E+00	O	182	Zr- 96	100.0	3000.0	2.19E-02	O
182	Sr- 83g	160.0	3000.0	1.09E+00	C	182	Zr- 97	100.0	100.0	4.14E-03	O
182	Sr- 83m	100.0	3000.0	7.32E-01	C	182	Zr- 98	100.0	225.0	3.91E-03	O
182	Sr- 84	110.0	3000.0	1.40E+00	O	182	Zr-100	100.0	800.0	7.28E-05	O
182	Sr- 85g	100.0	3000.0	2.86E+00	C	182	Nb- 84	100.0	2000.0	6.03E-04	O
182	Sr- 85m	100.0	3000.0	2.56E-01	C	182	Nb- 85g	100.0	2500.0	2.23E-03	C
182	Sr- 86	100.0	3000.0	2.79E+00	O	182	Nb- 85m	100.0	2500.0	2.23E-03	C
182	Sr- 87g	100.0	3000.0	1.13E+00	O	182	Nb- 86g	100.0	2500.0	1.59E-02	O
182	Sr- 87m	100.0	3000.0	1.22E-01	O	182	Nb- 86m	100.0	2500.0	1.59E-02	O
182	Sr- 88	100.0	3000.0	6.64E-01	O	182	Nb- 87g	100.0	2500.0	3.46E-02	C
182	Sr- 89	100.0	3000.0	1.49E-01	O	182	Nb- 87m	100.0	2500.0	1.30E-01	C
182	Sr- 90	100.0	3000.0	5.24E-02	O	182	Nb- 88g	100.0	2500.0	3.39E-01	C
182	Sr- 91	100.0	160.0	1.44E-02	O	182	Nb- 88m	100.0	2500.0	3.39E-01	C
182	Sr- 92	100.0	750.0	9.25E-03	O	182	Nb- 89g	180.0	3000.0	1.95E+00	C
182	Sr- 93	100.0	225.0	2.25E-03	O	182	Nb- 89m	100.0	2500.0	1.53E-01	C
182	Sr- 94	100.0	350.0	6.62E-04	O	182	Nb- 90g	120.0	3000.0	2.26E+00	C
182	Y - 80g	100.0	3000.0	5.44E-03	O	182	Nb- 90m	100.0	3000.0	6.63E-01	C
182	Y - 80m	100.0	3000.0	3.51E-03	O	182	Nb- 90m2	100.0	3000.0	4.67E-03	C
182	Y - 81	100.0	2500.0	1.68E-02	O	182	Nb- 91g	95.0	3000.0	1.24E+00	N
182	Y - 82	100.0	2500.0	7.78E-02	O	182	Nb- 91m	100.0	3000.0	7.86E-01	N
182	Y - 83g	100.0	2500.0	1.69E-01	C	182	Nb- 92g	100.0	3000.0	1.87E+00	O
182	Y - 83m	100.0	2500.0	1.62E-01	C	182	Nb- 92m	100.0	3000.0	5.93E-01	O
182	Y - 84g	100.0	2500.0	4.93E-01	O	182	Nb- 93g	100.0	3000.0	1.51E+00	O
182	Y - 84m	100.0	2500.0	4.93E-01	O	182	Nb- 93m	100.0	3000.0	1.29E-01	O
182	Y - 85g	100.0	3000.0	2.97E-01	C	182	Nb- 94g	100.0	3000.0	6.54E-01	O
182	Y - 85m	140.0	3000.0	1.18E+00	C	182	Nb- 94m	100.0	3000.0	2.01E-01	O
182	Y - 86g	100.0	3000.0	2.17E+00	O	182	Nb- 95g	100.0	3000.0	9.28E-01	N
182	Y - 86m	100.0	3000.0	2.23E+00	O	182	Nb- 95m	100.0	2000.0	6.69E-01	O
182	Y - 87g	100.0	3000.0	4.50E-01	C	182	Nb- 96	100.0	2500.0	1.86E-01	O
182	Y - 87m	75.0	3000.0	1.29E+00	C	182	Nb- 97g	100.0	3000.0	4.98E-02	O
182	Y - 88g	40.0	3000.0	4.73E-01	I	182	Nb- 97m	100.0	3000.0	1.54E-02	O
182	Y - 88m	40.0	3000.0	4.73E-01	I	182	Nb- 98g	100.0	2000.0	1.41E-02	O
182	Y - 89g	100.0	3000.0	1.64E-01	O	182	Nb- 98m	100.0	2000.0	4.49E-03	O
182	Y - 89m	100.0	3000.0	1.45E+00	O	182	Nb- 99g	100.0	900.0	2.28E-03	O
182	Y - 90g	100.0	3000.0	1.28E-01	N	182	Nb- 99m	100.0	900.0	1.70E-03	O
182	Y - 90m	100.0	2500.0	1.04E+00	N	182	Nb-100g	100.0	3000.0	2.76E-03	O
182	Y - 91g	100.0	2500.0	7.75E-02	O	182	Nb-100m	100.0	3000.0	4.55E-04	O
182	Y - 91m	100.0	2500.0	1.12E-01	O	182	Mo- 86	100.0	2500.0	1.97E-04	O
182	Y - 92	100.0	3000.0	6.90E-02	O	182	Mo- 87	100.0	2500.0	2.42E-03	C
182	Y - 93g	100.0	3000.0	1.37E-02	O	182	Mo- 88	100.0	2500.0	3.08E-02	C
182	Y - 93m	100.0	3000.0	1.37E-02	O	182	Mo- 89g	100.0	2500.0	7.80E-02	C
182	Y - 94	100.0	3000.0	7.01E-03	O	182	Mo- 89m	100.0	2500.0	7.80E-02	C
182	Y - 95	100.0	3000.0	3.25E-03	O	182	Mo- 90	100.0	3000.0	5.56E-01	C
182	Y - 96g	100.0	3000.0	6.66E-04	O	182	Mo- 91g	225.0	3000.0	2.08E+00	O
182	Y - 96m	100.0	3000.0	6.66E-04	O	182	Mo- 91m	100.0	3000.0	3.07E-01	O
182	Zr- 82	100.0	2500.0	1.21E-03	O	182	Mo- 92	140.0	3000.0	3.33E+00	O
182	Zr- 83	100.0	2500.0	9.84E-03	C	182	Mo- 93g	100.0	3000.0	2.58E+00	O
182	Zr- 84	100.0	3000.0	1.03E-01	O	182	Mo- 93m	120.0	3000.0	1.40E+00	I
182	Zr- 85g	100.0	3000.0	2.13E-01	C	182	Mo- 94	100.0	3000.0	3.95E+00	O
182	Zr- 85m	100.0	3000.0	1.05E-01	C	182	Mo- 95	100.0	3000.0	2.12E+00	O
182	Zr- 86	100.0	3000.0	1.33E+00	O	182	Mo- 96	100.0	3000.0	1.39E+00	O
182	Zr- 87g	160.0	3000.0	1.51E+00	C	182	Mo- 97	100.0	3000.0	6.43E-01	O
182	Zr- 87m	100.0	3000.0	8.36E-02	C	182	Mo- 98	100.0	3000.0	3.29E-01	O
182	Zr- 88	120.0	3000.0	2.32E+00	C	182	Mo- 99	100.0	2000.0	7.79E-02	O
182	Zr- 89g	80.0	3000.0	1.44E+00	C	182	Mo-100	100.0	2500.0	2.96E-02	O

182	Mo-101	100.0	3000.0	1.62E-02	O
182	Mo-102	100.0	1000.0	2.39E-03	O
182	Mo-103	100.0	130.0	7.36E-04	O
182	Tc- 89g	100.0	2500.0	1.65E-03	C
182	Tc- 89m	100.0	2500.0	2.45E-04	C
182	Tc- 90g	100.0	3000.0	6.81E-03	C
182	Tc- 90m	100.0	3000.0	6.81E-03	C
182	Tc- 91g	100.0	3000.0	6.73E-02	O
182	Tc- 91m	100.0	3000.0	8.24E-03	O
182	Tc- 92	100.0	3000.0	4.63E-01	O
182	Tc- 93g	180.0	3000.0	2.77E+00	O
182	Tc- 93m	100.0	3000.0	1.97E-01	O
182	Tc- 94g	160.0	3000.0	1.99E+00	O
182	Tc- 94m	100.0	3000.0	9.35E-02	O
182	Tc- 95g	110.0	3000.0	1.32E+00	N
182	Tc- 95m	100.0	2500.0	5.34E-01	N
182	Tc- 96g	100.0	3000.0	1.37E+00	I
182	Tc- 96m	100.0	3000.0	1.96E-01	I
182	Tc- 97g	100.0	3000.0	2.21E+00	O
182	Tc- 97m	100.0	3000.0	1.28E-01	O
182	Tc- 98	100.0	3000.0	1.19E+00	O
182	Tc- 99g	100.0	2500.0	4.64E-01	N
182	Tc- 99m	100.0	2000.0	1.50E-01	N
182	Tc-100	100.0	3000.0	2.53E-01	O
182	Tc-101	100.0	3000.0	1.41E-01	O
182	Tc-102g	100.0	2500.0	1.62E-02	O
182	Tc-102m	100.0	2500.0	1.62E-02	O
182	Tc-103	100.0	2500.0	1.46E-02	O
182	Tc-104	100.0	1000.0	3.24E-03	O
182	Tc-105	100.0	900.0	1.15E-03	O
182	Ru- 91g	100.0	3000.0	8.43E-04	O
182	Ru- 91m	100.0	3000.0	8.43E-04	O
182	Ru- 92	100.0	2500.0	7.04E-03	O
182	Ru- 93g	100.0	3000.0	7.94E-02	O
182	Ru- 93m	100.0	3000.0	7.90E-03	O
182	Ru- 94	225.0	3000.0	2.32E+00	O
182	Ru- 95	200.0	3000.0	3.12E+00	O
182	Ru- 96	180.0	3000.0	2.79E+00	O
182	Ru- 97	140.0	3000.0	2.33E+00	O
182	Ru- 98	100.0	3000.0	1.43E+00	O
182	Ru- 99	100.0	2500.0	3.38E+00	O
182	Ru-100	100.0	2500.0	2.33E+00	O
182	Ru-101	100.0	2500.0	1.01E+00	O
182	Ru-102	100.0	3000.0	6.70E-01	O
182	Ru-103g	100.0	3000.0	1.00E-01	O
182	Ru-103m	100.0	3000.0	1.00E-01	O
182	Ru-104	100.0	3000.0	1.12E-01	O
182	Ru-105	100.0	3000.0	3.58E-02	O
182	Ru-106	100.0	1000.0	5.19E-03	O
182	Ru-107	100.0	1000.0	1.92E-03	O
182	Ru-108	100.0	900.0	6.83E-04	O
182	Ru-109	100.0	900.0	2.27E-04	O
182	Rh- 94g	100.0	3000.0	6.24E-03	O
182	Rh- 94m	100.0	3000.0	6.24E-03	O
182	Rh- 95g	100.0	3000.0	1.85E-01	O
182	Rh- 95m	100.0	3000.0	1.11E-02	O
182	Rh- 96g	350.0	3000.0	1.55E+00	O
182	Rh- 96m	100.0	3000.0	1.90E-01	O
182	Rh- 97g	180.0	3000.0	2.62E+00	O
182	Rh- 97m	100.0	3000.0	5.73E-02	O
182	Rh- 98g	180.0	3000.0	1.55E+00	O
182	Rh- 98m	180.0	3000.0	1.55E+00	O
182	Rh- 99g	100.0	2500.0	3.66E-01	O
182	Rh- 99m	140.0	3000.0	2.28E+00	O
182	Rh-100g	100.0	2500.0	2.78E+00	N
182	Rh-100m	100.0	2500.0	1.72E+00	O
182	Rh-101g	100.0	2500.0	3.39E-01	O
182	Rh-101m	90.0	3000.0	1.00E+00	O
182	Rh-102g	100.0	3000.0	1.27E+00	N
182	Rh-102m	100.0	3000.0	1.02E+00	N
182	Rh-103g	100.0	3000.0	2.80E-01	O
182	Rh-103m	100.0	3000.0	1.44E+00	O
182	Rh-104g	100.0	2500.0	3.85E-01	O
182	Rh-104m	100.0	2500.0	4.34E-01	O
182	Rh-105g	100.0	2000.0	3.20E-01	O
182	Rh-105m	100.0	2000.0	1.05E-01	O
182	Rh-106g	100.0	2000.0	4.02E-02	O
182	Rh-106m	100.0	2000.0	9.74E-02	O
182	Rh-107	100.0	1500.0	4.26E-02	O
182	Rh-108g	100.0	2500.0	8.02E-03	O
182	Rh-108m	100.0	2500.0	8.02E-03	O
182	Rh-109	100.0	1000.0	3.67E-03	O
182	Rh-110g	100.0	900.0	5.90E-04	O
182	Rh-110m	100.0	900.0	5.90E-04	O
182	Pd- 96	100.0	3000.0	5.67E-02	O
182	Pd- 97	100.0	3000.0	3.56E-01	O
182	Pd- 98	225.0	3000.0	2.04E+00	O
182	Pd- 99	225.0	3000.0	3.26E+00	O
182	Pd-100	200.0	3000.0	4.22E+00	O
182	Pd-101	160.0	3000.0	4.04E+00	O
182	Pd-102	120.0	3000.0	3.00E+00	O
182	Pd-103	110.0	3000.0	1.85E+00	O
182	Pd-104	100.0	2500.0	2.35E+00	O
182	Pd-105	100.0	2500.0	1.52E+00	O
182	Pd-106	100.0	2000.0	1.02E+00	O
182	Pd-107g	100.0	3000.0	1.60E-01	O
182	Pd-107m	100.0	2000.0	2.05E-01	O
182	Pd-108	100.0	2000.0	1.92E-01	O
182	Pd-109g	100.0	2500.0	3.44E-02	O
182	Pd-109m	100.0	2500.0	2.90E-02	O
182	Pd-110	100.0	2000.0	2.22E-02	O
182	Pd-111g	100.0	1000.0	3.61E-03	O
182	Pd-111m	100.0	1000.0	1.67E-03	O
182	Pd-112	100.0	1000.0	2.04E-03	O
182	Pd-113g	100.0	900.0	3.77E-04	O
182	Pd-113m	100.0	900.0	3.77E-04	O
182	Ag- 97	100.0	2500.0	2.28E-04	O
182	Ag- 98	100.0	3000.0	2.21E-02	O
182	Ag- 99g	100.0	3000.0	1.27E-01	O
182	Ag- 99m	100.0	3000.0	2.80E-03	O
182	Ag-100g	300.0	3000.0	1.02E+00	O
182	Ag-100m	100.0	3000.0	9.72E-02	O
182	Ag-101g	300.0	3000.0	2.33E+00	O
182	Ag-101m	100.0	3000.0	1.44E-01	O
182	Ag-102g	180.0	3000.0	3.53E+00	O
182	Ag-102m	100.0	3000.0	2.64E-01	O
182	Ag-103g	160.0	3000.0	4.04E+00	O
182	Ag-103m	100.0	3000.0	1.80E-01	O
182	Ag-104g	110.0	3000.0	3.02E+00	O
182	Ag-104m	100.0	3000.0	4.60E-01	O
182	Ag-105g	100.0	2500.0	2.75E-01	C
182	Ag-105m	120.0	3000.0	3.38E+00	C
182	Ag-106g	100.0	2500.0	2.51E-01	O
182	Ag-106m	100.0	3000.0	3.34E+00	I
182	Ag-107g	100.0	2500.0	9.88E-02	O
182	Ag-107m	100.0	2500.0	1.23E+00	O

182	Ag-108g	100.0	3000.0	5.39E-01	O
182	Ag-108m	100.0	3000.0	3.68E-01	O
182	Ag-109g	100.0	3000.0	2.28E-01	O
182	Ag-109m	100.0	2500.0	2.74E-01	O
182	Ag-110g	100.0	2000.0	1.23E-01	N
182	Ag-110m	100.0	2000.0	7.09E-02	N
182	Ag-111g	100.0	1500.0	3.33E-02	O
182	Ag-111m	100.0	1500.0	6.17E-02	O
182	Ag-112	100.0	1500.0	3.23E-02	O
182	Ag-113g	100.0	1500.0	5.43E-03	O
182	Ag-113m	100.0	1500.0	6.89E-03	O
182	Ag-114g	100.0	2500.0	2.31E-03	O
182	Ag-114m	100.0	2500.0	2.31E-03	O
182	Cd- 98	100.0	3000.0	1.39E-03	O
182	Cd- 99	100.0	2500.0	1.44E-04	O
182	Cd-100	100.0	3000.0	6.95E-03	O
182	Cd-101	100.0	3000.0	1.13E-01	O
182	Cd-102	400.0	3000.0	1.21E+00	O
182	Cd-103	275.0	3000.0	3.09E+00	O
182	Cd-104	225.0	3000.0	4.78E+00	O
182	Cd-105	180.0	3000.0	8.72E+00	C
182	Cd-106	180.0	3000.0	5.53E+00	O
182	Cd-107	140.0	3000.0	3.88E+00	O
182	Cd-108	110.0	3000.0	2.65E+00	O
182	Cd-109	70.0	3000.0	1.49E+00	O
182	Cd-110	100.0	2000.0	1.93E+00	O
182	Cd-111g	100.0	3000.0	1.63E-01	O
182	Cd-111m	100.0	2000.0	8.65E-01	O
182	Cd-112	100.0	2000.0	6.37E-01	O
182	Cd-113g	100.0	3000.0	1.03E-01	O
182	Cd-113m	100.0	3000.0	9.72E-02	O
182	Cd-114	100.0	1500.0	1.10E-01	O
182	Cd-115g	100.0	2000.0	1.63E-02	O
182	Cd-115m	100.0	2000.0	3.56E-03	O
182	Cd-116	100.0	3000.0	1.09E-02	O
182	Cd-117g	100.0	3000.0	1.27E-03	O
182	Cd-117m	100.0	2500.0	2.59E-03	O
182	In-101g	100.0	2000.0	3.42E-05	O
182	In-101m	100.0	2000.0	3.42E-05	O
182	In-102	100.0	3000.0	1.45E-03	O
182	In-103g	100.0	3000.0	5.60E-02	O
182	In-103m	100.0	3000.0	6.00E-04	O
182	In-104g	100.0	3000.0	2.78E-01	O
182	In-104m	100.0	3000.0	3.37E-02	O
182	In-105g	400.0	3000.0	1.58E+00	C
182	In-105m	400.0	3000.0	1.62E+00	C
182	In-106g	250.0	3000.0	1.25E+00	O
182	In-106m	250.0	3000.0	2.87E+00	O
182	In-107g	180.0	3000.0	4.64E+00	O
182	In-107m	100.0	3000.0	3.66E-01	O
182	In-108g	180.0	3000.0	2.96E+00	N
182	In-108m	180.0	3000.0	6.05E+00	N
182	In-109g	140.0	3000.0	4.77E+00	O
182	In-109m	100.0	3000.0	3.74E-01	O
182	In-109m2	100.0	2500.0	3.67E-03	O
182	In-110g	100.0	3000.0	5.33E+00	N
182	In-110m	100.0	3000.0	4.62E+00	N
182	In-111g	100.0	3000.0	2.32E+00	O
182	In-111m	100.0	2500.0	1.48E-01	O
182	In-112g	100.0	2500.0	3.05E-01	O
182	In-112m	90.0	3000.0	1.04E+00	O
182	In-113g	100.0	2500.0	8.02E-01	O
182	In-113m	100.0	2500.0	8.98E-02	O
182	In-114g	100.0	2000.0	2.64E-02	O
182	In-114m	100.0	2000.0	4.79E-01	O
182	In-114m2	100.0	2000.0	5.05E-04	O
182	In-115g	100.0	1500.0	1.63E-01	O
182	In-115m	100.0	3000.0	8.89E-02	O
182	In-116g	100.0	3000.0	4.45E-03	O
182	In-116m	100.0	1500.0	1.39E-02	O
182	In-116m2	100.0	1500.0	7.62E-02	O
182	In-117g	100.0	1500.0	2.69E-02	O
182	In-117m	100.0	1500.0	1.43E-02	O
182	In-118g	100.0	1200.0	1.24E-03	O
182	In-118m	100.0	1200.0	2.12E-03	O
182	In-118m2	100.0	3000.0	9.05E-03	O
182	In-119g	100.0	1200.0	3.30E-03	O
182	In-119m	100.0	1000.0	4.25E-04	O
182	Sn-104	100.0	3000.0	2.80E-03	O
182	Sn-105	100.0	3000.0	4.45E-02	C
182	Sn-106	100.0	3000.0	2.14E-01	O
182	Sn-107	275.0	3000.0	1.52E+00	O
182	Sn-108	250.0	3000.0	3.59E+00	O
182	Sn-109	225.0	3000.0	6.19E+00	O
182	Sn-110	225.0	3000.0	9.33E+00	O
182	Sn-111	160.0	3000.0	8.63E+00	O
182	Sn-112	140.0	3000.0	8.39E+00	O
182	Sn-113g	100.0	2500.0	2.95E-01	C
182	Sn-113m	100.0	3000.0	8.03E+00	C
182	Sn-114	100.0	3000.0	3.87E+00	O
182	Sn-115	90.0	3000.0	1.83E+00	O
182	Sn-116	100.0	2500.0	8.54E-01	O
182	Sn-117g	100.0	2000.0	1.07E-01	O
182	Sn-117m	100.0	3000.0	3.28E-01	O
182	Sn-118	100.0	1500.0	1.89E-01	O
182	Sn-119g	100.0	1500.0	4.28E-02	O
182	Sn-119m	100.0	1500.0	2.34E-02	O
182	Sn-120	100.0	1500.0	2.65E-02	O
182	Sn-121g	100.0	2000.0	5.92E-04	O
182	Sn-121m	100.0	2000.0	6.18E-03	O
182	Sb-108	100.0	3000.0	3.78E-03	O
182	Sb-109	100.0	3000.0	3.51E-02	O
182	Sb-110	100.0	2500.0	1.04E-01	O
182	Sb-111	275.0	3000.0	2.45E+00	O
182	Sb-112	160.0	3000.0	3.96E+00	O
182	Sb-113	180.0	3000.0	8.58E+00	C
182	Sb-114	140.0	3000.0	6.87E+00	O
182	Sb-115	225.0	3000.0	5.65E+00	O
182	Sb-116g	100.0	3000.0	1.22E+00	O
182	Sb-116m	100.0	3000.0	2.50E+00	O
182	Sb-117	110.0	3000.0	2.22E+00	O
182	Sb-118g	100.0	2000.0	3.71E-01	N
182	Sb-118m	100.0	2500.0	9.34E-01	N
182	Sb-119g	100.0	2000.0	2.93E-01	O
182	Sb-119m	100.0	2000.0	2.93E-01	O
182	Sb-120g	100.0	2500.0	1.27E-01	N
182	Sb-120m	100.0	2600.0	1.50E-01	N
182	Sb-121	100.0	3000.0	1.18E-01	O
182	Sb-122g	100.0	2000.0	1.31E-02	O
182	Sb-122m	100.0	2000.0	3.42E-02	O
182	Sb-123	100.0	2500.0	1.79E-02	O
182	Sb-124g	100.0	2000.0	3.35E-01	N
182	Sb-124m	100.0	2000.0	2.75E-01	N
182	Sb-124m2	100.0	2000.0	4.48E-01	N
182	Te-110	100.0	2500.0	2.08E-03	O
182	Te-111	100.0	2500.0	8.65E-03	O

182	Te-112	100.0	3000.0	6.29E-02	O
182	Te-113	100.0	3000.0	6.51E-01	C
182	Te-114	250.0	3000.0	2.57E+00	O
182	Te-115g	250.0	3000.0	4.94E+00	O
182	Te-115m	100.0	2500.0	1.08E-01	O
182	Te-116	160.0	3000.0	6.75E+00	O
182	Te-117g	140.0	3000.0	3.06E+00	O
182	Te-117m	140.0	3000.0	3.06E+00	O
182	Te-118	120.0	3000.0	5.17E+00	O
182	Te-119g	100.0	2000.0	7.08E-01	C
182	Te-119m	140.0	3000.0	3.41E+00	C
182	Te-120	100.0	3000.0	1.58E+00	O
182	Te-121g	100.0	2000.0	1.08E-01	C
182	Te-121m	100.0	2500.0	7.80E-01	I
182	Te-122	100.0	2500.0	4.65E-01	O
182	Te-123g	100.0	2000.0	7.72E-02	O
182	Te-123m	100.0	2000.0	8.35E-02	O
182	Te-124	100.0	2000.0	1.04E-01	O
182	Te-125g	100.0	1200.0	1.18E-02	O
182	Te-125m	100.0	1200.0	1.44E-02	O
182	Te-126	100.0	2500.0	1.09E-02	O
182	Te-127g	100.0	2500.0	1.45E-03	O
182	Te-127m	100.0	2500.0	2.28E-03	O
182	Te-129g	100.0	2500.0	1.30E-05	O
182	Te-129m	100.0	2500.0	6.00E-05	O
182	I -113	100.0	2500.0	6.31E-03	C
182	I -114g	100.0	3000.0	5.11E-02	O
182	I -114m	100.0	3000.0	9.05E-03	O
182	I -115	100.0	3000.0	2.75E-01	O
182	I -116	275.0	3000.0	2.31E+00	O
182	I -117	180.0	3000.0	4.64E+00	O
182	I -118g	250.0	3000.0	2.99E+00	O
182	I -118m	250.0	3000.0	2.99E+00	O
182	I -119	140.0	3000.0	8.17E+00	C
182	I -120g	200.0	3000.0	9.24E+00	N
182	I -120m	200.0	3000.0	2.79E+00	N
182	I -121	160.0	3000.0	4.50E+00	C
182	I -122	180.0	2500.0	1.97E+00	O
182	I -123	250.0	3000.0	1.14E+00	O
182	I -124	100.0	2000.0	8.46E-01	O
182	I -125	100.0	2000.0	4.86E-01	O
182	I -126	100.0	3000.0	1.78E-01	N
182	I -127	100.0	2000.0	9.44E-02	O
182	I -128	100.0	3000.0	4.73E-02	O
182	Xe-114	100.0	2000.0	2.49E-04	O
182	Xe-115	100.0	2500.0	1.61E-03	O
182	Xe-116	100.0	3000.0	7.35E-02	O
182	Xe-117	100.0	3000.0	1.49E-01	O
182	Xe-118	450.0	3000.0	2.76E+00	O
182	Xe-119	250.0	3000.0	6.21E+00	C
182	Xe-120	180.0	3000.0	7.25E+00	O
182	Xe-121	225.0	3000.0	9.40E+00	C
182	Xe-122	200.0	3000.0	7.18E+00	O
182	Xe-123	140.0	2500.0	7.07E+00	C
182	Xe-124	225.0	3000.0	3.18E+00	O
182	Xe-125g	100.0	2500.0	5.65E-01	C
182	Xe-125m	100.0	2500.0	6.77E-01	C
182	Xe-126	100.0	2500.0	6.63E-01	O
182	Xe-127g	100.0	2000.0	8.08E-02	C
182	Xe-127m	100.0	2000.0	2.17E-01	C
182	Xe-128	100.0	2000.0	1.22E-01	O
182	Xe-129g	100.0	2500.0	1.94E-02	O
182	Xe-129m	100.0	2500.0	1.50E-02	O
182	Xe-130	100.0	2000.0	1.72E-02	O
182	Xe-131g	100.0	2000.0	1.48E-03	O
182	Xe-131m	100.0	2000.0	1.59E-03	O
182	Cs-117g	100.0	2500.0	1.17E-02	O
182	Cs-117m	100.0	2500.0	2.35E-03	O
182	Cs-118g	100.0	2000.0	2.88E-02	O
182	Cs-118m	100.0	2000.0	2.88E-02	O
182	Cs-119g	100.0	2500.0	1.74E-01	C
182	Cs-119m	100.0	2500.0	1.74E-01	C
182	Cs-120g	100.0	2500.0	5.20E-01	O
182	Cs-120m	100.0	2500.0	5.20E-01	O
182	Cs-121g	400.0	3000.0	1.37E+00	C
182	Cs-121m	400.0	3000.0	3.06E+00	C
182	Cs-122g	275.0	3000.0	1.92E+00	O
182	Cs-122m	275.0	3000.0	4.15E+00	O
182	Cs-122m2	100.0	2500.0	4.35E-03	O
182	Cs-123g	160.0	2500.0	5.82E+00	C
182	Cs-123m	160.0	2500.0	4.68E+00	C
182	Cs-124g	200.0	3000.0	3.72E+00	O
182	Cs-124m	200.0	3000.0	3.72E+00	O
182	Cs-125g	180.0	3000.0	3.07E+00	C
182	Cs-125m	180.0	3000.0	3.07E+00	C
182	Cs-126	140.0	2500.0	3.68E+00	O
182	Cs-127	80.0	2500.0	2.19E+00	C
182	Cs-128	100.0	2000.0	7.49E-01	O
182	Cs-129	100.0	2000.0	5.15E-01	C
182	Cs-130g	100.0	2500.0	1.13E-01	O
182	Cs-130m	100.0	2000.0	6.93E-02	O
182	Cs-131	100.0	1000.0	8.47E-02	O
182	Cs-132	100.0	2500.0	2.21E-02	O
182	Cs-133	100.0	2000.0	1.10E-02	O
182	Ba-119	100.0	3000.0	1.82E-03	C
182	Ba-120	100.0	3000.0	2.16E-02	O
182	Ba-121	100.0	2500.0	7.62E-02	C
182	Ba-122	650.0	3000.0	1.29E+00	O
182	Ba-123	550.0	2500.0	4.67E+00	C
182	Ba-124	450.0	3000.0	6.26E+00	O
182	Ba-125	350.0	2500.0	8.37E+00	C
182	Ba-126	250.0	3000.0	8.87E+00	O
182	Ba-127g	160.0	2500.0	4.36E+00	C
182	Ba-127m	160.0	2500.0	3.36E+00	C
182	Ba-128	140.0	2500.0	5.63E+00	C
182	Ba-129g	100.0	2000.0	7.07E-01	C
182	Ba-129m	180.0	2500.0	2.87E+00	C
182	Ba-130g	100.0	2000.0	1.00E+00	O
182	Ba-130m	100.0	2000.0	1.00E+00	O
182	Ba-131g	100.0	1600.0	2.14E-01	C
182	Ba-131m	100.0	2000.0	6.89E-01	C
182	Ba-132	100.0	2000.0	4.55E-01	O
182	Ba-133g	100.0	1200.0	1.15E-01	C
182	Ba-133m	100.0	1200.0	4.85E-02	C
182	Ba-134	100.0	2000.0	8.20E-02	O
182	Ba-135g	100.0	2000.0	1.55E-03	O
182	Ba-135m	100.0	2500.0	1.45E-02	O
182	Ba-136g	100.0	2500.0	3.77E-03	O
182	Ba-136m	100.0	2500.0	3.77E-03	O
182	La-121	100.0	3000.0	1.59E-03	C
182	La-122	100.0	3000.0	5.99E-03	O
182	La-123	100.0	2500.0	6.81E-02	C
182	La-124g	100.0	2500.0	8.78E-02	O
182	La-124m	100.0	2500.0	8.78E-02	O
182	La-125g	700.0	2500.0	1.32E+00	C
182	La-125m	700.0	2500.0	1.32E+00	C

182	La-126g	650.0	3000.0	2.29E+00	O
182	La-126m	650.0	3000.0	2.29E+00	O
182	La-127g	500.0	2500.0	5.74E+00	C
182	La-127m	500.0	2500.0	1.97E+00	C
182	La-128g	180.0	2500.0	4.25E+00	C
182	La-128m	180.0	2500.0	4.25E+00	C
182	La-129g	275.0	2500.0	4.40E+00	C
182	La-129m	275.0	2500.0	4.40E+00	C
182	La-130	120.0	1600.0	6.30E+00	N
182	La-131	180.0	2500.0	3.59E+00	C
182	La-132g	550.0	2500.0	9.43E-01	C
182	La-132m	550.0	2500.0	9.02E-01	C
182	La-133	100.0	2000.0	1.23E+00	C
182	La-134	100.0	1500.0	5.07E-01	O
182	La-135	100.0	2000.0	2.66E-01	O
182	La-136g	100.0	1000.0	5.14E-02	O
182	La-136m	100.0	1000.0	5.14E-02	O
182	La-137	100.0	1500.0	4.96E-02	O
182	La-138	100.0	900.0	1.30E-02	O
182	Ce-123	100.0	2500.0	2.79E-04	C
182	Ce-124	100.0	3000.0	4.29E-03	O
182	Ce-125	100.0	2500.0	3.47E-02	C
182	Ce-126	100.0	2500.0	1.79E-01	O
182	Ce-127g	100.0	2500.0	4.29E-01	C
182	Ce-127m	100.0	2500.0	4.29E-01	C
182	Ce-128	650.0	2500.0	4.66E+00	C
182	Ce-129	600.0	2500.0	7.12E+00	C
182	Ce-130	200.0	2500.0	1.02E+01	O
182	Ce-131g	600.0	2500.0	4.41E+00	C
182	Ce-131m	600.0	2500.0	4.41E+00	C
182	Ce-132g	500.0	2500.0	3.61E+00	C
182	Ce-132m	500.0	2500.0	3.61E+00	C
182	Ce-133g	500.0	2000.0	1.18E+00	C
182	Ce-133m	500.0	2500.0	3.74E+00	I
182	Ce-134	500.0	2000.0	3.07E+00	C
182	Ce-135g	450.0	2500.0	1.20E+00	C
182	Ce-135m	100.0	2000.0	2.02E-01	C
182	Ce-136	100.0	2000.0	9.34E-01	O
182	Ce-137g	100.0	1000.0	3.38E-02	O
182	Ce-137m	100.0	1000.0	3.52E-01	O
182	Ce-138g	100.0	1200.0	9.82E-02	O
182	Ce-138m	100.0	1200.0	9.82E-02	O
182	Ce-139g	100.0	1000.0	3.05E-02	C
182	Ce-139m	100.0	1000.0	2.31E-02	C
182	Ce-140	100.0	1500.0	2.13E-02	O
182	Pr-126	100.0	3000.0	2.83E-03	O
182	Pr-127g	100.0	3000.0	1.10E-02	C
182	Pr-127m	100.0	3000.0	1.10E-02	C
182	Pr-128	100.0	2000.0	9.14E-02	C
182	Pr-129g	100.0	2500.0	2.93E-01	C
182	Pr-129m	100.0	2500.0	2.93E-01	C
182	Pr-130g	600.0	3000.0	1.32E+00	O
182	Pr-130m	600.0	3000.0	1.32E+00	O
182	Pr-131g	550.0	2500.0	1.34E+00	C
182	Pr-131m	550.0	2500.0	4.60E+00	C
182	Pr-132g	500.0	2500.0	3.60E+00	C
182	Pr-132m	500.0	2500.0	3.60E+00	C
182	Pr-133	500.0	2000.0	9.04E+00	C
182	Pr-134g	450.0	2000.0	3.97E+00	C
182	Pr-134m	450.0	2000.0	3.97E+00	C
182	Pr-135	400.0	2000.0	6.34E+00	C
182	Pr-136	450.0	1600.0	8.00E+00	N
182	Pr-137	450.0	2000.0	1.88E+00	O
182	Pr-138g	100.0	2000.0	3.24E-01	O
182	Pr-138m	100.0	2000.0	3.90E-01	O
182	Pr-139	100.0	2000.0	3.28E-01	C
182	Pr-140	100.0	1200.0	1.43E-01	O
182	Pr-141	100.0	2500.0	6.25E-02	O
182	Pr-142g	100.0	2500.0	4.44E-03	O
182	Pr-142m	100.0	2500.0	1.42E-02	O
182	Pr-143	100.0	3000.0	8.22E-03	O
182	Nd-128	100.0	3000.0	6.00E-03	C
182	Nd-129	100.0	1600.0	4.34E-02	C
182	Nd-130	100.0	2000.0	1.93E-01	O
182	Nd-131	100.0	2000.0	6.81E-01	C
182	Nd-132	550.0	2500.0	2.67E+00	C
182	Nd-133g	550.0	2500.0	3.29E+00	C
182	Nd-133m	550.0	2500.0	2.05E+00	C
182	Nd-134	500.0	2000.0	8.76E+00	C
182	Nd-135g	450.0	2000.0	7.51E+00	C
182	Nd-135m	450.0	2000.0	2.05E+00	C
182	Nd-136	500.0	2000.0	1.15E+01	C
182	Nd-137g	450.0	1600.0	8.48E+00	C
182	Nd-137m	450.0	1600.0	7.14E+00	C
182	Nd-138	450.0	2000.0	4.92E+00	O
182	Nd-139g	100.0	1200.0	8.86E-01	C
182	Nd-139m	450.0	2000.0	2.60E+00	I
182	Nd-140	450.0	2000.0	1.13E+00	O
182	Nd-141g	100.0	1000.0	9.61E-01	O
182	Nd-141m	100.0	1000.0	7.60E-01	O
182	Nd-142	100.0	1000.0	9.74E-01	O
182	Nd-143	100.0	1000.0	2.64E-01	O
182	Nd-144	100.0	1000.0	1.18E-01	O
182	Nd-145	100.0	2500.0	3.57E-02	O
182	Nd-147	100.0	3000.0	7.66E-03	O
182	Nd-148	100.0	1200.0	7.25E-03	O
182	Pm-131	100.0	1500.0	1.44E-03	C
182	Pm-132	100.0	3000.0	1.31E-02	C
182	Pm-133g	100.0	3000.0	5.45E-02	C
182	Pm-133m	100.0	3000.0	5.45E-02	C
182	Pm-134g	100.0	3000.0	1.15E-01	C
182	Pm-134m	100.0	3000.0	1.15E-01	C
182	Pm-135g	500.0	2500.0	1.72E+00	C
182	Pm-135m	500.0	2500.0	1.72E+00	C
182	Pm-136g	500.0	2000.0	3.00E+00	C
182	Pm-136m	500.0	2000.0	3.00E+00	C
182	Pm-137g	450.0	1600.0	6.94E+00	C
182	Pm-137m	450.0	1600.0	6.94E+00	C
182	Pm-138g	400.0	2000.0	4.16E+00	O
182	Pm-138m	400.0	2000.0	4.64E+00	O
182	Pm-139g	400.0	2000.0	4.04E+00	C
182	Pm-139m	400.0	2000.0	4.04E+00	C
182	Pm-140g	400.0	2000.0	2.98E+00	N
182	Pm-140m	400.0	1500.0	6.55E+00	N
182	Pm-141	350.0	1500.0	2.89E+00	O
182	Pm-142g	100.0	1000.0	2.54E+00	O
182	Pm-142m	100.0	1000.0	2.54E+00	O
182	Pm-143	100.0	1000.0	2.70E+00	C
182	Pm-144	450.0	1600.0	5.69E-01	I
182	Pm-145	100.0	1000.0	6.12E-01	O
182	Pm-146	100.0	1200.0	2.19E-01	O
182	Pm-147	100.0	1000.0	1.02E-01	O
182	Pm-148g	100.0	1200.0	3.41E-02	N
182	Pm-148m	100.0	500.0	2.51E+00	N
182	Pm-149	550.0	550.0	1.61E-03	O
182	Pm-150	100.0	1200.0	1.96E-02	O

182	Pm-151	100.0	1200.0	8.71E-03	O
182	Sm-133	100.0	2000.0	3.03E-04	C
182	Sm-134	100.0	2000.0	2.97E-02	C
182	Sm-135g	100.0	2000.0	6.17E-02	C
182	Sm-135m	100.0	2000.0	6.17E-02	C
182	Sm-136	450.0	2000.0	1.64E+00	C
182	Sm-137g	450.0	1600.0	3.86E+00	C
182	Sm-137m	450.0	1600.0	3.86E+00	C
182	Sm-138	450.0	2000.0	7.49E+00	O
182	Sm-139g	350.0	2000.0	4.49E+00	C
182	Sm-139m	350.0	2000.0	4.75E+00	C
182	Sm-140	400.0	2000.0	1.30E+01	O
182	Sm-141g	400.0	1500.0	1.23E+00	O
182	Sm-141m	400.0	2000.0	1.06E+01	O
182	Sm-142	350.0	1500.0	8.87E+00	O
182	Sm-143g	350.0	1500.0	2.44E+00	C
182	Sm-143m	350.0	1500.0	1.16E+00	C
182	Sm-143m2	100.0	1000.0	5.30E-03	C
182	Sm-144	350.0	1500.0	1.66E+00	O
182	Sm-145	100.0	1000.0	2.19E+00	O
182	Sm-146	100.0	1000.0	1.23E+00	O
182	Sm-147	100.0	1000.0	4.58E-01	O
182	Sm-148	100.0	1000.0	2.41E-01	O
182	Sm-149	100.0	1200.0	6.88E-02	O
182	Sm-150	100.0	1200.0	3.29E-02	O
182	Sm-151	550.0	3000.0	5.43E-03	O
182	Sm-152	100.0	1200.0	1.32E-02	O
182	Sm-153g	550.0	550.0	8.30E-04	O
182	Sm-153m	550.0	550.0	8.30E-04	O
182	Sm-154	100.0	1200.0	2.55E-03	O
182	Eu-136g	100.0	2000.0	1.93E-03	C
182	Eu-136m	100.0	2000.0	1.93E-03	C
182	Eu-137	100.0	1600.0	5.66E-02	C
182	Eu-138	100.0	2500.0	2.30E-01	O
182	Eu-139	450.0	2000.0	2.08E+00	C
182	Eu-140g	450.0	2000.0	1.94E+00	O
182	Eu-140m	450.0	2000.0	1.94E+00	O
182	Eu-141g	400.0	1500.0	2.05E+00	O
182	Eu-141m	400.0	1500.0	5.75E+00	O
182	Eu-142g	350.0	1500.0	5.89E+00	O
182	Eu-142m	350.0	1500.0	5.89E+00	O
182	Eu-143	300.0	1500.0	1.07E+01	C
182	Eu-144	300.0	1500.0	1.07E+01	O
182	Eu-145	350.0	1500.0	3.18E+00	C
182	Eu-146	300.0	1600.0	7.22E+00	I
182	Eu-147	100.0	1000.0	2.45E+00	C
182	Eu-148	350.0	1000.0	1.45E+00	I
182	Eu-149	100.0	800.0	9.29E-01	C
182	Eu-150g	100.0	1200.0	1.28E-01	O
182	Eu-150m	100.0	1200.0	1.67E-01	O
182	Eu-151	100.0	750.0	1.35E-01	O
182	Eu-152g	100.0	700.0	3.46E-02	O
182	Eu-152m	100.0	750.0	1.45E-02	O
182	Eu-152m2	100.0	750.0	4.90E-05	O
182	Eu-153	550.0	1200.0	2.68E-05	O
182	Eu-154g	100.0	1200.0	3.19E-03	O
182	Eu-154m	100.0	1200.0	3.19E-03	O
182	Eu-155	1200.0	1200.0	2.08E-03	O
182	Eu-158	100.0	1200.0	4.57E-04	O
182	Gd-138	120.0	1200.0	1.34E-03	O
182	Gd-139g	110.0	2000.0	2.67E-03	C
182	Gd-139m	110.0	2000.0	2.67E-03	C
182	Gd-140	100.0	2000.0	1.84E-01	O
182	Gd-141g	100.0	2000.0	2.63E-01	O
182	Gd-141m	100.0	2000.0	2.49E-01	O
182	Gd-142	400.0	1500.0	4.52E+00	O
182	Gd-143g	350.0	1500.0	3.44E+00	C
182	Gd-143m	350.0	1500.0	3.18E+00	C
182	Gd-144	350.0	1500.0	1.16E+01	O
182	Gd-145g	350.0	1200.0	7.44E+00	C
182	Gd-145m	350.0	1200.0	3.99E+00	C
182	Gd-146	300.0	1500.0	1.08E+01	O
182	Gd-147	275.0	1200.0	4.40E+00	C
182	Gd-148	275.0	1000.0	8.94E+00	N
182	Gd-149	275.0	1500.0	2.31E+00	C
182	Gd-150	100.0	1000.0	2.51E+00	O
182	Gd-151	100.0	800.0	1.04E+00	C
182	Gd-152	100.0	800.0	6.23E-01	O
182	Gd-153	100.0	800.0	2.40E-01	C
182	Gd-154	100.0	1200.0	1.04E-01	O
182	Gd-155g	300.0	2000.0	4.68E-03	O
182	Gd-155m	300.0	2000.0	4.68E-03	O
182	Gd-156	550.0	800.0	1.33E-03	O
182	Gd-157	1000.0	1500.0	1.09E-03	O
182	Gd-158	2000.0	2000.0	2.37E-03	O
182	Tb-140	140.0	1200.0	1.01E-04	O
182	Tb-141g	120.0	3000.0	2.13E-03	O
182	Tb-141m	120.0	3000.0	2.13E-03	O
182	Tb-142g	110.0	2500.0	7.43E-03	O
182	Tb-142m	110.0	2500.0	7.43E-03	O
182	Tb-143g	100.0	2500.0	7.29E-02	C
182	Tb-143m	100.0	2500.0	7.29E-02	C
182	Tb-144g	100.0	1500.0	9.18E-02	O
182	Tb-144m	400.0	1500.0	2.94E+00	O
182	Tb-145g	350.0	1500.0	2.44E+00	C
182	Tb-145m	350.0	1500.0	2.44E+00	C
182	Tb-146g	350.0	1500.0	3.97E+00	O
182	Tb-146m	350.0	1500.0	3.97E+00	O
182	Tb-146m2	350.0	1500.0	3.97E+00	O
182	Tb-147g	300.0	1200.0	4.59E+00	C
182	Tb-147m	300.0	1200.0	5.58E+00	C
182	Tb-148g	300.0	1200.0	8.12E-01	N
182	Tb-148m	300.0	1200.0	5.30E+00	N
182	Tb-149g	100.0	1200.0	8.64E-01	C
182	Tb-149m	250.0	1200.0	7.01E+00	C
182	Tb-150g	100.0	1200.0	3.22E-01	C
182	Tb-150m	225.0	1200.0	4.36E+00	O
182	Tb-151g	250.0	1200.0	1.39E+00	C
182	Tb-151m	250.0	1200.0	1.07E+00	C
182	Tb-152g	100.0	800.0	7.11E-01	C
182	Tb-152m	250.0	1000.0	1.76E+00	C
182	Tb-153	100.0	1000.0	2.62E+00	C
182	Tb-154g	100.0	1200.0	4.00E-01	O
182	Tb-154m	100.0	1200.0	4.00E-01	O
182	Tb-154m2	100.0	1200.0	4.00E-01	O
182	Tb-155	100.0	1200.0	7.12E-01	C
182	Tb-156g	100.0	420.0	5.50E-01	N
182	Tb-156m	100.0	420.0	4.71E-02	N
182	Tb-156m2	100.0	420.0	5.98E-04	N
182	Tb-157	250.0	2500.0	2.61E-02	O
182	Tb-158g	450.0	2000.0	8.60E-03	O
182	Tb-158m	450.0	2000.0	9.52E-04	O
182	Tb-159	275.0	1500.0	4.39E-03	O
182	Tb-160	650.0	1500.0	3.45E-03	O
182	Tb-161	2500.0	2500.0	2.57E-03	O
182	Tb-162	10.0	1200.0	5.72E-03	O

182	Tb-163	10.0	1200.0	2.54E-03	O
182	Dy-142	150.0	1500.0	6.23E-05	O
182	Dy-143g	140.0	2000.0	1.57E-03	C
182	Dy-143m	140.0	2000.0	1.57E-03	C
182	Dy-144	120.0	1500.0	3.14E-02	O
182	Dy-145g	110.0	1200.0	1.69E-02	C
182	Dy-145m	110.0	1200.0	1.15E-01	C
182	Dy-146g	350.0	1500.0	1.47E+00	O
182	Dy-146m	350.0	1500.0	1.47E+00	O
182	Dy-147g	300.0	1200.0	6.38E+00	C
182	Dy-147m	300.0	1200.0	2.42E+00	C
182	Dy-148	300.0	1200.0	5.51E+00	N
182	Dy-149g	275.0	1200.0	5.67E+00	C
182	Dy-149m	275.0	1200.0	5.67E+00	C
182	Dy-150	250.0	1200.0	1.00E+01	C
182	Dy-151	250.0	1000.0	1.06E+01	C
182	Dy-152	250.0	1000.0	1.01E+01	C
182	Dy-153	225.0	1000.0	5.27E+00	C
182	Dy-154	225.0	1000.0	3.04E+00	O
182	Dy-155	200.0	1000.0	1.81E+00	C
182	Dy-156	100.0	1000.0	2.25E+00	O
182	Dy-157g	180.0	1200.0	1.96E-01	C
182	Dy-157m	180.0	1200.0	1.96E-01	C
182	Dy-158	225.0	900.0	1.69E-01	O
182	Dy-159	225.0	1500.0	6.02E-02	O
182	Dy-160	300.0	3000.0	2.46E-02	O
182	Dy-161	350.0	3000.0	1.36E-02	O
182	Dy-162	500.0	3000.0	5.48E-03	O
182	Dy-163	100.0	1200.0	9.76E-03	O
182	Dy-164	85.0	120.0	4.00E-08	O
182	Dy-166	10.0	1200.0	2.55E-03	O
182	Ho-145g	150.0	2000.0	1.98E-04	C
182	Ho-145m	150.0	2000.0	1.98E-04	C
182	Ho-146	140.0	2000.0	9.38E-03	O
182	Ho-147	120.0	1200.0	7.22E-02	C
182	Ho-148g	400.0	1200.0	1.74E-01	N
182	Ho-148m	400.0	1200.0	1.74E-01	N
182	Ho-148m2	400.0	1200.0	1.74E-01	N
182	Ho-149g	250.0	1200.0	3.99E+00	C
182	Ho-149m	250.0	1200.0	1.65E+00	C
182	Ho-150g	275.0	1200.0	1.01E+00	C
182	Ho-150m	275.0	1200.0	5.49E+00	C
182	Ho-151g	225.0	1000.0	5.14E+00	C
182	Ho-151m	225.0	1200.0	2.53E+00	C
182	Ho-152g	240.0	1000.0	1.09E-01	N
182	Ho-152m	240.0	1000.0	7.24E+00	N
182	Ho-153g	225.0	1000.0	7.66E+00	C
182	Ho-153m	225.0	1000.0	5.64E+00	C
182	Ho-154g	200.0	1000.0	4.87E+00	O
182	Ho-154m	200.0	1000.0	4.87E+00	O
182	Ho-155	200.0	1000.0	8.12E+00	C
182	Ho-156g	160.0	800.0	1.16E+00	C
182	Ho-156m	160.0	800.0	8.44E+00	C
182	Ho-156m2	160.0	800.0	9.60E-03	C
182	Ho-157	180.0	1000.0	3.19E+00	C
182	Ho-158g	160.0	1000.0	5.69E-01	O
182	Ho-158m	160.0	1000.0	5.19E-01	O
182	Ho-158m2	160.0	1000.0	6.20E-01	O
182	Ho-159g	180.0	800.0	8.21E-01	C
182	Ho-159m	180.0	800.0	2.14E-01	C
182	Ho-160g	160.0	1200.0	3.60E+00	N
182	Ho-160m	160.0	900.0	3.45E-02	C
182	Ho-160m2	160.0	1200.0	3.88E-03	N
182	Ho-161g	150.0	1000.0	1.50E-01	O
182	Ho-161m	150.0	1000.0	4.74E-02	O
182	Ho-162g	140.0	2000.0	2.80E-02	O
182	Ho-162m	140.0	2500.0	5.75E-02	O
182	Ho-163g	140.0	3000.0	3.80E-02	O
182	Ho-163m	140.0	3000.0	5.83E-03	O
182	Ho-164g	140.0	2500.0	1.15E-02	O
182	Ho-164m	140.0	2500.0	8.12E-03	O
182	Ho-165	130.0	2000.0	1.23E-02	O
182	Ho-166g	75.0	3000.0	2.20E-03	O
182	Ho-166m	75.0	3000.0	3.23E-03	O
182	Ho-167	75.0	130.0	6.73E-08	O
182	Ho-168g	100.0	1500.0	1.60E-03	O
182	Ho-168m	100.0	1500.0	6.12E-04	O
182	Er-147g	180.0	2000.0	6.76E-04	C
182	Er-147m	180.0	2000.0	6.76E-04	C
182	Er-148	150.0	1200.0	2.60E-02	C
182	Er-149g	140.0	1200.0	1.67E-02	C
182	Er-149m	140.0	1200.0	4.90E-02	C
182	Er-150	300.0	1200.0	3.22E+00	C
182	Er-151g	300.0	1200.0	2.66E+00	C
182	Er-151m	300.0	1200.0	2.66E+00	C
182	Er-152	275.0	1000.0	2.97E+00	N
182	Er-153	250.0	900.0	1.74E+01	C
182	Er-154	225.0	900.0	1.55E+01	O
182	Er-155	225.0	900.0	1.65E+01	C
182	Er-156	200.0	800.0	2.66E+01	C
182	Er-157g	180.0	900.0	5.90E+00	C
182	Er-157m	180.0	900.0	5.90E+00	C
182	Er-158	160.0	900.0	8.47E+00	O
182	Er-159	160.0	800.0	6.71E+00	C
182	Er-160	140.0	800.0	4.04E+00	C
182	Er-161	140.0	900.0	1.61E+00	C
182	Er-162	140.0	1200.0	8.79E-01	O
182	Er-163	120.0	1500.0	4.52E-01	O
182	Er-164	120.0	275.0	2.41E-01	O
182	Er-165	110.0	225.0	1.51E-01	O
182	Er-166	95.0	2500.0	6.28E-02	O
182	Er-167g	90.0	3000.0	3.86E-02	O
182	Er-167m	90.0	3000.0	1.31E-02	O
182	Er-168	85.0	2000.0	1.61E-02	O
182	Er-169	85.0	3000.0	1.09E-02	O
182	Er-170	55.0	3000.0	8.14E-03	O
182	Er-171	100.0	1500.0	5.88E-03	O
182	Er-172	100.0	1500.0	1.70E-03	O
182	Er-173	100.0	3000.0	9.94E-04	O
182	Tm-149	200.0	1200.0	2.31E-05	C
182	Tm-150g	180.0	900.0	1.51E-03	C
182	Tm-150m	180.0	900.0	1.51E-03	C
182	Tm-150m2	180.0	900.0	1.51E-03	C
182	Tm-151g	160.0	1200.0	9.04E-02	C
182	Tm-151m	160.0	1200.0	9.04E-02	C
182	Tm-152g	150.0	1200.0	2.34E-01	C
182	Tm-152m	150.0	1200.0	2.34E-01	C
182	Tm-153g	250.0	1000.0	1.80E+00	C
182	Tm-153m	250.0	1000.0	9.52E-01	C
182	Tm-154g	250.0	1000.0	2.59E+00	C
182	Tm-154m	250.0	1000.0	2.59E+00	C
182	Tm-155g	225.0	900.0	8.99E+00	C
182	Tm-155m	100.0	900.0	3.24E-01	C
182	Tm-156	200.0	800.0	2.40E+01	C
182	Tm-157	180.0	800.0	1.70E+01	C
182	Tm-158	180.0	750.0	1.51E+01	O

182	Tm-159	160.0	800.0	1.82E+01	C
182	Tm-160g	140.0	800.0	1.18E+01	C
182	Tm-160m	140.0	800.0	1.74E+00	C
182	Tm-161g	140.0	800.0	4.09E+00	C
182	Tm-161m	140.0	800.0	4.09E+00	C
182	Tm-162g	140.0	600.0	1.15E+01	N
182	Tm-162m	140.0	600.0	1.15E+01	N
182	Tm-163	120.0	800.0	4.16E+00	C
182	Tm-164g	120.0	900.0	1.06E+00	O
182	Tm-164m	120.0	900.0	1.06E+00	O
182	Tm-165	95.0	800.0	1.33E+00	C
182	Tm-166g	85.0	750.0	1.89E+00	I
182	Tm-166m	85.0	750.0	1.89E+00	I
182	Tm-167	80.0	275.0	1.30E+00	C
182	Tm-168	80.0	2000.0	2.19E-01	O
182	Tm-169	75.0	350.0	1.19E-01	O
182	Tm-170	34.0	130.0	8.97E-02	O
182	Tm-171	34.0	2500.0	3.54E-02	O
182	Tm-172	85.0	3000.0	2.45E-02	O
182	Tm-173	130.0	3000.0	1.93E-02	O
182	Tm-174	100.0	1200.0	8.93E-03	O
182	Tm-175	100.0	3000.0	4.82E-03	O
182	Tm-176	100.0	120.0	7.81E-04	O
182	Yb-150	220.0	600.0	1.96E-06	C
182	Yb-151g	200.0	2000.0	2.80E-03	C
182	Yb-151m	200.0	2000.0	2.80E-03	C
182	Yb-152	180.0	1200.0	7.98E-02	C
182	Yb-153	180.0	1200.0	2.44E-01	C
182	Yb-154	250.0	1000.0	1.43E+00	C
182	Yb-155	250.0	900.0	2.89E+00	C
182	Yb-156	240.0	800.0	2.71E+00	N
182	Yb-157	225.0	800.0	1.18E+01	C
182	Yb-158	180.0	750.0	1.54E+01	O
182	Yb-159	180.0	800.0	2.23E+01	C
182	Yb-160	160.0	750.0	2.44E+01	C
182	Yb-161	160.0	700.0	1.91E+01	C
182	Yb-162	150.0	700.0	1.79E+01	C
182	Yb-163	140.0	750.0	1.53E+01	C
182	Yb-164	130.0	700.0	1.03E+01	O
182	Yb-165	120.0	750.0	7.44E+00	C
182	Yb-166	110.0	700.0	4.60E+00	C
182	Yb-167	95.0	225.0	1.13E+01	C
182	Yb-168	85.0	225.0	4.78E+00	O
182	Yb-169g	75.0	275.0	6.50E+00	C
182	Yb-169m	75.0	275.0	4.54E+00	C
182	Yb-170	70.0	275.0	9.13E+00	O
182	Yb-171g	65.0	300.0	1.09E+00	O
182	Yb-171m	65.0	300.0	1.09E+00	O
182	Yb-172	55.0	3000.0	3.08E-01	O
182	Yb-173	55.0	3000.0	2.02E-01	O
182	Yb-174	30.0	1500.0	1.18E-01	O
182	Yb-175g	90.0	3000.0	3.42E-02	O
182	Yb-175m	90.0	3000.0	3.42E-02	O
182	Yb-176g	100.0	2500.0	2.76E-02	O
182	Yb-176m	100.0	3000.0	5.29E-03	O
182	Yb-177g	100.0	700.0	9.51E-03	O
182	Yb-177m	100.0	2500.0	9.27E-04	O
182	Yb-178	100.0	3000.0	8.58E-03	O
182	Lu-152	200.0	750.0	1.62E-06	C
182	Lu-153g	200.0	900.0	2.65E-06	C
182	Lu-153m	200.0	900.0	2.65E-06	C
182	Lu-154g	180.0	3000.0	1.17E-03	C
182	Lu-154m	180.0	3000.0	1.17E-03	C
182	Lu-155g	180.0	750.0	1.79E-02	C
182	Lu-155m	180.0	750.0	1.79E-02	C
182	Lu-155m2	180.0	750.0	1.79E-02	C
182	Lu-156g	160.0	900.0	6.52E-02	C
182	Lu-156m	160.0	900.0	6.52E-02	C
182	Lu-157g	150.0	800.0	2.67E-01	C
182	Lu-157m	150.0	800.0	5.33E-01	C
182	Lu-158	180.0	800.0	3.52E+00	O
182	Lu-159g	200.0	750.0	3.71E+00	C
182	Lu-159m	200.0	750.0	3.27E+00	C
182	Lu-160g	180.0	650.0	2.17E+00	N
182	Lu-160m	180.0	750.0	6.15E+00	C
182	Lu-161g	160.0	650.0	7.72E+00	C
182	Lu-161m	160.0	650.0	7.72E+00	C
182	Lu-162g	140.0	600.0	6.43E+00	C
182	Lu-162m	140.0	600.0	6.43E+00	C
182	Lu-162m2	140.0	600.0	6.43E+00	C
182	Lu-163	140.0	650.0	2.42E+01	C
182	Lu-164	140.0	600.0	2.22E+01	O
182	Lu-165	120.0	600.0	2.25E+01	C
182	Lu-166g	110.0	600.0	1.58E+00	C
182	Lu-166m	110.0	600.0	1.09E+01	C
182	Lu-166m2	110.0	600.0	6.10E+00	C
182	Lu-167g	95.0	650.0	8.29E+00	C
182	Lu-167m	95.0	650.0	8.29E+00	C
182	Lu-168g	90.0	650.0	4.74E+00	O
182	Lu-168m	90.0	650.0	5.81E+00	O
182	Lu-169g	80.0	800.0	1.70E+00	C
182	Lu-169m	80.0	800.0	5.97E+00	C
182	Lu-170g	65.0	800.0	3.11E+00	I
182	Lu-170m	65.0	800.0	3.11E+00	I
182	Lu-171g	50.0	200.0	5.53E+00	I
182	Lu-171m	50.0	225.0	7.08E+00	I
182	Lu-172g	50.0	800.0	1.55E+00	I
182	Lu-172m	50.0	800.0	2.13E+00	I
182	Lu-173	45.0	1000.0	1.68E+00	C
182	Lu-174g	12.2	275.0	1.12E+00	N
182	Lu-174m	12.2	300.0	1.32E+00	N
182	Lu-175	8.6	275.0	1.73E+00	O
182	Lu-176g	45.0	300.0	4.90E-01	O
182	Lu-176m	45.0	300.0	6.91E-01	O
182	Lu-177g	55.0	3000.0	3.62E-01	N
182	Lu-177m	55.0	700.0	8.09E-02	N
182	Lu-177m2	55.0	3000.0	3.79E-04	N
182	Lu-178g	90.0	3000.0	1.40E-01	N
182	Lu-178m	90.0	3000.0	6.87E-02	N
182	Lu-179g	85.0	2500.0	2.00E-02	O
182	Lu-179m	85.0	2500.0	2.00E-02	O
182	Lu-180g	700.0	1000.0	3.96E-03	O
182	Lu-180m	700.0	1000.0	3.96E-03	O
182	Lu-180m2	700.0	1000.0	3.96E-03	O
182	Hf-154	220.0	650.0	3.49E-07	C
182	Hf-155	200.0	2500.0	2.06E-06	C
182	Hf-156	180.0	700.0	3.46E-03	C
182	Hf-157	180.0	900.0	2.96E-02	C
182	Hf-158	180.0	900.0	1.36E-01	C
182	Hf-159	160.0	800.0	4.36E-01	C
182	Hf-160	200.0	700.0	2.72E+00	C
182	Hf-161	200.0	650.0	4.51E+00	C
182	Hf-162	160.0	600.0	9.95E+00	C
182	Hf-163	140.0	600.0	1.54E+01	C
182	Hf-164	120.0	550.0	1.96E+01	O
182	Hf-165	150.0	550.0	2.45E+01	C

182	Hf-166	130.0	550.0	2.76E+01	C	182	W -160	200.0	900.0	6.28E-04	C
182	Hf-167	120.0	550.0	3.29E+01	C	182	W -161	180.0	600.0	2.27E-03	C
182	Hf-168	100.0	450.0	3.08E+01	O	182	W -162	180.0	550.0	1.94E-02	C
182	Hf-169	95.0	550.0	3.06E+01	C	182	W -163	160.0	700.0	8.61E-02	C
182	Hf-170	85.0	450.0	2.85E+01	C	182	W -164	150.0	600.0	3.36E-01	O
182	Hf-171g	80.0	400.0	2.48E+01	C	182	W -165	160.0	500.0	1.99E+00	C
182	Hf-171m	80.0	400.0	9.14E+00	C	182	W -166	130.0	300.0	4.54E+00	C
182	Hf-172	60.0	160.0	3.22E+01	N	182	W -167	140.0	250.0	9.94E+00	C
182	Hf-173	60.0	275.0	9.62E+00	I	182	W -168	150.0	400.0	1.23E+01	O
182	Hf-174	50.0	225.0	1.04E+01	O	182	W -169	130.0	400.0	1.62E+01	C
182	Hf-175	45.0	800.0	8.21E+00	C	182	W -170	120.0	300.0	2.44E+01	C
182	Hf-176	30.0	750.0	5.33E+00	O	182	W -171	110.0	275.0	3.29E+01	C
182	Hf-177g	30.0	800.0	4.32E+00	O	182	W -172	90.0	160.0	2.89E+01	N
182	Hf-177m	30.0	800.0	2.83E-01	O	182	W -173	80.0	150.0	6.56E+01	C
182	Hf-177m2	30.0	800.0	4.61E-03	O	182	W -174	70.0	140.0	8.84E+01	C
182	Hf-178g	3.9	800.0	2.95E+00	N	182	W -175	60.0	95.0	1.37E+02	C
182	Hf-178m	11.0	900.0	7.86E-01	N	182	W -176	50.0	130.0	1.03E+02	C
182	Hf-178m2	11.4	3000.0	4.86E-02	N	182	W -177	40.0	100.0	1.06E+02	C
182	Hf-179g	45.0	800.0	2.56E+00	N	182	W -178	30.0	95.0	1.12E+02	C
182	Hf-179m	45.0	750.0	4.95E-01	N	182	W -179g	24.0	70.0	2.01E+02	O
182	Hf-179m2	45.0	750.0	2.72E-01	N	182	W -179m	24.0	80.0	2.46E+01	O
182	Hf-180g	50.0	900.0	1.40E+00	N	182	W -180g	14.6	55.0	9.94E+01	O
182	Hf-180m	50.0	900.0	1.15E+00	N	182	W -180m	14.6	55.0	9.94E+01	O
182	Hf-181	275.0	1500.0	1.89E-01	I	182	W -181	12.2	45.0	2.48E+02	O
182	Ta-158g	100.0	900.0	2.15E-04	C	182	W -183g	160.0	160.0	1.10E-03	O
182	Ta-158m	100.0	900.0	2.15E-04	C	182	W -183m	160.0	160.0	1.12E-04	O
182	Ta-159g	110.0	1000.0	3.37E-03	C	182	Re-164g	250.0	550.0	8.21E-04	C
182	Ta-159m	110.0	1000.0	2.89E-03	C	182	Re-164m	250.0	550.0	8.21E-04	C
182	Ta-160g	100.0	750.0	5.34E-03	C	182	Re-165g	225.0	350.0	1.97E-03	C
182	Ta-160m	100.0	750.0	5.34E-03	C	182	Re-165m	225.0	300.0	3.94E-03	C
182	Ta-161g	100.0	600.0	8.26E-02	C	182	Re-166g	180.0	350.0	2.26E-02	C
182	Ta-161m	100.0	600.0	6.48E-02	C	182	Re-166m	180.0	350.0	2.25E-02	C
182	Ta-162	100.0	600.0	2.99E-01	C	182	Re-167g	160.0	275.0	7.50E-02	C
182	Ta-163	180.0	550.0	1.98E+00	C	182	Re-167m	160.0	275.0	7.69E-02	C
182	Ta-164	160.0	550.0	3.54E+00	O	182	Re-168	140.0	200.0	1.32E+00	O
182	Ta-165	120.0	450.0	6.64E+00	C	182	Re-169g	150.0	700.0	2.28E-01	C
182	Ta-166	150.0	450.0	8.11E+00	C	182	Re-169m	150.0	700.0	2.28E-01	C
182	Ta-167	130.0	450.0	1.16E+01	C	182	Re-170	130.0	450.0	8.12E-01	C
182	Ta-168	120.0	400.0	1.08E+01	O	182	Re-171	120.0	400.0	1.78E+00	C
182	Ta-169	100.0	400.0	1.11E+01	C	182	Re-172g	100.0	140.0	3.30E+00	N
182	Ta-170	90.0	200.0	2.39E+01	C	182	Re-172m	100.0	140.0	3.30E+00	N
182	Ta-171	80.0	225.0	1.97E+01	C	182	Re-173	90.0	120.0	8.76E+00	C
182	Ta-172	65.0	180.0	3.49E+01	N	182	Re-174	80.0	100.0	8.44E+01	C
182	Ta-173	60.0	250.0	4.15E+01	C	182	Re-175	65.0	85.0	2.00E+01	C
182	Ta-174	50.0	750.0	3.83E+01	I	182	Re-176	60.0	80.0	1.79E+02	C
182	Ta-175	36.0	160.0	3.64E+01	C	182	Re-177	45.0	65.0	2.88E+02	C
182	Ta-176g	30.0	140.0	9.04E+00	I	182	Re-178	38.0	50.0	3.67E+02	C
182	Ta-176m	30.0	140.0	9.04E+00	I	182	Re-179	28.0	40.0	7.44E+02	I
182	Ta-176m2	30.0	140.0	9.04E+00	I	182	Re-180	19.5	30.0	1.13E+03	O
182	Ta-177	18.5	150.0	3.55E+01	O	182	Re-181	10.8	20.0	1.16E+03	I
182	Ta-178g	12.2	400.0	7.10E+00	N	182	Re-182g	5.2	15.0	1.81E+02	N
182	Ta-178m	12.2	350.0	1.41E+01	I	182	Re-182m	5.2	15.0	4.76E+02	N
182	Ta-178m2	12.2	400.0	7.10E+00	N	182	Re-183g	2.8	6.2	1.73E+00	O
182	Ta-179g	2.8	120.0	1.99E+01	O	182	Re-183m	2.8	6.2	1.73E+00	O
182	Ta-179m	2.8	120.0	1.99E+01	O	183	H - 1	3.0	3000.0	1.39E+04	M
182	Ta-179m2	2.8	120.0	1.99E+01	O	183	H - 2	5.0	3000.0	3.53E+03	M
182	Ta-180g	28.0	120.0	2.98E+01	O	183	H - 3	9.0	3000.0	2.01E+03	M
182	Ta-180m	28.0	100.0	3.01E+01	O	183	He- 3	8.5	3000.0	4.21E+02	M
182	Ta-181	28.0	800.0	4.20E+01	O	183	He- 4	3.0	3000.0	2.97E+03	M
182	Ta-182g	200.0	1600.0	9.17E-01	N	183	He- 5	10.0	3000.0	1.71E+01	O
182	Ta-182m	200.0	1600.0	9.17E-01	N	183	He- 6	10.0	3000.0	3.63E+01	O
182	Ta-182m2	200.0	1600.0	9.17E-01	N	183	He- 7	14.0	3000.0	2.21E+00	O
182	W -159	220.0	600.0	7.12E-04	C	183	He- 8	20.0	3000.0	2.49E-01	O

183	He- 9	28.0	3000.0	1.34E-02	O	183	Ne- 19	100.0	3000.0	3.94E-01	O
183	He- 10	36.0	3000.0	4.26E-04	O	183	Ne- 20	50.0	3000.0	2.53E+00	O
183	He- 11	50.0	3000.0	5.76E-06	O	183	Ne- 21	50.0	3000.0	1.88E+00	O
183	He- 12	60.0	3000.0	4.06E-08	O	183	Ne- 22	50.0	3000.0	6.48E+00	O
183	He- 13	80.0	3000.0	1.55E-10	O	183	Ne- 23	50.0	3000.0	3.98E+00	O
183	Li- 5	35.0	3000.0	8.96E+00	O	183	Ne- 24	40.0	3000.0	3.40E+00	C
183	Li- 6	35.0	3000.0	7.35E+00	O	183	Ne- 25	50.0	3000.0	3.42E+00	O
183	Li- 7	35.0	3000.0	6.22E+00	O	183	Ne- 26	50.0	3000.0	2.30E+00	O
183	Li- 8	40.0	3000.0	2.89E+00	O	183	Na- 19	100.0	3000.0	6.55E-03	O
183	Li- 9	40.0	2800.0	3.66E+00	N	183	Na- 20	100.0	3000.0	4.91E-02	O
183	Li- 10	100.0	3000.0	2.87E-01	O	183	Na- 21	100.0	3000.0	3.18E-01	O
183	Li- 11	100.0	3000.0	6.31E-02	O	183	Na- 22	100.0	3000.0	6.51E-01	O
183	Be- 7	50.0	3000.0	7.13E+00	I	183	Na- 23	50.0	3000.0	1.21E+00	O
183	Be- 8	30.0	3000.0	2.11E+01	O	183	Na- 24g	100.0	3000.0	2.91E-01	C
183	Be- 9	35.0	3000.0	1.99E+01	O	183	Na- 24m	100.0	3000.0	2.91E-01	C
183	Be- 10	35.0	3000.0	1.65E+01	O	183	Na- 25	50.0	3000.0	1.54E+00	O
183	Be- 11	40.0	3000.0	6.21E+00	O	183	Na- 26	50.0	3000.0	1.44E+00	O
183	Be- 12	50.0	3000.0	2.81E+00	O	183	Na- 27	50.0	3000.0	1.20E+00	O
183	Be- 13	100.0	3000.0	3.75E-01	O	183	Na- 28	100.0	3000.0	3.07E-01	C
183	B - 10	40.0	3000.0	8.86E+00	O	183	Mg- 19	100.0	3000.0	1.17E-04	O
183	B - 11	40.0	3000.0	1.57E+01	O	183	Mg- 20	100.0	3000.0	5.30E-04	O
183	B - 12	40.0	3000.0	9.42E+00	O	183	Mg- 21	100.0	3000.0	3.45E-03	O
183	B - 13	50.0	3000.0	5.56E+00	O	183	Mg- 22	100.0	3000.0	3.13E-02	O
183	B - 14	50.0	3000.0	2.23E+00	O	183	Mg- 23	100.0	3000.0	1.90E-01	O
183	B - 15	100.0	3000.0	4.57E-01	O	183	Mg- 24	100.0	3000.0	6.77E-01	O
183	C - 10	100.0	3000.0	4.28E-01	O	183	Mg- 25	100.0	3000.0	1.56E+00	O
183	C - 11	100.0	3000.0	2.52E+00	O	183	Mg- 26	100.0	3000.0	1.48E+00	O
183	C - 12	35.0	3000.0	1.01E+00	O	183	Mg- 27	100.0	3000.0	7.63E-01	O
183	C - 13	100.0	3000.0	3.29E+00	O	183	Mg- 28	100.0	3000.0	3.89E-01	C
183	C - 14	100.0	3000.0	1.70E+00	O	183	Mg- 29	100.0	3000.0	4.07E-01	O
183	C - 15	100.0	3000.0	4.74E-01	O	183	Mg- 30	100.0	3000.0	2.80E-01	O
183	C - 16	100.0	2800.0	8.87E-01	N	183	Mg- 31	100.0	3000.0	1.58E-01	O
183	N - 12	100.0	3000.0	1.37E-01	O	183	Al- 20	100.0	3000.0	1.39E-06	O
183	N - 13	100.0	3000.0	4.25E-01	O	183	Al- 21	100.0	3000.0	2.69E-05	O
183	N - 14	50.0	3000.0	1.38E+00	O	183	Al- 22	100.0	3000.0	9.59E-05	O
183	N - 15	40.0	3000.0	2.90E+00	O	183	Al- 23	100.0	3000.0	1.30E-03	O
183	N - 16	40.0	3000.0	1.36E+00	O	183	Al- 24g	100.0	3000.0	7.04E-03	O
183	N - 17	100.0	2800.0	3.32E+00	N	183	Al- 24m	100.0	3000.0	7.04E-03	O
183	N - 18	100.0	3000.0	2.96E-01	O	183	Al- 25	100.0	3000.0	1.22E-01	O
183	N - 19	100.0	3000.0	1.27E-01	O	183	Al- 26g	100.0	3000.0	5.07E-01	O
183	O - 13	100.0	3000.0	3.75E-02	O	183	Al- 26m	100.0	3000.0	2.66E-01	O
183	O - 14	100.0	3000.0	2.50E-01	O	183	Al- 27	100.0	3000.0	1.45E+00	O
183	O - 15	50.0	3000.0	1.64E+00	O	183	Al- 28	100.0	3000.0	1.40E+00	O
183	O - 16	40.0	3000.0	6.63E+00	O	183	Al- 29	100.0	3000.0	6.54E-01	O
183	O - 17	40.0	3000.0	4.83E+00	O	183	Al- 30	100.0	3000.0	2.62E-01	O
183	O - 18	40.0	3000.0	5.35E+00	O	183	Al- 31	100.0	3000.0	2.38E-01	O
183	O - 19	50.0	3000.0	3.70E+00	O	183	Al- 32	100.0	3000.0	1.24E-01	O
183	O - 20	50.0	3000.0	3.41E+00	O	183	Al- 33	100.0	3000.0	7.20E-02	O
183	O - 21	50.0	3000.0	2.16E+00	O	183	Al- 34	100.0	3000.0	4.58E-02	O
183	O - 22	50.0	3000.0	1.65E+00	O	183	Si- 23	100.0	3000.0	2.05E-05	O
183	F - 15	100.0	3000.0	9.56E-03	O	183	Si- 24	100.0	3000.0	8.14E-05	O
183	F - 16	100.0	3000.0	7.27E-02	O	183	Si- 25	100.0	3000.0	8.38E-04	O
183	F - 17	100.0	3000.0	2.62E-01	O	183	Si- 26	100.0	3000.0	1.03E-02	O
183	F - 18	100.0	3000.0	7.79E-01	O	183	Si- 27	100.0	3000.0	9.92E-02	O
183	F - 19	100.0	3000.0	1.26E+00	O	183	Si- 28	100.0	3000.0	5.85E-01	O
183	F - 20	100.0	3000.0	7.47E-01	O	183	Si- 29	100.0	3000.0	1.38E+00	O
183	F - 21	100.0	3000.0	4.49E-01	O	183	Si- 30	100.0	3000.0	1.61E+00	O
183	F - 22	100.0	3000.0	4.29E-01	O	183	Si- 31	100.0	3000.0	9.54E-01	O
183	F - 23	100.0	3000.0	3.41E-01	O	183	Si- 32	100.0	3000.0	4.11E-01	O
183	F - 24	100.0	3000.0	1.23E-01	C	183	Si- 33	100.0	3000.0	1.88E-01	O
183	Ne- 16	100.0	3000.0	4.48E-03	O	183	Si- 34	100.0	3000.0	1.70E-01	O
183	Ne- 17	100.0	3000.0	2.47E-02	O	183	Si- 35	100.0	3000.0	9.48E-02	O
183	Ne- 18	100.0	3000.0	1.26E-01	O	183	P - 24	100.0	3000.0	8.57E-07	O

183	P - 25	100.0	3000.0	1.09E-05	O	183	K - 40	160.0	3000.0	1.24E+00	O
183	P - 26	100.0	3000.0	4.39E-05	O	183	K - 41	100.0	3000.0	1.92E+00	O
183	P - 27	100.0	3000.0	6.02E-04	O	183	K - 42	100.0	3000.0	9.74E-01	O
183	P - 28	100.0	3000.0	6.59E-03	O	183	K - 43	100.0	3000.0	4.16E-01	O
183	P - 29	100.0	3000.0	7.50E-02	O	183	K - 44	100.0	3000.0	1.59E-01	O
183	P - 30	100.0	3000.0	4.88E-01	O	183	K - 45	100.0	3000.0	5.67E-02	O
183	P - 31	50.0	3000.0	1.07E+00	O	183	K - 46	100.0	3000.0	1.01E-02	O
183	P - 32	100.0	3000.0	1.99E+00	O	183	K - 47	100.0	1000.0	2.87E-03	O
183	P - 33	100.0	3000.0	1.11E+00	O	183	Ca- 39	100.0	3000.0	8.29E-03	O
183	P - 34	100.0	3000.0	4.52E-01	O	183	Ca- 40	100.0	3000.0	1.49E-01	O
183	P - 35	100.0	3000.0	2.19E-01	O	183	Ca- 41	100.0	3000.0	6.83E-01	O
183	P - 36	100.0	3000.0	1.77E-01	O	183	Ca- 42	275.0	3000.0	1.13E+00	O
183	P - 37	100.0	3000.0	8.69E-02	O	183	Ca- 43	225.0	3000.0	1.16E+00	O
183	P - 38	100.0	3000.0	9.19E-02	O	183	Ca- 44	100.0	3000.0	1.64E+00	O
183	S - 27	100.0	3000.0	6.24E-05	O	183	Ca- 45	100.0	3000.0	6.13E-01	O
183	S - 28	100.0	3000.0	3.06E-04	O	183	Ca- 46	100.0	3000.0	3.19E-01	O
183	S - 29	100.0	3000.0	1.77E-03	O	183	Ca- 47	100.0	3000.0	7.80E-02	O
183	S - 30	100.0	3000.0	1.41E-02	O	183	Ca- 48	100.0	3000.0	2.98E-02	O
183	S - 31	100.0	3000.0	5.64E-02	O	183	Ca- 49	100.0	1000.0	4.75E-03	O
183	S - 32	100.0	3000.0	3.59E-01	O	183	Sc- 41	100.0	3000.0	6.86E-03	O
183	S - 33	50.0	3000.0	1.16E+00	O	183	Sc- 42g	100.0	3000.0	5.55E-02	O
183	S - 34	50.0	3000.0	1.45E+00	O	183	Sc- 42m	100.0	3000.0	4.39E-02	O
183	S - 35	50.0	3000.0	1.24E+00	O	183	Sc- 43	100.0	3000.0	5.32E-01	O
183	S - 36	40.0	3000.0	1.64E+00	O	183	Sc- 44g	180.0	3000.0	1.03E+00	N
183	S - 37	40.0	3000.0	1.40E+00	O	183	Sc- 44m	100.0	3000.0	7.10E-01	N
183	S - 38	40.0	3000.0	1.69E+00	O	183	Sc- 45g	100.0	3000.0	1.27E+00	O
183	S - 39	40.0	3000.0	1.46E+00	O	183	Sc- 45m	100.0	3000.0	1.27E+00	O
183	S - 40	40.0	3000.0	1.61E+00	O	183	Sc- 46g	100.0	3000.0	1.69E+00	N
183	S - 41	40.0	3000.0	1.14E+00	O	183	Sc- 46m	100.0	3000.0	3.52E-01	N
183	Cl- 30	100.0	3000.0	2.09E-05	O	183	Sc- 47	100.0	3000.0	8.27E-01	O
183	Cl- 31	100.0	3000.0	2.63E-04	O	183	Sc- 48	100.0	3000.0	5.22E-01	I
183	Cl- 32	100.0	3000.0	2.81E-03	O	183	Sc- 49	100.0	3000.0	1.28E-01	O
183	Cl- 33	100.0	3000.0	3.76E-02	O	183	Sc- 50g	100.0	3000.0	1.10E-02	O
183	Cl- 34g	100.0	3000.0	1.11E-01	O	183	Sc- 50m	100.0	3000.0	1.10E-02	O
183	Cl- 34m	100.0	3000.0	1.96E-01	O	183	Ti- 43	100.0	3000.0	4.31E-03	O
183	Cl- 35	100.0	3000.0	1.03E+00	O	183	Ti- 44	100.0	3000.0	6.88E-02	O
183	Cl- 36	50.0	3000.0	1.29E+00	O	183	Ti- 45	100.0	3000.0	4.73E-01	O
183	Cl- 37	100.0	3000.0	1.50E+00	O	183	Ti- 46	250.0	3000.0	1.58E+00	O
183	Cl- 38g	100.0	3000.0	3.09E-01	O	183	Ti- 47	200.0	3000.0	1.64E+00	O
183	Cl- 38m	100.0	3000.0	3.09E-01	O	183	Ti- 48	100.0	3000.0	2.35E+00	O
183	Cl- 39	100.0	3000.0	2.87E-01	O	183	Ti- 49	100.0	3000.0	1.04E+00	O
183	Cl- 40	100.0	3000.0	1.51E-01	O	183	Ti- 50	100.0	3000.0	4.40E-01	O
183	Cl- 41	100.0	3000.0	1.41E-01	O	183	Ti- 51	100.0	3000.0	1.21E-01	O
183	Cl- 42	100.0	3000.0	1.89E-01	O	183	Ti- 52	100.0	1200.0	2.91E-02	O
183	Ar- 31	100.0	3000.0	5.59E-05	O	183	Ti- 53	100.0	3000.0	9.86E-03	O
183	Ar- 32	100.0	3000.0	2.67E-04	O	183	V - 45	100.0	3000.0	2.13E-03	O
183	Ar- 33	100.0	3000.0	1.25E-03	O	183	V - 46g	100.0	3000.0	6.24E-02	O
183	Ar- 34	100.0	3000.0	5.99E-03	O	183	V - 46m	100.0	3000.0	6.24E-02	O
183	Ar- 35	100.0	3000.0	3.41E-02	O	183	V - 47	100.0	3000.0	4.10E-01	O
183	Ar- 36	100.0	3000.0	2.52E-01	O	183	V - 48	250.0	3000.0	1.27E+00	C
183	Ar- 37	100.0	3000.0	8.87E-01	O	183	V - 49	180.0	3000.0	1.58E+00	O
183	Ar- 38	50.0	3000.0	1.06E+00	O	183	V - 50	140.0	3000.0	1.35E+00	O
183	Ar- 39	100.0	3000.0	1.72E+00	O	183	V - 51	100.0	3000.0	1.52E+00	O
183	Ar- 40	100.0	3000.0	1.01E+00	O	183	V - 52	100.0	3000.0	4.56E-01	O
183	Ar- 41	40.0	3000.0	1.02E+00	O	183	V - 53	100.0	3000.0	1.97E-01	O
183	Ar- 42	35.0	3000.0	1.43E+00	O	183	V - 54	100.0	3000.0	5.11E-02	O
183	Ar- 43	35.0	3000.0	1.52E+00	O	183	V - 55	100.0	3000.0	2.10E-02	O
183	Ar- 44	35.0	3000.0	1.86E+00	O	183	V - 56	100.0	2000.0	6.44E-03	O
183	Ar- 45	35.0	3000.0	1.95E+00	O	183	V - 57	100.0	275.0	1.37E-03	O
183	K - 37	100.0	3000.0	1.27E-02	O	183	Cr- 47	100.0	3000.0	1.40E-03	O
183	K - 38g	100.0	3000.0	1.18E-01	O	183	Cr- 48	100.0	3000.0	1.84E-02	C
183	K - 38m	100.0	3000.0	1.18E-01	O	183	Cr- 49	100.0	3000.0	3.46E-01	O
183	K - 39	275.0	3000.0	1.25E+00	O	183	Cr- 50	250.0	3000.0	1.49E+00	O

183	Cr- 51	200.0	3000.0	2.04E+00	O	183	Ni- 60	180.0	3000.0	2.10E+00	O
183	Cr- 52	200.0	3000.0	1.12E+00	O	183	Ni- 61	140.0	3000.0	1.73E+00	O
183	Cr- 53	100.0	3000.0	1.67E+00	O	183	Ni- 62	100.0	3000.0	3.18E+00	O
183	Cr- 54	100.0	3000.0	7.77E-01	O	183	Ni- 63	100.0	3000.0	1.16E+00	O
183	Cr- 55	100.0	3000.0	2.33E-01	O	183	Ni- 64	100.0	3000.0	5.47E-01	O
183	Cr- 56	100.0	3000.0	8.18E-02	O	183	Ni- 65	100.0	3000.0	1.99E-01	O
183	Cr- 57	100.0	3000.0	2.88E-02	O	183	Ni- 66	100.0	3000.0	6.63E-02	O
183	Cr- 58	100.0	500.0	9.31E-03	O	183	Ni- 67	100.0	650.0	1.50E-02	O
183	Cr- 59	100.0	800.0	4.57E-03	C	183	Ni- 68	100.0	900.0	3.50E-03	O
183	Cr- 60	100.0	400.0	9.50E-04	O	183	Ni- 69g	100.0	450.0	9.18E-04	O
183	Mn- 49	100.0	2500.0	1.12E-03	O	183	Ni- 69m	100.0	450.0	9.18E-04	O
183	Mn- 50g	100.0	3000.0	1.42E-02	O	183	Cu- 58	100.0	2500.0	4.01E-03	O
183	Mn- 50m	100.0	3000.0	2.12E-02	O	183	Cu- 59	100.0	2500.0	3.38E-02	O
183	Mn- 51	100.0	3000.0	3.15E-01	O	183	Cu- 60	100.0	3000.0	3.89E-01	O
183	Mn- 52g	300.0	3000.0	7.86E-01	C	183	Cu- 61	250.0	3000.0	1.48E+00	O
183	Mn- 52m	100.0	3000.0	4.63E-01	O	183	Cu- 62	180.0	3000.0	2.23E+00	O
183	Mn- 53	160.0	3000.0	2.40E+00	O	183	Cu- 63	140.0	3000.0	1.90E+00	O
183	Mn- 54	180.0	3000.0	2.02E+00	I	183	Cu- 64	100.0	3000.0	1.26E+00	O
183	Mn- 55	100.0	3000.0	2.45E+00	O	183	Cu- 65	100.0	3000.0	1.75E+00	O
183	Mn- 56	100.0	3000.0	9.63E-01	O	183	Cu- 66	100.0	3000.0	6.74E-01	O
183	Mn- 57	100.0	3000.0	4.44E-01	O	183	Cu- 67	100.0	3000.0	3.01E-01	O
183	Mn- 58g	100.0	3000.0	2.67E-02	O	183	Cu- 68g	100.0	3000.0	2.37E-02	O
183	Mn- 58m	100.0	3000.0	9.34E-02	O	183	Cu- 68m	100.0	3000.0	5.00E-02	O
183	Mn- 59	100.0	3000.0	6.90E-02	C	183	Cu- 69	100.0	1200.0	1.69E-02	O
183	Mn- 60g	100.0	900.0	3.01E-03	O	183	Cu- 70g	100.0	900.0	1.95E-03	O
183	Mn- 60m	100.0	900.0	1.36E-02	O	183	Cu- 70m	100.0	900.0	3.52E-03	O
183	Mn- 61	100.0	900.0	2.70E-03	O	183	Cu- 70m2	100.0	900.0	5.47E-06	O
183	Fe- 51	100.0	3000.0	1.71E-03	O	183	Cu- 71	100.0	350.0	1.86E-03	O
183	Fe- 52g	100.0	3000.0	1.02E-02	O	183	Zn- 60	100.0	2500.0	1.72E-03	O
183	Fe- 52m	100.0	3000.0	6.11E-03	C	183	Zn- 61g	100.0	3000.0	4.16E-03	O
183	Fe- 53g	100.0	3000.0	9.41E-02	O	183	Zn- 61m	100.0	3000.0	4.16E-03	O
183	Fe- 53m	100.0	3000.0	9.41E-02	O	183	Zn- 61m2	100.0	3000.0	4.16E-03	O
183	Fe- 54	275.0	3000.0	1.59E+00	O	183	Zn- 61m3	100.0	3000.0	4.16E-03	O
183	Fe- 55	225.0	3000.0	2.27E+00	O	183	Zn- 62	100.0	3000.0	1.97E-01	O
183	Fe- 56	180.0	3000.0	1.54E+00	O	183	Zn- 63	100.0	3000.0	9.29E-01	O
183	Fe- 57	100.0	3000.0	2.86E+00	O	183	Zn- 64	180.0	3000.0	1.45E+00	O
183	Fe- 58	100.0	3000.0	1.54E+00	O	183	Zn- 65	160.0	3000.0	1.44E+00	O
183	Fe- 59	100.0	3000.0	7.59E-01	C	183	Zn- 66	100.0	3000.0	1.16E+00	O
183	Fe- 60	100.0	3000.0	2.39E-01	O	183	Zn- 67	100.0	3000.0	2.22E+00	O
183	Fe- 61	100.0	3000.0	5.63E-02	O	183	Zn- 68	100.0	3000.0	1.52E+00	O
183	Fe- 62	100.0	1200.0	1.99E-02	O	183	Zn- 69g	100.0	3000.0	8.53E-02	O
183	Fe- 63	100.0	3000.0	7.16E-03	O	183	Zn- 69m	100.0	3000.0	6.00E-01	I
183	Co- 54g	100.0	2500.0	9.03E-03	O	183	Zn- 70	100.0	3000.0	1.49E-01	O
183	Co- 54m	100.0	2500.0	1.06E-02	O	183	Zn- 71g	100.0	1000.0	1.89E-02	O
183	Co- 55	100.0	3000.0	2.24E-01	O	183	Zn- 71m	100.0	1000.0	1.18E-02	O
183	Co- 56	225.0	3000.0	1.86E+00	O	183	Zn- 72	100.0	1000.0	2.10E-02	O
183	Co- 57	200.0	3000.0	2.02E+00	O	183	Zn- 73g	100.0	800.0	1.41E-03	O
183	Co- 58g	130.0	3000.0	6.60E-01	N	183	Zn- 73m	100.0	800.0	1.41E-03	O
183	Co- 58m	100.0	3000.0	1.17E+00	N	183	Zn- 73m2	100.0	800.0	1.41E-03	O
183	Co- 59	90.0	3000.0	1.03E+00	O	183	Zn- 74	100.0	220.0	1.23E-03	O
183	Co- 60g	100.0	3000.0	1.18E+00	N	183	Zn- 75	100.0	200.0	1.05E-03	O
183	Co- 60m	100.0	3000.0	4.79E-01	N	183	Ga- 62	100.0	3000.0	1.70E-03	O
183	Co- 61	100.0	3000.0	8.70E-01	O	183	Ga- 63	100.0	2500.0	1.37E-02	O
183	Co- 62g	100.0	3000.0	1.79E-01	O	183	Ga- 64	100.0	2500.0	1.01E-01	O
183	Co- 62m	100.0	3000.0	1.36E-01	O	183	Ga- 65	100.0	3000.0	6.20E-01	O
183	Co- 63	100.0	3000.0	1.08E-01	O	183	Ga- 66	160.0	3000.0	1.50E+00	O
183	Co- 64	100.0	3000.0	3.12E-02	O	183	Ga- 67	140.0	3000.0	1.72E+00	O
183	Co- 65	100.0	1000.0	9.70E-03	O	183	Ga- 68	100.0	3000.0	1.46E+00	O
183	Co- 66	100.0	900.0	1.90E-03	O	183	Ga- 69	100.0	3000.0	2.84E+00	O
183	Ni- 56	100.0	3000.0	1.48E-02	O	183	Ga- 70	100.0	3000.0	1.52E+00	O
183	Ni- 57	100.0	3000.0	1.41E-01	O	183	Ga- 71	100.0	3000.0	4.65E-01	O
183	Ni- 58	250.0	3000.0	1.07E+00	O	183	Ga- 72g	100.0	3000.0	1.84E-01	N
183	Ni- 59	200.0	3000.0	2.35E+00	O	183	Ga- 72m	100.0	3000.0	1.84E-01	N

183	Ga- 73	100.0	900.0	4.51E-02	O	183	Se- 83m	100.0	900.0	1.81E-03	O
183	Ga- 74g	100.0	700.0	8.28E-03	O	183	Se- 84	100.0	140.0	2.44E-03	O
183	Ga- 74m	100.0	700.0	5.82E-03	O	183	Br- 71	100.0	2500.0	1.17E-03	O
183	Ga- 75	100.0	1000.0	8.37E-03	O	183	Br- 72g	100.0	2500.0	2.50E-03	O
183	Ga- 76	100.0	300.0	1.82E-03	O	183	Br- 72m	100.0	2500.0	6.15E-03	O
183	Ga- 77	100.0	3000.0	3.65E-03	O	183	Br- 73	100.0	2500.0	8.14E-02	O
183	Ge- 65	100.0	2500.0	7.27E-03	O	183	Br- 74g	100.0	2500.0	2.08E-01	O
183	Ge- 66	100.0	2500.0	5.94E-02	O	183	Br- 74m	100.0	2500.0	2.94E-01	O
183	Ge- 67	100.0	3000.0	3.79E-01	O	183	Br- 75	100.0	3000.0	2.48E+00	C
183	Ge- 68	100.0	3000.0	2.03E+00	O	183	Br- 76g	100.0	3000.0	2.09E+00	O
183	Ge- 69	180.0	2500.0	1.30E+00	O	183	Br- 76m	100.0	3000.0	2.74E+00	O
183	Ge- 70	140.0	3000.0	1.38E+00	O	183	Br- 77g	100.0	3000.0	5.94E-01	O
183	Ge- 71g	100.0	3000.0	1.72E+00	O	183	Br- 77m	100.0	3000.0	4.13E+00	O
183	Ge- 71m	100.0	3000.0	1.72E+00	O	183	Br- 78	100.0	3000.0	2.98E+00	O
183	Ge- 72	100.0	3000.0	2.43E+00	O	183	Br- 79g	100.0	3000.0	9.64E-01	O
183	Ge- 73g	100.0	3000.0	3.42E-01	O	183	Br- 79m	100.0	3000.0	1.18E+00	O
183	Ge- 73m	100.0	3000.0	3.42E-01	O	183	Br- 80g	100.0	3000.0	3.87E-01	O
183	Ge- 74	100.0	3000.0	3.68E-01	O	183	Br- 80m	100.0	3000.0	5.22E-01	O
183	Ge- 75g	100.0	3000.0	1.26E-02	O	183	Br- 81	100.0	3000.0	4.53E-01	O
183	Ge- 75m	100.0	3000.0	7.38E-02	O	183	Br- 82g	100.0	3000.0	2.99E-01	N
183	Ge- 76	100.0	3000.0	3.49E-02	O	183	Br- 82m	100.0	3000.0	1.13E-01	N
183	Ge- 77g	100.0	700.0	1.14E-02	O	183	Br- 83	100.0	3000.0	6.21E-02	O
183	Ge- 77m	100.0	350.0	1.23E-03	O	183	Br- 84g	100.0	3000.0	2.40E-03	O
183	Ge- 78	100.0	800.0	7.10E-03	O	183	Br- 84m	100.0	500.0	1.23E-02	O
183	Ge- 79g	100.0	400.0	5.21E-04	O	183	Br- 85	100.0	600.0	8.93E-03	O
183	Ge- 79m	100.0	150.0	4.44E-04	O	183	Br- 86	100.0	200.0	2.23E-03	O
183	As- 67	100.0	2500.0	4.39E-03	O	183	Br- 87	100.0	3000.0	6.07E-02	C
183	As- 68	100.0	2500.0	3.09E-02	O	183	Kr- 74	100.0	3000.0	7.96E-03	O
183	As- 69	100.0	3000.0	2.57E-01	O	183	Kr- 75	100.0	3000.0	7.64E-02	C
183	As- 70	100.0	3000.0	1.23E+00	O	183	Kr- 76	100.0	3000.0	5.15E-01	O
183	As- 71	180.0	3000.0	1.31E+00	O	183	Kr- 77	100.0	3000.0	1.96E+00	O
183	As- 72	110.0	3000.0	7.23E-01	N	183	Kr- 78	140.0	3000.0	1.35E+00	O
183	As- 73	110.0	2500.0	9.61E-01	O	183	Kr- 79g	100.0	3000.0	9.45E-01	O
183	As- 74	100.0	3000.0	2.18E+00	I	183	Kr- 79m	100.0	3000.0	4.33E+00	O
183	As- 75g	100.0	3000.0	7.40E-01	O	183	Kr- 80	100.0	3000.0	5.10E+00	O
183	As- 75m	100.0	3000.0	7.40E-01	O	183	Kr- 81g	100.0	3000.0	2.28E+00	O
183	As- 76	100.0	3000.0	8.41E-01	N	183	Kr- 81m	100.0	3000.0	1.06E-01	O
183	As- 77	100.0	3000.0	2.93E-01	O	183	Kr- 82	100.0	3000.0	1.73E+00	O
183	As- 78	100.0	3000.0	6.17E-02	O	183	Kr- 83g	100.0	3000.0	5.29E-01	O
183	As- 79	100.0	900.0	2.29E-02	O	183	Kr- 83m	100.0	3000.0	3.95E-02	O
183	As- 80	100.0	3000.0	1.22E-02	O	183	Kr- 84	100.0	3000.0	2.71E-01	O
183	As- 82g	100.0	750.0	2.90E-04	O	183	Kr- 85g	100.0	3000.0	5.03E-02	O
183	As- 82m	100.0	750.0	2.90E-04	O	183	Kr- 85m	100.0	3000.0	1.77E-02	O
183	Se- 68	100.0	3000.0	1.21E-03	O	183	Kr- 86	100.0	2500.0	3.27E-02	O
183	Se- 69	100.0	2500.0	2.46E-03	O	183	Kr- 87	100.0	800.0	2.22E-01	C
183	Se- 70	100.0	2500.0	2.12E-02	O	183	Kr- 88	100.0	120.0	2.87E-03	O
183	Se- 71	100.0	2500.0	1.39E-01	O	183	Rb- 76	100.0	2500.0	4.24E-03	O
183	Se- 72	100.0	3000.0	9.73E-01	O	183	Rb- 77	100.0	2500.0	3.92E-02	O
183	Se- 73g	100.0	3000.0	1.35E+00	O	183	Rb- 78g	100.0	2500.0	9.69E-02	O
183	Se- 73m	100.0	3000.0	1.47E+00	O	183	Rb- 78m	100.0	2500.0	9.69E-02	O
183	Se- 74	140.0	3000.0	1.46E+00	O	183	Rb- 79	100.0	2500.0	7.24E-01	O
183	Se- 75	110.0	3000.0	1.16E+00	C	183	Rb- 80	180.0	3000.0	1.08E+00	O
183	Se- 76	100.0	3000.0	3.02E+00	O	183	Rb- 81g	100.0	3000.0	7.68E-01	O
183	Se- 77g	100.0	3000.0	1.28E-01	O	183	Rb- 81m	100.0	3000.0	4.24E+00	O
183	Se- 77m	100.0	3000.0	1.03E+00	O	183	Rb- 82g	100.0	3000.0	5.64E-01	N
183	Se- 78	100.0	3000.0	7.53E-01	O	183	Rb- 82m	100.0	2600.0	1.77E+00	N
183	Se- 79g	100.0	3000.0	1.80E-01	O	183	Rb- 83g	100.0	3000.0	1.26E+00	C
183	Se- 79m	100.0	3000.0	1.21E-02	O	183	Rb- 83m	100.0	3000.0	1.26E+00	C
183	Se- 80	100.0	2500.0	7.91E-02	O	183	Rb- 84g	100.0	3000.0	7.31E-01	I
183	Se- 81g	100.0	3000.0	4.77E-03	O	183	Rb- 84m	100.0	3000.0	8.96E-01	I
183	Se- 81m	100.0	3000.0	2.14E-02	O	183	Rb- 85	100.0	3000.0	1.01E+00	O
183	Se- 82	100.0	500.0	1.10E-02	O	183	Rb- 86g	100.0	3000.0	2.50E-01	N
183	Se- 83g	100.0	800.0	2.46E-03	O	183	Rb- 86m	100.0	3000.0	8.68E-01	N

183	Rb- 87	100.0	3000.0	3.34E+00	C	183	Zr- 89m	100.0	3000.0	6.24E-01	C
183	Rb- 88	100.0	3000.0	3.45E-02	O	183	Zr- 90g	100.0	3000.0	2.36E+00	O
183	Rb- 89	100.0	250.0	1.13E-02	O	183	Zr- 90m	100.0	3000.0	2.36E+00	O
183	Rb- 90g	100.0	300.0	2.18E-03	O	183	Zr- 91	100.0	3000.0	1.66E+00	O
183	Rb- 90m	100.0	300.0	2.42E-03	O	183	Zr- 92	100.0	3000.0	1.10E+00	O
183	Rb- 91	100.0	275.0	1.68E-03	O	183	Zr- 93	100.0	3000.0	4.34E-01	O
183	Sr- 78	100.0	3000.0	3.54E-03	O	183	Zr- 94	100.0	2500.0	2.32E-01	O
183	Sr- 79	100.0	2000.0	2.26E-02	O	183	Zr- 95	100.0	3000.0	5.82E-02	O
183	Sr- 80	100.0	3000.0	2.12E-01	O	183	Zr- 96	100.0	2500.0	1.46E-02	O
183	Sr- 81	100.0	2500.0	5.97E-01	O	183	Zr- 97	100.0	900.0	3.76E-03	O
183	Sr- 82	180.0	3000.0	1.18E+00	O	183	Zr- 98	100.0	800.0	1.02E-03	O
183	Sr- 83g	120.0	3000.0	9.25E-01	C	183	Nb- 84	100.0	2500.0	1.57E-03	O
183	Sr- 83m	100.0	3000.0	6.23E-01	C	183	Nb- 85g	100.0	3000.0	1.95E-03	C
183	Sr- 84	140.0	3000.0	1.47E+00	O	183	Nb- 85m	100.0	3000.0	1.95E-03	C
183	Sr- 85g	100.0	3000.0	3.00E+00	C	183	Nb- 86g	100.0	2500.0	1.15E-02	O
183	Sr- 85m	100.0	3000.0	2.68E-01	C	183	Nb- 86m	100.0	2500.0	1.15E-02	O
183	Sr- 86	100.0	3000.0	2.96E+00	O	183	Nb- 87g	100.0	2500.0	3.21E-02	C
183	Sr- 87g	100.0	3000.0	1.18E+00	O	183	Nb- 87m	100.0	2500.0	1.21E-01	C
183	Sr- 87m	100.0	3000.0	1.28E-01	O	183	Nb- 88g	100.0	2500.0	3.02E-01	C
183	Sr- 88	100.0	3000.0	5.74E-01	O	183	Nb- 88m	100.0	2500.0	3.02E-01	C
183	Sr- 89	100.0	2500.0	1.52E-01	O	183	Nb- 89g	180.0	3000.0	1.86E+00	C
183	Sr- 90	100.0	2500.0	5.26E-02	O	183	Nb- 89m	100.0	2500.0	1.43E-01	C
183	Sr- 91	100.0	3000.0	1.74E-02	O	183	Nb- 90g	120.0	3000.0	2.81E+00	C
183	Sr- 92	100.0	3000.0	9.52E-03	O	183	Nb- 90m	100.0	2500.0	4.98E-01	C
183	Sr- 93	100.0	180.0	1.46E-03	O	183	Nb- 90m2	100.0	2500.0	3.50E-03	C
183	Y - 80g	100.0	3000.0	3.16E-03	O	183	Nb- 91g	110.0	3000.0	1.23E+00	N
183	Y - 80m	100.0	3000.0	2.02E-03	O	183	Nb- 91m	100.0	3000.0	8.30E-01	N
183	Y - 81	100.0	2500.0	1.32E-02	O	183	Nb- 92g	100.0	3000.0	2.06E+00	O
183	Y - 82	100.0	2500.0	7.22E-02	O	183	Nb- 92m	100.0	3000.0	6.54E-01	O
183	Y - 83g	100.0	2500.0	1.20E-01	C	183	Nb- 93g	100.0	3000.0	1.65E+00	O
183	Y - 83m	100.0	2500.0	1.14E-01	C	183	Nb- 93m	100.0	3000.0	1.40E-01	O
183	Y - 84g	100.0	2500.0	4.41E-01	O	183	Nb- 94g	100.0	3000.0	7.20E-01	O
183	Y - 84m	100.0	2500.0	4.41E-01	O	183	Nb- 94m	100.0	3000.0	2.22E-01	O
183	Y - 85g	100.0	3000.0	2.72E-01	C	183	Nb- 95g	100.0	3000.0	1.08E+00	N
183	Y - 85m	200.0	3000.0	1.05E+00	C	183	Nb- 95m	100.0	2000.0	8.09E-01	N
183	Y - 86g	100.0	3000.0	2.30E+00	O	183	Nb- 96	100.0	2500.0	2.10E-01	O
183	Y - 86m	100.0	3000.0	2.36E+00	O	183	Nb- 97g	100.0	2500.0	5.92E-02	O
183	Y - 87g	100.0	3000.0	5.01E-01	C	183	Nb- 97m	100.0	2500.0	1.97E-02	O
183	Y - 87m	140.0	3000.0	1.19E+00	C	183	Nb- 98g	100.0	1500.0	1.65E-02	O
183	Y - 88g	40.0	3000.0	1.05E+00	I	183	Nb- 98m	100.0	1500.0	4.77E-03	O
183	Y - 88m	40.0	3000.0	1.05E+00	I	183	Nb- 99g	100.0	900.0	2.56E-03	O
183	Y - 89g	100.0	3000.0	1.68E-01	O	183	Nb- 99m	100.0	900.0	1.97E-03	O
183	Y - 89m	100.0	3000.0	1.49E+00	O	183	Nb-100g	100.0	900.0	1.37E-03	O
183	Y - 90g	100.0	3000.0	1.62E-01	N	183	Nb-100m	100.0	900.0	2.39E-04	O
183	Y - 90m	100.0	3000.0	1.31E+00	N	183	Nb-102g	100.0	450.0	1.47E-04	O
183	Y - 91g	100.0	3000.0	8.71E-02	O	183	Nb-102m	100.0	450.0	1.47E-04	O
183	Y - 91m	100.0	2500.0	1.21E-01	O	183	Mo- 87	100.0	2500.0	3.35E-03	C
183	Y - 92	100.0	2000.0	5.92E-02	O	183	Mo- 88	100.0	3000.0	1.83E-02	C
183	Y - 93g	100.0	2500.0	1.48E-02	O	183	Mo- 89g	100.0	3000.0	6.52E-02	C
183	Y - 93m	100.0	2500.0	1.48E-02	O	183	Mo- 89m	100.0	3000.0	6.52E-02	C
183	Y - 94	100.0	550.0	9.86E-03	O	183	Mo- 90	100.0	2500.0	7.59E-01	C
183	Y - 95	100.0	800.0	1.75E-03	O	183	Mo- 91g	180.0	3000.0	1.67E+00	O
183	Y - 96g	100.0	1000.0	4.14E-04	O	183	Mo- 91m	100.0	3000.0	2.61E-01	O
183	Y - 96m	100.0	1000.0	4.14E-04	O	183	Mo- 92	160.0	3000.0	2.91E+00	O
183	Zr- 83	100.0	2500.0	5.51E-03	C	183	Mo- 93g	100.0	3000.0	2.63E+00	O
183	Zr- 84	100.0	3000.0	9.83E-02	O	183	Mo- 93m	100.0	3000.0	1.67E+00	I
183	Zr- 85g	100.0	3000.0	1.64E-01	C	183	Mo- 94	100.0	3000.0	4.35E+00	O
183	Zr- 85m	100.0	3000.0	8.16E-02	C	183	Mo- 95	100.0	3000.0	2.25E+00	O
183	Zr- 86	100.0	3000.0	1.22E+00	O	183	Mo- 96	100.0	3000.0	1.48E+00	O
183	Zr- 87g	200.0	3000.0	1.47E+00	C	183	Mo- 97	100.0	2500.0	6.56E-01	O
183	Zr- 87m	100.0	2500.0	8.47E-02	C	183	Mo- 98	100.0	2000.0	3.09E-01	O
183	Zr- 88	160.0	3000.0	2.17E+00	C	183	Mo- 99	100.0	2500.0	9.37E-02	O
183	Zr- 89g	120.0	3000.0	1.48E+00	C	183	Mo-100	100.0	3000.0	5.40E-02	O

183	Mo-101	100.0	3000.0	1.50E-02	O
183	Mo-102	100.0	900.0	3.32E-03	O
183	Mo-103	100.0	800.0	9.67E-04	O
183	Mo-104	100.0	650.0	6.35E-04	O
183	Tc- 90g	100.0	2500.0	7.46E-03	C
183	Tc- 90m	100.0	2500.0	7.46E-03	C
183	Tc- 91g	100.0	2500.0	5.74E-02	O
183	Tc- 91m	100.0	2500.0	7.04E-03	O
183	Tc- 92	100.0	3000.0	3.78E-01	O
183	Tc- 93g	180.0	3000.0	2.58E+00	O
183	Tc- 93m	100.0	3000.0	1.75E-01	O
183	Tc- 94g	160.0	3000.0	1.96E+00	O
183	Tc- 94m	100.0	3000.0	8.61E-02	O
183	Tc- 95g	120.0	3000.0	1.19E+00	N
183	Tc- 95m	100.0	2500.0	5.25E-01	N
183	Tc- 96g	100.0	3000.0	1.86E+00	I
183	Tc- 96m	100.0	3000.0	2.67E-01	I
183	Tc- 97g	100.0	3000.0	2.32E+00	O
183	Tc- 97m	100.0	3000.0	1.34E-01	O
183	Tc- 98	100.0	3000.0	1.37E+00	O
183	Tc- 99g	100.0	3000.0	5.13E-01	N
183	Tc- 99m	100.0	2000.0	1.63E-01	N
183	Tc-100	100.0	2500.0	2.87E-01	O
183	Tc-101	100.0	2500.0	1.37E-01	O
183	Tc-102g	100.0	2500.0	2.03E-02	O
183	Tc-102m	100.0	2500.0	2.03E-02	O
183	Tc-103	100.0	2000.0	1.50E-02	O
183	Tc-104	100.0	1000.0	4.30E-03	O
183	Tc-105	100.0	900.0	3.79E-03	O
183	Tc-106	100.0	800.0	5.73E-04	O
183	Ru- 91g	100.0	3000.0	7.81E-04	O
183	Ru- 91m	100.0	3000.0	7.81E-04	O
183	Ru- 92	100.0	3000.0	1.03E-02	O
183	Ru- 93g	100.0	3000.0	7.32E-02	O
183	Ru- 93m	100.0	3000.0	7.29E-03	O
183	Ru- 94	250.0	3000.0	2.15E+00	O
183	Ru- 95	225.0	3000.0	2.83E+00	O
183	Ru- 96	180.0	3000.0	2.49E+00	O
183	Ru- 97	140.0	3000.0	2.16E+00	O
183	Ru- 98	100.0	3000.0	1.39E+00	O
183	Ru- 99	100.0	3000.0	3.78E+00	O
183	Ru-100	100.0	2500.0	2.55E+00	O
183	Ru-101	100.0	3000.0	1.11E+00	O
183	Ru-102	100.0	2500.0	6.29E-01	O
183	Ru-103g	100.0	2000.0	1.07E-01	O
183	Ru-103m	100.0	2000.0	1.07E-01	O
183	Ru-104	100.0	3000.0	1.10E-01	O
183	Ru-105	100.0	2000.0	2.72E-02	O
183	Ru-106	100.0	3000.0	1.12E-02	O
183	Ru-107	100.0	900.0	2.81E-03	O
183	Ru-108	100.0	650.0	1.02E-03	O
183	Rh- 93	100.0	3000.0	1.48E-03	O
183	Rh- 94g	100.0	3000.0	5.99E-03	O
183	Rh- 94m	100.0	3000.0	5.99E-03	O
183	Rh- 95g	100.0	3000.0	2.11E-01	O
183	Rh- 95m	100.0	3000.0	1.26E-02	O
183	Rh- 96g	300.0	3000.0	1.31E+00	O
183	Rh- 96m	100.0	3000.0	1.62E-01	O
183	Rh- 97g	200.0	3000.0	2.39E+00	O
183	Rh- 97m	100.0	3000.0	5.33E-02	O
183	Rh- 98g	180.0	3000.0	1.62E+00	O
183	Rh- 98m	180.0	3000.0	1.62E+00	O
183	Rh- 99g	100.0	2500.0	3.42E-01	O
183	Rh- 99m	160.0	3000.0	2.15E+00	O
183	Rh-100g	100.0	2500.0	2.70E+00	N
183	Rh-100m	100.0	2500.0	1.67E+00	O
183	Rh-101g	100.0	2500.0	3.57E-01	O
183	Rh-101m	110.0	3000.0	1.00E+00	O
183	Rh-102g	100.0	3000.0	1.27E+00	N
183	Rh-102m	100.0	2500.0	1.05E+00	N
183	Rh-103g	100.0	2500.0	2.88E-01	O
183	Rh-103m	100.0	2500.0	1.50E+00	O
183	Rh-104g	100.0	2000.0	3.90E-01	O
183	Rh-104m	100.0	2000.0	4.39E-01	O
183	Rh-105g	100.0	3000.0	3.49E-01	O
183	Rh-105m	100.0	3000.0	1.15E-01	O
183	Rh-106g	100.0	2000.0	4.44E-02	O
183	Rh-106m	100.0	2000.0	1.07E-01	O
183	Rh-107	100.0	2000.0	7.91E-02	O
183	Rh-108g	100.0	2500.0	9.41E-03	O
183	Rh-108m	100.0	2500.0	9.41E-03	O
183	Rh-109	100.0	3000.0	7.25E-03	O
183	Rh-110g	100.0	900.0	7.93E-04	O
183	Rh-110m	100.0	900.0	7.93E-04	O
183	Pd- 95g	100.0	1200.0	4.48E-05	O
183	Pd- 95m	100.0	1200.0	8.44E-05	O
183	Pd- 96	100.0	3000.0	5.15E-02	O
183	Pd- 97	100.0	3000.0	2.39E-01	O
183	Pd- 98	350.0	3000.0	1.70E+00	O
183	Pd- 99	225.0	3000.0	2.95E+00	O
183	Pd-100	200.0	3000.0	3.64E+00	O
183	Pd-101	160.0	3000.0	3.70E+00	O
183	Pd-102	140.0	3000.0	2.79E+00	O
183	Pd-103	120.0	3000.0	1.68E+00	O
183	Pd-104	80.0	3000.0	1.02E+00	O
183	Pd-105	100.0	2500.0	1.76E+00	O
183	Pd-106	100.0	2000.0	1.10E+00	O
183	Pd-107g	100.0	3000.0	2.05E-01	O
183	Pd-107m	100.0	2000.0	2.46E-01	O
183	Pd-108	100.0	2000.0	2.20E-01	O
183	Pd-109g	100.0	3000.0	3.19E-02	O
183	Pd-109m	100.0	2000.0	3.10E-02	O
183	Pd-110	100.0	2500.0	3.21E-02	O
183	Pd-111g	100.0	3000.0	5.84E-03	O
183	Pd-111m	100.0	3000.0	2.67E-03	O
183	Pd-112	100.0	1000.0	2.74E-03	O
183	Ag- 97	100.0	2000.0	1.30E-04	O
183	Ag- 98	100.0	3000.0	1.68E-02	O
183	Ag- 99g	100.0	3000.0	1.49E-01	O
183	Ag- 99m	100.0	3000.0	3.32E-03	O
183	Ag-100g	350.0	3000.0	1.01E+00	O
183	Ag-100m	100.0	3000.0	9.43E-02	O
183	Ag-101g	250.0	3000.0	2.12E+00	O
183	Ag-101m	100.0	3000.0	1.29E-01	O
183	Ag-102g	225.0	3000.0	3.17E+00	O
183	Ag-102m	100.0	3000.0	2.47E-01	O
183	Ag-103g	180.0	3000.0	3.73E+00	O
183	Ag-103m	100.0	3000.0	1.69E-01	O
183	Ag-104g	160.0	3000.0	3.07E+00	O
183	Ag-104m	100.0	3000.0	4.44E-01	O
183	Ag-105g	100.0	2500.0	2.96E-01	C
183	Ag-105m	140.0	3000.0	3.60E+00	C
183	Ag-106g	100.0	2500.0	2.74E-01	O
183	Ag-106m	100.0	3000.0	3.59E+00	I
183	Ag-107g	100.0	2500.0	1.06E-01	O
183	Ag-107m	100.0	2500.0	1.32E+00	O

183	Ag-108g	100.0	2500.0	6.00E-01	O
183	Ag-108m	100.0	2500.0	4.12E-01	O
183	Ag-109g	100.0	2500.0	2.59E-01	O
183	Ag-109m	100.0	2000.0	3.16E-01	O
183	Ag-110g	100.0	2000.0	1.46E-01	O
183	Ag-110m	100.0	2000.0	8.51E-02	O
183	Ag-111g	100.0	3000.0	4.02E-02	O
183	Ag-111m	100.0	3000.0	7.52E-02	O
183	Ag-112	100.0	3000.0	4.24E-02	O
183	Ag-113g	100.0	1200.0	8.04E-03	O
183	Ag-113m	100.0	1200.0	9.92E-03	O
183	Ag-114g	100.0	1000.0	2.35E-03	O
183	Ag-114m	100.0	1000.0	2.35E-03	O
183	Ag-115g	100.0	1000.0	1.35E-03	O
183	Ag-115m	100.0	1000.0	4.49E-04	O
183	Cd-100	100.0	3000.0	8.40E-03	O
183	Cd-101	100.0	3000.0	9.55E-02	O
183	Cd-102	450.0	3000.0	1.12E+00	O
183	Cd-103	275.0	3000.0	2.83E+00	O
183	Cd-104	200.0	3000.0	4.48E+00	O
183	Cd-105	225.0	3000.0	8.38E+00	C
183	Cd-106	160.0	3000.0	5.07E+00	O
183	Cd-107	140.0	3000.0	3.89E+00	O
183	Cd-108	140.0	3000.0	2.66E+00	O
183	Cd-109	120.0	3000.0	1.56E+00	O
183	Cd-110	100.0	2500.0	2.11E+00	O
183	Cd-111g	100.0	3000.0	1.95E-01	O
183	Cd-111m	100.0	2000.0	9.65E-01	O
183	Cd-112	100.0	2000.0	6.52E-01	O
183	Cd-113g	100.0	2000.0	1.10E-01	O
183	Cd-113m	100.0	2000.0	1.06E-01	O
183	Cd-114	100.0	2000.0	1.18E-01	O
183	Cd-115g	100.0	1500.0	2.40E-02	O
183	Cd-115m	100.0	1500.0	4.80E-03	O
183	Cd-116	100.0	2000.0	1.33E-02	O
183	Cd-117g	100.0	1000.0	1.04E-03	O
183	Cd-117m	100.0	1000.0	2.04E-03	O
183	Cd-118	100.0	1200.0	1.45E-03	O
183	In-102	100.0	3000.0	1.43E-03	O
183	In-103g	100.0	3000.0	3.17E-02	O
183	In-103m	100.0	3000.0	3.44E-04	O
183	In-104g	100.0	3000.0	2.33E-01	O
183	In-104m	100.0	3000.0	2.81E-02	O
183	In-105g	100.0	3000.0	4.59E-01	C
183	In-105m	100.0	3000.0	4.72E-01	C
183	In-106g	225.0	3000.0	1.15E+00	O
183	In-106m	225.0	3000.0	2.64E+00	O
183	In-107g	200.0	3000.0	4.36E+00	O
183	In-107m	100.0	3000.0	3.34E-01	O
183	In-108g	180.0	3000.0	2.74E+00	N
183	In-108m	180.0	3000.0	5.59E+00	N
183	In-109g	160.0	3000.0	4.54E+00	O
183	In-109m	100.0	3000.0	3.51E-01	O
183	In-109m2	100.0	2500.0	3.41E-03	O
183	In-110g	160.0	3000.0	5.64E+00	N
183	In-110m	160.0	3000.0	4.88E+00	N
183	In-111g	100.0	3000.0	2.32E+00	O
183	In-111m	100.0	2500.0	1.57E-01	O
183	In-112g	100.0	2500.0	3.25E-01	O
183	In-112m	100.0	2500.0	1.11E+00	O
183	In-113g	100.0	2500.0	7.67E-01	O
183	In-113m	100.0	2500.0	7.90E-02	O
183	In-114g	100.0	2500.0	2.67E-02	O
183	In-114m	100.0	2500.0	5.08E-01	O
183	In-114m2	100.0	2500.0	5.35E-04	O
183	In-115g	100.0	2500.0	1.92E-01	O
183	In-115m	100.0	2500.0	1.08E-01	O
183	In-116g	100.0	3000.0	4.84E-03	O
183	In-116m	100.0	1500.0	1.50E-02	O
183	In-116m2	100.0	1500.0	7.67E-02	O
183	In-117g	100.0	2500.0	2.66E-02	O
183	In-117m	100.0	2500.0	1.45E-02	O
183	In-118g	100.0	3000.0	1.18E-03	O
183	In-118m	100.0	3000.0	1.93E-03	O
183	In-118m2	100.0	1000.0	1.05E-02	O
183	In-120g	100.0	3000.0	9.77E-04	O
183	In-120m	100.0	3000.0	1.66E-03	O
183	In-120m2	100.0	3000.0	2.64E-06	O
183	Sn-104	100.0	2500.0	2.21E-03	O
183	Sn-105	100.0	3000.0	3.52E-02	C
183	Sn-106	100.0	3000.0	1.49E-01	O
183	Sn-107	450.0	3000.0	1.38E+00	O
183	Sn-108	275.0	3000.0	3.27E+00	O
183	Sn-109	275.0	3000.0	6.05E+00	O
183	Sn-110	180.0	3000.0	8.75E+00	O
183	Sn-111	180.0	3000.0	8.56E+00	O
183	Sn-112	140.0	3000.0	8.21E+00	O
183	Sn-113g	100.0	2500.0	3.31E-01	C
183	Sn-113m	120.0	3000.0	8.45E+00	C
183	Sn-114	100.0	3000.0	3.76E+00	O
183	Sn-115	90.0	3000.0	2.04E+00	O
183	Sn-116	110.0	3000.0	1.04E+00	O
183	Sn-117g	100.0	3000.0	8.52E-02	O
183	Sn-117m	100.0	3000.0	3.63E-01	O
183	Sn-118	100.0	2500.0	2.30E-01	O
183	Sn-119g	100.0	1500.0	4.44E-02	O
183	Sn-119m	100.0	1500.0	2.45E-02	O
183	Sn-120	100.0	1500.0	3.30E-02	O
183	Sn-121g	100.0	1000.0	1.33E-03	O
183	Sn-121m	100.0	1000.0	1.13E-02	O
183	Sn-122	100.0	2500.0	3.67E-03	O
183	Sn-123g	100.0	3000.0	2.16E-03	O
183	Sn-123m	100.0	3000.0	1.88E-04	O
183	Sb-108	100.0	3000.0	2.02E-03	O
183	Sb-109	100.0	3000.0	2.67E-02	O
183	Sb-110	100.0	3000.0	8.38E-02	O
183	Sb-111	400.0	3000.0	2.25E+00	O
183	Sb-112	180.0	3000.0	3.77E+00	O
183	Sb-113	250.0	3000.0	8.97E+00	C
183	Sb-114	180.0	3000.0	6.49E+00	O
183	Sb-115	180.0	3000.0	5.51E+00	O
183	Sb-116g	90.0	3000.0	1.29E+00	O
183	Sb-116m	90.0	3000.0	2.64E+00	O
183	Sb-117	140.0	3000.0	2.44E+00	O
183	Sb-118g	100.0	2500.0	3.78E-01	N
183	Sb-118m	100.0	2500.0	9.87E-01	N
183	Sb-119g	100.0	2000.0	3.45E-01	O
183	Sb-119m	100.0	2000.0	3.45E-01	O
183	Sb-120g	100.0	2500.0	1.26E-01	N
183	Sb-120m	100.0	2600.0	1.50E-01	N
183	Sb-121	100.0	2000.0	1.47E-01	O
183	Sb-122g	100.0	1500.0	1.39E-02	O
183	Sb-122m	100.0	1500.0	3.51E-02	O
183	Sb-123	100.0	1500.0	1.86E-02	O
183	Sb-124g	100.0	1200.0	1.72E+00	N
183	Sb-124m	100.0	1200.0	1.41E+00	N

183	Sb-124m2	100.0	1200.0	2.39E+00	N
183	Sb-125	100.0	1000.0	8.24E-04	O
183	Te-110	100.0	2000.0	6.19E-04	O
183	Te-111	100.0	2500.0	4.53E-03	O
183	Te-112	100.0	3000.0	4.20E-02	O
183	Te-113	100.0	2500.0	5.98E-01	C
183	Te-114	300.0	3000.0	2.45E+00	O
183	Te-115g	275.0	3000.0	4.74E+00	O
183	Te-115m	100.0	2500.0	9.84E-02	O
183	Te-116	180.0	3000.0	6.62E+00	O
183	Te-117g	180.0	3000.0	3.01E+00	O
183	Te-117m	180.0	3000.0	3.01E+00	O
183	Te-118	180.0	3000.0	5.37E+00	O
183	Te-119g	100.0	2000.0	9.04E-01	C
183	Te-119m	120.0	3000.0	3.73E+00	C
183	Te-120	110.0	3000.0	1.76E+00	O
183	Te-121g	100.0	2000.0	1.39E-01	C
183	Te-121m	70.0	3000.0	5.71E-01	I
183	Te-122	100.0	2500.0	5.33E-01	O
183	Te-123g	100.0	2500.0	9.11E-02	O
183	Te-123m	100.0	2000.0	1.00E-01	O
183	Te-124	100.0	2000.0	1.07E-01	O
183	Te-125g	100.0	1200.0	1.38E-02	O
183	Te-125m	100.0	1200.0	1.68E-02	O
183	Te-126	100.0	1200.0	1.51E-02	O
183	Te-127g	100.0	2000.0	2.24E-03	O
183	Te-127m	100.0	2000.0	3.75E-03	O
183	I -113	100.0	3000.0	6.85E-03	C
183	I -114g	100.0	3000.0	2.80E-02	O
183	I -114m	100.0	2500.0	5.02E-03	O
183	I -115	100.0	3000.0	2.27E-01	O
183	I -116	300.0	3000.0	2.12E+00	O
183	I -117	250.0	3000.0	4.59E+00	O
183	I -118g	225.0	3000.0	2.79E+00	O
183	I -118m	225.0	3000.0	2.79E+00	O
183	I -119	250.0	3000.0	9.07E+00	C
183	I -120g	110.0	3000.0	8.96E+00	N
183	I -120m	110.0	3000.0	2.71E+00	N
183	I -121	180.0	3000.0	4.73E+00	C
183	I -122	160.0	3000.0	2.32E+00	O
183	I -123	200.0	3000.0	1.14E+00	O
183	I -124	100.0	2000.0	8.96E-01	O
183	I -125	100.0	2000.0	5.37E-01	O
183	I -126	100.0	2000.0	1.73E-01	O
183	I -127	100.0	1500.0	1.15E-01	O
183	I -128	100.0	1200.0	2.68E-02	O
183	I -129	100.0	1200.0	1.65E-02	O
183	Xe-114	100.0	2500.0	2.81E-04	O
183	Xe-115	100.0	2500.0	1.06E-03	O
183	Xe-116	100.0	3000.0	5.54E-02	O
183	Xe-117	100.0	3000.0	1.63E-01	O
183	Xe-118	450.0	3000.0	2.47E+00	O
183	Xe-119	225.0	3000.0	6.60E+00	C
183	Xe-120	275.0	3000.0	6.94E+00	O
183	Xe-121	160.0	3000.0	9.95E+00	C
183	Xe-122	225.0	3000.0	7.18E+00	O
183	Xe-123	160.0	2500.0	7.89E+00	C
183	Xe-124	100.0	2500.0	3.19E+00	O
183	Xe-125g	100.0	2500.0	7.14E-01	C
183	Xe-125m	100.0	2500.0	8.56E-01	C
183	Xe-126	100.0	2500.0	6.88E-01	O
183	Xe-127g	100.0	1000.0	1.07E-01	C
183	Xe-127m	100.0	1000.0	2.74E-01	C
183	Xe-128	100.0	2000.0	1.45E-01	O
183	Xe-129g	100.0	2000.0	2.67E-02	O
183	Xe-129m	100.0	2000.0	2.03E-02	O
183	Xe-130	100.0	2500.0	1.96E-02	O
183	Xe-131g	100.0	3000.0	4.86E-03	O
183	Xe-131m	100.0	3000.0	5.01E-03	O
183	Xe-132g	100.0	2000.0	2.98E-03	O
183	Xe-132m	100.0	2000.0	2.98E-03	O
183	Cs-117g	100.0	2500.0	7.39E-03	O
183	Cs-117m	100.0	2500.0	1.47E-03	O
183	Cs-118g	100.0	2500.0	2.79E-02	O
183	Cs-118m	100.0	2500.0	2.79E-02	O
183	Cs-119g	100.0	2500.0	1.59E-01	C
183	Cs-119m	100.0	2500.0	1.59E-01	C
183	Cs-120g	100.0	2500.0	4.33E-01	O
183	Cs-120m	100.0	2500.0	4.33E-01	O
183	Cs-121g	225.0	3000.0	1.24E+00	C
183	Cs-121m	225.0	3000.0	2.84E+00	C
183	Cs-122g	400.0	3000.0	1.82E+00	O
183	Cs-122m	400.0	3000.0	3.96E+00	O
183	Cs-122m2	100.0	2500.0	3.94E-03	O
183	Cs-123g	225.0	2500.0	6.07E+00	C
183	Cs-123m	225.0	2500.0	4.90E+00	C
183	Cs-124g	300.0	3000.0	3.67E+00	O
183	Cs-124m	300.0	3000.0	3.67E+00	O
183	Cs-125g	250.0	2500.0	3.52E+00	C
183	Cs-125m	250.0	2500.0	3.52E+00	C
183	Cs-126	250.0	3000.0	3.99E+00	O
183	Cs-127	300.0	2500.0	2.55E+00	C
183	Cs-128	200.0	3000.0	1.05E+00	O
183	Cs-129	100.0	2000.0	6.08E-01	C
183	Cs-130g	100.0	2000.0	1.15E-01	O
183	Cs-130m	100.0	2000.0	7.16E-02	O
183	Cs-131	100.0	2000.0	9.08E-02	O
183	Cs-132	100.0	1200.0	2.37E-02	O
183	Cs-133	100.0	1500.0	1.17E-02	O
183	Cs-134g	100.0	2000.0	1.57E-04	O
183	Cs-134m	100.0	2000.0	3.57E-04	O
183	Ba-119	100.0	2000.0	4.22E-04	C
183	Ba-120	100.0	3000.0	7.45E-03	O
183	Ba-121	100.0	3000.0	1.08E-01	C
183	Ba-122	900.0	3000.0	1.13E+00	O
183	Ba-123	700.0	3000.0	4.71E+00	C
183	Ba-124	350.0	3000.0	6.00E+00	O
183	Ba-125	200.0	2500.0	8.68E+00	C
183	Ba-126	275.0	3000.0	8.47E+00	O
183	Ba-127g	500.0	2500.0	4.86E+00	C
183	Ba-127m	500.0	2500.0	3.75E+00	C
183	Ba-128	140.0	2500.0	6.42E+00	C
183	Ba-129g	100.0	2000.0	8.30E-01	C
183	Ba-129m	180.0	2500.0	3.28E+00	C
183	Ba-130g	100.0	2000.0	1.13E+00	O
183	Ba-130m	100.0	2000.0	1.13E+00	O
183	Ba-131g	100.0	1600.0	2.63E-01	C
183	Ba-131m	100.0	2000.0	8.31E-01	C
183	Ba-132	100.0	1500.0	5.19E-01	O
183	Ba-133g	100.0	2000.0	1.33E-01	C
183	Ba-133m	100.0	2000.0	5.58E-02	C
183	Ba-134	100.0	1200.0	8.98E-02	O
183	Ba-135g	100.0	900.0	3.68E-03	O
183	Ba-135m	100.0	2000.0	2.79E-02	O
183	Ba-136g	100.0	800.0	4.92E-03	O
183	Ba-136m	100.0	800.0	4.92E-03	O

183	La-121	100.0	3000.0	1.75E-03	C
183	La-122	100.0	2500.0	4.63E-03	O
183	La-123	100.0	3000.0	7.36E-02	C
183	La-124g	100.0	3000.0	7.93E-02	O
183	La-124m	100.0	3000.0	7.93E-02	O
183	La-125g	750.0	2500.0	1.33E+00	C
183	La-125m	750.0	2500.0	1.33E+00	C
183	La-126g	200.0	3000.0	2.16E+00	O
183	La-126m	200.0	3000.0	2.16E+00	O
183	La-127g	550.0	3000.0	6.06E+00	C
183	La-127m	550.0	3000.0	2.04E+00	C
183	La-128g	600.0	2500.0	4.75E+00	C
183	La-128m	600.0	2500.0	4.75E+00	C
183	La-129g	300.0	2500.0	4.74E+00	C
183	La-129m	300.0	2500.0	4.74E+00	C
183	La-130	250.0	1600.0	6.17E+00	N
183	La-131	500.0	2500.0	4.13E+00	C
183	La-132g	500.0	3000.0	1.05E+00	C
183	La-132m	100.0	2500.0	1.04E+00	C
183	La-133	550.0	2500.0	9.94E-01	C
183	La-134	100.0	1500.0	5.75E-01	O
183	La-135	100.0	2000.0	3.26E-01	O
183	La-136g	100.0	2500.0	5.39E-02	O
183	La-136m	100.0	2500.0	5.39E-02	O
183	La-137	100.0	1500.0	5.44E-02	O
183	La-138	100.0	2500.0	1.54E-02	O
183	Ce-124	100.0	2500.0	2.33E-03	O
183	Ce-125	100.0	2500.0	2.39E-02	C
183	Ce-126	100.0	2500.0	1.49E-01	O
183	Ce-127g	100.0	2500.0	3.99E-01	C
183	Ce-127m	100.0	2500.0	3.99E-01	C
183	Ce-128	600.0	2500.0	4.72E+00	C
183	Ce-129	650.0	2500.0	7.43E+00	C
183	Ce-130	275.0	2500.0	1.00E+01	O
183	Ce-131g	550.0	2500.0	4.78E+00	C
183	Ce-131m	550.0	2500.0	4.78E+00	C
183	Ce-132g	550.0	2500.0	3.94E+00	C
183	Ce-132m	550.0	2500.0	3.94E+00	C
183	Ce-133g	600.0	2000.0	1.20E+00	C
183	Ce-133m	600.0	2000.0	4.78E+00	I
183	Ce-134	450.0	2500.0	3.34E+00	C
183	Ce-135g	600.0	2500.0	1.44E+00	C
183	Ce-135m	100.0	2000.0	2.41E-01	C
183	Ce-136	100.0	1500.0	1.02E+00	O
183	Ce-137g	100.0	1200.0	3.51E-02	O
183	Ce-137m	100.0	2000.0	3.71E-01	O
183	Ce-138g	100.0	1200.0	1.20E-01	O
183	Ce-138m	100.0	1200.0	1.20E-01	O
183	Ce-139g	100.0	1500.0	4.03E-02	C
183	Ce-139m	100.0	1500.0	3.08E-02	C
183	Ce-140	100.0	700.0	2.34E-02	O
183	Pr-127g	100.0	3000.0	5.64E-03	C
183	Pr-127m	100.0	3000.0	5.64E-03	C
183	Pr-128	100.0	2000.0	8.59E-02	C
183	Pr-129g	100.0	2500.0	2.84E-01	C
183	Pr-129m	100.0	2500.0	2.84E-01	C
183	Pr-130g	650.0	3000.0	1.20E+00	O
183	Pr-130m	650.0	3000.0	1.20E+00	O
183	Pr-131g	600.0	2500.0	1.38E+00	C
183	Pr-131m	600.0	2500.0	4.69E+00	C
183	Pr-132g	550.0	2500.0	3.84E+00	C
183	Pr-132m	550.0	2500.0	3.84E+00	C
183	Pr-133	550.0	2500.0	9.03E+00	C
183	Pr-134g	500.0	2000.0	4.18E+00	C
183	Pr-134m	500.0	2000.0	4.18E+00	C
183	Pr-135	500.0	2000.0	6.90E+00	C
183	Pr-136	450.0	1600.0	8.04E+00	N
183	Pr-137	450.0	2000.0	1.96E+00	O
183	Pr-138g	100.0	2500.0	3.71E-01	O
183	Pr-138m	100.0	2500.0	4.49E-01	O
183	Pr-139	100.0	1200.0	4.01E-01	C
183	Pr-140	100.0	1200.0	1.62E-01	O
183	Pr-141	100.0	2000.0	7.32E-02	O
183	Pr-142g	100.0	2500.0	6.15E-03	O
183	Pr-142m	100.0	2500.0	1.98E-02	O
183	Pr-143	100.0	2500.0	1.15E-02	O
183	Nd-127	110.0	2500.0	1.18E-05	C
183	Nd-128	100.0	3000.0	1.60E-03	C
183	Nd-129	100.0	1200.0	3.95E-02	C
183	Nd-130	100.0	1500.0	2.04E-01	O
183	Nd-131	100.0	2000.0	6.62E-01	C
183	Nd-132	600.0	2500.0	2.55E+00	C
183	Nd-133g	550.0	2500.0	3.15E+00	C
183	Nd-133m	550.0	2500.0	1.95E+00	C
183	Nd-134	500.0	2500.0	8.75E+00	C
183	Nd-135g	500.0	2000.0	8.11E+00	C
183	Nd-135m	500.0	2000.0	2.11E+00	C
183	Nd-136	450.0	2000.0	1.10E+01	C
183	Nd-137g	400.0	2000.0	7.07E+00	C
183	Nd-137m	400.0	2000.0	5.97E+00	C
183	Nd-138	450.0	2000.0	5.13E+00	O
183	Nd-139g	100.0	1200.0	9.99E-01	C
183	Nd-139m	450.0	1600.0	3.16E+00	I
183	Nd-140	450.0	2000.0	1.22E+00	O
183	Nd-141g	100.0	1000.0	1.07E+00	O
183	Nd-141m	100.0	1000.0	8.53E-01	O
183	Nd-142	100.0	1000.0	1.08E+00	O
183	Nd-143	100.0	1000.0	3.08E-01	O
183	Nd-144	100.0	1000.0	1.30E-01	O
183	Nd-145	100.0	1200.0	4.58E-02	O
183	Nd-146	100.0	3000.0	2.46E-02	O
183	Nd-147	100.0	1200.0	1.05E-02	O
183	Nd-149	100.0	1200.0	4.12E-03	O
183	Nd-150	100.0	1200.0	1.77E-03	O
183	Nd-151	100.0	1200.0	7.48E-04	O
183	Pm-131	100.0	2000.0	5.61E-05	C
183	Pm-132	100.0	3000.0	9.81E-03	C
183	Pm-133g	100.0	3000.0	5.61E-02	C
183	Pm-133m	100.0	3000.0	5.61E-02	C
183	Pm-134g	100.0	2500.0	1.06E-01	C
183	Pm-134m	100.0	2500.0	1.06E-01	C
183	Pm-135g	550.0	2000.0	1.76E+00	C
183	Pm-135m	550.0	2000.0	1.76E+00	C
183	Pm-136g	500.0	2000.0	2.76E+00	C
183	Pm-136m	500.0	2000.0	2.76E+00	C
183	Pm-137g	500.0	2000.0	5.49E+00	C
183	Pm-137m	500.0	2000.0	5.49E+00	C
183	Pm-138g	450.0	2000.0	3.93E+00	O
183	Pm-138m	450.0	2000.0	4.39E+00	O
183	Pm-139g	400.0	2000.0	4.65E+00	C
183	Pm-139m	400.0	2000.0	4.65E+00	C
183	Pm-140g	400.0	2000.0	3.15E+00	N
183	Pm-140m	400.0	1500.0	6.77E+00	N
183	Pm-141	400.0	2000.0	3.09E+00	O
183	Pm-142g	100.0	1000.0	2.61E+00	O
183	Pm-142m	100.0	1000.0	2.61E+00	O

183	Pm-143	100.0	1000.0	3.48E+00	C
183	Pm-144	400.0	1000.0	6.07E-01	I
183	Pm-145	100.0	1000.0	7.47E-01	O
183	Pm-146	100.0	1000.0	2.57E-01	O
183	Pm-147	100.0	1000.0	1.29E-01	O
183	Pm-148g	100.0	3000.0	3.83E-02	N
183	Pm-148m	100.0	500.0	2.65E+00	N
183	Pm-149	100.0	1200.0	2.28E-02	O
183	Pm-150	100.0	1200.0	2.53E-02	O
183	Pm-151	100.0	1200.0	1.14E-02	O
183	Pm-152g	100.0	1200.0	4.61E-03	O
183	Pm-152m	100.0	1200.0	4.08E-04	O
183	Pm-152m2	100.0	1200.0	5.02E-06	O
183	Sm-133	110.0	3000.0	1.48E-03	C
183	Sm-134	100.0	3000.0	2.75E-02	C
183	Sm-135g	100.0	3000.0	6.04E-02	C
183	Sm-135m	100.0	3000.0	6.04E-02	C
183	Sm-136	550.0	2000.0	1.50E+00	C
183	Sm-137g	450.0	2000.0	2.88E+00	C
183	Sm-137m	450.0	2000.0	2.88E+00	C
183	Sm-138	450.0	2000.0	7.03E+00	O
183	Sm-139g	450.0	2000.0	4.67E+00	C
183	Sm-139m	450.0	2000.0	4.95E+00	C
183	Sm-140	400.0	2000.0	1.27E+01	O
183	Sm-141g	350.0	2000.0	1.18E+00	O
183	Sm-141m	350.0	2000.0	1.04E+01	O
183	Sm-142	400.0	1500.0	9.11E+00	O
183	Sm-143g	400.0	1500.0	2.97E+00	C
183	Sm-143m	400.0	1500.0	1.42E+00	C
183	Sm-143m2	100.0	1200.0	6.17E-03	C
183	Sm-144	350.0	2000.0	1.81E+00	O
183	Sm-145	100.0	1000.0	2.36E+00	O
183	Sm-146	100.0	1000.0	1.43E+00	O
183	Sm-147	100.0	1200.0	5.04E-01	O
183	Sm-148	100.0	1000.0	2.65E-01	O
183	Sm-149	100.0	1000.0	8.79E-02	O
183	Sm-150	100.0	1000.0	3.81E-02	O
183	Sm-151	100.0	1200.0	1.89E-02	O
183	Sm-152	1000.0	1000.0	2.02E-03	O
183	Sm-153g	2000.0	2000.0	1.22E-03	O
183	Sm-153m	2000.0	2000.0	1.22E-03	O
183	Sm-154	100.0	1200.0	3.42E-03	O
183	Sm-155	100.0	1200.0	1.48E-03	O
183	Eu-135	130.0	900.0	1.61E-04	C
183	Eu-136g	110.0	3000.0	2.38E-03	C
183	Eu-136m	110.0	3000.0	2.38E-03	C
183	Eu-137	100.0	3000.0	4.16E-02	C
183	Eu-138	100.0	2000.0	1.88E-01	O
183	Eu-139	500.0	2000.0	2.00E+00	C
183	Eu-140g	450.0	2000.0	1.81E+00	O
183	Eu-140m	450.0	2000.0	1.81E+00	O
183	Eu-141g	400.0	2000.0	1.94E+00	O
183	Eu-141m	400.0	2000.0	5.45E+00	O
183	Eu-142g	400.0	1500.0	5.62E+00	O
183	Eu-142m	400.0	1500.0	5.62E+00	O
183	Eu-143	350.0	1500.0	1.19E+01	C
183	Eu-144	350.0	1500.0	1.05E+01	O
183	Eu-145	275.0	1500.0	3.80E+00	C
183	Eu-146	300.0	1600.0	6.93E+00	I
183	Eu-147	100.0	1000.0	2.77E+00	C
183	Eu-148	350.0	1000.0	1.68E+00	I
183	Eu-149	100.0	800.0	1.13E+00	C
183	Eu-150g	100.0	1000.0	1.42E-01	O
183	Eu-150m	100.0	1000.0	1.86E-01	O
183	Eu-151	100.0	1200.0	1.50E-01	O
183	Eu-152g	100.0	1200.0	4.31E-02	O
183	Eu-152m	100.0	1200.0	2.51E-02	O
183	Eu-152m2	100.0	1200.0	6.81E-05	O
183	Eu-153	100.0	1000.0	3.39E-02	O
183	Eu-154g	100.0	1200.0	4.57E-03	O
183	Eu-154m	100.0	1200.0	4.57E-03	O
183	Eu-155	2000.0	2000.0	3.12E-03	O
183	Eu-156	100.0	1200.0	3.36E-03	O
183	Eu-159	100.0	1200.0	2.67E-04	O
183	Gd-138	130.0	2500.0	2.30E-03	O
183	Gd-139g	110.0	2500.0	3.15E-03	C
183	Gd-139m	110.0	2500.0	3.15E-03	C
183	Gd-140	100.0	2000.0	1.49E-01	O
183	Gd-141g	100.0	1500.0	2.15E-01	O
183	Gd-141m	100.0	1500.0	2.05E-01	O
183	Gd-142	400.0	1500.0	4.03E+00	O
183	Gd-143g	400.0	1500.0	3.57E+00	C
183	Gd-143m	400.0	1500.0	3.30E+00	C
183	Gd-144	300.0	1500.0	1.11E+01	O
183	Gd-145g	350.0	1500.0	8.18E+00	C
183	Gd-145m	350.0	1500.0	4.40E+00	C
183	Gd-146	350.0	1500.0	1.10E+01	O
183	Gd-147	300.0	1500.0	5.14E+00	C
183	Gd-148	275.0	1200.0	9.69E+00	N
183	Gd-149	275.0	1500.0	3.10E+00	C
183	Gd-150	275.0	1500.0	1.06E+00	O
183	Gd-151	100.0	1000.0	1.39E+00	C
183	Gd-152	100.0	1200.0	7.09E-01	O
183	Gd-153	100.0	900.0	3.20E-01	C
183	Gd-154	100.0	1000.0	1.43E-01	O
183	Gd-155g	100.0	1200.0	2.85E-02	O
183	Gd-155m	100.0	1200.0	2.85E-02	O
183	Gd-156	400.0	2000.0	2.88E-03	O
183	Gd-157	800.0	800.0	3.72E-03	O
183	Gd-158	1000.0	1000.0	2.02E-03	O
183	Gd-159	100.0	1200.0	4.06E-03	O
183	Gd-163	100.0	3000.0	1.38E-03	O
183	Tb-141g	130.0	1500.0	8.46E-04	O
183	Tb-141m	130.0	1500.0	8.46E-04	O
183	Tb-142g	110.0	2000.0	9.66E-03	O
183	Tb-142m	110.0	2000.0	9.66E-03	O
183	Tb-143g	100.0	1500.0	1.06E-01	C
183	Tb-143m	100.0	1500.0	1.06E-01	C
183	Tb-144g	100.0	1500.0	7.85E-02	O
183	Tb-144m	350.0	1500.0	2.53E+00	O
183	Tb-145g	400.0	1500.0	2.46E+00	C
183	Tb-145m	400.0	1500.0	2.46E+00	C
183	Tb-146g	350.0	1500.0	3.82E+00	O
183	Tb-146m	350.0	1500.0	3.82E+00	O
183	Tb-146m2	350.0	1500.0	3.82E+00	O
183	Tb-147g	300.0	1500.0	4.70E+00	C
183	Tb-147m	300.0	1500.0	5.74E+00	C
183	Tb-148g	250.0	1500.0	1.18E+00	N
183	Tb-148m	250.0	1500.0	5.39E+00	N
183	Tb-149g	100.0	1000.0	8.35E-01	C
183	Tb-149m	275.0	1500.0	8.51E+00	C
183	Tb-150g	100.0	1000.0	3.55E-01	C
183	Tb-150m	275.0	1200.0	4.71E+00	O
183	Tb-151g	250.0	1200.0	1.79E+00	C
183	Tb-151m	250.0	1200.0	1.37E+00	C
183	Tb-152g	100.0	800.0	8.50E-01	C

183	Tb-152m	250.0	1000.0	2.15E+00	C
183	Tb-153	250.0	1600.0	1.25E+00	C
183	Tb-154g	100.0	1000.0	4.70E-01	O
183	Tb-154m	100.0	1000.0	4.70E-01	O
183	Tb-154m2	100.0	1000.0	4.70E-01	O
183	Tb-155	100.0	1200.0	9.62E-01	C
183	Tb-156g	100.0	420.0	6.22E-01	N
183	Tb-156m	100.0	420.0	5.45E-02	N
183	Tb-156m2	100.0	420.0	6.77E-04	N
183	Tb-157	200.0	2000.0	4.41E-02	O
183	Tb-158g	500.0	2500.0	1.55E-02	O
183	Tb-158m	500.0	2500.0	1.71E-03	O
183	Tb-159	400.0	3000.0	8.28E-03	O
183	Tb-160	500.0	2500.0	5.31E-03	O
183	Tb-161	1000.0	3000.0	2.78E-03	O
183	Tb-162	1200.0	1500.0	3.62E-03	O
183	Tb-163	130.0	130.0	2.00E-08	O
183	Tb-164	10.0	1200.0	1.54E-03	O
183	Dy-143g	150.0	3000.0	2.00E-03	C
183	Dy-143m	150.0	3000.0	2.00E-03	C
183	Dy-144	130.0	1500.0	2.83E-02	O
183	Dy-145g	110.0	1500.0	2.29E-02	C
183	Dy-145m	110.0	1500.0	1.56E-01	C
183	Dy-146g	400.0	1500.0	1.34E+00	O
183	Dy-146m	400.0	1500.0	1.34E+00	O
183	Dy-147g	350.0	1500.0	6.11E+00	C
183	Dy-147m	350.0	1500.0	2.31E+00	C
183	Dy-148	350.0	1200.0	7.31E+00	N
183	Dy-149g	275.0	1200.0	6.20E+00	C
183	Dy-149m	275.0	1200.0	6.20E+00	C
183	Dy-150	275.0	1200.0	1.06E+01	C
183	Dy-151	275.0	1200.0	1.23E+01	C
183	Dy-152	250.0	1200.0	1.08E+01	C
183	Dy-153	225.0	1500.0	6.24E+00	C
183	Dy-154	200.0	1200.0	3.42E+00	O
183	Dy-155	220.0	1000.0	2.22E+00	C
183	Dy-156	225.0	1000.0	1.12E+00	O
183	Dy-157g	240.0	1000.0	2.70E-01	C
183	Dy-157m	240.0	1000.0	2.70E-01	C
183	Dy-158	225.0	1500.0	2.03E-01	O
183	Dy-159	100.0	1200.0	3.07E-01	O
183	Dy-160	300.0	2500.0	3.04E-02	O
183	Dy-161	300.0	2500.0	1.77E-02	O
183	Dy-162	550.0	3000.0	5.45E-03	O
183	Dy-163	450.0	3000.0	5.50E-03	O
183	Dy-164	100.0	1200.0	5.67E-03	O
183	Dy-165g	100.0	1200.0	2.40E-03	O
183	Dy-165m	100.0	550.0	3.77E-04	O
183	Dy-166	10.0	1200.0	3.52E-03	O
183	Dy-167	95.0	130.0	4.00E-08	O
183	Ho-145g	160.0	1000.0	3.82E-05	C
183	Ho-145m	160.0	1000.0	3.82E-05	C
183	Ho-146	150.0	2500.0	8.78E-03	O
183	Ho-147	130.0	2000.0	4.54E-02	C
183	Ho-148g	400.0	1200.0	2.16E-01	N
183	Ho-148m	400.0	1200.0	2.16E-01	N
183	Ho-148m2	400.0	1200.0	2.16E-01	N
183	Ho-149g	350.0	1200.0	3.84E+00	C
183	Ho-149m	350.0	1200.0	1.58E+00	C
183	Ho-150g	300.0	1200.0	1.00E+00	C
183	Ho-150m	300.0	1200.0	5.46E+00	C
183	Ho-151g	250.0	1200.0	5.31E+00	C
183	Ho-151m	250.0	1200.0	2.61E+00	C
183	Ho-152g	240.0	1000.0	1.86E-01	N
183	Ho-152m	250.0	1000.0	7.04E+00	N
183	Ho-153g	225.0	1000.0	8.27E+00	C
183	Ho-153m	225.0	1000.0	6.04E+00	C
183	Ho-154g	225.0	1000.0	5.09E+00	O
183	Ho-154m	225.0	1000.0	5.09E+00	O
183	Ho-155	200.0	1000.0	9.13E+00	C
183	Ho-156g	200.0	900.0	1.57E+00	I
183	Ho-156m	200.0	900.0	1.13E+01	I
183	Ho-156m2	200.0	900.0	1.29E-02	I
183	Ho-157	200.0	900.0	3.98E+00	C
183	Ho-158g	200.0	900.0	6.85E-01	O
183	Ho-158m	200.0	900.0	6.22E-01	O
183	Ho-158m2	200.0	900.0	7.50E-01	O
183	Ho-159g	160.0	1000.0	1.09E+00	C
183	Ho-159m	160.0	1000.0	2.84E-01	C
183	Ho-160g	180.0	1000.0	4.67E+00	N
183	Ho-160m	180.0	900.0	4.87E-02	C
183	Ho-160m2	180.0	1000.0	5.03E-03	N
183	Ho-161g	200.0	1000.0	1.98E-01	O
183	Ho-161m	200.0	1000.0	5.94E-02	O
183	Ho-162g	150.0	2000.0	4.33E-02	O
183	Ho-162m	150.0	2000.0	8.94E-02	O
183	Ho-163g	250.0	2500.0	4.27E-02	O
183	Ho-163m	275.0	2500.0	8.33E-03	O
183	Ho-164g	140.0	3000.0	1.76E-02	O
183	Ho-164m	140.0	3000.0	1.27E-02	O
183	Ho-165	140.0	3000.0	1.66E-02	O
183	Ho-166g	130.0	3000.0	4.32E-03	O
183	Ho-166m	130.0	3000.0	3.96E-03	O
183	Ho-167	65.0	3000.0	2.78E-03	O
183	Ho-168g	65.0	2000.0	1.74E-03	O
183	Ho-168m	65.0	2000.0	7.08E-04	O
183	Ho-169	100.0	3000.0	4.08E-03	O
183	Er-146	200.0	2000.0	1.13E-04	O
183	Er-147g	180.0	800.0	6.59E-04	C
183	Er-147m	180.0	800.0	6.59E-04	C
183	Er-148	180.0	2000.0	2.52E-02	O
183	Er-149g	150.0	1200.0	1.57E-02	C
183	Er-149m	150.0	1200.0	4.60E-02	C
183	Er-150	350.0	1200.0	3.02E+00	C
183	Er-151g	275.0	1200.0	2.55E+00	C
183	Er-151m	275.0	1200.0	2.55E+00	C
183	Er-152	250.0	1000.0	3.92E+00	N
183	Er-153	250.0	1000.0	1.79E+01	C
183	Er-154	250.0	1000.0	1.48E+01	O
183	Er-155	225.0	900.0	1.68E+01	C
183	Er-156	200.0	800.0	2.71E+01	C
183	Er-157g	180.0	800.0	6.66E+00	C
183	Er-157m	180.0	800.0	6.66E+00	C
183	Er-158	180.0	900.0	9.21E+00	O
183	Er-159	180.0	900.0	7.62E+00	C
183	Er-160	180.0	900.0	4.72E+00	C
183	Er-161	160.0	800.0	2.20E+00	C
183	Er-162	140.0	900.0	1.15E+00	O
183	Er-163	130.0	1200.0	5.41E-01	O
183	Er-164	120.0	275.0	4.37E-01	O
183	Er-165	110.0	300.0	4.19E-01	O
183	Er-166	100.0	3000.0	9.61E-02	O
183	Er-167g	95.0	3000.0	3.28E-02	O
183	Er-167m	95.0	3000.0	1.13E-02	O
183	Er-168	95.0	3000.0	3.32E-02	O
183	Er-169	95.0	2500.0	1.49E-02	O

183	Er-170	60.0	3000.0	8.23E-03	O	183	Yb-166	120.0	800.0	5.79E+00	C
183	Er-171	60.0	2500.0	7.61E-03	O	183	Yb-167	100.0	250.0	2.34E+01	C
183	Er-172	100.0	1200.0	1.66E-03	O	183	Yb-168	90.0	250.0	1.25E+01	O
183	Er-173	100.0	2500.0	1.16E-03	O	183	Yb-169g	85.0	250.0	1.42E+01	C
183	Er-174	100.0	1500.0	4.22E-04	O	183	Yb-169m	85.0	250.0	9.57E+00	C
183	Er-176	100.0	2000.0	1.34E-04	O	183	Yb-170	75.0	250.0	1.83E+01	O
183	Tm-149	200.0	1500.0	1.96E-04	C	183	Yb-171g	70.0	300.0	2.35E+00	O
183	Tm-150g	180.0	1500.0	1.89E-03	C	183	Yb-171m	70.0	300.0	2.35E+00	O
183	Tm-150m	180.0	1500.0	1.89E-03	C	183	Yb-172	65.0	275.0	4.34E-01	O
183	Tm-150m2	180.0	1500.0	1.89E-03	C	183	Yb-173	60.0	2500.0	2.96E-01	O
183	Tm-151g	180.0	1200.0	7.93E-02	C	183	Yb-174	60.0	2000.0	1.98E-01	O
183	Tm-151m	180.0	1200.0	7.93E-02	C	183	Yb-175g	22.0	2000.0	6.44E-02	O
183	Tm-152g	150.0	1000.0	2.83E-01	O	183	Yb-175m	22.0	2000.0	6.44E-02	O
183	Tm-152m	150.0	1000.0	2.83E-01	O	183	Yb-176g	110.0	3000.0	5.60E-02	O
183	Tm-153g	250.0	1000.0	1.62E+00	C	183	Yb-176m	110.0	3000.0	1.04E-02	O
183	Tm-153m	250.0	1000.0	8.50E-01	C	183	Yb-177g	100.0	3000.0	3.07E-02	O
183	Tm-154g	250.0	1000.0	2.43E+00	C	183	Yb-177m	100.0	3000.0	3.38E-03	O
183	Tm-154m	250.0	1000.0	2.43E+00	C	183	Yb-178	100.0	750.0	1.33E-02	O
183	Tm-155g	250.0	900.0	8.59E+00	C	183	Yb-179	100.0	100.0	2.20E-03	O
183	Tm-155m	120.0	1000.0	3.02E-01	C	183	Lu-152	220.0	2000.0	1.15E-06	C
183	Tm-156	225.0	800.0	2.24E+01	C	183	Lu-153g	200.0	1000.0	1.75E-06	C
183	Tm-157	180.0	800.0	1.81E+01	C	183	Lu-153m	200.0	1000.0	1.75E-06	C
183	Tm-158	180.0	800.0	1.48E+01	O	183	Lu-154g	200.0	900.0	1.22E-03	C
183	Tm-159	160.0	800.0	1.89E+01	C	183	Lu-154m	200.0	900.0	1.22E-03	C
183	Tm-160g	160.0	800.0	1.34E+01	C	183	Lu-155g	180.0	900.0	1.31E-02	C
183	Tm-160m	160.0	800.0	1.98E+00	C	183	Lu-155m	180.0	900.0	1.31E-02	C
183	Tm-161g	140.0	750.0	5.00E+00	C	183	Lu-155m2	180.0	900.0	1.31E-02	C
183	Tm-161m	140.0	750.0	5.00E+00	C	183	Lu-156g	180.0	900.0	7.86E-02	O
183	Tm-162g	150.0	600.0	1.29E+01	N	183	Lu-156m	180.0	900.0	7.86E-02	O
183	Tm-162m	150.0	600.0	1.29E+01	N	183	Lu-157g	160.0	900.0	2.45E-01	C
183	Tm-163	130.0	800.0	5.26E+00	C	183	Lu-157m	160.0	900.0	4.66E-01	C
183	Tm-164g	130.0	800.0	1.27E+00	O	183	Lu-158	225.0	800.0	3.00E+00	O
183	Tm-164m	130.0	800.0	1.27E+00	O	183	Lu-159g	225.0	800.0	3.28E+00	C
183	Tm-165	110.0	800.0	1.90E+00	C	183	Lu-159m	225.0	800.0	2.94E+00	C
183	Tm-166g	95.0	800.0	3.39E+00	I	183	Lu-160g	180.0	700.0	2.03E+00	N
183	Tm-166m	95.0	800.0	3.39E+00	I	183	Lu-160m	180.0	700.0	5.75E+00	C
183	Tm-167	90.0	300.0	1.54E+00	C	183	Lu-161g	140.0	700.0	7.69E+00	C
183	Tm-168	90.0	1600.0	6.76E-01	I	183	Lu-161m	140.0	700.0	7.69E+00	C
183	Tm-169	70.0	250.0	6.28E-01	O	183	Lu-162g	160.0	650.0	5.72E+00	C
183	Tm-170	65.0	400.0	2.44E-01	O	183	Lu-162m	160.0	650.0	5.72E+00	C
183	Tm-171	28.0	3000.0	5.79E-02	O	183	Lu-162m2	160.0	650.0	5.72E+00	C
183	Tm-172	22.0	2500.0	3.41E-02	O	183	Lu-163	140.0	700.0	2.51E+01	C
183	Tm-173	90.0	2000.0	1.45E-02	O	183	Lu-164	150.0	650.0	2.18E+01	O
183	Tm-174	100.0	3000.0	8.09E-03	O	183	Lu-165	130.0	800.0	2.40E+01	C
183	Tm-175	100.0	3000.0	2.11E-03	O	183	Lu-166g	120.0	700.0	1.68E+00	C
183	Tm-176	100.0	1500.0	1.13E-03	O	183	Lu-166m	120.0	650.0	1.17E+01	C
183	Tm-177	100.0	120.0	5.01E-04	O	183	Lu-166m2	120.0	650.0	6.51E+00	C
183	Yb-151g	200.0	1000.0	7.06E-04	C	183	Lu-167g	110.0	650.0	9.36E+00	C
183	Yb-151m	200.0	1000.0	7.06E-04	C	183	Lu-167m	110.0	650.0	9.36E+00	C
183	Yb-152	200.0	1200.0	9.40E-02	O	183	Lu-168g	95.0	650.0	5.18E+00	O
183	Yb-153	180.0	1200.0	2.01E-01	C	183	Lu-168m	95.0	650.0	6.35E+00	O
183	Yb-154	275.0	1000.0	1.21E+00	C	183	Lu-169g	90.0	800.0	2.02E+00	C
183	Yb-155	275.0	900.0	2.52E+00	C	183	Lu-169m	90.0	800.0	7.21E+00	C
183	Yb-156	240.0	800.0	2.33E+00	N	183	Lu-170g	75.0	800.0	6.80E+00	I
183	Yb-157	225.0	800.0	1.12E+01	C	183	Lu-170m	75.0	800.0	6.80E+00	I
183	Yb-158	200.0	800.0	1.38E+01	O	183	Lu-171g	60.0	800.0	6.44E+00	I
183	Yb-159	180.0	800.0	2.10E+01	C	183	Lu-171m	60.0	800.0	9.16E+00	I
183	Yb-160	180.0	750.0	2.53E+01	C	183	Lu-172g	55.0	800.0	2.33E+00	I
183	Yb-161	160.0	750.0	2.07E+01	C	183	Lu-172m	55.0	800.0	3.23E+00	I
183	Yb-162	140.0	700.0	1.74E+01	C	183	Lu-173	45.0	700.0	2.18E+00	C
183	Yb-163	150.0	750.0	1.74E+01	C	183	Lu-174g	38.0	275.0	2.00E+00	N
183	Yb-164	140.0	750.0	1.13E+01	O	183	Lu-174m	38.0	275.0	2.23E+00	N
183	Yb-165	130.0	800.0	9.18E+00	C	183	Lu-175	10.2	275.0	1.92E+00	O

183	Lu-176g	7.6	225.0	7.14E-01	O
183	Lu-176m	7.6	225.0	1.11E+00	O
183	Lu-177g	55.0	3000.0	5.29E-01	N
183	Lu-177m	55.0	420.0	1.62E-01	N
183	Lu-177m2	55.0	3000.0	5.59E-04	N
183	Lu-178g	60.0	2500.0	2.58E-01	N
183	Lu-178m	60.0	2500.0	1.32E-01	N
183	Lu-179g	90.0	3000.0	1.11E-01	O
183	Lu-179m	90.0	3000.0	1.11E-01	O
183	Lu-180g	90.0	3000.0	1.47E-02	O
183	Lu-180m	90.0	3000.0	1.47E-02	O
183	Lu-180m2	90.0	3000.0	1.47E-02	O
183	Lu-181	650.0	650.0	4.30E-03	C
183	Hf-155	220.0	500.0	2.42E-05	C
183	Hf-156	200.0	1500.0	4.36E-03	O
183	Hf-157	180.0	900.0	2.41E-02	C
183	Hf-158	180.0	750.0	1.20E-01	C
183	Hf-159	160.0	750.0	3.85E-01	C
183	Hf-160	225.0	700.0	2.39E+00	C
183	Hf-161	200.0	700.0	4.06E+00	C
183	Hf-162	180.0	600.0	8.07E+00	C
183	Hf-163	160.0	600.0	1.43E+01	C
183	Hf-164	160.0	600.0	1.76E+01	O
183	Hf-165	140.0	700.0	2.28E+01	C
183	Hf-166	140.0	600.0	2.64E+01	C
183	Hf-167	130.0	550.0	3.38E+01	C
183	Hf-168	110.0	550.0	3.04E+01	O
183	Hf-169	110.0	800.0	3.12E+01	C
183	Hf-170	95.0	450.0	3.14E+01	C
183	Hf-171g	85.0	400.0	2.86E+01	C
183	Hf-171m	85.0	400.0	1.06E+01	C
183	Hf-172	70.0	400.0	3.54E+01	N
183	Hf-173	65.0	300.0	1.04E+01	I
183	Hf-174	55.0	225.0	1.46E+01	O
183	Hf-175	50.0	800.0	9.61E+00	C
183	Hf-176	36.0	225.0	7.14E+00	O
183	Hf-177g	32.0	800.0	4.91E+00	O
183	Hf-177m	32.0	800.0	3.68E-01	O
183	Hf-177m2	32.0	800.0	5.33E-03	O
183	Hf-178g	24.0	750.0	3.13E+00	N
183	Hf-178m	24.0	700.0	1.20E+00	N
183	Hf-178m2	24.0	3000.0	1.09E-01	N
183	Hf-179g	3.9	800.0	3.03E+00	N
183	Hf-179m	3.9	2500.0	3.74E-01	I
183	Hf-179m2	3.9	800.0	3.45E-01	N
183	Hf-180g	55.0	900.0	2.39E+00	N
183	Hf-180m	55.0	1000.0	1.84E+00	N
183	Hf-181	50.0	800.0	6.26E-01	C
183	Hf-182g	275.0	3000.0	3.36E-02	C
183	Hf-182m	270.0	3000.0	1.44E-01	N
183	Ta-159g	100.0	1000.0	3.58E-03	C
183	Ta-159m	100.0	1000.0	2.93E-03	C
183	Ta-160g	100.0	800.0	1.13E-02	C
183	Ta-160m	100.0	800.0	1.13E-02	C
183	Ta-161g	100.0	700.0	5.97E-02	C
183	Ta-161m	100.0	700.0	4.81E-02	C
183	Ta-162	100.0	600.0	3.30E-01	C
183	Ta-163	200.0	600.0	1.59E+00	C
183	Ta-164	160.0	550.0	2.89E+00	O
183	Ta-165	160.0	600.0	5.16E+00	C
183	Ta-166	140.0	450.0	6.98E+00	C
183	Ta-167	140.0	500.0	1.04E+01	C
183	Ta-168	130.0	450.0	9.80E+00	O
183	Ta-169	110.0	650.0	9.36E+00	C
183	Ta-170	100.0	225.0	1.84E+01	C
183	Ta-171	85.0	250.0	1.92E+01	C
183	Ta-172	75.0	250.0	2.94E+01	N
183	Ta-173	65.0	350.0	4.39E+01	C
183	Ta-174	60.0	800.0	4.54E+01	I
183	Ta-175	45.0	180.0	3.78E+01	C
183	Ta-176g	36.0	180.0	1.34E+01	I
183	Ta-176m	36.0	180.0	1.34E+01	I
183	Ta-176m2	36.0	180.0	1.34E+01	I
183	Ta-177	28.0	140.0	4.92E+01	O
183	Ta-178g	19.0	300.0	7.53E+00	N
183	Ta-178m	19.0	300.0	1.53E+01	I
183	Ta-178m2	19.0	300.0	7.53E+00	N
183	Ta-179g	3.6	150.0	3.39E+01	O
183	Ta-179m	3.6	150.0	3.39E+01	O
183	Ta-179m2	3.6	150.0	3.39E+01	O
183	Ta-180g	2.8	120.0	3.91E+01	O
183	Ta-180m	2.8	100.0	4.48E+01	O
183	Ta-181	24.0	130.0	2.96E+01	O
183	Ta-182g	25.0	3000.0	2.13E+01	N
183	Ta-182m	25.0	3000.0	2.51E-02	N
183	Ta-182m2	25.0	3000.0	3.88E+00	N
183	Ta-183	200.0	800.0	5.53E+00	I
183	Ta-184	200.0	800.0	5.64E-01	I
183	W -160	200.0	1200.0	1.04E-03	O
183	W -161	200.0	750.0	1.74E-03	C
183	W -162	180.0	900.0	1.45E-02	C
183	W -163	180.0	600.0	7.31E-02	C
183	W -164	160.0	550.0	2.63E-01	O
183	W -165	200.0	650.0	1.34E+00	C
183	W -166	160.0	500.0	3.22E+00	C
183	W -167	140.0	300.0	7.63E+00	C
183	W -168	120.0	250.0	1.29E+01	O
183	W -169	140.0	450.0	1.17E+01	C
183	W -170	120.0	300.0	2.39E+01	C
183	W -171	110.0	275.0	3.36E+01	C
183	W -172	100.0	180.0	2.23E+01	N
183	W -173	90.0	180.0	5.18E+01	C
183	W -174	80.0	160.0	6.51E+01	C
183	W -175	70.0	110.0	9.74E+01	C
183	W -176	60.0	150.0	8.13E+01	C
183	W -177	50.0	110.0	8.59E+01	C
183	W -178	38.0	100.0	9.63E+01	C
183	W -179g	30.0	85.0	1.59E+02	O
183	W -179m	30.0	85.0	2.10E+01	O
183	W -180g	20.0	65.0	8.78E+01	O
183	W -180m	20.0	65.0	8.78E+01	O
183	W -181	13.8	60.0	2.70E+02	O
183	W -182	10.2	40.0	1.98E+02	O
183	W -183m	3.9	28.0	4.21E+00	O
183	W -184	160.0	200.0	2.79E-03	O
183	Re-163g	650.0	650.0	1.12E-03	C
183	Re-163m	650.0	650.0	9.73E-04	C
183	Re-164g	650.0	750.0	1.85E-03	C
183	Re-164m	650.0	750.0	1.85E-03	C
183	Re-165g	225.0	2500.0	1.66E-03	C
183	Re-165m	225.0	2500.0	2.66E-03	C
183	Re-166g	180.0	400.0	1.23E-02	C
183	Re-166m	180.0	450.0	1.22E-02	C
183	Re-167g	160.0	350.0	5.32E-02	C
183	Re-167m	160.0	350.0	5.42E-02	C
183	Re-168	140.0	225.0	8.60E-01	O

183	Re-169g	130.0	200.0	7.91E-01	C
183	Re-169m	130.0	200.0	7.91E-01	C
183	Re-170	140.0	450.0	7.32E-01	C
183	Re-171	130.0	400.0	1.65E+00	C
183	Re-172g	110.0	150.0	1.76E+00	N
183	Re-172m	110.0	150.0	1.76E+00	N
183	Re-173	95.0	130.0	3.45E+00	C
183	Re-174	85.0	110.0	4.61E+01	C
183	Re-175	75.0	95.0	1.15E+01	C
183	Re-176	65.0	90.0	1.21E+02	C
183	Re-177	55.0	75.0	1.90E+02	C
183	Re-178	45.0	60.0	2.82E+02	C
183	Re-179	34.0	50.0	5.13E+02	I
183	Re-180	28.0	38.0	8.77E+02	O
183	Re-181	17.0	28.0	1.09E+03	I
183	Re-182g	10.0	18.0	4.96E+02	I
183	Re-182m	10.0	18.0	1.31E+03	N
183	Re-183g	3.6	12.6	2.93E+02	I
183	Re-183m	3.6	12.6	2.93E+02	I
183	Re-184g	2.8	24.0	4.19E+02	N
183	Re-184m	2.8	24.0	4.27E+01	N
184	H - 1	3.0	3000.0	1.38E+04	M
184	H - 2	5.5	3000.0	3.55E+03	M
184	H - 3	9.0	3000.0	2.02E+03	M
184	He- 3	8.5	3000.0	4.19E+02	M
184	He- 4	3.0	3000.0	2.99E+03	M
184	He- 5	10.0	3000.0	1.71E+01	O
184	He- 6	10.0	3000.0	3.65E+01	O
184	He- 7	15.0	3000.0	2.24E+00	O
184	He- 8	19.0	3000.0	2.53E-01	O
184	He- 9	28.0	3000.0	1.37E-02	O
184	He- 10	34.0	3000.0	4.38E-04	O
184	He- 11	50.0	3000.0	5.94E-06	O
184	He- 12	60.0	3000.0	4.22E-08	O
184	He- 13	75.0	3000.0	1.61E-10	O
184	Li- 5	35.0	3000.0	8.63E+00	O
184	Li- 6	35.0	3000.0	5.80E+00	O
184	Li- 7	35.0	3000.0	6.22E+00	O
184	Li- 8	40.0	3000.0	2.38E+00	O
184	Li- 9	40.0	2800.0	3.97E+00	N
184	Li- 10	100.0	3000.0	2.60E-01	O
184	Li- 11	100.0	3000.0	7.26E-02	O
184	Be- 7	50.0	3000.0	6.20E+00	I
184	Be- 8	30.0	3000.0	1.95E+01	O
184	Be- 9	35.0	3000.0	1.64E+01	O
184	Be- 10	35.0	3000.0	1.66E+01	O
184	Be- 11	50.0	3000.0	5.47E+00	O
184	Be- 12	50.0	3000.0	3.06E+00	O
184	Be- 13	100.0	3000.0	3.41E-01	O
184	B - 10	50.0	3000.0	6.70E+00	O
184	B - 11	40.0	3000.0	1.53E+01	O
184	B - 12	40.0	3000.0	7.76E+00	O
184	B - 13	50.0	3000.0	5.91E+00	O
184	B - 14	50.0	3000.0	1.91E+00	O
184	B - 15	60.0	3000.0	1.01E+00	O
184	C - 10	100.0	3000.0	4.40E-01	O
184	C - 11	100.0	3000.0	2.26E+00	O
184	C - 12	100.0	3000.0	3.49E+00	O
184	C - 13	100.0	3000.0	3.31E+00	O
184	C - 14	100.0	3000.0	1.79E+00	O
184	C - 15	100.0	3000.0	4.94E-01	O
184	C - 16	100.0	3000.0	8.83E-01	N
184	N - 12	100.0	3000.0	1.22E-01	O
184	N - 13	100.0	3000.0	3.99E-01	O
184	N - 14	100.0	3000.0	2.31E+00	O
184	N - 15	40.0	3000.0	2.69E+00	O
184	N - 16	100.0	3000.0	1.16E+00	O
184	N - 17	100.0	2800.0	3.38E+00	N
184	N - 18	100.0	3000.0	2.56E-01	O
184	N - 19	100.0	3000.0	1.50E-01	O
184	O - 13	100.0	3000.0	2.81E-02	O
184	O - 14	100.0	3000.0	2.53E-01	O
184	O - 15	50.0	3000.0	1.19E+00	O
184	O - 16	40.0	3000.0	5.72E+00	O
184	O - 17	50.0	3000.0	3.82E+00	O
184	O - 18	40.0	3000.0	5.09E+00	O
184	O - 19	50.0	3000.0	3.00E+00	O
184	O - 20	50.0	3000.0	3.66E+00	O
184	O - 21	50.0	3000.0	1.85E+00	O
184	O - 22	50.0	3000.0	1.87E+00	O
184	F - 15	100.0	3000.0	8.28E-03	O
184	F - 16	100.0	3000.0	6.07E-02	O
184	F - 17	100.0	3000.0	2.59E-01	O
184	F - 18	100.0	3000.0	7.40E-01	O
184	F - 19	100.0	3000.0	1.27E+00	O
184	F - 20	100.0	3000.0	7.13E-01	O
184	F - 21	100.0	3000.0	4.60E-01	O
184	F - 22	100.0	3000.0	3.56E-01	O
184	F - 23	100.0	3000.0	3.80E-01	O
184	F - 24	100.0	3000.0	9.66E-02	C
184	Ne- 16	100.0	3000.0	3.60E-03	O
184	Ne- 17	100.0	3000.0	1.68E-02	O
184	Ne- 18	100.0	3000.0	1.05E-01	O
184	Ne- 19	100.0	3000.0	3.09E-01	O
184	Ne- 20	50.0	3000.0	2.83E+00	O
184	Ne- 21	50.0	3000.0	1.44E+00	O
184	Ne- 22	50.0	3000.0	6.04E+00	O
184	Ne- 23	50.0	3000.0	3.28E+00	O
184	Ne- 24	40.0	3000.0	3.32E+00	C
184	Ne- 25	50.0	3000.0	2.87E+00	O
184	Ne- 26	50.0	3000.0	2.50E+00	O
184	Na- 19	100.0	3000.0	5.48E-03	O
184	Na- 20	100.0	3000.0	3.96E-02	O
184	Na- 21	100.0	3000.0	1.96E-01	O
184	Na- 22	100.0	3000.0	6.35E-01	O
184	Na- 23	50.0	3000.0	1.07E+00	O
184	Na- 24g	100.0	3000.0	2.84E-01	C
184	Na- 24m	100.0	3000.0	2.84E-01	C
184	Na- 25	50.0	3000.0	1.50E+00	O
184	Na- 26	50.0	3000.0	1.11E+00	O
184	Na- 27	50.0	3000.0	1.27E+00	O
184	Na- 28	100.0	3000.0	2.91E-01	C
184	Mg- 19	100.0	3000.0	6.94E-05	O
184	Mg- 20	100.0	3000.0	4.19E-04	O
184	Mg- 21	100.0	3000.0	2.51E-03	O
184	Mg- 22	100.0	3000.0	2.72E-02	O
184	Mg- 23	100.0	3000.0	1.60E-01	O
184	Mg- 24	100.0	3000.0	6.90E-01	O
184	Mg- 25	100.0	3000.0	1.48E+00	O
184	Mg- 26	100.0	3000.0	1.52E+00	O
184	Mg- 27	100.0	3000.0	7.36E-01	O
184	Mg- 28	100.0	3000.0	4.51E-01	C
184	Mg- 29	100.0	3000.0	3.59E-01	O
184	Mg- 30	100.0	3000.0	3.06E-01	O
184	Mg- 31	100.0	3000.0	1.36E-01	O
184	Al- 20	100.0	3000.0	7.64E-07	O

184	Al- 21	100.0	3000.0	1.99E-05	O	184	Cl- 34g	100.0	3000.0	1.08E-01	O
184	Al- 22	100.0	3000.0	6.63E-05	O	184	Cl- 34m	100.0	3000.0	1.91E-01	O
184	Al- 23	100.0	3000.0	1.10E-03	O	184	Cl- 35	60.0	3000.0	1.02E+00	O
184	Al- 24g	100.0	3000.0	5.95E-03	O	184	Cl- 36	50.0	3000.0	1.30E+00	O
184	Al- 24m	100.0	3000.0	5.95E-03	O	184	Cl- 37	100.0	3000.0	1.54E+00	O
184	Al- 25	100.0	3000.0	7.55E-02	O	184	Cl- 38g	100.0	3000.0	3.20E-01	O
184	Al- 26g	100.0	3000.0	3.43E-01	O	184	Cl- 38m	100.0	3000.0	3.20E-01	O
184	Al- 26m	100.0	3000.0	1.79E-01	O	184	Cl- 39	100.0	3000.0	2.82E-01	O
184	Al- 27	100.0	3000.0	1.39E+00	O	184	Cl- 40	100.0	3000.0	1.18E-01	O
184	Al- 28	100.0	3000.0	1.45E+00	O	184	Cl- 41	100.0	3000.0	1.36E-01	O
184	Al- 29	100.0	3000.0	6.92E-01	O	184	Cl- 42	100.0	3000.0	9.09E-02	O
184	Al- 30	100.0	3000.0	2.64E-01	O	184	Cl- 43	100.0	1000.0	1.23E-03	O
184	Al- 31	100.0	3000.0	2.58E-01	O	184	Ar- 31	100.0	3000.0	3.21E-05	O
184	Al- 32	100.0	3000.0	1.09E-01	O	184	Ar- 32	100.0	3000.0	1.98E-04	O
184	Al- 33	100.0	3000.0	8.06E-02	O	184	Ar- 33	100.0	3000.0	7.64E-04	O
184	Al- 34	100.0	3000.0	3.42E-02	O	184	Ar- 34	100.0	3000.0	5.09E-03	O
184	Si- 23	100.0	3000.0	1.15E-05	O	184	Ar- 35	100.0	3000.0	3.03E-02	O
184	Si- 24	100.0	3000.0	6.28E-05	O	184	Ar- 36	100.0	3000.0	2.26E-01	O
184	Si- 25	100.0	3000.0	6.32E-04	O	184	Ar- 37	100.0	3000.0	8.42E-01	O
184	Si- 26	100.0	3000.0	8.84E-03	O	184	Ar- 38	50.0	3000.0	1.11E+00	O
184	Si- 27	100.0	3000.0	5.85E-02	O	184	Ar- 39	100.0	3000.0	1.76E+00	O
184	Si- 28	100.0	3000.0	5.46E-01	O	184	Ar- 40	100.0	3000.0	9.68E-01	O
184	Si- 29	50.0	3000.0	1.01E+00	O	184	Ar- 41	100.0	3000.0	4.59E-01	O
184	Si- 30	100.0	3000.0	1.64E+00	O	184	Ar- 42	40.0	3000.0	1.24E+00	O
184	Si- 31	100.0	3000.0	9.99E-01	O	184	Ar- 43	40.0	3000.0	1.11E+00	O
184	Si- 32	100.0	3000.0	4.33E-01	O	184	Ar- 44	35.0	3000.0	1.68E+00	O
184	Si- 33	100.0	3000.0	2.59E-01	O	184	Ar- 45	35.0	3000.0	1.44E+00	O
184	Si- 34	100.0	3000.0	1.83E-01	O	184	K - 37	100.0	3000.0	1.18E-02	O
184	Si- 35	100.0	3000.0	7.37E-02	O	184	K - 38g	100.0	3000.0	1.65E-01	O
184	P - 24	100.0	3000.0	4.53E-07	O	184	K - 38m	100.0	3000.0	1.65E-01	O
184	P - 25	100.0	3000.0	7.83E-06	O	184	K - 39	350.0	3000.0	1.21E+00	O
184	P - 26	100.0	3000.0	2.76E-05	O	184	K - 40	275.0	3000.0	1.20E+00	O
184	P - 27	100.0	3000.0	4.83E-04	O	184	K - 41	100.0	3000.0	2.03E+00	O
184	P - 28	100.0	3000.0	5.29E-03	O	184	K - 42	100.0	3000.0	1.03E+00	O
184	P - 29	100.0	3000.0	5.96E-02	O	184	K - 43	100.0	3000.0	4.17E-01	O
184	P - 30	100.0	3000.0	4.65E-01	O	184	K - 44	100.0	3000.0	1.69E-01	O
184	P - 31	50.0	3000.0	1.03E+00	O	184	K - 45	100.0	3000.0	7.16E-02	O
184	P - 32	100.0	3000.0	2.05E+00	O	184	K - 46	100.0	1000.0	1.33E-02	O
184	P - 33	100.0	3000.0	1.19E+00	O	184	K - 47	100.0	1000.0	3.79E-03	O
184	P - 34	100.0	3000.0	4.70E-01	O	184	Ca- 39	100.0	3000.0	6.86E-03	O
184	P - 35	100.0	3000.0	2.21E-01	O	184	Ca- 40	100.0	3000.0	1.37E-01	O
184	P - 36	100.0	3000.0	9.49E-02	O	184	Ca- 41	100.0	3000.0	6.61E-01	O
184	P - 37	100.0	3000.0	1.25E-01	O	184	Ca- 42	200.0	3000.0	1.25E+00	O
184	P - 38	100.0	3000.0	6.56E-02	O	184	Ca- 43	225.0	3000.0	1.21E+00	O
184	S - 27	100.0	3000.0	3.46E-05	O	184	Ca- 44	100.0	3000.0	1.66E+00	O
184	S - 28	100.0	3000.0	2.26E-04	O	184	Ca- 45	100.0	3000.0	5.85E-01	O
184	S - 29	100.0	3000.0	1.08E-03	O	184	Ca- 46	100.0	3000.0	3.12E-01	O
184	S - 30	100.0	3000.0	1.12E-02	O	184	Ca- 47	100.0	3000.0	1.02E-01	O
184	S - 31	100.0	3000.0	6.35E-02	O	184	Ca- 48	100.0	3000.0	2.99E-02	O
184	S - 32	100.0	3000.0	3.32E-01	O	184	Ca- 49	100.0	1000.0	4.97E-03	O
184	S - 33	60.0	3000.0	1.13E+00	O	184	Sc- 42g	100.0	3000.0	7.82E-02	O
184	S - 34	50.0	3000.0	1.30E+00	O	184	Sc- 42m	100.0	3000.0	6.20E-02	O
184	S - 35	50.0	3000.0	1.05E+00	O	184	Sc- 43	100.0	3000.0	4.82E-01	O
184	S - 36	40.0	3000.0	1.45E+00	O	184	Sc- 44g	240.0	3000.0	1.11E+00	N
184	S - 37	100.0	3000.0	4.73E-01	O	184	Sc- 44m	100.0	3000.0	6.81E-01	N
184	S - 38	40.0	3000.0	1.52E+00	O	184	Sc- 45g	100.0	3000.0	1.25E+00	O
184	S - 39	50.0	3000.0	1.04E+00	O	184	Sc- 45m	100.0	3000.0	1.25E+00	O
184	S - 40	40.0	3000.0	1.47E+00	O	184	Sc- 46g	100.0	3000.0	1.80E+00	N
184	S - 41	100.0	3000.0	4.41E-01	O	184	Sc- 46m	100.0	3000.0	3.75E-01	N
184	Cl- 30	100.0	3000.0	1.20E-05	O	184	Sc- 47	100.0	3000.0	9.18E-01	O
184	Cl- 31	100.0	3000.0	2.01E-04	O	184	Sc- 48	100.0	3000.0	5.65E-01	I
184	Cl- 32	100.0	3000.0	2.12E-03	O	184	Sc- 49	100.0	3000.0	1.40E-01	O
184	Cl- 33	100.0	3000.0	3.30E-02	O	184	Sc- 50g	100.0	3000.0	2.63E-02	O

184	Sc- 50m	100.0	3000.0	2.63E-02	O
184	Sc- 51	100.0	2000.0	1.08E-02	O
184	Ti- 44	100.0	3000.0	5.90E-02	O
184	Ti- 45	100.0	3000.0	4.72E-01	O
184	Ti- 46	350.0	3000.0	1.56E+00	O
184	Ti- 47	275.0	3000.0	1.61E+00	O
184	Ti- 48	100.0	3000.0	2.31E+00	O
184	Ti- 49	100.0	3000.0	1.10E+00	O
184	Ti- 50	100.0	3000.0	5.27E-01	O
184	Ti- 51	100.0	3000.0	1.08E-01	O
184	Ti- 52	100.0	3000.0	4.47E-02	O
184	Ti- 53	100.0	1200.0	1.03E-02	O
184	V - 45	100.0	2500.0	2.06E-03	O
184	V - 46g	100.0	3000.0	2.92E-02	O
184	V - 46m	100.0	3000.0	2.92E-02	O
184	V - 47	100.0	3000.0	3.80E-01	O
184	V - 48	250.0	3000.0	1.14E+00	C
184	V - 49	180.0	3000.0	1.69E+00	O
184	V - 50	200.0	3000.0	1.36E+00	O
184	V - 51	100.0	3000.0	1.60E+00	O
184	V - 52	100.0	3000.0	5.26E-01	O
184	V - 53	100.0	3000.0	1.96E-01	O
184	V - 54	100.0	1500.0	4.15E-02	O
184	V - 55	100.0	800.0	1.58E-02	O
184	V - 56	100.0	1000.0	4.80E-03	O
184	Cr- 48	100.0	3000.0	1.87E-02	C
184	Cr- 49	100.0	3000.0	3.66E-01	O
184	Cr- 50	300.0	3000.0	1.50E+00	O
184	Cr- 51	225.0	3000.0	2.10E+00	O
184	Cr- 52	160.0	3000.0	1.20E+00	O
184	Cr- 53	100.0	3000.0	1.84E+00	O
184	Cr- 54	100.0	3000.0	8.64E-01	O
184	Cr- 55	100.0	3000.0	2.45E-01	O
184	Cr- 56	100.0	3000.0	9.09E-02	O
184	Cr- 57	100.0	1500.0	2.43E-02	O
184	Cr- 58	100.0	1000.0	1.03E-02	O
184	Cr- 59	100.0	450.0	3.77E-03	C
184	Mn- 49	100.0	3000.0	6.71E-04	O
184	Mn- 50g	100.0	3000.0	1.82E-02	O
184	Mn- 50m	100.0	3000.0	2.72E-02	O
184	Mn- 51	100.0	3000.0	2.98E-01	O
184	Mn- 52g	275.0	3000.0	8.39E-01	C
184	Mn- 52m	100.0	3000.0	4.48E-01	O
184	Mn- 53	200.0	3000.0	2.48E+00	O
184	Mn- 54	120.0	3000.0	1.69E+00	I
184	Mn- 55	100.0	3000.0	2.50E+00	O
184	Mn- 56	100.0	3000.0	1.03E+00	O
184	Mn- 57	100.0	3000.0	5.10E-01	O
184	Mn- 58g	100.0	3000.0	3.14E-02	O
184	Mn- 58m	100.0	3000.0	1.08E-01	O
184	Mn- 59	100.0	3000.0	7.02E-02	C
184	Mn- 60g	100.0	3000.0	2.91E-03	O
184	Mn- 60m	100.0	3000.0	1.28E-02	O
184	Mn- 61	100.0	900.0	3.31E-03	O
184	Fe- 52g	100.0	1600.0	2.78E-01	C
184	Fe- 52m	100.0	3000.0	6.23E-03	C
184	Fe- 53g	100.0	3000.0	8.85E-02	O
184	Fe- 53m	100.0	3000.0	8.85E-02	O
184	Fe- 54	300.0	3000.0	1.73E+00	O
184	Fe- 55	200.0	3000.0	2.36E+00	O
184	Fe- 56	160.0	3000.0	1.53E+00	O
184	Fe- 57	100.0	3000.0	3.06E+00	O
184	Fe- 58	100.0	3000.0	1.65E+00	O
184	Fe- 59	100.0	3000.0	6.26E-01	C
184	Fe- 60	100.0	3000.0	2.35E-01	O
184	Fe- 61	100.0	1200.0	5.30E-02	O
184	Fe- 62	100.0	800.0	1.98E-02	O
184	Fe- 63	100.0	1000.0	1.07E-02	O
184	Fe- 64	100.0	140.0	2.28E-03	O
184	Co- 53g	100.0	2000.0	1.99E-04	O
184	Co- 53m	100.0	2000.0	1.99E-04	O
184	Co- 54g	100.0	3000.0	1.24E-02	O
184	Co- 54m	100.0	3000.0	1.44E-02	O
184	Co- 55	100.0	3000.0	2.22E-01	O
184	Co- 56	250.0	3000.0	1.88E+00	O
184	Co- 57	180.0	3000.0	2.21E+00	O
184	Co- 58g	150.0	3000.0	6.83E-01	N
184	Co- 58m	100.0	3000.0	1.14E+00	N
184	Co- 59	120.0	3000.0	1.12E+00	O
184	Co- 60g	100.0	3000.0	1.20E+00	N
184	Co- 60m	100.0	3000.0	4.86E-01	N
184	Co- 61	100.0	3000.0	9.60E-01	O
184	Co- 62g	100.0	3000.0	1.93E-01	O
184	Co- 62m	100.0	3000.0	1.47E-01	O
184	Co- 63	100.0	3000.0	1.32E-01	O
184	Co- 64	100.0	3000.0	3.89E-02	O
184	Co- 65	100.0	2500.0	1.27E-02	O
184	Co- 66	100.0	800.0	8.60E-03	O
184	Ni- 56	100.0	3000.0	9.84E-03	O
184	Ni- 57	100.0	3000.0	1.42E-01	O
184	Ni- 58	250.0	3000.0	1.15E+00	O
184	Ni- 59	200.0	3000.0	2.15E+00	O
184	Ni- 60	200.0	3000.0	2.26E+00	O
184	Ni- 61	140.0	3000.0	1.75E+00	O
184	Ni- 62	110.0	3000.0	9.40E-01	O
184	Ni- 63	100.0	3000.0	1.23E+00	O
184	Ni- 64	100.0	3000.0	6.41E-01	O
184	Ni- 65	100.0	3000.0	2.04E-01	O
184	Ni- 66	100.0	3000.0	7.75E-02	O
184	Ni- 67	100.0	1000.0	1.49E-02	O
184	Ni- 68	100.0	3000.0	7.67E-03	O
184	Ni- 69g	100.0	225.0	1.49E-03	O
184	Ni- 69m	100.0	225.0	1.49E-03	O
184	Cu- 58	100.0	3000.0	6.60E-03	O
184	Cu- 59	100.0	2500.0	4.01E-02	O
184	Cu- 60	100.0	3000.0	3.19E-01	O
184	Cu- 61	250.0	3000.0	1.53E+00	O
184	Cu- 62	160.0	3000.0	2.14E+00	O
184	Cu- 63	160.0	3000.0	1.97E+00	O
184	Cu- 64	80.0	3000.0	1.42E+00	O
184	Cu- 65	100.0	3000.0	1.72E+00	O
184	Cu- 66	100.0	3000.0	6.63E-01	O
184	Cu- 67	100.0	3000.0	3.27E-01	O
184	Cu- 68g	100.0	3000.0	2.94E-02	O
184	Cu- 68m	100.0	3000.0	6.20E-02	O
184	Cu- 69	100.0	600.0	2.83E-02	O
184	Cu- 70g	100.0	550.0	4.15E-03	O
184	Cu- 70m	100.0	550.0	7.31E-03	O
184	Cu- 70m2	100.0	550.0	1.15E-05	O
184	Cu- 71	100.0	250.0	3.15E-03	O
184	Cu- 72	100.0	140.0	9.16E-04	O
184	Zn- 61g	100.0	2500.0	2.50E-03	O
184	Zn- 61m	100.0	2500.0	2.50E-03	O
184	Zn- 61m2	100.0	2500.0	2.50E-03	O
184	Zn- 61m3	100.0	2500.0	2.50E-03	O
184	Zn- 62	100.0	3000.0	1.99E-01	O

184	Zn- 63	100.0	3000.0	8.08E-01	O	184	As- 77	100.0	3000.0	2.04E-01	O
184	Zn- 64	200.0	3000.0	1.41E+00	O	184	As- 78	100.0	1000.0	5.91E-02	O
184	Zn- 65	160.0	3000.0	1.39E+00	O	184	As- 79	100.0	650.0	2.55E-02	O
184	Zn- 66	140.0	3000.0	1.19E+00	O	184	As- 80	100.0	600.0	9.68E-03	O
184	Zn- 67	100.0	3000.0	2.41E+00	O	184	As- 81	100.0	160.0	3.11E-03	O
184	Zn- 68	100.0	3000.0	1.54E+00	O	184	Se- 69	100.0	3000.0	3.16E-03	O
184	Zn- 69g	100.0	3000.0	8.35E-02	O	184	Se- 70	100.0	3000.0	1.91E-02	O
184	Zn- 69m	100.0	3000.0	4.79E-01	I	184	Se- 71	100.0	2500.0	1.13E-01	O
184	Zn- 70	100.0	3000.0	2.01E-01	O	184	Se- 72	100.0	3000.0	9.04E-01	O
184	Zn- 71g	100.0	350.0	2.67E-02	O	184	Se- 73g	100.0	3000.0	1.24E+00	O
184	Zn- 71m	100.0	350.0	1.73E-02	O	184	Se- 73m	100.0	3000.0	1.34E+00	O
184	Zn- 72	100.0	700.0	2.04E-02	O	184	Se- 74	160.0	3000.0	1.53E+00	O
184	Zn- 73g	100.0	300.0	1.38E-03	O	184	Se- 75	120.0	3000.0	1.18E+00	O
184	Zn- 73m	100.0	300.0	1.38E-03	O	184	Se- 76	100.0	3000.0	3.26E+00	O
184	Zn- 73m2	100.0	300.0	1.38E-03	O	184	Se- 77g	100.0	3000.0	1.45E-01	O
184	Zn- 74	100.0	200.0	2.42E-03	O	184	Se- 77m	100.0	3000.0	1.16E+00	O
184	Ga- 62	100.0	2500.0	1.70E-03	O	184	Se- 78	100.0	3000.0	7.70E-01	O
184	Ga- 63	100.0	2500.0	1.03E-02	O	184	Se- 79g	100.0	3000.0	2.13E-01	O
184	Ga- 64	100.0	2500.0	1.17E-01	O	184	Se- 79m	100.0	3000.0	1.41E-02	O
184	Ga- 65	100.0	3000.0	5.60E-01	O	184	Se- 80	100.0	3000.0	1.08E-01	O
184	Ga- 66	250.0	3000.0	1.35E+00	O	184	Se- 81g	100.0	3000.0	5.96E-03	O
184	Ga- 67	200.0	3000.0	1.79E+00	O	184	Se- 81m	100.0	600.0	2.67E-02	O
184	Ga- 68	140.0	3000.0	1.51E+00	O	184	Se- 82	100.0	500.0	1.22E-02	O
184	Ga- 69	100.0	3000.0	2.98E+00	O	184	Se- 83g	100.0	800.0	5.78E-03	O
184	Ga- 70	100.0	3000.0	1.54E+00	O	184	Se- 83m	100.0	800.0	3.80E-03	O
184	Ga- 71	100.0	3000.0	5.54E-01	O	184	Se- 84	100.0	3000.0	2.99E-03	O
184	Ga- 72g	100.0	3000.0	2.17E-01	N	184	Br- 71	100.0	2500.0	1.39E-03	O
184	Ga- 72m	100.0	3000.0	2.17E-01	N	184	Br- 72g	100.0	2500.0	2.15E-03	O
184	Ga- 73	100.0	3000.0	6.32E-02	O	184	Br- 72m	100.0	2500.0	5.31E-03	O
184	Ga- 74g	100.0	500.0	1.27E-02	O	184	Br- 73	100.0	2500.0	6.88E-02	O
184	Ga- 74m	100.0	500.0	8.73E-03	O	184	Br- 74g	100.0	3000.0	1.76E-01	O
184	Ga- 75	100.0	550.0	8.24E-03	O	184	Br- 74m	100.0	3000.0	2.45E-01	O
184	Ga- 76	100.0	300.0	2.24E-03	O	184	Br- 75	100.0	3000.0	2.19E+00	O
184	Ga- 77	100.0	110.0	1.54E-03	O	184	Br- 76g	100.0	3000.0	1.96E+00	O
184	Ge- 65	100.0	2500.0	5.25E-03	O	184	Br- 76m	100.0	3000.0	2.57E+00	O
184	Ge- 66	100.0	3000.0	5.99E-02	O	184	Br- 77g	100.0	3000.0	6.34E-01	O
184	Ge- 67	100.0	3000.0	3.48E-01	O	184	Br- 77m	100.0	3000.0	4.46E+00	O
184	Ge- 68	100.0	3000.0	1.85E+00	O	184	Br- 78	100.0	3000.0	3.31E+00	O
184	Ge- 69	160.0	3000.0	1.34E+00	O	184	Br- 79g	100.0	3000.0	9.90E-01	O
184	Ge- 70	180.0	3000.0	1.50E+00	O	184	Br- 79m	100.0	3000.0	1.22E+00	O
184	Ge- 71g	100.0	3000.0	1.80E+00	O	184	Br- 80g	100.0	3000.0	4.20E-01	O
184	Ge- 71m	100.0	3000.0	1.80E+00	O	184	Br- 80m	100.0	3000.0	5.68E-01	O
184	Ge- 72	100.0	3000.0	2.43E+00	O	184	Br- 81	100.0	3000.0	4.79E-01	O
184	Ge- 73g	100.0	3000.0	3.97E-01	O	184	Br- 82g	100.0	3000.0	2.56E-01	N
184	Ge- 73m	100.0	3000.0	3.97E-01	O	184	Br- 82m	100.0	3000.0	9.59E-02	N
184	Ge- 74	100.0	3000.0	4.11E-01	O	184	Br- 83	100.0	3000.0	5.79E-02	O
184	Ge- 75g	100.0	3000.0	1.42E-02	O	184	Br- 84g	100.0	3000.0	2.94E-03	O
184	Ge- 75m	100.0	3000.0	8.32E-02	O	184	Br- 84m	100.0	3000.0	1.43E-02	O
184	Ge- 76	100.0	900.0	4.88E-02	O	184	Br- 85	100.0	900.0	7.47E-03	O
184	Ge- 77g	100.0	120.0	7.94E-03	O	184	Br- 86	100.0	550.0	1.85E-03	O
184	Ge- 77m	100.0	120.0	7.51E-04	O	184	Kr- 74	100.0	2500.0	7.31E-03	O
184	Ge- 78	100.0	400.0	6.61E-03	O	184	Kr- 75	100.0	2500.0	5.65E-02	O
184	As- 67	100.0	3000.0	3.90E-03	O	184	Kr- 76	100.0	3000.0	4.75E-01	O
184	As- 68	100.0	3000.0	2.63E-02	O	184	Kr- 77	100.0	3000.0	1.88E+00	O
184	As- 69	100.0	2500.0	1.96E-01	O	184	Kr- 78	200.0	3000.0	1.30E+00	O
184	As- 70	100.0	3000.0	1.13E+00	O	184	Kr- 79g	100.0	3000.0	9.83E-01	O
184	As- 71	200.0	3000.0	1.30E+00	O	184	Kr- 79m	100.0	3000.0	4.48E+00	O
184	As- 72	160.0	3000.0	7.61E-01	N	184	Kr- 80	100.0	3000.0	5.16E+00	O
184	As- 73	120.0	2500.0	1.05E+00	O	184	Kr- 81g	100.0	3000.0	2.43E+00	O
184	As- 74	110.0	3000.0	1.95E+00	I	184	Kr- 81m	100.0	3000.0	1.11E-01	O
184	As- 75g	100.0	3000.0	6.78E-01	O	184	Kr- 82	100.0	3000.0	2.01E+00	O
184	As- 75m	100.0	3000.0	6.78E-01	O	184	Kr- 83g	100.0	3000.0	5.80E-01	O
184	As- 76	100.0	3000.0	8.39E-01	N	184	Kr- 83m	100.0	3000.0	4.35E-02	O

184	Kr- 84	100.0	3000.0	3.00E-01	O	184	Y - 87g	100.0	3000.0	4.94E-01	C
184	Kr- 85g	100.0	3000.0	6.25E-02	O	184	Y - 87m	110.0	3000.0	1.13E+00	C
184	Kr- 85m	100.0	3000.0	2.22E-02	O	184	Y - 88g	40.0	3000.0	9.79E-01	I
184	Kr- 86	100.0	750.0	2.48E-02	O	184	Y - 88m	40.0	3000.0	9.79E-01	I
184	Kr- 87	100.0	400.0	1.67E-01	C	184	Y - 89g	100.0	3000.0	1.77E-01	O
184	Kr- 88	100.0	150.0	3.14E-03	O	184	Y - 89m	100.0	3000.0	1.58E+00	O
184	Kr- 89	100.0	140.0	2.54E-03	O	184	Y - 90g	100.0	3000.0	1.41E-01	N
184	Rb- 75	100.0	2500.0	4.86E-04	O	184	Y - 90m	100.0	3000.0	1.12E+00	N
184	Rb- 76	100.0	3000.0	5.40E-03	O	184	Y - 91g	100.0	3000.0	9.97E-02	O
184	Rb- 77	100.0	2500.0	2.10E-02	O	184	Y - 91m	100.0	3000.0	1.47E-01	O
184	Rb- 78g	100.0	2500.0	8.13E-02	O	184	Y - 92	100.0	3000.0	7.32E-02	O
184	Rb- 78m	100.0	2500.0	8.13E-02	O	184	Y - 93g	100.0	3000.0	2.36E-02	O
184	Rb- 79	100.0	2500.0	6.17E-01	O	184	Y - 93m	100.0	3000.0	2.36E-02	O
184	Rb- 80	100.0	3000.0	2.77E+00	O	184	Y - 94	100.0	275.0	7.19E-03	O
184	Rb- 81g	100.0	3000.0	7.94E-01	O	184	Y - 95	100.0	800.0	4.30E-03	O
184	Rb- 81m	100.0	3000.0	4.36E+00	O	184	Y - 96g	100.0	160.0	8.86E-04	O
184	Rb- 82g	100.0	3000.0	5.94E-01	N	184	Y - 96m	100.0	160.0	8.86E-04	O
184	Rb- 82m	100.0	2600.0	1.90E+00	N	184	Zr- 83	100.0	3000.0	1.28E-02	C
184	Rb- 83g	100.0	3000.0	1.24E+00	C	184	Zr- 84	100.0	3000.0	1.10E-01	O
184	Rb- 83m	100.0	3000.0	1.24E+00	C	184	Zr- 85g	100.0	2500.0	1.20E-01	C
184	Rb- 84g	80.0	3000.0	7.52E-01	I	184	Zr- 85m	100.0	2500.0	5.91E-02	C
184	Rb- 84m	80.0	3000.0	9.24E-01	I	184	Zr- 86	100.0	3000.0	1.19E+00	O
184	Rb- 85	100.0	3000.0	1.17E+00	O	184	Zr- 87g	200.0	3000.0	1.30E+00	C
184	Rb- 86g	100.0	2500.0	2.65E-01	N	184	Zr- 87m	100.0	3000.0	6.99E-02	C
184	Rb- 86m	100.0	2500.0	9.20E-01	N	184	Zr- 88	160.0	3000.0	1.88E+00	C
184	Rb- 87	100.0	3000.0	2.45E+00	C	184	Zr- 89g	140.0	3000.0	1.14E+00	C
184	Rb- 88	100.0	3000.0	3.36E-02	O	184	Zr- 89m	100.0	3000.0	5.72E-01	C
184	Rb- 89	100.0	1500.0	1.24E-02	O	184	Zr- 90g	100.0	3000.0	2.60E+00	O
184	Rb- 90g	100.0	200.0	2.69E-03	O	184	Zr- 90m	100.0	3000.0	2.60E+00	O
184	Rb- 90m	100.0	200.0	2.92E-03	O	184	Zr- 91	100.0	3000.0	1.80E+00	O
184	Sr- 78	100.0	3000.0	4.14E-03	O	184	Zr- 92	100.0	3000.0	1.12E+00	O
184	Sr- 79	100.0	2500.0	1.79E-02	O	184	Zr- 93	100.0	3000.0	4.69E-01	O
184	Sr- 80	100.0	3000.0	1.65E-01	O	184	Zr- 94	100.0	2500.0	2.38E-01	O
184	Sr- 81	100.0	3000.0	5.10E-01	O	184	Zr- 95	100.0	3000.0	7.48E-02	O
184	Sr- 82	180.0	3000.0	1.11E+00	O	184	Zr- 96	100.0	3000.0	3.21E-02	O
184	Sr- 83g	160.0	3000.0	8.61E-01	C	184	Zr- 97	100.0	2000.0	8.92E-03	O
184	Sr- 83m	100.0	3000.0	5.31E-01	C	184	Zr- 98	100.0	800.0	1.36E-03	O
184	Sr- 84	120.0	3000.0	1.39E+00	O	184	Nb- 84	100.0	2000.0	3.45E-04	O
184	Sr- 85g	100.0	3000.0	2.71E+00	C	184	Nb- 85g	100.0	3000.0	2.09E-03	C
184	Sr- 85m	100.0	3000.0	2.45E-01	C	184	Nb- 85m	100.0	3000.0	2.09E-03	C
184	Sr- 86	100.0	3000.0	3.23E+00	O	184	Nb- 86g	100.0	3000.0	1.81E-02	O
184	Sr- 87g	100.0	3000.0	1.28E+00	O	184	Nb- 86m	100.0	3000.0	1.81E-02	O
184	Sr- 87m	100.0	3000.0	1.38E-01	O	184	Nb- 87g	100.0	2500.0	2.22E-02	C
184	Sr- 88	100.0	3000.0	7.93E-01	O	184	Nb- 87m	100.0	2500.0	8.34E-02	C
184	Sr- 89	100.0	3000.0	1.62E-01	O	184	Nb- 88g	100.0	2500.0	2.51E-01	C
184	Sr- 90	100.0	3000.0	6.02E-02	O	184	Nb- 88m	100.0	2500.0	2.51E-01	C
184	Sr- 91	100.0	900.0	1.92E-02	O	184	Nb- 89g	200.0	3000.0	1.53E+00	C
184	Sr- 92	100.0	600.0	1.03E-02	O	184	Nb- 89m	100.0	2500.0	1.16E-01	C
184	Sr- 93	100.0	100.0	2.71E-03	O	184	Nb- 90g	180.0	3000.0	2.01E+00	C
184	Sr- 94	100.0	350.0	1.24E-03	O	184	Nb- 90m	100.0	3000.0	3.16E-01	C
184	Y - 79	100.0	3000.0	1.15E-03	O	184	Nb- 90m2	100.0	3000.0	2.23E-03	C
184	Y - 80g	100.0	2000.0	2.49E-03	O	184	Nb- 91g	110.0	3000.0	1.12E+00	N
184	Y - 80m	100.0	2000.0	1.58E-03	O	184	Nb- 91m	100.0	3000.0	8.66E-01	N
184	Y - 81	100.0	2500.0	9.71E-03	O	184	Nb- 92g	100.0	3000.0	2.30E+00	O
184	Y - 82	100.0	2500.0	5.65E-02	O	184	Nb- 92m	100.0	3000.0	7.16E-01	O
184	Y - 83g	100.0	2500.0	9.17E-02	C	184	Nb- 93g	100.0	3000.0	1.73E+00	O
184	Y - 83m	100.0	2500.0	8.74E-02	C	184	Nb- 93m	100.0	3000.0	1.47E-01	O
184	Y - 84g	100.0	2500.0	3.93E-01	O	184	Nb- 94g	100.0	3000.0	7.51E-01	O
184	Y - 84m	100.0	2500.0	3.93E-01	O	184	Nb- 94m	100.0	3000.0	2.27E-01	O
184	Y - 85g	100.0	3000.0	2.20E-01	C	184	Nb- 95g	100.0	2500.0	1.23E+00	N
184	Y - 85m	200.0	3000.0	8.49E-01	C	184	Nb- 95m	100.0	2000.0	1.00E+00	N
184	Y - 86g	100.0	3000.0	2.37E+00	O	184	Nb- 96	100.0	3000.0	2.07E-01	O
184	Y - 86m	100.0	3000.0	2.43E+00	O	184	Nb- 97g	100.0	2000.0	7.37E-02	O

184	Nb- 97m	100.0	2000.0	2.29E-02	O
184	Nb- 98g	100.0	3000.0	1.86E-02	O
184	Nb- 98m	100.0	3000.0	5.59E-03	O
184	Nb- 99g	100.0	3000.0	8.13E-03	O
184	Nb- 99m	100.0	3000.0	6.25E-03	O
184	Nb-100g	100.0	3000.0	5.47E-03	O
184	Nb-100m	100.0	3000.0	8.93E-04	O
184	Nb-101	100.0	750.0	7.93E-04	O
184	Mo- 87	100.0	3000.0	2.04E-03	C
184	Mo- 88	100.0	3000.0	2.04E-02	C
184	Mo- 89g	100.0	3000.0	5.35E-02	C
184	Mo- 89m	100.0	3000.0	5.35E-02	C
184	Mo- 90	100.0	3000.0	5.25E-01	C
184	Mo- 91g	200.0	3000.0	1.72E+00	O
184	Mo- 91m	100.0	3000.0	2.67E-01	O
184	Mo- 92	160.0	3000.0	2.86E+00	O
184	Mo- 93g	100.0	3000.0	2.77E+00	O
184	Mo- 93m	100.0	3000.0	1.87E+00	I
184	Mo- 94	100.0	3000.0	4.47E+00	O
184	Mo- 95	100.0	3000.0	2.59E+00	O
184	Mo- 96	100.0	3000.0	1.67E+00	O
184	Mo- 97	100.0	2500.0	7.09E-01	O
184	Mo- 98	100.0	2500.0	3.39E-01	O
184	Mo- 99	100.0	2000.0	9.17E-02	O
184	Mo-100	100.0	3000.0	4.23E-02	O
184	Mo-101	100.0	1000.0	9.77E-03	O
184	Mo-102	100.0	3000.0	6.88E-03	O
184	Mo-103	100.0	800.0	1.31E-03	O
184	Mo-104	100.0	225.0	7.34E-04	O
184	Mo-105	100.0	1200.0	3.38E-04	O
184	Tc- 90g	100.0	3000.0	4.78E-03	C
184	Tc- 90m	100.0	3000.0	4.78E-03	C
184	Tc- 91g	100.0	2500.0	4.76E-02	O
184	Tc- 91m	100.0	2500.0	5.88E-03	O
184	Tc- 92	100.0	3000.0	3.46E-01	O
184	Tc- 93g	200.0	3000.0	2.42E+00	O
184	Tc- 93m	100.0	3000.0	1.65E-01	O
184	Tc- 94g	160.0	3000.0	1.79E+00	O
184	Tc- 94m	100.0	3000.0	8.34E-02	O
184	Tc- 95g	130.0	3000.0	1.17E+00	N
184	Tc- 95m	100.0	2500.0	4.92E-01	N
184	Tc- 96g	100.0	3000.0	1.79E+00	I
184	Tc- 96m	100.0	3000.0	2.58E-01	I
184	Tc- 97g	100.0	3000.0	2.50E+00	O
184	Tc- 97m	100.0	3000.0	1.45E-01	O
184	Tc- 98	100.0	3000.0	1.50E+00	O
184	Tc- 99g	100.0	2500.0	6.16E-01	N
184	Tc- 99m	100.0	2000.0	2.00E-01	N
184	Tc-100	100.0	2000.0	3.23E-01	O
184	Tc-101	100.0	3000.0	1.65E-01	O
184	Tc-102g	100.0	1500.0	2.29E-02	O
184	Tc-102m	100.0	1500.0	2.29E-02	O
184	Tc-103	100.0	2500.0	2.46E-02	O
184	Tc-104	100.0	1000.0	6.24E-03	O
184	Tc-105	100.0	900.0	2.09E-03	O
184	Tc-106	100.0	800.0	7.82E-04	O
184	Ru- 92	100.0	2500.0	4.88E-03	O
184	Ru- 93g	100.0	3000.0	5.76E-02	O
184	Ru- 93m	100.0	3000.0	5.70E-03	O
184	Ru- 94	275.0	3000.0	1.76E+00	O
184	Ru- 95	225.0	3000.0	2.58E+00	O
184	Ru- 96	200.0	3000.0	2.45E+00	O
184	Ru- 97	140.0	3000.0	2.19E+00	O
184	Ru- 98	140.0	3000.0	1.31E+00	O
184	Ru- 99	100.0	3000.0	4.10E+00	O
184	Ru-100	100.0	2500.0	2.72E+00	O
184	Ru-101	100.0	3000.0	1.23E+00	O
184	Ru-102	100.0	2500.0	6.88E-01	O
184	Ru-103g	100.0	2500.0	1.23E-01	O
184	Ru-103m	100.0	2500.0	1.23E-01	O
184	Ru-104	100.0	2500.0	1.26E-01	O
184	Ru-105	100.0	1500.0	2.58E-02	O
184	Ru-106	100.0	2000.0	1.40E-02	O
184	Ru-107	100.0	900.0	3.45E-03	O
184	Ru-108	100.0	900.0	1.26E-03	O
184	Rh- 94g	100.0	3000.0	6.58E-03	O
184	Rh- 94m	100.0	3000.0	6.58E-03	O
184	Rh- 95g	100.0	3000.0	1.93E-01	O
184	Rh- 95m	100.0	3000.0	1.15E-02	O
184	Rh- 96g	350.0	3000.0	1.11E+00	O
184	Rh- 96m	100.0	3000.0	1.38E-01	O
184	Rh- 97g	275.0	3000.0	2.15E+00	O
184	Rh- 97m	100.0	3000.0	4.53E-02	O
184	Rh- 98g	225.0	3000.0	1.39E+00	O
184	Rh- 98m	225.0	3000.0	1.39E+00	O
184	Rh- 99g	100.0	2500.0	3.10E-01	O
184	Rh- 99m	140.0	3000.0	1.99E+00	O
184	Rh-100g	100.0	2500.0	2.84E+00	N
184	Rh-100m	100.0	2500.0	1.76E+00	O
184	Rh-101g	100.0	2500.0	3.62E-01	O
184	Rh-101m	100.0	2500.0	3.17E+00	O
184	Rh-102g	100.0	3000.0	1.41E+00	N
184	Rh-102m	100.0	2500.0	1.15E+00	N
184	Rh-103g	100.0	2500.0	3.09E-01	O
184	Rh-103m	100.0	2500.0	1.60E+00	O
184	Rh-104g	100.0	2000.0	4.35E-01	O
184	Rh-104m	100.0	2000.0	4.85E-01	O
184	Rh-105g	100.0	2500.0	3.70E-01	O
184	Rh-105m	100.0	2500.0	1.22E-01	O
184	Rh-106g	100.0	2500.0	5.75E-02	O
184	Rh-106m	100.0	2500.0	1.35E-01	O
184	Rh-107	100.0	3000.0	1.01E-01	O
184	Rh-108g	100.0	1000.0	7.55E-03	O
184	Rh-108m	100.0	1000.0	7.55E-03	O
184	Rh-109	100.0	3000.0	1.06E-02	O
184	Rh-110g	100.0	900.0	1.06E-03	O
184	Rh-110m	100.0	900.0	1.06E-03	O
184	Rh-111	100.0	800.0	8.03E-04	O
184	Pd- 96	100.0	3000.0	2.96E-02	O
184	Pd- 97	100.0	3000.0	3.03E-01	O
184	Pd- 98	350.0	3000.0	1.65E+00	O
184	Pd- 99	250.0	3000.0	2.67E+00	O
184	Pd-100	225.0	3000.0	3.29E+00	O
184	Pd-101	200.0	3000.0	3.49E+00	O
184	Pd-102	160.0	3000.0	2.57E+00	O
184	Pd-103	140.0	3000.0	1.70E+00	O
184	Pd-104	110.0	3000.0	1.03E+00	O
184	Pd-105	100.0	2000.0	1.90E+00	O
184	Pd-106	100.0	2500.0	1.24E+00	O
184	Pd-107g	100.0	2500.0	1.97E-01	O
184	Pd-107m	100.0	2000.0	2.49E-01	O
184	Pd-108	100.0	2500.0	2.38E-01	O
184	Pd-109g	100.0	3000.0	4.45E-02	O
184	Pd-109m	100.0	2000.0	3.92E-02	O
184	Pd-110	100.0	2000.0	4.07E-02	O
184	Pd-111g	100.0	1000.0	7.72E-03	O

184	Pd-111m	100.0	1000.0	3.70E-03	O
184	Pd-112	100.0	1000.0	3.67E-03	O
184	Pd-113g	100.0	900.0	6.94E-04	O
184	Pd-113m	100.0	900.0	6.94E-04	O
184	Ag- 97	100.0	3000.0	2.80E-03	O
184	Ag- 98	100.0	3000.0	1.55E-02	O
184	Ag- 99g	100.0	3000.0	1.51E-01	O
184	Ag- 99m	100.0	3000.0	3.37E-03	O
184	Ag-100g	100.0	3000.0	2.84E-01	O
184	Ag-100m	100.0	3000.0	7.66E-02	O
184	Ag-101g	250.0	3000.0	1.86E+00	O
184	Ag-101m	100.0	3000.0	1.12E-01	O
184	Ag-102g	250.0	3000.0	2.96E+00	O
184	Ag-102m	100.0	3000.0	2.14E-01	O
184	Ag-103g	160.0	3000.0	3.55E+00	O
184	Ag-103m	100.0	3000.0	1.52E-01	O
184	Ag-104g	180.0	3000.0	2.83E+00	O
184	Ag-104m	100.0	3000.0	4.03E-01	O
184	Ag-105g	100.0	2500.0	2.99E-01	C
184	Ag-105m	140.0	3000.0	3.41E+00	C
184	Ag-106g	100.0	2500.0	2.83E-01	O
184	Ag-106m	80.0	2500.0	1.55E+00	I
184	Ag-107g	100.0	2500.0	1.15E-01	O
184	Ag-107m	100.0	2500.0	1.41E+00	O
184	Ag-108g	100.0	2500.0	6.65E-01	O
184	Ag-108m	100.0	2000.0	4.57E-01	O
184	Ag-109g	100.0	2000.0	2.89E-01	O
184	Ag-109m	100.0	2000.0	3.51E-01	O
184	Ag-110g	100.0	2000.0	1.67E-01	O
184	Ag-110m	100.0	2000.0	1.00E-01	O
184	Ag-111g	100.0	1500.0	4.40E-02	O
184	Ag-111m	100.0	1500.0	8.45E-02	O
184	Ag-112	100.0	1200.0	3.13E-02	O
184	Ag-113g	100.0	1500.0	9.01E-03	O
184	Ag-113m	100.0	1500.0	1.11E-02	O
184	Ag-114g	100.0	1000.0	3.09E-03	O
184	Ag-114m	100.0	1000.0	3.09E-03	O
184	Ag-115g	100.0	1000.0	3.37E-03	O
184	Ag-115m	100.0	1000.0	1.02E-03	O
184	Ag-116g	100.0	900.0	5.94E-04	O
184	Ag-116m	100.0	900.0	3.24E-04	O
184	Cd- 99	100.0	800.0	2.54E-05	O
184	Cd-100	100.0	3000.0	9.80E-03	O
184	Cd-101	100.0	3000.0	1.04E-01	O
184	Cd-102	300.0	3000.0	1.03E+00	O
184	Cd-103	300.0	3000.0	2.57E+00	O
184	Cd-104	225.0	3000.0	4.12E+00	O
184	Cd-105	225.0	3000.0	7.79E+00	C
184	Cd-106	200.0	3000.0	4.80E+00	O
184	Cd-107	160.0	3000.0	3.61E+00	O
184	Cd-108	140.0	3000.0	2.79E+00	O
184	Cd-109	120.0	3000.0	1.51E+00	O
184	Cd-110	100.0	2500.0	2.23E+00	O
184	Cd-111g	100.0	2500.0	1.98E-01	O
184	Cd-111m	100.0	2000.0	1.08E+00	O
184	Cd-112	100.0	2000.0	7.29E-01	O
184	Cd-113g	100.0	2500.0	1.45E-01	O
184	Cd-113m	100.0	2500.0	1.36E-01	O
184	Cd-114	100.0	1500.0	1.22E-01	O
184	Cd-115g	100.0	1500.0	2.22E-02	O
184	Cd-115m	100.0	1500.0	4.67E-03	O
184	Cd-116	100.0	1000.0	1.01E-02	O
184	Cd-117g	100.0	3000.0	8.38E-04	O
184	Cd-117m	100.0	1000.0	3.58E-03	O
184	Cd-118	100.0	1000.0	1.64E-03	O
184	Cd-119g	100.0	900.0	4.41E-04	O
184	Cd-119m	100.0	900.0	1.75E-04	O
184	In-101g	100.0	2500.0	2.38E-05	O
184	In-101m	100.0	2500.0	2.38E-05	O
184	In-102	100.0	3000.0	2.81E-03	O
184	In-103g	100.0	3000.0	2.37E-02	O
184	In-103m	100.0	3000.0	2.65E-04	O
184	In-104g	100.0	3000.0	2.01E-01	O
184	In-104m	100.0	3000.0	2.40E-02	O
184	In-105g	100.0	3000.0	6.34E-01	C
184	In-105m	100.0	3000.0	6.52E-01	C
184	In-106g	100.0	3000.0	3.46E-01	O
184	In-106m	250.0	3000.0	2.28E+00	O
184	In-107g	225.0	3000.0	4.08E+00	O
184	In-107m	100.0	3000.0	3.09E-01	O
184	In-108g	200.0	3000.0	2.60E+00	N
184	In-108m	200.0	3000.0	5.31E+00	N
184	In-109g	180.0	3000.0	4.37E+00	O
184	In-109m	100.0	3000.0	3.21E-01	O
184	In-109m2	100.0	2500.0	3.14E-03	O
184	In-110g	160.0	3000.0	5.56E+00	N
184	In-110m	160.0	3000.0	4.79E+00	N
184	In-111g	110.0	3000.0	2.22E+00	O
184	In-111m	100.0	2500.0	1.62E-01	O
184	In-112g	100.0	2500.0	3.45E-01	O
184	In-112m	110.0	3000.0	1.04E+00	O
184	In-113g	100.0	2500.0	8.81E-01	O
184	In-113m	100.0	3000.0	9.36E-02	O
184	In-114g	100.0	2000.0	3.15E-02	O
184	In-114m	100.0	2000.0	6.16E-01	O
184	In-114m2	100.0	2000.0	6.47E-04	O
184	In-115g	100.0	2000.0	2.08E-01	O
184	In-115m	100.0	2000.0	1.16E-01	O
184	In-116g	100.0	3000.0	7.03E-03	O
184	In-116m	100.0	2500.0	2.10E-02	O
184	In-116m2	100.0	2500.0	1.02E-01	O
184	In-117g	100.0	2500.0	3.32E-02	O
184	In-117m	100.0	2500.0	1.85E-02	O
184	In-118g	100.0	1200.0	1.34E-03	O
184	In-118m	100.0	1200.0	2.26E-03	O
184	In-118m2	100.0	1200.0	1.06E-02	O
184	In-119g	100.0	2000.0	6.90E-03	O
184	In-119m	100.0	2000.0	8.75E-04	O
184	Sn-104	100.0	2000.0	8.83E-05	O
184	Sn-105	100.0	3000.0	3.99E-02	C
184	Sn-106	100.0	3000.0	1.44E-01	O
184	Sn-107	550.0	3000.0	1.17E+00	O
184	Sn-108	400.0	3000.0	2.99E+00	O
184	Sn-109	225.0	3000.0	5.60E+00	O
184	Sn-110	200.0	3000.0	8.32E+00	O
184	Sn-111	180.0	3000.0	8.28E+00	O
184	Sn-112	140.0	3000.0	7.99E+00	O
184	Sn-113g	100.0	2500.0	3.13E-01	C
184	Sn-113m	120.0	3000.0	8.14E+00	C
184	Sn-114	120.0	3000.0	4.05E+00	O
184	Sn-115	100.0	3000.0	2.09E+00	O
184	Sn-116	90.0	3000.0	1.10E+00	O
184	Sn-117g	100.0	3000.0	1.13E-01	O
184	Sn-117m	100.0	3000.0	4.85E-01	O
184	Sn-118	100.0	2000.0	2.40E-01	O
184	Sn-119g	100.0	1500.0	5.60E-02	O

184	Sn-119m	100.0	1500.0	3.32E-02	O
184	Sn-120	100.0	1500.0	3.45E-02	O
184	Sn-121g	100.0	3000.0	6.87E-04	O
184	Sn-121m	100.0	1200.0	1.01E-02	O
184	Sn-122	100.0	1000.0	5.99E-03	O
184	Sn-123g	100.0	3000.0	2.52E-03	O
184	Sn-123m	100.0	3000.0	2.22E-04	O
184	Sb-108	100.0	3000.0	3.16E-03	O
184	Sb-109	100.0	3000.0	1.68E-02	O
184	Sb-110	100.0	2500.0	5.62E-02	O
184	Sb-111	400.0	3000.0	2.10E+00	O
184	Sb-112	250.0	3000.0	3.51E+00	O
184	Sb-113	275.0	3000.0	8.64E+00	C
184	Sb-114	225.0	3000.0	6.39E+00	O
184	Sb-115	160.0	3000.0	5.66E+00	O
184	Sb-116g	200.0	3000.0	1.26E+00	O
184	Sb-116m	200.0	3000.0	2.61E+00	O
184	Sb-117	200.0	3000.0	2.38E+00	O
184	Sb-118g	100.0	2500.0	4.19E-01	N
184	Sb-118m	100.0	2500.0	1.09E+00	N
184	Sb-119g	100.0	2500.0	3.53E-01	O
184	Sb-119m	100.0	2500.0	3.53E-01	O
184	Sb-120g	100.0	2500.0	1.27E-01	N
184	Sb-120m	100.0	2600.0	1.52E-01	N
184	Sb-121	100.0	2000.0	1.50E-01	O
184	Sb-122g	100.0	3000.0	1.22E-02	O
184	Sb-122m	100.0	2000.0	3.54E-02	O
184	Sb-123	100.0	2000.0	2.54E-02	O
184	Sb-124g	100.0	1200.0	1.68E+00	N
184	Sb-124m	100.0	1200.0	1.38E+00	N
184	Sb-124m2	100.0	1200.0	2.31E+00	N
184	Sb-125	100.0	2000.0	1.41E-03	O
184	Sb-126g	100.0	3000.0	3.53E-04	O
184	Sb-126m	100.0	3000.0	1.53E-03	O
184	Sb-126m2	100.0	3000.0	1.15E-03	O
184	Te-110	100.0	2500.0	1.55E-03	O
184	Te-111	100.0	2500.0	3.10E-03	O
184	Te-112	100.0	2500.0	3.60E-02	O
184	Te-113	100.0	2500.0	5.23E-01	C
184	Te-114	550.0	3000.0	2.31E+00	O
184	Te-115g	225.0	3000.0	4.65E+00	O
184	Te-115m	100.0	3000.0	9.25E-02	O
184	Te-116	200.0	3000.0	6.30E+00	O
184	Te-117g	180.0	3000.0	3.14E+00	O
184	Te-117m	180.0	3000.0	3.14E+00	O
184	Te-118	180.0	3000.0	5.25E+00	O
184	Te-119g	100.0	2000.0	9.19E-01	C
184	Te-119m	140.0	3000.0	3.56E+00	C
184	Te-120	100.0	3000.0	1.87E+00	O
184	Te-121g	100.0	2000.0	1.41E-01	C
184	Te-121m	80.0	3000.0	7.12E-01	I
184	Te-122	100.0	2000.0	6.34E-01	O
184	Te-123g	100.0	2000.0	9.95E-02	O
184	Te-123m	100.0	2000.0	1.07E-01	O
184	Te-124	100.0	2000.0	1.14E-01	O
184	Te-125g	100.0	3000.0	1.53E-02	O
184	Te-125m	100.0	3000.0	1.81E-02	O
184	Te-126	100.0	3000.0	6.16E-03	O
184	Te-127g	100.0	2500.0	1.64E-03	O
184	Te-127m	100.0	2500.0	2.48E-03	O
184	I -113	100.0	3000.0	8.91E-03	C
184	I -114g	100.0	3000.0	2.46E-02	O
184	I -114m	100.0	3000.0	4.37E-03	O
184	I -115	100.0	3000.0	2.06E-01	O
184	I -116	400.0	3000.0	1.94E+00	O
184	I -117	275.0	3000.0	4.10E+00	O
184	I -118g	275.0	3000.0	2.69E+00	O
184	I -118m	275.0	3000.0	2.69E+00	O
184	I -119	180.0	3000.0	8.74E+00	C
184	I -120g	180.0	3000.0	8.70E+00	N
184	I -120m	180.0	3000.0	2.63E+00	N
184	I -121	140.0	3000.0	5.00E+00	C
184	I -122	160.0	3000.0	2.29E+00	O
184	I -123	225.0	3000.0	1.29E+00	O
184	I -124	100.0	2000.0	9.64E-01	O
184	I -125	100.0	2000.0	5.95E-01	O
184	I -126	100.0	2000.0	2.23E-01	O
184	I -127	100.0	1500.0	1.17E-01	O
184	I -128	100.0	1000.0	3.48E-02	O
184	I -129	100.0	3000.0	1.76E-02	O
184	I -130g	100.0	3000.0	3.44E-03	O
184	I -130m	100.0	3000.0	9.57E-04	O
184	I -131	100.0	2500.0	4.67E-04	O
184	Xe-116	100.0	3000.0	3.46E-02	O
184	Xe-117	100.0	3000.0	1.23E-01	O
184	Xe-118	700.0	3000.0	2.35E+00	O
184	Xe-119	500.0	3000.0	6.09E+00	C
184	Xe-120	225.0	3000.0	6.94E+00	O
184	Xe-121	200.0	3000.0	9.56E+00	C
184	Xe-122	250.0	3000.0	7.06E+00	O
184	Xe-123	180.0	2500.0	7.92E+00	C
184	Xe-124	200.0	3000.0	3.50E+00	O
184	Xe-125g	100.0	2500.0	7.51E-01	C
184	Xe-125m	100.0	2500.0	9.07E-01	C
184	Xe-126	100.0	2500.0	7.86E-01	O
184	Xe-127g	100.0	2000.0	1.26E-01	C
184	Xe-127m	100.0	2500.0	3.30E-01	C
184	Xe-128	100.0	2500.0	1.60E-01	O
184	Xe-129g	100.0	2000.0	3.04E-02	O
184	Xe-129m	100.0	2000.0	2.42E-02	O
184	Xe-130	100.0	2000.0	3.32E-02	O
184	Xe-131g	100.0	2500.0	1.94E-03	O
184	Xe-131m	100.0	2500.0	2.03E-03	O
184	Xe-133g	100.0	2000.0	5.56E-05	O
184	Xe-133m	100.0	2000.0	6.56E-04	O
184	Cs-117g	100.0	2500.0	4.45E-03	O
184	Cs-117m	100.0	2500.0	9.06E-04	O
184	Cs-118g	100.0	2500.0	1.92E-02	O
184	Cs-118m	100.0	2500.0	1.92E-02	O
184	Cs-119g	100.0	2500.0	1.30E-01	C
184	Cs-119m	100.0	2500.0	1.30E-01	C
184	Cs-120g	100.0	2500.0	3.65E-01	O
184	Cs-120m	100.0	2500.0	3.65E-01	O
184	Cs-121g	400.0	3000.0	1.25E+00	C
184	Cs-121m	400.0	3000.0	2.91E+00	C
184	Cs-122g	500.0	3000.0	1.77E+00	O
184	Cs-122m	500.0	3000.0	3.86E+00	O
184	Cs-122m2	100.0	2500.0	3.45E-03	O
184	Cs-123g	275.0	3000.0	5.94E+00	C
184	Cs-123m	275.0	3000.0	4.76E+00	C
184	Cs-124g	250.0	3000.0	3.72E+00	O
184	Cs-124m	250.0	3000.0	3.72E+00	O
184	Cs-125g	225.0	3000.0	3.53E+00	C
184	Cs-125m	225.0	3000.0	3.53E+00	C
184	Cs-126	140.0	3000.0	4.07E+00	O
184	Cs-127	180.0	3000.0	2.81E+00	C

184	Cs-128	200.0	2500.0	1.12E+00	O
184	Cs-129	100.0	1600.0	6.58E-01	C
184	Cs-130g	100.0	2000.0	1.33E-01	O
184	Cs-130m	100.0	2000.0	8.16E-02	O
184	Cs-131	100.0	2500.0	8.93E-02	O
184	Cs-132	100.0	3000.0	4.12E-02	O
184	Cs-133	100.0	2000.0	9.22E-03	O
184	Ba-120	100.0	3000.0	8.67E-03	O
184	Ba-121	100.0	3000.0	6.73E-02	C
184	Ba-122	650.0	3000.0	1.10E+00	O
184	Ba-123	750.0	2500.0	4.29E+00	C
184	Ba-124	600.0	3000.0	5.86E+00	O
184	Ba-125	300.0	3000.0	8.31E+00	C
184	Ba-126	300.0	3000.0	8.52E+00	O
184	Ba-127g	200.0	3000.0	4.66E+00	C
184	Ba-127m	200.0	3000.0	3.59E+00	C
184	Ba-128	180.0	2500.0	6.51E+00	C
184	Ba-129g	100.0	2000.0	8.35E-01	C
184	Ba-129m	300.0	2500.0	3.40E+00	C
184	Ba-130g	100.0	2000.0	1.22E+00	O
184	Ba-130m	100.0	2000.0	1.22E+00	O
184	Ba-131g	100.0	1600.0	2.66E-01	C
184	Ba-131m	100.0	2000.0	8.76E-01	C
184	Ba-132	100.0	2000.0	6.77E-01	O
184	Ba-133g	100.0	1600.0	1.63E-01	C
184	Ba-133m	100.0	1600.0	6.98E-02	C
184	Ba-134	100.0	2000.0	1.02E-01	O
184	Ba-135g	100.0	1500.0	3.84E-03	O
184	Ba-135m	100.0	2000.0	3.34E-02	O
184	Ba-136g	100.0	3000.0	3.00E-03	O
184	Ba-136m	100.0	3000.0	3.00E-03	O
184	La-122	100.0	2500.0	2.65E-03	O
184	La-123	100.0	3000.0	6.08E-02	C
184	La-124g	100.0	3000.0	1.06E-01	O
184	La-124m	100.0	3000.0	1.06E-01	O
184	La-125g	100.0	2500.0	4.56E-01	C
184	La-125m	100.0	2500.0	4.56E-01	C
184	La-126g	700.0	3000.0	2.12E+00	O
184	La-126m	700.0	3000.0	2.12E+00	O
184	La-127g	650.0	2500.0	5.61E+00	C
184	La-127m	650.0	2500.0	1.92E+00	C
184	La-128g	225.0	2500.0	4.36E+00	C
184	La-128m	225.0	2500.0	4.36E+00	C
184	La-129g	350.0	2500.0	4.67E+00	C
184	La-129m	350.0	2500.0	4.67E+00	C
184	La-130	650.0	2000.0	5.98E+00	N
184	La-131	180.0	2500.0	4.06E+00	C
184	La-132g	550.0	2500.0	1.16E+00	C
184	La-132m	550.0	2500.0	1.11E+00	C
184	La-133	550.0	2500.0	1.13E+00	C
184	La-134	100.0	2000.0	6.74E-01	O
184	La-135	100.0	1200.0	3.36E-01	O
184	La-136g	100.0	2000.0	6.30E-02	O
184	La-136m	100.0	2000.0	6.30E-02	O
184	La-137	100.0	1500.0	5.95E-02	O
184	La-138	100.0	3000.0	2.01E-02	O
184	La-139	100.0	2500.0	4.63E-03	O
184	Ce-123	100.0	3000.0	2.04E-03	C
184	Ce-124	100.0	3000.0	5.66E-03	O
184	Ce-125	100.0	3000.0	2.62E-02	C
184	Ce-126	100.0	2500.0	1.29E-01	O
184	Ce-127g	100.0	2500.0	3.40E-01	C
184	Ce-127m	100.0	2500.0	3.40E-01	C
184	Ce-128	700.0	2500.0	4.57E+00	C
184	Ce-129	600.0	2500.0	7.12E+00	C
184	Ce-130	600.0	3000.0	9.84E+00	O
184	Ce-131g	600.0	2500.0	4.57E+00	C
184	Ce-131m	600.0	2500.0	4.57E+00	C
184	Ce-132g	500.0	2500.0	4.14E+00	C
184	Ce-132m	500.0	2500.0	4.14E+00	C
184	Ce-133g	550.0	2500.0	1.30E+00	C
184	Ce-133m	550.0	2500.0	4.43E+00	I
184	Ce-134	500.0	2500.0	3.36E+00	C
184	Ce-135g	550.0	2000.0	1.56E+00	C
184	Ce-135m	100.0	2000.0	2.75E-01	C
184	Ce-136	100.0	2000.0	1.12E+00	O
184	Ce-137g	100.0	2000.0	4.01E-02	O
184	Ce-137m	100.0	2000.0	4.40E-01	O
184	Ce-138g	100.0	1200.0	1.39E-01	O
184	Ce-138m	100.0	1200.0	1.39E-01	O
184	Ce-139g	100.0	2000.0	4.02E-02	C
184	Ce-139m	100.0	2000.0	3.03E-02	C
184	Ce-140	100.0	2500.0	2.90E-02	O
184	Ce-141	100.0	2500.0	8.02E-03	O
184	Ce-147	100.0	3000.0	1.42E-03	O
184	Pr-127g	100.0	3000.0	6.66E-03	C
184	Pr-127m	100.0	3000.0	6.66E-03	C
184	Pr-128	100.0	2500.0	7.85E-02	C
184	Pr-129g	100.0	2500.0	2.31E-01	C
184	Pr-129m	100.0	2500.0	2.31E-01	C
184	Pr-130g	600.0	3000.0	1.17E+00	O
184	Pr-130m	600.0	3000.0	1.17E+00	O
184	Pr-131g	600.0	2500.0	1.23E+00	C
184	Pr-131m	600.0	2500.0	4.22E+00	C
184	Pr-132g	550.0	2500.0	3.74E+00	C
184	Pr-132m	550.0	2500.0	3.74E+00	C
184	Pr-133	550.0	2500.0	9.51E+00	C
184	Pr-134g	500.0	2500.0	3.98E+00	C
184	Pr-134m	500.0	2500.0	3.98E+00	C
184	Pr-135	550.0	2000.0	6.84E+00	C
184	Pr-136	450.0	1600.0	8.17E+00	N
184	Pr-137	550.0	2000.0	2.05E+00	O
184	Pr-138g	100.0	2500.0	4.47E-01	O
184	Pr-138m	100.0	2500.0	5.41E-01	O
184	Pr-139	100.0	2500.0	4.51E-01	C
184	Pr-140	100.0	2500.0	1.98E-01	O
184	Pr-141	100.0	2500.0	9.03E-02	O
184	Pr-142g	100.0	2500.0	5.99E-03	O
184	Pr-142m	100.0	2500.0	1.92E-02	O
184	Pr-143	100.0	3000.0	1.60E-02	O
184	Pr-144g	100.0	3000.0	3.33E-03	O
184	Pr-144m	100.0	3000.0	2.96E-03	O
184	Nd-129	100.0	1600.0	3.96E-02	C
184	Nd-130	100.0	1500.0	1.63E-01	O
184	Nd-131	100.0	2000.0	6.04E-01	C
184	Nd-132	650.0	2500.0	2.44E+00	C
184	Nd-133g	500.0	2500.0	3.15E+00	C
184	Nd-133m	500.0	2500.0	1.94E+00	C
184	Nd-134	550.0	2500.0	8.20E+00	C
184	Nd-135g	500.0	2000.0	7.74E+00	C
184	Nd-135m	500.0	2000.0	1.95E+00	C
184	Nd-136	500.0	2000.0	1.10E+01	C
184	Nd-137g	500.0	2000.0	7.12E+00	C
184	Nd-137m	500.0	2000.0	6.02E+00	C
184	Nd-138	500.0	2000.0	5.49E+00	O
184	Nd-139g	100.0	1200.0	9.54E-01	C

184	Nd-139m	450.0	2000.0	3.63E+00	I
184	Nd-140	450.0	2000.0	1.35E+00	O
184	Nd-141g	100.0	1000.0	1.19E+00	O
184	Nd-141m	100.0	1000.0	9.48E-01	O
184	Nd-142	100.0	1000.0	1.18E+00	O
184	Nd-143	100.0	1000.0	3.83E-01	O
184	Nd-144	100.0	1000.0	1.68E-01	O
184	Nd-145	100.0	1000.0	5.36E-02	O
184	Nd-146	100.0	3000.0	3.02E-02	O
184	Pm-131	100.0	3000.0	1.50E-03	C
184	Pm-132	100.0	2000.0	4.72E-03	C
184	Pm-133g	100.0	3000.0	4.81E-02	C
184	Pm-133m	100.0	3000.0	4.81E-02	C
184	Pm-134g	100.0	2500.0	9.79E-02	C
184	Pm-134m	100.0	2500.0	9.79E-02	C
184	Pm-135g	500.0	2000.0	1.51E+00	C
184	Pm-135m	500.0	2000.0	1.51E+00	C
184	Pm-136g	550.0	2000.0	2.65E+00	C
184	Pm-136m	550.0	2000.0	2.65E+00	C
184	Pm-137g	450.0	2000.0	5.48E+00	C
184	Pm-137m	450.0	2000.0	5.48E+00	C
184	Pm-138g	450.0	2000.0	4.06E+00	O
184	Pm-138m	450.0	2000.0	4.54E+00	O
184	Pm-139g	350.0	2000.0	4.28E+00	C
184	Pm-139m	350.0	2000.0	4.28E+00	C
184	Pm-140g	450.0	2000.0	3.23E+00	N
184	Pm-140m	450.0	1500.0	6.61E+00	N
184	Pm-141	400.0	2000.0	3.26E+00	O
184	Pm-142g	100.0	1000.0	2.74E+00	O
184	Pm-142m	100.0	1000.0	2.74E+00	O
184	Pm-143	100.0	1000.0	3.52E+00	C
184	Pm-144	100.0	1000.0	6.95E-01	I
184	Pm-145	100.0	1000.0	8.31E-01	O
184	Pm-146	100.0	1200.0	3.13E-01	O
184	Pm-147	100.0	1200.0	1.48E-01	O
184	Pm-148g	100.0	1200.0	5.53E-02	N
184	Pm-148m	100.0	500.0	3.43E+00	N
184	Pm-149	100.0	1200.0	2.68E-02	O
184	Pm-150	100.0	1200.0	1.63E-02	O
184	Pm-151	100.0	1200.0	1.48E-02	O
184	Pm-152g	100.0	1200.0	6.08E-03	O
184	Pm-152m	100.0	1200.0	5.39E-04	O
184	Pm-152m2	100.0	1200.0	6.62E-06	O
184	Pm-153	100.0	1200.0	2.91E-03	O
184	Sm-132	130.0	1000.0	1.79E-05	C
184	Sm-133	120.0	3000.0	1.53E-03	C
184	Sm-134	100.0	3000.0	2.68E-02	C
184	Sm-135g	100.0	3000.0	5.74E-02	C
184	Sm-135m	100.0	3000.0	5.74E-02	C
184	Sm-136	550.0	2000.0	1.35E+00	C
184	Sm-137g	500.0	2000.0	2.75E+00	C
184	Sm-137m	500.0	2000.0	2.75E+00	C
184	Sm-138	450.0	2000.0	6.43E+00	O
184	Sm-139g	450.0	2000.0	4.30E+00	C
184	Sm-139m	450.0	2000.0	4.56E+00	C
184	Sm-140	450.0	2000.0	1.22E+01	O
184	Sm-141g	400.0	2000.0	1.14E+00	O
184	Sm-141m	400.0	2000.0	1.03E+01	O
184	Sm-142	350.0	2000.0	9.27E+00	O
184	Sm-143g	400.0	2000.0	2.88E+00	C
184	Sm-143m	400.0	2000.0	1.39E+00	C
184	Sm-143m2	100.0	1200.0	5.69E-03	C
184	Sm-144	400.0	1500.0	2.05E+00	O
184	Sm-145	100.0	1000.0	2.67E+00	O
184	Sm-146	100.0	1000.0	1.62E+00	O
184	Sm-147	100.0	1000.0	6.67E-01	O
184	Sm-148	100.0	1200.0	3.31E-01	O
184	Sm-149	100.0	1000.0	1.10E-01	O
184	Sm-150	100.0	1000.0	6.39E-02	O
184	Sm-151	100.0	1200.0	2.51E-02	O
184	Sm-152	100.0	1200.0	1.17E-02	O
184	Sm-153g	100.0	1200.0	5.11E-03	O
184	Sm-153m	100.0	1200.0	5.11E-03	O
184	Sm-154	100.0	1200.0	4.55E-03	O
184	Sm-155	100.0	1200.0	1.99E-03	O
184	Sm-156	100.0	1200.0	8.59E-04	O
184	Eu-136g	120.0	3000.0	8.34E-04	C
184	Eu-136m	120.0	3000.0	8.34E-04	C
184	Eu-137	110.0	2000.0	3.81E-02	C
184	Eu-138	100.0	2000.0	1.59E-01	O
184	Eu-139	550.0	2000.0	1.72E+00	C
184	Eu-140g	500.0	2000.0	1.70E+00	O
184	Eu-140m	500.0	2000.0	1.70E+00	O
184	Eu-141g	450.0	2000.0	1.85E+00	O
184	Eu-141m	450.0	2000.0	5.22E+00	O
184	Eu-142g	400.0	2000.0	5.42E+00	O
184	Eu-142m	400.0	2000.0	5.42E+00	O
184	Eu-143	350.0	1500.0	1.06E+01	C
184	Eu-144	350.0	1500.0	1.07E+01	O
184	Eu-145	400.0	1500.0	3.74E+00	C
184	Eu-146	400.0	1600.0	1.01E+01	I
184	Eu-147	250.0	1500.0	1.01E+00	C
184	Eu-148	100.0	1000.0	1.46E+00	I
184	Eu-149	100.0	1200.0	1.15E+00	C
184	Eu-150g	100.0	1000.0	1.73E-01	O
184	Eu-150m	100.0	1000.0	2.23E-01	O
184	Eu-151	100.0	1000.0	1.94E-01	O
184	Eu-152g	100.0	1200.0	5.34E-02	O
184	Eu-152m	100.0	1200.0	3.11E-02	O
184	Eu-152m2	100.0	1200.0	8.45E-05	O
184	Eu-153	100.0	2000.0	2.83E-02	O
184	Eu-154g	100.0	1200.0	5.82E-03	O
184	Eu-154m	100.0	1200.0	5.82E-03	O
184	Eu-155	900.0	900.0	1.96E-03	O
184	Eu-156	100.0	1200.0	4.51E-03	O
184	Eu-157	100.0	1200.0	1.99E-03	O
184	Eu-160	100.0	1200.0	1.56E-04	O
184	Gd-138	140.0	2000.0	2.00E-03	O
184	Gd-139g	130.0	3000.0	2.19E-03	C
184	Gd-139m	130.0	3000.0	2.19E-03	C
184	Gd-140	110.0	2000.0	2.01E-01	O
184	Gd-141g	100.0	2000.0	2.00E-01	O
184	Gd-141m	100.0	2000.0	1.91E-01	O
184	Gd-142	400.0	2000.0	3.66E+00	O
184	Gd-143g	400.0	1500.0	3.03E+00	C
184	Gd-143m	400.0	1500.0	2.80E+00	C
184	Gd-144	400.0	1500.0	1.05E+01	O
184	Gd-145g	350.0	1500.0	7.56E+00	C
184	Gd-145m	350.0	1500.0	4.08E+00	C
184	Gd-146	350.0	1500.0	1.13E+01	O
184	Gd-147	300.0	1500.0	5.37E+00	C
184	Gd-148	300.0	1500.0	1.07E+01	N
184	Gd-149	300.0	1500.0	3.20E+00	C
184	Gd-150	300.0	1500.0	1.24E+00	O
184	Gd-151	100.0	1000.0	1.40E+00	C
184	Gd-152	100.0	1000.0	8.71E-01	O

184	Gd-153	100.0	1000.0	3.96E-01	C
184	Gd-154	100.0	1200.0	1.51E-01	O
184	Gd-155g	100.0	1200.0	3.23E-02	O
184	Gd-155m	100.0	1200.0	3.23E-02	O
184	Gd-156	100.0	1200.0	2.60E-02	O
184	Gd-157	800.0	800.0	1.89E-03	O
184	Gd-158	3000.0	3000.0	2.79E-03	O
184	Gd-159	1500.0	1500.0	2.28E-03	O
184	Gd-160	100.0	1200.0	2.44E-03	O
184	Tb-140	160.0	1500.0	4.94E-05	O
184	Tb-141g	140.0	3000.0	2.11E-03	O
184	Tb-141m	140.0	3000.0	2.11E-03	O
184	Tb-142g	130.0	3000.0	8.51E-03	O
184	Tb-142m	130.0	3000.0	8.51E-03	O
184	Tb-143g	110.0	2000.0	8.20E-02	C
184	Tb-143m	110.0	2000.0	8.20E-02	C
184	Tb-144g	100.0	1500.0	7.14E-02	O
184	Tb-144m	450.0	1500.0	2.30E+00	O
184	Tb-145g	400.0	1500.0	2.09E+00	C
184	Tb-145m	400.0	1500.0	2.09E+00	C
184	Tb-146g	350.0	1500.0	3.55E+00	O
184	Tb-146m	350.0	1500.0	3.55E+00	O
184	Tb-146m2	350.0	1500.0	3.55E+00	O
184	Tb-147g	300.0	1200.0	4.62E+00	C
184	Tb-147m	300.0	1200.0	5.67E+00	C
184	Tb-148g	350.0	1500.0	1.21E+00	N
184	Tb-148m	350.0	1500.0	5.56E+00	N
184	Tb-149g	100.0	1200.0	6.77E-01	C
184	Tb-149m	300.0	1200.0	7.97E+00	C
184	Tb-150g	100.0	1200.0	3.28E-01	C
184	Tb-150m	275.0	1200.0	5.05E+00	O
184	Tb-151g	275.0	1200.0	1.75E+00	C
184	Tb-151m	275.0	1200.0	1.35E+00	C
184	Tb-152g	100.0	1000.0	8.52E-01	C
184	Tb-152m	250.0	1200.0	2.27E+00	C
184	Tb-153	275.0	1600.0	1.38E+00	C
184	Tb-154g	100.0	1200.0	5.69E-01	O
184	Tb-154m	100.0	1200.0	5.69E-01	O
184	Tb-154m2	100.0	1200.0	5.69E-01	O
184	Tb-155	100.0	1000.0	1.09E+00	C
184	Tb-156g	100.0	420.0	8.57E-01	N
184	Tb-156m	100.0	420.0	7.17E-02	N
184	Tb-156m2	100.0	420.0	9.29E-04	N
184	Tb-157	100.0	1200.0	2.12E-01	O
184	Tb-158g	100.0	1200.0	8.51E-02	O
184	Tb-158m	100.0	1200.0	9.37E-03	O
184	Tb-159	400.0	3000.0	5.58E-03	O
184	Tb-160	800.0	3000.0	8.37E-03	O
184	Tb-161	600.0	600.0	1.70E-03	O
184	Tb-162	100.0	1200.0	1.05E-02	O
184	Tb-164	100.0	1200.0	2.12E-03	O
184	Tb-165	100.0	1200.0	9.34E-04	O
184	Dy-141	200.0	1000.0	5.53E-06	O
184	Dy-143g	160.0	2000.0	7.92E-04	C
184	Dy-143m	160.0	2000.0	7.92E-04	C
184	Dy-144	140.0	1500.0	1.25E-02	O
184	Dy-145g	130.0	1500.0	1.96E-02	C
184	Dy-145m	130.0	1500.0	1.32E-01	C
184	Dy-146g	450.0	1500.0	1.15E+00	O
184	Dy-146m	450.0	1500.0	1.15E+00	O
184	Dy-147g	350.0	1200.0	5.68E+00	C
184	Dy-147m	350.0	1200.0	2.15E+00	C
184	Dy-148	300.0	1500.0	6.92E+00	N
184	Dy-149g	275.0	1200.0	5.58E+00	C
184	Dy-149m	275.0	1200.0	5.58E+00	C
184	Dy-150	275.0	1200.0	1.02E+01	C
184	Dy-151	250.0	1200.0	1.08E+01	C
184	Dy-152	250.0	1200.0	1.02E+01	C
184	Dy-153	225.0	1200.0	6.53E+00	C
184	Dy-154	225.0	1200.0	3.86E+00	O
184	Dy-155	225.0	1200.0	2.51E+00	C
184	Dy-156	225.0	1000.0	1.29E+00	O
184	Dy-157g	100.0	1000.0	8.55E-01	C
184	Dy-157m	100.0	1000.0	8.55E-01	C
184	Dy-158	100.0	1200.0	8.40E-01	O
184	Dy-159	100.0	1200.0	3.71E-01	O
184	Dy-160	100.0	1200.0	1.81E-01	O
184	Dy-161	350.0	2500.0	2.30E-02	O
184	Dy-162	400.0	2500.0	6.96E-03	O
184	Dy-163	450.0	2500.0	4.56E-03	O
184	Dy-164	800.0	3000.0	2.79E-03	O
184	Dy-165g	100.0	1200.0	2.54E-03	O
184	Dy-165m	100.0	1200.0	1.31E-03	O
184	Dy-166	100.0	1200.0	1.77E-03	O
184	Dy-168	100.0	1200.0	9.67E-04	O
184	Ho-145g	180.0	1500.0	2.19E-04	C
184	Ho-145m	180.0	1500.0	2.19E-04	C
184	Ho-146	160.0	2000.0	4.63E-03	O
184	Ho-147	140.0	2000.0	4.51E-02	C
184	Ho-148g	400.0	1500.0	1.77E-01	N
184	Ho-148m	400.0	1500.0	1.77E-01	N
184	Ho-148m2	400.0	1500.0	1.77E-01	N
184	Ho-149g	350.0	1200.0	3.31E+00	C
184	Ho-149m	350.0	1200.0	1.36E+00	C
184	Ho-150g	300.0	1200.0	9.24E-01	C
184	Ho-150m	300.0	1200.0	5.01E+00	C
184	Ho-151g	275.0	1200.0	5.13E+00	C
184	Ho-151m	275.0	1200.0	2.50E+00	C
184	Ho-152g	240.0	1000.0	1.53E-01	N
184	Ho-152m	275.0	1200.0	6.31E+00	N
184	Ho-153g	225.0	1000.0	8.27E+00	C
184	Ho-153m	225.0	1200.0	6.05E+00	C
184	Ho-154g	225.0	1000.0	5.12E+00	O
184	Ho-154m	225.0	1000.0	5.12E+00	O
184	Ho-155	225.0	1000.0	9.42E+00	C
184	Ho-156g	225.0	800.0	3.26E+00	I
184	Ho-156m	225.0	900.0	1.60E+01	I
184	Ho-156m2	225.0	800.0	2.70E-02	I
184	Ho-157	180.0	1000.0	4.12E+00	C
184	Ho-158g	100.0	1000.0	1.51E+00	O
184	Ho-158m	100.0	1000.0	1.37E+00	O
184	Ho-158m2	100.0	1000.0	1.65E+00	O
184	Ho-159g	180.0	900.0	1.28E+00	C
184	Ho-159m	180.0	1000.0	3.32E-01	C
184	Ho-160g	180.0	1200.0	5.72E+00	N
184	Ho-160m	180.0	900.0	5.46E-02	C
184	Ho-160m2	180.0	1200.0	6.16E-03	N
184	Ho-161g	180.0	900.0	2.15E-01	O
184	Ho-161m	180.0	900.0	6.61E-02	O
184	Ho-162g	100.0	1200.0	1.24E-01	O
184	Ho-162m	100.0	1200.0	2.51E-01	O
184	Ho-163g	200.0	2500.0	6.37E-02	O
184	Ho-163m	200.0	2000.0	1.15E-02	O
184	Ho-164g	275.0	3000.0	2.28E-02	O
184	Ho-164m	275.0	3000.0	1.63E-02	O
184	Ho-165	140.0	3000.0	1.95E-02	O

184	Ho-166g	130.0	2500.0	3.92E-03	O
184	Ho-166m	130.0	2500.0	4.39E-03	O
184	Ho-167	700.0	700.0	1.83E-03	O
184	Ho-168g	75.0	130.0	2.54E-08	O
184	Ho-168m	75.0	130.0	4.27E-08	O
184	Ho-169	75.0	1500.0	2.25E-03	O
184	Ho-174	100.0	900.0	1.01E-04	O
184	Er-147g	200.0	2500.0	8.65E-05	C
184	Er-147m	200.0	2500.0	8.65E-05	C
184	Er-148	180.0	1500.0	2.61E-02	O
184	Er-149g	160.0	1200.0	1.29E-02	C
184	Er-149m	160.0	1200.0	3.85E-02	C
184	Er-150	350.0	1200.0	2.45E+00	C
184	Er-151g	350.0	1200.0	2.27E+00	C
184	Er-151m	350.0	1200.0	2.27E+00	C
184	Er-152	300.0	1000.0	3.48E+00	N
184	Er-153	275.0	1000.0	1.49E+01	C
184	Er-154	250.0	1000.0	1.40E+01	O
184	Er-155	250.0	900.0	1.61E+01	C
184	Er-156	200.0	800.0	2.47E+01	C
184	Er-157g	200.0	900.0	6.47E+00	C
184	Er-157m	200.0	900.0	6.47E+00	C
184	Er-158	200.0	900.0	9.79E+00	O
184	Er-159	180.0	900.0	8.45E+00	C
184	Er-160	180.0	900.0	5.31E+00	C
184	Er-161	160.0	900.0	2.39E+00	C
184	Er-162	150.0	1000.0	1.41E+00	O
184	Er-163	130.0	1200.0	6.86E-01	O
184	Er-164	120.0	1500.0	3.64E-01	O
184	Er-165	110.0	3000.0	2.37E-01	O
184	Er-166	100.0	3000.0	1.09E-01	O
184	Er-167g	95.0	2500.0	5.11E-02	O
184	Er-167m	95.0	2500.0	1.72E-02	O
184	Er-168	90.0	3000.0	4.46E-02	O
184	Er-169	90.0	2500.0	2.09E-02	O
184	Er-170	100.0	1200.0	1.41E-02	O
184	Er-171	100.0	1200.0	5.54E-03	O
184	Er-172	70.0	3000.0	2.79E-03	O
184	Er-173	100.0	3000.0	3.95E-03	O
184	Er-174	100.0	3000.0	1.01E-03	O
184	Er-175	100.0	1200.0	3.15E-04	O
184	Tm-150g	200.0	1000.0	1.45E-03	C
184	Tm-150m	200.0	1000.0	1.45E-03	C
184	Tm-150m2	200.0	1000.0	1.45E-03	C
184	Tm-151g	180.0	1200.0	6.24E-02	C
184	Tm-151m	180.0	1200.0	6.24E-02	C
184	Tm-152g	180.0	1200.0	2.36E-01	O
184	Tm-152m	180.0	1200.0	2.36E-01	O
184	Tm-153g	300.0	1000.0	1.39E+00	C
184	Tm-153m	150.0	1000.0	3.64E-01	C
184	Tm-154g	275.0	1000.0	2.07E+00	C
184	Tm-154m	275.0	1000.0	2.07E+00	C
184	Tm-155g	275.0	1000.0	7.38E+00	C
184	Tm-155m	130.0	1000.0	2.57E-01	C
184	Tm-156	225.0	800.0	1.90E+01	C
184	Tm-157	200.0	800.0	1.58E+01	C
184	Tm-158	200.0	900.0	1.46E+01	O
184	Tm-159	180.0	800.0	1.96E+01	C
184	Tm-160g	160.0	800.0	1.38E+01	C
184	Tm-160m	160.0	800.0	2.06E+00	C
184	Tm-161g	140.0	800.0	5.15E+00	C
184	Tm-161m	140.0	800.0	5.15E+00	C
184	Tm-162g	130.0	650.0	1.41E+01	N
184	Tm-162m	130.0	650.0	1.41E+01	N
184	Tm-163	150.0	800.0	5.97E+00	C
184	Tm-164g	150.0	900.0	1.54E+00	O
184	Tm-164m	150.0	900.0	1.54E+00	O
184	Tm-165	120.0	1000.0	2.15E+00	C
184	Tm-166g	110.0	800.0	2.59E+00	I
184	Tm-166m	110.0	800.0	2.59E+00	I
184	Tm-167	110.0	1200.0	7.58E-01	C
184	Tm-168	100.0	1600.0	9.00E-01	I
184	Tm-169	85.0	1200.0	2.14E-01	O
184	Tm-170	75.0	250.0	4.10E-01	O
184	Tm-171	75.0	3000.0	1.00E-01	O
184	Tm-172	28.0	2000.0	5.53E-02	O
184	Tm-173	28.0	3000.0	3.63E-02	O
184	Tm-174	100.0	1500.0	8.65E-03	O
184	Tm-175	100.0	1500.0	4.78E-03	O
184	Tm-176	100.0	2500.0	5.27E-03	O
184	Tm-177	100.0	1500.0	1.60E-03	O
184	Yb-150	220.0	2500.0	1.25E-06	C
184	Yb-151g	220.0	900.0	7.52E-04	C
184	Yb-151m	220.0	900.0	7.52E-04	C
184	Yb-152	200.0	1000.0	5.76E-02	O
184	Yb-153	200.0	1200.0	1.04E-01	C
184	Yb-154	300.0	1000.0	9.81E-01	C
184	Yb-155	275.0	1000.0	2.33E+00	C
184	Yb-156	250.0	900.0	1.82E+00	N
184	Yb-157	250.0	800.0	9.11E+00	C
184	Yb-158	200.0	800.0	1.26E+01	O
184	Yb-159	200.0	800.0	1.99E+01	C
184	Yb-160	200.0	800.0	2.32E+01	C
184	Yb-161	180.0	750.0	1.96E+01	C
184	Yb-162	160.0	750.0	1.89E+01	C
184	Yb-163	140.0	750.0	1.82E+01	C
184	Yb-164	150.0	700.0	1.20E+01	O
184	Yb-165	130.0	800.0	9.88E+00	C
184	Yb-166	120.0	700.0	6.15E+00	O
184	Yb-167	110.0	275.0	1.76E+01	C
184	Yb-168	95.0	250.0	9.64E+00	O
184	Yb-169g	85.0	275.0	1.26E+01	C
184	Yb-169m	85.0	275.0	8.34E+00	C
184	Yb-170	75.0	250.0	1.91E+01	O
184	Yb-171g	70.0	225.0	3.74E+00	O
184	Yb-171m	70.0	225.0	3.74E+00	O
184	Yb-172	65.0	275.0	1.05E+00	O
184	Yb-173	65.0	1500.0	3.77E-01	O
184	Yb-174	65.0	3000.0	2.34E-01	O
184	Yb-175g	70.0	2000.0	8.52E-02	O
184	Yb-175m	70.0	2000.0	8.52E-02	O
184	Yb-176g	28.0	2500.0	8.00E-02	O
184	Yb-176m	28.0	2500.0	1.63E-02	O
184	Yb-177g	100.0	2000.0	5.21E-02	O
184	Yb-177m	100.0	2000.0	5.77E-03	O
184	Yb-178	100.0	3000.0	2.28E-02	O
184	Yb-179	100.0	3000.0	1.98E-02	O
184	Yb-180	100.0	100.0	1.44E-03	O
184	Lu-153g	200.0	1000.0	9.51E-07	C
184	Lu-153m	200.0	1000.0	9.51E-07	C
184	Lu-154g	200.0	2000.0	9.74E-04	C
184	Lu-154m	200.0	2000.0	9.74E-04	C
184	Lu-155g	180.0	1000.0	1.02E-02	C
184	Lu-155m	180.0	1000.0	1.02E-02	C
184	Lu-155m2	200.0	1000.0	1.02E-02	C
184	Lu-156g	180.0	750.0	5.68E-02	O

184	Lu-156m	180.0	750.0	5.68E-02	O
184	Lu-157g	160.0	900.0	1.87E-01	C
184	Lu-157m	160.0	900.0	3.62E-01	C
184	Lu-158	225.0	800.0	2.43E+00	O
184	Lu-159g	225.0	800.0	2.82E+00	C
184	Lu-159m	225.0	800.0	2.42E+00	C
184	Lu-160g	200.0	800.0	1.77E+00	N
184	Lu-160m	200.0	800.0	4.99E+00	C
184	Lu-161g	180.0	700.0	6.62E+00	C
184	Lu-161m	180.0	700.0	6.62E+00	C
184	Lu-162g	160.0	700.0	5.76E+00	C
184	Lu-162m	160.0	700.0	5.76E+00	C
184	Lu-162m2	160.0	700.0	5.76E+00	C
184	Lu-163	140.0	700.0	2.36E+01	C
184	Lu-164	140.0	600.0	2.15E+01	O
184	Lu-165	150.0	700.0	2.31E+01	C
184	Lu-166g	130.0	650.0	1.64E+00	O
184	Lu-166m	130.0	600.0	1.15E+01	O
184	Lu-166m2	130.0	600.0	6.40E+00	O
184	Lu-167g	120.0	700.0	9.55E+00	C
184	Lu-167m	120.0	700.0	9.55E+00	C
184	Lu-168g	110.0	700.0	5.70E+00	O
184	Lu-168m	110.0	700.0	6.99E+00	O
184	Lu-169g	100.0	800.0	2.25E+00	C
184	Lu-169m	100.0	800.0	7.90E+00	C
184	Lu-170g	90.0	800.0	5.15E+00	I
184	Lu-170m	90.0	800.0	5.15E+00	I
184	Lu-171g	70.0	800.0	6.92E+00	I
184	Lu-171m	70.0	800.0	9.78E+00	I
184	Lu-172g	65.0	800.0	2.46E+00	I
184	Lu-172m	65.0	800.0	3.43E+00	I
184	Lu-173	55.0	700.0	2.53E+00	C
184	Lu-174g	40.0	275.0	1.38E+00	N
184	Lu-174m	40.0	120.0	2.01E+00	N
184	Lu-175	30.0	275.0	1.66E+00	O
184	Lu-176g	10.4	900.0	4.45E-01	O
184	Lu-176m	10.4	800.0	7.29E-01	O
184	Lu-177g	7.8	1000.0	7.08E-01	N
184	Lu-177m	7.8	800.0	2.70E-01	N
184	Lu-177m2	7.8	1000.0	7.65E-04	N
184	Lu-178g	60.0	800.0	3.70E-01	N
184	Lu-178m	60.0	1200.0	1.87E-01	N
184	Lu-179g	60.0	1500.0	1.71E-01	O
184	Lu-179m	60.0	1500.0	1.71E-01	O
184	Lu-180g	90.0	2500.0	6.66E-02	O
184	Lu-180m	90.0	2500.0	6.66E-02	O
184	Lu-180m2	90.0	2500.0	6.66E-02	O
184	Lu-181	24.0	1600.0	3.24E-02	C
184	Hf-155	220.0	750.0	8.74E-04	C
184	Hf-156	200.0	2000.0	3.68E-03	O
184	Hf-157	200.0	900.0	1.49E-02	C
184	Hf-158	160.0	900.0	7.39E-02	C
184	Hf-159	180.0	650.0	2.49E-01	C
184	Hf-160	225.0	750.0	1.88E+00	C
184	Hf-161	200.0	700.0	3.22E+00	C
184	Hf-162	200.0	700.0	7.39E+00	C
184	Hf-163	180.0	650.0	1.24E+01	C
184	Hf-164	140.0	600.0	1.58E+01	O
184	Hf-165	140.0	600.0	2.08E+01	C
184	Hf-166	150.0	550.0	2.44E+01	O
184	Hf-167	140.0	600.0	3.09E+01	C
184	Hf-168	120.0	550.0	2.98E+01	O
184	Hf-169	120.0	700.0	3.06E+01	C
184	Hf-170	110.0	500.0	3.13E+01	C
184	Hf-171g	95.0	450.0	2.47E+01	C
184	Hf-171m	95.0	450.0	9.15E+00	C
184	Hf-172	80.0	400.0	3.68E+01	N
184	Hf-173	70.0	550.0	1.24E+01	I
184	Hf-174	60.0	225.0	1.61E+01	O
184	Hf-175	55.0	650.0	9.97E+00	C
184	Hf-176	45.0	250.0	8.45E+00	O
184	Hf-177g	40.0	700.0	5.36E+00	O
184	Hf-177m	40.0	700.0	5.17E-01	O
184	Hf-177m2	40.0	700.0	5.91E-03	O
184	Hf-178g	32.0	650.0	3.19E+00	N
184	Hf-178m	32.0	650.0	1.53E+00	N
184	Hf-178m2	32.0	160.0	2.22E-01	N
184	Hf-179g	28.0	900.0	3.27E+00	O
184	Hf-179m	28.0	900.0	7.08E-01	O
184	Hf-179m2	28.0	1600.0	3.72E-01	I
184	Hf-180g	3.9	900.0	2.65E+00	N
184	Hf-180m	3.9	800.0	2.97E+00	N
184	Hf-181	55.0	900.0	1.25E+00	C
184	Hf-182g	50.0	900.0	1.57E+00	C
184	Hf-182m	50.0	900.0	4.96E+00	N
184	Hf-183	350.0	1500.0	3.08E-02	C
184	Ta-158g	200.0	650.0	2.13E-07	C
184	Ta-158m	200.0	650.0	2.13E-07	C
184	Ta-159g	200.0	750.0	1.77E-03	C
184	Ta-159m	200.0	750.0	1.75E-03	C
184	Ta-160g	100.0	700.0	5.33E-03	C
184	Ta-160m	100.0	700.0	5.33E-03	C
184	Ta-161g	100.0	800.0	4.17E-02	C
184	Ta-161m	100.0	800.0	3.34E-02	C
184	Ta-162	100.0	700.0	2.58E-01	C
184	Ta-163	200.0	650.0	1.25E+00	C
184	Ta-164	180.0	600.0	2.21E+00	O
184	Ta-165	160.0	550.0	4.28E+00	C
184	Ta-166	140.0	500.0	5.82E+00	O
184	Ta-167	110.0	450.0	9.12E+00	C
184	Ta-168	140.0	450.0	8.82E+00	O
184	Ta-169	120.0	550.0	8.95E+00	C
184	Ta-170	110.0	300.0	1.24E+01	C
184	Ta-171	95.0	350.0	1.32E+01	C
184	Ta-172	85.0	250.0	2.55E+01	N
184	Ta-173	75.0	350.0	4.37E+01	C
184	Ta-174	70.0	450.0	4.17E+01	I
184	Ta-175	55.0	250.0	3.53E+01	C
184	Ta-176g	45.0	180.0	1.14E+01	I
184	Ta-176m	45.0	180.0	1.14E+01	I
184	Ta-176m2	45.0	180.0	1.14E+01	I
184	Ta-177	36.0	150.0	4.76E+01	O
184	Ta-178g	25.0	300.0	7.72E+00	N
184	Ta-178m	28.0	350.0	1.63E+01	I
184	Ta-178m2	25.0	300.0	7.72E+00	N
184	Ta-179g	17.5	38.0	4.00E+01	O
184	Ta-179m	17.5	38.0	4.00E+01	O
184	Ta-179m2	17.5	38.0	4.00E+01	O
184	Ta-180g	3.6	30.0	4.08E+01	O
184	Ta-180m	3.6	34.0	5.05E+01	O
184	Ta-181	2.8	130.0	3.08E+01	O
184	Ta-182g	25.0	640.0	1.66E+01	N
184	Ta-182m	25.0	640.0	2.01E-02	N
184	Ta-182m2	25.0	640.0	3.56E+00	N
184	Ta-183	25.0	800.0	2.12E+01	C
184	Ta-184	200.0	900.0	9.86E-01	I

184	W -159	750.0	750.0	1.73E-03	C
184	W -160	220.0	1500.0	1.14E-03	O
184	W -161	200.0	700.0	1.63E-03	C
184	W -162	200.0	750.0	1.07E-02	C
184	W -163	180.0	600.0	4.88E-02	C
184	W -164	180.0	750.0	2.03E-01	O
184	W -165	200.0	600.0	1.13E+00	C
184	W -166	180.0	450.0	2.59E+00	O
184	W -167	160.0	450.0	5.68E+00	C
184	W -168	140.0	275.0	9.77E+00	O
184	W -169	150.0	450.0	1.07E+01	C
184	W -170	140.0	350.0	2.08E+01	C
184	W -171	120.0	350.0	2.49E+01	C
184	W -172	110.0	180.0	1.69E+01	N
184	W -173	100.0	200.0	4.44E+01	C
184	W -174	90.0	200.0	5.42E+01	C
184	W -175	75.0	140.0	7.21E+01	C
184	W -176	65.0	140.0	7.21E+01	C
184	W -177	60.0	130.0	6.84E+01	C
184	W -178	50.0	120.0	9.81E+01	C
184	W -179g	38.0	100.0	1.24E+02	O
184	W -179m	38.0	200.0	1.68E+01	O
184	W -180g	30.0	85.0	7.06E+01	O
184	W -180m	30.0	85.0	7.06E+01	O
184	W -181	22.0	70.0	2.27E+02	O
184	W -182	13.2	60.0	2.29E+02	O
184	W -183g	11.6	45.0	1.78E+02	O
184	W -183m	11.6	36.0	1.31E+01	O
184	W -185g	160.0	160.0	1.32E-03	N
184	W -185m	160.0	160.0	7.51E-05	N
184	Re-163g	650.0	650.0	1.14E-03	C
184	Re-163m	650.0	650.0	8.45E-04	C
184	Re-164g	550.0	2000.0	1.40E-03	C
184	Re-164m	550.0	2000.0	1.40E-03	C
184	Re-165g	275.0	1000.0	8.40E-04	C
184	Re-165m	275.0	650.0	1.54E-03	C
184	Re-166g	200.0	550.0	1.20E-02	C
184	Re-166m	200.0	550.0	1.11E-02	O
184	Re-167g	180.0	500.0	3.61E-02	C
184	Re-167m	180.0	500.0	3.49E-02	C
184	Re-168	160.0	300.0	2.11E-01	O
184	Re-169g	130.0	225.0	6.19E-01	C
184	Re-169m	130.0	225.0	6.19E-01	C
184	Re-170	130.0	200.0	5.60E+00	C
184	Re-171	140.0	450.0	1.25E+00	C
184	Re-172g	120.0	160.0	7.98E-01	N
184	Re-172m	120.0	160.0	7.98E-01	N
184	Re-173	110.0	350.0	2.17E+00	C
184	Re-174	95.0	120.0	2.49E+01	C
184	Re-175	85.0	110.0	6.20E+00	C
184	Re-176	75.0	100.0	8.02E+01	C
184	Re-177	65.0	85.0	1.15E+02	C
184	Re-178	55.0	75.0	2.20E+02	C
184	Re-179	45.0	60.0	2.84E+02	I
184	Re-180	34.0	50.0	5.45E+02	O
184	Re-181	28.0	38.0	7.08E+02	I
184	Re-182g	17.5	28.0	4.56E+02	I
184	Re-182m	17.5	28.0	1.20E+03	N
184	Re-183g	9.0	20.0	5.67E+02	I
184	Re-183m	10.8	20.0	5.67E+02	I
184	Re-184g	3.6	9.6	1.23E+02	I
184	Re-184m	3.6	9.8	1.03E+01	I
184	Re-185	2.8	15.5	9.24E-01	O
186	H - 1	3.0	3000.0	1.36E+04	M
186	H - 2	5.0	3000.0	3.59E+03	M
186	H - 3	9.0	3000.0	2.04E+03	M
186	He- 3	8.5	3000.0	4.14E+02	M
186	He- 4	3.0	3000.0	3.02E+03	M
186	He- 5	10.0	3000.0	1.72E+01	O
186	He- 6	10.0	3000.0	3.70E+01	O
186	He- 7	13.0	3000.0	2.30E+00	O
186	He- 8	17.0	3000.0	2.62E-01	O
186	He- 9	28.0	3000.0	1.43E-02	O
186	He- 10	32.0	3000.0	4.62E-04	O
186	He- 11	50.0	3000.0	6.34E-06	O
186	He- 12	55.0	3000.0	4.54E-08	O
186	He- 13	75.0	3000.0	1.75E-10	O
186	Li- 5	35.0	3000.0	7.36E+00	O
186	Li- 6	35.0	3000.0	5.48E+00	O
186	Li- 7	35.0	3000.0	6.26E+00	O
186	Li- 8	40.0	3000.0	2.48E+00	O
186	Li- 9	40.0	2800.0	4.30E+00	N
186	Li- 10	100.0	3000.0	2.93E-01	O
186	Li- 11	100.0	3000.0	8.89E-02	O
186	Be- 7	50.0	3000.0	5.73E+00	I
186	Be- 8	30.0	3000.0	1.80E+01	O
186	Be- 9	35.0	3000.0	1.56E+01	O
186	Be- 10	35.0	3000.0	1.64E+01	O
186	Be- 11	50.0	3000.0	5.90E+00	O
186	Be- 12	50.0	3000.0	3.53E+00	O
186	Be- 13	100.0	3000.0	4.23E-01	O
186	B - 10	50.0	3000.0	5.74E+00	O
186	B - 11	40.0	3000.0	1.37E+01	O
186	B - 12	40.0	3000.0	7.59E+00	O
186	B - 13	40.0	3000.0	6.29E+00	O
186	B - 14	50.0	3000.0	2.21E+00	O
186	B - 15	50.0	3000.0	1.22E+00	O
186	C - 10	100.0	3000.0	4.31E-01	O
186	C - 11	100.0	3000.0	2.23E+00	O
186	C - 12	100.0	3000.0	3.15E+00	O
186	C - 13	100.0	3000.0	3.31E+00	O
186	C - 14	100.0	3000.0	1.95E+00	O
186	C - 15	100.0	3000.0	5.13E-01	O
186	C - 16	100.0	2800.0	9.89E-01	N
186	N - 12	100.0	3000.0	1.04E-01	O
186	N - 13	100.0	3000.0	3.57E-01	O
186	N - 14	100.0	3000.0	2.09E+00	O
186	N - 15	40.0	3000.0	2.24E+00	O
186	N - 16	100.0	3000.0	1.14E+00	O
186	N - 17	100.0	3000.0	3.68E+00	N
186	N - 18	100.0	3000.0	2.84E-01	O
186	N - 19	100.0	3000.0	1.77E-01	O
186	O - 13	100.0	3000.0	2.15E-02	O
186	O - 14	100.0	3000.0	2.85E-01	O
186	O - 15	60.0	3000.0	1.07E+00	O
186	O - 16	40.0	3000.0	5.79E+00	O
186	O - 17	50.0	3000.0	3.13E+00	O
186	O - 18	40.0	3000.0	4.55E+00	O
186	O - 19	50.0	3000.0	2.98E+00	O
186	O - 20	50.0	3000.0	3.74E+00	O
186	O - 21	50.0	3000.0	2.13E+00	O
186	O - 22	50.0	3000.0	2.28E+00	O
186	F - 15	100.0	3000.0	6.22E-03	O
186	F - 16	100.0	3000.0	4.98E-02	O
186	F - 17	100.0	3000.0	3.22E-01	O
186	F - 18	100.0	3000.0	6.58E-01	O

186	F - 19	100.0	3000.0	1.31E+00	O
186	F - 20	100.0	3000.0	7.04E-01	O
186	F - 21	100.0	3000.0	4.48E-01	O
186	F - 22	100.0	3000.0	2.46E-01	O
186	F - 23	100.0	3000.0	4.20E-01	O
186	F - 24	100.0	3000.0	1.13E-01	C
186	Ne- 16	100.0	3000.0	2.26E-03	O
186	Ne- 17	100.0	3000.0	1.15E-02	O
186	Ne- 18	100.0	3000.0	7.80E-02	O
186	Ne- 19	100.0	3000.0	3.72E-01	O
186	Ne- 20	50.0	3000.0	2.19E+00	O
186	Ne- 21	50.0	3000.0	1.46E+00	O
186	Ne- 22	50.0	3000.0	6.73E+00	O
186	Ne- 23	50.0	3000.0	2.94E+00	O
186	Ne- 24	40.0	3000.0	3.21E+00	C
186	Ne- 25	50.0	3000.0	3.14E+00	O
186	Ne- 26	50.0	3000.0	2.78E+00	O
186	Na- 19	100.0	3000.0	3.81E-03	O
186	Na- 20	100.0	3000.0	3.09E-02	O
186	Na- 21	100.0	3000.0	2.37E-01	O
186	Na- 22	100.0	3000.0	1.36E+00	C
186	Na- 23	50.0	3000.0	1.22E+00	O
186	Na- 24g	100.0	3000.0	3.04E-01	C
186	Na- 24m	100.0	3000.0	3.04E-01	C
186	Na- 25	50.0	3000.0	1.30E+00	O
186	Na- 26	50.0	3000.0	1.07E+00	O
186	Na- 27	50.0	3000.0	1.28E+00	O
186	Na- 28	100.0	3000.0	2.99E-01	C
186	Mg- 19	100.0	3000.0	3.89E-05	O
186	Mg- 20	100.0	3000.0	2.57E-04	O
186	Mg- 21	100.0	3000.0	1.76E-03	O
186	Mg- 22	100.0	1600.0	5.60E-02	C
186	Mg- 23	100.0	3000.0	1.30E-01	O
186	Mg- 24	100.0	3000.0	5.91E-01	O
186	Mg- 25	100.0	3000.0	1.43E+00	O
186	Mg- 26	100.0	3000.0	1.62E+00	O
186	Mg- 27	100.0	3000.0	7.84E-01	O
186	Mg- 28	100.0	3000.0	4.28E-01	C
186	Mg- 29	100.0	3000.0	2.52E-01	O
186	Mg- 30	100.0	3000.0	3.31E-01	O
186	Mg- 31	100.0	3000.0	1.62E-01	O
186	Al- 20	100.0	3000.0	3.77E-07	O
186	Al- 21	100.0	3000.0	1.05E-05	O
186	Al- 22	100.0	1600.0	1.05E-04	C
186	Al- 23	100.0	3000.0	7.73E-04	O
186	Al- 24g	100.0	3000.0	4.59E-03	O
186	Al- 24m	100.0	3000.0	4.59E-03	O
186	Al- 25	100.0	3000.0	6.14E-02	O
186	Al- 26g	100.0	3000.0	3.04E-01	O
186	Al- 26m	100.0	3000.0	1.58E-01	O
186	Al- 27	100.0	3000.0	1.31E+00	O
186	Al- 28	100.0	3000.0	1.57E+00	O
186	Al- 29	100.0	3000.0	7.63E-01	O
186	Al- 30	100.0	3000.0	2.94E-01	O
186	Al- 31	100.0	3000.0	2.83E-01	O
186	Al- 32	100.0	3000.0	1.22E-01	O
186	Al- 33	100.0	3000.0	8.96E-02	O
186	Al- 34	100.0	3000.0	3.90E-02	O
186	Si- 23	100.0	3000.0	1.39E-05	C
186	Si- 24	100.0	3000.0	3.68E-05	O
186	Si- 25	100.0	3000.0	4.34E-04	O
186	Si- 26	100.0	3000.0	6.46E-03	O
186	Si- 27	100.0	3000.0	7.04E-02	O
186	Si- 28	100.0	3000.0	5.03E-01	O
186	Si- 29	50.0	3000.0	1.06E+00	O
186	Si- 30	100.0	3000.0	1.74E+00	O
186	Si- 31	100.0	3000.0	1.11E+00	O
186	Si- 32	100.0	3000.0	4.78E-01	O
186	Si- 33	100.0	3000.0	2.01E-01	O
186	Si- 34	100.0	3000.0	1.95E-01	O
186	Si- 35	100.0	3000.0	5.75E-02	O
186	P - 24	100.0	3000.0	4.94E-07	C
186	P - 25	100.0	3000.0	3.86E-06	O
186	P - 26	100.0	3000.0	1.59E-05	O
186	P - 27	100.0	3000.0	3.07E-04	O
186	P - 28	100.0	3000.0	3.79E-03	O
186	P - 29	100.0	3000.0	5.21E-02	O
186	P - 30	100.0	3000.0	4.40E-01	O
186	P - 31	50.0	3000.0	1.11E+00	O
186	P - 32	50.0	3000.0	1.06E+00	O
186	P - 33	100.0	3000.0	1.35E+00	O
186	P - 34	100.0	3000.0	5.48E-01	O
186	P - 35	100.0	3000.0	2.39E-01	O
186	P - 36	100.0	3000.0	1.43E-01	O
186	P - 37	100.0	3000.0	7.82E-02	O
186	P - 38	100.0	3000.0	4.16E-02	O
186	S - 27	100.0	3000.0	1.71E-05	O
186	S - 28	100.0	3000.0	1.19E-04	O
186	S - 29	100.0	3000.0	6.17E-04	O
186	S - 30	100.0	3000.0	6.94E-03	O
186	S - 31	100.0	3000.0	4.20E-02	O
186	S - 32	100.0	3000.0	2.72E-01	O
186	S - 33	60.0	3000.0	1.06E+00	O
186	S - 34	50.0	3000.0	1.35E+00	O
186	S - 35	100.0	3000.0	1.61E+00	O
186	S - 36	50.0	3000.0	1.29E+00	O
186	S - 37	100.0	3000.0	4.54E-01	O
186	S - 38	40.0	3000.0	1.20E+00	O
186	S - 39	100.0	3000.0	2.96E-01	O
186	S - 40	40.0	3000.0	1.22E+00	O
186	S - 41	100.0	3000.0	3.75E-01	O
186	Cl- 30	100.0	3000.0	6.17E-06	O
186	Cl- 31	100.0	3000.0	1.15E-04	O
186	Cl- 32	100.0	3000.0	1.40E-03	O
186	Cl- 33	100.0	3000.0	2.19E-02	O
186	Cl- 34g	100.0	3000.0	1.45E-01	O
186	Cl- 34m	100.0	3000.0	2.56E-01	O
186	Cl- 35	60.0	3000.0	1.17E+00	O
186	Cl- 36	60.0	3000.0	1.58E+00	O
186	Cl- 37	100.0	3000.0	1.77E+00	O
186	Cl- 38g	100.0	3000.0	3.76E-01	O
186	Cl- 38m	100.0	3000.0	3.76E-01	O
186	Cl- 39	100.0	3000.0	2.98E-01	O
186	Cl- 40	100.0	3000.0	1.22E-01	O
186	Cl- 41	100.0	3000.0	1.07E-01	O
186	Cl- 42	100.0	3000.0	1.05E-01	O
186	Ar- 31	100.0	3000.0	1.62E-05	O
186	Ar- 32	100.0	3000.0	1.05E-04	O
186	Ar- 33	100.0	3000.0	4.29E-04	O
186	Ar- 34	100.0	3000.0	3.06E-03	O
186	Ar- 35	100.0	3000.0	1.69E-02	O
186	Ar- 36	100.0	3000.0	1.69E-01	O
186	Ar- 37	100.0	3000.0	7.52E-01	O
186	Ar- 38	60.0	3000.0	1.12E+00	O
186	Ar- 39	100.0	3000.0	1.90E+00	O
186	Ar- 40	100.0	3000.0	1.07E+00	O

186	Ar- 41	100.0	3000.0	4.57E-01	O
186	Ar- 42	100.0	3000.0	4.05E-01	O
186	Ar- 43	100.0	3000.0	4.43E-01	O
186	Ar- 44	35.0	3000.0	1.34E+00	O
186	Ar- 45	40.0	3000.0	1.20E+00	O
186	K - 36	100.0	2500.0	7.15E-04	O
186	K - 37	100.0	3000.0	7.50E-03	O
186	K - 38g	100.0	3000.0	1.09E-01	O
186	K - 38m	100.0	3000.0	1.09E-01	O
186	K - 39	450.0	3000.0	1.32E+00	O
186	K - 40	350.0	3000.0	1.37E+00	O
186	K - 41	100.0	3000.0	2.21E+00	O
186	K - 42	100.0	3000.0	1.23E+00	O
186	K - 43	100.0	3000.0	5.18E-01	O
186	K - 44	100.0	3000.0	1.66E-01	O
186	K - 45	100.0	3000.0	6.95E-02	O
186	K - 46	100.0	1200.0	2.18E-02	O
186	K - 47	100.0	1000.0	4.88E-03	O
186	Ca- 39	100.0	3000.0	3.67E-03	O
186	Ca- 40	100.0	3000.0	1.52E-01	O
186	Ca- 41	450.0	3000.0	1.01E+00	O
186	Ca- 42	300.0	3000.0	1.40E+00	O
186	Ca- 43	250.0	3000.0	1.31E+00	O
186	Ca- 44	100.0	3000.0	1.75E+00	O
186	Ca- 45	100.0	3000.0	7.38E-01	O
186	Ca- 46	100.0	3000.0	3.41E-01	O
186	Ca- 47	100.0	3000.0	9.21E-02	O
186	Ca- 48	100.0	1200.0	2.97E-02	O
186	Ca- 49	100.0	1000.0	7.08E-03	O
186	Ca- 50	100.0	800.0	2.06E-03	O
186	Sc- 41	100.0	3000.0	3.42E-03	O
186	Sc- 42g	100.0	3000.0	4.46E-02	O
186	Sc- 42m	100.0	3000.0	3.55E-02	O
186	Sc- 43	100.0	3000.0	4.65E-01	O
186	Sc- 44g	350.0	3000.0	1.07E+00	N
186	Sc- 44m	100.0	3000.0	6.06E-01	N
186	Sc- 45g	100.0	3000.0	1.27E+00	O
186	Sc- 45m	100.0	3000.0	1.27E+00	O
186	Sc- 46g	100.0	3000.0	1.99E+00	N
186	Sc- 46m	100.0	3000.0	4.13E-01	N
186	Sc- 47	100.0	3000.0	1.05E+00	O
186	Sc- 48	100.0	3000.0	6.36E-01	I
186	Sc- 49	100.0	3000.0	1.88E-01	O
186	Sc- 50g	100.0	1200.0	1.68E-02	O
186	Sc- 50m	100.0	1200.0	1.68E-02	O
186	Sc- 51	100.0	3000.0	1.33E-02	O
186	Sc- 52	100.0	900.0	3.02E-03	O
186	Ti- 44	100.0	3000.0	7.16E-02	O
186	Ti- 45	100.0	3000.0	4.29E-01	O
186	Ti- 46	400.0	3000.0	1.71E+00	O
186	Ti- 47	180.0	3000.0	1.91E+00	O
186	Ti- 48	100.0	3000.0	2.56E+00	O
186	Ti- 49	100.0	3000.0	1.33E+00	O
186	Ti- 50	100.0	3000.0	5.71E-01	O
186	Ti- 51	100.0	3000.0	1.82E-01	O
186	Ti- 52	100.0	1200.0	5.00E-02	O
186	Ti- 53	100.0	1000.0	1.64E-02	O
186	Ti- 54	100.0	900.0	8.63E-03	O
186	V - 46g	100.0	3000.0	3.12E-02	O
186	V - 46m	100.0	3000.0	3.12E-02	O
186	V - 47	100.0	3000.0	3.43E-01	O
186	V - 48	350.0	3000.0	1.21E+00	C
186	V - 49	275.0	3000.0	1.80E+00	O
186	V - 50	160.0	3000.0	1.59E+00	O
186	V - 51	100.0	3000.0	1.80E+00	O
186	V - 52	100.0	3000.0	6.15E-01	O
186	V - 53	100.0	3000.0	2.51E-01	O
186	V - 54	100.0	3000.0	8.34E-02	O
186	V - 55	100.0	1000.0	3.01E-02	O
186	V - 56	100.0	1000.0	1.42E-02	O
186	Cr- 48	100.0	3000.0	1.31E-02	C
186	Cr- 49	100.0	3000.0	3.59E-01	O
186	Cr- 50	350.0	3000.0	1.64E+00	O
186	Cr- 51	275.0	3000.0	2.33E+00	O
186	Cr- 52	180.0	3000.0	1.32E+00	O
186	Cr- 53	100.0	3000.0	2.06E+00	O
186	Cr- 54	100.0	3000.0	9.55E-01	O
186	Cr- 55	100.0	3000.0	2.92E-01	O
186	Cr- 56	100.0	3000.0	1.06E-01	O
186	Cr- 57	100.0	1200.0	3.15E-02	O
186	Cr- 58	100.0	900.0	1.61E-02	O
186	Mn- 49	100.0	2500.0	7.40E-04	O
186	Mn- 50g	100.0	3000.0	1.41E-02	O
186	Mn- 50m	100.0	3000.0	2.11E-02	O
186	Mn- 51	100.0	3000.0	2.73E-01	O
186	Mn- 52g	225.0	3000.0	9.81E-01	C
186	Mn- 52m	100.0	3000.0	4.56E-01	O
186	Mn- 53	180.0	3000.0	2.63E+00	O
186	Mn- 54	200.0	3000.0	1.89E+00	I
186	Mn- 55	100.0	3000.0	2.82E+00	O
186	Mn- 56	100.0	3000.0	1.18E+00	O
186	Mn- 57	100.0	3000.0	5.95E-01	O
186	Mn- 58g	100.0	3000.0	3.94E-02	O
186	Mn- 58m	100.0	3000.0	1.37E-01	O
186	Mn- 59	100.0	3000.0	8.45E-02	C
186	Mn- 60g	100.0	1200.0	3.86E-03	O
186	Mn- 60m	100.0	700.0	1.79E-02	O
186	Mn- 61	100.0	600.0	1.56E-02	O
186	Fe- 52g	100.0	3000.0	1.05E+00	I
186	Fe- 52m	100.0	270.0	5.96E-03	C
186	Fe- 53g	100.0	3000.0	8.30E-02	O
186	Fe- 53m	100.0	3000.0	8.30E-02	O
186	Fe- 54	400.0	3000.0	1.82E+00	O
186	Fe- 55	225.0	3000.0	2.53E+00	O
186	Fe- 56	200.0	3000.0	1.75E+00	O
186	Fe- 57	100.0	3000.0	3.36E+00	O
186	Fe- 58	100.0	3000.0	1.94E+00	O
186	Fe- 59	100.0	3000.0	7.60E-01	C
186	Fe- 60	100.0	3000.0	2.95E-01	O
186	Fe- 61	100.0	3000.0	7.88E-02	O
186	Fe- 62	100.0	900.0	4.27E-02	O
186	Fe- 63	100.0	700.0	1.45E-02	O
186	Fe- 64	100.0	900.0	2.63E-03	O
186	Co- 54g	100.0	3000.0	8.13E-03	O
186	Co- 54m	100.0	3000.0	9.42E-03	O
186	Co- 55	100.0	3000.0	2.03E-01	O
186	Co- 56	350.0	3000.0	1.14E+00	C
186	Co- 57	250.0	3000.0	2.32E+00	O
186	Co- 58g	220.0	3000.0	7.54E-01	N
186	Co- 58m	220.0	3000.0	6.63E-01	N
186	Co- 59	140.0	3000.0	1.38E+00	O
186	Co- 60g	100.0	3000.0	1.42E+00	N
186	Co- 60m	100.0	3000.0	5.74E-01	N
186	Co- 61	100.0	3000.0	1.12E+00	O
186	Co- 62g	100.0	3000.0	2.21E-01	O
186	Co- 62m	100.0	3000.0	1.68E-01	O

186	Co- 63	100.0	3000.0	1.79E-01	O	186	Ga- 65	100.0	3000.0	3.64E-01	C
186	Co- 64	100.0	1000.0	5.11E-02	O	186	Ga- 66	225.0	3000.0	1.45E+00	O
186	Co- 65	100.0	600.0	3.21E-02	O	186	Ga- 67	180.0	3000.0	1.88E+00	O
186	Co- 66	100.0	450.0	3.71E-03	O	186	Ga- 68	160.0	3000.0	1.65E+00	O
186	Co- 67	100.0	180.0	2.10E-03	O	186	Ga- 69	140.0	3000.0	1.14E+00	O
186	Ni- 56	100.0	420.0	1.10E-02	C	186	Ga- 70	100.0	3000.0	1.71E+00	O
186	Ni- 57	100.0	3000.0	1.30E-01	O	186	Ga- 71	100.0	3000.0	6.57E-01	O
186	Ni- 58	350.0	3000.0	1.22E+00	O	186	Ga- 72g	100.0	3000.0	2.91E-01	N
186	Ni- 59	275.0	3000.0	2.36E+00	O	186	Ga- 72m	100.0	3000.0	2.91E-01	N
186	Ni- 60	180.0	3000.0	2.45E+00	O	186	Ga- 73	100.0	3000.0	1.05E-01	O
186	Ni- 61	200.0	3000.0	1.95E+00	O	186	Ga- 74g	100.0	600.0	2.54E-02	O
186	Ni- 62	140.0	3000.0	1.18E+00	O	186	Ga- 74m	100.0	600.0	1.75E-02	O
186	Ni- 63	100.0	3000.0	1.35E+00	O	186	Ga- 75	100.0	700.0	2.18E-02	O
186	Ni- 64	100.0	3000.0	7.60E-01	O	186	Ga- 76	100.0	225.0	4.94E-03	O
186	Ni- 65	100.0	3000.0	2.45E-01	O	186	Ga- 77	100.0	120.0	2.24E-03	O
186	Ni- 66	100.0	3000.0	1.20E-01	O	186	Ge- 65	100.0	2500.0	1.80E-03	C
186	Ni- 67	100.0	1000.0	3.50E-02	O	186	Ge- 66	100.0	2500.0	3.34E-02	O
186	Ni- 68	100.0	900.0	5.58E-03	O	186	Ge- 67	100.0	3000.0	2.52E-01	O
186	Ni- 69g	100.0	350.0	1.31E-03	O	186	Ge- 68	100.0	3000.0	1.53E+00	O
186	Ni- 69m	100.0	350.0	1.31E-03	O	186	Ge- 69	225.0	3000.0	1.39E+00	O
186	Ni- 70	100.0	100.0	8.52E-04	O	186	Ge- 70	180.0	3000.0	1.62E+00	O
186	Cu- 58	100.0	3000.0	5.23E-03	O	186	Ge- 71g	100.0	3000.0	2.05E+00	O
186	Cu- 59	100.0	2500.0	2.87E-02	O	186	Ge- 71m	100.0	3000.0	2.05E+00	O
186	Cu- 60	100.0	3000.0	3.01E-01	O	186	Ge- 72	100.0	3000.0	2.54E+00	O
186	Cu- 61	250.0	3000.0	1.50E+00	O	186	Ge- 73g	100.0	3000.0	4.23E-01	O
186	Cu- 62	200.0	3000.0	2.61E+00	O	186	Ge- 73m	100.0	3000.0	4.23E-01	O
186	Cu- 63	200.0	3000.0	2.22E+00	O	186	Ge- 74	100.0	3000.0	4.74E-01	O
186	Cu- 64	110.0	3000.0	1.47E+00	O	186	Ge- 75g	100.0	3000.0	2.16E-02	O
186	Cu- 65	100.0	3000.0	1.95E+00	O	186	Ge- 75m	100.0	3000.0	1.28E-01	O
186	Cu- 66	100.0	3000.0	8.23E-01	O	186	Ge- 76	100.0	800.0	8.11E-02	O
186	Cu- 67	100.0	3000.0	4.14E-01	O	186	Ge- 77g	100.0	1500.0	1.83E-02	O
186	Cu- 68g	100.0	1200.0	3.10E-02	O	186	Ge- 77m	100.0	600.0	1.94E-03	O
186	Cu- 68m	100.0	1200.0	6.30E-02	O	186	Ge- 78	100.0	600.0	1.27E-02	O
186	Cu- 69	100.0	600.0	4.25E-02	O	186	Ge- 79g	100.0	400.0	1.13E-03	O
186	Cu- 70g	100.0	1000.0	1.01E-02	O	186	Ge- 79m	100.0	180.0	8.50E-04	O
186	Cu- 70m	100.0	1000.0	1.74E-02	O	186	Ge- 80	100.0	275.0	1.07E-03	O
186	Cu- 70m2	100.0	1000.0	2.74E-05	O	186	As- 67	100.0	3000.0	1.97E-03	O
186	Cu- 71	100.0	900.0	1.23E-02	O	186	As- 68	100.0	2500.0	1.91E-02	O
186	Cu- 72	100.0	110.0	1.82E-03	O	186	As- 69	100.0	3000.0	1.46E-01	O
186	Zn- 61g	100.0	3000.0	2.74E-03	O	186	As- 70	100.0	3000.0	8.82E-01	O
186	Zn- 61m	100.0	3000.0	2.74E-03	O	186	As- 71	225.0	3000.0	1.37E+00	O
186	Zn- 61m2	100.0	3000.0	2.74E-03	O	186	As- 72	180.0	3000.0	7.61E-01	N
186	Zn- 61m3	100.0	3000.0	2.74E-03	O	186	As- 73	140.0	3000.0	1.15E+00	O
186	Zn- 62	100.0	3000.0	1.56E-01	O	186	As- 74	100.0	3000.0	2.00E+00	I
186	Zn- 63	100.0	3000.0	7.13E-01	O	186	As- 75g	100.0	3000.0	8.15E-01	O
186	Zn- 64	250.0	3000.0	1.40E+00	O	186	As- 75m	100.0	3000.0	8.15E-01	O
186	Zn- 65	160.0	3000.0	1.35E+00	C	186	As- 76	100.0	3000.0	1.08E+00	N
186	Zn- 66	140.0	3000.0	1.45E+00	O	186	As- 77	100.0	3000.0	3.09E-01	O
186	Zn- 67	100.0	3000.0	2.65E+00	O	186	As- 78	100.0	1000.0	8.21E-02	O
186	Zn- 68	100.0	3000.0	1.75E+00	O	186	As- 79	100.0	900.0	6.05E-02	O
186	Zn- 69g	100.0	3000.0	8.09E-02	O	186	As- 80	100.0	400.0	7.42E-03	O
186	Zn- 69m	100.0	3000.0	4.23E-01	I	186	As- 81	100.0	450.0	4.13E-03	O
186	Zn- 70	100.0	3000.0	2.23E-01	O	186	As- 82g	100.0	300.0	7.58E-04	O
186	Zn- 71g	100.0	650.0	3.63E-02	O	186	As- 82m	100.0	300.0	7.58E-04	O
186	Zn- 71m	100.0	650.0	2.28E-02	O	186	Se- 70	100.0	3000.0	9.12E-03	O
186	Zn- 72	100.0	750.0	3.71E-02	O	186	Se- 71	100.0	3000.0	8.69E-02	O
186	Zn- 73g	100.0	700.0	5.45E-03	O	186	Se- 72	100.0	3000.0	9.92E-01	C
186	Zn- 73m	100.0	700.0	5.45E-03	O	186	Se- 73g	100.0	3000.0	1.06E+00	O
186	Zn- 73m2	100.0	700.0	5.45E-03	O	186	Se- 73m	100.0	3000.0	1.12E+00	O
186	Zn- 74	100.0	450.0	9.76E-03	O	186	Se- 74	200.0	3000.0	1.50E+00	O
186	Zn- 75	100.0	110.0	1.38E-03	O	186	Se- 75	160.0	3000.0	1.16E+00	C
186	Ga- 63	100.0	2500.0	7.63E-03	O	186	Se- 76	100.0	3000.0	3.66E+00	O
186	Ga- 64	100.0	3000.0	6.68E-02	O	186	Se- 77g	100.0	3000.0	1.59E-01	O

186	Se- 77m	100.0	3000.0	1.27E+00	O	186	Rb- 82m	100.0	2600.0	2.11E+00	N
186	Se- 78	100.0	3000.0	8.96E-01	O	186	Rb- 83g	100.0	3000.0	1.20E+00	C
186	Se- 79g	100.0	3000.0	2.61E-01	O	186	Rb- 83m	100.0	3000.0	1.20E+00	C
186	Se- 79m	100.0	3000.0	1.73E-02	O	186	Rb- 84g	100.0	3000.0	7.43E-01	I
186	Se- 80	100.0	3000.0	1.38E-01	O	186	Rb- 84m	100.0	3000.0	9.11E-01	I
186	Se- 81g	100.0	550.0	5.92E-03	O	186	Rb- 85	100.0	3000.0	1.25E+00	O
186	Se- 81m	100.0	550.0	3.14E-02	O	186	Rb- 86g	100.0	3000.0	3.88E-01	N
186	Se- 82	100.0	500.0	2.47E-02	O	186	Rb- 86m	100.0	3000.0	1.35E+00	N
186	Se- 83g	100.0	350.0	2.77E-03	O	186	Rb- 87	100.0	3000.0	2.13E+00	C
186	Se- 83m	100.0	400.0	1.62E-03	O	186	Rb- 88	100.0	500.0	4.60E-02	O
186	Se- 84	100.0	450.0	2.09E-03	O	186	Rb- 89	100.0	900.0	1.93E-02	O
186	Br- 72g	100.0	3000.0	3.66E-03	C	186	Rb- 90g	100.0	150.0	3.13E-03	O
186	Br- 72m	100.0	3000.0	9.04E-03	C	186	Rb- 90m	100.0	150.0	3.43E-03	O
186	Br- 73	100.0	2500.0	3.88E-02	O	186	Rb- 91	100.0	350.0	4.33E-03	O
186	Br- 74g	100.0	3000.0	1.56E-01	O	186	Rb- 92	100.0	120.0	7.98E-04	O
186	Br- 74m	100.0	3000.0	2.20E-01	O	186	Sr- 78	100.0	3000.0	1.49E-03	O
186	Br- 75	100.0	3000.0	1.65E+00	C	186	Sr- 79	100.0	3000.0	1.29E-02	O
186	Br- 76g	100.0	3000.0	1.69E+00	O	186	Sr- 80	100.0	3000.0	1.50E-01	O
186	Br- 76m	100.0	3000.0	2.24E+00	O	186	Sr- 81	100.0	3000.0	4.14E-01	O
186	Br- 77g	100.0	3000.0	6.59E-01	O	186	Sr- 82	100.0	3000.0	2.21E+00	O
186	Br- 77m	100.0	3000.0	4.67E+00	O	186	Sr- 83g	100.0	3000.0	2.15E+00	C
186	Br- 78	100.0	3000.0	3.74E+00	O	186	Sr- 83m	100.0	3000.0	3.90E-01	C
186	Br- 79g	100.0	3000.0	1.15E+00	O	186	Sr- 84	180.0	3000.0	1.29E+00	O
186	Br- 79m	100.0	3000.0	1.48E+00	O	186	Sr- 85g	100.0	3000.0	2.59E+00	C
186	Br- 80g	100.0	3000.0	5.04E-01	O	186	Sr- 85m	100.0	3000.0	2.32E-01	C
186	Br- 80m	100.0	3000.0	6.80E-01	O	186	Sr- 86	100.0	3000.0	3.39E+00	O
186	Br- 81	100.0	3000.0	6.65E-01	O	186	Sr- 87g	100.0	3000.0	1.47E+00	O
186	Br- 82g	100.0	3000.0	3.20E-01	N	186	Sr- 87m	100.0	3000.0	1.58E-01	O
186	Br- 82m	100.0	3000.0	1.20E-01	N	186	Sr- 88	100.0	3000.0	7.96E-01	O
186	Br- 83	100.0	3000.0	7.56E-02	O	186	Sr- 89	100.0	3000.0	2.30E-01	O
186	Br- 84g	100.0	600.0	4.05E-03	O	186	Sr- 90	100.0	3000.0	1.12E-01	O
186	Br- 84m	100.0	800.0	2.27E-02	O	186	Sr- 91	100.0	2500.0	2.58E-02	O
186	Br- 85	100.0	1000.0	1.32E-02	O	186	Sr- 92	100.0	500.0	1.27E-02	O
186	Br- 86	100.0	650.0	6.24E-03	O	186	Sr- 93	100.0	250.0	5.60E-03	O
186	Kr- 74	100.0	2000.0	2.60E-03	O	186	Sr- 94	100.0	300.0	2.80E-03	O
186	Kr- 75	100.0	3000.0	4.69E-02	C	186	Sr- 95	100.0	250.0	9.37E-04	C
186	Kr- 76	100.0	3000.0	3.65E-01	O	186	Y - 80g	100.0	2500.0	8.57E-04	O
186	Kr- 77	100.0	3000.0	1.49E+00	O	186	Y - 80m	100.0	2500.0	5.42E-04	O
186	Kr- 78	225.0	3000.0	1.23E+00	O	186	Y - 81	100.0	3000.0	8.98E-03	O
186	Kr- 79g	100.0	3000.0	9.60E-01	O	186	Y - 82	100.0	3000.0	3.82E-02	O
186	Kr- 79m	100.0	3000.0	4.50E+00	O	186	Y - 83g	100.0	3000.0	5.50E-02	C
186	Kr- 80	160.0	3000.0	1.05E+00	O	186	Y - 83m	100.0	3000.0	5.26E-02	C
186	Kr- 81g	100.0	3000.0	2.77E+00	O	186	Y - 84g	100.0	2500.0	3.22E-01	O
186	Kr- 81m	100.0	3000.0	1.27E-01	O	186	Y - 84m	100.0	2500.0	3.22E-01	O
186	Kr- 82	100.0	3000.0	2.17E+00	O	186	Y - 85g	100.0	3000.0	1.50E-01	C
186	Kr- 83g	100.0	3000.0	6.61E-01	O	186	Y - 85m	100.0	3000.0	1.60E+00	C
186	Kr- 83m	100.0	3000.0	4.92E-02	O	186	Y - 86g	100.0	3000.0	2.38E+00	O
186	Kr- 84	100.0	3000.0	3.21E-01	O	186	Y - 86m	100.0	3000.0	2.44E+00	O
186	Kr- 85g	100.0	3000.0	6.89E-02	O	186	Y - 87g	100.0	3000.0	5.00E-01	C
186	Kr- 85m	100.0	3000.0	2.45E-02	O	186	Y - 87m	100.0	3000.0	3.76E+00	C
186	Kr- 86	100.0	700.0	4.50E-02	O	186	Y - 88g	100.0	3000.0	9.10E-01	I
186	Kr- 87	100.0	750.0	1.78E-01	C	186	Y - 88m	100.0	3000.0	9.10E-01	I
186	Kr- 88	100.0	300.0	5.17E-03	O	186	Y - 89g	100.0	3000.0	2.04E-01	O
186	Kr- 89	100.0	160.0	2.26E-03	O	186	Y - 89m	100.0	3000.0	1.84E+00	O
186	Rb- 76	100.0	3000.0	1.91E-03	O	186	Y - 90g	100.0	3000.0	2.02E-01	N
186	Rb- 77	100.0	3000.0	1.84E-02	O	186	Y - 90m	100.0	3000.0	1.65E+00	N
186	Rb- 78g	100.0	2500.0	6.43E-02	O	186	Y - 91g	100.0	3000.0	1.17E-01	O
186	Rb- 78m	100.0	2500.0	6.43E-02	O	186	Y - 91m	100.0	3000.0	1.73E-01	O
186	Rb- 79	100.0	3000.0	5.05E-01	O	186	Y - 92	100.0	3000.0	1.24E-01	O
186	Rb- 80	100.0	3000.0	2.21E+00	O	186	Y - 93g	100.0	2500.0	2.10E-02	O
186	Rb- 81g	100.0	3000.0	6.74E-01	O	186	Y - 93m	100.0	2500.0	2.10E-02	O
186	Rb- 81m	100.0	3000.0	3.81E+00	O	186	Y - 94	100.0	550.0	1.31E-02	O
186	Rb- 82g	100.0	3000.0	6.54E-01	N	186	Y - 95	100.0	250.0	1.06E-02	C

186	Y - 96g	100.0	600.0	8.75E-04	O
186	Y - 96m	100.0	600.0	8.75E-04	O
186	Y - 97g	100.0	275.0	1.43E-04	O
186	Y - 97m	100.0	225.0	6.36E-04	O
186	Y - 97m2	100.0	225.0	7.79E-07	O
186	Zr- 81	100.0	3000.0	1.17E-03	O
186	Zr- 83	100.0	3000.0	3.79E-03	C
186	Zr- 84	100.0	3000.0	7.66E-02	O
186	Zr- 85g	100.0	3000.0	9.36E-02	C
186	Zr- 85m	100.0	3000.0	4.63E-02	C
186	Zr- 86	100.0	3000.0	9.55E-01	O
186	Zr- 87g	100.0	3000.0	1.73E+00	C
186	Zr- 87m	100.0	3000.0	5.42E-02	C
186	Zr- 88	200.0	3000.0	1.63E+00	C
186	Zr- 89g	160.0	3000.0	1.10E+00	C
186	Zr- 89m	100.0	3000.0	6.05E-01	C
186	Zr- 90g	100.0	3000.0	2.70E+00	O
186	Zr- 90m	100.0	3000.0	2.70E+00	O
186	Zr- 91	100.0	3000.0	2.21E+00	O
186	Zr- 92	100.0	3000.0	1.40E+00	O
186	Zr- 93	100.0	3000.0	5.27E-01	O
186	Zr- 94	100.0	3000.0	2.86E-01	O
186	Zr- 95	100.0	2000.0	7.36E-02	C
186	Zr- 96	100.0	3000.0	3.48E-02	O
186	Zr- 97	100.0	900.0	6.67E-03	O
186	Zr- 98	100.0	200.0	2.95E-03	O
186	Zr- 99	100.0	700.0	1.56E-03	O
186	Zr-100	100.0	550.0	2.93E-03	O
186	Nb- 84	100.0	3000.0	1.47E-03	O
186	Nb- 85g	100.0	2500.0	2.20E-04	C
186	Nb- 85m	100.0	2500.0	2.20E-04	C
186	Nb- 86g	100.0	3000.0	6.71E-03	O
186	Nb- 86m	100.0	3000.0	6.71E-03	O
186	Nb- 87g	100.0	2500.0	1.65E-02	C
186	Nb- 87m	100.0	2500.0	6.22E-02	C
186	Nb- 88g	100.0	2500.0	1.71E-01	C
186	Nb- 88m	100.0	2500.0	1.71E-01	C
186	Nb- 89g	225.0	3000.0	1.23E+00	C
186	Nb- 89m	100.0	2500.0	8.44E-02	C
186	Nb- 90g	180.0	3000.0	1.69E+00	C
186	Nb- 90m	100.0	2500.0	2.61E-01	C
186	Nb- 90m2	100.0	2500.0	1.84E-03	C
186	Nb- 91g	100.0	3000.0	4.06E+00	O
186	Nb- 91m	100.0	3000.0	9.30E-01	I
186	Nb- 92g	100.0	3000.0	2.78E+00	O
186	Nb- 92m	100.0	3000.0	8.38E-01	O
186	Nb- 93g	100.0	3000.0	2.23E+00	O
186	Nb- 93m	100.0	3000.0	1.88E-01	O
186	Nb- 94g	100.0	3000.0	9.31E-01	O
186	Nb- 94m	100.0	3000.0	2.80E-01	O
186	Nb- 95g	100.0	3000.0	6.26E-01	I
186	Nb- 95m	100.0	3000.0	2.16E-02	I
186	Nb- 96	100.0	3000.0	2.76E-01	O
186	Nb- 97g	100.0	3000.0	9.50E-02	O
186	Nb- 97m	100.0	3000.0	3.13E-02	O
186	Nb- 98g	100.0	1500.0	2.31E-02	O
186	Nb- 98m	100.0	1500.0	6.86E-03	O
186	Nb- 99g	100.0	3000.0	8.52E-03	O
186	Nb- 99m	100.0	3000.0	6.49E-03	O
186	Nb-100g	100.0	900.0	4.45E-03	O
186	Nb-100m	100.0	900.0	8.25E-04	O
186	Nb-101	100.0	600.0	3.91E-03	O
186	Nb-102g	100.0	225.0	4.79E-04	O
186	Nb-102m	100.0	225.0	4.79E-04	O
186	Nb-103	100.0	200.0	1.55E-03	C
186	Mo- 87	100.0	3000.0	1.59E-03	C
186	Mo- 88	100.0	3000.0	1.37E-02	C
186	Mo- 89g	100.0	2500.0	4.19E-02	C
186	Mo- 89m	100.0	2500.0	4.19E-02	C
186	Mo- 90	100.0	3000.0	4.28E-01	C
186	Mo- 91g	250.0	3000.0	1.38E+00	O
186	Mo- 91m	100.0	3000.0	2.13E-01	O
186	Mo- 92	180.0	3000.0	2.29E+00	O
186	Mo- 93g	100.0	3000.0	2.70E+00	O
186	Mo- 93m	100.0	3000.0	1.68E+00	I
186	Mo- 94	100.0	3000.0	5.23E+00	O
186	Mo- 95	100.0	3000.0	3.03E+00	O
186	Mo- 96	100.0	3000.0	2.04E+00	O
186	Mo- 97	100.0	3000.0	9.24E-01	O
186	Mo- 98	100.0	3000.0	4.58E-01	O
186	Mo- 99	100.0	2500.0	1.46E-01	O
186	Mo-100	100.0	3000.0	7.09E-02	O
186	Mo-101	100.0	1000.0	1.97E-02	O
186	Mo-102	100.0	900.0	6.47E-03	O
186	Mo-103	100.0	600.0	3.40E-03	C
186	Mo-104	100.0	900.0	1.11E-03	O
186	Tc- 90g	100.0	3000.0	3.94E-03	C
186	Tc- 90m	100.0	3000.0	3.94E-03	C
186	Tc- 91g	100.0	3000.0	2.11E-02	O
186	Tc- 91m	100.0	3000.0	2.60E-03	O
186	Tc- 92	100.0	3000.0	2.51E-01	O
186	Tc- 93g	225.0	3000.0	2.00E+00	O
186	Tc- 93m	100.0	3000.0	1.29E-01	O
186	Tc- 94g	225.0	3000.0	1.58E+00	O
186	Tc- 94m	100.0	3000.0	7.07E-02	O
186	Tc- 95g	100.0	2500.0	2.09E+00	O
186	Tc- 95m	100.0	2500.0	2.08E-01	I
186	Tc- 96g	100.0	3000.0	1.80E+00	I
186	Tc- 96m	100.0	3000.0	2.61E-01	I
186	Tc- 97g	100.0	2500.0	3.04E+00	O
186	Tc- 97m	100.0	3000.0	1.75E-01	O
186	Tc- 98	100.0	2500.0	1.71E+00	O
186	Tc- 99g	100.0	3000.0	7.36E-01	N
186	Tc- 99m	100.0	2000.0	2.30E-01	N
186	Tc-100	100.0	3000.0	4.19E-01	O
186	Tc-101	100.0	3000.0	2.12E-01	O
186	Tc-102g	100.0	3000.0	3.40E-02	O
186	Tc-102m	100.0	3000.0	3.40E-02	O
186	Tc-103	100.0	1200.0	3.39E-02	C
186	Tc-104	100.0	2000.0	1.64E-02	O
186	Tc-105	100.0	3000.0	6.94E-03	O
186	Tc-106	100.0	800.0	1.45E-03	O
186	Tc-108	100.0	600.0	4.60E-04	O
186	Ru- 92	100.0	3000.0	4.75E-03	O
186	Ru- 93g	100.0	3000.0	3.53E-02	O
186	Ru- 93m	100.0	3000.0	3.48E-03	O
186	Ru- 94	350.0	3000.0	1.49E+00	O
186	Ru- 95	275.0	3000.0	2.16E+00	O
186	Ru- 96	225.0	3000.0	2.03E+00	O
186	Ru- 97	180.0	3000.0	1.82E+00	O
186	Ru- 98	180.0	3000.0	1.14E+00	O
186	Ru- 99	100.0	3000.0	4.61E+00	O
186	Ru-100	100.0	2500.0	3.24E+00	O
186	Ru-101	100.0	2500.0	1.49E+00	O
186	Ru-102	100.0	3000.0	9.51E-01	O
186	Ru-103g	100.0	2500.0	1.76E-01	C

186	Ru-103m	100.0	2500.0	1.76E-01	C
186	Ru-104	100.0	2000.0	1.56E-01	O
186	Ru-105	100.0	1500.0	4.73E-02	O
186	Ru-106	100.0	2000.0	2.36E-02	O
186	Ru-107	100.0	900.0	6.17E-03	O
186	Ru-108	100.0	800.0	2.40E-03	O
186	Ru-109	100.0	650.0	8.95E-04	O
186	Ru-110	100.0	650.0	3.61E-04	O
186	Rh- 93	100.0	3000.0	1.45E-03	O
186	Rh- 94g	100.0	2500.0	8.67E-04	O
186	Rh- 94m	100.0	2500.0	8.67E-04	O
186	Rh- 95g	100.0	3000.0	1.21E-01	O
186	Rh- 95m	100.0	3000.0	7.27E-03	O
186	Rh- 96g	100.0	3000.0	3.39E-01	O
186	Rh- 96m	100.0	3000.0	1.15E-01	O
186	Rh- 97g	275.0	3000.0	1.83E+00	O
186	Rh- 97m	100.0	3000.0	4.06E-02	O
186	Rh- 98g	250.0	3000.0	1.16E+00	O
186	Rh- 98m	250.0	3000.0	1.16E+00	O
186	Rh- 99g	100.0	2500.0	2.81E-01	O
186	Rh- 99m	160.0	3000.0	1.77E+00	O
186	Rh-100g	100.0	2500.0	2.57E+00	N
186	Rh-100m	100.0	2500.0	1.59E+00	O
186	Rh-101g	100.0	2500.0	3.74E-01	O
186	Rh-101m	100.0	2500.0	3.29E+00	O
186	Rh-102g	100.0	3000.0	1.82E+00	I
186	Rh-102m	100.0	3000.0	1.40E+00	N
186	Rh-103g	100.0	3000.0	3.72E-01	O
186	Rh-103m	100.0	3000.0	1.92E+00	O
186	Rh-104g	100.0	2500.0	5.10E-01	O
186	Rh-104m	100.0	2500.0	5.78E-01	O
186	Rh-105g	100.0	3000.0	4.83E-01	O
186	Rh-105m	100.0	3000.0	1.59E-01	O
186	Rh-106g	100.0	2500.0	6.26E-02	O
186	Rh-106m	100.0	2500.0	1.50E-01	O
186	Rh-107	100.0	2000.0	1.02E-01	O
186	Rh-108g	100.0	2000.0	1.85E-02	O
186	Rh-108m	100.0	2000.0	1.85E-02	O
186	Rh-109	100.0	650.0	1.14E-02	O
186	Rh-110g	100.0	900.0	1.94E-03	O
186	Rh-110m	100.0	900.0	1.94E-03	O
186	Rh-111	100.0	800.0	1.51E-03	O
186	Pd- 96	100.0	3000.0	1.33E-02	O
186	Pd- 97	100.0	3000.0	1.72E-01	O
186	Pd- 98	400.0	3000.0	1.32E+00	O
186	Pd- 99	275.0	3000.0	2.40E+00	O
186	Pd-100	250.0	3000.0	3.06E+00	C
186	Pd-101	225.0	3000.0	3.12E+00	O
186	Pd-102	180.0	3000.0	2.39E+00	O
186	Pd-103	140.0	3000.0	1.70E+00	O
186	Pd-104	100.0	2500.0	2.82E+00	O
186	Pd-105	100.0	3000.0	2.37E+00	O
186	Pd-106	100.0	2000.0	1.43E+00	O
186	Pd-107g	100.0	3000.0	2.80E-01	O
186	Pd-107m	100.0	1500.0	3.57E-01	O
186	Pd-108	100.0	2000.0	2.96E-01	O
186	Pd-109g	100.0	3000.0	4.41E-02	O
186	Pd-109m	100.0	1200.0	5.09E-02	O
186	Pd-110	100.0	1500.0	5.73E-02	O
186	Pd-111g	100.0	1000.0	9.42E-03	O
186	Pd-111m	100.0	1000.0	4.62E-03	O
186	Pd-112	100.0	900.0	6.53E-03	O
186	Pd-113g	100.0	900.0	1.26E-03	O
186	Pd-113m	100.0	900.0	1.26E-03	O
186	Pd-114	100.0	800.0	1.00E-03	O
186	Pd-115g	100.0	650.0	3.17E-04	O
186	Pd-115m	100.0	650.0	7.94E-05	O
186	Ag- 97	100.0	3000.0	2.81E-03	O
186	Ag- 98	100.0	3000.0	1.29E-02	O
186	Ag- 99g	100.0	3000.0	1.14E-01	O
186	Ag- 99m	100.0	3000.0	2.57E-03	O
186	Ag-100g	100.0	3000.0	2.39E-01	C
186	Ag-100m	100.0	3000.0	6.44E-02	C
186	Ag-101g	400.0	3000.0	1.60E+00	O
186	Ag-101m	100.0	3000.0	9.34E-02	O
186	Ag-102g	225.0	3000.0	2.47E+00	O
186	Ag-102m	100.0	3000.0	1.76E-01	O
186	Ag-103g	225.0	3000.0	3.09E+00	O
186	Ag-103m	100.0	3000.0	1.29E-01	O
186	Ag-104g	180.0	3000.0	2.64E+00	O
186	Ag-104m	100.0	3000.0	3.60E-01	O
186	Ag-105g	100.0	2500.0	2.74E-01	C
186	Ag-105m	140.0	3000.0	3.12E+00	C
186	Ag-106g	100.0	2500.0	3.22E-01	O
186	Ag-106m	100.0	3000.0	3.09E+00	I
186	Ag-107g	100.0	2500.0	1.29E-01	O
186	Ag-107m	100.0	2500.0	1.59E+00	O
186	Ag-108g	100.0	3000.0	8.49E-01	O
186	Ag-108m	100.0	2000.0	5.92E-01	O
186	Ag-109g	100.0	3000.0	3.74E-01	O
186	Ag-109m	100.0	3000.0	4.48E-01	O
186	Ag-110g	100.0	1500.0	2.05E-01	O
186	Ag-110m	100.0	2500.0	7.81E-01	I
186	Ag-111g	100.0	2000.0	6.08E-02	O
186	Ag-111m	100.0	2000.0	1.17E-01	O
186	Ag-112	100.0	3000.0	5.30E-02	O
186	Ag-113g	100.0	1200.0	1.03E-02	O
186	Ag-113m	100.0	1200.0	1.21E-02	O
186	Ag-114g	100.0	1000.0	5.49E-03	O
186	Ag-114m	100.0	1000.0	5.49E-03	O
186	Ag-115g	100.0	2000.0	3.44E-03	O
186	Ag-115m	100.0	3000.0	1.08E-03	O
186	Ag-118g	100.0	650.0	4.87E-05	O
186	Ag-118m	100.0	650.0	2.18E-04	O
186	Cd-100	100.0	3000.0	9.03E-03	C
186	Cd-101	100.0	3000.0	7.30E-02	O
186	Cd-102	100.0	3000.0	2.89E-01	O
186	Cd-103	275.0	3000.0	2.07E+00	O
186	Cd-104	300.0	3000.0	3.51E+00	O
186	Cd-105	275.0	3000.0	6.52E+00	C
186	Cd-106	225.0	3000.0	4.33E+00	O
186	Cd-107	200.0	3000.0	3.53E+00	O
186	Cd-108	180.0	3000.0	2.62E+00	O
186	Cd-109	160.0	3000.0	1.55E+00	O
186	Cd-110	100.0	2500.0	2.48E+00	O
186	Cd-111g	100.0	3000.0	2.43E-01	O
186	Cd-111m	100.0	2000.0	1.28E+00	O
186	Cd-112	100.0	2000.0	9.01E-01	O
186	Cd-113g	100.0	2000.0	1.77E-01	O
186	Cd-113m	100.0	2000.0	1.66E-01	O
186	Cd-114	100.0	3000.0	1.76E-01	O
186	Cd-115g	100.0	2000.0	3.82E-02	O
186	Cd-115m	100.0	2000.0	8.07E-03	O
186	Cd-116	100.0	2000.0	2.22E-02	O
186	Cd-117g	100.0	3000.0	3.80E-03	O
186	Cd-117m	100.0	3000.0	7.63E-03	O

186	Cd-118	100.0	3000.0	3.07E-03	O
186	Cd-119g	100.0	900.0	8.43E-04	O
186	Cd-119m	100.0	900.0	3.24E-04	O
186	In-101g	100.0	3000.0	7.15E-04	O
186	In-101m	100.0	3000.0	7.15E-04	O
186	In-103g	100.0	3000.0	2.25E-02	O
186	In-103m	100.0	3000.0	2.48E-04	O
186	In-104g	100.0	3000.0	1.56E-01	O
186	In-104m	100.0	3000.0	1.90E-02	O
186	In-105g	100.0	3000.0	4.95E-01	C
186	In-105m	100.0	3000.0	5.10E-01	C
186	In-106g	100.0	3000.0	3.16E-01	O
186	In-106m	400.0	3000.0	2.07E+00	O
186	In-107g	275.0	3000.0	3.66E+00	O
186	In-107m	100.0	3000.0	2.66E-01	O
186	In-108g	250.0	3000.0	2.31E+00	N
186	In-108m	250.0	3000.0	4.71E+00	N
186	In-109g	225.0	3000.0	4.17E+00	O
186	In-109m	100.0	3000.0	2.85E-01	O
186	In-109m2	100.0	3000.0	2.88E-03	O
186	In-110g	160.0	3000.0	5.31E+00	N
186	In-110m	160.0	3000.0	4.57E+00	N
186	In-111g	160.0	3000.0	2.15E+00	O
186	In-111m	100.0	2500.0	1.70E-01	O
186	In-112g	100.0	2500.0	3.95E-01	O
186	In-112m	100.0	3000.0	1.15E+00	O
186	In-113g	100.0	2500.0	1.00E+00	O
186	In-113m	100.0	2500.0	1.03E-01	O
186	In-114g	100.0	3000.0	4.21E-02	O
186	In-114m	100.0	2000.0	7.85E-01	O
186	In-114m2	100.0	2000.0	8.26E-04	O
186	In-115g	100.0	2000.0	2.82E-01	O
186	In-115m	100.0	2500.0	1.55E-01	O
186	In-116g	100.0	2500.0	8.47E-03	O
186	In-116m	100.0	2000.0	2.78E-02	O
186	In-116m2	100.0	2000.0	1.39E-01	O
186	In-117g	100.0	1500.0	5.54E-02	O
186	In-117m	100.0	3000.0	2.90E-02	O
186	In-118g	100.0	1500.0	2.34E-03	O
186	In-118m	100.0	1500.0	3.90E-03	O
186	In-118m2	100.0	1500.0	2.25E-02	O
186	In-119g	100.0	1000.0	1.09E-02	O
186	In-119m	100.0	2000.0	1.42E-03	O
186	In-120g	100.0	1000.0	1.73E-03	O
186	In-120m	100.0	1000.0	3.52E-03	O
186	In-120m2	100.0	1000.0	5.25E-06	O
186	Sn-104	100.0	3000.0	2.87E-03	O
186	Sn-105	100.0	3000.0	3.02E-02	C
186	Sn-106	100.0	3000.0	8.84E-02	O
186	Sn-107	100.0	3000.0	3.40E-01	O
186	Sn-108	400.0	3000.0	2.66E+00	O
186	Sn-109	275.0	3000.0	4.67E+00	O
186	Sn-110	275.0	3000.0	7.47E+00	O
186	Sn-111	200.0	3000.0	7.77E+00	O
186	Sn-112	200.0	3000.0	7.74E+00	O
186	Sn-113g	100.0	2500.0	3.39E-01	C
186	Sn-113m	160.0	3000.0	8.73E+00	C
186	Sn-114	120.0	3000.0	4.20E+00	O
186	Sn-115	110.0	3000.0	2.24E+00	O
186	Sn-116	120.0	3000.0	1.08E+00	O
186	Sn-117g	100.0	2000.0	1.36E-01	O
186	Sn-117m	100.0	3000.0	5.58E-01	O
186	Sn-118	100.0	2000.0	3.24E-01	O
186	Sn-119g	100.0	1500.0	7.33E-02	O
186	Sn-119m	100.0	1500.0	4.39E-02	O
186	Sn-120	100.0	1500.0	5.91E-02	O
186	Sn-121g	100.0	1500.0	1.48E-03	O
186	Sn-121m	100.0	1500.0	1.98E-02	O
186	Sn-122	100.0	1200.0	1.13E-02	O
186	Sn-124	100.0	900.0	1.50E-03	O
186	Sb-109	100.0	3000.0	1.87E-02	O
186	Sb-110	100.0	3000.0	5.23E-02	O
186	Sb-111	600.0	3000.0	1.75E+00	O
186	Sb-112	500.0	3000.0	3.02E+00	O
186	Sb-113	250.0	3000.0	8.10E+00	C
186	Sb-114	160.0	3000.0	5.99E+00	O
186	Sb-115	140.0	3000.0	5.19E+00	O
186	Sb-116g	160.0	3000.0	1.29E+00	O
186	Sb-116m	160.0	3000.0	2.72E+00	O
186	Sb-117	120.0	3000.0	2.44E+00	O
186	Sb-118g	100.0	2500.0	4.94E-01	N
186	Sb-118m	100.0	2500.0	1.29E+00	N
186	Sb-119g	100.0	2500.0	4.15E-01	O
186	Sb-119m	100.0	2500.0	4.15E-01	O
186	Sb-120g	100.0	2500.0	1.77E-01	N
186	Sb-120m	100.0	2600.0	2.10E-01	N
186	Sb-121	100.0	2500.0	1.84E-01	O
186	Sb-122g	100.0	2000.0	1.39E-02	O
186	Sb-122m	100.0	2000.0	4.07E-02	O
186	Sb-123	100.0	1200.0	3.72E-02	O
186	Sb-124g	100.0	2500.0	8.62E-01	N
186	Sb-124m	100.0	2500.0	7.04E-01	N
186	Sb-124m2	100.0	2500.0	1.17E+00	N
186	Sb-125	100.0	2000.0	2.27E-03	O
186	Sb-126g	100.0	900.0	1.40E-04	O
186	Sb-126m	100.0	900.0	6.26E-04	O
186	Sb-126m2	100.0	900.0	4.64E-04	O
186	Te-110	100.0	3000.0	1.48E-03	O
186	Te-111	100.0	3000.0	1.87E-03	O
186	Te-112	100.0	3000.0	3.32E-02	O
186	Te-113	100.0	3000.0	4.28E-01	C
186	Te-114	350.0	3000.0	1.97E+00	O
186	Te-115g	300.0	3000.0	4.12E+00	O
186	Te-115m	100.0	3000.0	7.96E-02	O
186	Te-116	225.0	3000.0	5.77E+00	O
186	Te-117g	180.0	3000.0	3.01E+00	O
186	Te-117m	180.0	3000.0	3.01E+00	O
186	Te-118	160.0	3000.0	5.37E+00	O
186	Te-119g	100.0	2000.0	1.02E+00	C
186	Te-119m	200.0	3000.0	4.02E+00	C
186	Te-120	160.0	3000.0	2.03E+00	O
186	Te-121g	100.0	2000.0	1.85E-01	C
186	Te-121m	100.0	2500.0	7.81E-01	I
186	Te-122	100.0	2000.0	7.44E-01	O
186	Te-123g	100.0	2500.0	1.40E-01	O
186	Te-123m	100.0	2500.0	1.50E-01	O
186	Te-124	100.0	2000.0	1.69E-01	O
186	Te-125g	100.0	2000.0	2.42E-02	O
186	Te-125m	100.0	2000.0	2.92E-02	O
186	Te-126	100.0	2500.0	2.59E-02	O
186	Te-127g	100.0	3000.0	4.90E-03	O
186	Te-127m	100.0	3000.0	8.28E-03	O
186	I -113	100.0	2500.0	2.73E-03	C
186	I -114g	100.0	3000.0	1.71E-02	O
186	I -114m	100.0	3000.0	3.07E-03	O
186	I -115	100.0	3000.0	1.65E-01	O

186	I -116	550.0	3000.0	1.68E+00	O
186	I -117	300.0	3000.0	3.66E+00	O
186	I -118g	350.0	3000.0	2.49E+00	O
186	I -118m	350.0	3000.0	2.49E+00	O
186	I -119	275.0	3000.0	9.24E+00	C
186	I -120g	225.0	3000.0	8.85E+00	N
186	I -120m	225.0	3000.0	2.67E+00	N
186	I -121	225.0	3000.0	5.60E+00	C
186	I -122	110.0	3000.0	2.46E+00	O
186	I -123	200.0	3000.0	1.40E+00	O
186	I -124	100.0	2000.0	1.15E+00	O
186	I -125	100.0	2000.0	7.73E-01	O
186	I -126	100.0	2500.0	1.86E-01	I
186	I -127	100.0	2000.0	1.65E-01	O
186	I -128	100.0	2500.0	6.81E-02	O
186	I -129	100.0	1000.0	1.83E-02	O
186	I -131	100.0	2500.0	8.59E-04	O
186	Xe-116	100.0	3000.0	3.89E-02	O
186	Xe-117	100.0	3000.0	9.35E-02	O
186	Xe-118	350.0	3000.0	2.05E+00	O
186	Xe-119	350.0	3000.0	5.69E+00	C
186	Xe-120	275.0	3000.0	6.39E+00	O
186	Xe-121	250.0	3000.0	1.00E+01	C
186	Xe-122	225.0	3000.0	6.80E+00	O
186	Xe-123	200.0	3000.0	8.46E+00	C
186	Xe-124	120.0	3000.0	3.64E+00	O
186	Xe-125g	100.0	2500.0	9.90E-01	C
186	Xe-125m	140.0	3000.0	1.46E+00	C
186	Xe-126	140.0	3000.0	1.06E+00	O
186	Xe-127g	100.0	2000.0	1.70E-01	C
186	Xe-127m	100.0	2000.0	4.28E-01	C
186	Xe-128	100.0	2500.0	2.12E-01	O
186	Xe-129g	100.0	2000.0	3.72E-02	O
186	Xe-129m	100.0	2000.0	2.87E-02	O
186	Xe-130	100.0	2500.0	3.12E-02	O
186	Xe-131g	100.0	2000.0	6.83E-03	O
186	Xe-131m	100.0	2000.0	7.15E-03	O
186	Xe-132g	100.0	3000.0	1.74E-03	O
186	Xe-132m	100.0	3000.0	1.74E-03	O
186	Cs-117g	100.0	2500.0	2.45E-03	O
186	Cs-117m	100.0	2500.0	4.78E-04	O
186	Cs-118g	100.0	3000.0	6.69E-03	O
186	Cs-118m	100.0	3000.0	6.69E-03	O
186	Cs-119g	100.0	3000.0	7.78E-02	C
186	Cs-119m	100.0	3000.0	7.78E-02	C
186	Cs-120g	100.0	2500.0	2.27E-01	O
186	Cs-120m	100.0	2500.0	2.27E-01	O
186	Cs-121g	100.0	2500.0	5.32E-01	C
186	Cs-121m	700.0	3000.0	2.68E+00	C
186	Cs-122g	400.0	3000.0	1.64E+00	O
186	Cs-122m	400.0	3000.0	3.61E+00	O
186	Cs-122m2	100.0	2500.0	2.74E-03	O
186	Cs-123g	225.0	3000.0	5.66E+00	C
186	Cs-123m	225.0	3000.0	4.55E+00	C
186	Cs-124g	350.0	3000.0	3.59E+00	O
186	Cs-124m	350.0	3000.0	3.59E+00	O
186	Cs-125g	350.0	3000.0	3.73E+00	C
186	Cs-125m	350.0	3000.0	3.73E+00	C
186	Cs-126	180.0	3000.0	4.22E+00	O
186	Cs-127	300.0	3000.0	2.91E+00	C
186	Cs-128	300.0	3000.0	1.42E+00	O
186	Cs-129	100.0	2000.0	8.28E-01	C
186	Cs-130g	100.0	2500.0	1.56E-01	O
186	Cs-130m	100.0	2500.0	9.74E-02	O
186	Cs-131	100.0	2000.0	1.20E-01	O
186	Cs-132	100.0	1500.0	4.83E-02	O
186	Cs-133	100.0	1500.0	1.86E-02	O
186	Cs-134g	100.0	900.0	3.12E-03	O
186	Cs-134m	100.0	900.0	6.93E-03	O
186	Ba-120	100.0	3000.0	1.15E-02	O
186	Ba-121	100.0	3000.0	7.30E-02	C
186	Ba-122	100.0	3000.0	3.44E-01	O
186	Ba-123	600.0	3000.0	4.06E+00	C
186	Ba-124	275.0	3000.0	5.24E+00	O
186	Ba-125	400.0	3000.0	8.47E+00	C
186	Ba-126	225.0	3000.0	8.24E+00	O
186	Ba-127g	350.0	3000.0	5.03E+00	C
186	Ba-127m	350.0	3000.0	3.89E+00	C
186	Ba-128	200.0	3000.0	6.97E+00	C
186	Ba-129g	100.0	2000.0	9.53E-01	C
186	Ba-129m	160.0	3000.0	3.78E+00	C
186	Ba-130g	180.0	3000.0	1.04E+00	O
186	Ba-130m	180.0	3000.0	1.04E+00	O
186	Ba-131g	100.0	2000.0	3.23E-01	C
186	Ba-131m	100.0	2000.0	1.22E+00	C
186	Ba-132	100.0	2000.0	7.60E-01	O
186	Ba-133g	100.0	2500.0	2.11E-01	C
186	Ba-133m	100.0	2500.0	9.04E-02	C
186	Ba-134	100.0	2000.0	1.34E-01	O
186	Ba-135g	100.0	2500.0	4.54E-03	O
186	Ba-135m	100.0	2500.0	4.81E-02	O
186	Ba-138	100.0	2500.0	2.09E-03	O
186	Ba-139	10.0	2500.0	1.26E-03	O
186	Ba-140	10.0	900.0	3.90E-03	I
186	La-122	100.0	3000.0	1.46E-03	O
186	La-123	100.0	3000.0	5.13E-02	C
186	La-124g	100.0	3000.0	7.34E-02	O
186	La-124m	100.0	3000.0	7.34E-02	O
186	La-125g	100.0	3000.0	4.24E-01	C
186	La-125m	100.0	3000.0	4.24E-01	C
186	La-126g	600.0	3000.0	1.79E+00	O
186	La-126m	600.0	3000.0	1.79E+00	O
186	La-127g	700.0	3000.0	5.50E+00	C
186	La-127m	700.0	3000.0	1.84E+00	C
186	La-128g	300.0	3000.0	4.25E+00	C
186	La-128m	300.0	3000.0	4.25E+00	C
186	La-129g	500.0	3000.0	4.60E+00	C
186	La-129m	500.0	3000.0	4.60E+00	C
186	La-130	180.0	2000.0	5.82E+00	N
186	La-131	550.0	3000.0	4.40E+00	C
186	La-132g	600.0	3000.0	1.26E+00	C
186	La-132m	600.0	3000.0	1.21E+00	C
186	La-133	500.0	3000.0	1.20E+00	C
186	La-134	100.0	2000.0	8.83E-01	O
186	La-135	100.0	2000.0	4.45E-01	O
186	La-136g	100.0	2000.0	8.97E-02	O
186	La-136m	100.0	2000.0	8.97E-02	O
186	La-137	100.0	1000.0	7.80E-02	O
186	La-138	100.0	2000.0	2.19E-02	O
186	La-139	100.0	2500.0	8.07E-03	O
186	Ce-124	100.0	3000.0	1.44E-03	O
186	Ce-125	100.0	2500.0	1.57E-02	C
186	Ce-126	100.0	2500.0	1.05E-01	O
186	Ce-127g	100.0	2500.0	2.98E-01	C
186	Ce-127m	100.0	2500.0	2.98E-01	C
186	Ce-128	700.0	3000.0	4.07E+00	C

186	Ce-129	700.0	3000.0	6.29E+00	C
186	Ce-130	650.0	3000.0	9.06E+00	O
186	Ce-131g	600.0	3000.0	4.55E+00	C
186	Ce-131m	600.0	3000.0	4.55E+00	C
186	Ce-132g	500.0	3000.0	4.07E+00	C
186	Ce-132m	500.0	3000.0	4.07E+00	C
186	Ce-133g	600.0	3000.0	1.10E+00	C
186	Ce-133m	600.0	3000.0	4.88E+00	I
186	Ce-134	550.0	3000.0	3.69E+00	C
186	Ce-135g	600.0	2000.0	1.69E+00	C
186	Ce-135m	100.0	2000.0	3.28E-01	C
186	Ce-136	100.0	2000.0	1.37E+00	O
186	Ce-137g	100.0	2000.0	5.32E-02	O
186	Ce-137m	100.0	2000.0	5.81E-01	O
186	Ce-138g	100.0	2000.0	1.58E-01	O
186	Ce-138m	100.0	2000.0	1.58E-01	O
186	Ce-139g	100.0	2500.0	6.51E-02	C
186	Ce-139m	100.0	2500.0	4.99E-02	C
186	Ce-140	100.0	3000.0	5.46E-02	O
186	Pr-125	110.0	3000.0	1.87E-03	C
186	Pr-127g	100.0	2000.0	4.57E-03	C
186	Pr-127m	100.0	2000.0	4.57E-03	C
186	Pr-128	100.0	2500.0	5.48E-02	C
186	Pr-129g	100.0	2500.0	2.09E-01	C
186	Pr-129m	100.0	2500.0	2.09E-01	C
186	Pr-130g	100.0	3000.0	3.58E-01	O
186	Pr-130m	100.0	3000.0	3.58E-01	O
186	Pr-131g	650.0	3000.0	1.13E+00	C
186	Pr-131m	650.0	3000.0	3.85E+00	C
186	Pr-132g	650.0	3000.0	3.41E+00	C
186	Pr-132m	650.0	3000.0	3.41E+00	C
186	Pr-133	600.0	3000.0	8.00E+00	C
186	Pr-134g	500.0	3000.0	4.11E+00	C
186	Pr-134m	500.0	3000.0	4.11E+00	C
186	Pr-135	600.0	2000.0	7.01E+00	C
186	Pr-136	550.0	1600.0	8.14E+00	N
186	Pr-137	550.0	2000.0	2.27E+00	O
186	Pr-138g	100.0	2500.0	5.75E-01	O
186	Pr-138m	100.0	2500.0	7.06E-01	O
186	Pr-139	100.0	2500.0	6.15E-01	C
186	Pr-140	100.0	2500.0	3.09E-01	O
186	Pr-141	100.0	2500.0	1.33E-01	O
186	Pr-142g	100.0	2500.0	1.11E-02	O
186	Pr-142m	100.0	2500.0	3.57E-02	O
186	Pr-143	100.0	2000.0	2.26E-02	O
186	Nd-129	110.0	1600.0	2.62E-02	C
186	Nd-130	100.0	1500.0	1.35E-01	O
186	Nd-131	100.0	2000.0	4.99E-01	C
186	Nd-132	600.0	3000.0	1.87E+00	C
186	Nd-133g	600.0	3000.0	2.47E+00	C
186	Nd-133m	600.0	3000.0	1.51E+00	C
186	Nd-134	550.0	3000.0	7.20E+00	C
186	Nd-135g	550.0	2000.0	7.21E+00	C
186	Nd-135m	550.0	2000.0	1.70E+00	C
186	Nd-136	500.0	2000.0	1.00E+01	C
186	Nd-137g	450.0	2000.0	7.07E+00	C
186	Nd-137m	450.0	2000.0	6.01E+00	C
186	Nd-138	500.0	2000.0	5.42E+00	O
186	Nd-139g	100.0	2000.0	9.63E-01	C
186	Nd-139m	450.0	2000.0	3.89E+00	I
186	Nd-140	500.0	2000.0	1.58E+00	O
186	Nd-141g	100.0	1000.0	1.40E+00	O
186	Nd-141m	100.0	1000.0	1.13E+00	O
186	Nd-142	100.0	1000.0	1.36E+00	O
186	Nd-143	100.0	2500.0	5.14E-01	O
186	Nd-144	100.0	2500.0	2.41E-01	O
186	Nd-145	100.0	2500.0	1.12E-01	O
186	Nd-146	100.0	2500.0	4.26E-02	O
186	Nd-148	100.0	3000.0	1.21E-02	O
186	Pm-131	120.0	3000.0	1.61E-03	C
186	Pm-132	110.0	3000.0	7.43E-03	C
186	Pm-133g	100.0	3000.0	3.80E-02	C
186	Pm-133m	100.0	3000.0	3.80E-02	C
186	Pm-134g	100.0	2500.0	7.52E-02	C
186	Pm-134m	100.0	2500.0	7.52E-02	C
186	Pm-135g	600.0	2000.0	1.26E+00	C
186	Pm-135m	600.0	2000.0	1.26E+00	C
186	Pm-136g	600.0	2000.0	2.15E+00	C
186	Pm-136m	600.0	2000.0	2.15E+00	C
186	Pm-137g	500.0	2000.0	4.99E+00	C
186	Pm-137m	500.0	2000.0	4.99E+00	C
186	Pm-138g	400.0	2000.0	3.67E+00	O
186	Pm-138m	400.0	2000.0	4.10E+00	O
186	Pm-139g	450.0	2000.0	4.41E+00	C
186	Pm-139m	450.0	2000.0	4.41E+00	C
186	Pm-140g	500.0	2000.0	3.33E+00	N
186	Pm-140m	500.0	1600.0	6.72E+00	N
186	Pm-141	450.0	2000.0	3.67E+00	O
186	Pm-142g	100.0	1200.0	2.89E+00	O
186	Pm-142m	100.0	1200.0	2.89E+00	O
186	Pm-143	100.0	2500.0	3.54E+00	C
186	Pm-144	100.0	3000.0	1.26E+00	I
186	Pm-145	100.0	1000.0	1.08E+00	O
186	Pm-146	100.0	3000.0	4.29E-01	O
186	Pm-147	100.0	2500.0	2.11E-01	O
186	Pm-148g	100.0	1000.0	7.60E-02	O
186	Pm-148m	100.0	1200.0	3.25E-02	I
186	Pm-149	100.0	3000.0	4.50E-02	O
186	Pm-150	100.0	1200.0	2.66E-02	O
186	Pm-154g	100.0	1200.0	1.12E-03	O
186	Pm-154m	100.0	1200.0	1.12E-03	O
186	Pm-155	100.0	1200.0	9.73E-04	O
186	Sm-133	140.0	3000.0	1.47E-03	C
186	Sm-134	120.0	2500.0	1.69E-02	C
186	Sm-135g	110.0	2500.0	3.32E-02	C
186	Sm-135m	110.0	2500.0	3.32E-02	C
186	Sm-136	550.0	2000.0	1.04E+00	C
186	Sm-137g	500.0	2000.0	2.34E+00	C
186	Sm-137m	500.0	2000.0	2.34E+00	C
186	Sm-138	500.0	2000.0	5.45E+00	O
186	Sm-139g	500.0	2000.0	3.92E+00	C
186	Sm-139m	500.0	2000.0	4.18E+00	C
186	Sm-140	500.0	2000.0	1.15E+01	O
186	Sm-141g	450.0	2000.0	1.09E+00	O
186	Sm-141m	450.0	2000.0	1.02E+01	O
186	Sm-142	400.0	2000.0	9.59E+00	O
186	Sm-143g	400.0	2000.0	3.12E+00	C
186	Sm-143m	400.0	2000.0	1.52E+00	C
186	Sm-143m2	100.0	2500.0	5.42E-03	C
186	Sm-144	400.0	2000.0	2.39E+00	O
186	Sm-145	100.0	1000.0	3.09E+00	O
186	Sm-146	100.0	1200.0	1.93E+00	O
186	Sm-147	100.0	1000.0	8.62E-01	O
186	Sm-148	100.0	1200.0	4.11E-01	O
186	Sm-149	100.0	1200.0	1.85E-01	O
186	Sm-150	100.0	1000.0	7.88E-02	O

186	Sm-151	100.0	1200.0	3.18E-02	O
186	Sm-152	100.0	1200.0	1.63E-02	O
186	Sm-153g	100.0	1200.0	4.61E-03	O
186	Sm-153m	100.0	1200.0	4.61E-03	O
186	Sm-155	100.0	1200.0	3.57E-03	O
186	Sm-156	100.0	750.0	3.59E-02	C
186	Sm-157	100.0	1200.0	6.82E-04	O
186	Sm-158	100.0	1200.0	2.92E-04	O
186	Eu-136g	140.0	2000.0	2.02E-03	C
186	Eu-136m	140.0	2000.0	2.02E-03	C
186	Eu-137	120.0	2000.0	2.15E-02	C
186	Eu-138	110.0	2000.0	1.14E-01	O
186	Eu-139	550.0	2000.0	1.49E+00	C
186	Eu-140g	500.0	2000.0	1.41E+00	O
186	Eu-140m	500.0	2000.0	1.41E+00	O
186	Eu-141g	500.0	2000.0	1.56E+00	O
186	Eu-141m	500.0	2000.0	4.46E+00	O
186	Eu-142g	450.0	2000.0	4.97E+00	O
186	Eu-142m	450.0	2000.0	4.97E+00	O
186	Eu-143	400.0	2000.0	1.05E+01	C
186	Eu-144	400.0	2000.0	1.07E+01	O
186	Eu-145	400.0	1500.0	4.25E+00	C
186	Eu-146	400.0	1600.0	1.07E+01	I
186	Eu-147	400.0	2000.0	1.36E+00	C
186	Eu-148	100.0	3000.0	9.87E-01	I
186	Eu-149	100.0	1600.0	1.47E+00	C
186	Eu-150g	100.0	1200.0	2.44E-01	O
186	Eu-150m	100.0	1200.0	3.12E-01	O
186	Eu-151	100.0	1000.0	3.15E-01	O
186	Eu-152g	100.0	1200.0	7.26E-02	O
186	Eu-152m	100.0	1200.0	4.22E-02	O
186	Eu-152m2	100.0	1200.0	1.15E-04	O
186	Eu-153	100.0	1500.0	5.16E-02	O
186	Eu-154g	100.0	1200.0	9.59E-03	O
186	Eu-154m	100.0	1200.0	9.59E-03	O
186	Eu-155	100.0	1200.0	9.23E-03	O
186	Eu-156	100.0	750.0	9.08E-02	C
186	Eu-157	100.0	1200.0	3.62E-03	O
186	Eu-158	100.0	1200.0	1.60E-03	O
186	Eu-159	100.0	1200.0	7.00E-04	O
186	Eu-162	100.0	1200.0	5.42E-05	O
186	Gd-138	160.0	2500.0	4.41E-04	O
186	Gd-139g	150.0	3000.0	1.42E-03	C
186	Gd-139m	150.0	3000.0	1.42E-03	C
186	Gd-140	130.0	3000.0	1.28E-01	O
186	Gd-141g	120.0	2000.0	1.57E-01	O
186	Gd-141m	120.0	2000.0	1.52E-01	O
186	Gd-142	500.0	2000.0	2.95E+00	O
186	Gd-143g	450.0	2000.0	2.62E+00	C
186	Gd-143m	450.0	2000.0	2.43E+00	C
186	Gd-144	450.0	1500.0	9.18E+00	O
186	Gd-145g	400.0	1500.0	7.13E+00	C
186	Gd-145m	400.0	1500.0	3.88E+00	C
186	Gd-146	350.0	1500.0	9.59E+00	C
186	Gd-147	350.0	1500.0	6.28E+00	C
186	Gd-148	300.0	1500.0	1.18E+01	N
186	Gd-149	350.0	1600.0	4.12E+00	C
186	Gd-150	350.0	1500.0	1.50E+00	O
186	Gd-151	100.0	1200.0	1.97E+00	C
186	Gd-152	100.0	1000.0	1.15E+00	O
186	Gd-153	100.0	1200.0	5.49E-01	C
186	Gd-154	100.0	1200.0	2.65E-01	O
186	Gd-155g	100.0	1200.0	5.11E-02	O
186	Gd-155m	100.0	1200.0	5.11E-02	O
186	Gd-156	100.0	1200.0	5.29E-02	O
186	Gd-157	100.0	1200.0	2.10E-02	O
186	Gd-159	100.0	1200.0	9.88E-03	O
186	Gd-160	100.0	1200.0	4.50E-03	O
186	Gd-161	100.0	1200.0	2.01E-03	O
186	Gd-162	100.0	1200.0	8.89E-04	O
186	Tb-141g	160.0	1500.0	8.78E-04	O
186	Tb-141m	160.0	1500.0	8.78E-04	O
186	Tb-142g	150.0	2000.0	6.20E-03	O
186	Tb-142m	150.0	2000.0	6.20E-03	O
186	Tb-143g	130.0	2000.0	6.29E-02	C
186	Tb-143m	130.0	2000.0	6.29E-02	C
186	Tb-144g	120.0	2000.0	5.73E-02	O
186	Tb-144m	500.0	2000.0	1.84E+00	O
186	Tb-145g	450.0	2000.0	1.73E+00	C
186	Tb-145m	450.0	2000.0	1.73E+00	C
186	Tb-146g	400.0	1500.0	2.67E+00	C
186	Tb-146m	400.0	1500.0	2.67E+00	C
186	Tb-146m2	400.0	1500.0	2.67E+00	C
186	Tb-147g	350.0	1500.0	4.59E+00	C
186	Tb-147m	350.0	1500.0	5.68E+00	C
186	Tb-148g	350.0	1500.0	1.24E+00	N
186	Tb-148m	350.0	1500.0	5.74E+00	N
186	Tb-149g	100.0	1200.0	5.68E-01	C
186	Tb-149m	300.0	1600.0	9.52E+00	C
186	Tb-150g	100.0	1200.0	3.43E-01	O
186	Tb-150m	300.0	1500.0	5.57E+00	O
186	Tb-151g	275.0	1500.0	2.35E+00	C
186	Tb-151m	275.0	1500.0	1.81E+00	C
186	Tb-152g	100.0	1200.0	9.22E-01	C
186	Tb-152m	350.0	1600.0	2.81E+00	C
186	Tb-153	300.0	1500.0	1.81E+00	C
186	Tb-154g	100.0	1200.0	7.52E-01	O
186	Tb-154m	100.0	1200.0	7.52E-01	O
186	Tb-154m2	100.0	1200.0	7.52E-01	O
186	Tb-155	100.0	275.0	4.12E+00	C
186	Tb-156g	100.0	2000.0	3.46E-01	I
186	Tb-156m	100.0	2000.0	3.34E-02	I
186	Tb-156m2	100.0	2000.0	3.79E-04	I
186	Tb-157	100.0	1200.0	3.24E-01	O
186	Tb-158g	100.0	1200.0	1.38E-01	O
186	Tb-158m	100.0	1200.0	1.51E-02	O
186	Tb-159	100.0	1200.0	7.92E-02	O
186	Tb-160	100.0	1200.0	4.23E-02	O
186	Tb-161	550.0	1500.0	3.33E-03	O
186	Tb-162	3000.0	3000.0	2.86E-03	O
186	Tb-163	1200.0	1200.0	2.11E-03	O
186	Tb-164	100.0	1200.0	3.97E-03	O
186	Tb-166	100.0	1200.0	7.94E-04	O
186	Dy-143g	180.0	3000.0	6.66E-04	C
186	Dy-143m	180.0	3000.0	6.66E-04	C
186	Dy-144	160.0	1500.0	1.54E-02	O
186	Dy-145g	150.0	2000.0	1.64E-02	C
186	Dy-145m	150.0	2000.0	1.12E-01	C
186	Dy-146g	130.0	1500.0	2.58E-01	C
186	Dy-146m	130.0	1500.0	2.58E-01	C
186	Dy-147g	400.0	1500.0	4.82E+00	C
186	Dy-147m	400.0	1500.0	1.83E+00	C
186	Dy-148	350.0	1500.0	6.00E+00	N
186	Dy-149g	350.0	1200.0	5.17E+00	C
186	Dy-149m	350.0	1200.0	5.17E+00	C
186	Dy-150	300.0	1200.0	1.07E+01	C

186	Dy-151	300.0	1500.0	1.22E+01	C
186	Dy-152	300.0	1600.0	1.07E+01	C
186	Dy-153	275.0	1200.0	7.42E+00	C
186	Dy-154	275.0	1200.0	4.63E+00	O
186	Dy-155	250.0	1200.0	2.99E+00	C
186	Dy-156	275.0	1200.0	1.74E+00	O
186	Dy-157g	220.0	1500.0	4.76E-01	C
186	Dy-157m	220.0	1500.0	4.76E-01	C
186	Dy-158	200.0	1500.0	4.05E-01	O
186	Dy-159	100.0	1200.0	5.94E-01	O
186	Dy-160	100.0	1200.0	3.04E-01	O
186	Dy-161	100.0	1200.0	1.39E-01	O
186	Dy-162	100.0	1200.0	6.85E-02	O
186	Dy-163	450.0	3000.0	1.98E-02	O
186	Dy-164	600.0	800.0	1.38E-03	O
186	Dy-165g	500.0	3000.0	1.89E-03	O
186	Dy-165m	500.0	3000.0	9.69E-04	O
186	Dy-166	750.0	2000.0	1.57E-15	O
186	Dy-167	100.0	1200.0	1.38E-03	O
186	Dy-170	100.0	1200.0	3.72E-04	O
186	Ho-144	220.0	750.0	3.26E-06	O
186	Ho-145g	200.0	1000.0	6.59E-06	C
186	Ho-145m	200.0	1000.0	6.59E-06	C
186	Ho-146	180.0	3000.0	3.93E-03	C
186	Ho-147	160.0	1500.0	2.83E-02	C
186	Ho-148g	400.0	1500.0	1.43E-01	N
186	Ho-148m	400.0	1500.0	1.43E-01	N
186	Ho-148m2	400.0	1500.0	1.43E-01	N
186	Ho-149g	350.0	1200.0	2.56E+00	C
186	Ho-149m	350.0	1200.0	1.05E+00	C
186	Ho-150g	120.0	1200.0	2.84E-01	C
186	Ho-150m	350.0	1200.0	4.43E+00	C
186	Ho-151g	350.0	1200.0	4.66E+00	C
186	Ho-151m	350.0	1200.0	2.26E+00	C
186	Ho-152g	240.0	1200.0	1.19E-01	N
186	Ho-152m	300.0	1200.0	5.52E+00	N
186	Ho-153g	275.0	1200.0	8.00E+00	C
186	Ho-153m	275.0	1200.0	5.82E+00	C
186	Ho-154g	275.0	1200.0	5.39E+00	O
186	Ho-154m	275.0	1200.0	5.39E+00	O
186	Ho-155	250.0	1200.0	9.91E+00	C
186	Ho-156g	100.0	1100.0	2.21E+00	C
186	Ho-156m	200.0	1100.0	1.31E+01	C
186	Ho-156m2	100.0	1100.0	1.82E-02	C
186	Ho-157	225.0	1000.0	5.03E+00	C
186	Ho-158g	225.0	1200.0	1.03E+00	O
186	Ho-158m	225.0	1200.0	9.34E-01	O
186	Ho-158m2	225.0	1200.0	1.13E+00	O
186	Ho-159g	200.0	1000.0	1.60E+00	C
186	Ho-159m	200.0	1000.0	4.13E-01	C
186	Ho-160g	200.0	1200.0	8.52E+00	N
186	Ho-160m	200.0	1000.0	7.54E-02	C
186	Ho-160m2	200.0	1200.0	9.16E-03	N
186	Ho-161g	200.0	1500.0	3.52E-01	O
186	Ho-161m	200.0	1200.0	1.05E-01	O
186	Ho-162g	200.0	1500.0	7.46E-02	O
186	Ho-162m	200.0	3000.0	1.69E-01	O
186	Ho-163g	225.0	2000.0	9.32E-02	O
186	Ho-163m	225.0	2000.0	1.70E-02	O
186	Ho-164g	250.0	3000.0	3.64E-02	O
186	Ho-164m	250.0	3000.0	2.61E-02	O
186	Ho-165	300.0	3000.0	3.69E-02	O
186	Ho-166g	300.0	2000.0	7.94E-03	O
186	Ho-166m	300.0	3000.0	1.20E-02	O
186	Ho-167	500.0	1500.0	9.22E-03	O
186	Ho-168g	800.0	3000.0	5.85E-03	O
186	Ho-168m	700.0	3000.0	2.63E-03	O
186	Ho-169	100.0	650.0	3.32E-03	O
186	Ho-170g	70.0	3000.0	1.38E-03	O
186	Ho-170m	70.0	3000.0	1.48E-03	O
186	Ho-171	10.0	1200.0	2.00E-03	O
186	Er-147g	220.0	3000.0	6.97E-04	C
186	Er-147m	220.0	3000.0	6.97E-04	C
186	Er-148	200.0	1500.0	1.33E-02	O
186	Er-149g	200.0	2000.0	9.22E-03	C
186	Er-149m	200.0	2000.0	2.79E-02	C
186	Er-150	350.0	1200.0	1.91E+00	C
186	Er-151g	350.0	1200.0	1.77E+00	C
186	Er-151m	350.0	1200.0	1.77E+00	C
186	Er-152	300.0	1200.0	2.82E+00	N
186	Er-153	300.0	1600.0	1.25E+01	C
186	Er-154	275.0	1200.0	1.25E+01	O
186	Er-155	250.0	1000.0	1.43E+01	C
186	Er-156	225.0	1100.0	2.89E+01	C
186	Er-157g	250.0	1000.0	6.48E+00	C
186	Er-157m	250.0	1000.0	6.48E+00	C
186	Er-158	225.0	1000.0	1.06E+01	O
186	Er-159	180.0	900.0	8.75E+00	C
186	Er-160	200.0	1000.0	5.88E+00	C
186	Er-161	180.0	1000.0	3.23E+00	C
186	Er-162	160.0	1000.0	1.90E+00	O
186	Er-163	180.0	1200.0	1.04E+00	O
186	Er-164	150.0	1500.0	6.10E-01	O
186	Er-165	140.0	1500.0	3.10E-01	O
186	Er-166	130.0	3000.0	2.13E-01	O
186	Er-167g	120.0	3000.0	8.97E-02	O
186	Er-167m	120.0	3000.0	3.03E-02	O
186	Er-168	120.0	3000.0	8.81E-02	O
186	Er-169	120.0	3000.0	4.24E-02	O
186	Er-170	120.0	2000.0	2.24E-02	O
186	Er-171	100.0	1200.0	9.35E-03	O
186	Er-172	100.0	3000.0	1.05E-02	O
186	Er-173	100.0	800.0	2.05E-03	O
186	Er-174	70.0	3000.0	8.48E-03	O
186	Er-175	100.0	3000.0	9.97E-04	O
186	Er-177	100.0	1000.0	1.85E-04	O
186	Tm-149	220.0	800.0	1.21E-04	C
186	Tm-150g	200.0	1500.0	4.94E-04	C
186	Tm-150m	200.0	1500.0	4.94E-04	C
186	Tm-150m2	200.0	1500.0	4.94E-04	C
186	Tm-151g	200.0	1500.0	4.51E-02	C
186	Tm-151m	200.0	1500.0	4.51E-02	C
186	Tm-152g	180.0	1200.0	1.63E-01	O
186	Tm-152m	180.0	1200.0	1.63E-01	O
186	Tm-153g	300.0	1200.0	1.02E+00	C
186	Tm-153m	180.0	1200.0	2.64E-01	C
186	Tm-154g	300.0	1000.0	1.77E+00	C
186	Tm-154m	300.0	1000.0	1.77E+00	C
186	Tm-155g	275.0	1000.0	5.79E+00	C
186	Tm-155m	140.0	1000.0	2.01E-01	C
186	Tm-156	275.0	1100.0	1.89E+01	C
186	Tm-157	250.0	1000.0	1.38E+01	C
186	Tm-158	250.0	900.0	1.40E+01	O
186	Tm-159	225.0	900.0	1.78E+01	C
186	Tm-160g	200.0	800.0	1.29E+01	C
186	Tm-160m	200.0	800.0	1.99E+00	C

186	Tm-161g	180.0	900.0	5.58E+00	C
186	Tm-161m	180.0	900.0	5.58E+00	C
186	Tm-162g	180.0	650.0	1.60E+01	N
186	Tm-162m	180.0	650.0	1.60E+01	N
186	Tm-163	160.0	800.0	6.66E+00	C
186	Tm-164g	160.0	900.0	2.06E+00	O
186	Tm-164m	160.0	900.0	2.06E+00	O
186	Tm-165	150.0	900.0	2.79E+00	C
186	Tm-166g	130.0	800.0	3.34E+00	I
186	Tm-166m	130.0	800.0	3.34E+00	I
186	Tm-167	120.0	1000.0	1.01E+00	C
186	Tm-168	120.0	1600.0	1.42E+00	I
186	Tm-169	95.0	2000.0	3.50E-01	O
186	Tm-170	85.0	3000.0	2.68E-01	O
186	Tm-171	75.0	3000.0	2.05E-01	O
186	Tm-172	70.0	2000.0	1.14E-01	O
186	Tm-173	70.0	3000.0	6.83E-02	O
186	Tm-174	40.0	3000.0	5.13E-02	O
186	Tm-175	40.0	1500.0	2.23E-02	O
186	Tm-176	100.0	3000.0	8.98E-03	O
186	Tm-177	100.0	2500.0	1.04E-02	O
186	Tm-178	100.0	750.0	5.56E-03	O
186	Tm-179	100.0	140.0	2.36E-04	O
186	Tm-180	100.0	2000.0	4.01E-04	O
186	Tm-181	100.0	3000.0	3.38E-03	C
186	Yb-151g	220.0	900.0	2.51E-05	C
186	Yb-151m	220.0	900.0	2.51E-05	C
186	Yb-152	220.0	1000.0	4.52E-02	O
186	Yb-153	200.0	1000.0	9.64E-02	C
186	Yb-154	200.0	1200.0	3.65E-01	C
186	Yb-155	350.0	1000.0	1.57E+00	C
186	Yb-156	275.0	1100.0	1.66E+00	N
186	Yb-157	250.0	1000.0	6.62E+00	C
186	Yb-158	250.0	900.0	1.01E+01	O
186	Yb-159	250.0	800.0	1.52E+01	C
186	Yb-160	225.0	800.0	1.87E+01	C
186	Yb-161	200.0	800.0	1.81E+01	C
186	Yb-162	200.0	750.0	1.54E+01	C
186	Yb-163	180.0	750.0	1.70E+01	C
186	Yb-164	160.0	750.0	1.35E+01	O
186	Yb-165	160.0	750.0	1.07E+01	C
186	Yb-166	140.0	750.0	7.69E+00	O
186	Yb-167	130.0	900.0	5.24E+00	C
186	Yb-168	120.0	800.0	3.73E+00	O
186	Yb-169g	110.0	275.0	7.65E+00	C
186	Yb-169m	110.0	275.0	5.87E+00	C
186	Yb-170	95.0	250.0	1.64E+01	O
186	Yb-171g	90.0	275.0	4.41E+00	O
186	Yb-171m	90.0	275.0	4.41E+00	O
186	Yb-172	85.0	250.0	1.26E+00	O
186	Yb-173	75.0	1000.0	6.01E-01	O
186	Yb-174	70.0	2000.0	3.81E-01	O
186	Yb-175g	70.0	2000.0	1.58E-01	O
186	Yb-175m	70.0	2000.0	1.58E-01	O
186	Yb-176g	70.0	3000.0	1.96E-01	O
186	Yb-176m	70.0	3000.0	4.05E-02	O
186	Yb-177g	70.0	1200.0	1.26E-01	O
186	Yb-177m	70.0	1200.0	1.60E-02	O
186	Yb-178	34.0	2000.0	8.24E-02	O
186	Yb-179	100.0	2500.0	4.34E-02	O
186	Yb-180	100.0	1200.0	2.77E-02	O
186	Yb-181	100.0	3000.0	1.18E-02	C
186	Yb-182	100.0	1000.0	1.19E-02	C
186	Lu-154g	220.0	3000.0	6.62E-04	C
186	Lu-154m	220.0	3000.0	6.62E-04	C
186	Lu-155g	200.0	1200.0	8.07E-03	C
186	Lu-155m	200.0	1200.0	8.07E-03	C
186	Lu-155m2	200.0	1200.0	8.07E-03	C
186	Lu-156g	200.0	1200.0	3.70E-02	O
186	Lu-156m	200.0	1200.0	3.70E-02	O
186	Lu-157g	180.0	1600.0	9.74E-02	C
186	Lu-157m	180.0	1000.0	2.09E-01	C
186	Lu-158	275.0	900.0	1.68E+00	O
186	Lu-159g	275.0	800.0	1.84E+00	C
186	Lu-159m	275.0	800.0	1.65E+00	C
186	Lu-160g	250.0	900.0	1.24E+00	N
186	Lu-160m	250.0	800.0	3.41E+00	C
186	Lu-161g	200.0	800.0	5.21E+00	C
186	Lu-161m	200.0	800.0	5.21E+00	C
186	Lu-162g	180.0	750.0	4.05E+00	C
186	Lu-162m	180.0	750.0	4.05E+00	C
186	Lu-162m2	180.0	750.0	4.05E+00	C
186	Lu-163	180.0	700.0	1.85E+01	C
186	Lu-164	140.0	700.0	2.01E+01	O
186	Lu-165	140.0	650.0	2.25E+01	C
186	Lu-166g	140.0	650.0	1.74E+00	O
186	Lu-166m	140.0	650.0	1.21E+01	O
186	Lu-166m2	140.0	650.0	6.71E+00	O
186	Lu-167g	140.0	750.0	8.71E+00	C
186	Lu-167m	140.0	750.0	8.71E+00	C
186	Lu-168g	130.0	700.0	6.54E+00	O
186	Lu-168m	130.0	700.0	8.05E+00	O
186	Lu-169g	120.0	700.0	2.45E+00	C
186	Lu-169m	120.0	700.0	8.58E+00	C
186	Lu-170g	100.0	750.0	8.50E+00	I
186	Lu-170m	100.0	750.0	8.50E+00	I
186	Lu-171g	90.0	800.0	1.21E+01	I
186	Lu-171m	90.0	800.0	1.70E+01	I
186	Lu-172g	85.0	800.0	3.26E+00	I
186	Lu-172m	85.0	800.0	4.54E+00	I
186	Lu-173	70.0	800.0	3.56E+00	C
186	Lu-174g	60.0	1000.0	1.54E+00	I
186	Lu-174m	60.0	423.0	1.60E+00	I
186	Lu-175	50.0	800.0	2.11E+00	O
186	Lu-176g	45.0	800.0	6.70E-01	O
186	Lu-176m	45.0	800.0	1.11E+00	O
186	Lu-177g	40.0	800.0	1.07E+00	O
186	Lu-177m	40.0	640.0	2.62E-01	I
186	Lu-177m2	40.0	800.0	1.22E-03	O
186	Lu-178g	11.4	1000.0	6.75E-01	O
186	Lu-178m	17.5	1000.0	3.33E-01	N
186	Lu-179g	7.6	1200.0	3.24E-01	O
186	Lu-179m	7.6	1200.0	3.24E-01	O
186	Lu-180g	65.0	1000.0	1.77E-01	O
186	Lu-180m	65.0	1000.0	1.77E-01	O
186	Lu-180m2	65.0	1000.0	1.77E-01	O
186	Lu-181	65.0	3000.0	2.54E-01	C
186	Lu-182	95.0	1000.0	2.34E-01	C
186	Lu-183	95.0	2000.0	2.23E-02	C
186	Hf-155	225.0	900.0	2.18E-07	C
186	Hf-156	220.0	3000.0	1.43E-03	O
186	Hf-157	220.0	1200.0	1.15E-02	C
186	Hf-158	200.0	800.0	5.11E-02	C
186	Hf-159	180.0	900.0	1.82E-01	C
186	Hf-160	275.0	800.0	1.06E+00	C
186	Hf-161	250.0	750.0	2.16E+00	C

186	Hf-162	225.0	700.0	4.35E+00	C
186	Hf-163	225.0	700.0	8.37E+00	C
186	Hf-164	160.0	650.0	1.23E+01	O
186	Hf-165	160.0	600.0	1.79E+01	C
186	Hf-166	160.0	600.0	2.16E+01	O
186	Hf-167	140.0	700.0	2.28E+01	C
186	Hf-168	140.0	550.0	2.82E+01	O
186	Hf-169	140.0	550.0	3.05E+01	C
186	Hf-170	130.0	500.0	2.88E+01	C
186	Hf-171g	120.0	400.0	2.04E+01	C
186	Hf-171m	120.0	400.0	7.54E+00	C
186	Hf-172	100.0	400.0	4.02E+01	N
186	Hf-173	90.0	1600.0	1.46E+01	I
186	Hf-174	80.0	250.0	1.77E+01	O
186	Hf-175	70.0	250.0	1.19E+01	C
186	Hf-176	60.0	250.0	1.12E+01	O
186	Hf-177g	55.0	600.0	6.46E+00	O
186	Hf-177m	55.0	650.0	1.02E+00	O
186	Hf-177m2	55.0	600.0	7.61E-03	O
186	Hf-178g	50.0	650.0	4.06E+00	N
186	Hf-178m	50.0	650.0	1.96E+00	N
186	Hf-178m2	50.0	430.0	5.17E-01	N
186	Hf-179g	45.0	700.0	3.99E+00	O
186	Hf-179m	45.0	700.0	9.08E-01	O
186	Hf-179m2	45.0	420.0	8.67E-01	I
186	Hf-180g	38.0	800.0	3.10E+00	O
186	Hf-180m	38.0	800.0	1.55E+00	I
186	Hf-181	34.0	900.0	3.07E+00	C
186	Hf-182g	3.9	640.0	4.55E+00	C
186	Hf-182m	3.9	800.0	1.18E+01	N
186	Hf-183	55.0	3000.0	2.25E+00	C
186	Hf-184g	55.0	3000.0	4.98E-01	I
186	Hf-184m	55.0	3000.0	4.98E-01	I
186	Hf-185	350.0	2000.0	1.10E-01	N
186	Ta-159g	200.0	3000.0	7.54E-04	C
186	Ta-159m	200.0	3000.0	6.97E-04	C
186	Ta-160g	200.0	750.0	3.32E-03	C
186	Ta-160m	200.0	750.0	3.32E-03	C
186	Ta-161g	180.0	650.0	1.46E-02	C
186	Ta-161m	180.0	700.0	1.53E-02	C
186	Ta-162	100.0	700.0	1.13E-01	C
186	Ta-163	100.0	700.0	3.21E-01	C
186	Ta-164	200.0	600.0	1.41E+00	O
186	Ta-165	200.0	600.0	2.96E+00	C
186	Ta-166	180.0	550.0	4.09E+00	O
186	Ta-167	160.0	700.0	5.35E+00	C
186	Ta-168	140.0	500.0	7.33E+00	O
186	Ta-169	140.0	550.0	8.56E+00	C
186	Ta-170	130.0	450.0	9.21E+00	C
186	Ta-171	120.0	350.0	1.01E+01	C
186	Ta-172	110.0	400.0	1.83E+01	N
186	Ta-173	95.0	500.0	3.68E+01	C
186	Ta-174	85.0	450.0	4.42E+01	I
186	Ta-175	70.0	225.0	3.36E+01	C
186	Ta-176g	65.0	225.0	1.30E+01	I
186	Ta-176m	65.0	225.0	1.30E+01	I
186	Ta-176m2	65.0	225.0	1.30E+01	I
186	Ta-177	55.0	180.0	4.74E+01	O
186	Ta-178g	45.0	300.0	8.26E+00	N
186	Ta-178m	45.0	300.0	2.20E+01	I
186	Ta-178m2	45.0	300.0	8.26E+00	N
186	Ta-179g	32.0	150.0	2.79E+01	O
186	Ta-179m	32.0	150.0	2.79E+01	O
186	Ta-179m2	32.0	150.0	2.79E+01	O
186	Ta-180g	28.0	200.0	3.11E+01	O
186	Ta-180m	28.0	55.0	5.43E+01	O
186	Ta-181	17.0	120.0	2.65E+01	O
186	Ta-182g	9.0	250.0	1.60E+01	N
186	Ta-182m	9.0	250.0	2.01E-02	N
186	Ta-182m2	9.0	250.0	4.11E+00	N
186	Ta-183	2.8	130.0	2.91E+01	C
186	Ta-184	28.0	110.0	2.50E+01	C
186	Ta-185g	13.0	700.0	2.55E+01	N
186	Ta-185m	13.0	700.0	2.55E+01	N
186	Ta-186	200.0	3000.0	7.76E-01	O
186	W -160	800.0	3000.0	2.86E-03	O
186	W -161	220.0	3000.0	1.26E-03	C
186	W -162	200.0	750.0	8.21E-03	C
186	W -163	200.0	800.0	2.28E-02	C
186	W -164	180.0	700.0	1.06E-01	O
186	W -165	180.0	600.0	3.44E-01	C
186	W -166	200.0	550.0	1.64E+00	O
186	W -167	180.0	600.0	2.77E+00	C
186	W -168	160.0	450.0	6.27E+00	O
186	W -169	140.0	420.0	9.82E+00	C
186	W -170	120.0	250.0	2.00E+01	C
186	W -171	140.0	275.0	2.01E+01	C
186	W -172	130.0	250.0	1.34E+01	N
186	W -173	120.0	200.0	3.23E+01	C
186	W -174	110.0	225.0	4.76E+01	C
186	W -175	95.0	200.0	5.77E+01	C
186	W -176	85.0	200.0	6.03E+01	C
186	W -177	75.0	140.0	6.84E+01	C
186	W -178	65.0	150.0	8.57E+01	C
186	W -179g	55.0	140.0	8.94E+01	O
186	W -179m	55.0	200.0	1.38E+01	O
186	W -180g	45.0	100.0	4.73E+01	O
186	W -180m	45.0	100.0	4.73E+01	O
186	W -181	36.0	95.0	1.63E+02	O
186	W -182	28.0	85.0	1.77E+02	O
186	W -183g	19.5	70.0	1.78E+02	O
186	W -183m	19.5	200.0	1.62E+01	O
186	W -184	12.4	60.0	2.26E+02	O
186	W -185g	11.2	45.0	1.23E+02	N
186	W -185m	11.2	45.0	5.00E+01	N
186	W -186m	3.9	24.0	5.33E+01	O
186	W -187	160.0	180.0	2.82E-03	O
186	Re-163g	550.0	550.0	9.79E-04	C
186	Re-163m	550.0	550.0	9.05E-04	C
186	Re-164g	900.0	1000.0	1.15E-03	C
186	Re-164m	900.0	1000.0	1.15E-03	C
186	Re-165g	350.0	3000.0	1.14E-03	C
186	Re-165m	350.0	700.0	2.23E-03	C
186	Re-166g	225.0	450.0	5.03E-03	C
186	Re-166m	225.0	450.0	5.48E-03	O
186	Re-167g	225.0	550.0	1.88E-02	C
186	Re-167m	225.0	550.0	1.52E-02	C
186	Re-168	200.0	300.0	1.32E-01	O
186	Re-169g	160.0	420.0	1.78E-01	C
186	Re-169m	160.0	420.0	1.78E-01	C
186	Re-170	140.0	225.0	2.65E+00	C
186	Re-171	130.0	225.0	7.22E+00	C
186	Re-172g	135.0	180.0	2.43E-01	N
186	Re-172m	135.0	180.0	2.43E-01	N
186	Re-173	130.0	500.0	1.55E+00	C
186	Re-174	120.0	140.0	3.66E+00	C

186	Re-175	100.0	350.0	2.91E+00	C	186	Re-183m	24.0	34.0	5.25E+02	I
186	Re-176	90.0	120.0	3.39E+01	C	186	Re-184g	15.5	24.0	9.83E+02	I
186	Re-177	80.0	110.0	6.74E+01	C	186	Re-184m	15.5	24.0	1.63E+02	I
186	Re-178	70.0	95.0	1.26E+02	C	186	Re-185	7.6	16.0	9.62E+02	O
186	Re-179	60.0	80.0	1.40E+02	I	186	Re-186g	3.6	9.2	5.89E+01	M
186	Re-180	50.0	70.0	2.88E+02	O	186	Re-186m	3.6	32.0	7.74E+00	O
186	Re-181	40.0	55.0	3.60E+02	I	186	Re-187	2.8	15.0	9.89E-01	O
186	Re-182g	32.0	45.0	2.99E+02	I						
186	Re-182m	32.0	45.0	7.89E+02	N						
186	Re-183g	22.0	34.0	5.25E+02	I						

Appendix D: Example of data presentation

```
 7.418000+4 1.784010+2         -1          0          7          07425 1451    1
 0.000000+0 0.000000+0          0          0          0          67425 1451    2
 9.986200-1 3.000000+9          0          0      10010          17425 1451    3
 0.000000+0 0.000000+0          0          0         13          27425 1451    4
 74-W -180 KIT        EVAL-MAR12                                   7425 1451    5
                      DIST-                            20120414   7425 1451    6
----W3000             MATERIAL 7425                                7425 1451    7
-----INCIDENT PROTON DATA                                         7425 1451    8
------ENDF-6 FORMAT                                              7425 1451    9
                                                                  7425 1451   10
                                                                  7425 1451   11
  Activation and gas production data at energies up to 3 GeV      7425 1451   12
                                                                  7425 1451   13
                                                                  7425 1451   14
  MF=10  MT=5  :  nuclide production cross-sections               7425 1451   15
                                                                  7425 1451   16
                                                                  7425 1451   17
                               1        451         19          07425 1451   18
                              10          5      21108          07425 1451   19
                                                                  7425 1  099999
                                                                  7425 0  0    0
 7.418000+4 1.784010+2          0          0       1586          0742510  5    1
 0.000000+0 0.000000+0       1001          0          1         66742510  5    2
         66          2                                            742510  5    3
 0.000000+0 0.000000+0 2.500000+6 0.000000+0 3.000000+6 1.013514-8742510  5    4
 3.500000+6 8.473648-8 4.000000+6 2.484471-6 4.500000+6 3.294515-5742510  5    5
 5.000000+6 2.235296-4 5.500000+6 9.073797-4 6.000000+6 2.477493-3742510  5    6
 6.500000+6 4.988811-3 7.000000+6 8.005323-3 7.500000+6 1.096088-2742510  5    7
 8.000000+6 1.360964-2 8.500000+6 1.613816-2 9.000000+6 1.898256-2742510  5    8
 9.500000+6 2.256423-2 1.000000+7 2.706543-2 1.100000+7 3.802477-2742510  5    9
 1.200000+7 4.934412-2 1.300000+7 6.011876-2 1.400000+7 7.118527-2742510  5   10
 1.500000+7 8.372378-2 1.600000+7 9.725271-2 1.700000+7 1.104516-1742510  5   11
 1.800000+7 1.233542-1 1.900000+7 1.362180-1 2.000000+7 1.496702-1742510  5   12
 2.200000+7 1.781397-1 2.500000+7 2.249609-1 3.000000+7 3.141400-1742510  5   13
 4.000000+7 5.296564-1 5.000000+7 7.426279-1 6.000000+7 9.265763-1742510  5   14
 8.000000+7 1.195804+0 9.000000+7 1.293958+0 1.000000+8 1.372692+0742510  5   15
 1.100000+8 1.435325+0 1.200000+8 1.485219+0 1.300000+8 1.525408+0742510  5   16
 1.400000+8 1.552807+0 1.500000+8 1.591627+0 1.600000+8 1.627383+0742510  5   17
 1.700000+8 1.661095+0 1.800000+8 1.692764+0 1.900000+8 1.724433+0742510  5   18
 2.000000+8 1.755081+0 2.200000+8 1.838850+0 2.400000+8 1.919556+0742510  5   19
 2.600000+8 2.000261+0 2.800000+8 2.078923+0 3.000000+8 2.135089+0742510  5   20
 3.500000+8 2.260574+0 4.000000+8 2.502412+0 4.500000+8 2.752148+0742510  5   21
 5.000000+8 3.014953+0 5.500000+8 3.300347+0 6.000000+8 3.619466+0742510  5   22
 7.000000+8 4.107554+0 8.000000+8 4.551532+0 9.000000+8 4.967947+0742510  5   23
 1.000000+9 5.340312+0 1.200000+9 6.074336+0 1.500000+9 7.719225+0742510  5   24
 2.000000+9 1.009774+1 2.500000+9 1.216865+1 3.000000+9 1.410194+1742510  5   25
-6.187794+6-6.187794+6       1002          0          1         66742510  5   26
         66          2                                            742510  5   27
 6.222170+6 0.000000+0 6.500000+6 9.89111-21 7.000000+6 2.26402-18742510  5   28
 7.500000+6 9.52502-16 8.000000+6 3.85955-14 8.500000+6 4.55261-13742510  5   29
 9.000000+6 7.37085-12 9.500000+6 9.31984-11 1.000000+7 8.93018-10742510  5   30
 1.100000+7 3.727141-8 1.200000+7 7.343980-7 1.300000+7 8.148450-6742510  5   31
 1.400000+7 5.542207-5 1.500000+7 2.498262-4 1.600000+7 8.002549-4742510  5   32
 1.700000+7 1.924731-3 1.800000+7 3.680824-3 1.900000+7 5.956231-3742510  5   33
 2.000000+7 8.597721-3 2.200000+7 1.420030-2 2.500000+7 2.284217-2742510  5   34
 3.000000+7 3.579371-2 3.500000+7 4.878362-2 4.000000+7 6.116550-2742510  5   35
 4.500000+7 7.110036-2 5.000000+7 7.890143-2 5.500000+7 8.462744-2742510  5   36
 6.000000+7 8.873842-2 6.500000+7 9.601094-2 7.000000+7 1.068855-1742510  5   37
```

ISSN 1869-9669
ISBN 978-3-86644-924-4