



JANIS Book

of photon-induced cross-sections

Comparison of evaluated and experimental data from
ENDF/B-VIII.0, JENDL/PD-2016, TENDL-2017 and EXFOR

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OECD NEA Data Bank

Introduction

This document compares evaluated cross-sections with corresponding experimental data from the EXFOR database for a number of evaluated libraries (Table 1), nuclear reactions and associated reaction products (Table 3). This document was produced using tools based on the NEA Java-based nuclear information software (JANIS) and associated databases; up-to-date plots are available from online JANIS Books [1].

Caveat: When studying plots, please take into account that the energy resolution of experimental data is not always comparable with the resolution of the evaluated data.

Graphical comparison of nuclear data

Experimental data sets are identified by the year and first author of the main reference compiled in EXFOR. The colors give an indication on the publication year, from black/blue for the oldest data to orange/red for the most recent ones (Table 2). All experimental data are plotted on the graph but the legend will ignore all of them if there are more than 20 data sets.

Evaluated data are plotted with full lines for exclusive cross-sections explicitly defined by a MT number, whereas dashed lines indicate residual production cross-sections given in MT5. A star ‘*’ after the name of the library indicates additional operations performed by JANIS, e.g. summation over the ground and metastable yields, reconstruction of residual production cross-sections over the whole energy range.

The data are plotted in log-log scale (on the left hand side) and lin-log scale (on the right hand side). The best representation depends on the Q value of the reaction and/or the magnitude of the variation in the cross-section values.

Table of reactions and Q values

In order to identify individual contributions in residual production cross-sections, reactions leading to the same product are listed along with their associated Q values. The latter are calculated using mass excess from the NUBASE2012 evaluation of nuclear properties [2].

Navigation in this document

The data are sorted by element, then by isotope and finally by reaction. In order to facilitate access to the information, two navigation modes are available in addition to the usual bookmark. At the top of each page, on the first row, the previous (<<) and next (>>) “Isotope links” allow the reader to move from one isotope to another while staying on the same MT reaction. On the second row, the “MT links” allow scanning all reactions of a given isotope. The latter navigation mode is actually similar to the use of the page up and page down keys.

References

- [1] N. Soppera *et al.*, *Nuclear Data Sheets 120 (2014)*, 294. See also www.oecd-nea.org/janis.
- [2] G. Audi, *et al.*, *Chinese Physics C*, 2012, 36 (12), 1157–1286, 2012.

Table 1: list of databases used in the inter-comparison

Library	Release date
ENDF/B-VIII.0	February 2018
JENDL/PD-2016	December 2017
TENDL-2017	December 2017
EXFOR	April 2018

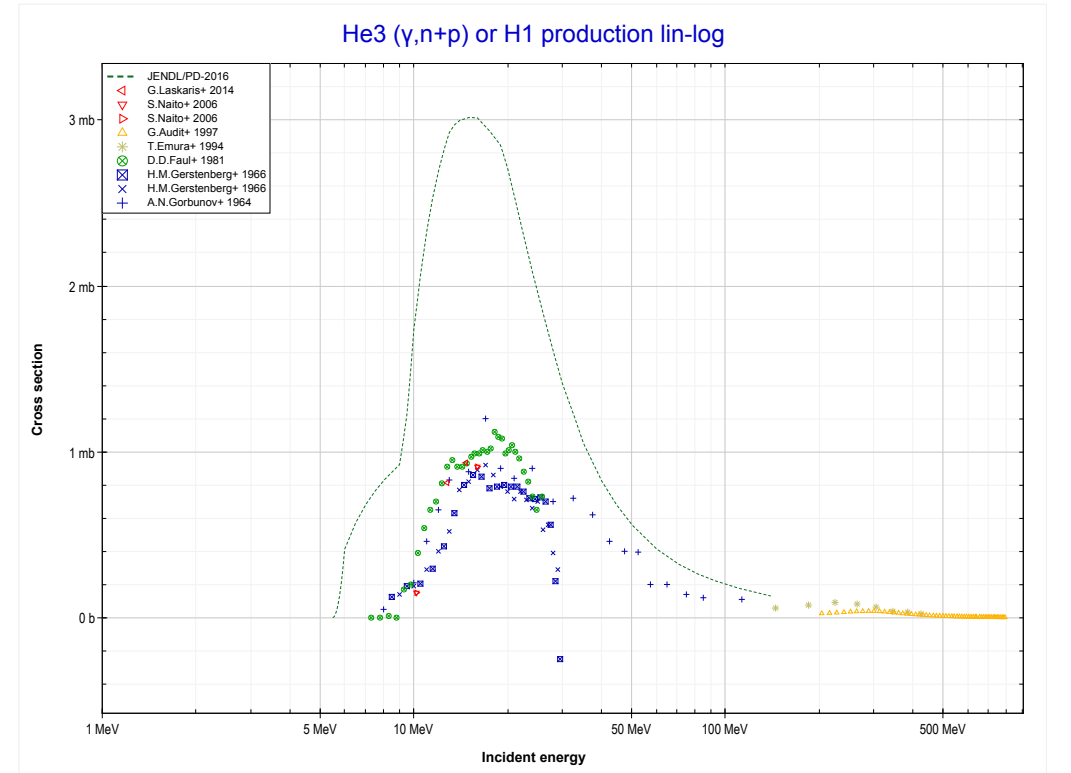
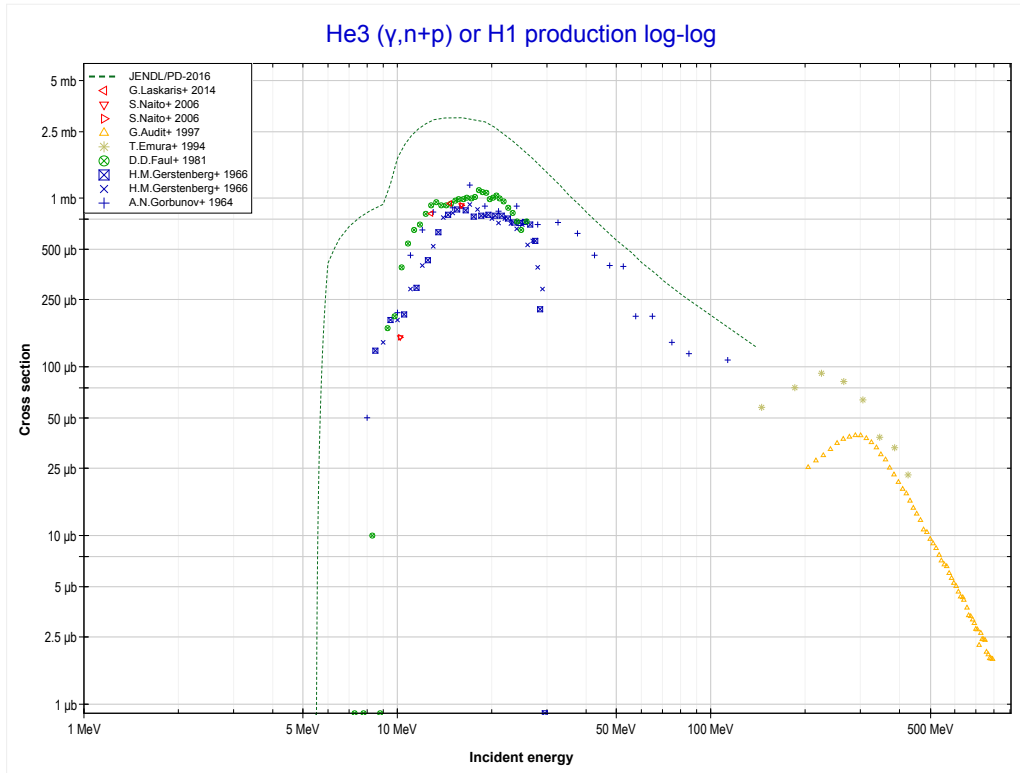
Table 2: experimental data sets color code

Color	Publication year
red	2005 ≤ year
orange	2000 ≤ year < 2005
light orange	1995 ≤ year < 2000
khaki	1990 ≤ year < 1995
light green	1985 ≤ year < 1990
green	1980 ≤ year < 1985
light blue	1970 ≤ year < 1980
dark blue	1960 ≤ year < 1970
black	year < 1960

Table 3: list of exclusive reactions used in the inter-comparison

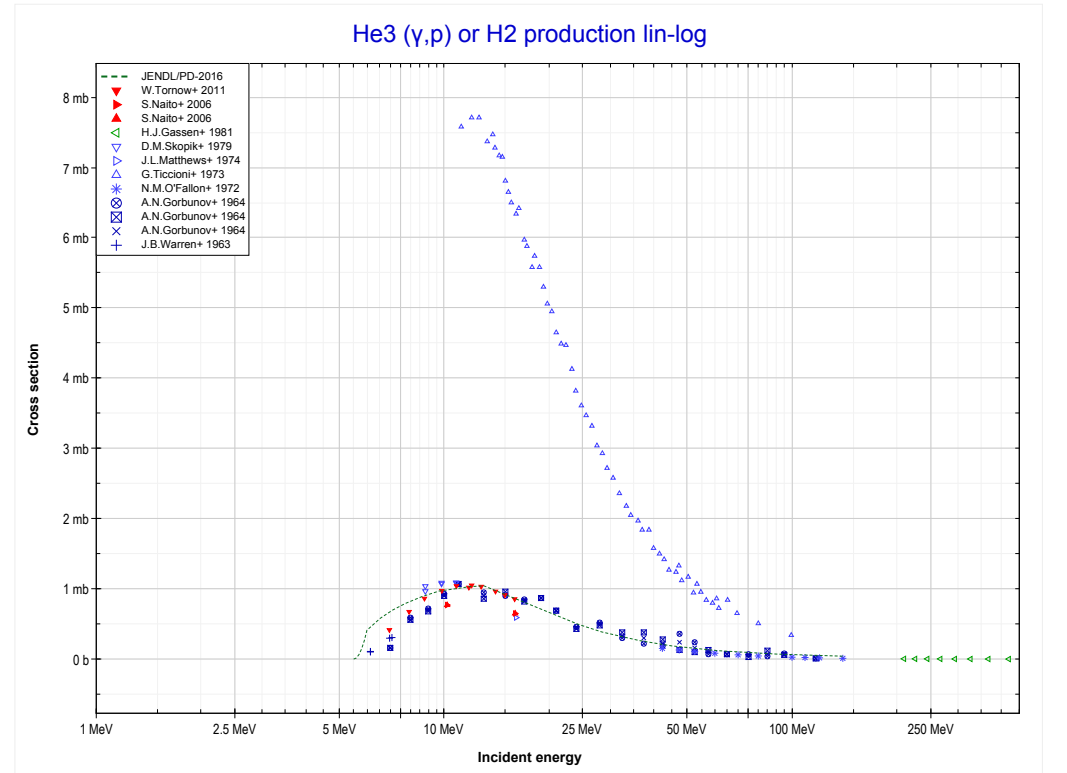
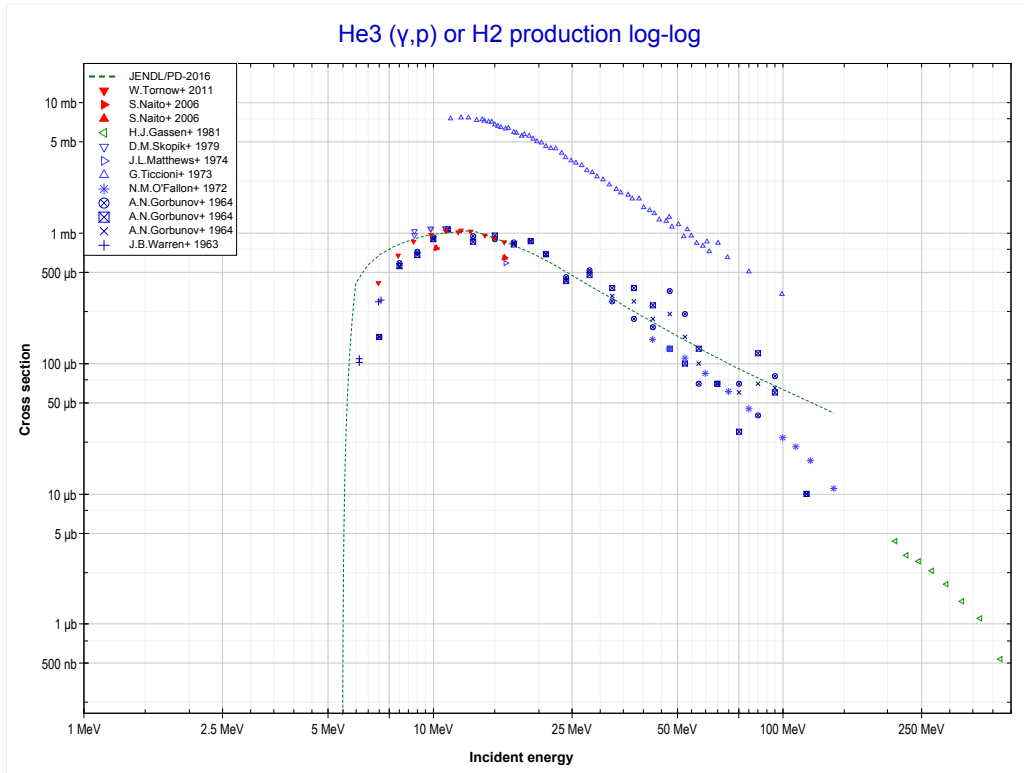
MT	Reaction	MT	Reaction	MT	Reaction	MT	Reaction
4	n	102	gamma	159	2n+p+a	181	3n+p+a
11	2n+d	103	p	160	7n	182	d+t
16	2n	104	d	161	8n	183	n+p+d
17	3n	105	t	162	5n+p	184	n+p+t
18	fission	106	h	163	6n+p	185	n+d+t
22	n+a	107	a	164	7n+p	186	n+p+h
23	n+3a	108	2a	165	4n+a	187	n+d+h
24	2n+a	109	3a	166	5n+a	188	n+t+h
25	3n+a	111	2p	167	6n+a	189	n+t+a
28	n+p	112	p+a	168	7n+a	190	2n+2p
29	n+2a	113	t+2a	169	4n+d	191	p+h
30	2n+2a	114	d+2a	170	5n+d	192	d+h
32	n+d	115	p+d	171	6n+d	193	h+a
33	n+t	116	p+t	172	3n+t	194	4n+2p
34	n+h	117	d+a	173	4n+t	195	4n+2a
35	n+d+2a	152	5n	174	5n+t	196	4n+p+a
36	n+t+2a	153	6n	175	6n+t	197	3p
37	4n	154	2n+t	176	2n+h	198	n+3p
41	2n+p	155	t+a	177	3n+h	199	3n+2p+a
42	3n+p	156	4n+p	178	4n+h	200	5n+2p
44	n+2p	157	3n+d	179	3n+2p		
45	n+p+a	158	n+d+a	180	3n+2a		

	2-He-3	3-Li-6 >>
	MT28 ($\gamma, n+p$) or MT5 (H1 production)	MT103 (γ, p) >>



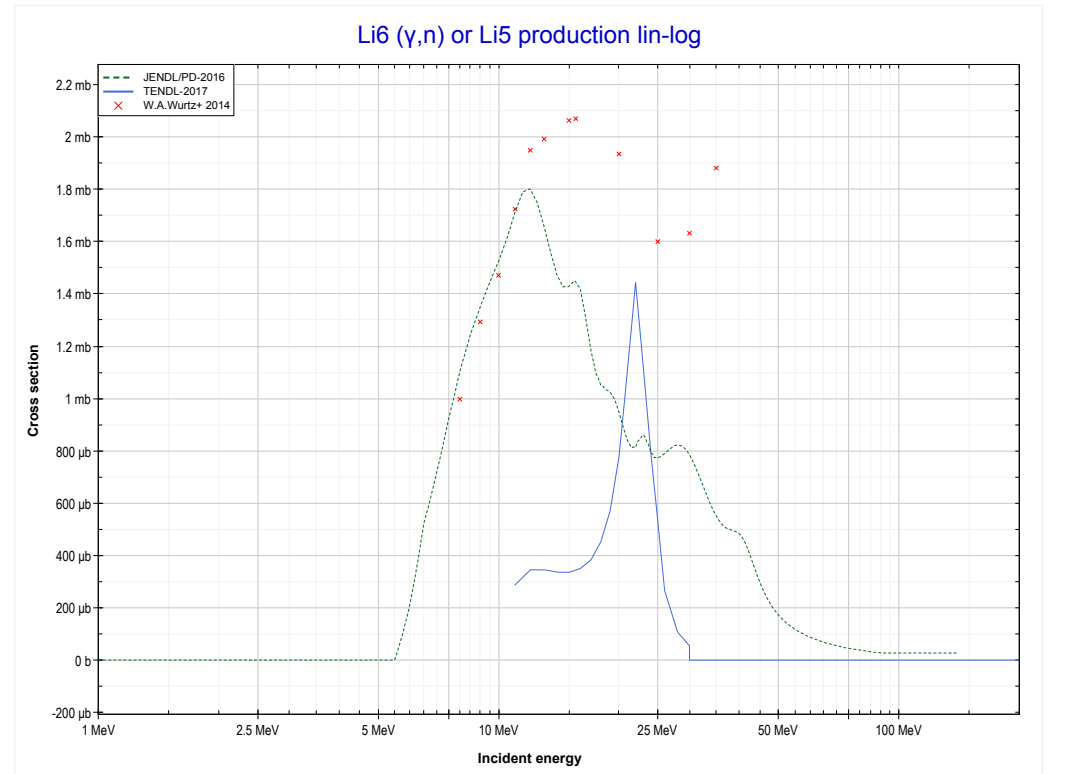
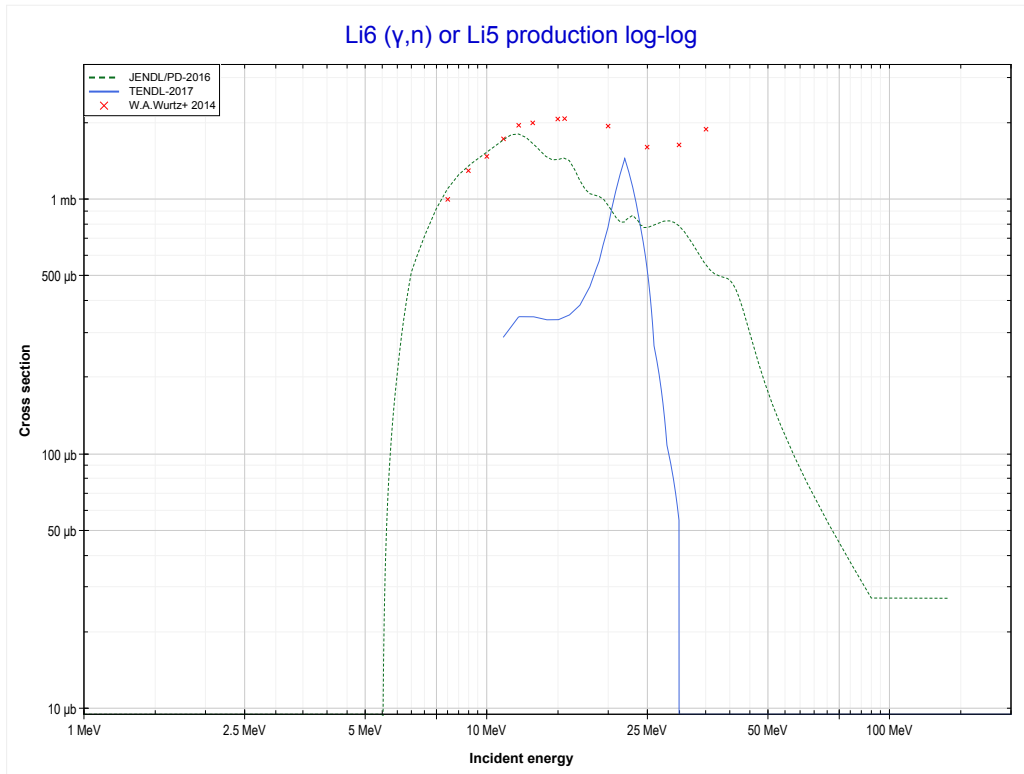
Reaction	Q-Value
He3(γ, d)H1	-5493.48 keV
He3($\gamma, n+p$)H1	-7718.04 keV

	2-He-3	3-Li-6 >>
<< MT28 ($\gamma, n + p$)	MT103 (γ, p) or MT5 (H2 production)	3-Li-6 MT4 (γ, n) >>



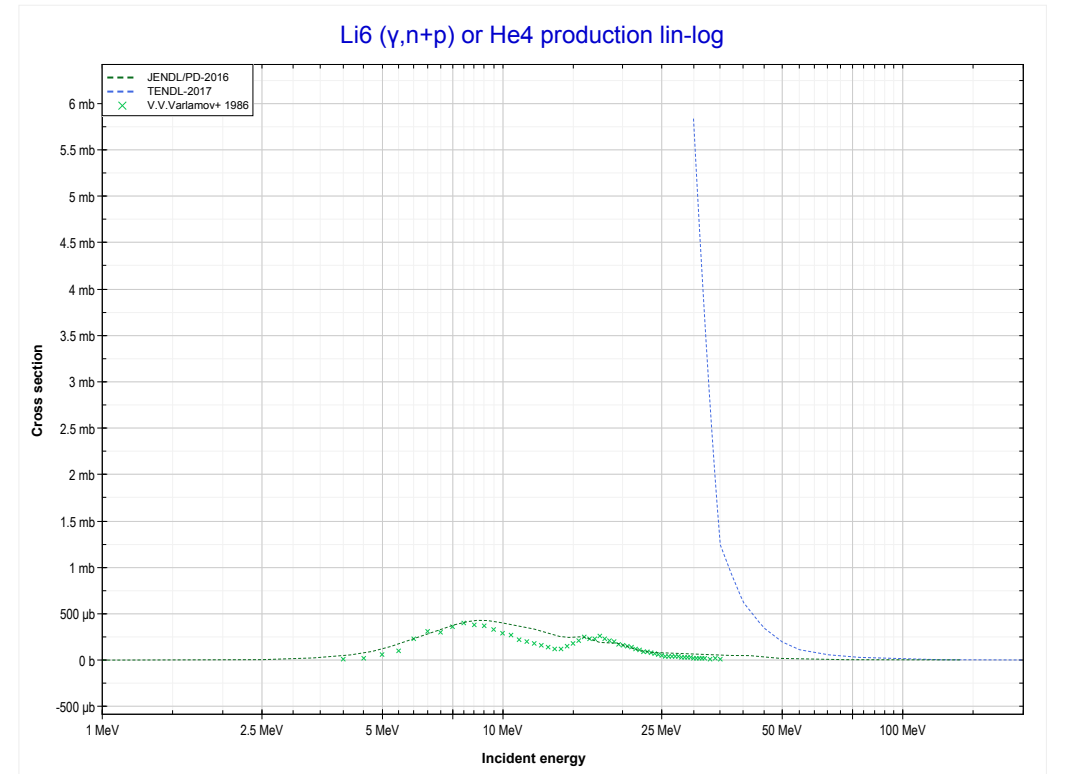
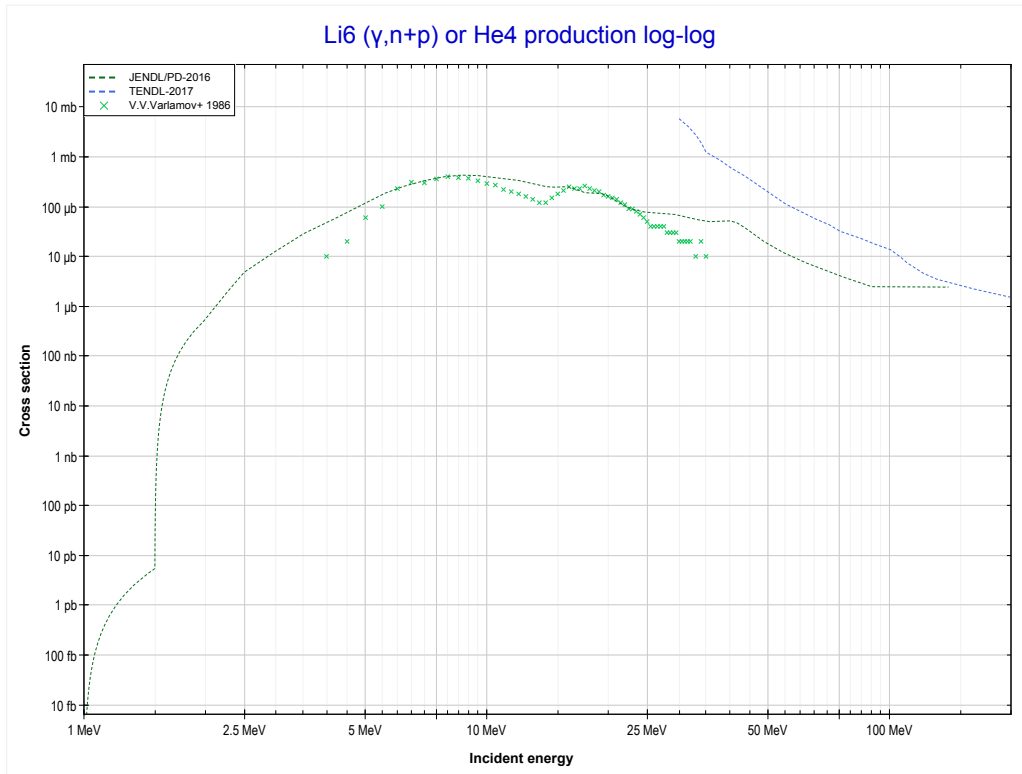
Reaction	Q-Value
He3(γ, p)H2	-5493.48 keV

	3-Li-6	3-Li-7 >>
<< 2-He-3 MT103 (γ,p)	MT4 (γ,n) or MT5 (Li5 production)	MT28 (γ,n+p) >>



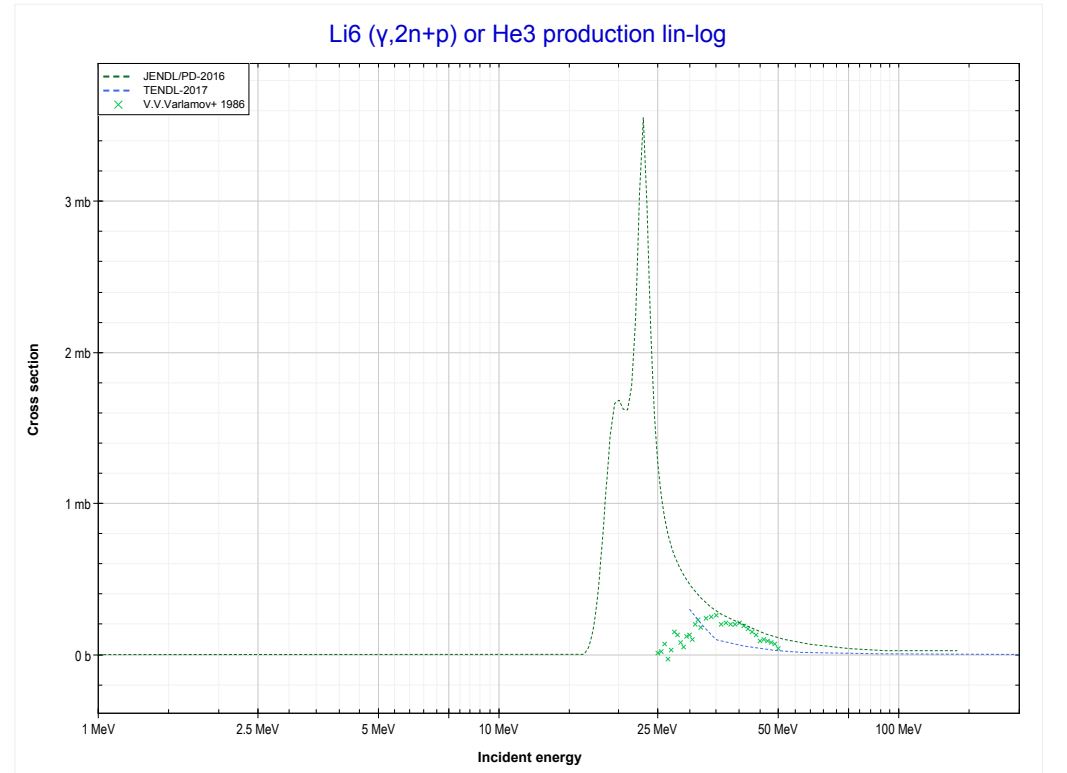
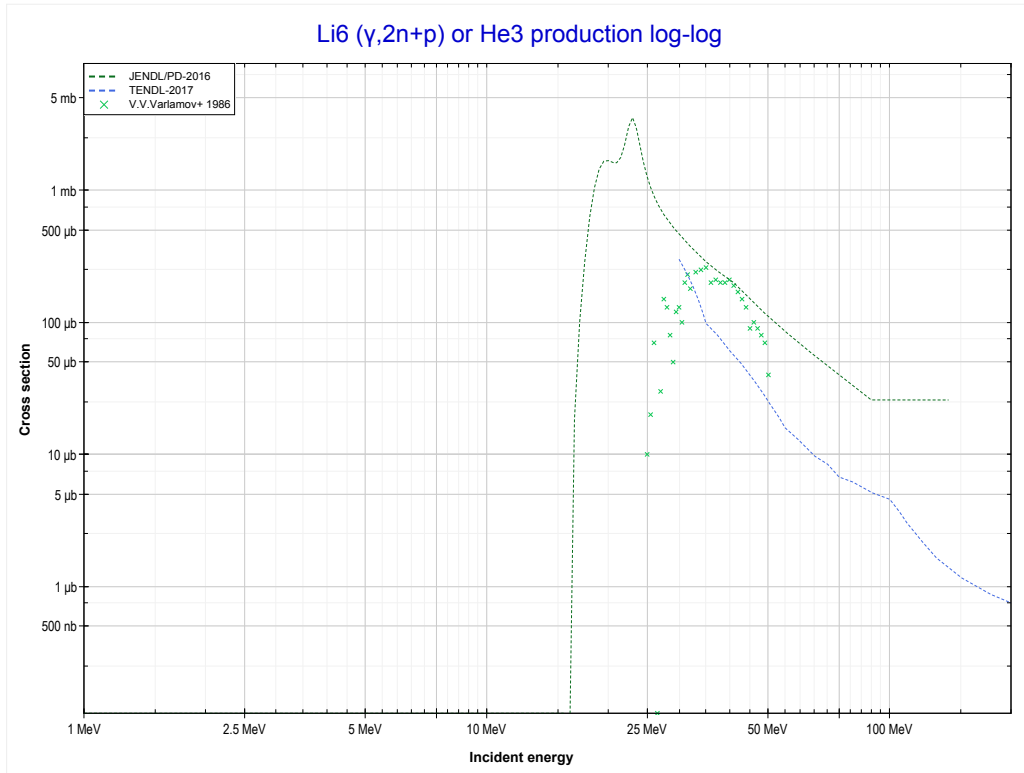
Reaction	Q-Value
Li6(γ,n)Li5	-5664.44 keV

<< 2-He-3	3-Li-6	6-C-12 >>
<< MT4 (γ, n)	MT28 ($\gamma, n+p$) or MT5 (He4 production)	MT41 ($\gamma, 2n+p$) >>



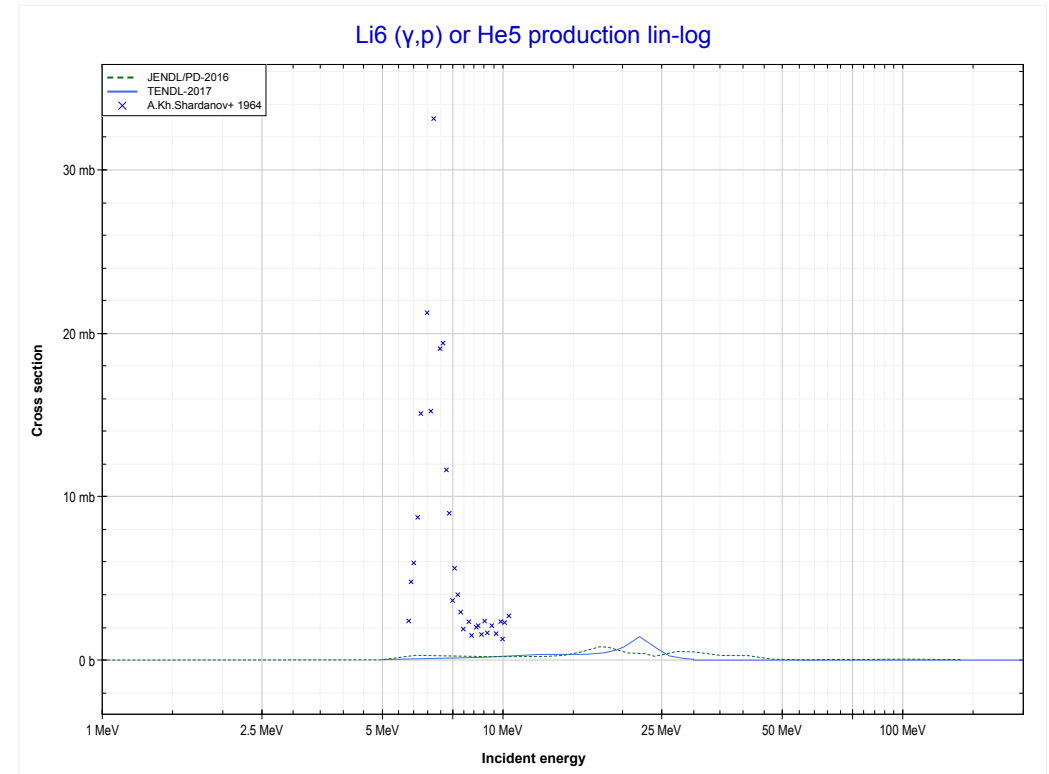
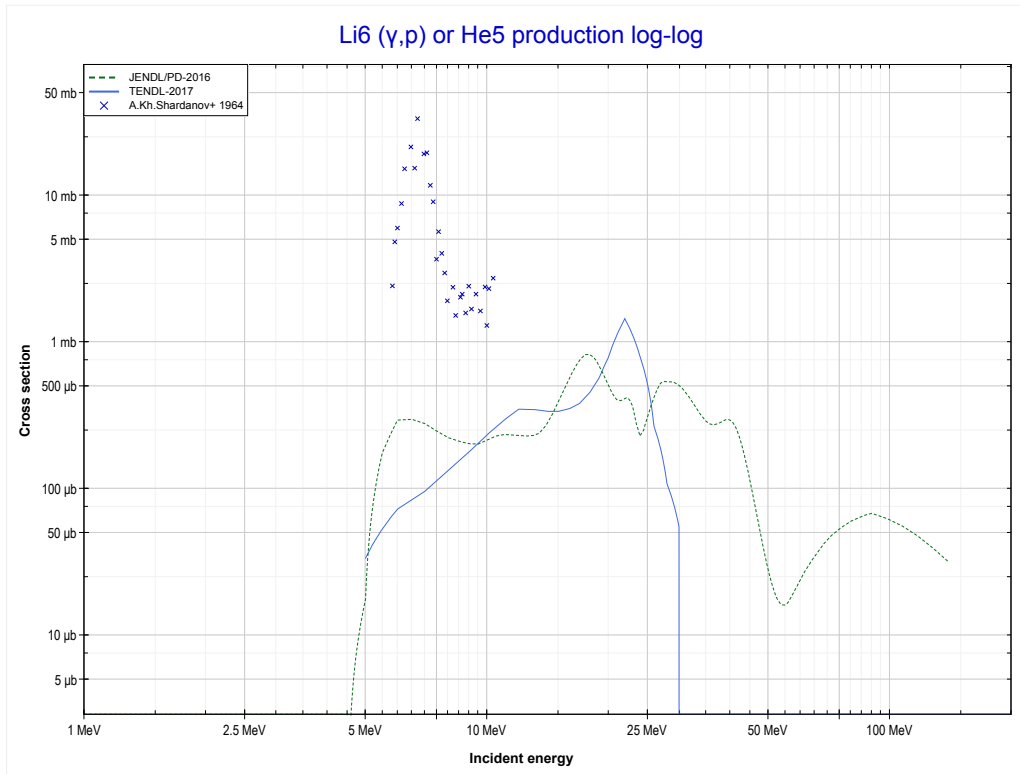
Reaction	Q-Value
$\text{Li6}(\gamma, d)\text{He4}$	-1473.76 keV
$\text{Li6}(\gamma, n+p)\text{He4}$	-3698.32 keV

	3-Li-6	3-Li-7 >>
<< MT28 ($\gamma, n+p$)	MT41 ($\gamma, 2n+p$) or MT5 (He3 production)	MT103 (γ, p) >>



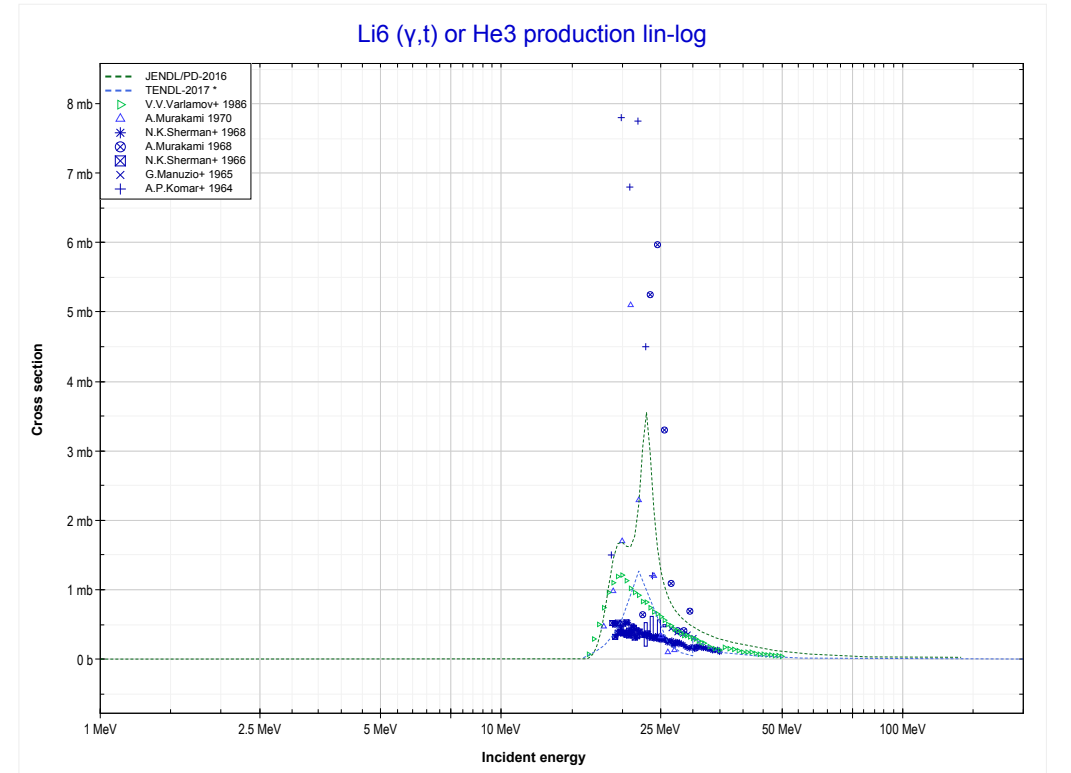
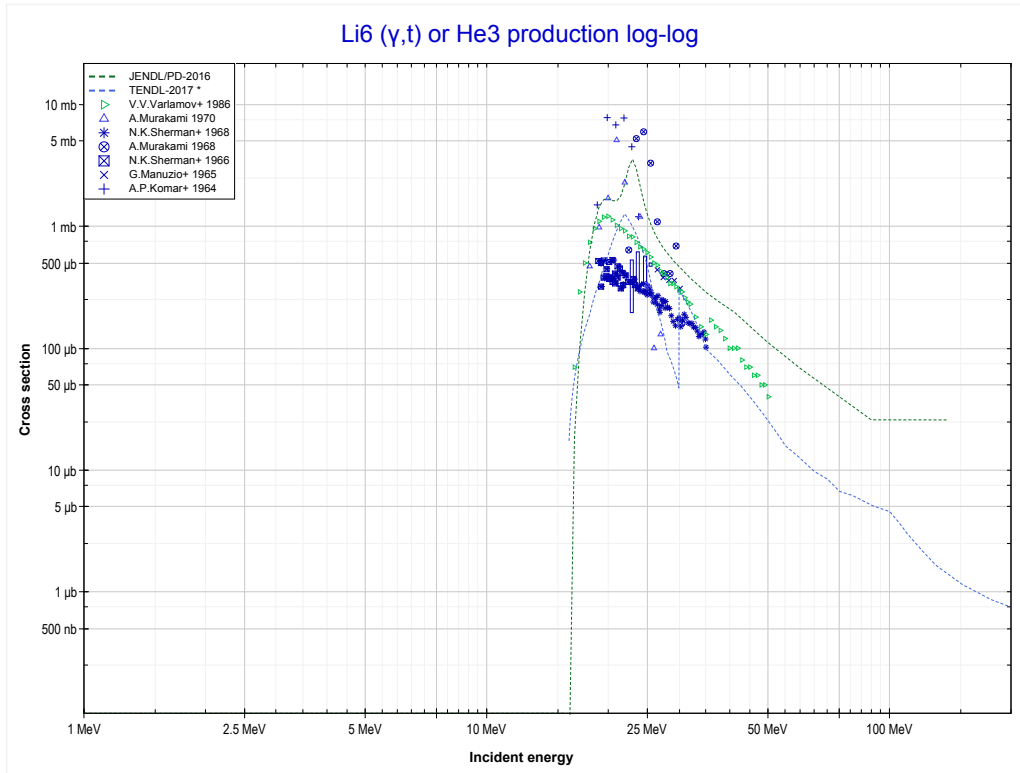
Reaction	Q-Value
Li6(γ, t)He3	-15794.14 keV
Li6($\gamma, n+d$)He3	-22051.38 keV
Li6($\gamma, 2n+p$)He3	-24275.94 keV

<< 2-He-3	3-Li-6	3-Li-7 >>
<< MT41 ($\gamma, 2n+p$)	MT103 (γ, p) or MT5 (He5 production)	MT105 (γ, t) >>



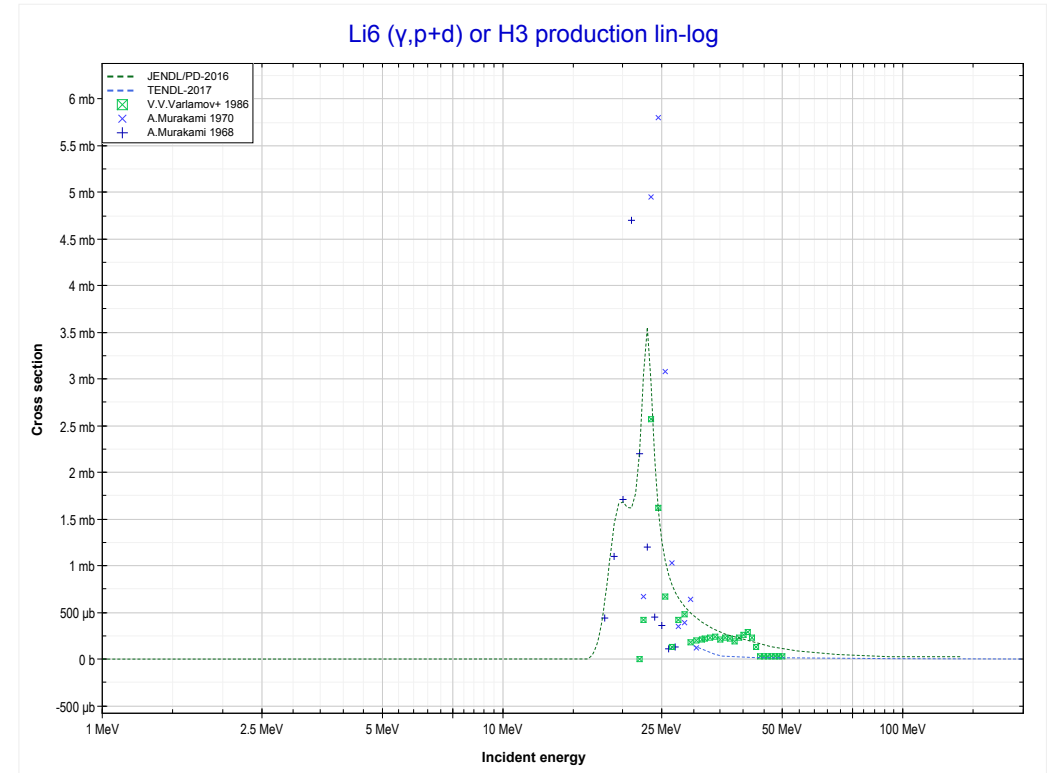
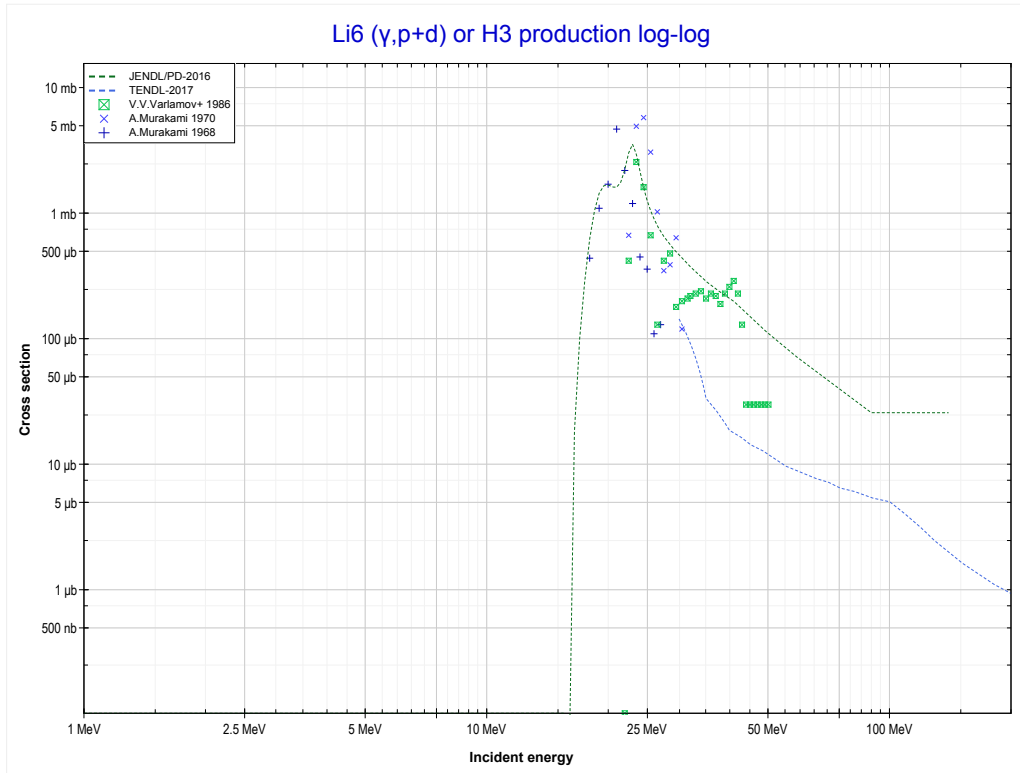
Reaction	Q-Value
Li6(γ, p)He5	-4433.09 keV

	3-Li-6	3-Li-7 >>
<< MT103 (γ,p)	MT105 (γ,t) or MT5 (He3 production)	MT115 (γ,p+d) >>



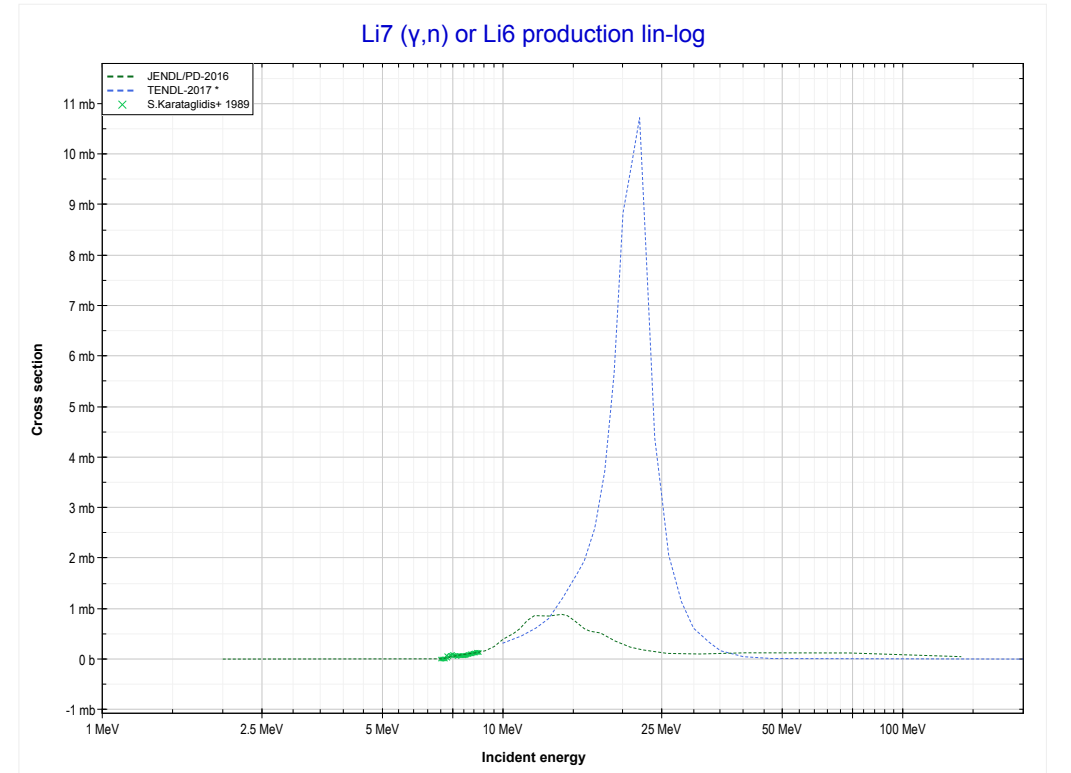
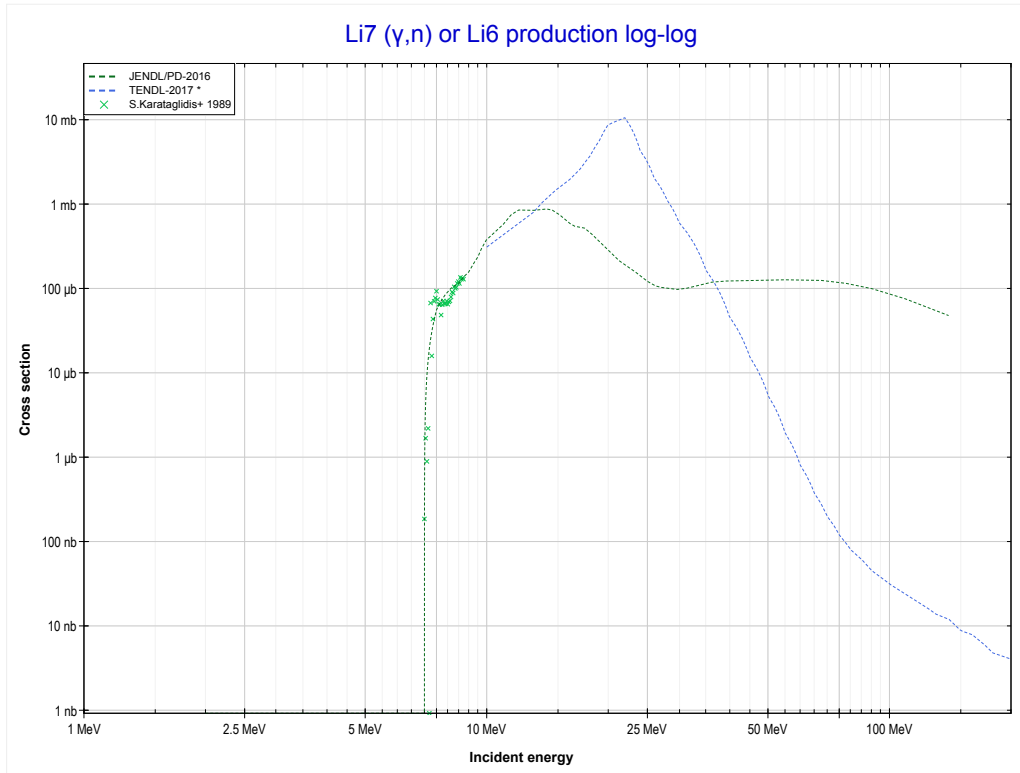
Reaction	Q-Value
Li6(γ,t)He3	-15794.14 keV
Li6(γ,n+d)He3	-22051.38 keV
Li6(γ,2n+p)He3	-24275.94 keV

	3-Li-6	
<< MT105 (γ,t)	MT115 (γ,p+d) or MT5 (H3 production)	3-Li-7 MT4 (γ,n) >>



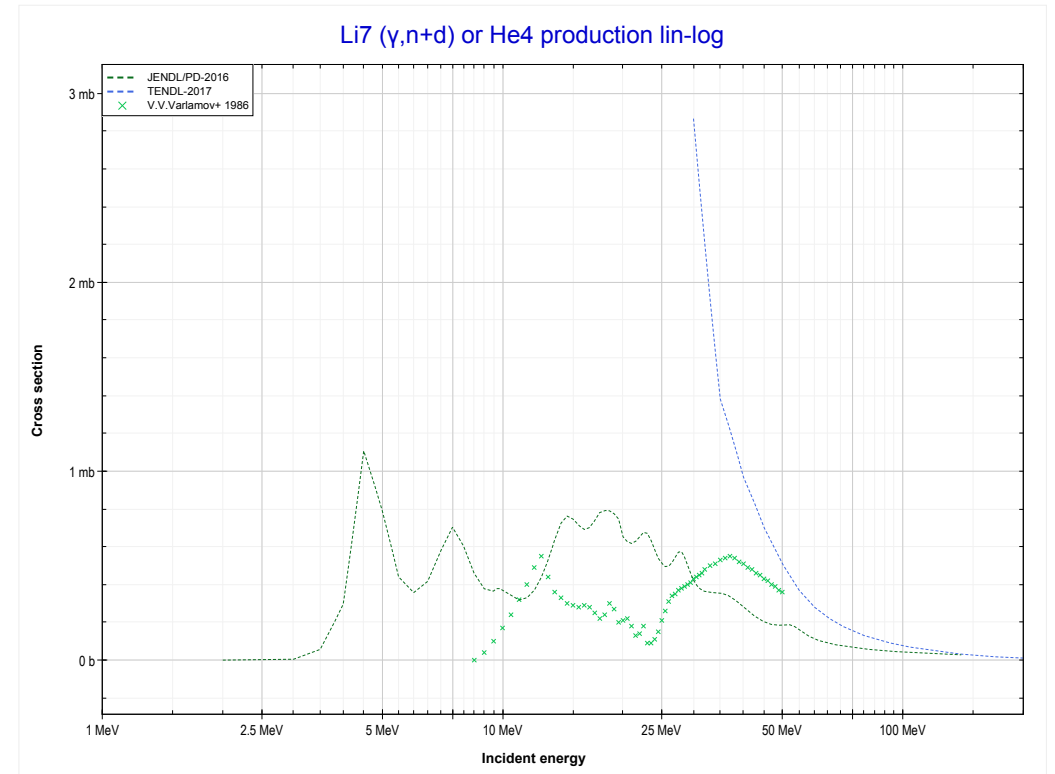
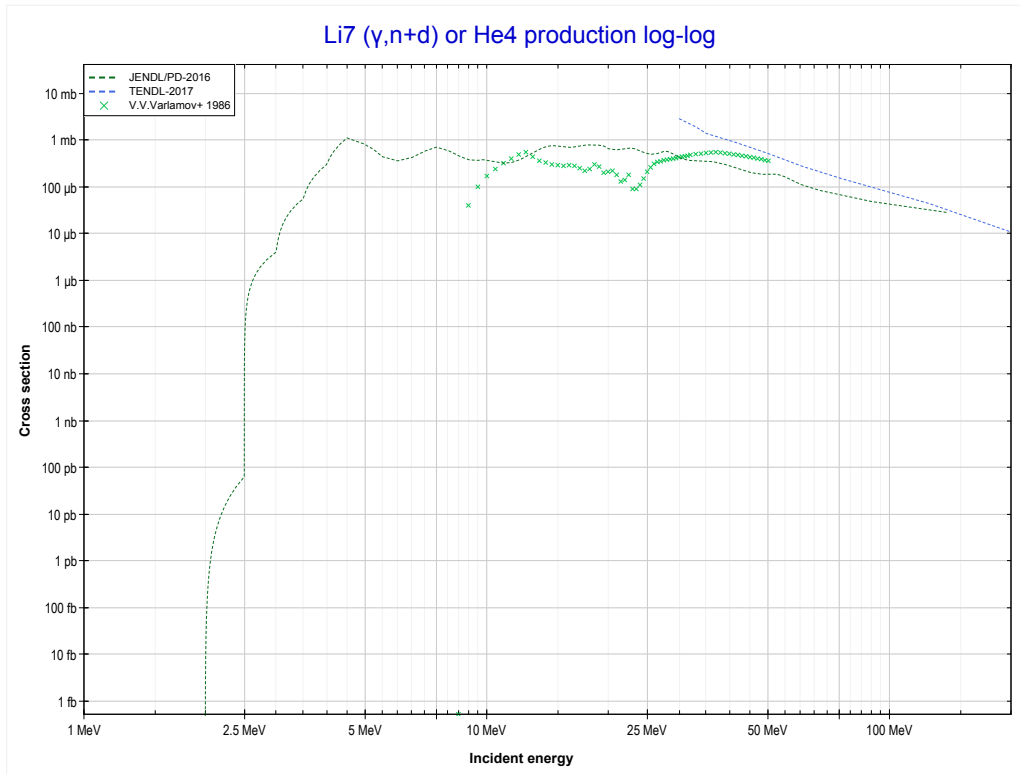
Reaction	Q-Value
Li6(γ,He3)H3	-15794.14 keV
Li6(γ,p+d)H3	-21287.62 keV
Li6(γ,n+2p)H3	-23512.19 keV

<< 3-Li-6	3-Li-7	4-Be-9 >>
<< 3-Li-6 MT115 ($\gamma, p+d$)	MT4 (γ, n) or MT5 (Li6 production)	MT32 ($\gamma, n+d$) >>



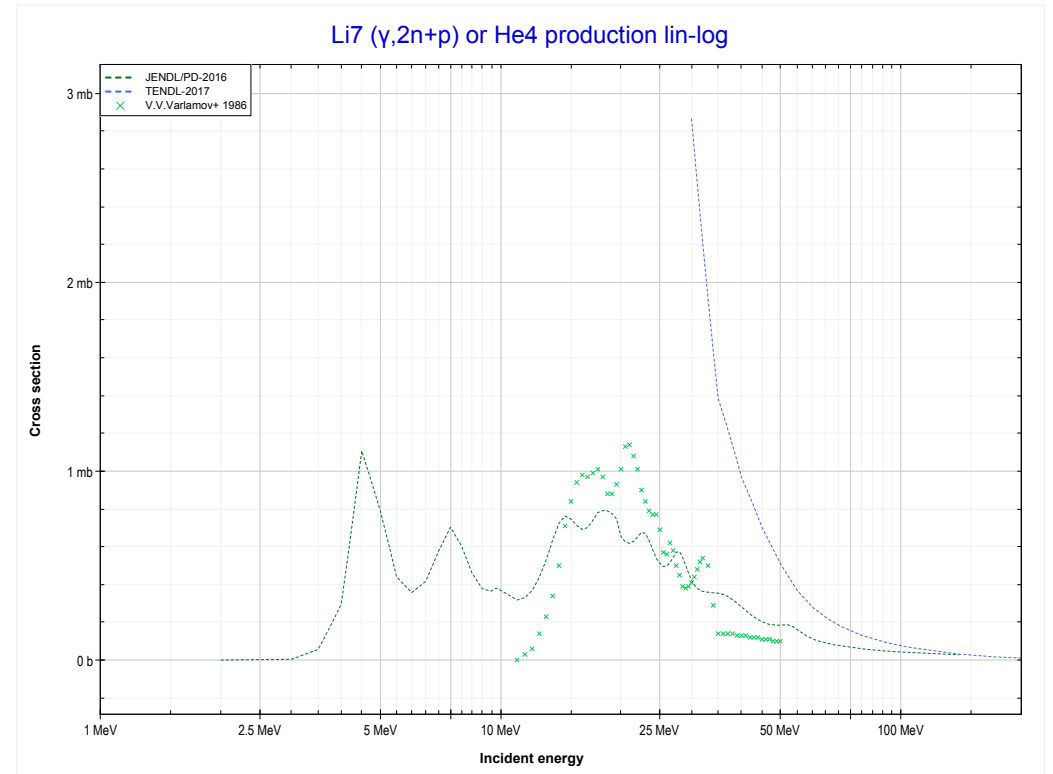
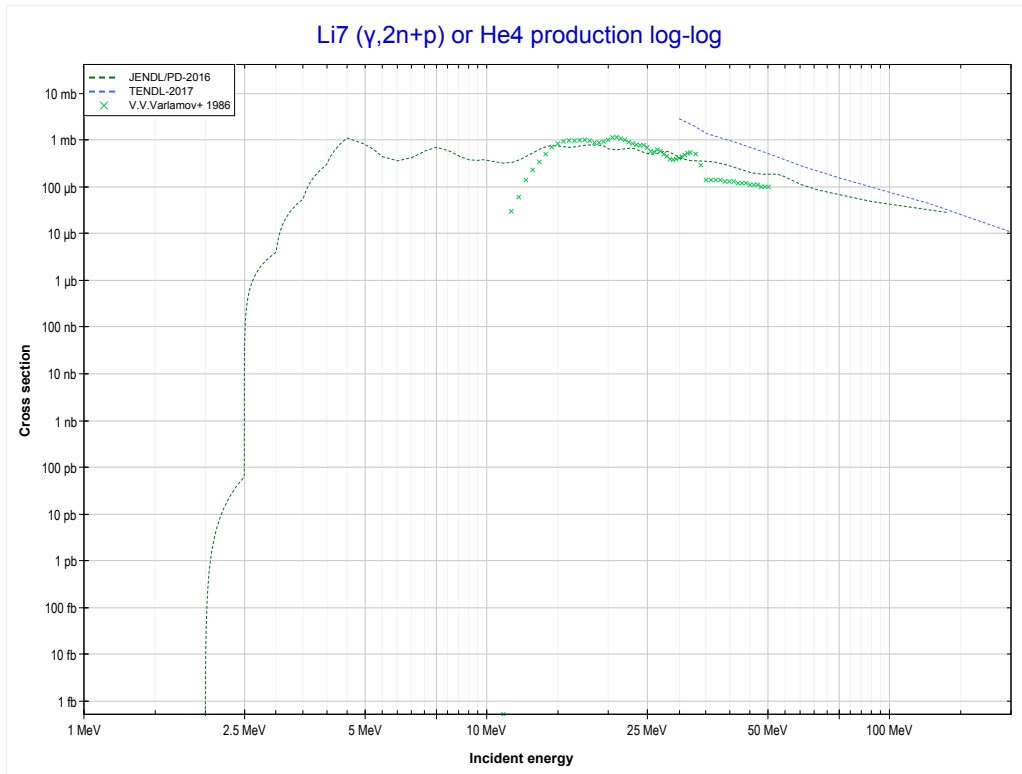
Reaction	Q-Value
Li7(γ, n)Li6	-7251.09 keV

3-Li-7		
<< MT4 (γ, n)	MT32 ($\gamma, n+d$) or MT5 (He4 production)	MT41 ($\gamma, 2n+p$) >>



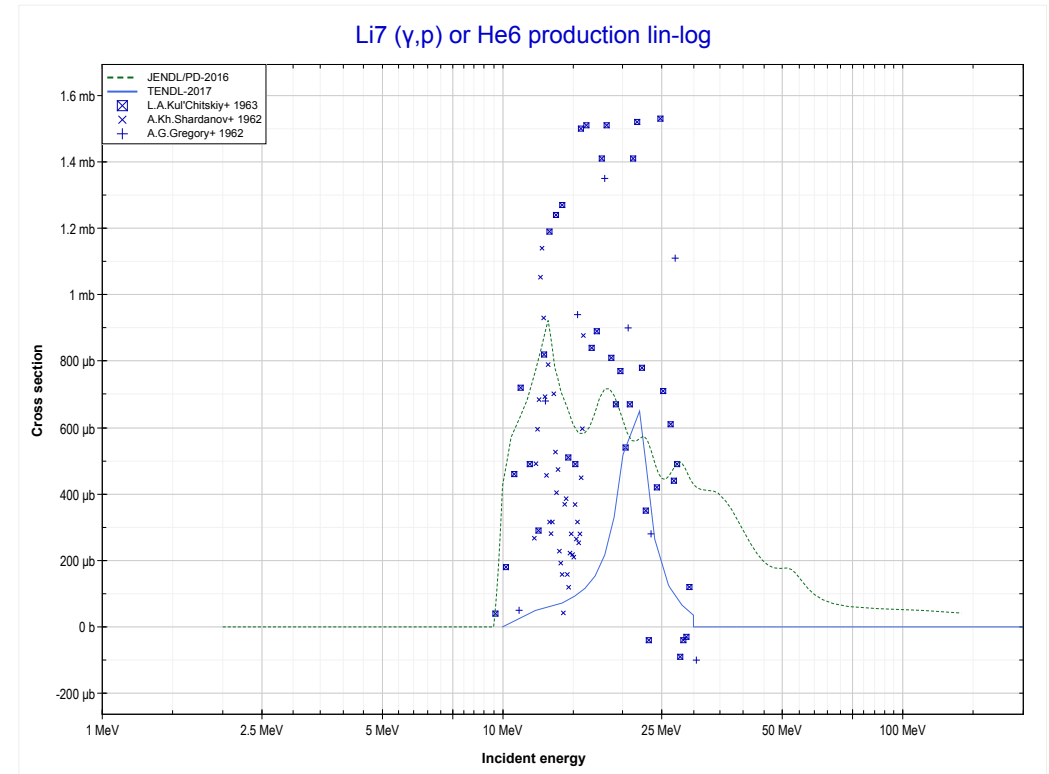
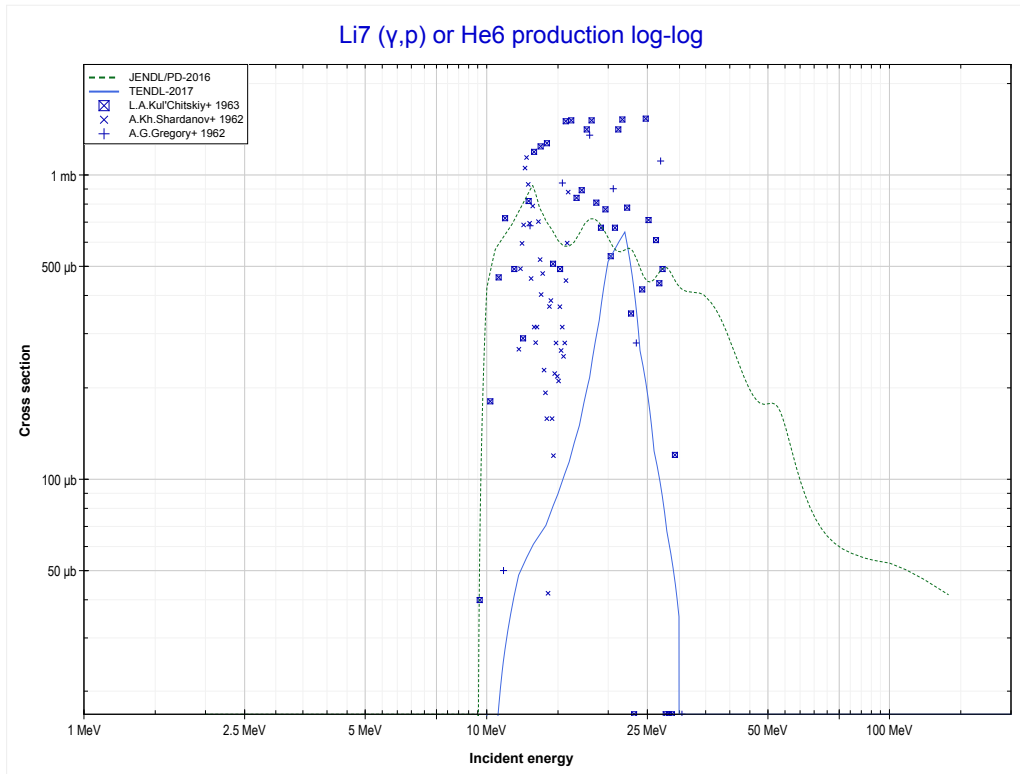
Reaction	Q-Value
$\text{Li7}(\gamma, t)\text{He4}$	-2467.62 keV
$\text{Li7}(\gamma, n+d)\text{He4}$	-8724.85 keV
$\text{Li7}(\gamma, 2n+p)\text{He4}$	-10949.42 keV

<< 3-Li-6	3-Li-7	
<< MT32 ($\gamma, n+d$)	MT41 ($\gamma, 2n+p$) or MT5 (He4 production)	MT103 (γ, p) >>



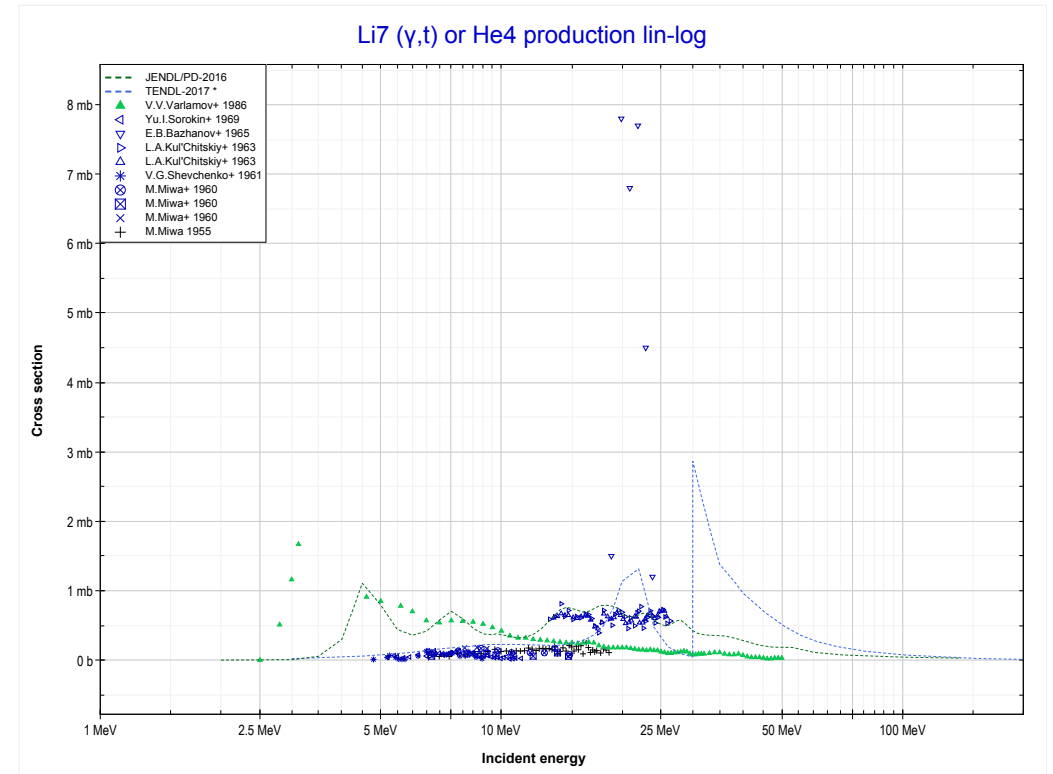
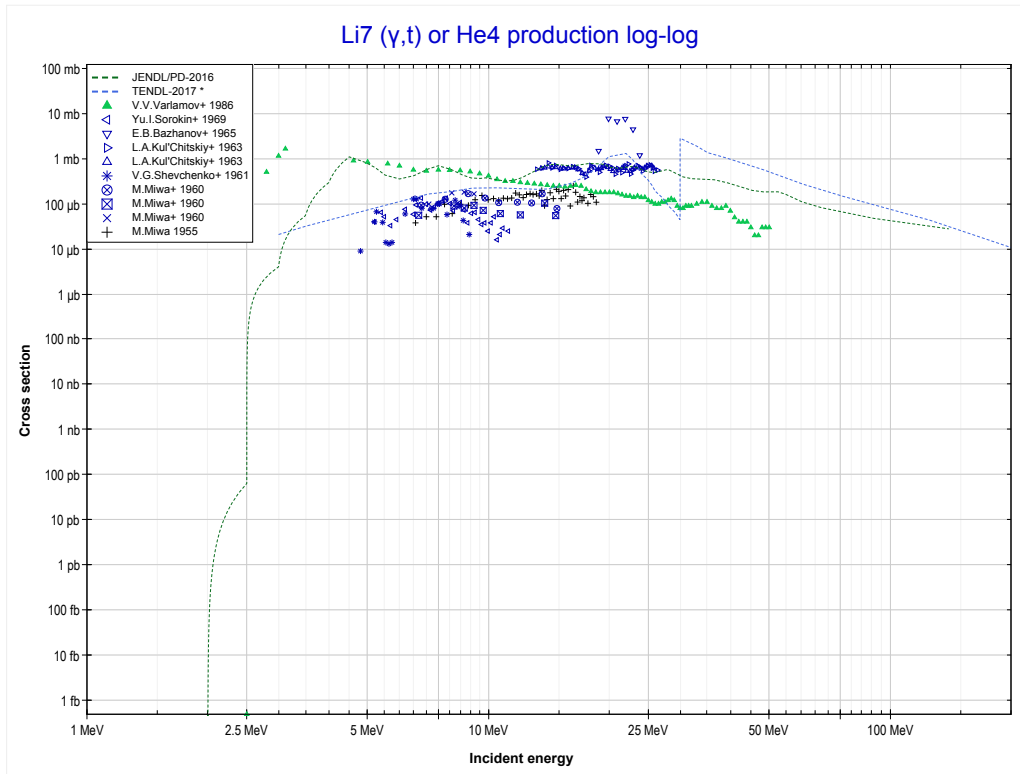
Reaction	Q-Value
$Li7(\gamma, t)He4$	-2467.62 keV
$Li7(\gamma, n+d)He4$	-8724.85 keV
$Li7(\gamma, 2n+p)He4$	-10949.42 keV

<< 3-Li-6	3-Li-7	4-Be-9 >>
<< MT41 ($\gamma, 2n+p$)	MT103 (γ, p) or MT5 (He6 production)	MT105 (γ, t) >>



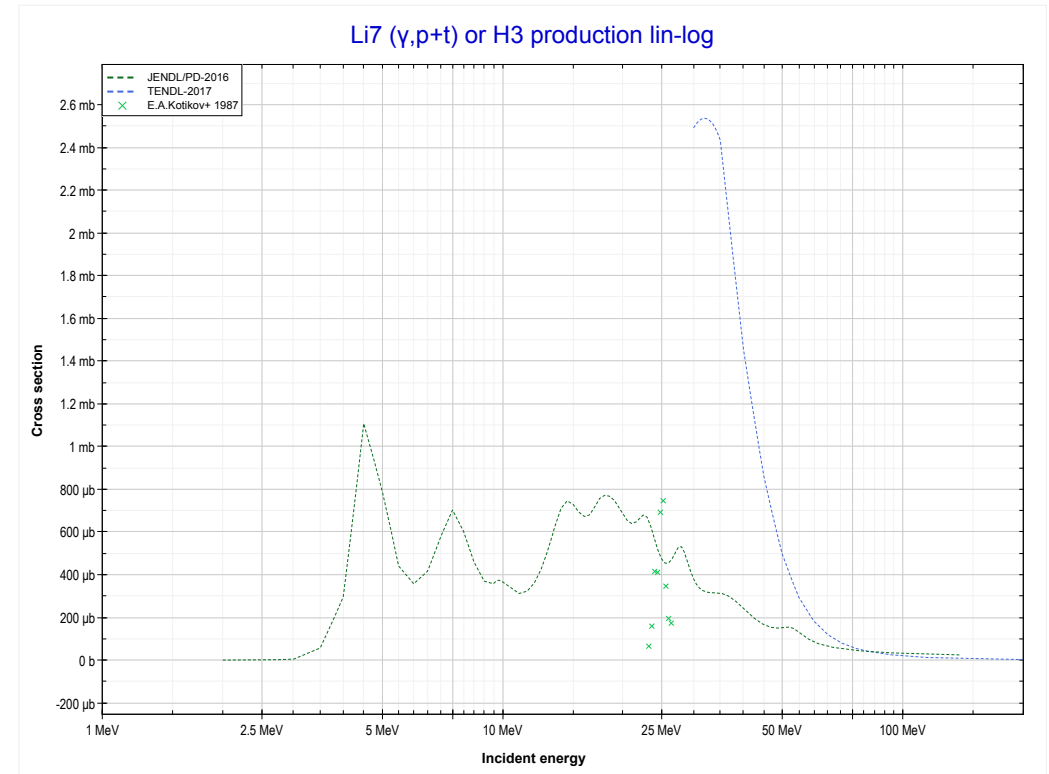
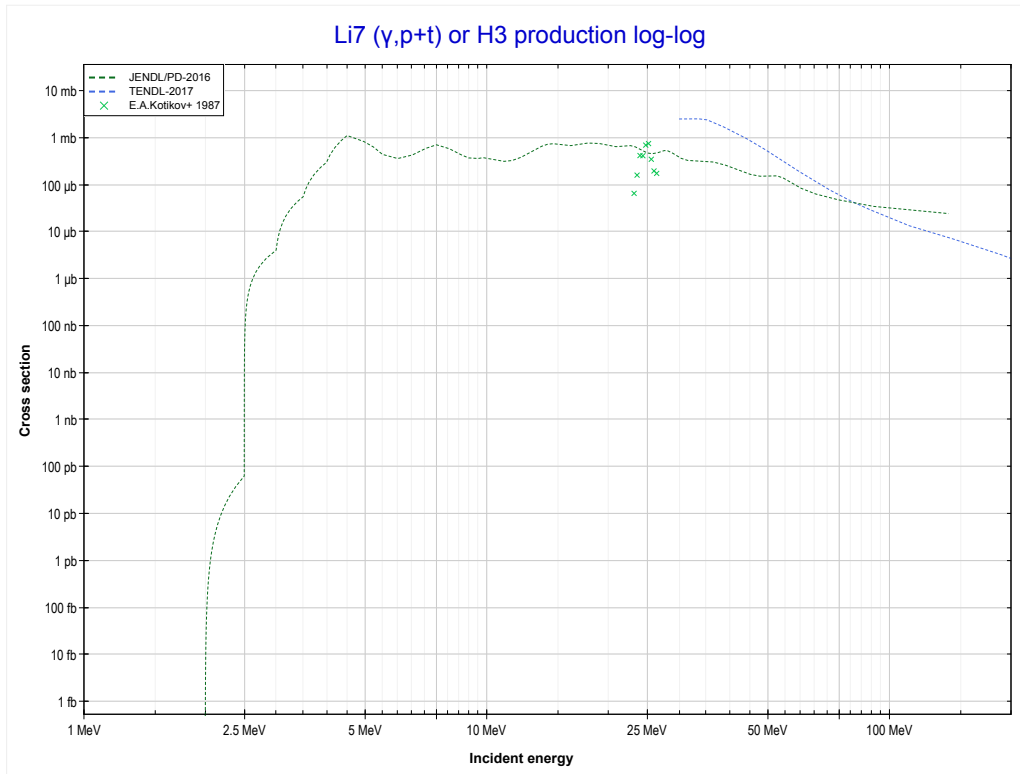
Reaction	Q-Value
Li7(γ, p)He6	-9973.96 keV

<< 3-Li-6	3-Li-7	
<< MT103 (γ,p)	MT105 (γ,t) or MT5 (He4 production)	MT116 ($\gamma,p+t$) >>



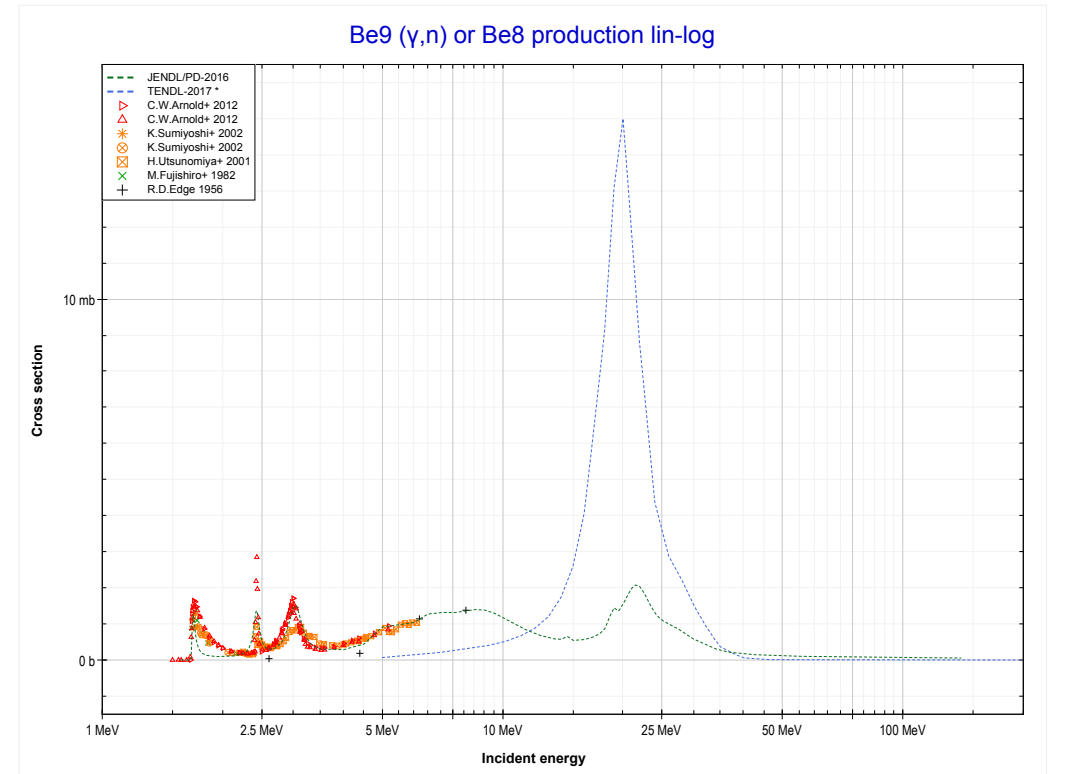
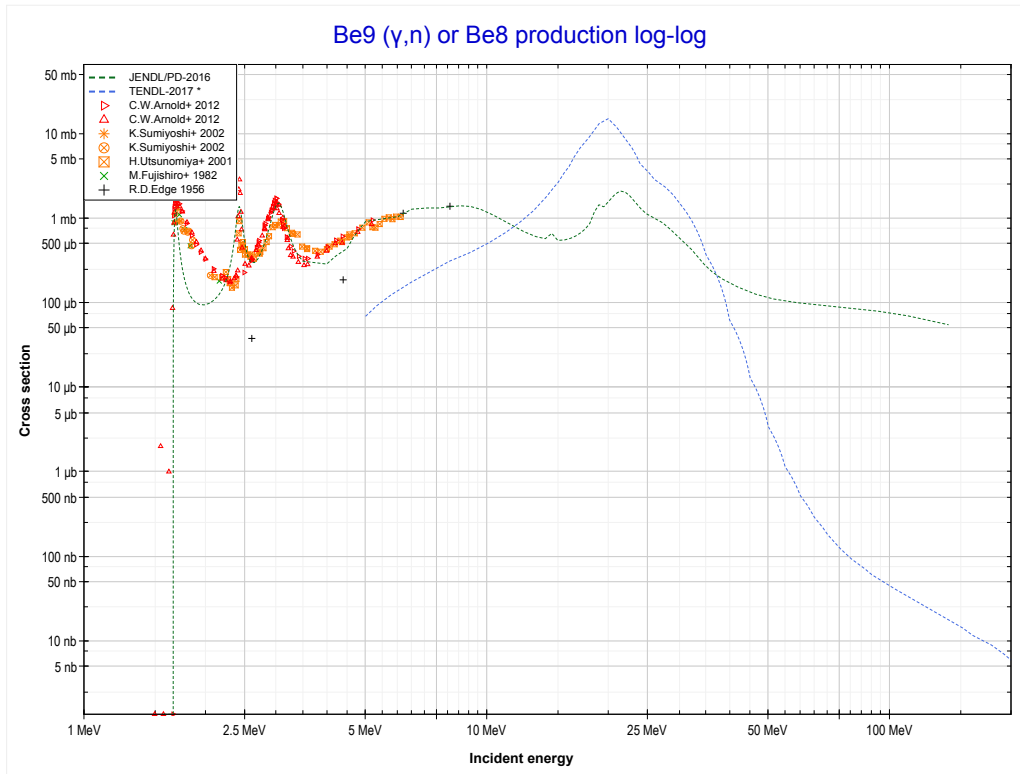
Reaction	Q-Value
Li7(γ,t)He4	-2467.62 keV
Li7($\gamma,n+d$)He4	-8724.85 keV
Li7($\gamma,2n+p$)He4	-10949.42 keV

	3-Li-7	
<< MT105 (γ,t)	MT116 (γ,p+t) or MT5 (H3 production)	>> 4-Be-9 MT4 (γ,n) >>



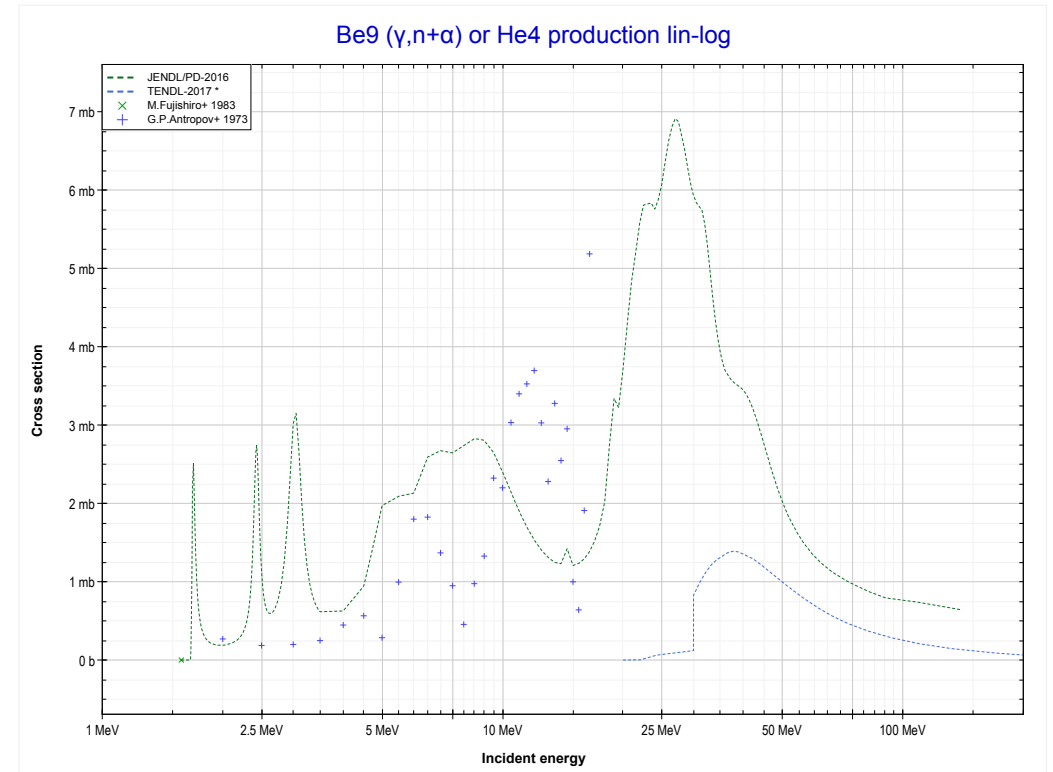
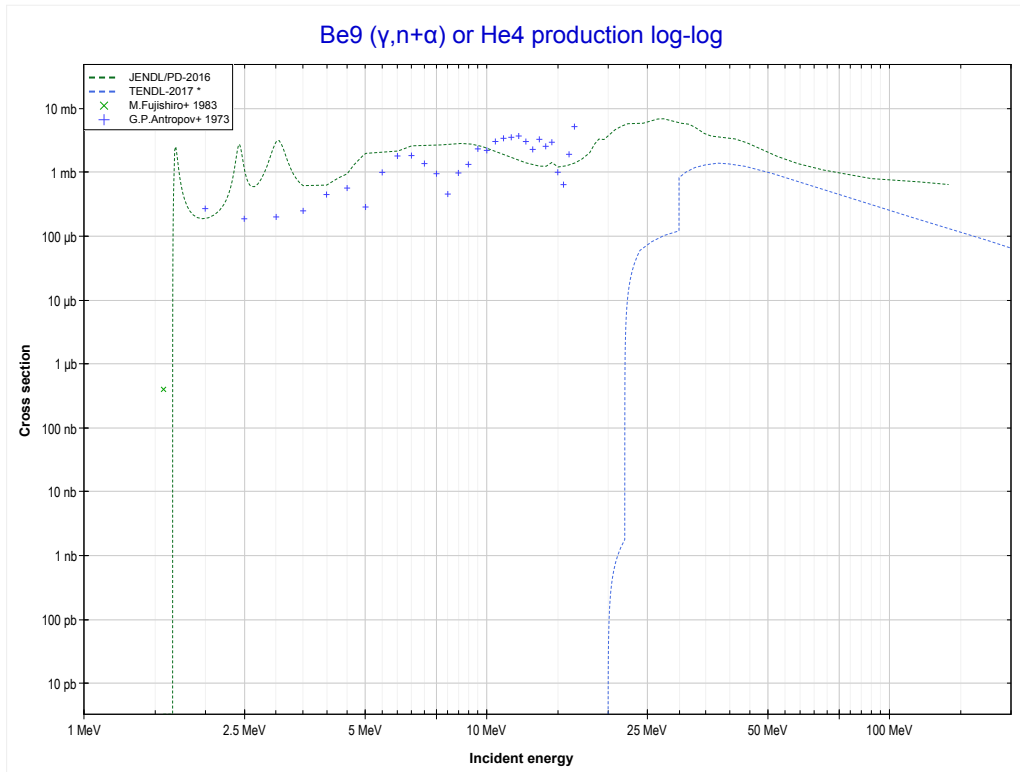
Reaction	Q-Value
Li7(γ,α)H3	-2467.62 keV
Li7(γ,p+t)H3	-22281.48 keV
Li7(γ,n+He3)H3	-23045.23 keV
Li7(γ,2d)H3	-26314.14 keV
Li7(γ,n+p+d)H3	-28538.71 keV
Li7(γ,2n+2p)H3	-30763.28 keV

<< 3-Li-7	4-Be-9	6-C-12 >>
<< 3-Li-7 MT116 ($\gamma, p+t$)	MT4 (γ, n) or MT5 (Be8 production)	MT22 ($\gamma, n+\alpha$) >>



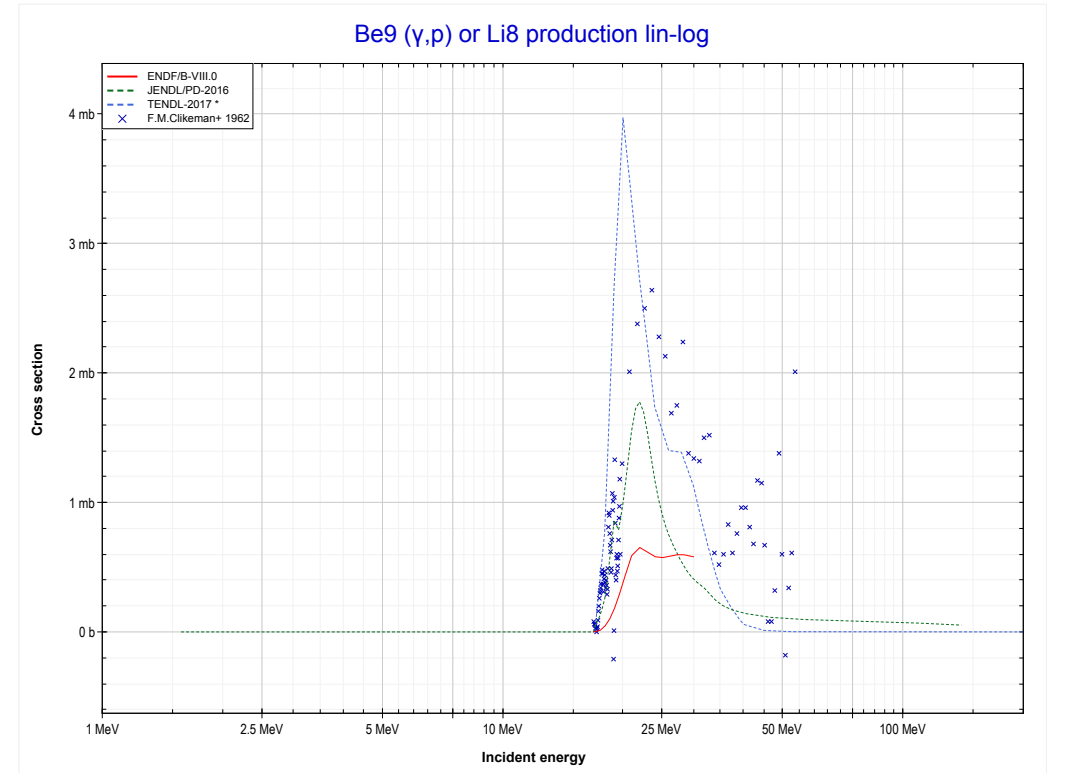
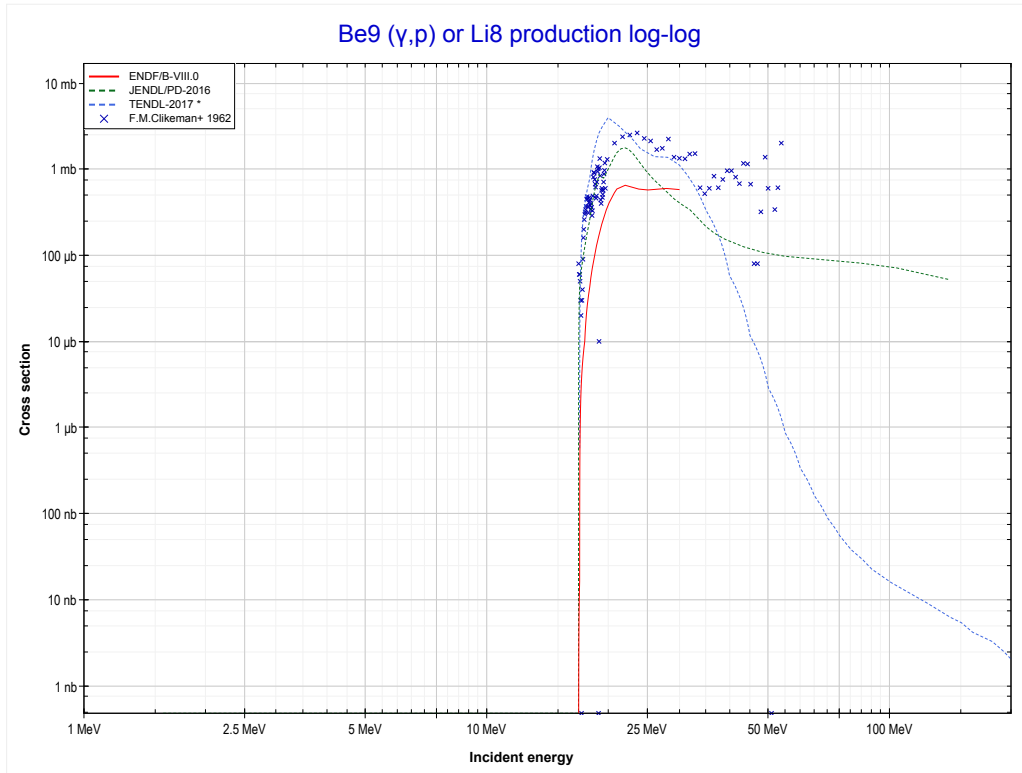
Reaction	Q-Value
Be9(γ, n)Be8	-1664.54 keV

	4-Be-9	6-C-12 >>
<< MT4 (γ,n)	MT22 ($\gamma,n+\alpha$) or MT5 (He4 production)	MT103 (γ,p) >>



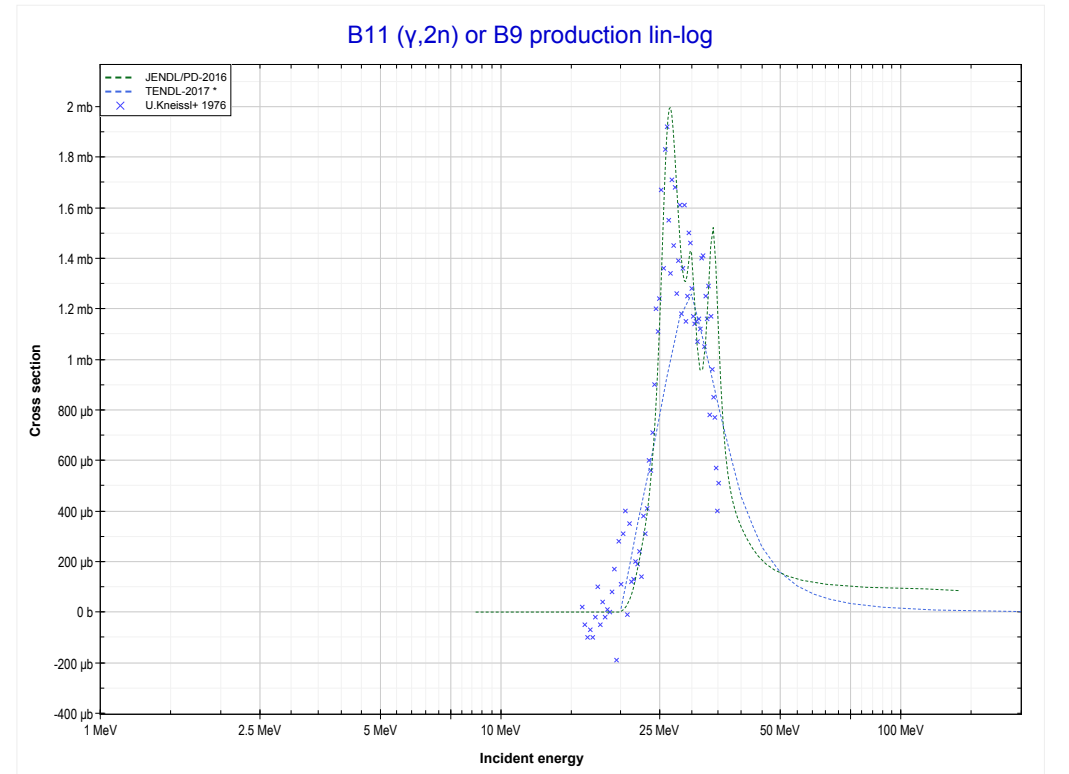
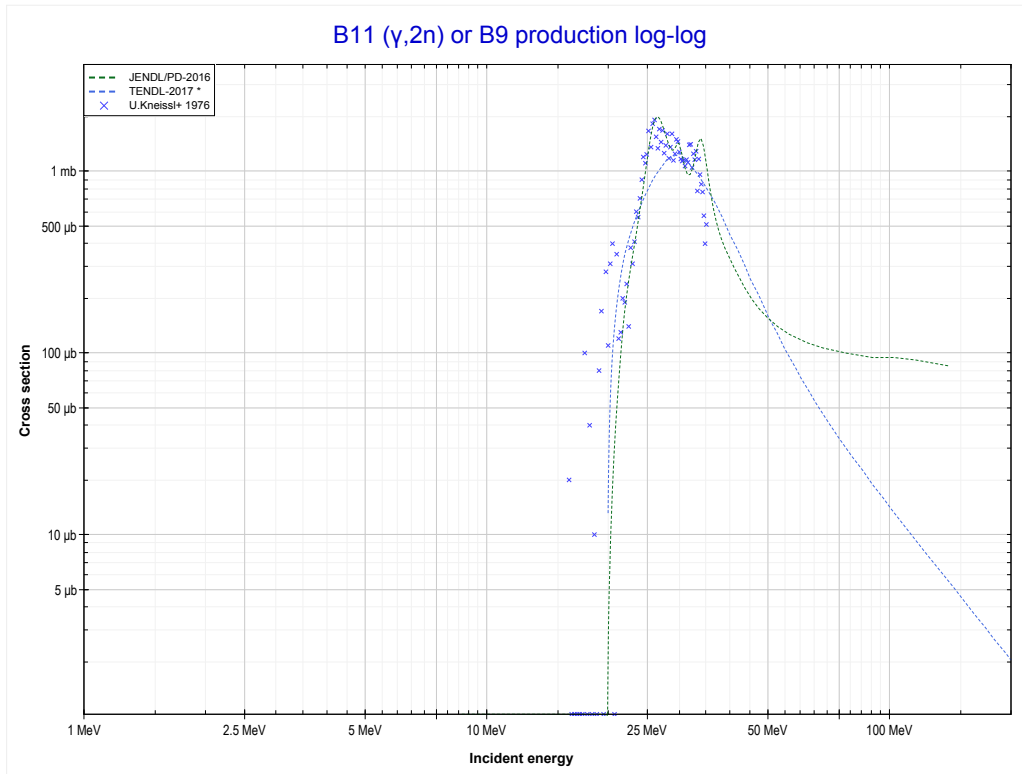
Reaction	Q-Value
Be9($\gamma,n+\alpha$)He4	-1572.70 keV
Be9($\gamma,d+t$)He4	-19161.99 keV
Be9($\gamma,n+p+t$)He4	-21386.56 keV
Be9($\gamma,2n+He3$)He4	-22150.32 keV
Be9($\gamma,n+2d$)He4	-25419.23 keV
Be9($\gamma,2n+p+d$)He4	-27643.79 keV
Be9($\gamma,3n+2p$)He4	-29868.36 keV

<< 3-Li-7	4-Be-9	5-B-11 >>
<< MT22 ($\gamma, n + \alpha$)	MT103 (γ, p) or MT5 (Li8 production)	5-B-11 MT16 ($\gamma, 2n$) >>



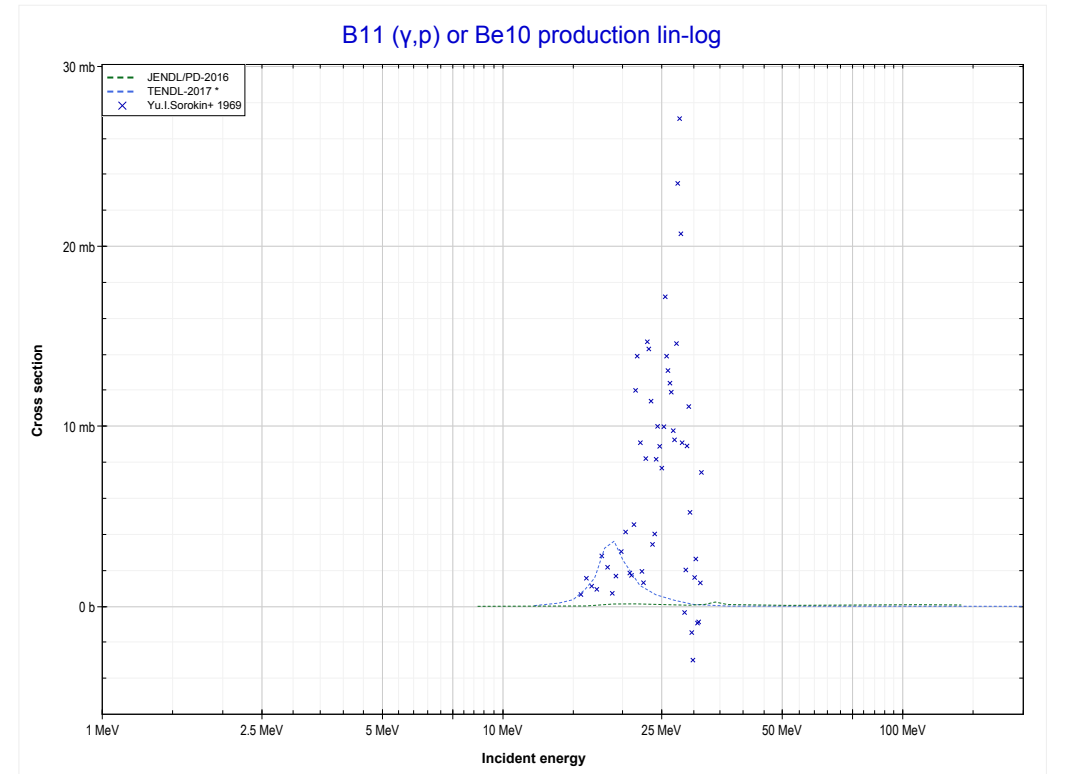
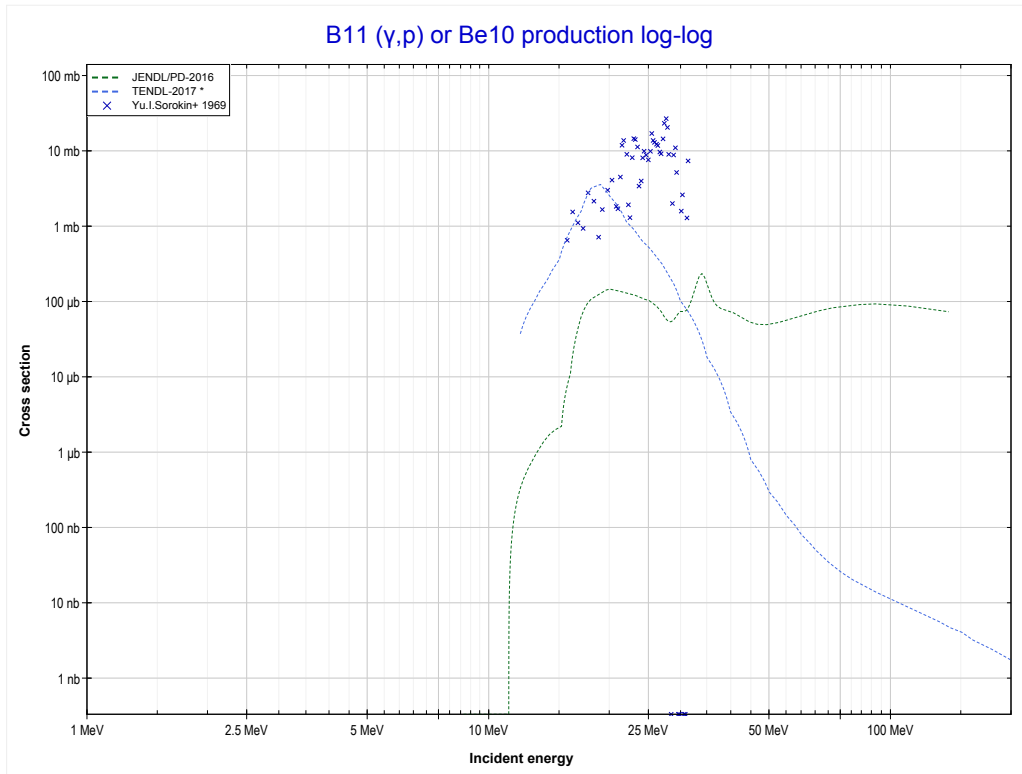
Reaction	Q-Value
Be9(γ, p)Li8	-16886.32 keV

	5-B-11	6-C-12 >>
<< 4-Be-9 MT103 (γ,p)	MT16 (γ,2n) or MT5 (B9 production)	MT103 (γ,p) >>



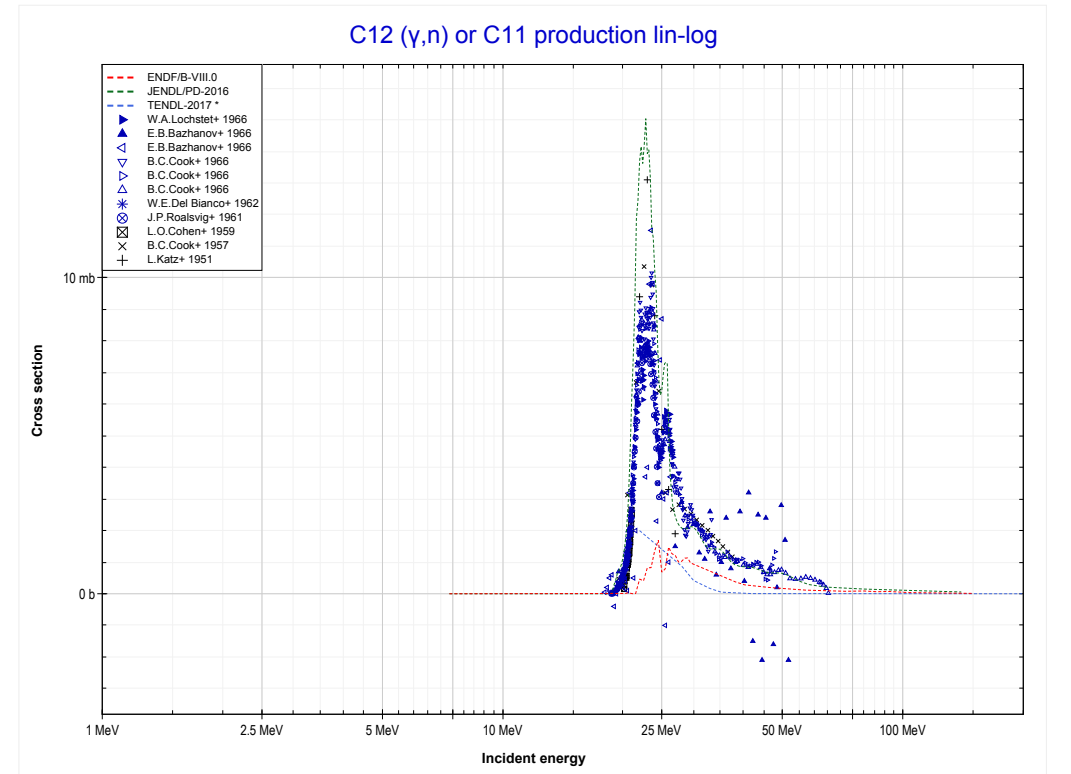
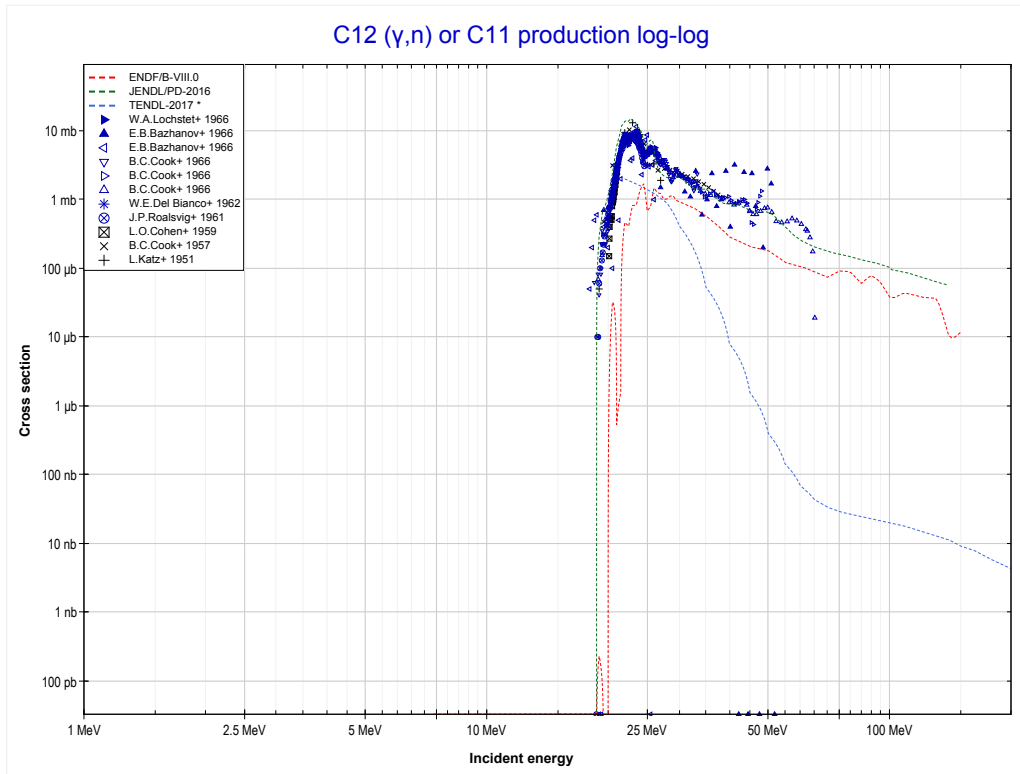
Reaction	Q-Value
B11(γ,2n)B9	-19891.23 keV

<< 4-Be-9	5-B-11	6-C-12 >>
<< MT16 ($\gamma,2n$)	MT103 (γ,p) or MT5 (Be10 production)	6-C-12 MT4 (γ,n) >>



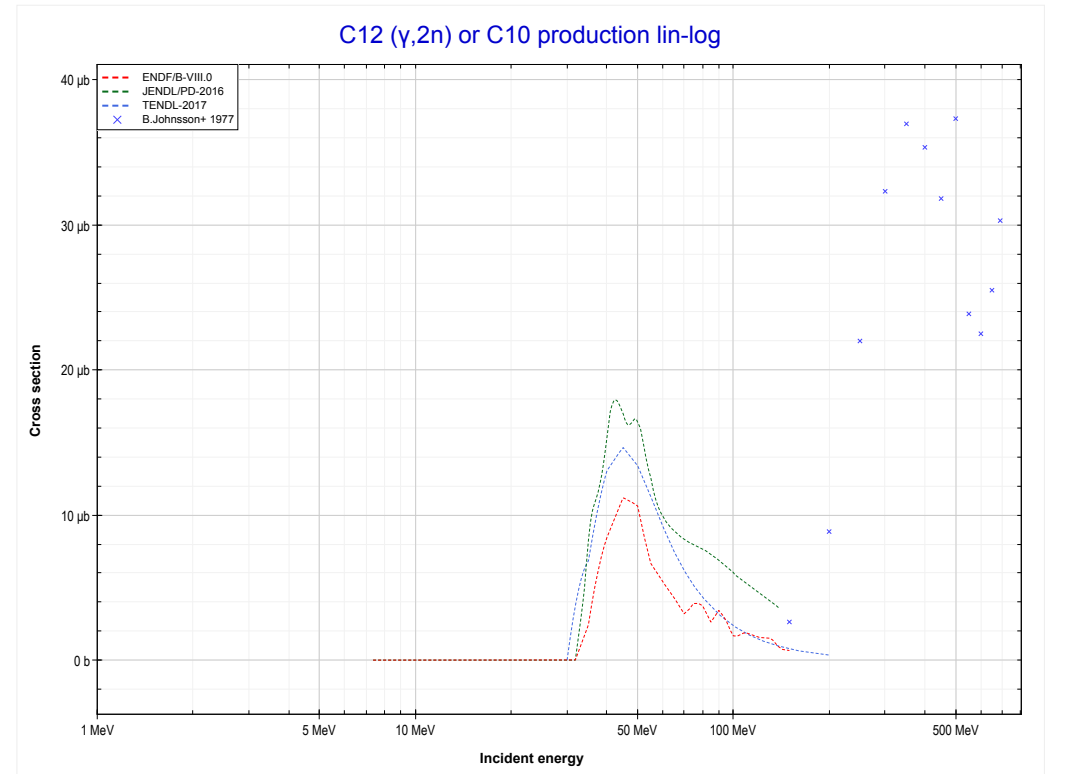
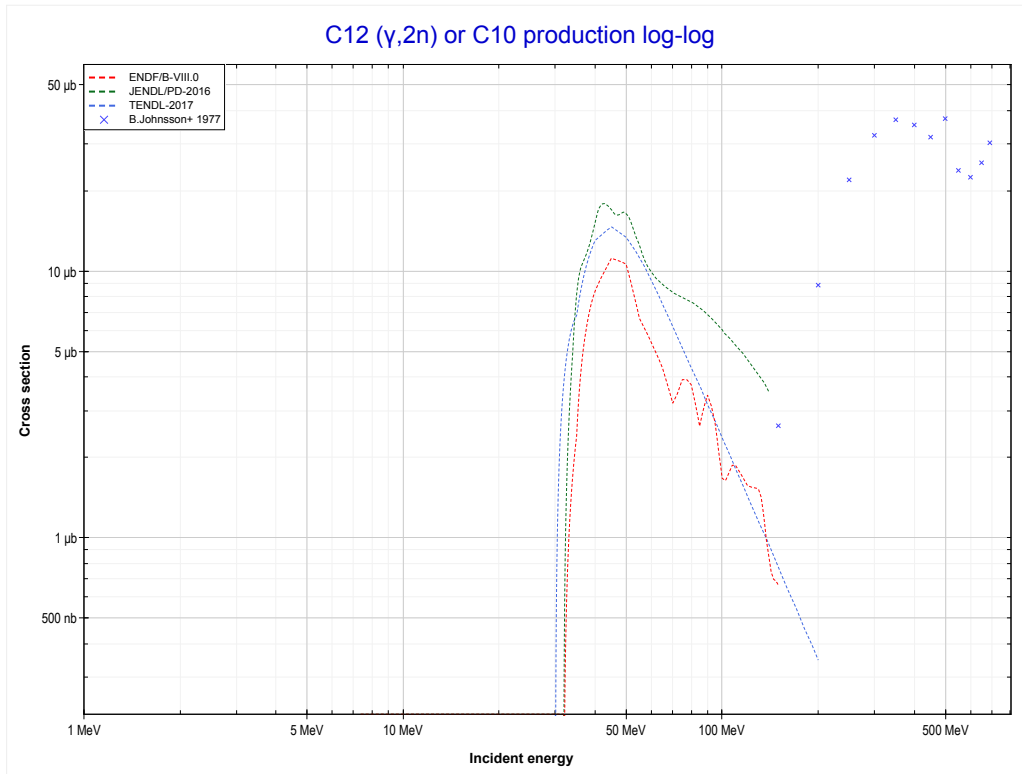
Reaction	Q-Value
B11(γ,p)Be10	-11228.56 keV

<< 4-Be-9	6-C-12	6-C-13 >>
<< 5-B-11 MT103 (γ,p)	MT4 (γ,n) or MT5 (C11 production)	MT16 ($\gamma,2n$) >>



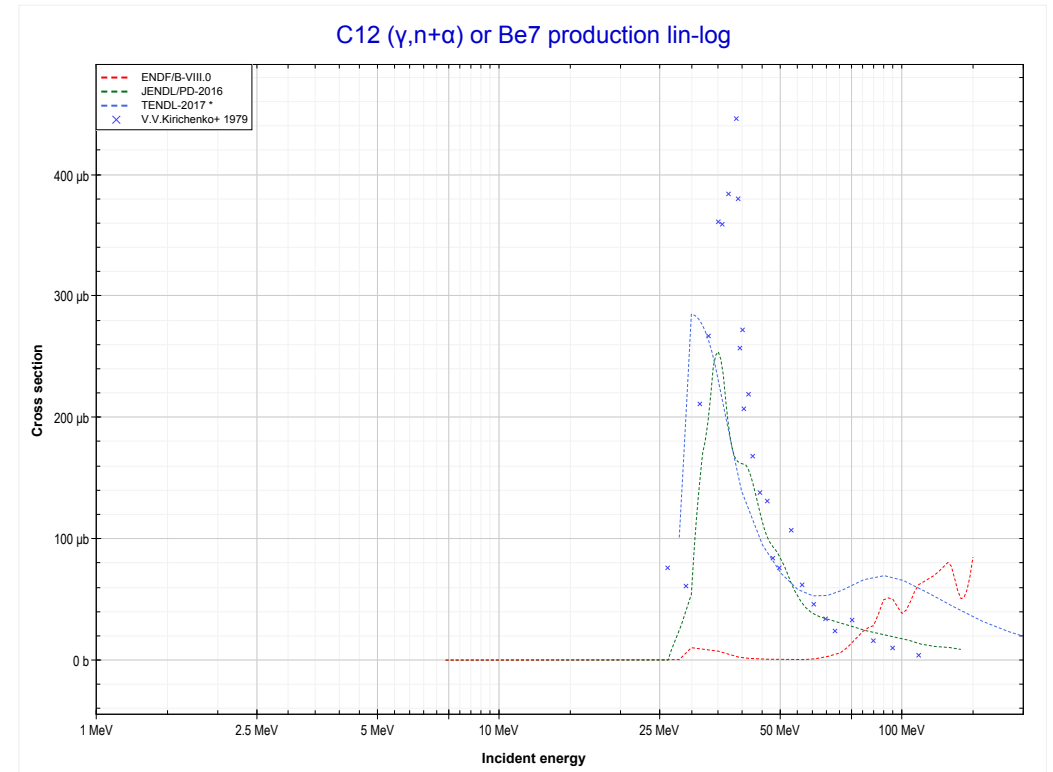
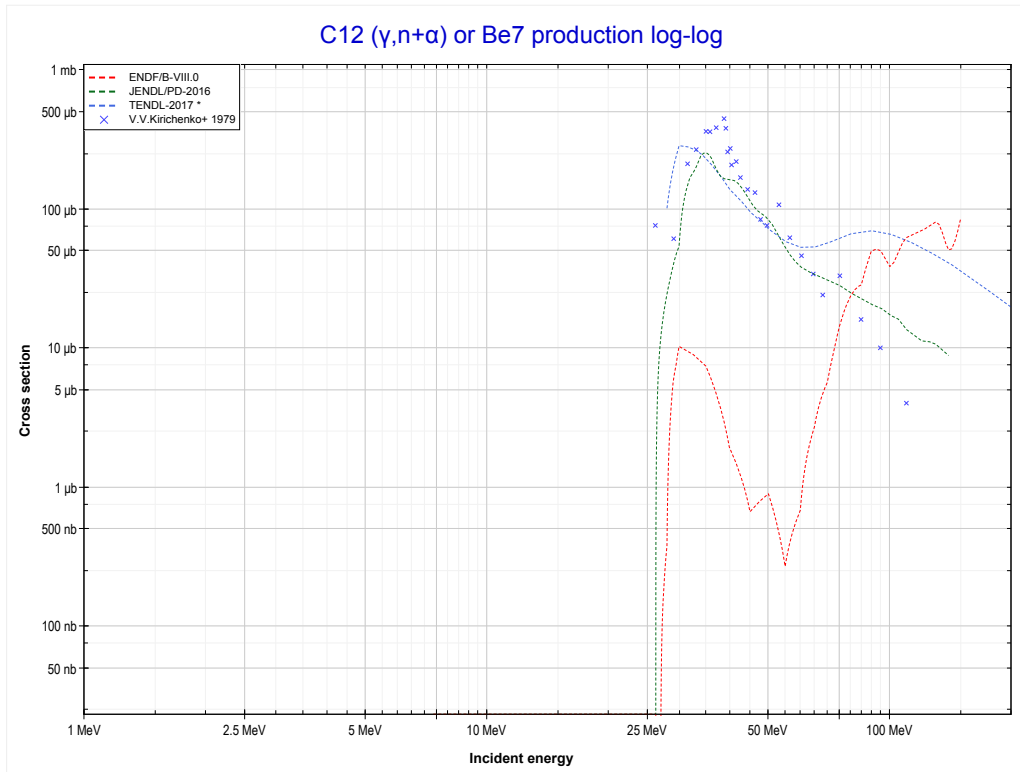
Reaction	Q-Value
C12(γ,n)C11	-18721.62 keV

<< 5-B-11	6-C-12	6-C-14 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (C10 production)	MT22 ($\gamma, n+\alpha$) >>



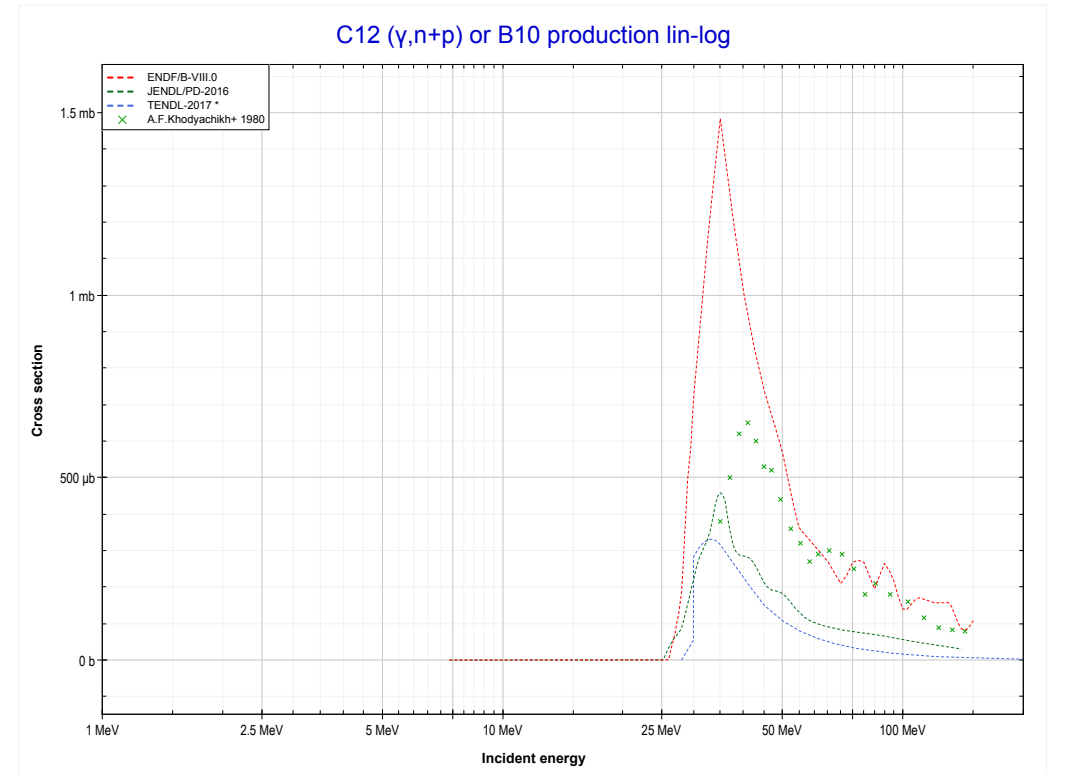
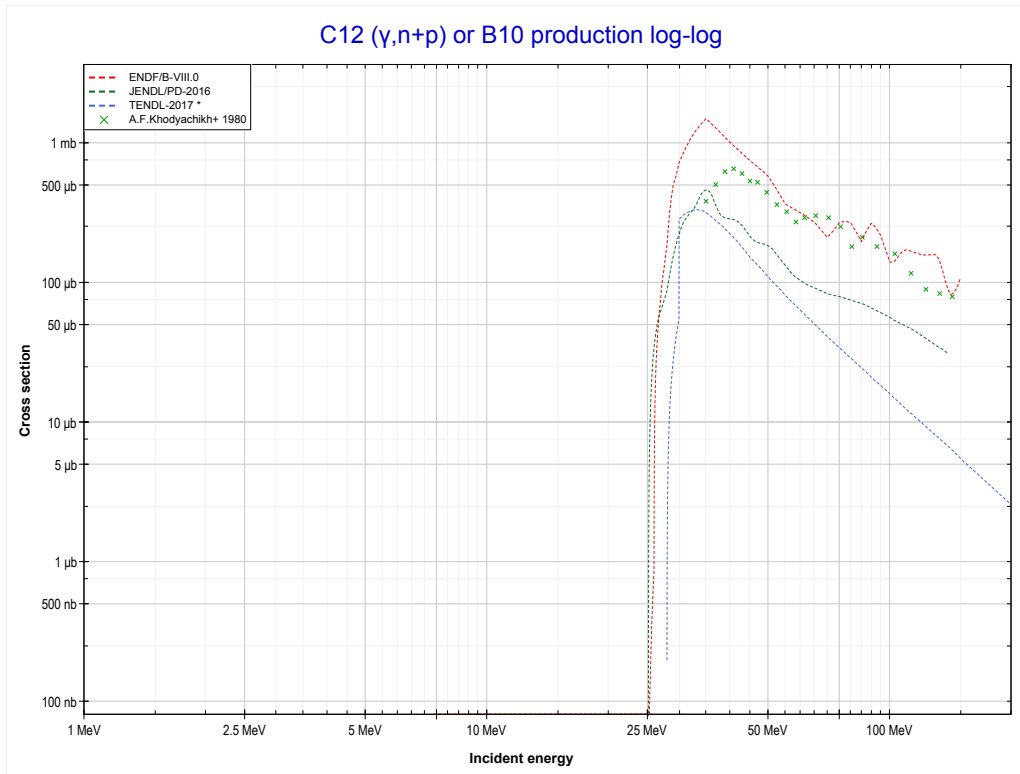
Reaction	Q-Value
C12($\gamma, 2n$)C10	-31841.43 keV

<< 4-Be-9	6-C-12	
<< MT16 ($\gamma,2n$)	MT22 ($\gamma,n+\alpha$) or MT5 (Be7 production)	MT28 ($\gamma,n+p$) >>



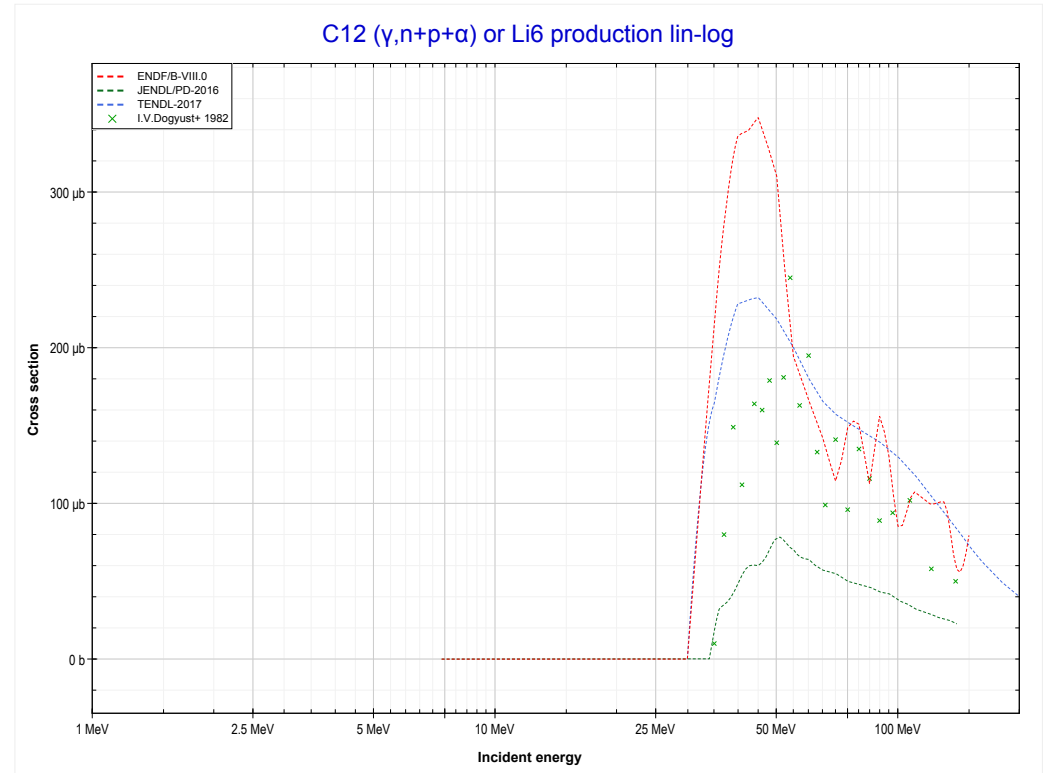
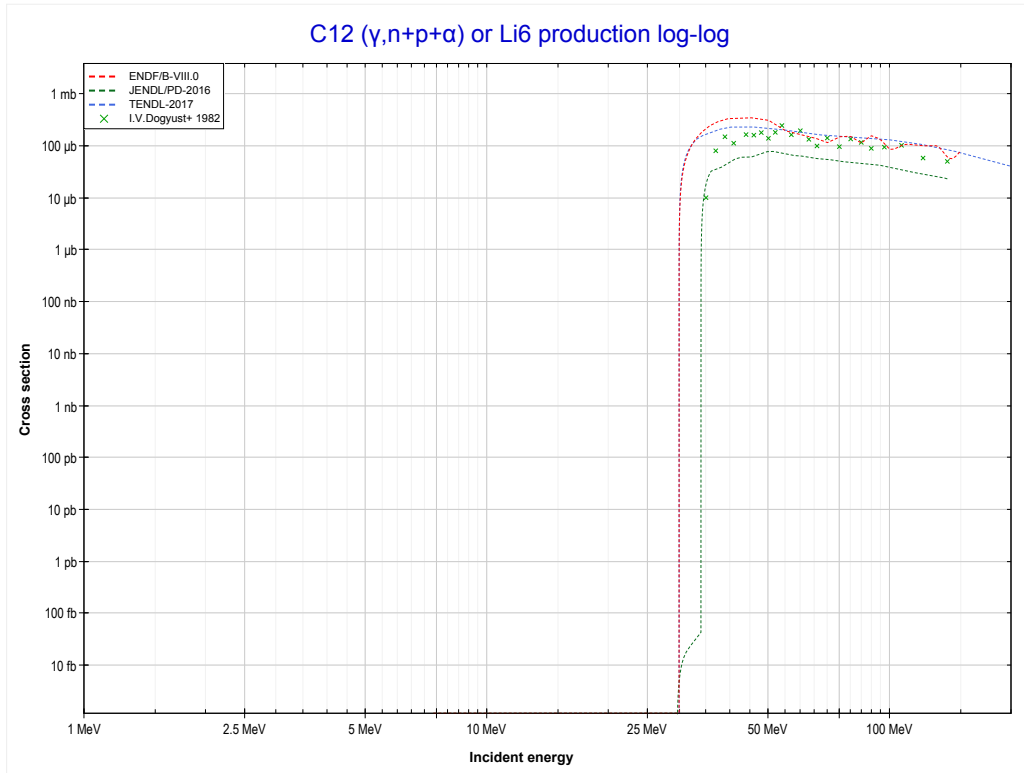
Reaction	Q-Value
C12($\gamma,n+\alpha$)Be7	-26265.23 keV
C12($\gamma,d+t$)Be7	-43854.53 keV
C12($\gamma,n+p+t$)Be7	-46079.09 keV
C12($\gamma,2n+He3$)Be7	-46842.85 keV
C12($\gamma,n+2d$)Be7	-50111.76 keV
C12($\gamma,2n+p+d$)Be7	-52336.33 keV
C12($\gamma,3n+2p$)Be7	-54560.89 keV

<< 3-Li-6	6-C-12	7-N-14 >>
<< MT22 ($\gamma, n + \alpha$)	MT28 ($\gamma, n + p$) or MT5 (B10 production)	MT45 ($\gamma, n + p + \alpha$) >>



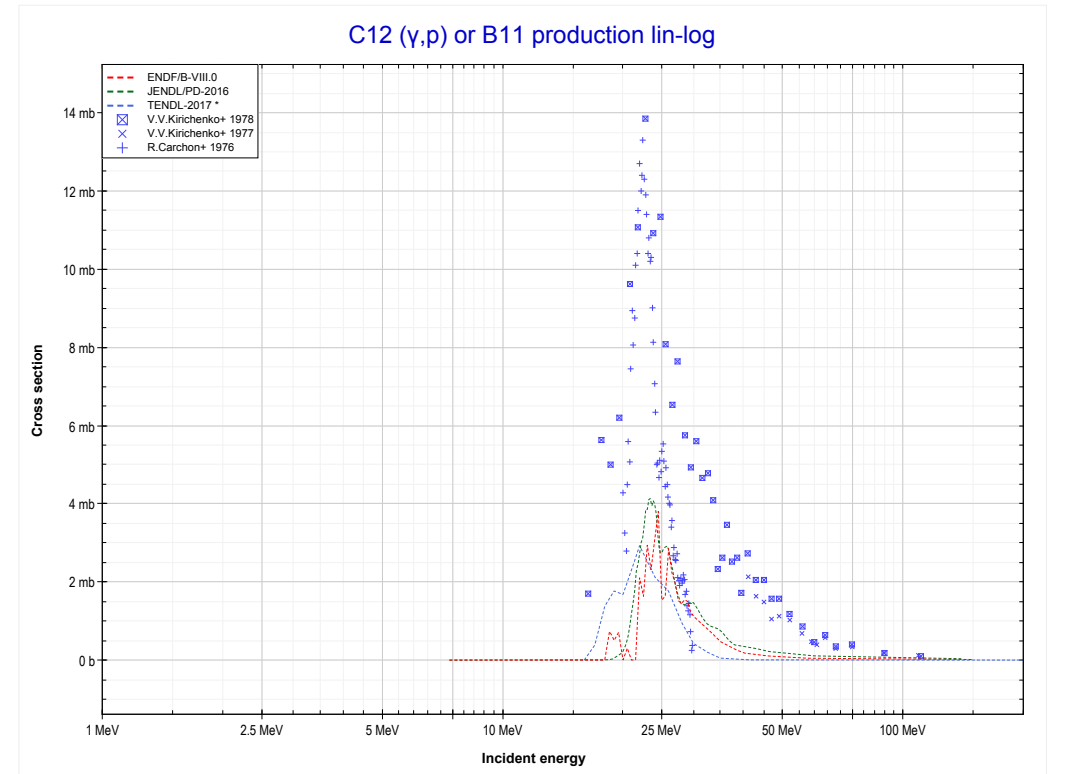
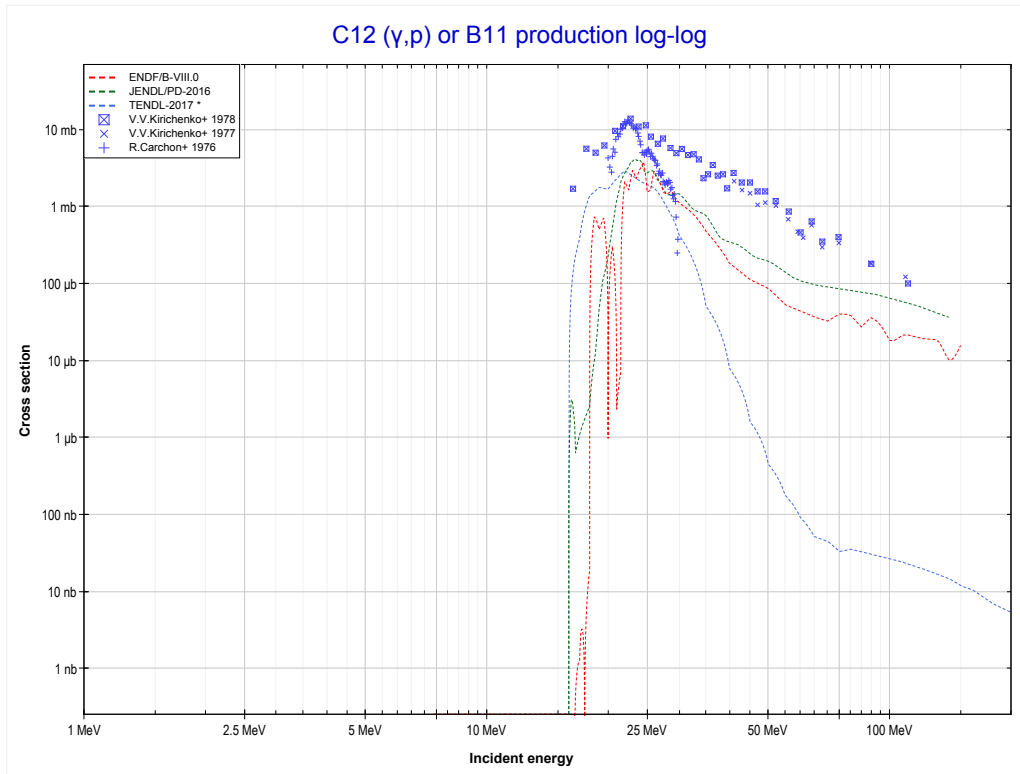
Reaction	Q-Value
C12(γ, d)B10	-25186.42 keV
C12($\gamma, n + p$)B10	-27410.99 keV

6-C-12		
<< MT28 ($\gamma, n+p$)	MT45 ($\gamma, n+p+\alpha$) or MT5 (Li6 production)	MT103 (γ, p) >>



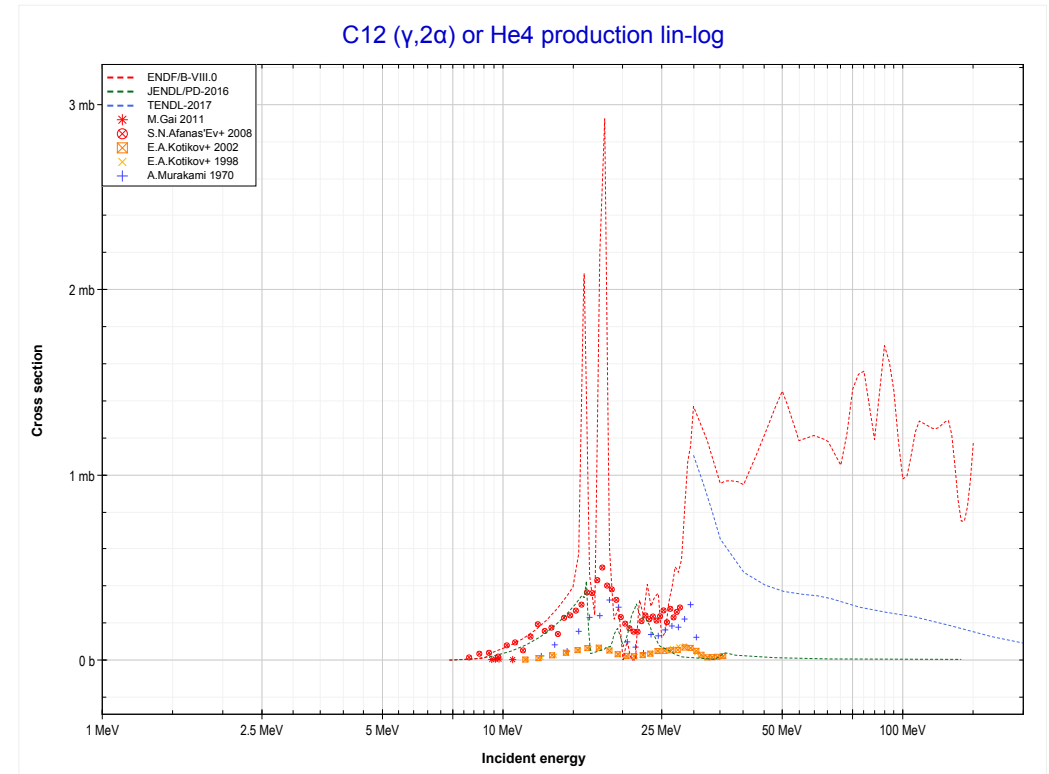
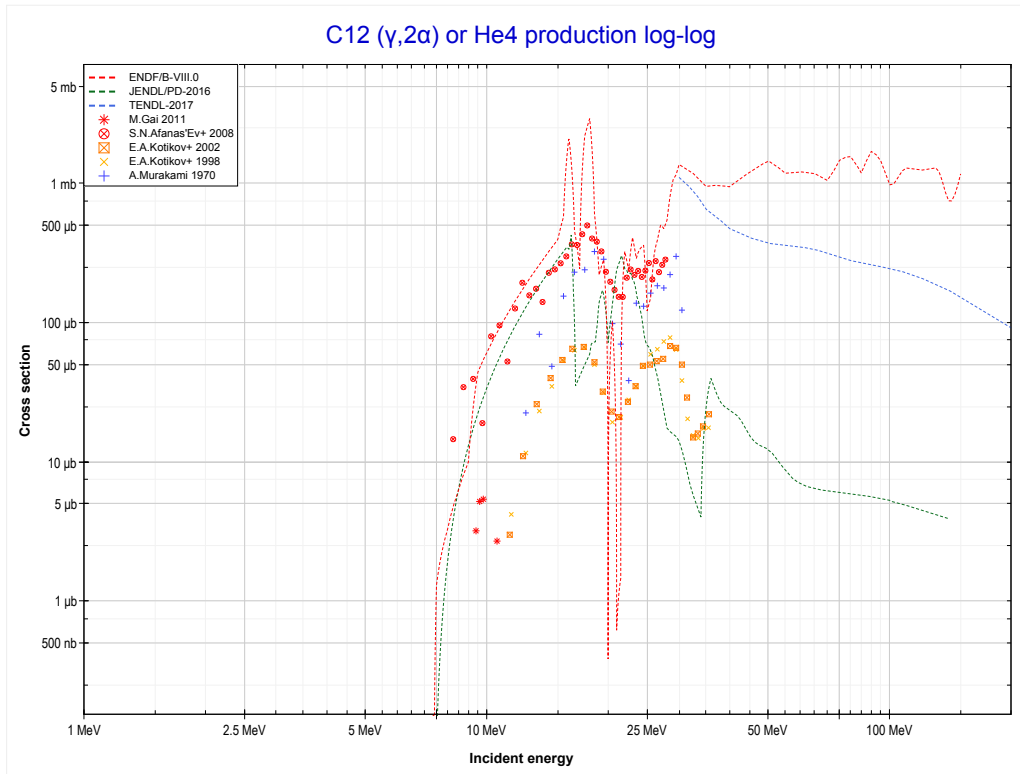
Reaction	Q-Value	Reaction	Q-Value
C12($\gamma, d+\alpha$)Li6	-29647.52 keV	C12($\gamma, n+p+2d$)Li6	-55718.61 keV
C12($\gamma, n+p+\alpha$)Li6	-31872.08 keV	C12($\gamma, 2n+2p+d$)Li6	-57943.18 keV
C12($\gamma, t+He3$)Li6	-43967.90 keV	C12($\gamma, 3n+3p$)Li6	-60167.74 keV
C12($\gamma, p+d+t$)Li6	-49461.38 keV		
C12($\gamma, n+d+He3$)Li6	-50225.13 keV		
C12($\gamma, n+2p+t$)Li6	-51685.94 keV		
C12($\gamma, 2n+p+He3$)Li6	-52449.70 keV		
C12($\gamma, 3d$)Li6	-53494.04 keV		

<< 5-B-11	6-C-12	6-C-13 >>
<< MT45 ($\gamma, n+p+\alpha$)	MT103 (γ, p) or MT5 (B11 production)	MT108 ($\gamma, 2\alpha$) >>



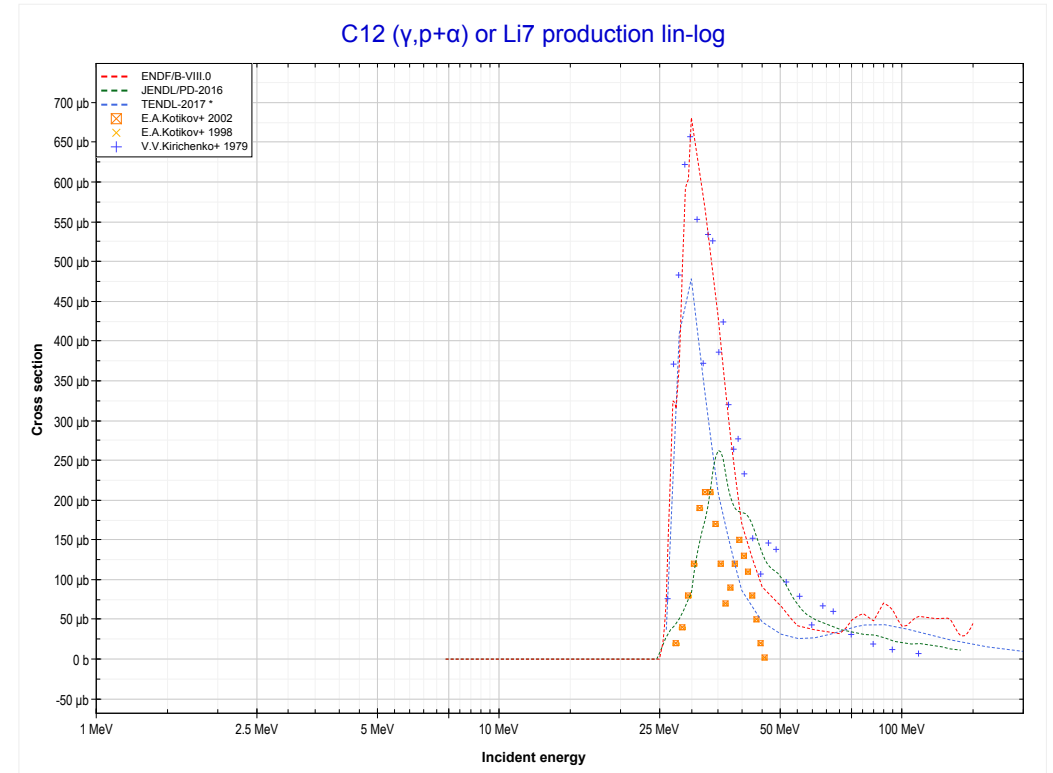
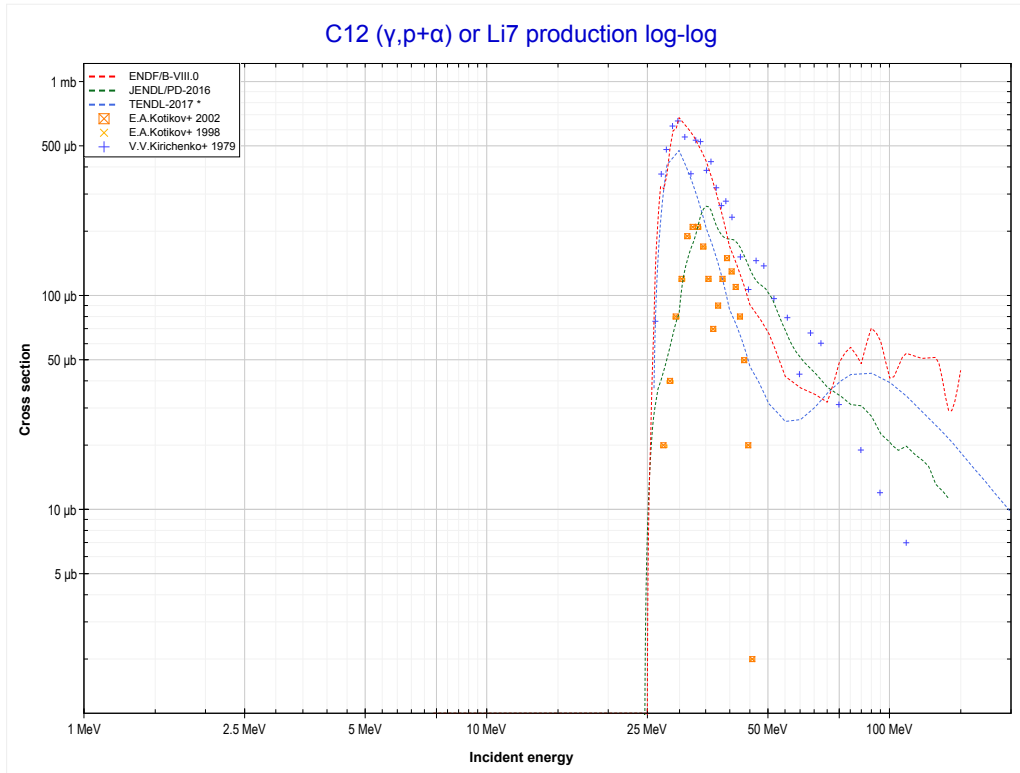
Reaction	Q-Value
C12(γ, p)B11	-15956.87 keV

	6-C-12	
<< MT103 (γ,p)	MT108 ($\gamma,2\alpha$) or MT5 (He4 production)	MT112 ($\gamma,p+\alpha$) >>



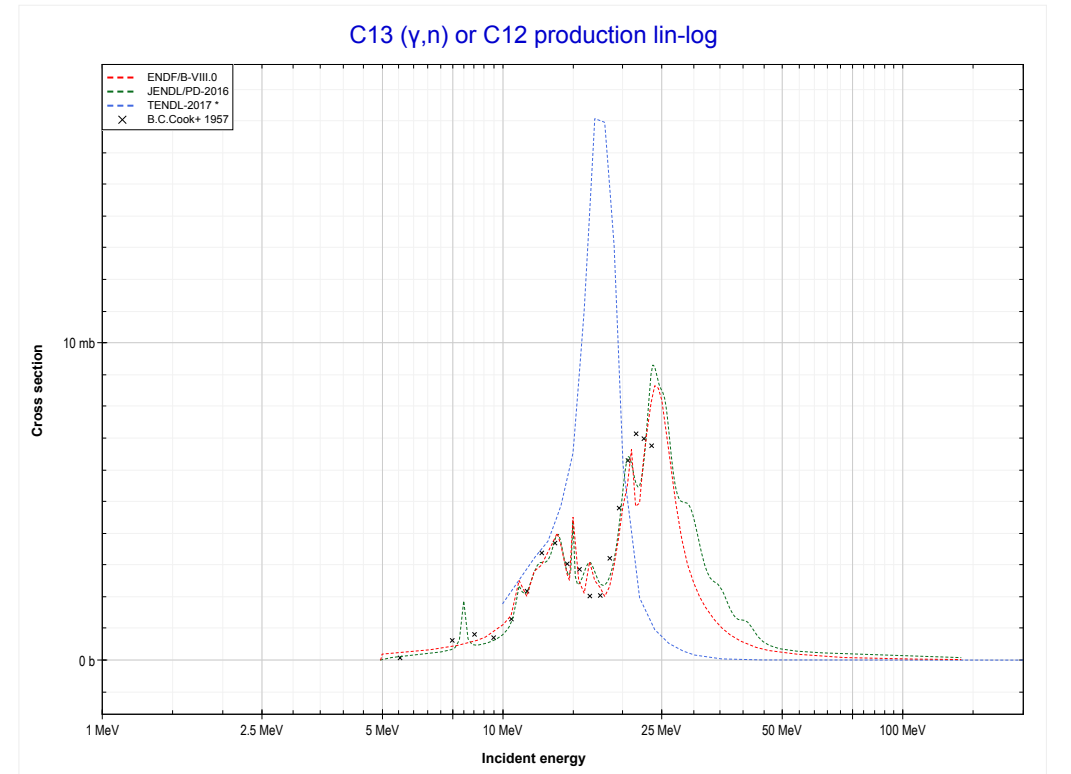
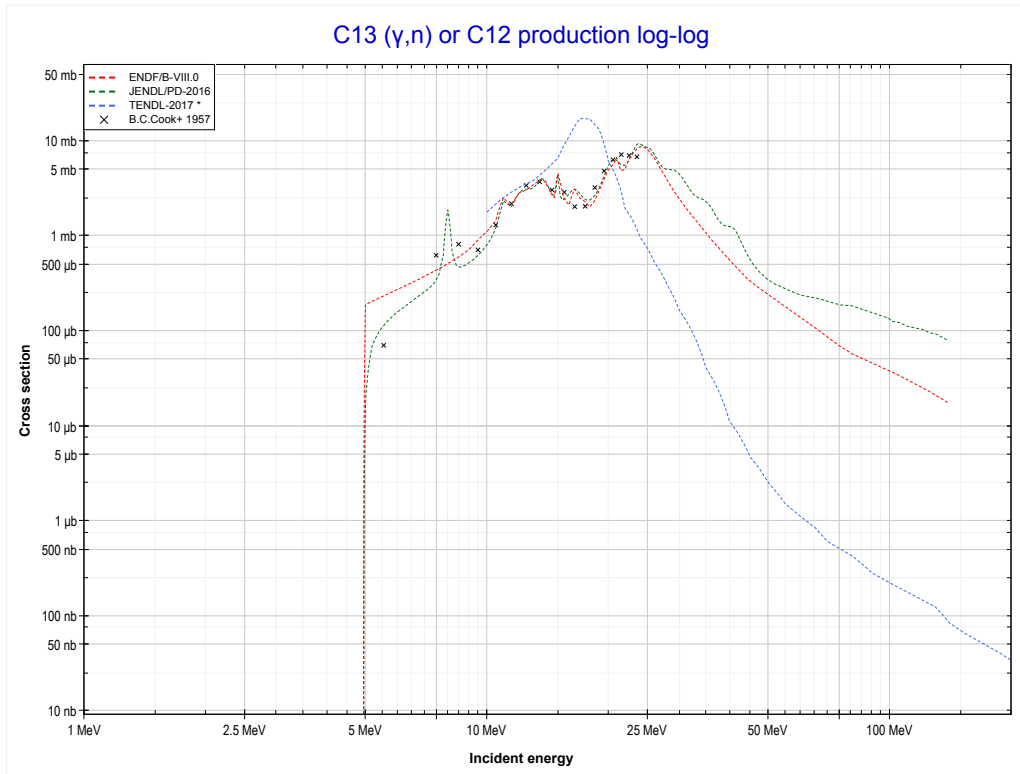
Reaction	Q-Value	Reaction	Q-Value
C12($\gamma,2\alpha$)He4	-7274.75 keV	C12($\gamma,n+p+t$)He3)He4	-47666.22 keV
C12($\gamma,p+t$)He4	-27088.61 keV	C12($\gamma,2n+2$ He3)He4	-48429.98 keV
C12($\gamma,n+He3+\alpha$)He4	-27852.36 keV	C12($\gamma,p+2d+t$)He4	-50935.14 keV
C12($\gamma,2d+\alpha$)He4	-31121.27 keV	C12($\gamma,n+2d+He3$)He4	-51698.89 keV
C12($\gamma,n+p+d+\alpha$)He4	-33345.84 keV	C12($\gamma,n+2p+d+t$)He4	-53159.70 keV
C12($\gamma,2n+2p+\alpha$)He4	-35570.41 keV	C12($\gamma,2n+p+d+He3$)He4	-53923.46 keV
C12($\gamma,d+t+He3$)He4	-45441.66 keV	C12($\gamma,4d$)He4	-54967.80 keV
C12($\gamma,2p+2t$)He4	-46902.47 keV	C12($\gamma,2n+3p+t$)He4	-55384.27 keV

	6-C-12	
<< MT108 ($\gamma,2\alpha$)	MT112 ($\gamma,p+\alpha$) or MT5 (Li7 production)	6-C-13 MT4 (γ,n) >>



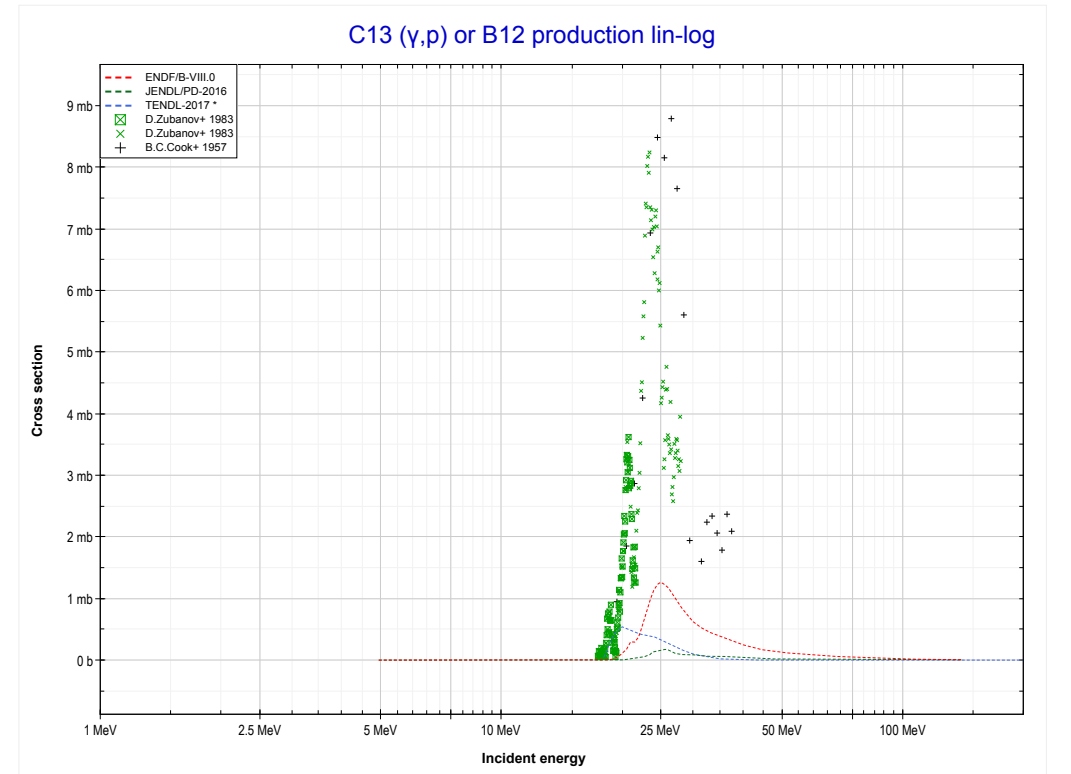
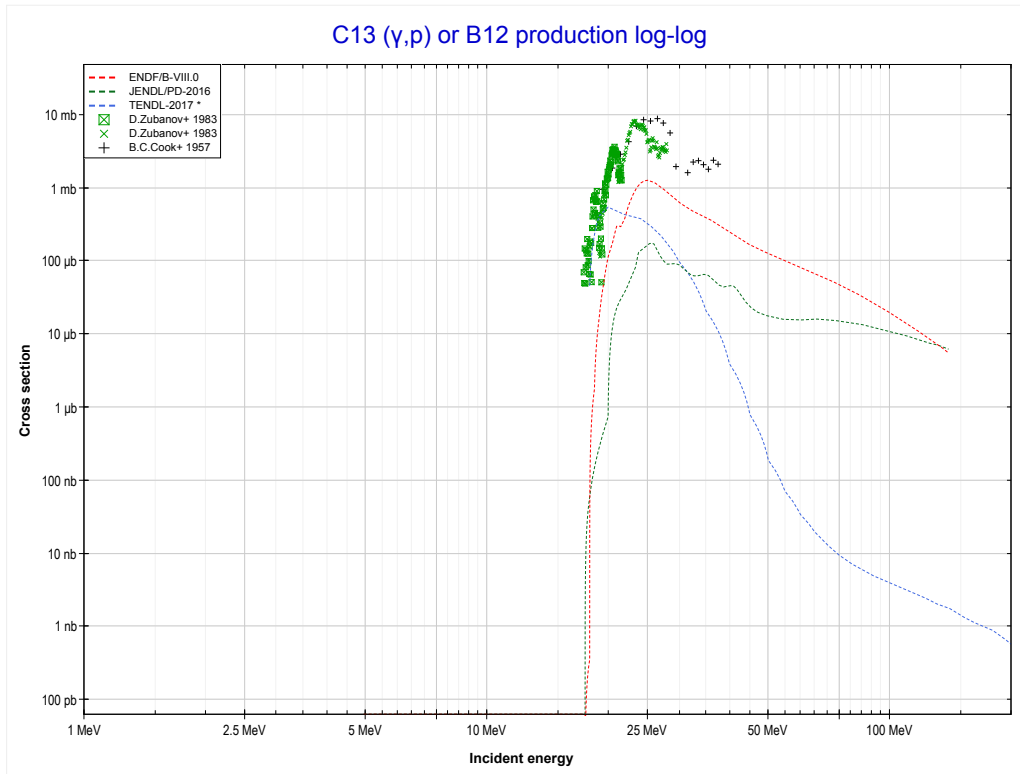
Reaction	Q-Value
C12($\gamma,p+\alpha$)Li7	-24620.99 keV
C12($\gamma,d+\text{He3}$)Li7	-42974.04 keV
C12($\gamma,2p+t$)Li7	-44434.85 keV
C12($\gamma,n+p+\text{He3}$)Li7	-45198.61 keV
C12($\gamma,p+2d$)Li7	-48467.52 keV
C12($\gamma,n+2p+d$)Li7	-50692.08 keV
C12($\gamma,2n+3p$)Li7	-52916.65 keV

<< 6-C-12	6-C-13	7-N-14 >>
<< 6-C-12 MT112 ($\gamma, p + \alpha$)	MT4 (γ, n) or MT5 (C12 production)	MT103 (γ, p) >>



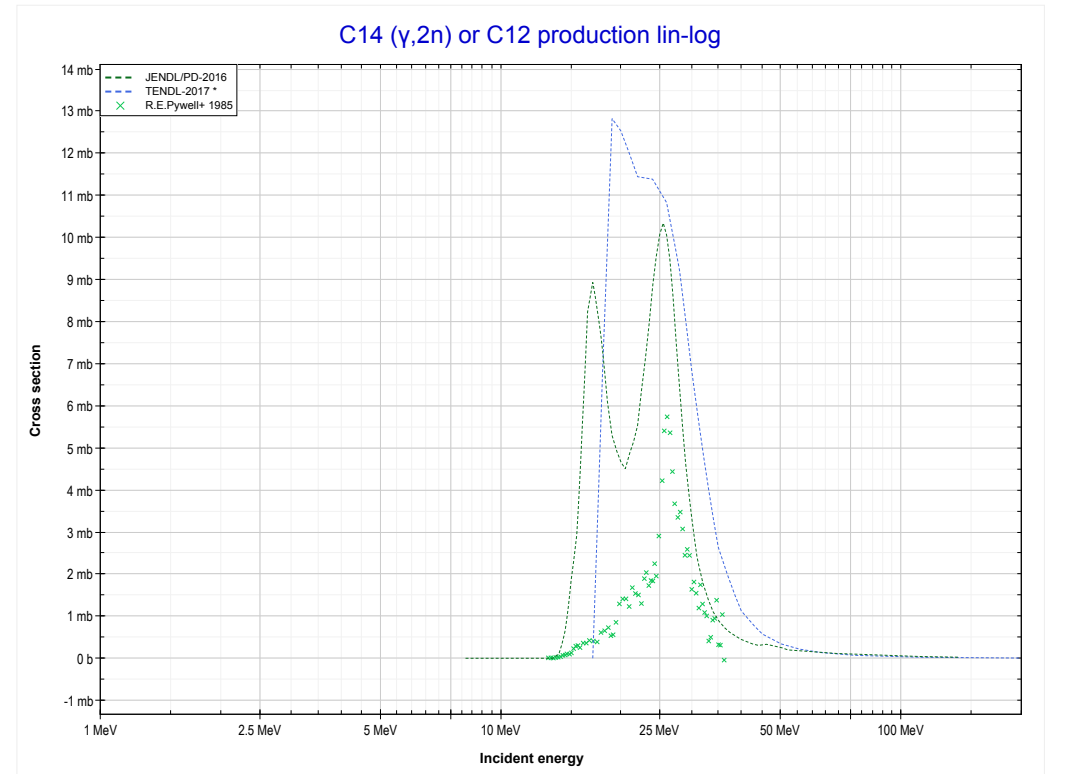
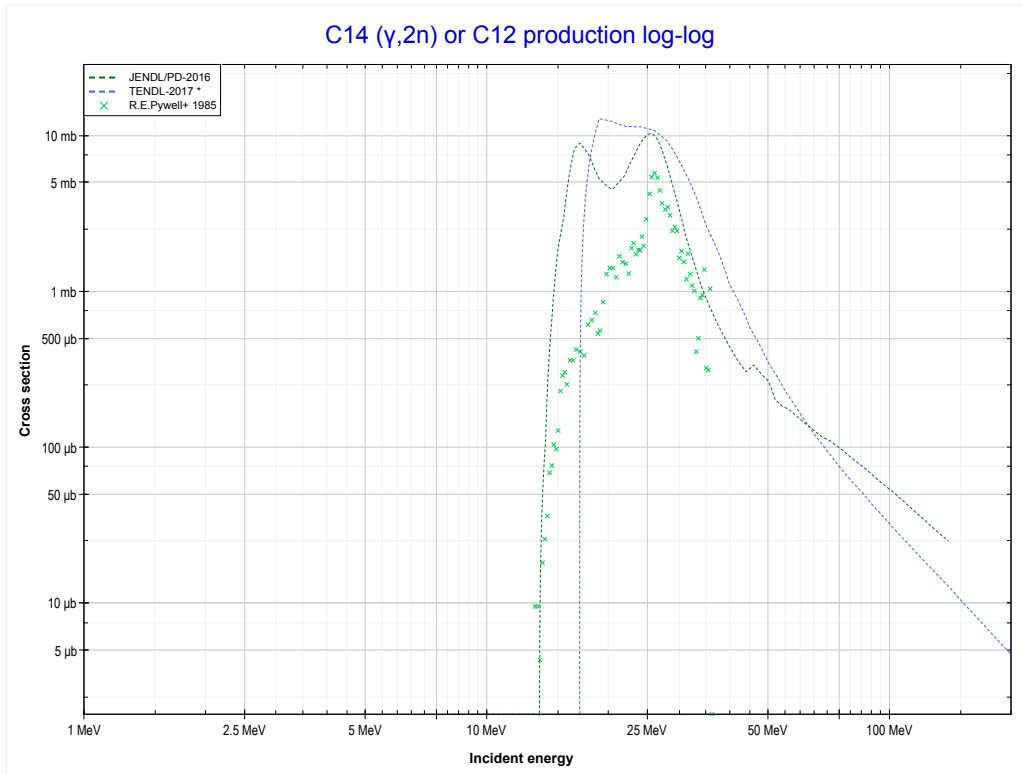
Reaction	Q-Value
C13(γ, n)C12	-4946.31 keV

<< 6-C-12	6-C-13	7-N-15 >>
<< MT4 (γ,n)	MT103 (γ,p) or MT5 (B12 production)	6-C-14 MT16 ($\gamma,2n$) >>



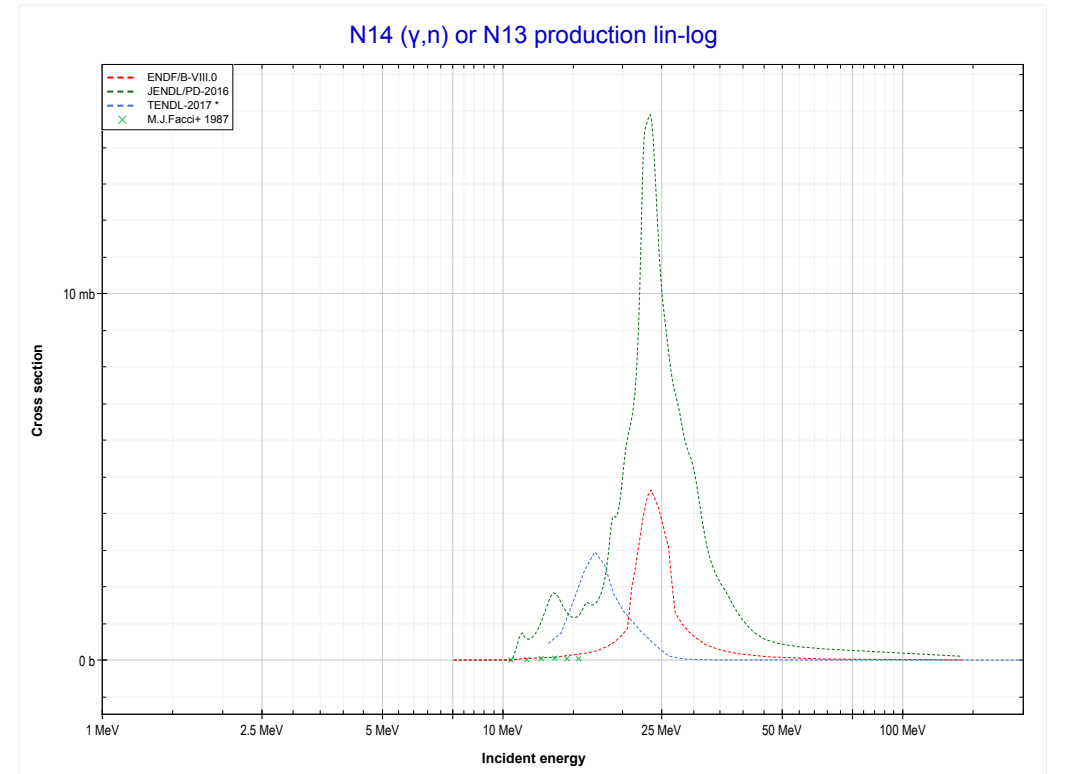
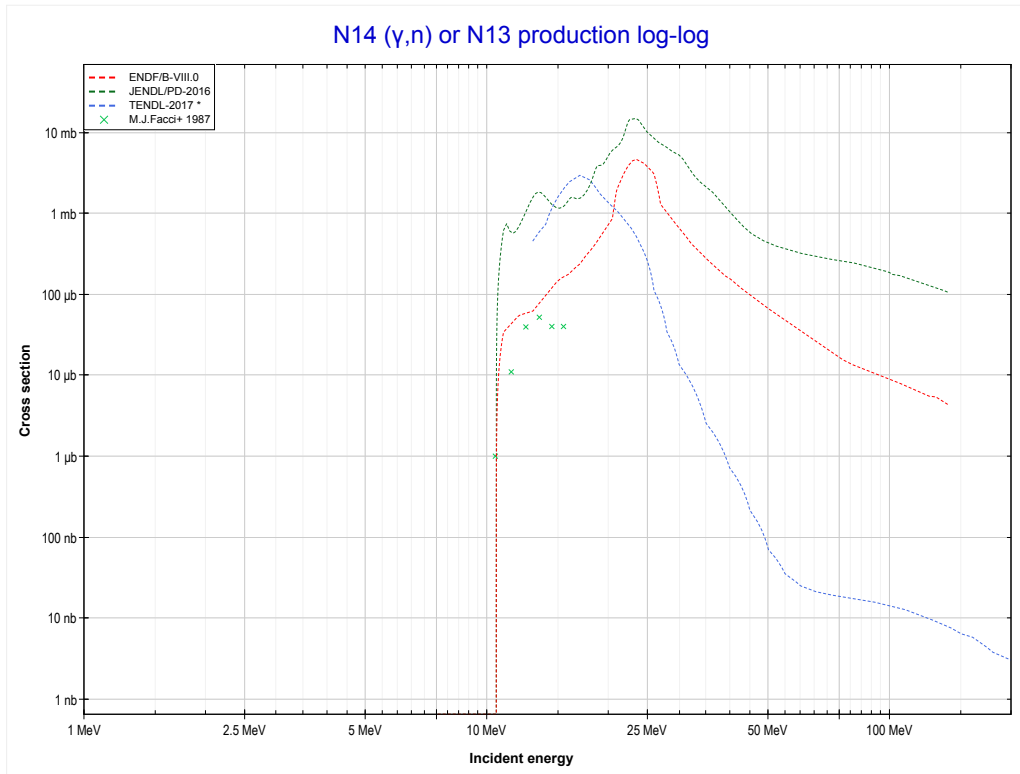
Reaction	Q-Value
C13(γ,p)B12	-17533.36 keV

<< 6-C-12	6-C-14	8-O-16 >>
<< 6-C-13 MT103 (γ, p)	MT16 ($\gamma, 2n$) or MT5 (C12 production)	7-N-14 MT4 (γ, n) >>



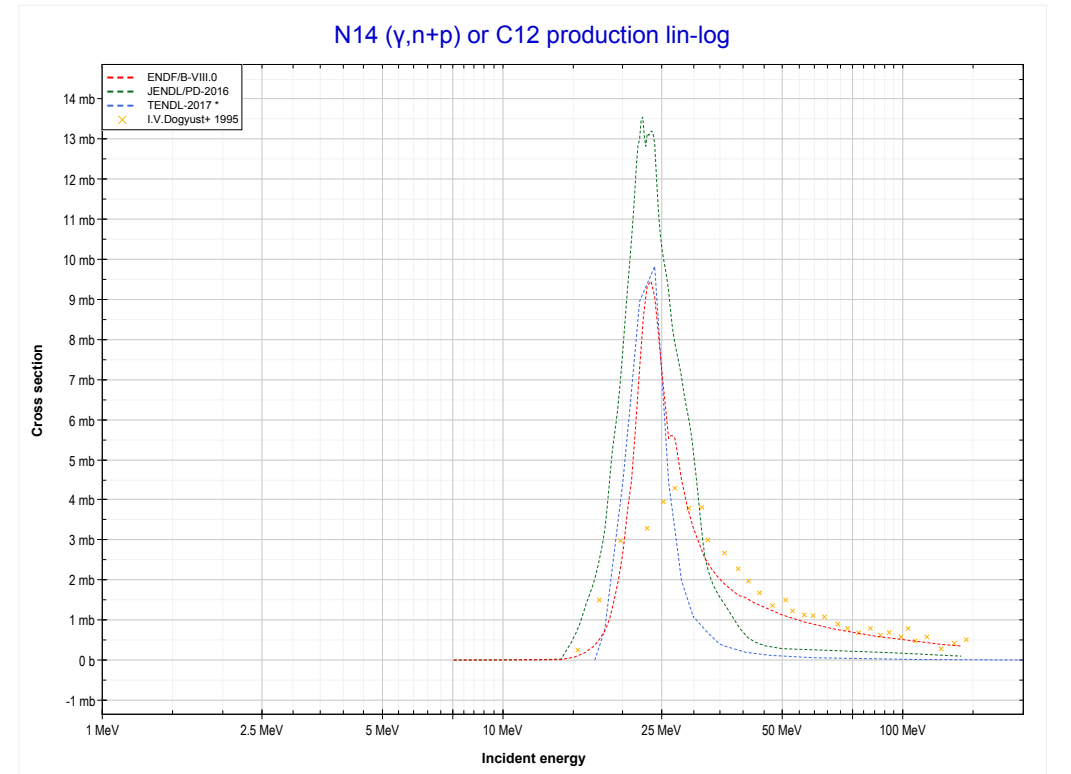
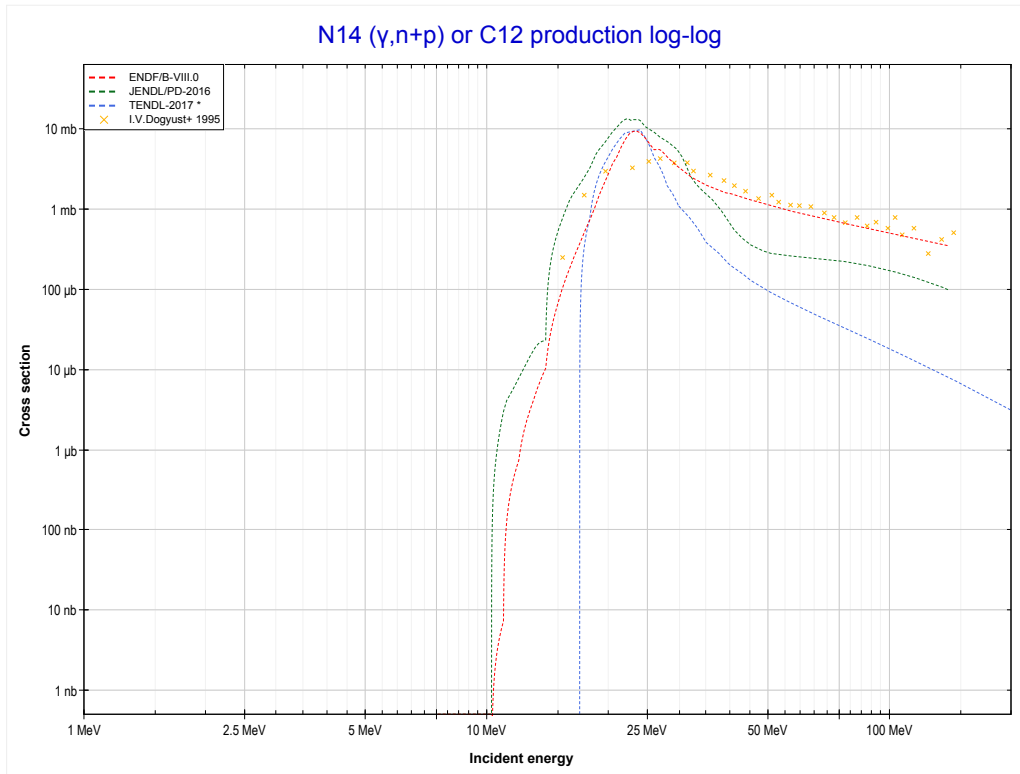
Reaction	Q-Value
C14($\gamma, 2n$)C12	-13122.74 keV

<< 6-C-13	7-N-14	8-O-16 >>
<< 6-C-14 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (N13 production)	MT28 ($\gamma,n+p$) >>



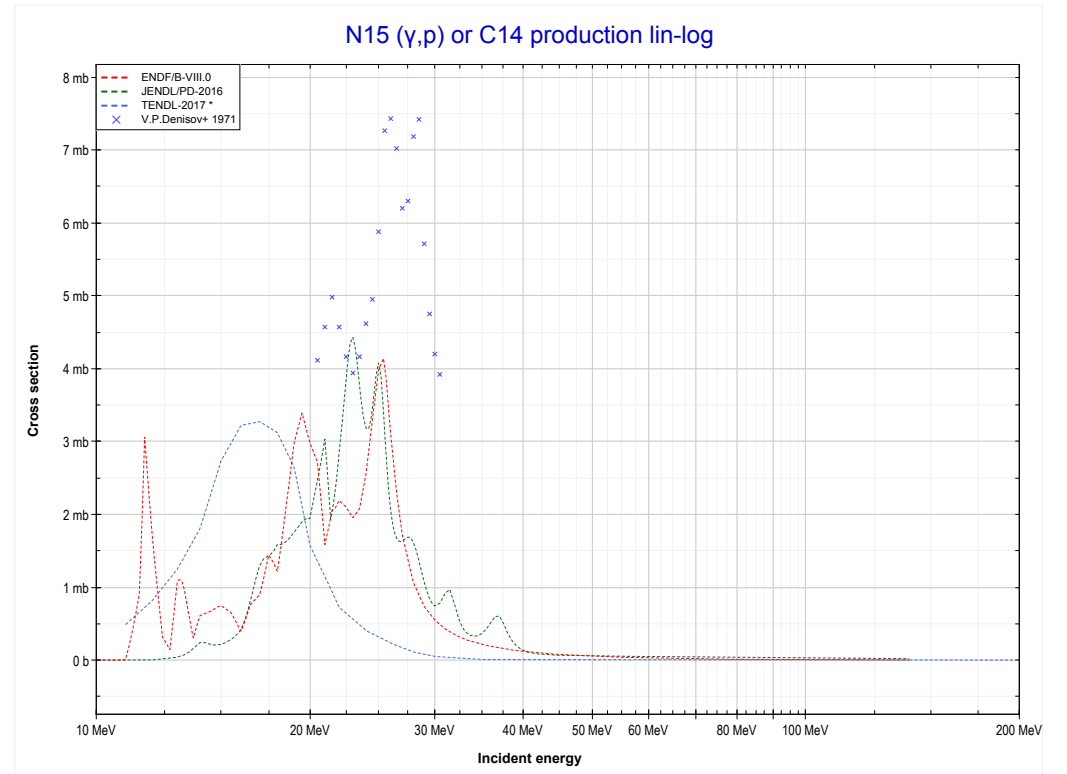
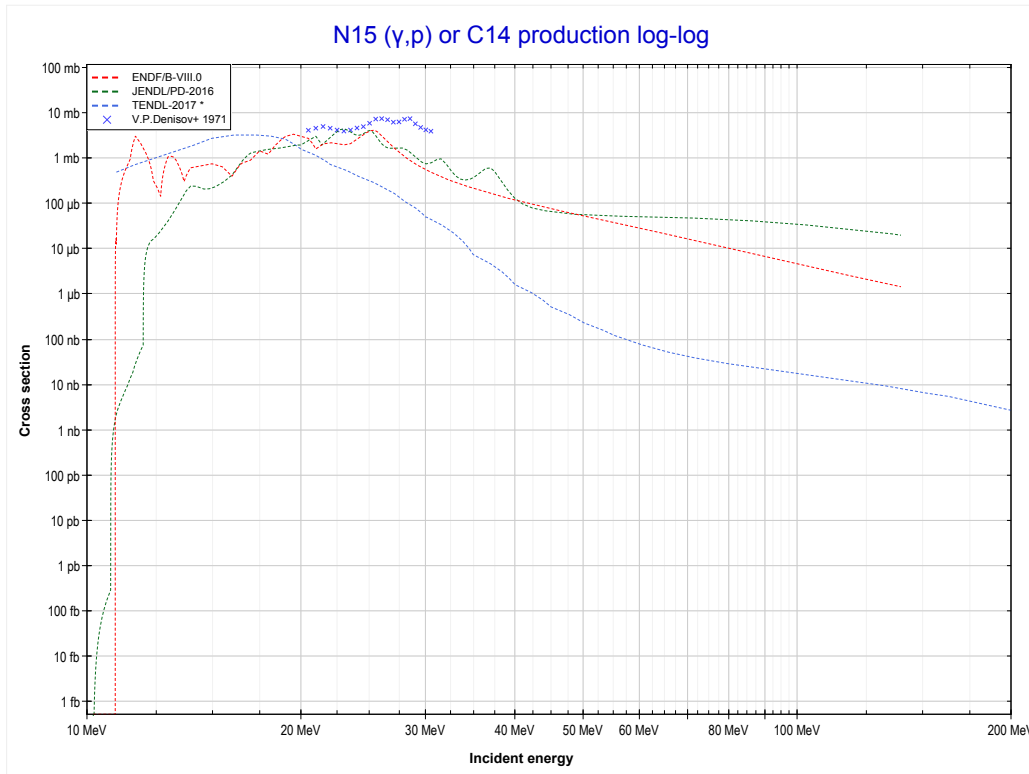
Reaction	Q-Value
N14(γ,n)N13	-10553.38 keV

<< 6-C-12	7-N-14	8-O-16 >>
<< MT4 (γ, n)	MT28 ($\gamma, n+p$) or MT5 (C12 production)	7-N-15 MT103 (γ, p) >>



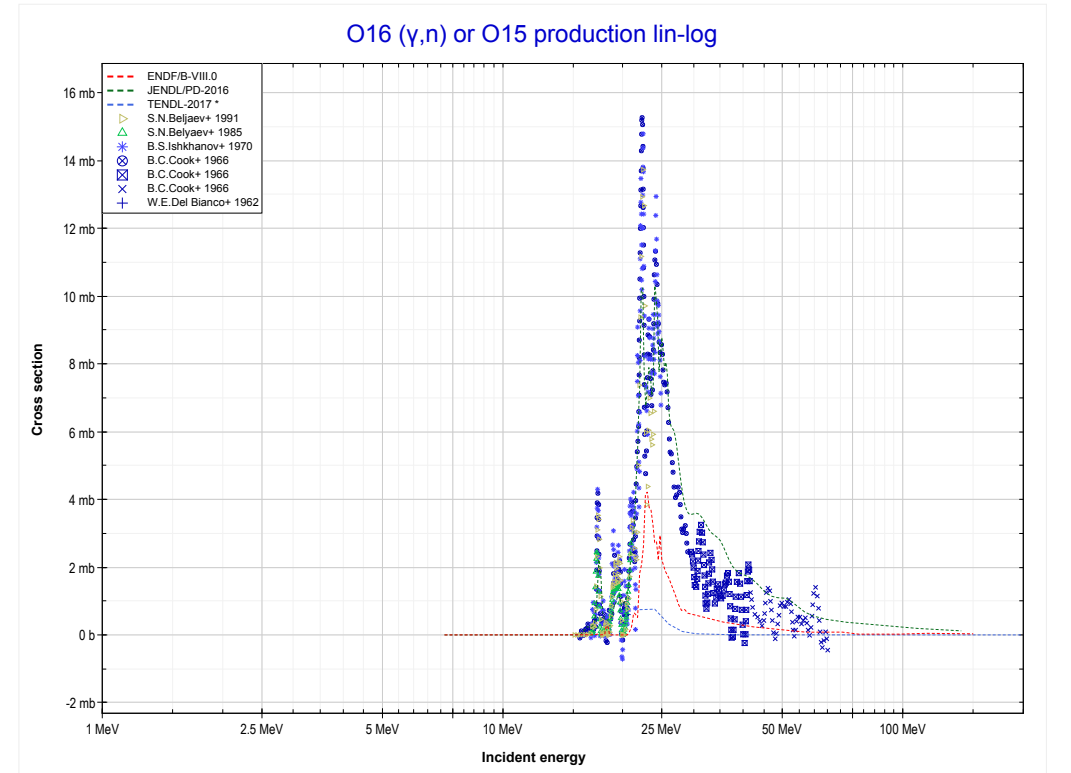
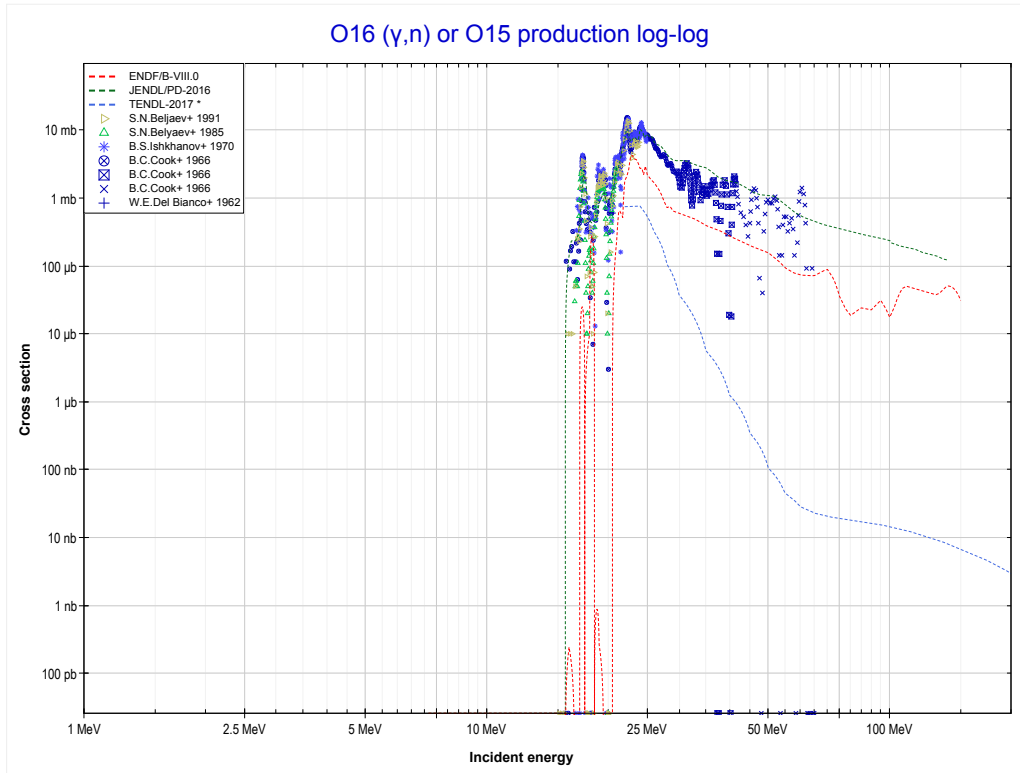
Reaction	Q-Value
N14(γ, d)C12	-10272.31 keV
N14($\gamma, n+p$)C12	-12496.87 keV

<< 6-C-13	7-N-15	8-O-16 >>
<< 7-N-14 MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (C14 production)	8-O-16 MT4 (γ, n) >>



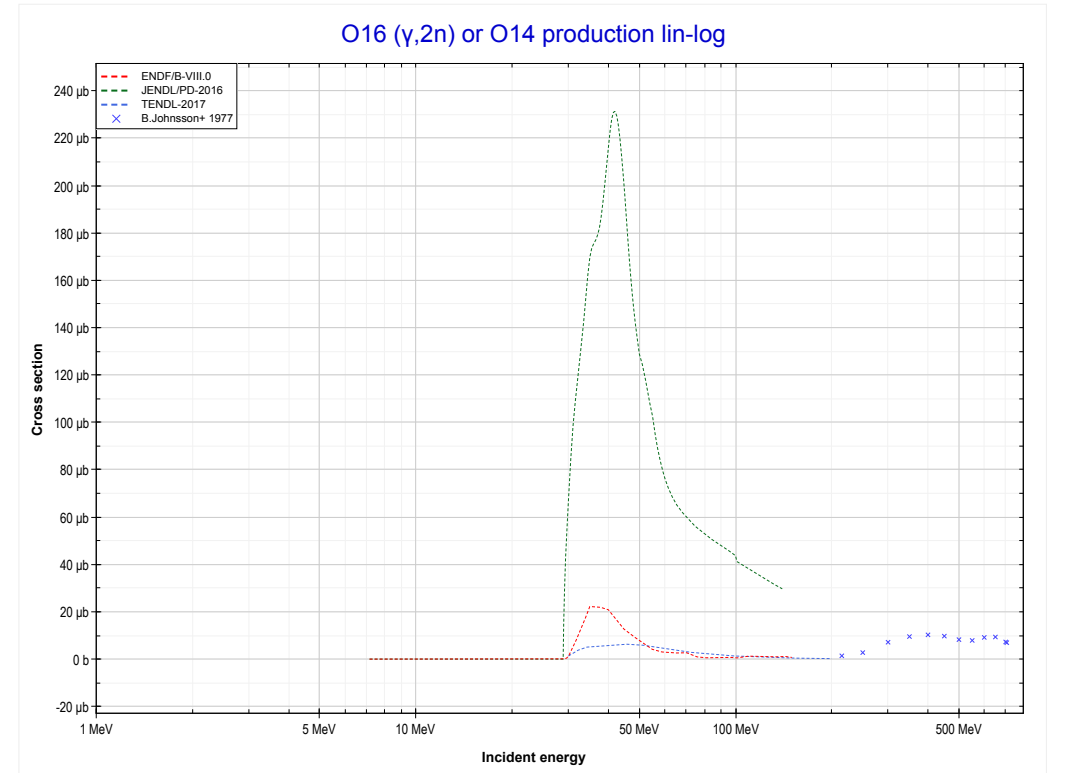
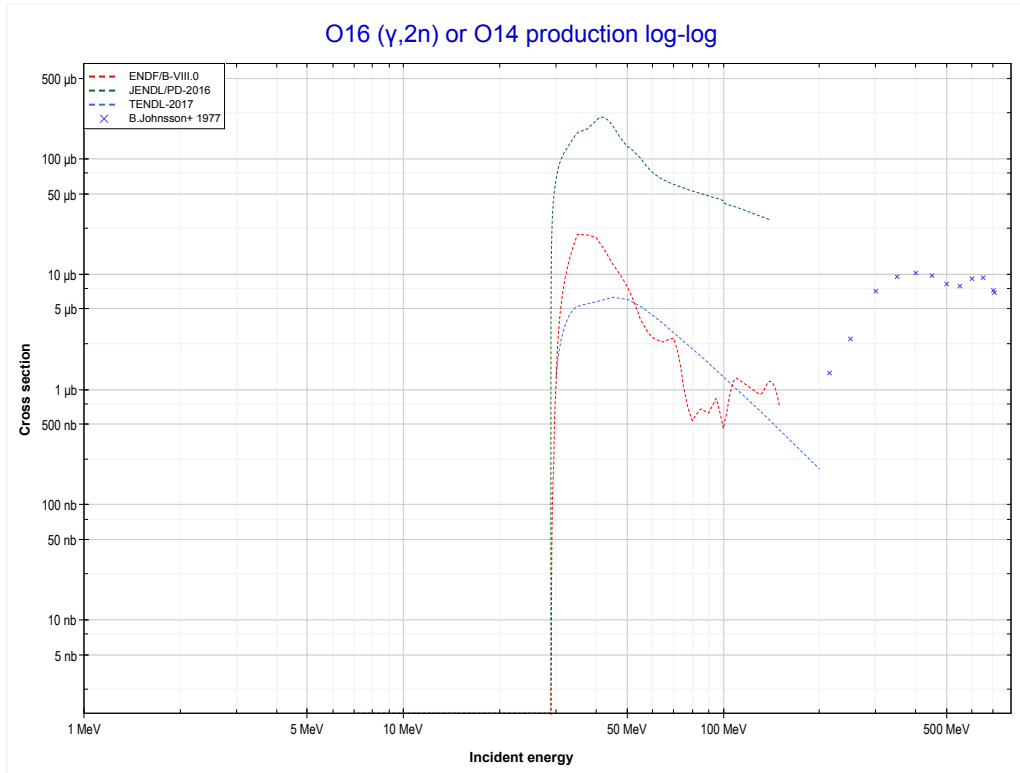
Reaction	Q-Value
N15(γ, p)C14	-10207.42 keV

<< 7-N-14	8-O-16	9-F-19 >>
<< 7-N-15 MT103 (γ,p)	MT4 (γ,n) or MT5 (O15 production)	MT16 ($\gamma,2n$) >>



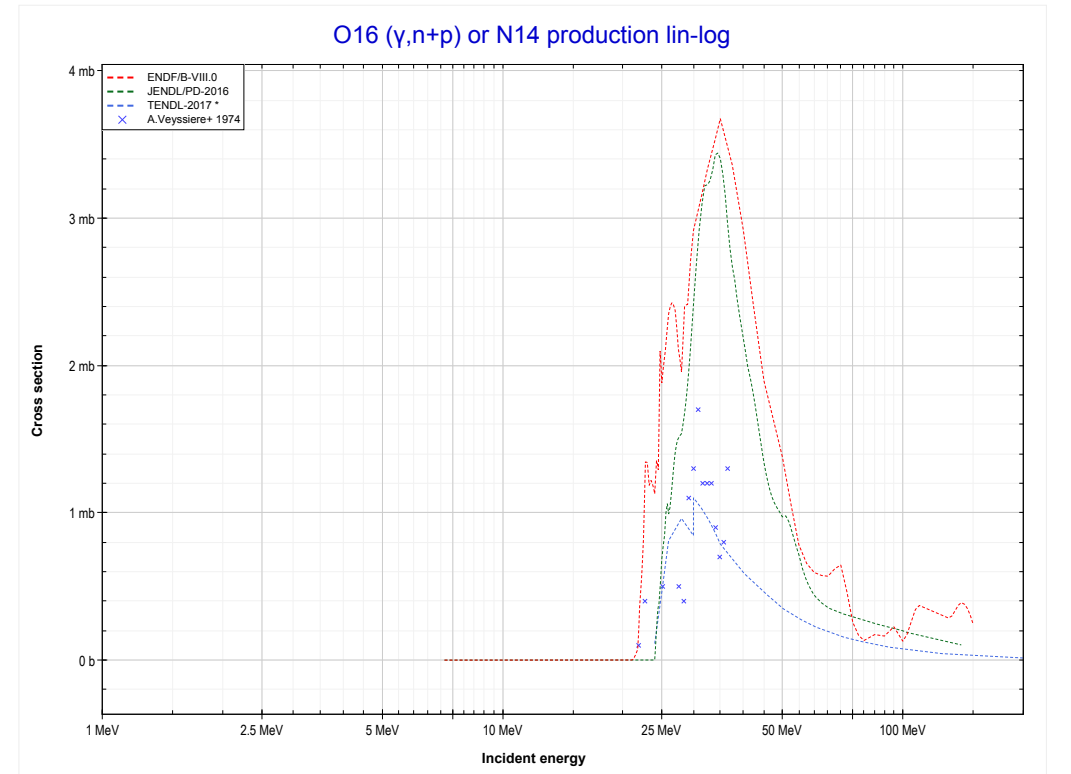
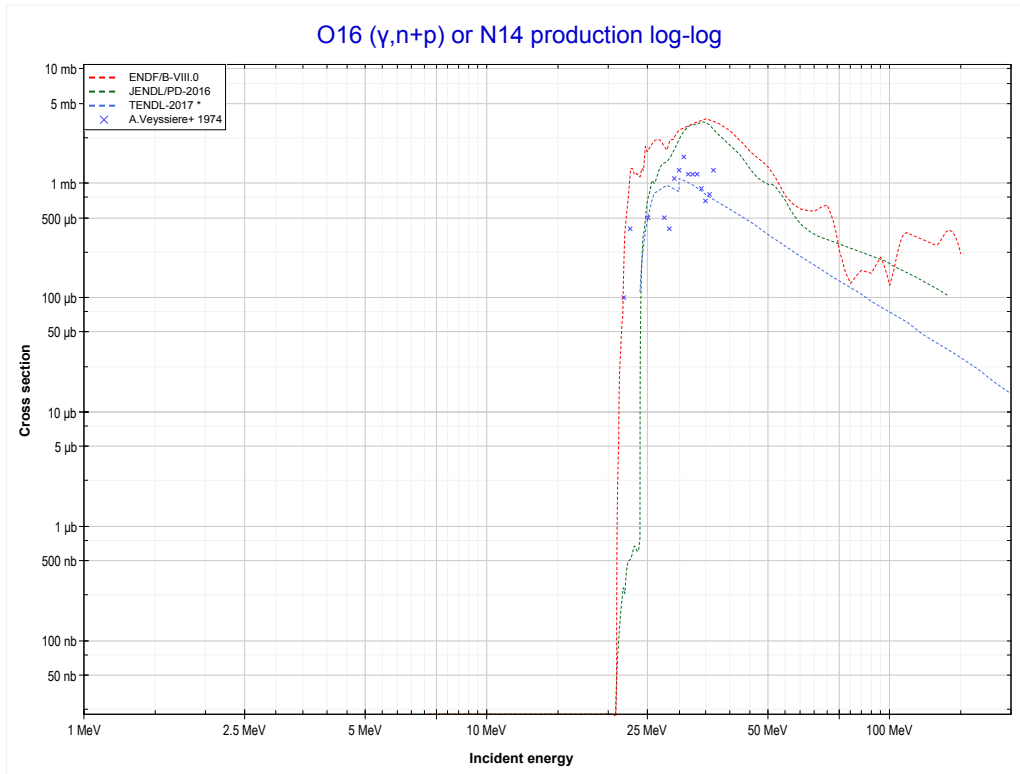
Reaction	Q-Value
O16(γ,n)O15	-15663.92 keV

<< 6-C-14	8-O-16	9-F-19 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (O14 production)	MT28 ($\gamma,n+p$) >>



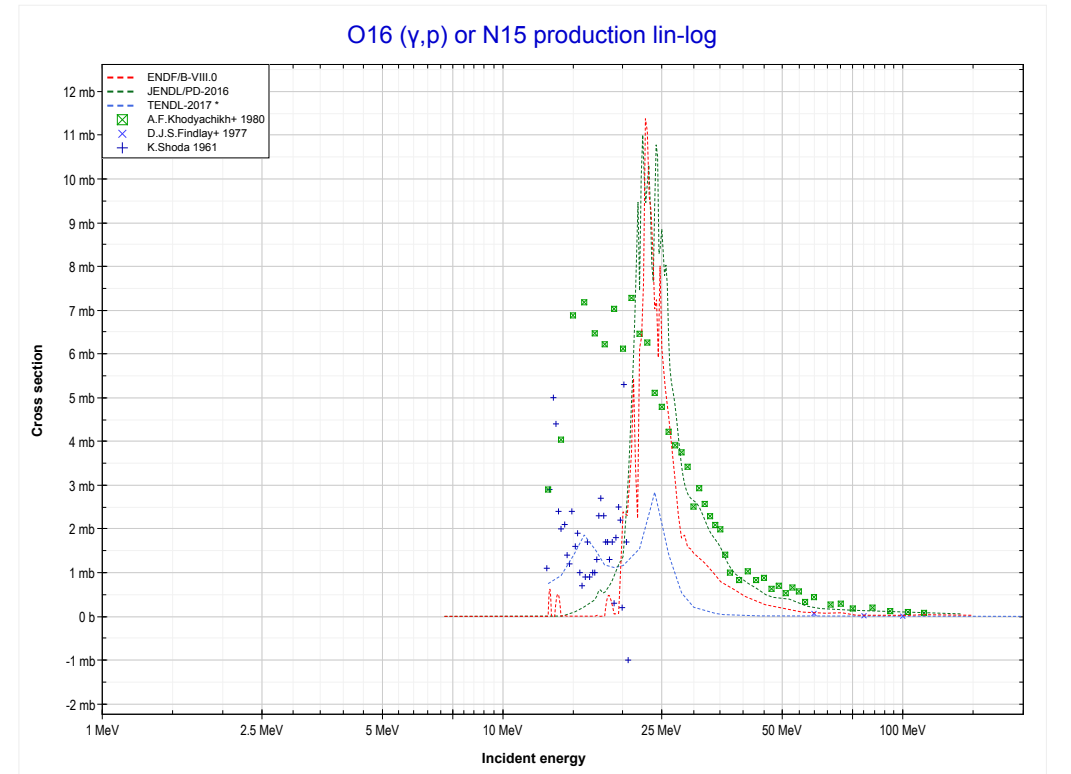
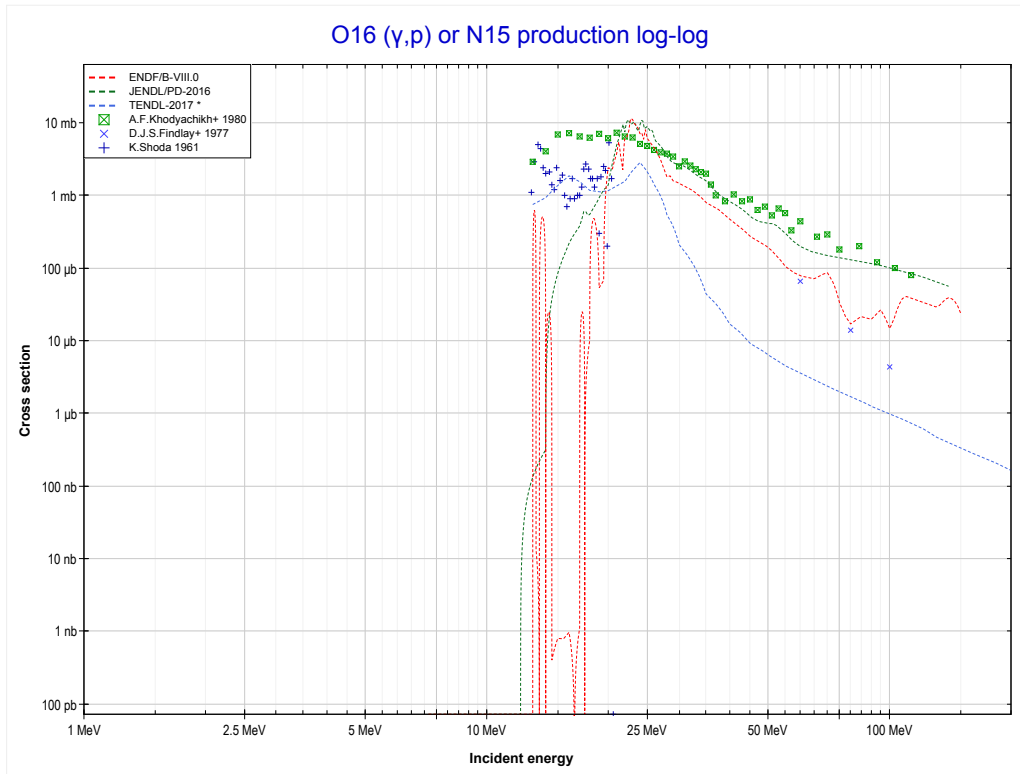
Reaction	Q-Value
O16($\gamma,2n$)O14	-28887.10 keV

<< 7-N-14	8-O-16	10-Ne-20 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (N14 production)	MT103 (γ,p) >>



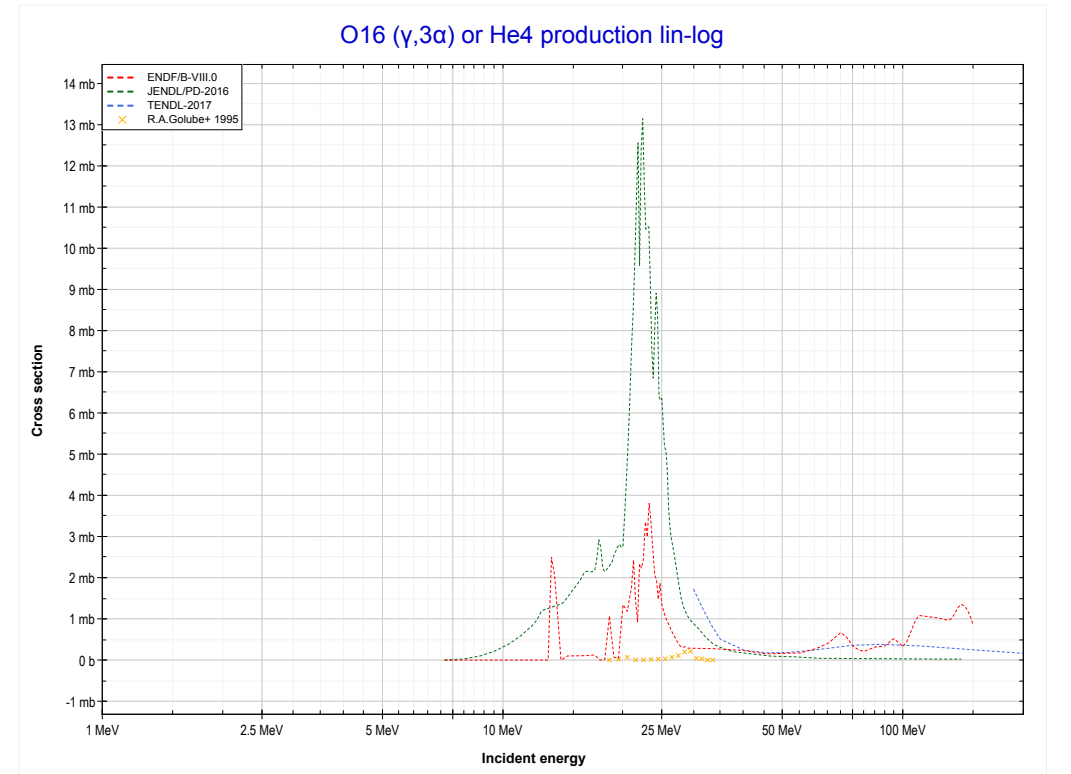
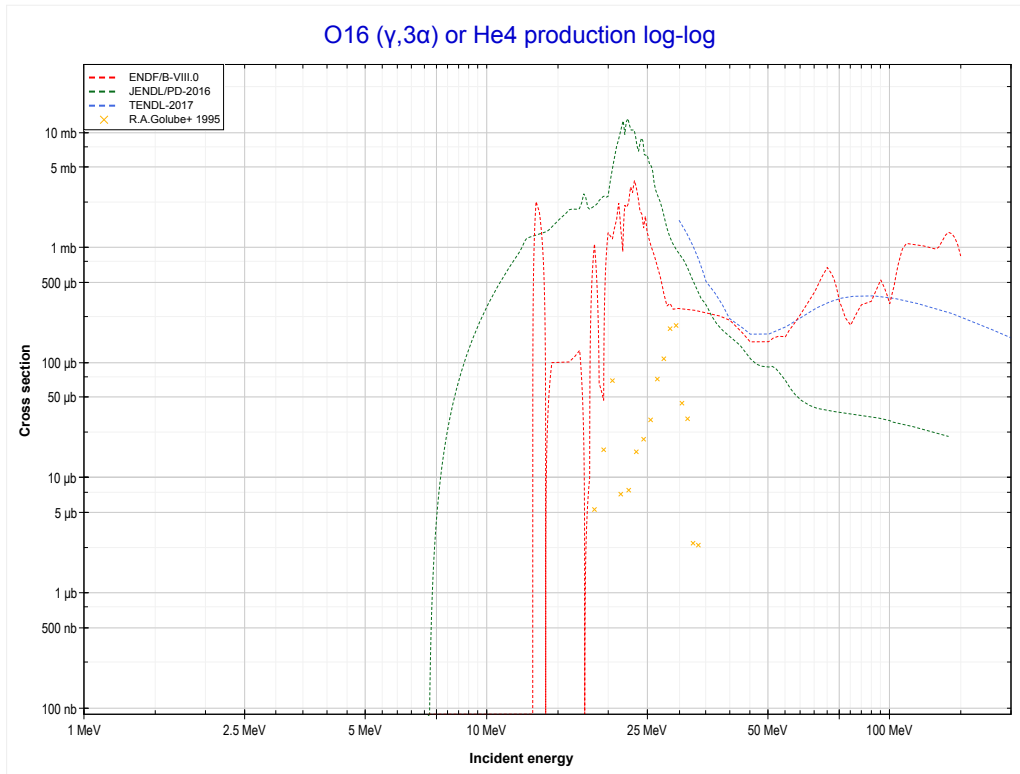
Reaction	Q-Value
O16(γ,d)N14	-20736.14 keV
O16($\gamma,n+p$)N14	-22960.71 keV

<< 7-N-15	8-O-16	8-O-18 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (N15 production)	MT109 ($\gamma, 3\alpha$) >>



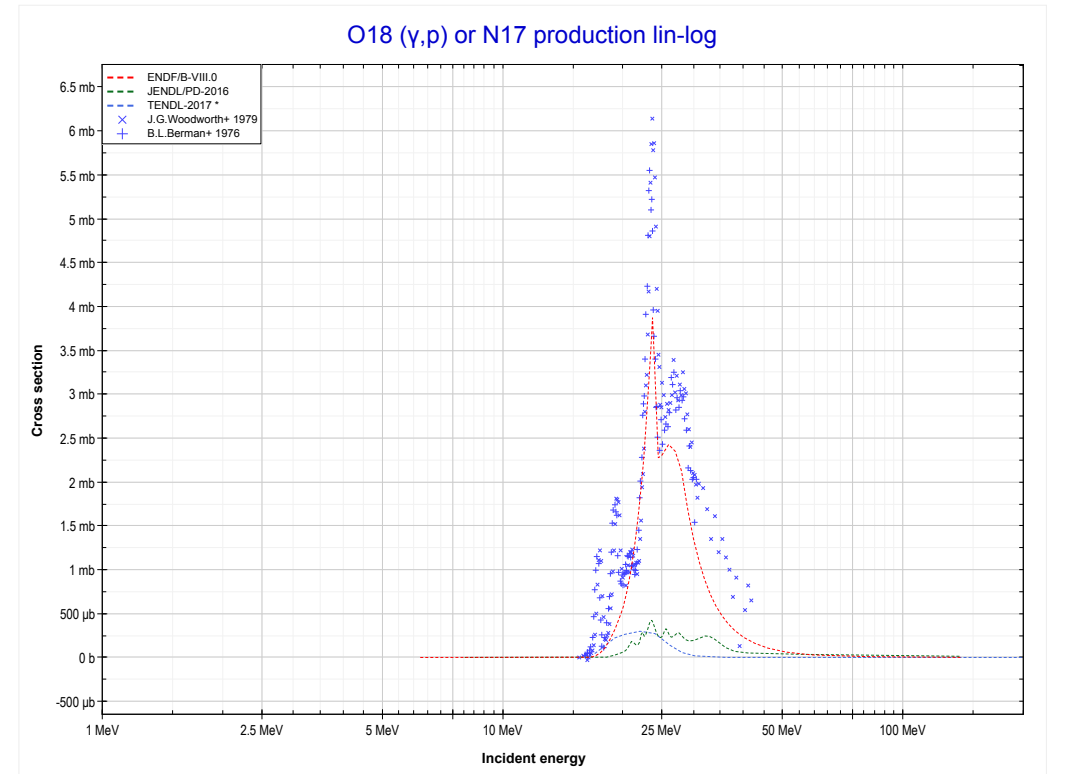
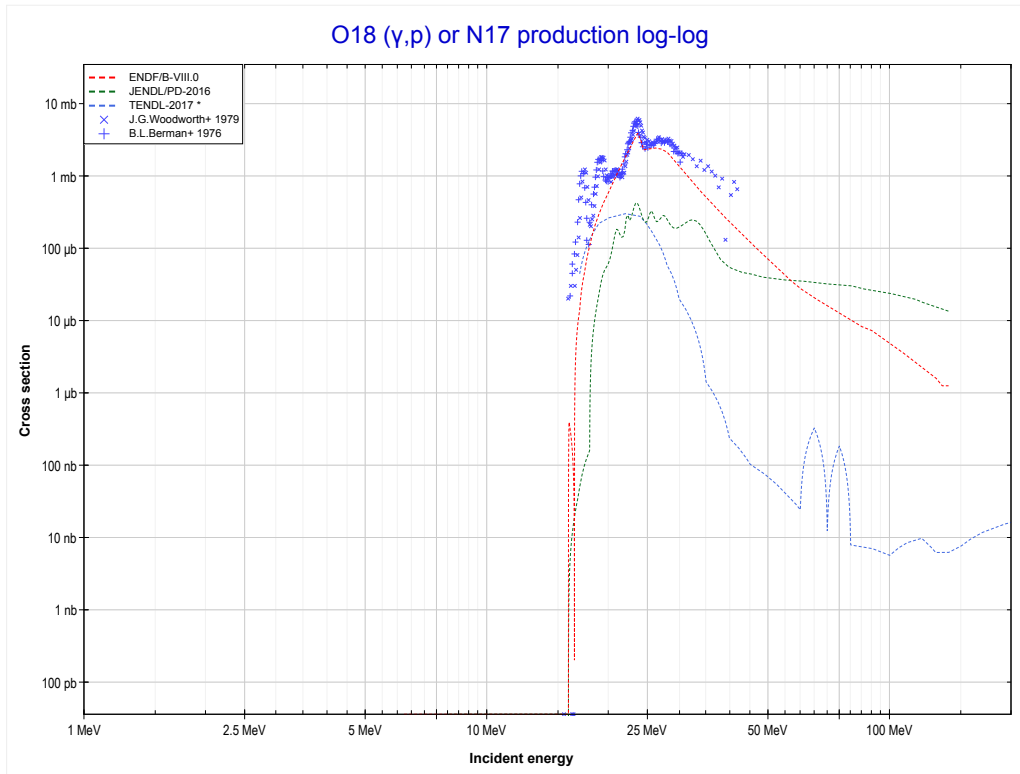
Reaction	Q-Value
O16(γ, p)N15	-12127.41 keV

	8-O-16	
<< MT103 (γ, p)	MT109 ($\gamma, 3\alpha$) or MT5 (He4 production)	8-O-18 MT103 (γ, p) >>



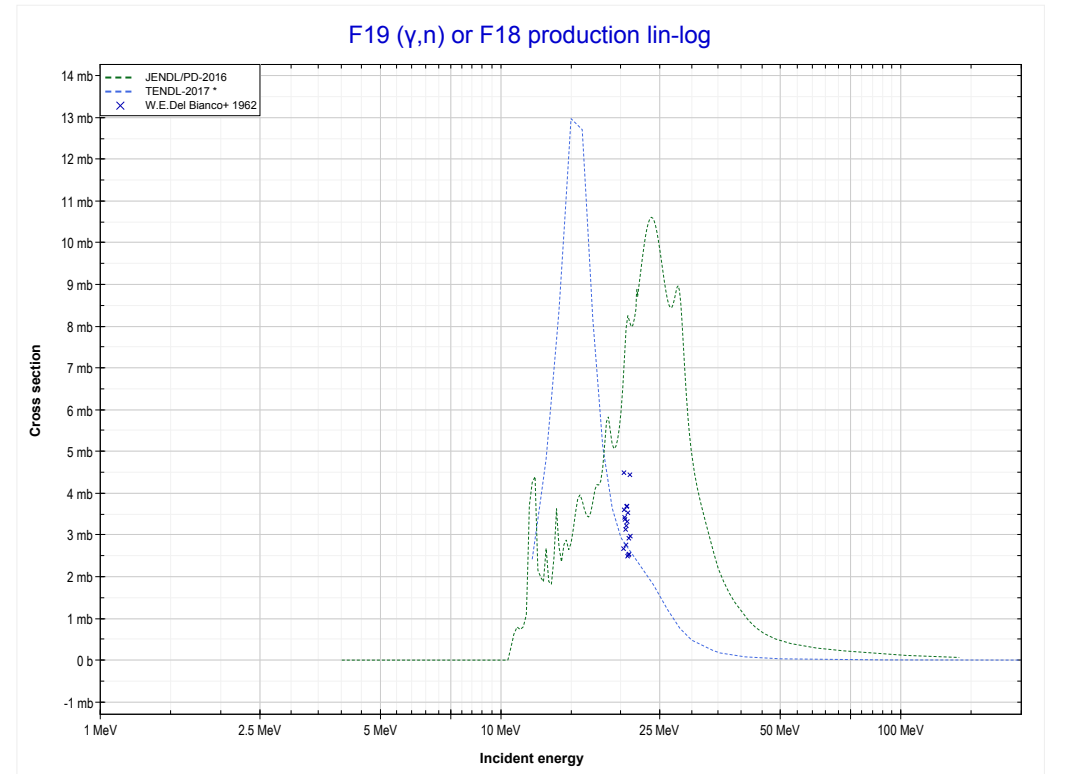
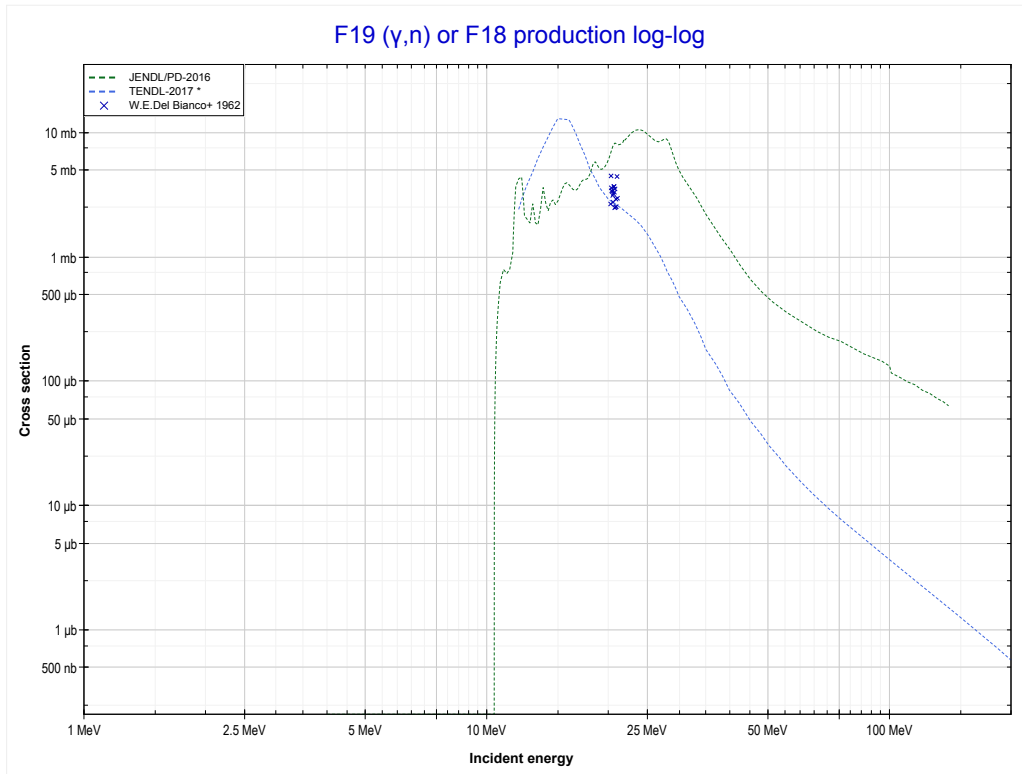
Reaction	Q-Value	Reaction	Q-Value
O16($\gamma, 3\alpha$)He4	-14436.66 keV	O16($\gamma, n+p+t+He3+\alpha$)He4	-54828.14 keV
O16($\gamma, p+t+2\alpha$)He4	-34250.52 keV	O16($\gamma, 2n+2He3+\alpha$)He4	-55591.90 keV
O16($\gamma, n+He3+2\alpha$)He4	-35014.28 keV	O16($\gamma, p+2d+t+\alpha$)He4	-58097.05 keV
O16($\gamma, 2d+2\alpha$)He4	-38283.19 keV	O16($\gamma, n+2d+He3+\alpha$)He4	-58860.81 keV
O16($\gamma, n+p+d+2\alpha$)He4	-40507.76 keV	O16($\gamma, n+2p+d+t+\alpha$)He4	-60321.62 keV
O16($\gamma, 2n+2p+2\alpha$)He4	-42732.32 keV	O16($\gamma, 2n+p+d+He3+\alpha$)He4	-61085.37 keV
O16($\gamma, d+t+He3+\alpha$)He4	-52603.58 keV	O16($\gamma, 4d+\alpha$)He4	-62129.72 keV
O16($\gamma, 2p+2t+\alpha$)He4	-54064.39 keV	O16($\gamma, 2n+3p+t+\alpha$)He4	-62546.18 keV

<< 8-O-16	8-O-18	10-Ne-20 >>
<< 8-O-16 MT109 ($\gamma,3\alpha$)	MT103 (γ,p) or MT5 (N17 production)	9-F-19 MT4 (γ,n) >>



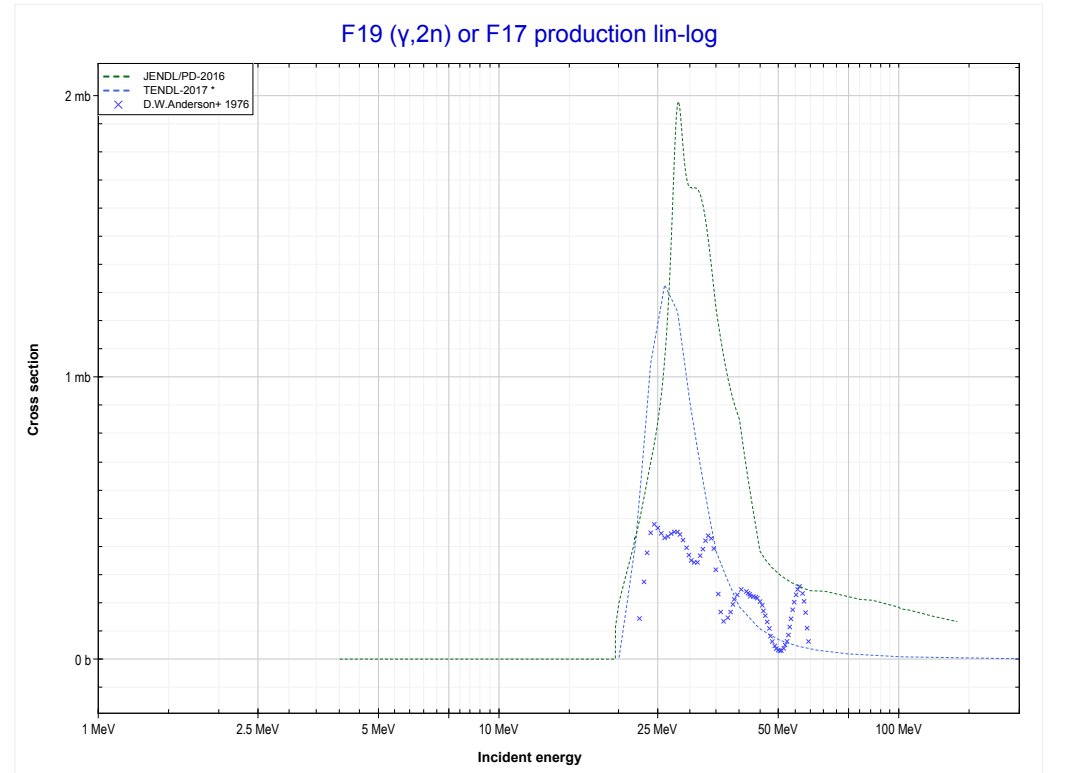
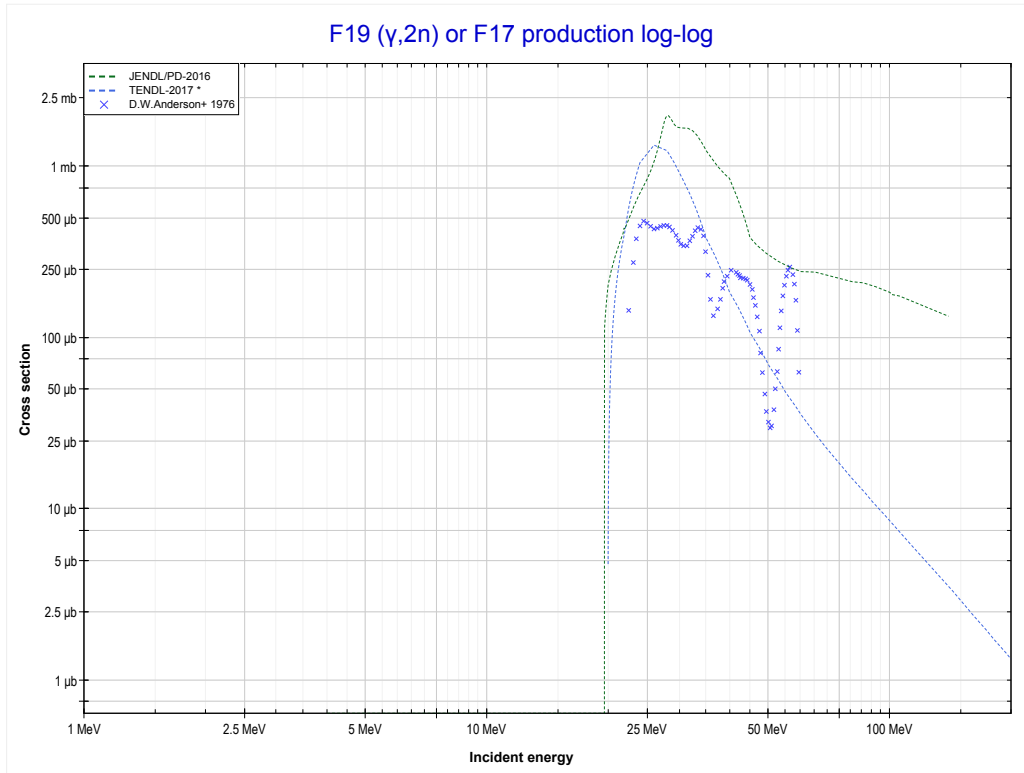
Reaction	Q-Value
O18(γ,p)N17	-15941.79 keV

<< 8-O-16	9-F-19	10-Ne-20 >>
<< 8-O-18 MT103 (γ,p)	MT4 (γ,n) or MT5 (F18 production)	MT16 ($\gamma,2n$) >>



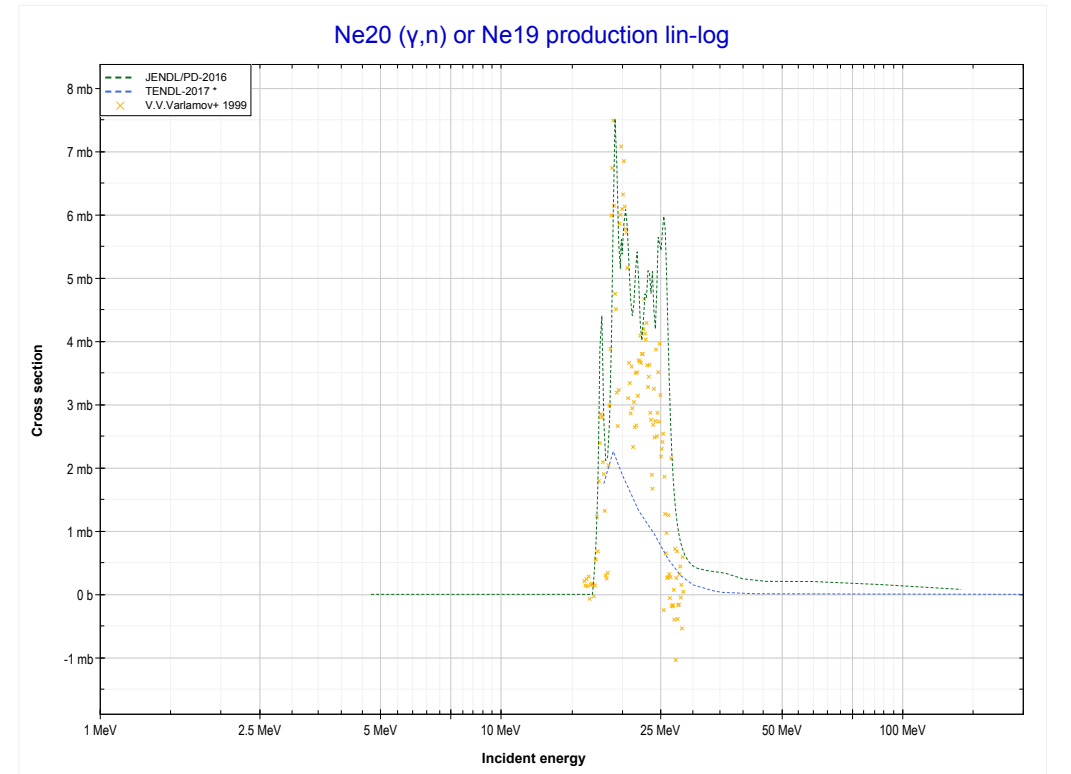
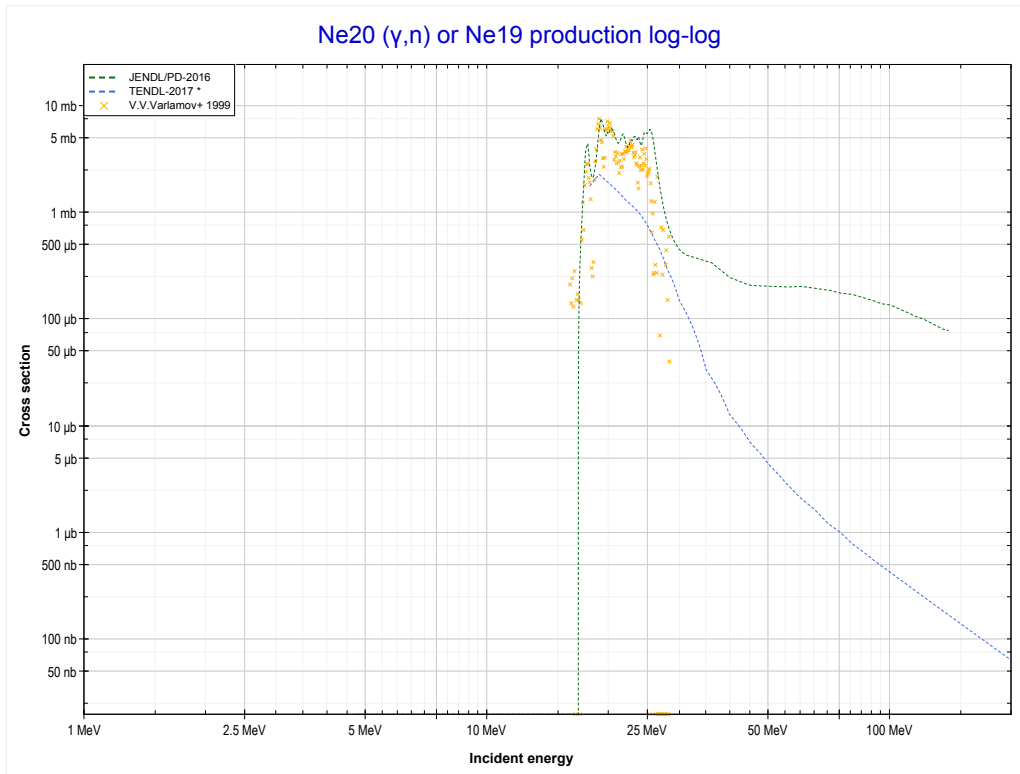
Reaction	Q-Value
F19(γ,n)F18	-10431.86 keV

<< 8-O-16	9-F-19	12-Mg-26 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (F17 production)	10-Ne-20 MT4 (γ,n) >>



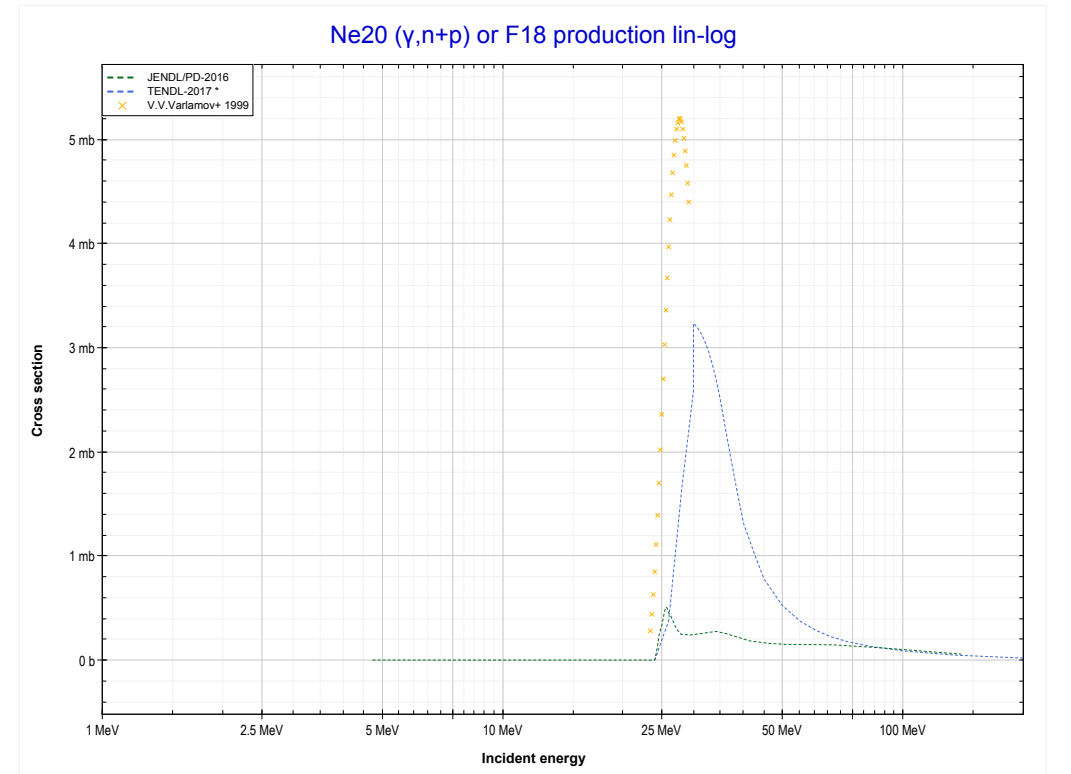
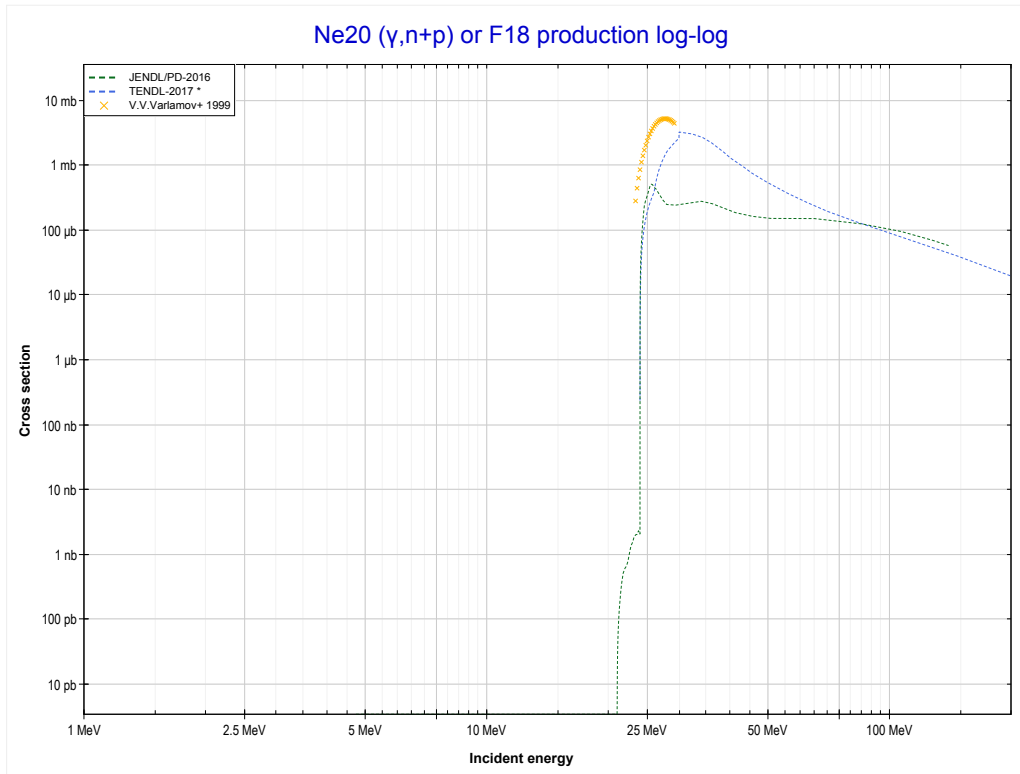
Reaction	Q-Value
F19($\gamma,2n$)F17	-19581.78 keV

<< 9-F-19	10-Ne-20	10-Ne-22 >>
<< 9-F-19 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Ne19 production)	MT28 ($\gamma,n+p$) >>



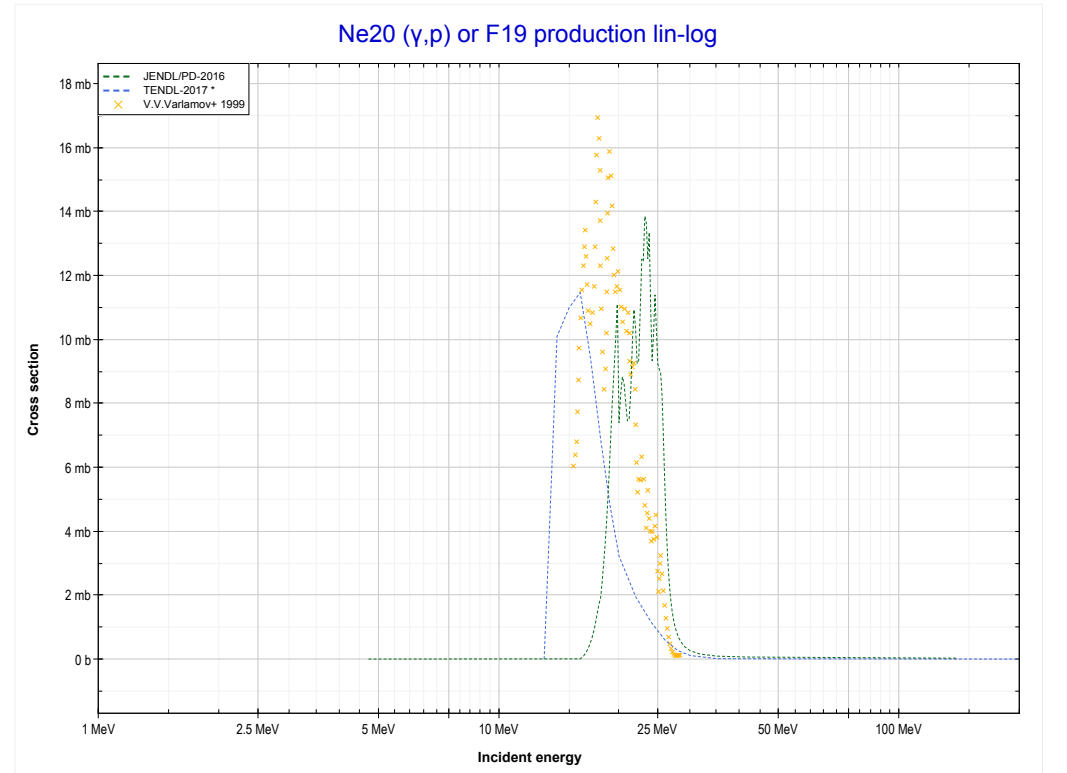
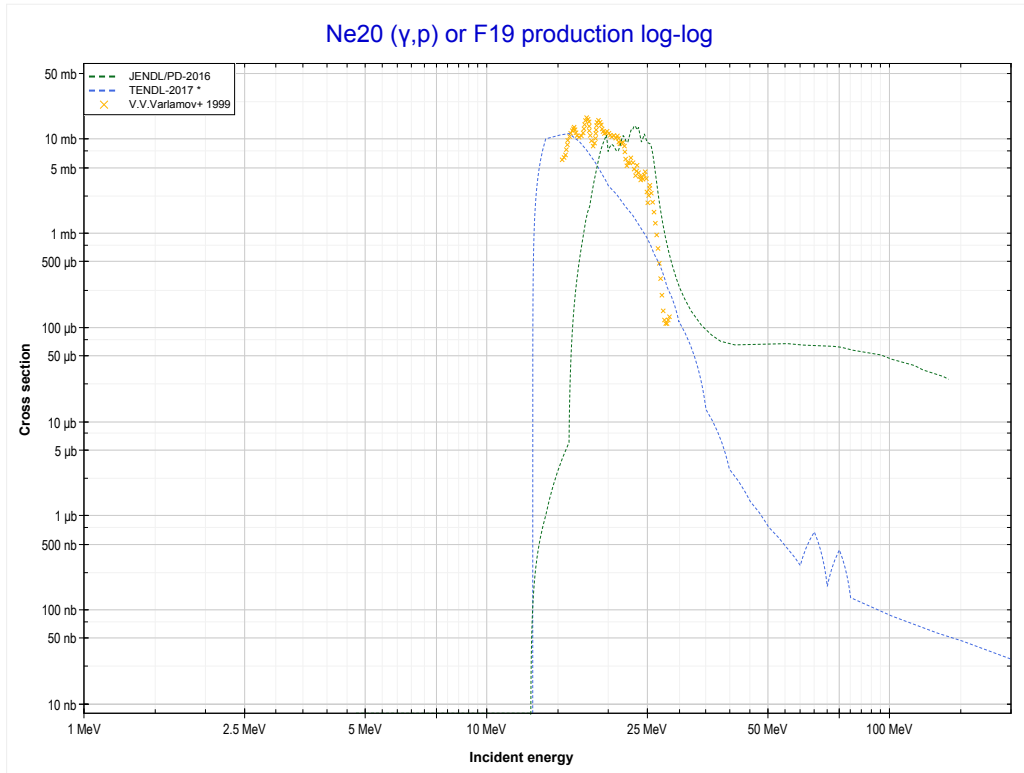
Reaction	Q-Value
Ne20(γ,n)Ne19	-16865.30 keV

<< 8-O-16	10-Ne-20	15-P-31 >>
<< MT4 (γ,n)	MT28 ($\gamma,n+p$) or MT5 (F18 production)	MT103 (γ,p) >>



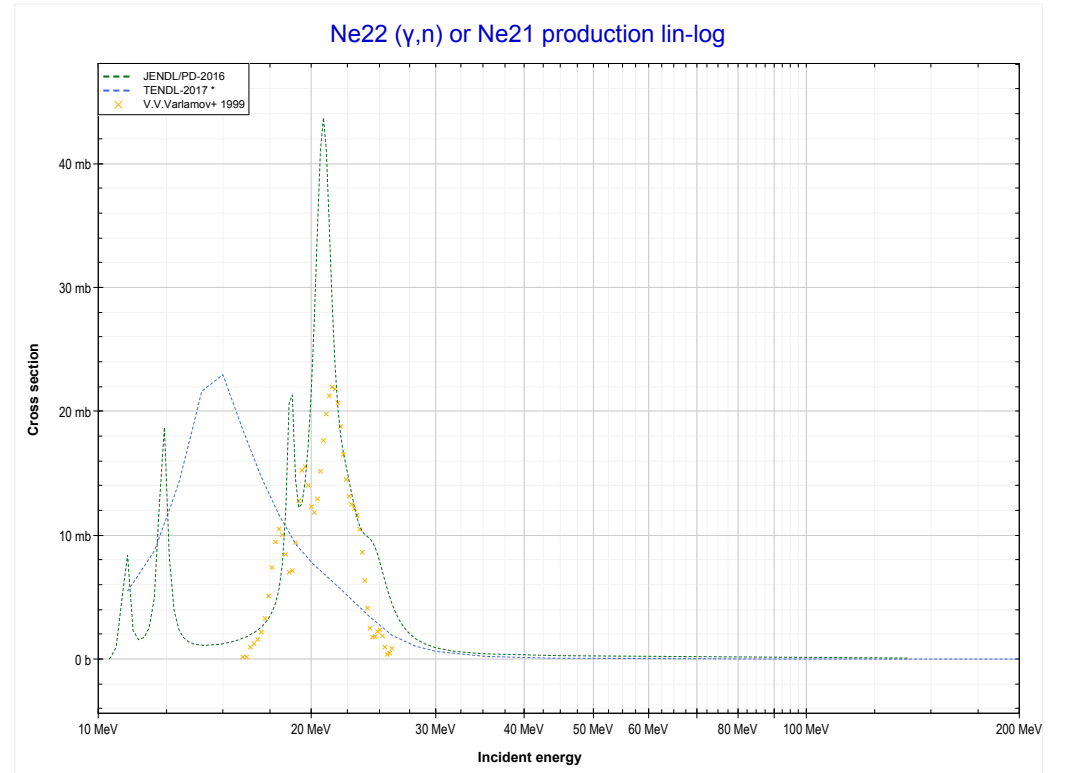
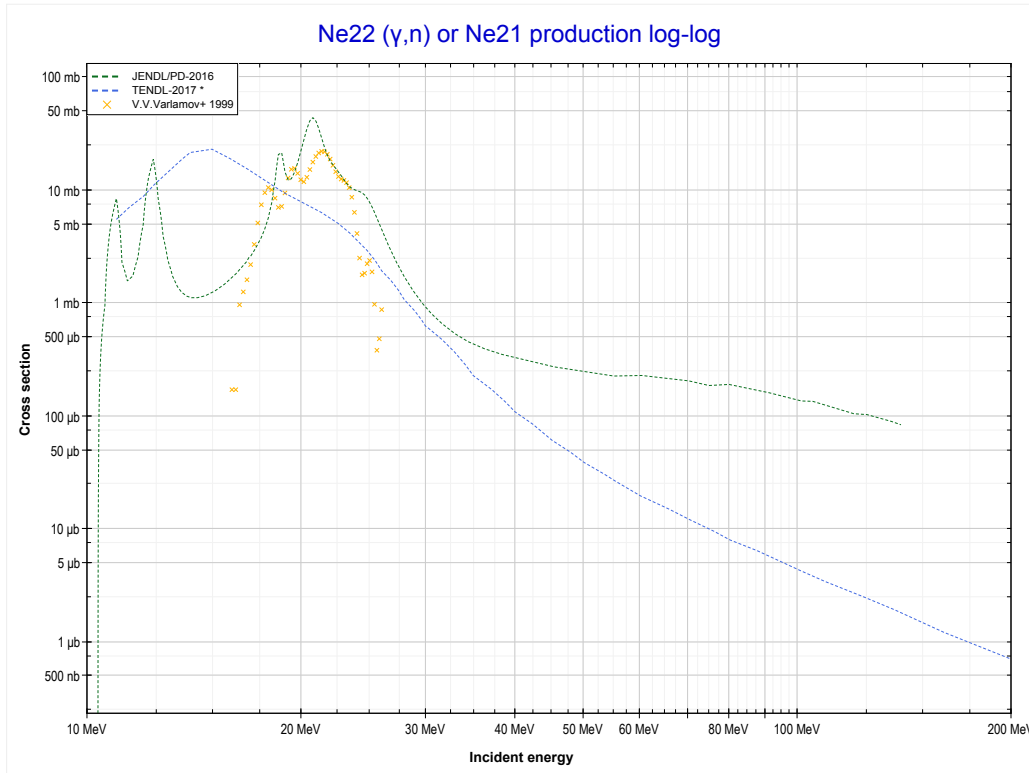
Reaction	Q-Value
Ne20(γ,d)F18	-21050.75 keV
Ne20($\gamma,n+p$)F18	-23275.32 keV

<< 8-O-18	10-Ne-20	10-Ne-22 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (F19 production)	10-Ne-22 MT4 (γ, n) >>



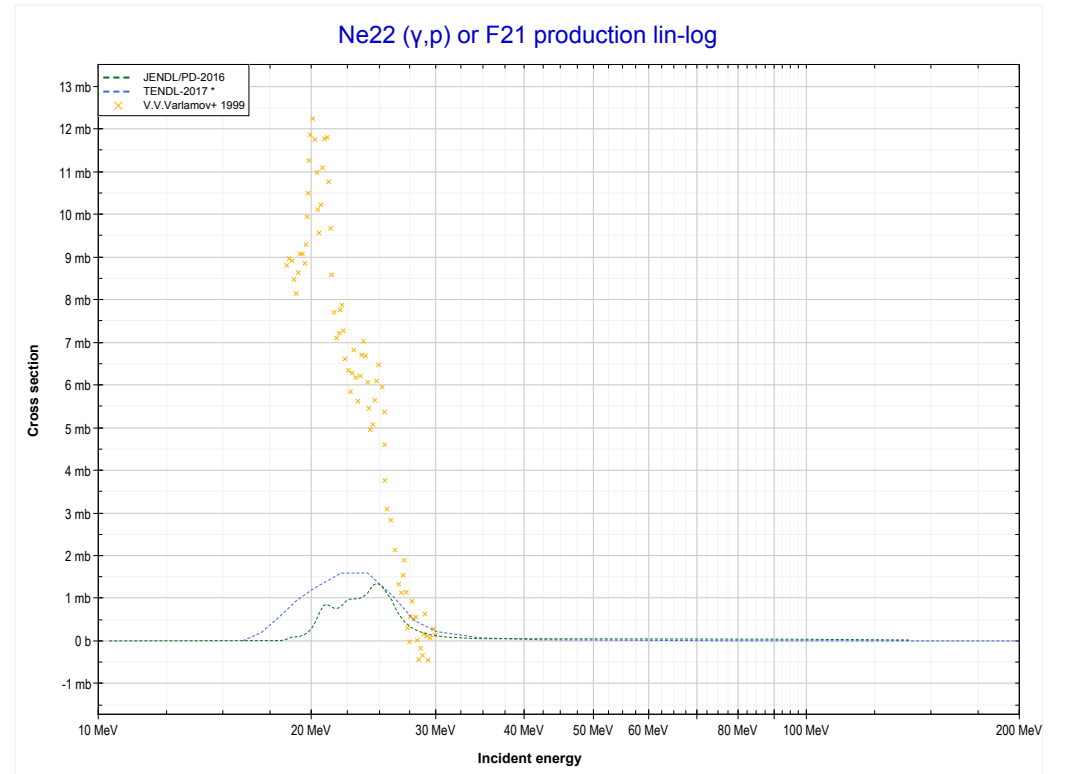
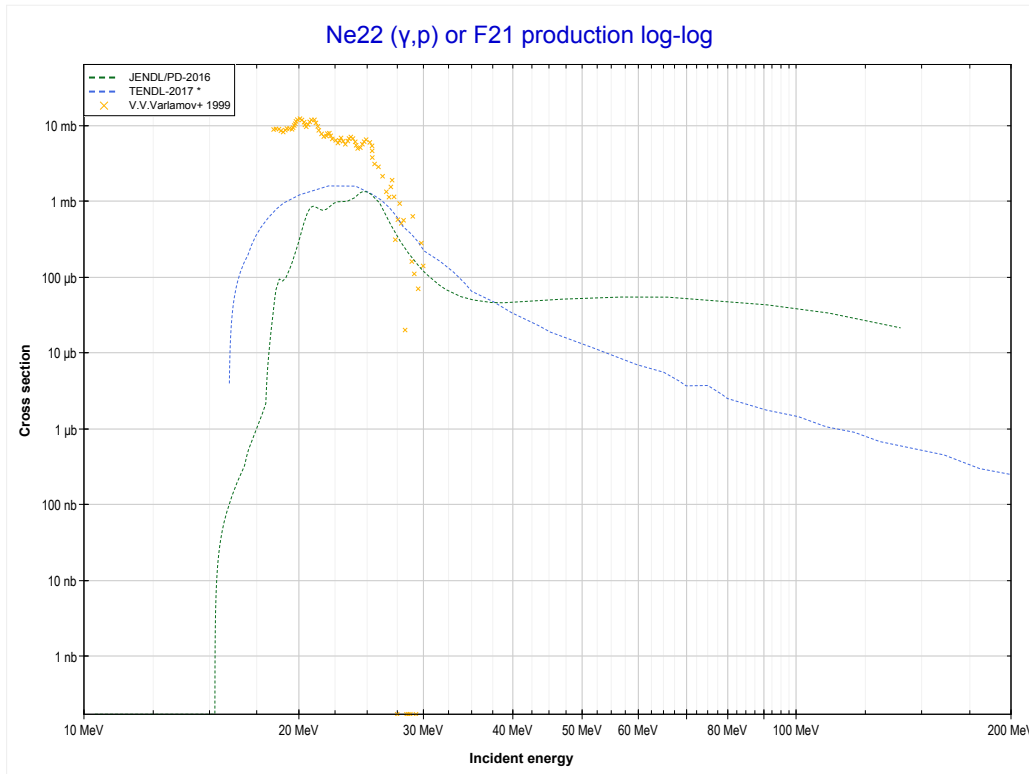
Reaction	Q-Value
Ne20(γ, p)F19	-12843.46 keV

<< 10-Ne-20	10-Ne-22	12-Mg-24 >>
<< 10-Ne-20 MT103 (γ,p)	MT4 (γ,n) or MT5 (Ne21 production)	MT103 (γ,p) >>



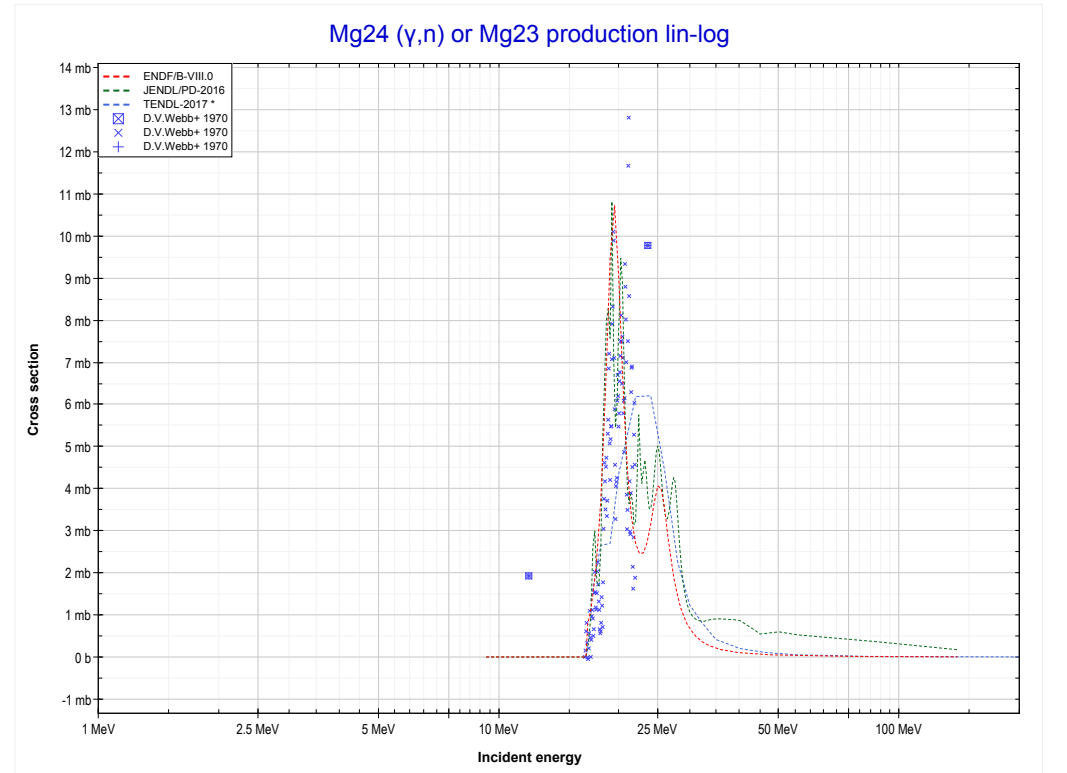
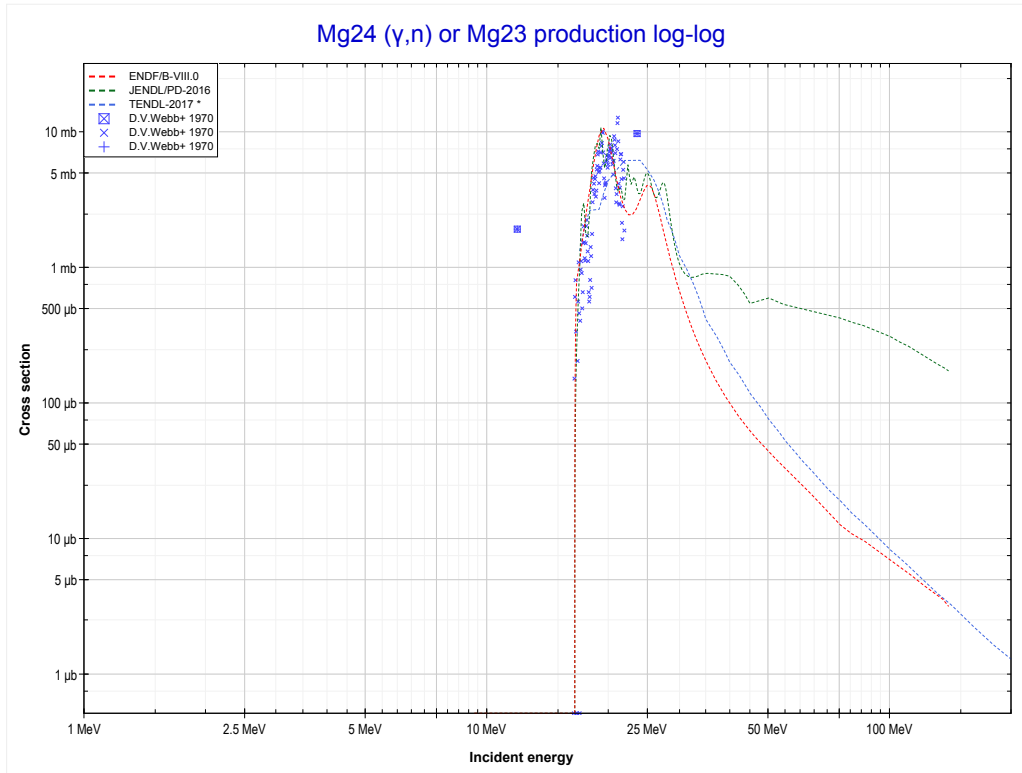
Reaction	Q-Value
Ne22(γ,n)Ne21	-10364.25 keV

<< 10-Ne-20	10-Ne-22	13-Al-27 >>
<< MT4 (γ,n)	MT103 (γ,p) or MT5 (F21 production)	12-Mg-24 MT4 (γ,n) >>



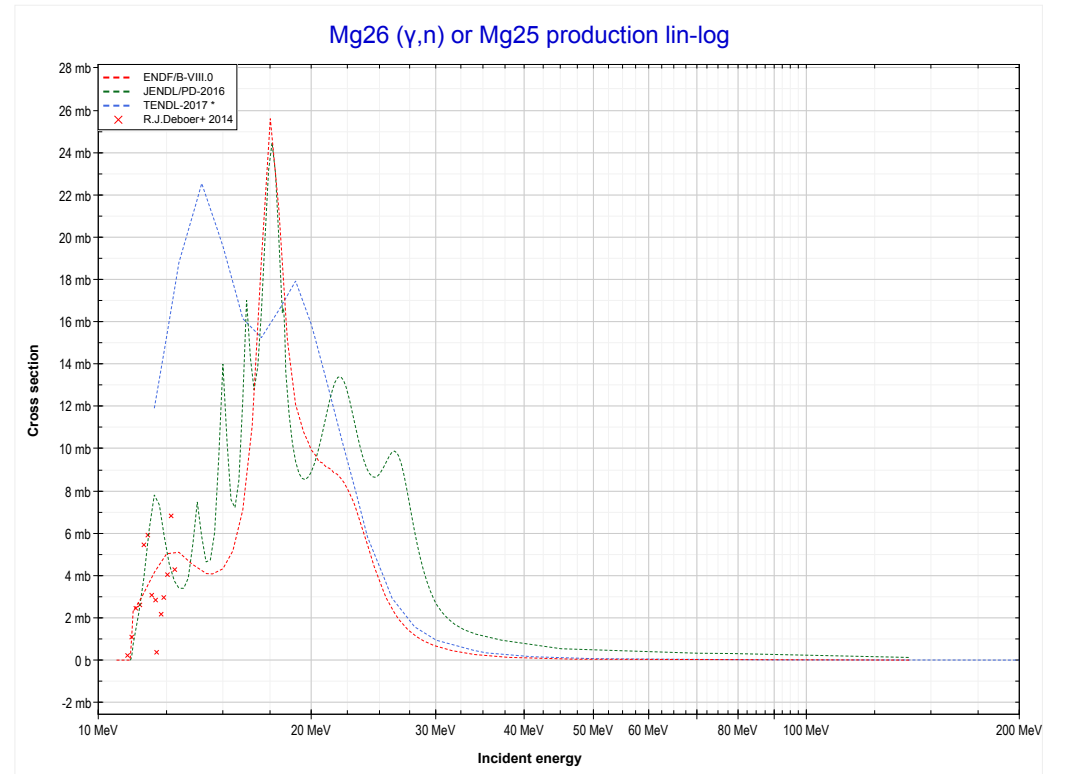
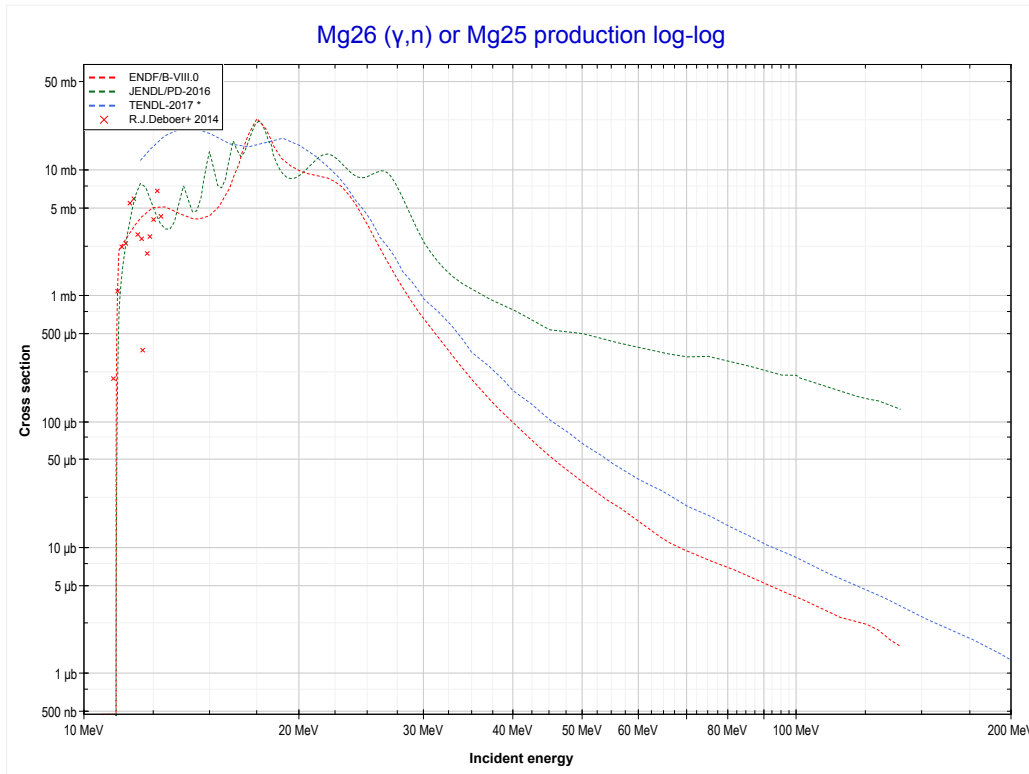
Reaction	Q-Value
Ne22(γ,p)F21	-15266.08 keV

<< 10-Ne-22	12-Mg-24	12-Mg-26 >>
<< 10-Ne-22 MT103 (γ,p)	MT4 (γ,n) or MT5 (Mg23 production)	12-Mg-26 MT4 (γ,n) >>



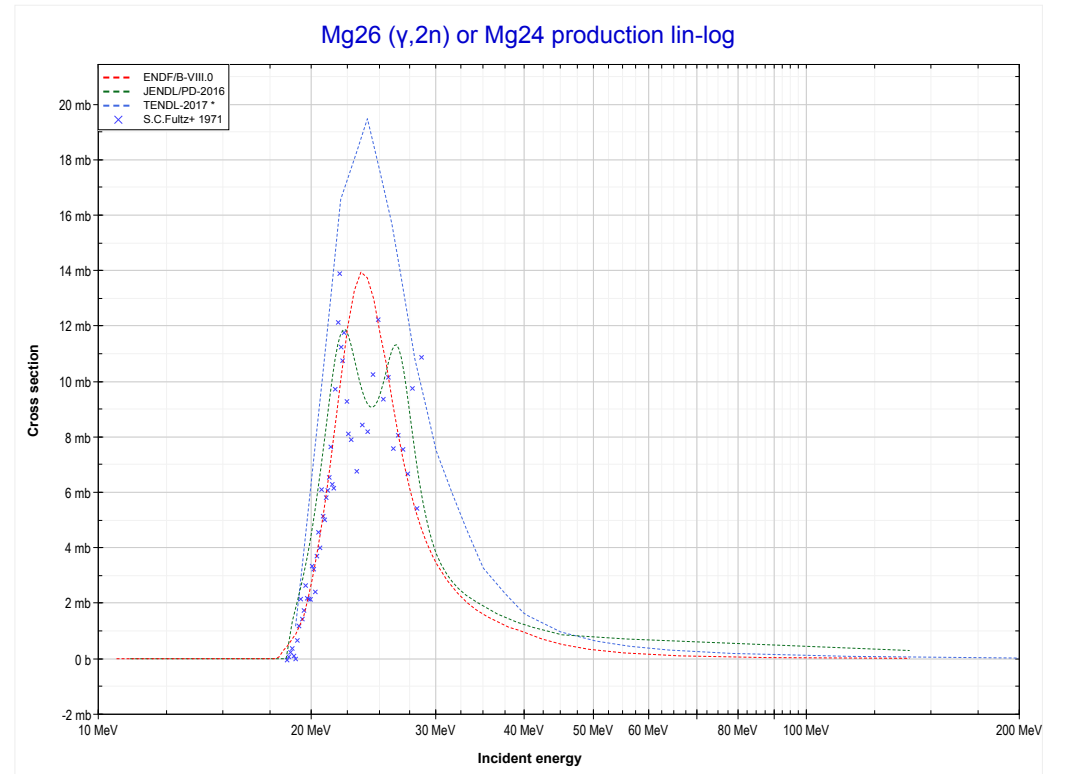
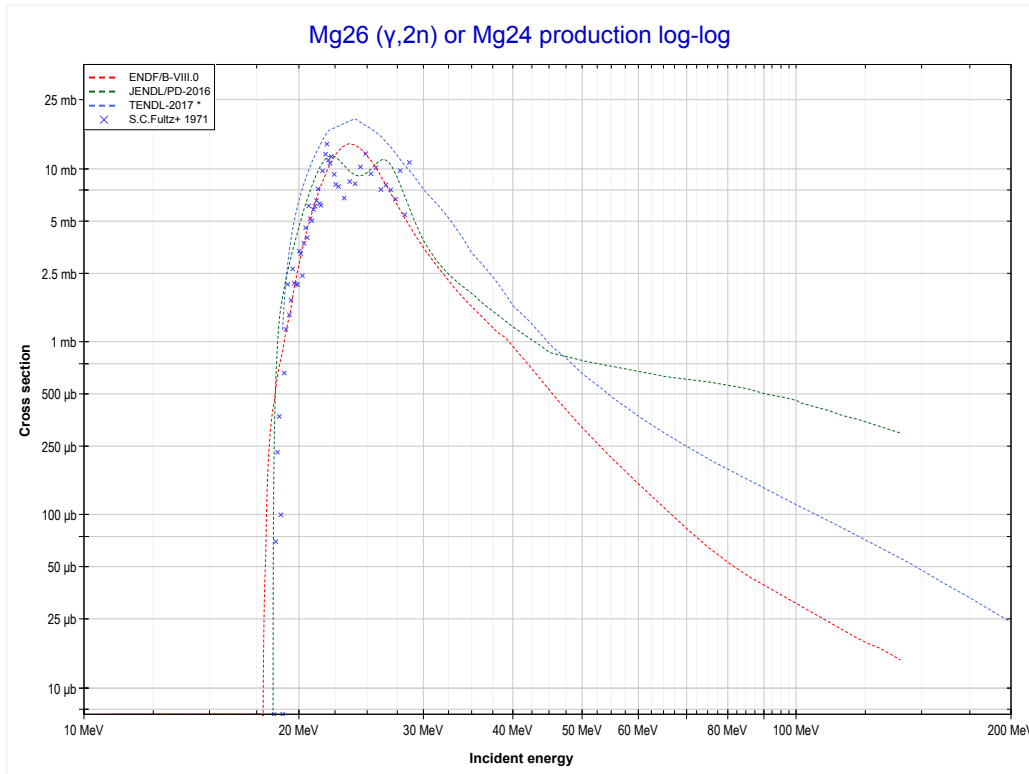
Reaction	Q-Value
Mg24(γ,n)Mg23	-16531.59 keV

<< 12-Mg-24	12-Mg-26	13-Al-27 >>
<< 12-Mg-24 MT4 (γ,n)	MT4 (γ,n) or MT5 (Mg25 production)	MT16 (γ,2n) >>



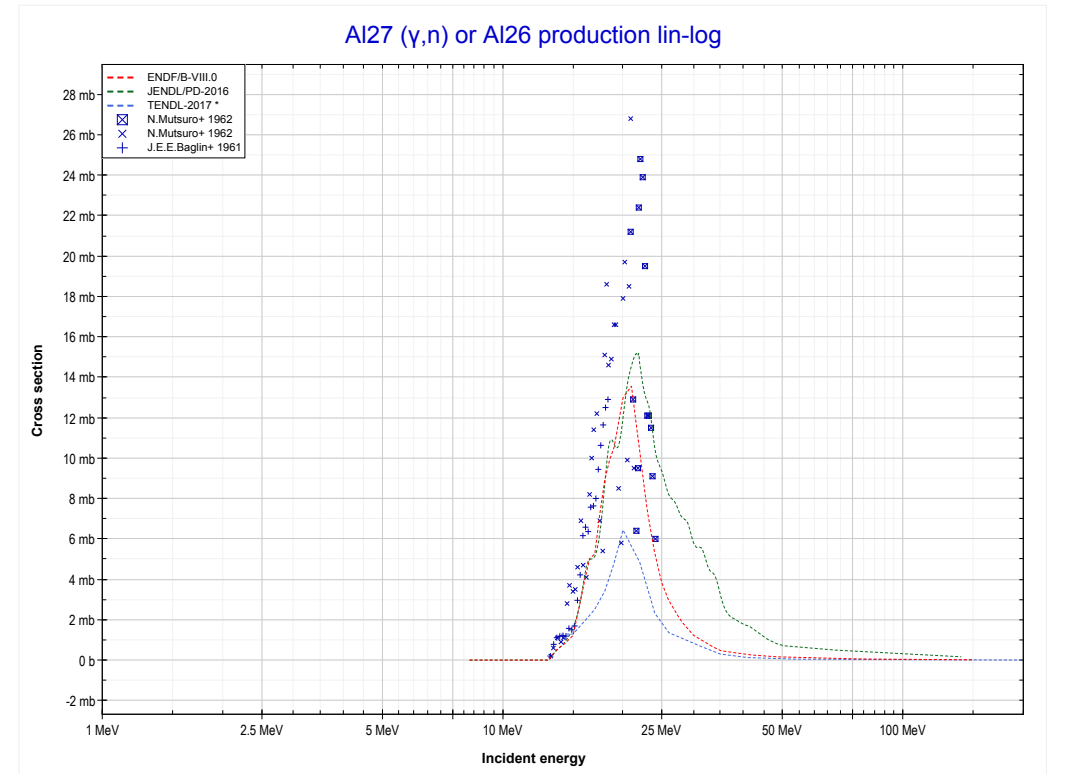
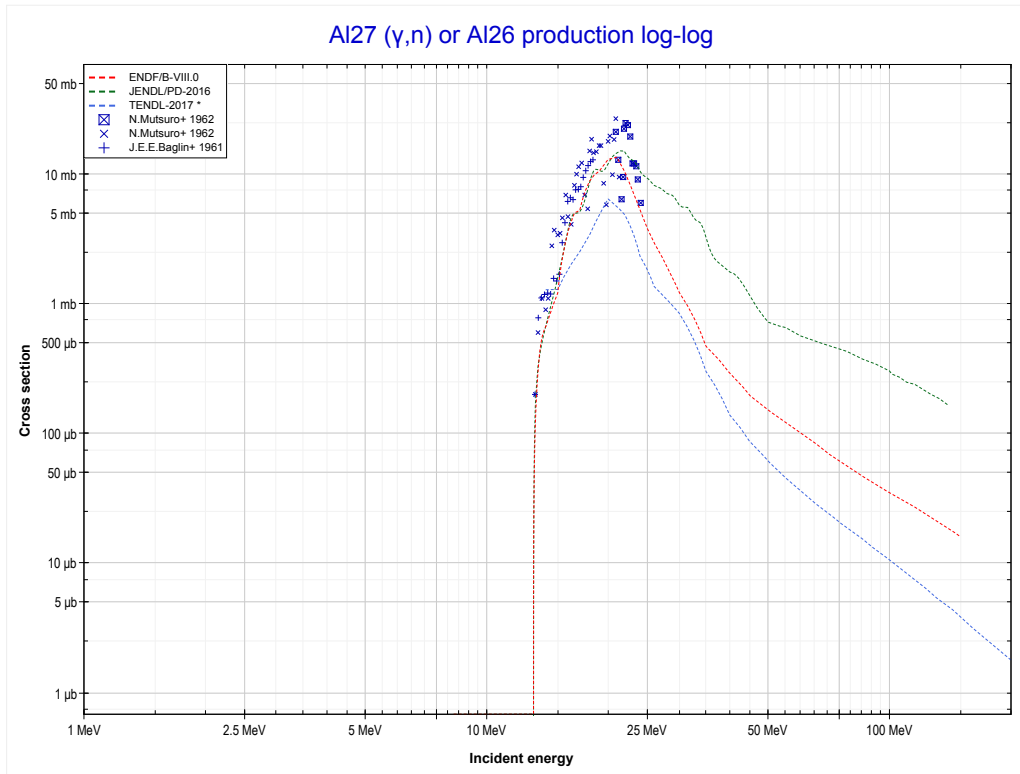
Reaction	Q-Value
Mg26(γ,n)Mg25	-11093.09 keV

<< 9-F-19	12-Mg-26	15-P-31 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Mg24 production)	13-AI-27 MT4 (γ, n) >>



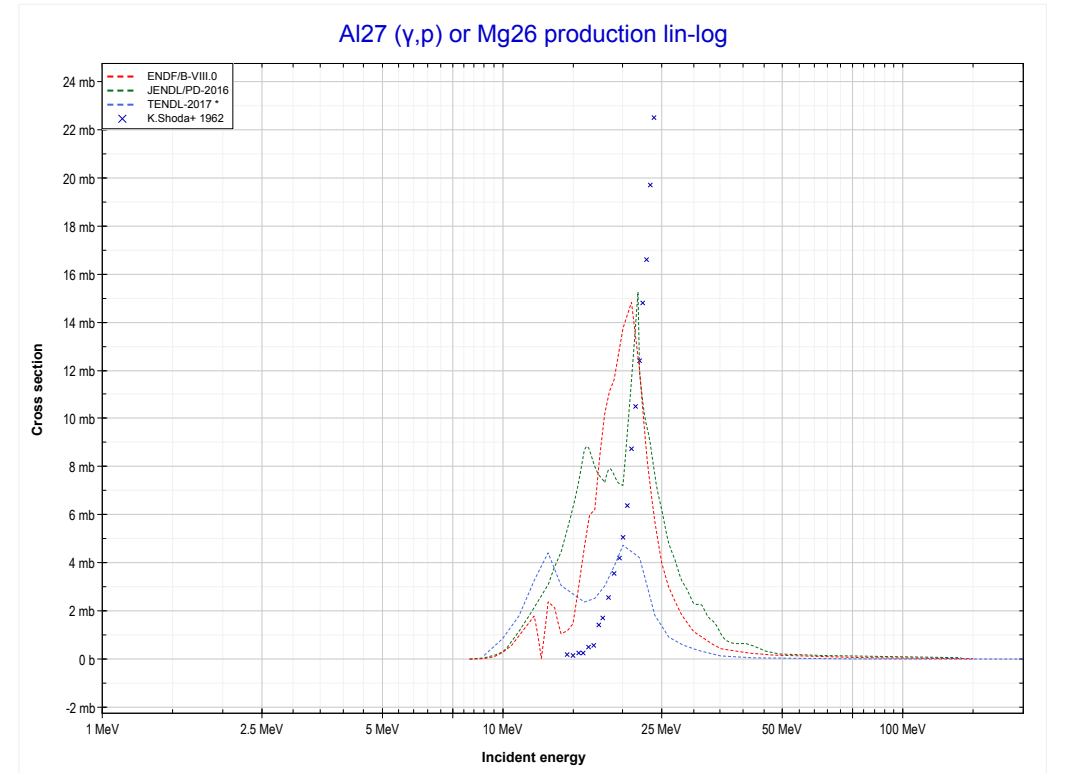
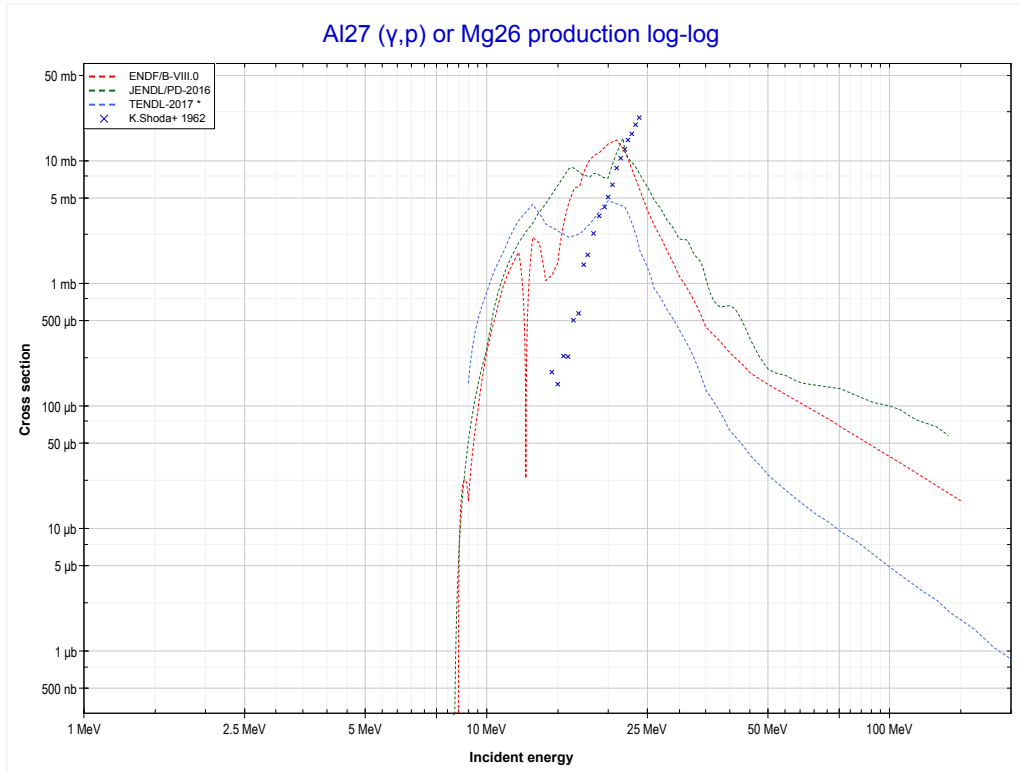
Reaction	Q-Value
Mg26($\gamma, 2n$)Mg24	-18423.61 keV

<< 12-Mg-26	13-Al-27	14-Si-28 >>
<< 12-Mg-26 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Al26 production)	MT103 (γ,p) >>



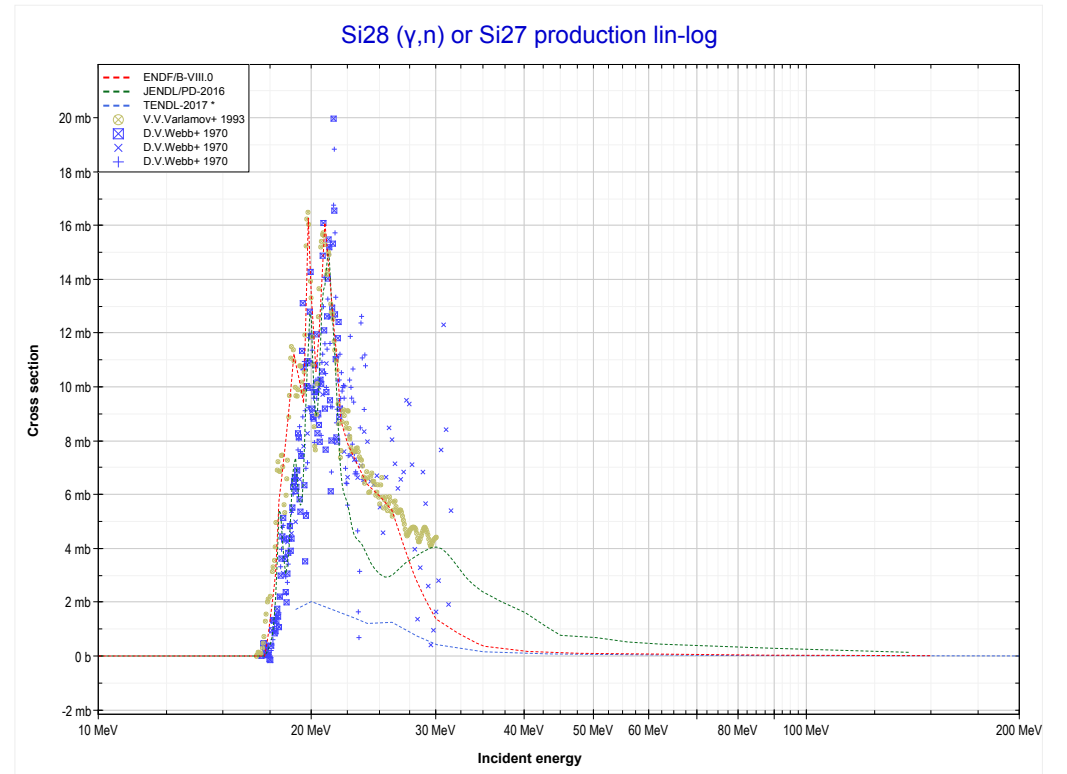
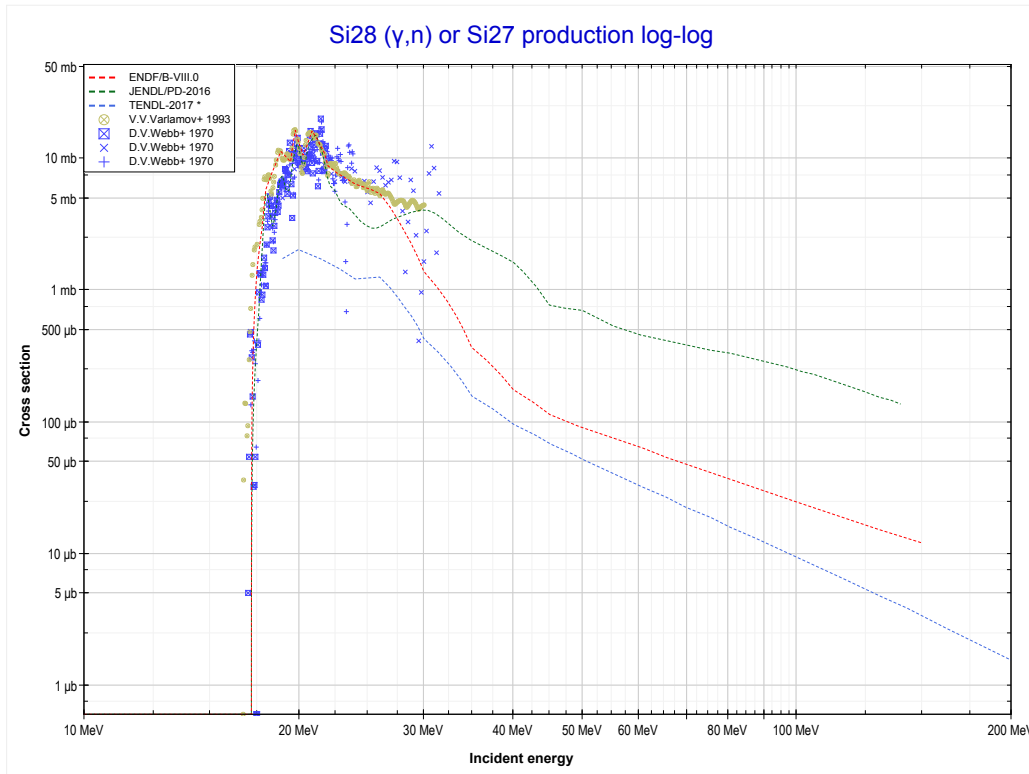
Reaction	Q-Value
Al27(γ,n)Al26	-13057.96 keV

<< 10-Ne-22	13-Al-27	14-Si-28 >>
<< MT4 (γ,n)	MT103 (γ,p) or MT5 (Mg26 production)	14-Si-28 MT4 (γ,n) >>



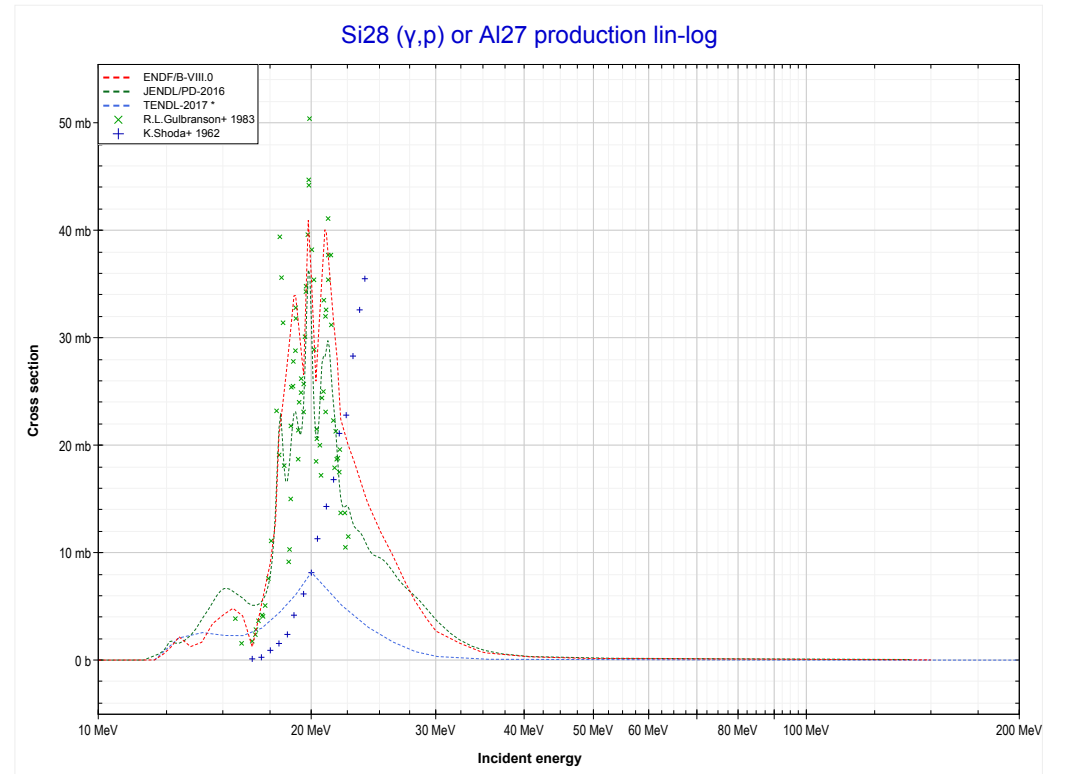
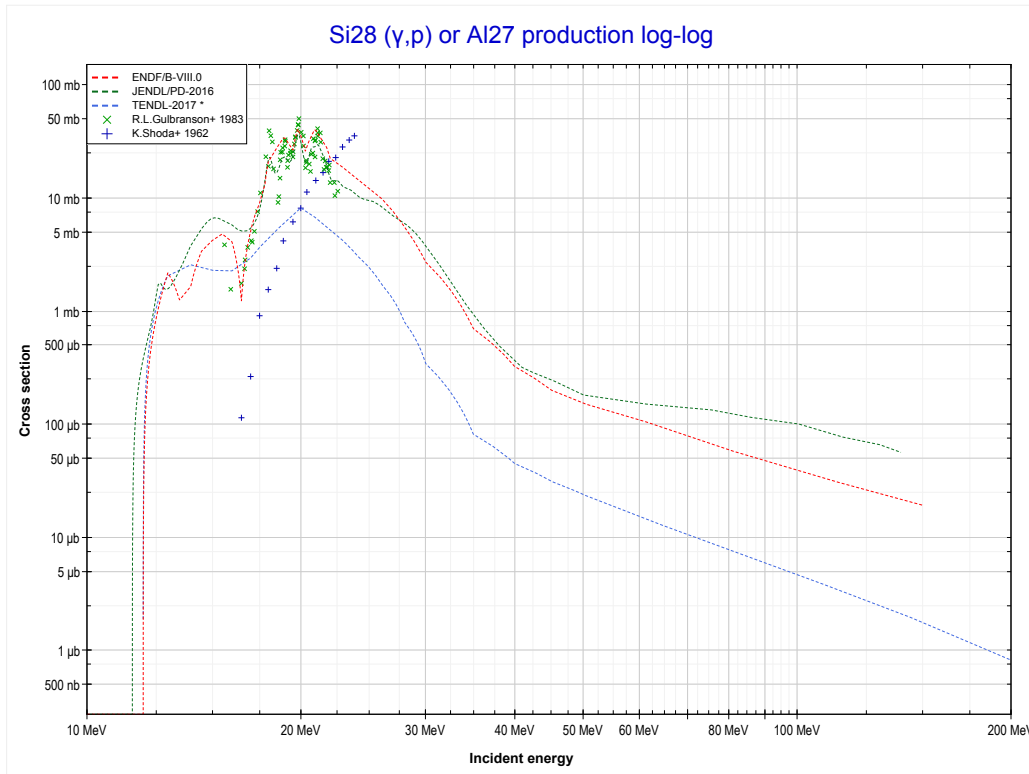
Reaction	Q-Value
Al27(γ,p)Mg26	-8271.17 keV

<< 13-Al-27	14-Si-28	14-Si-29 >>
<< 13-Al-27 MT103 (γ,p)	MT4 (γ,n) or MT5 (Si27 production)	MT103 (γ,p) >>



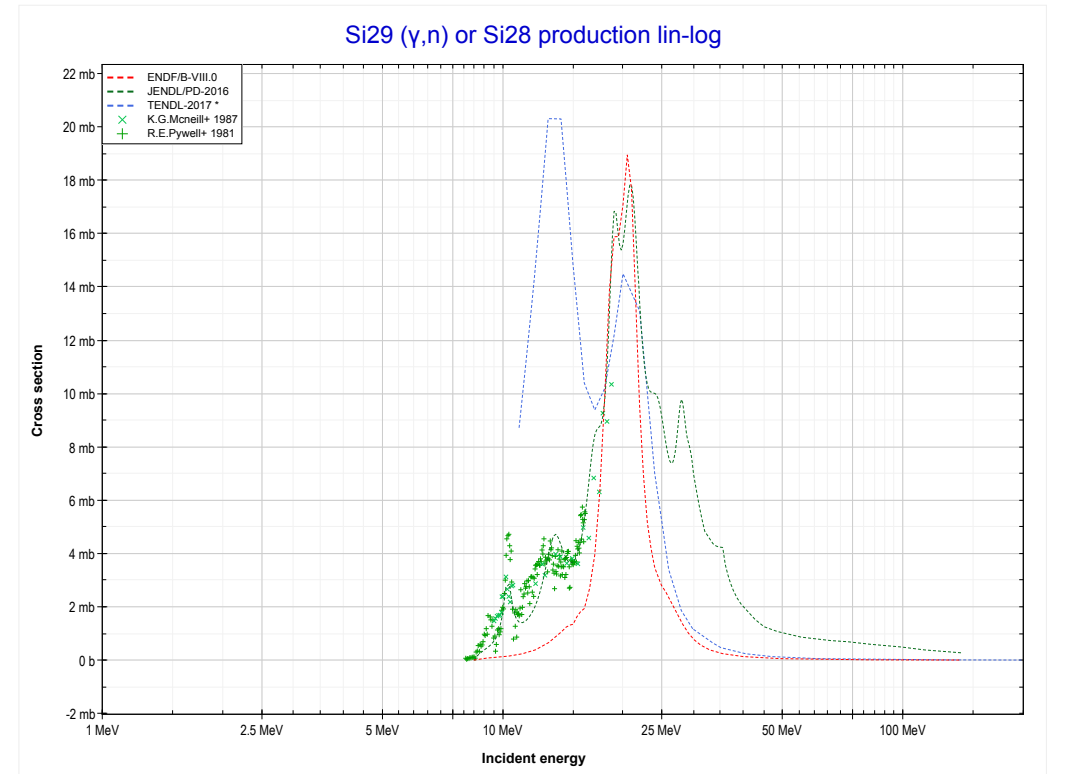
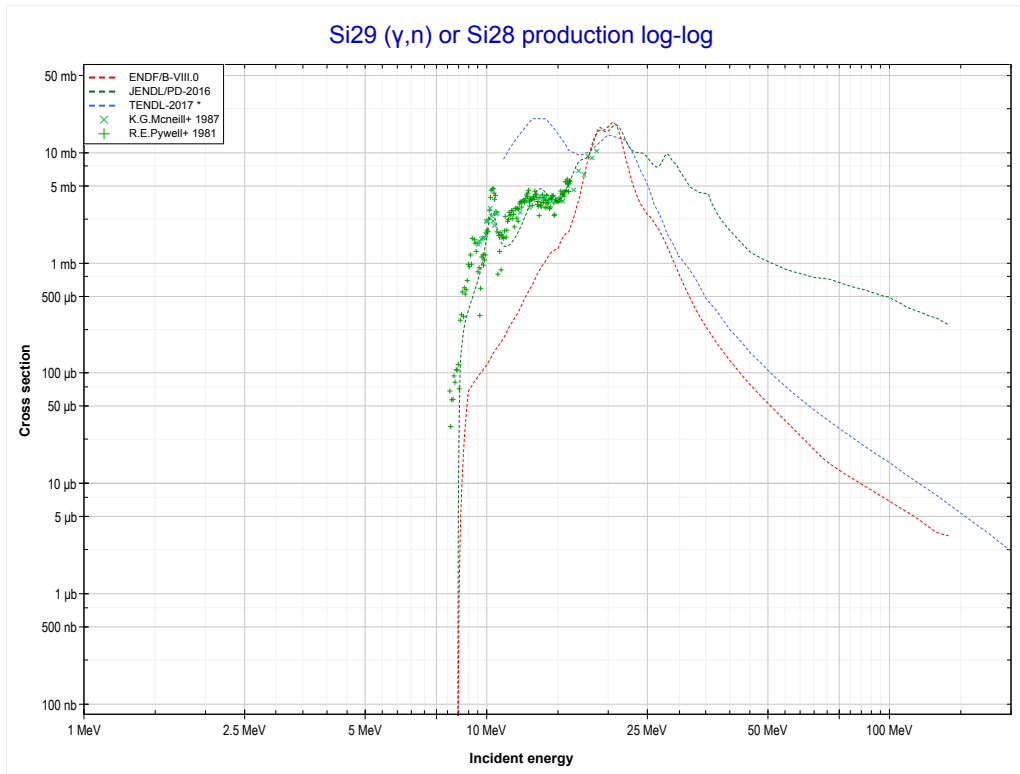
Reaction	Q-Value
Si28(γ,n)Si27	-17179.72 keV

<< 13-Al-27	14-Si-28	15-P-31 >>
<< MT4 (γ,n)	MT103 (γ,p) or MT5 (Al27 production)	14-Si-29 MT4 (γ,n) >>



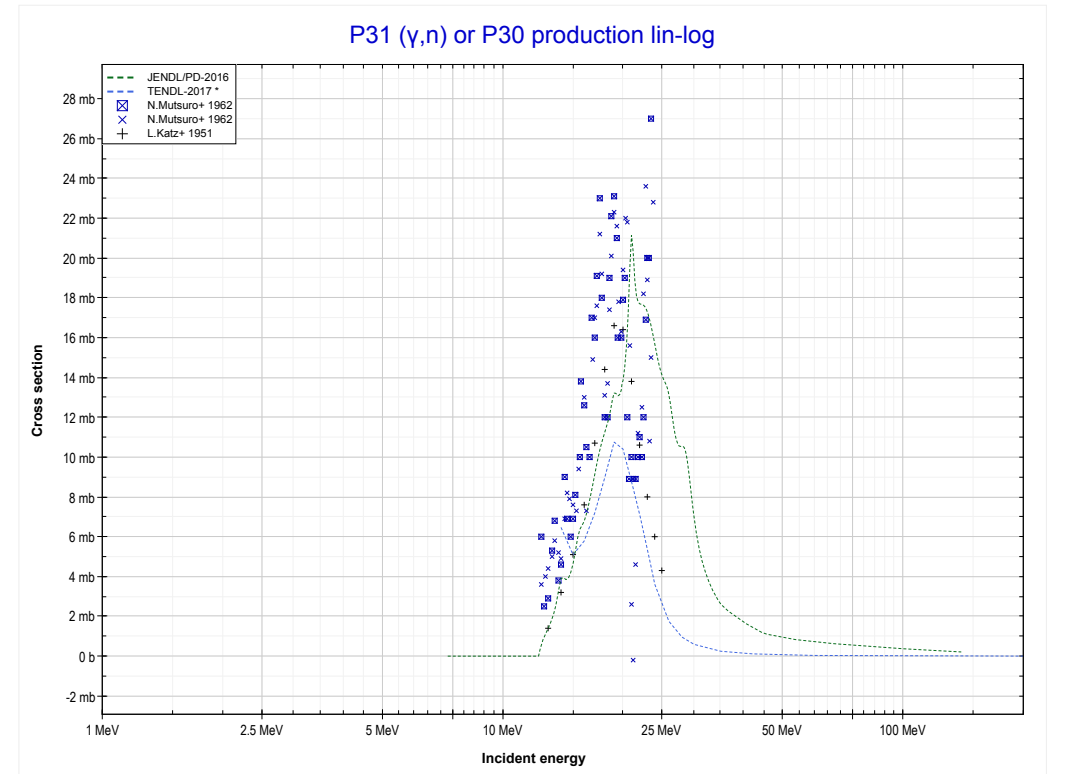
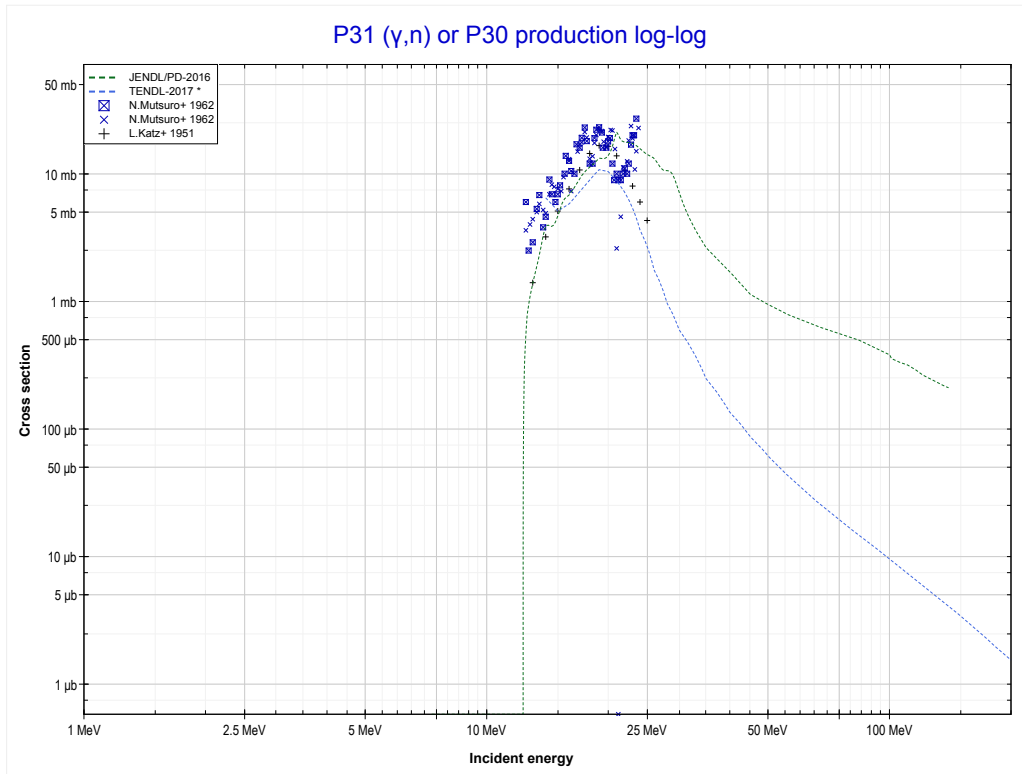
Reaction	Q-Value
Si28(γ,p)Al27	-11585.02 keV

<< 14-Si-28	14-Si-29	15-P-31 >>
<< 14-Si-28 MT103 (γ,p)	MT4 (γ,n) or MT5 (Si28 production)	15-P-31 MT4 (γ,n) >>



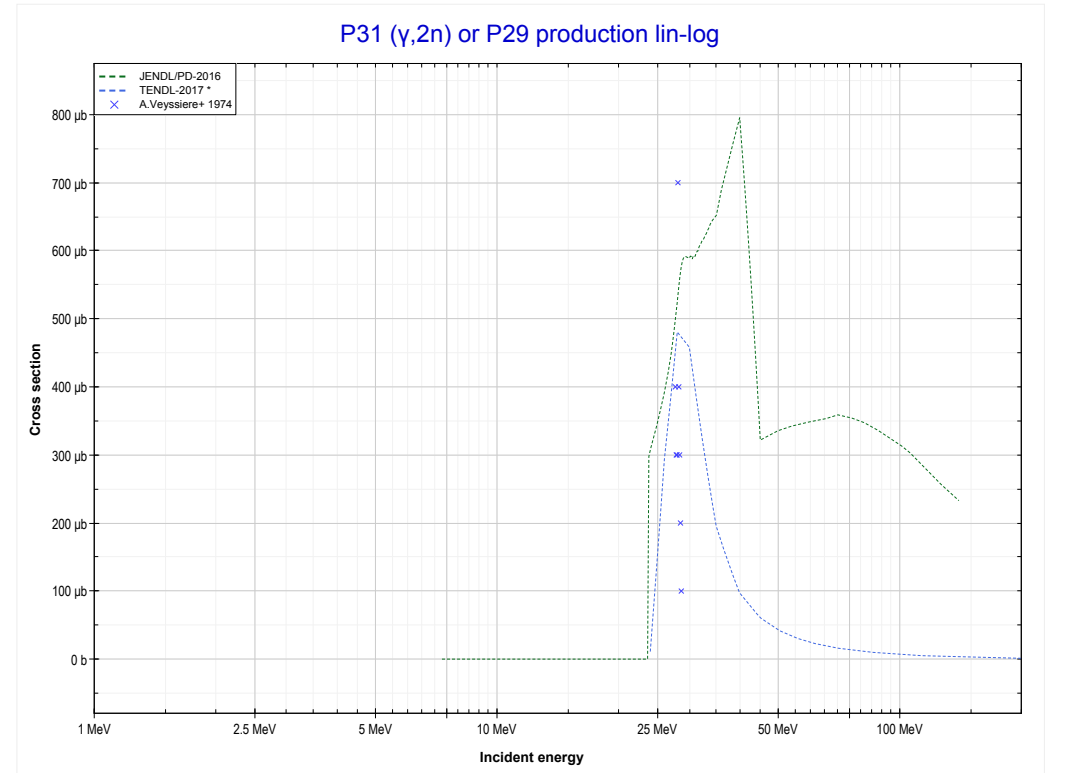
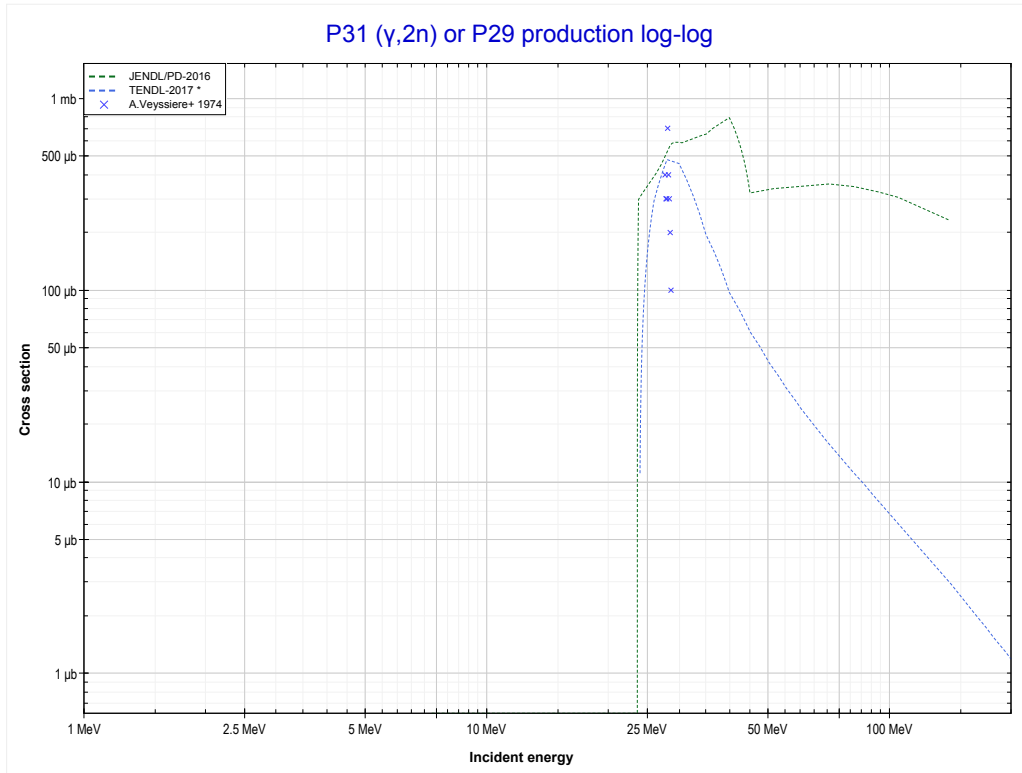
Reaction	Q-Value
Si29(γ,n)Si28	-8473.60 keV

<< 14-Si-29	15-P-31	16-S-32 >>
<< 14-Si-29 MT4 (γ,n)	MT4 (γ,n) or MT5 (P30 production)	MT16 (γ,2n) >>



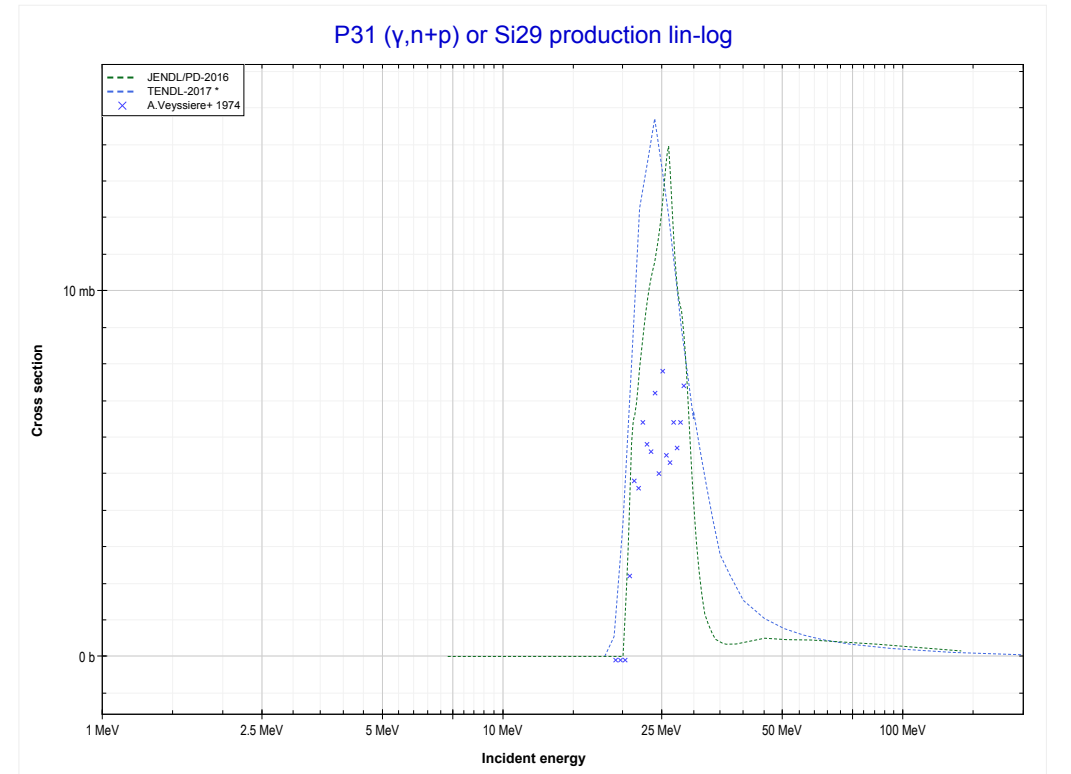
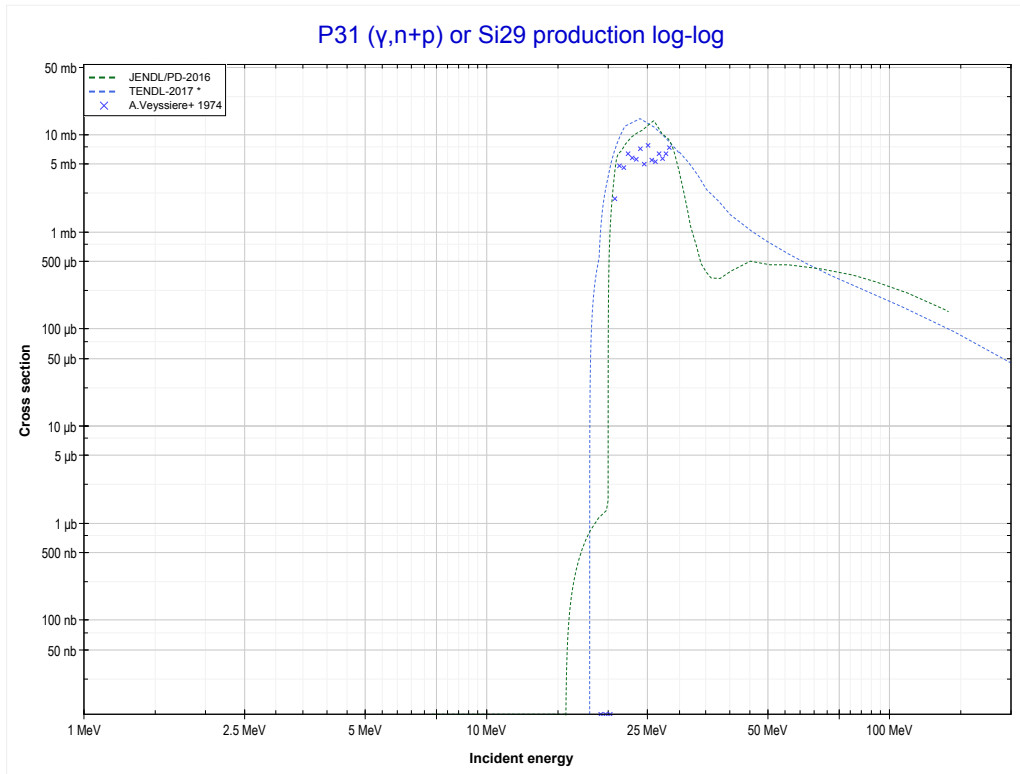
Reaction	Q-Value
P31(γ,n)P30	-12311.26 keV

<< 12-Mg-26	15-P-31	16-S-32 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (P29 production)	MT28 ($\gamma, n+p$) >>



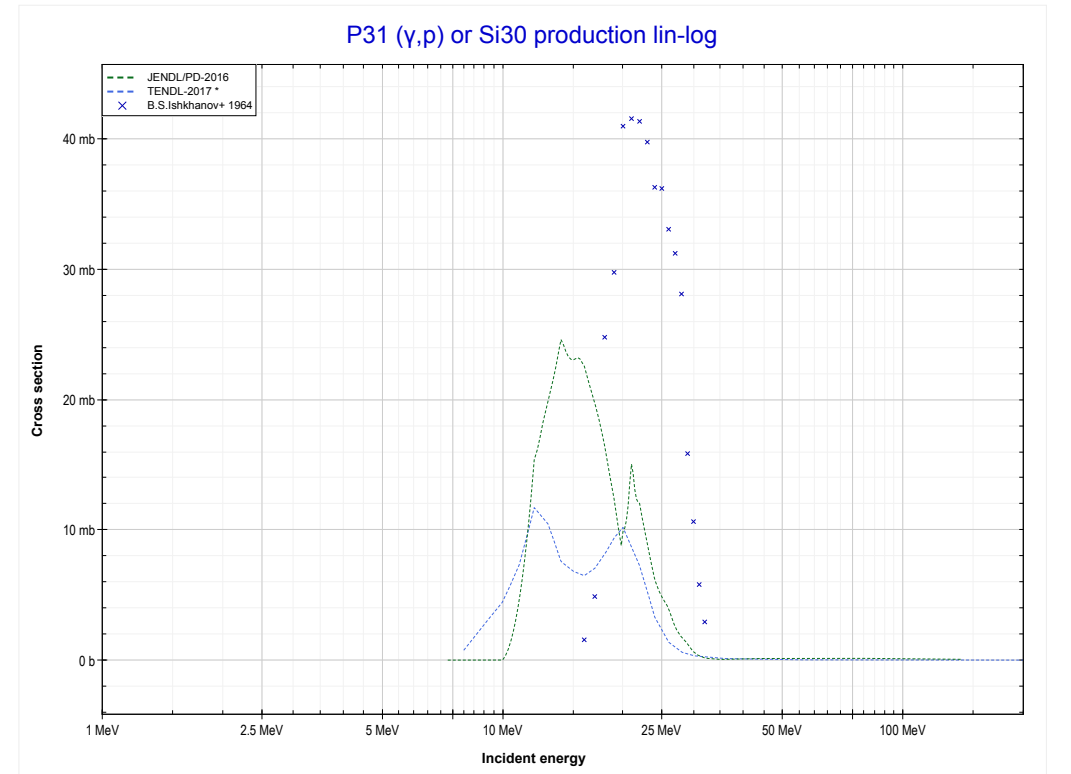
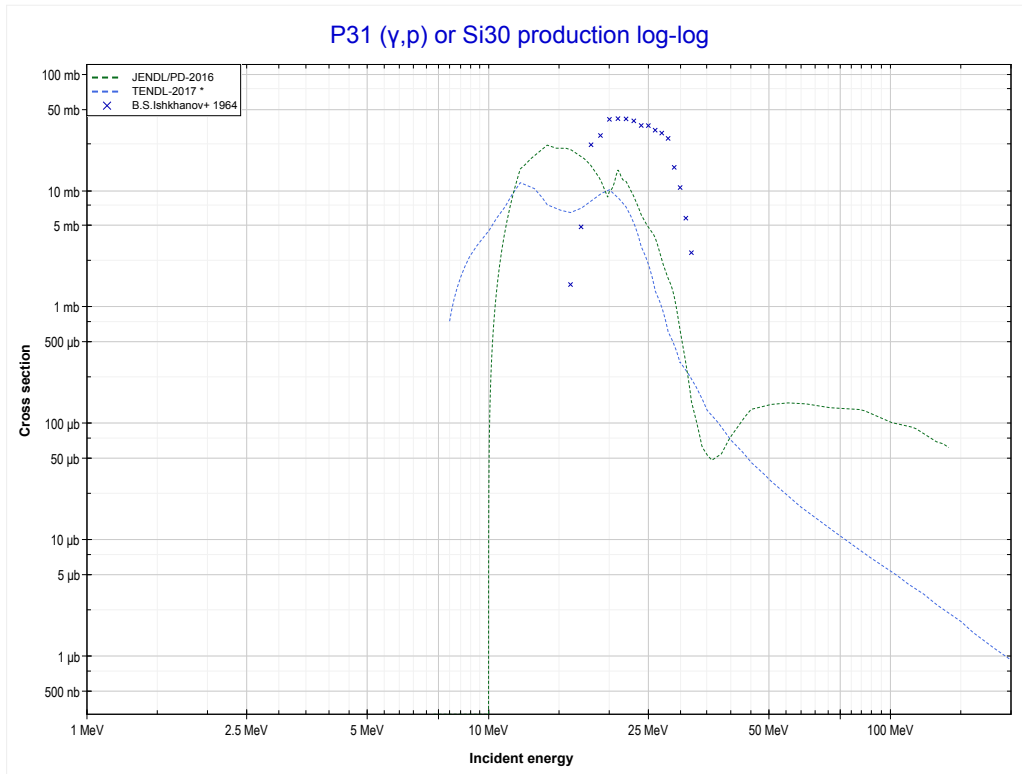
Reaction	Q-Value
P31($\gamma, 2n$)P29	-23630.68 keV

<< 10-Ne-20	15-P-31	16-S-32 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Si29 production)	MT103 (γ,p) >>



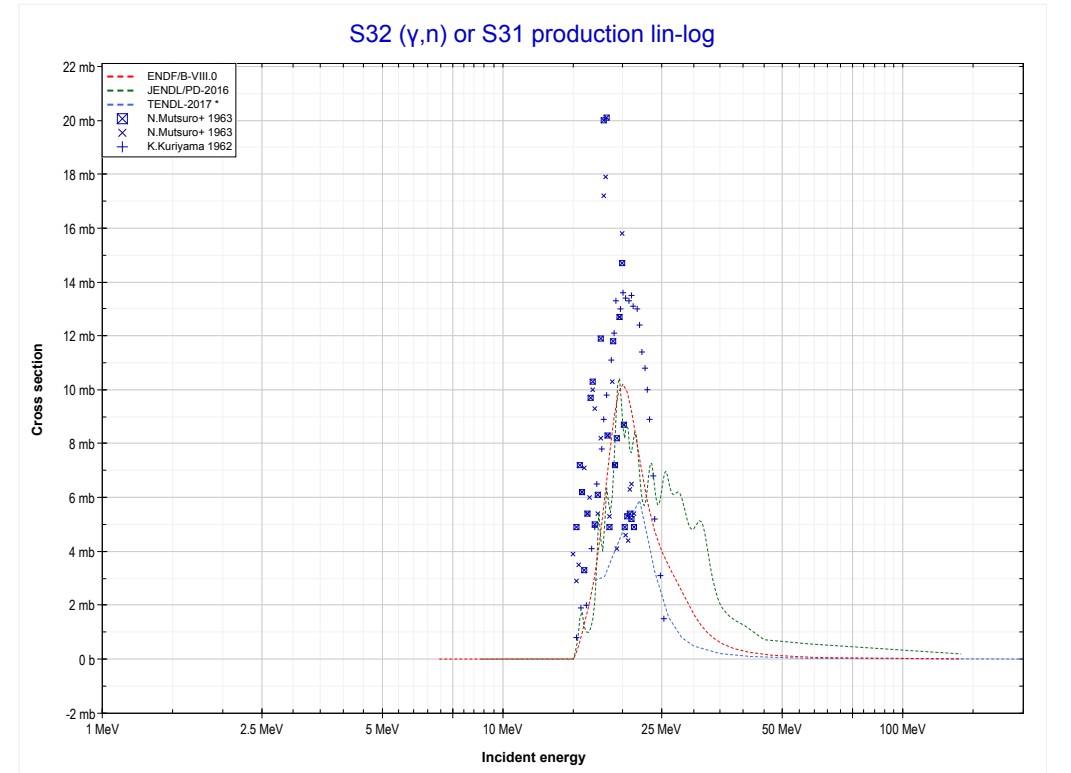
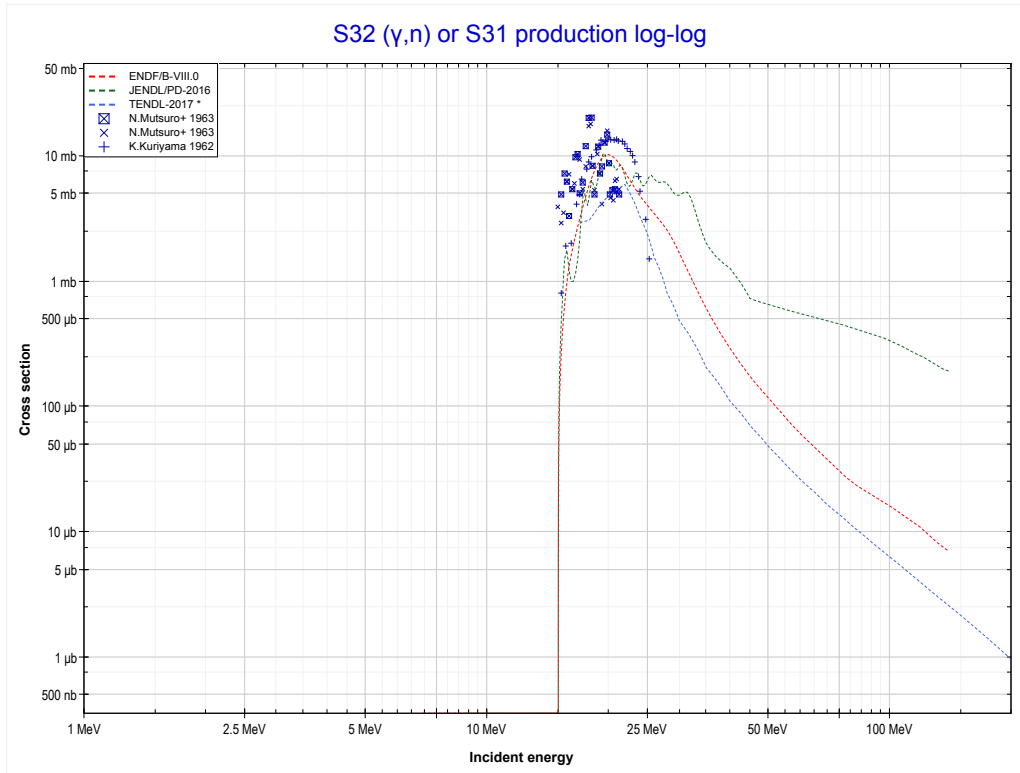
Reaction	Q-Value
P31(γ,d)Si29	-15681.18 keV
P31($\gamma,n+p$)Si29	-17905.75 keV

<< 14-Si-28	15-P-31	16-S-32 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Si30 production)	16-S-32 MT4 (γ, n) >>



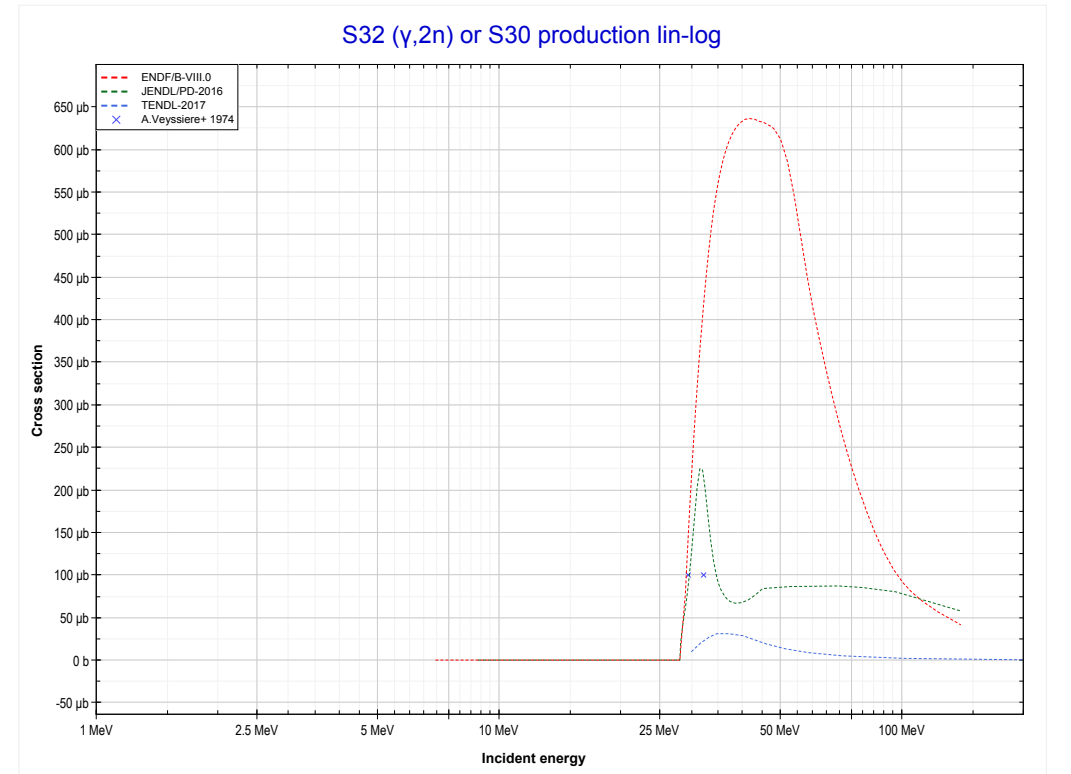
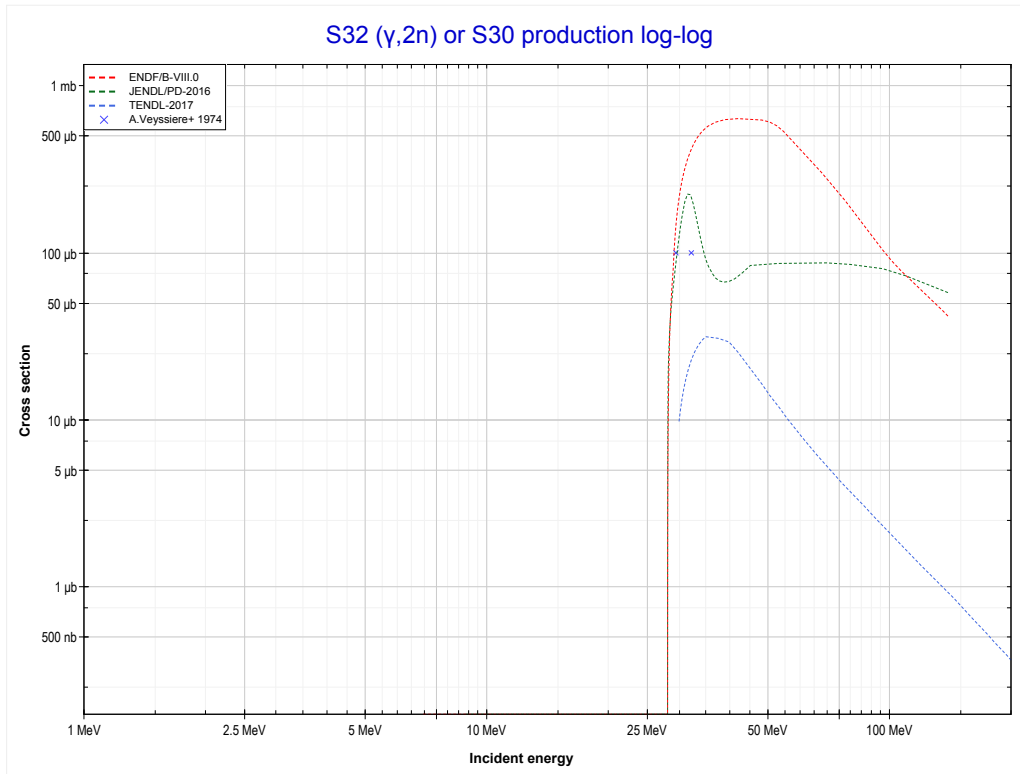
Reaction	Q-Value
P31(γ, p)Si30	-7296.55 keV

<< 15-P-31	16-S-32	17-CI-35 >>
<< 15-P-31 MT103 (γ,p)	MT4 (γ,n) or MT5 (S31 production)	MT16 (γ,2n) >>



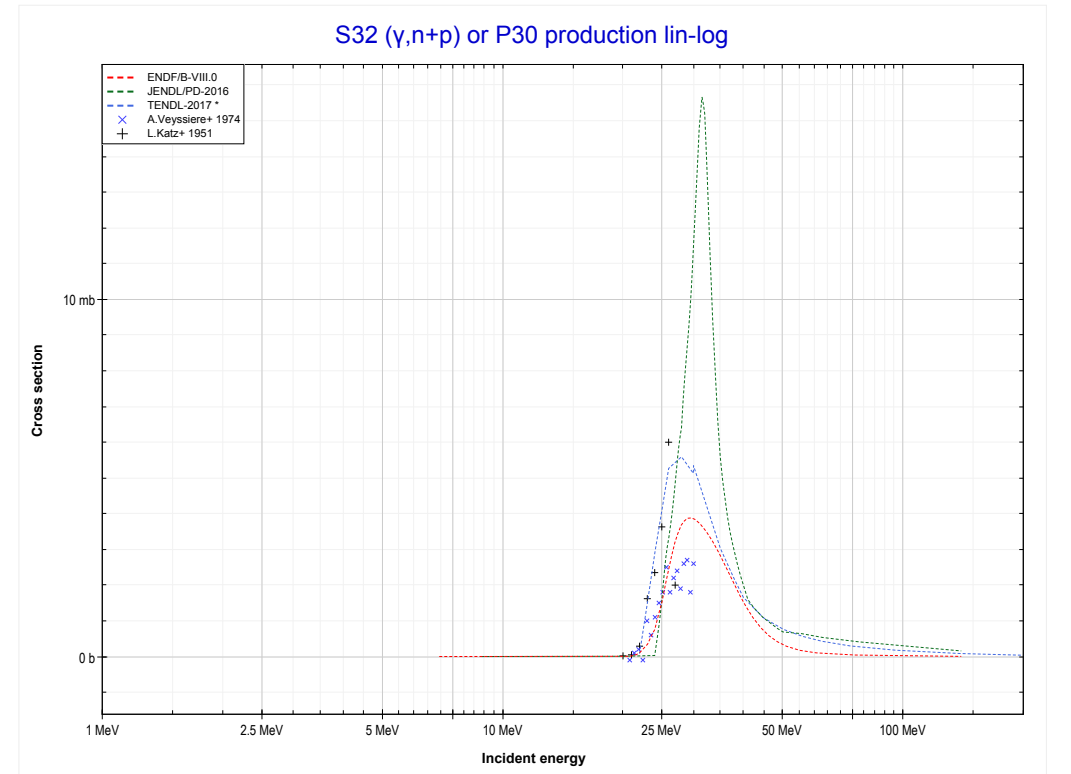
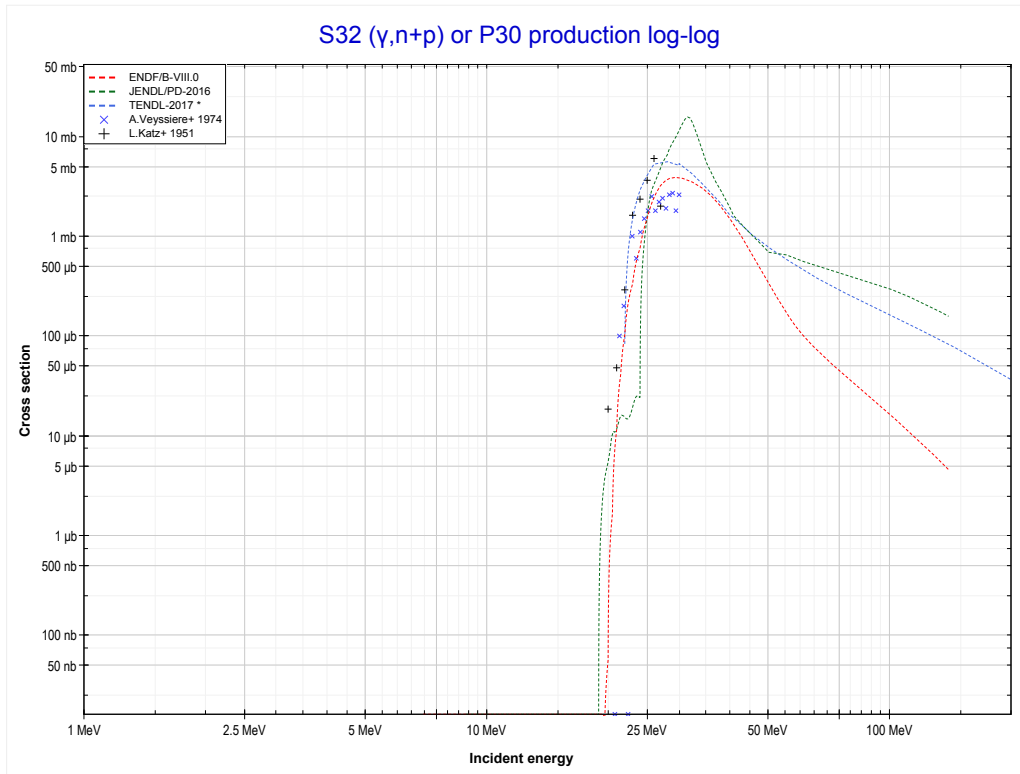
Reaction	Q-Value
S32(γ,n)S31	-15044.33 keV

<< 15-P-31	16-S-32	16-S-34 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (S30 production)	MT28 ($\gamma,n+p$) >>



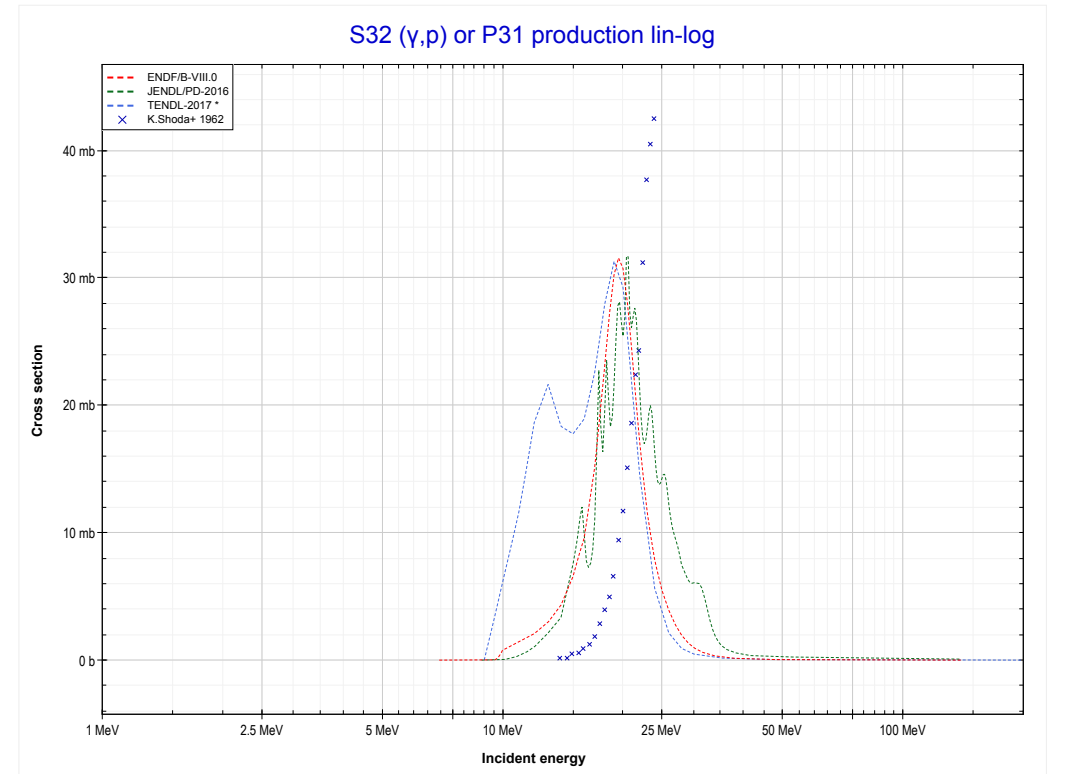
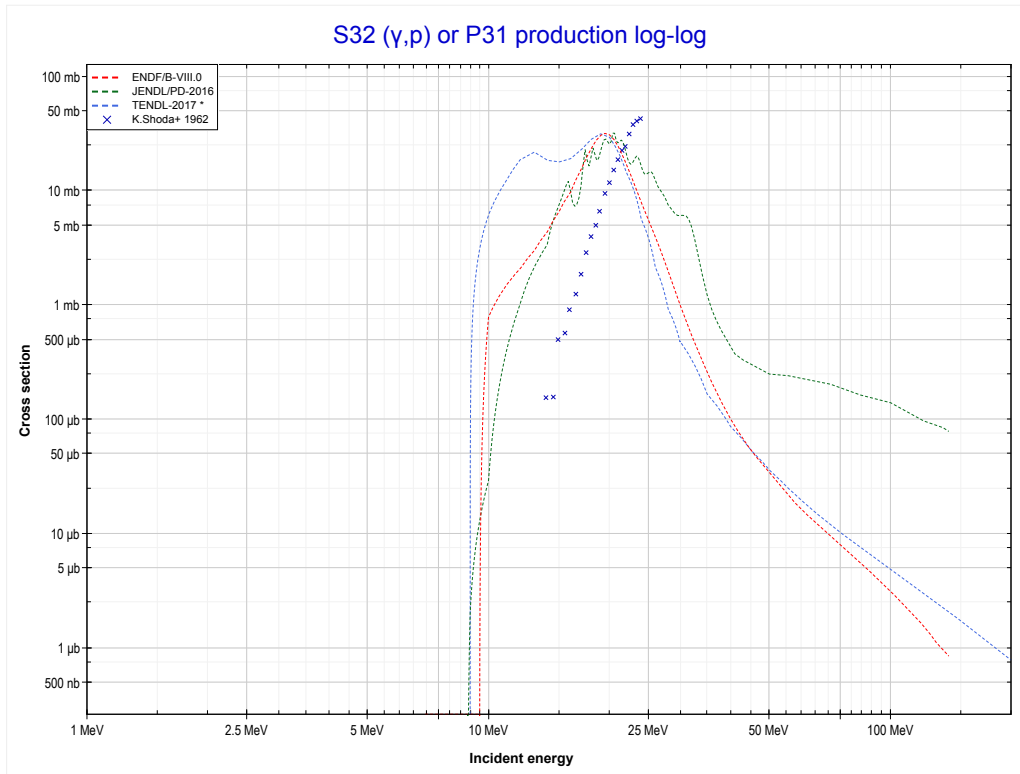
Reaction	Q-Value
S32($\gamma,2n$)S30	-28099.17 keV

<< 15-P-31	16-S-32	16-S-34 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (P30 production)	MT103 (γ,p) >>



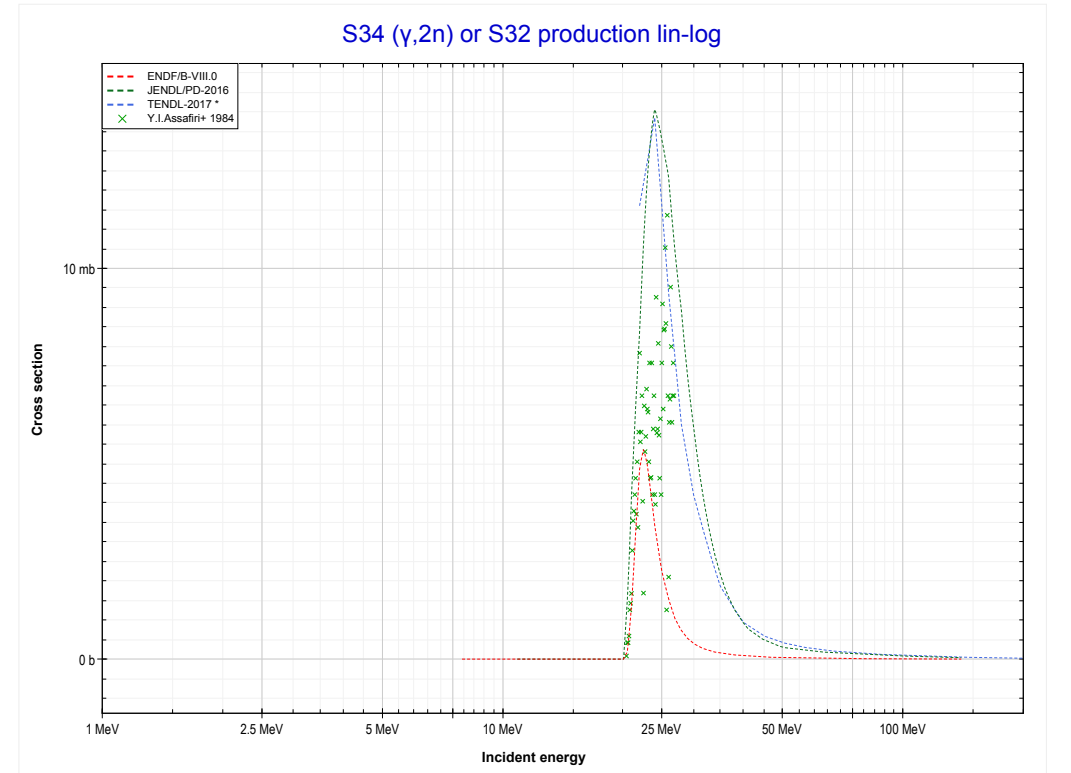
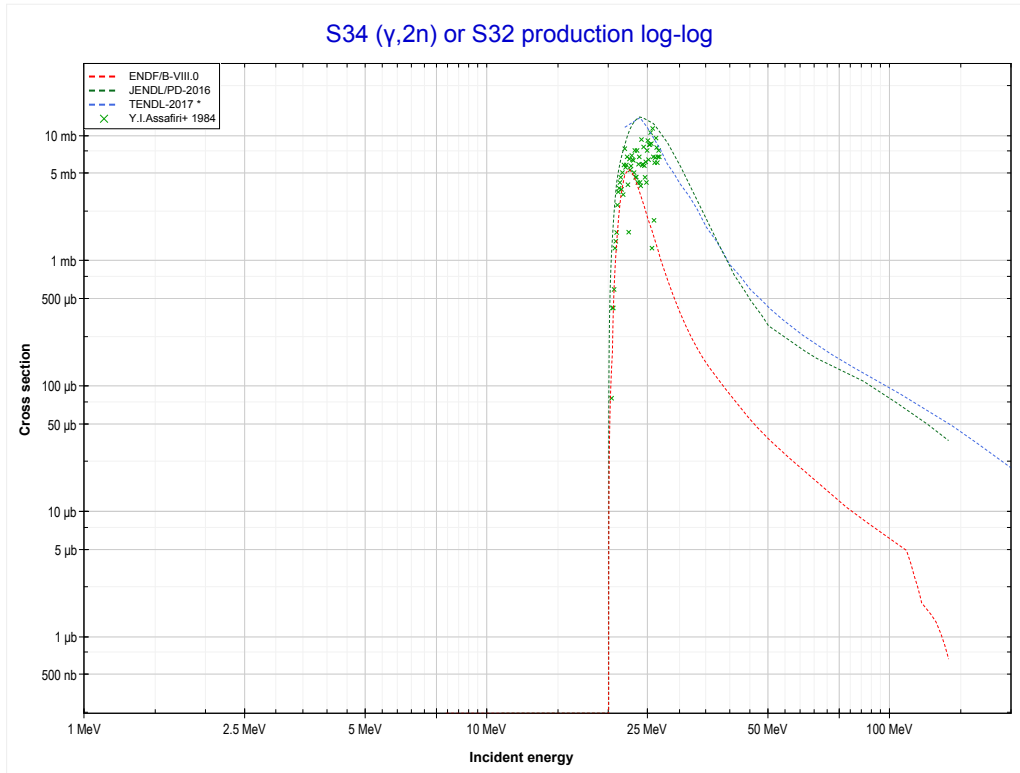
Reaction	Q-Value
S32(γ,d)P30	-18950.66 keV
S32($\gamma,n+p$)P30	-21175.22 keV

<< 15-P-31	16-S-32	16-S-34 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (P31 production)	16-S-34 MT16 ($\gamma, 2n$) >>



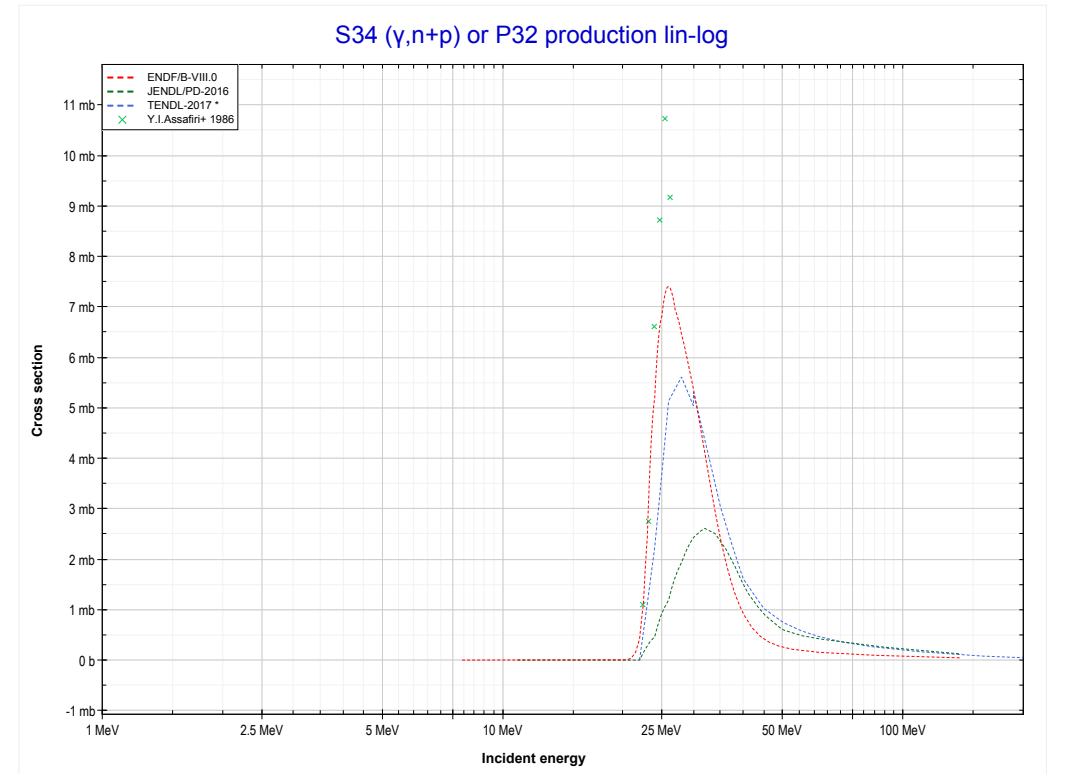
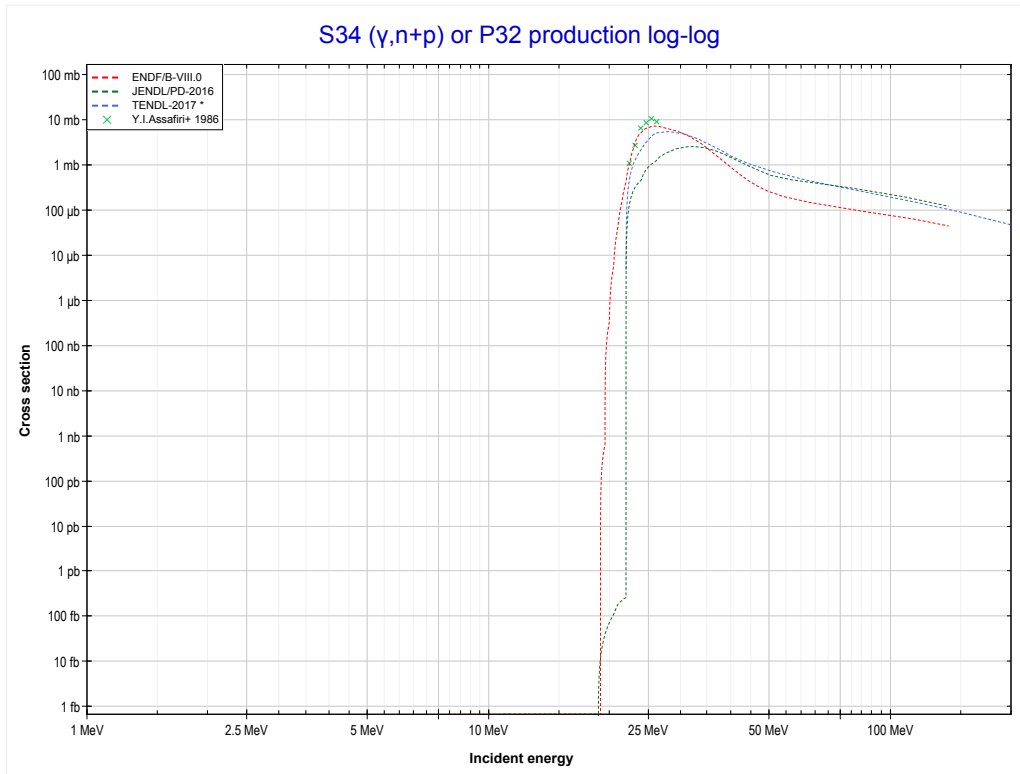
Reaction	Q-Value
S32(γ, p)P31	-8863.96 keV

<< 16-S-32	16-S-34	20-Ca-48 >>
<< 16-S-32 MT103 (γ,p)	MT16 (γ,2n) or MT5 (S32 production)	MT28 (γ,n+p) >>



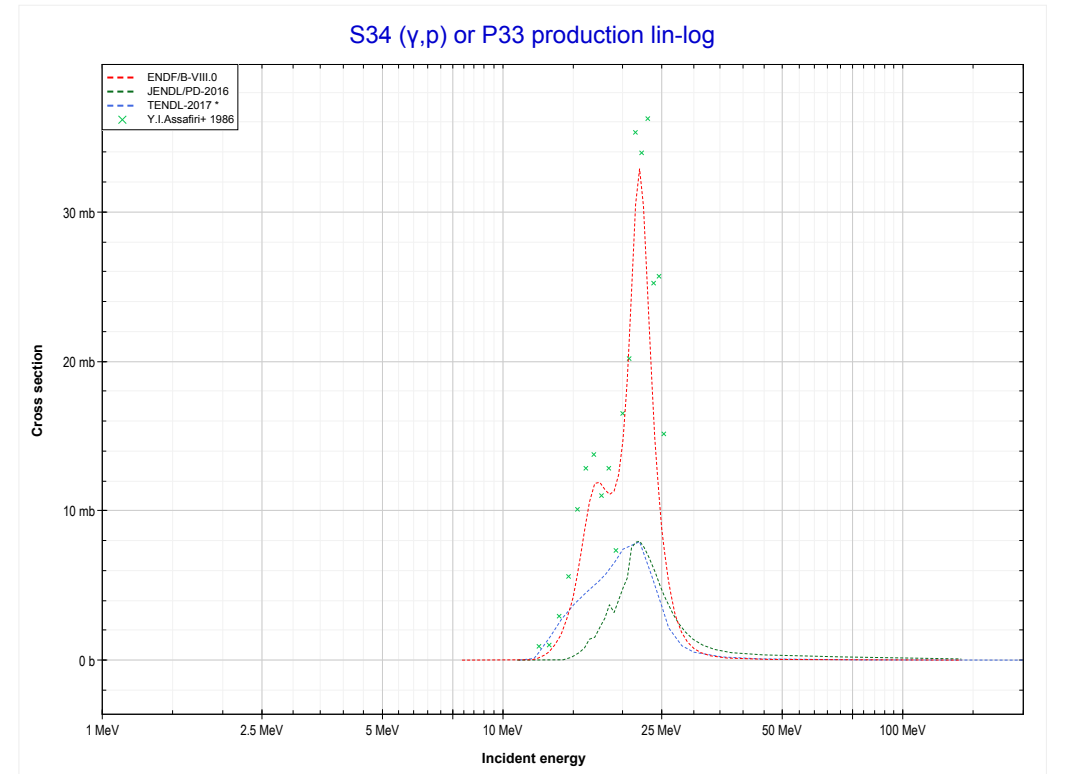
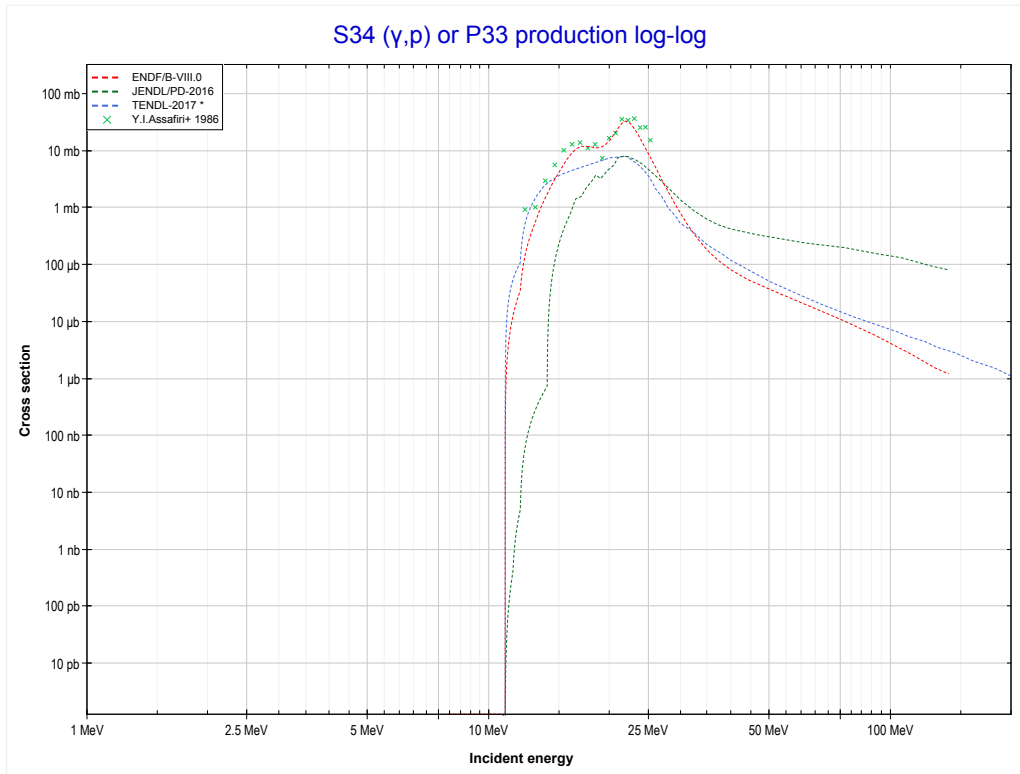
Reaction	Q-Value
S34(γ,2n)S32	-20058.79 keV

<< 16-S-32	16-S-34	26-Fe-54 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (P32 production)	MT103 (γ,p) >>



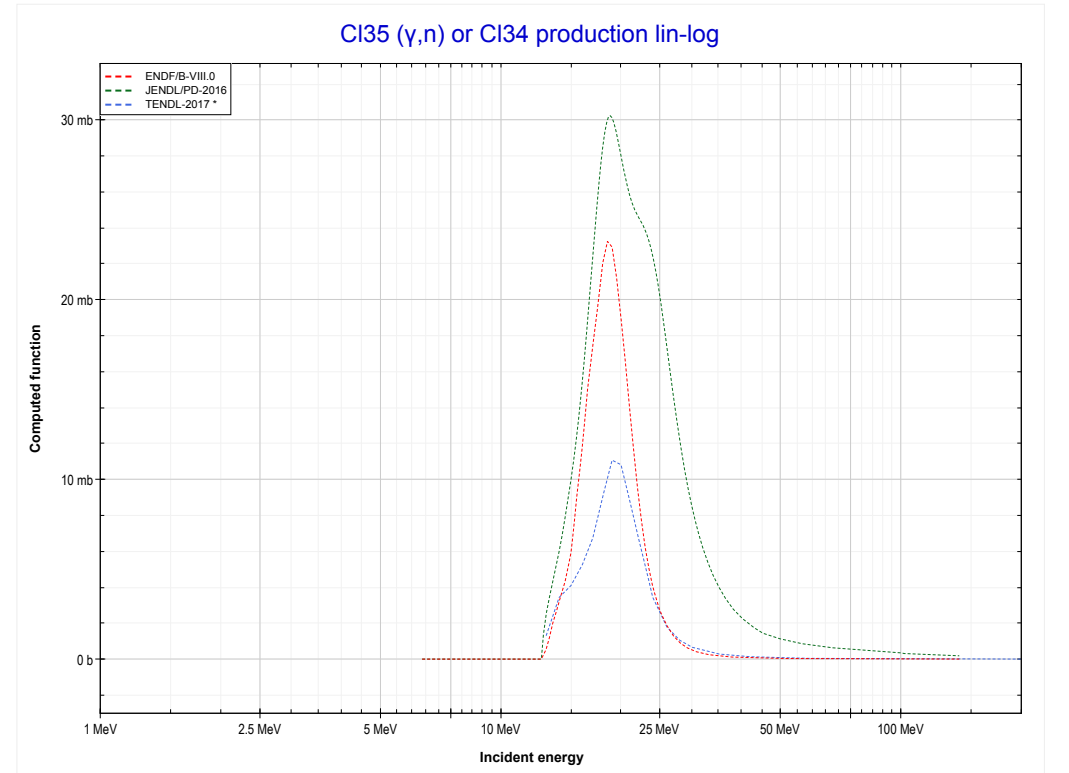
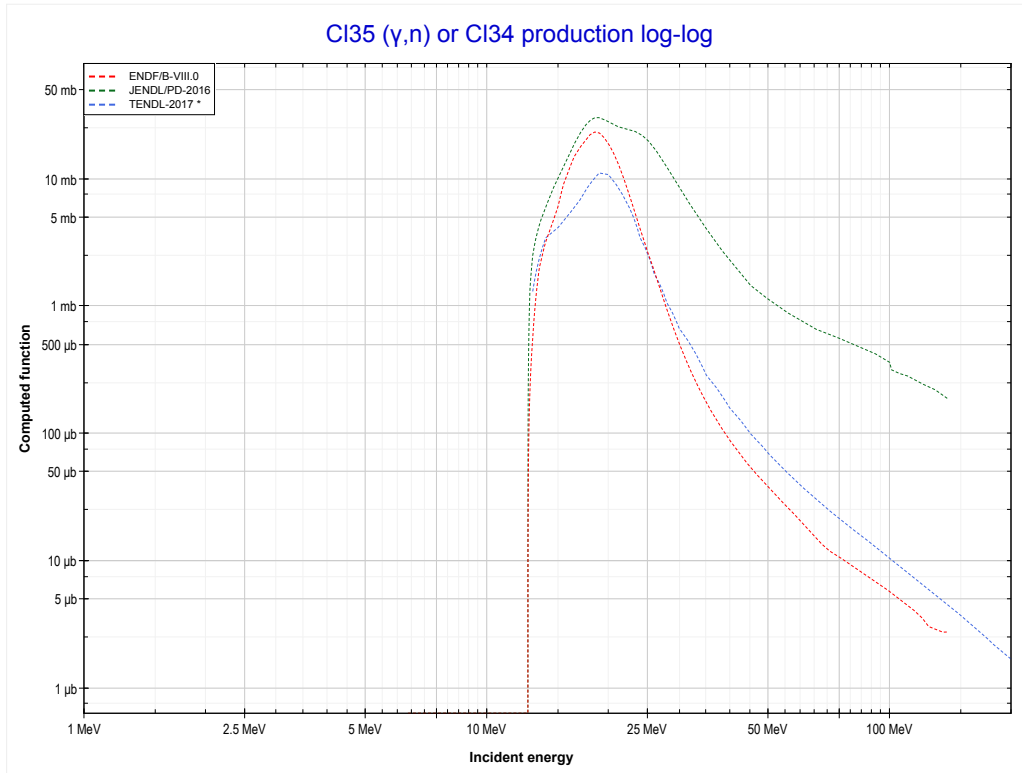
Reaction	Q-Value
S34(γ,d)P32	-18762.54 keV
S34($\gamma,n+p$)P32	-20987.11 keV

<< 16-S-32	16-S-34	22-Ti-50 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (P33 production)	17-Cl-35 MT4 (γ, n) >>



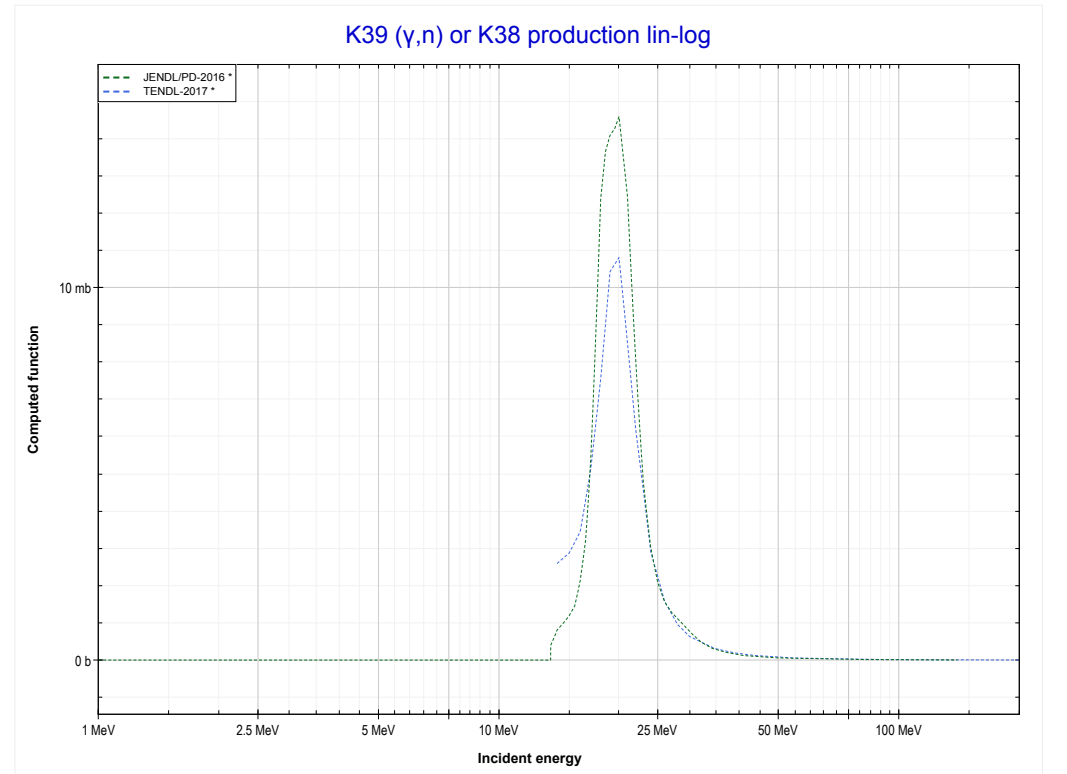
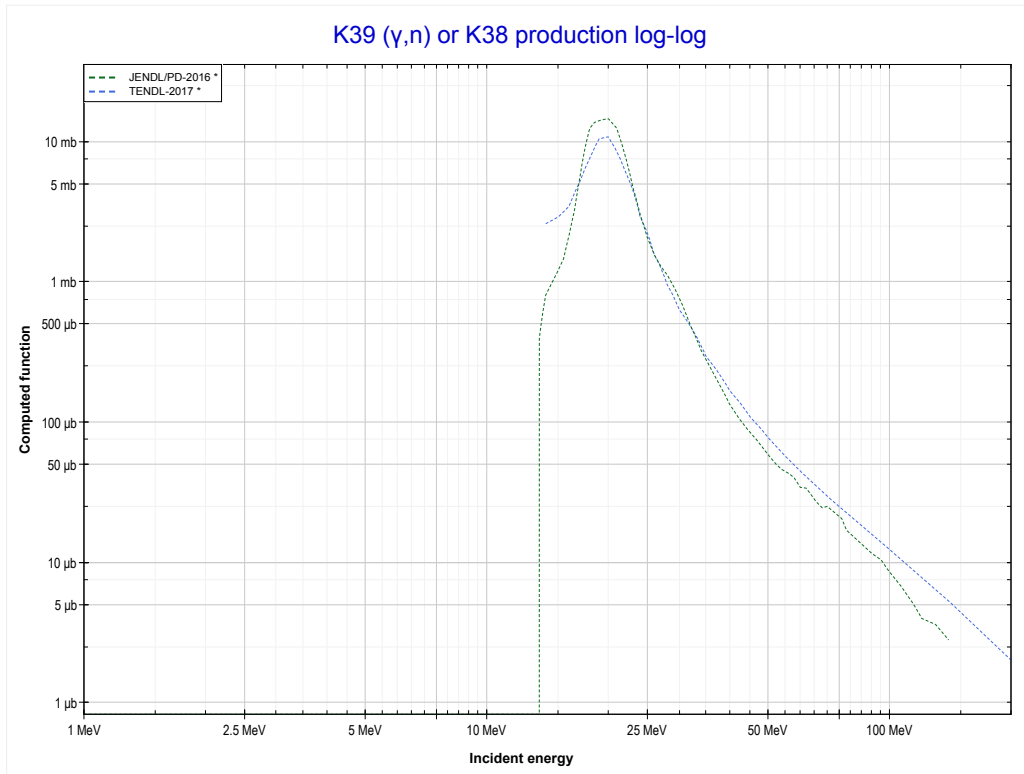
Reaction	Q-Value
S34(γ, p)P33	-10883.36 keV

<< 16-S-32	17-Cl-35	19-K-39 >>
<< 16-S-34 MT103 (γ,p)	MT4 (γ,n) or MT5 (Cl34 production)	19-K-39 MT4 (γ,n) >>



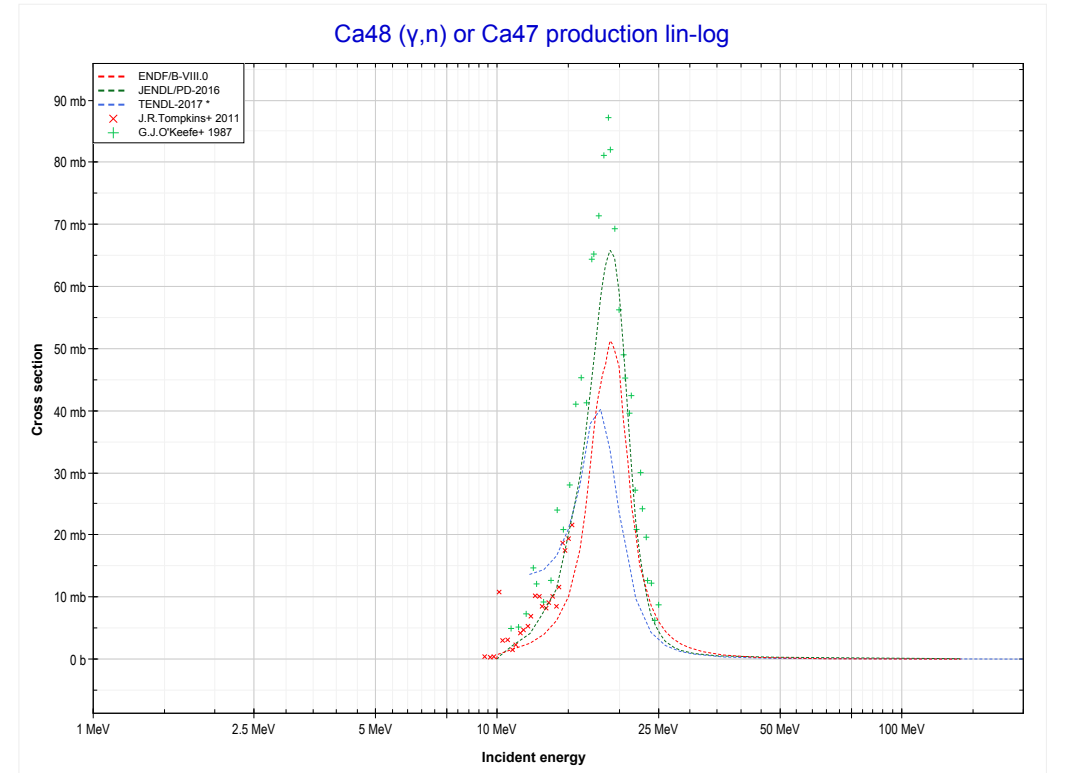
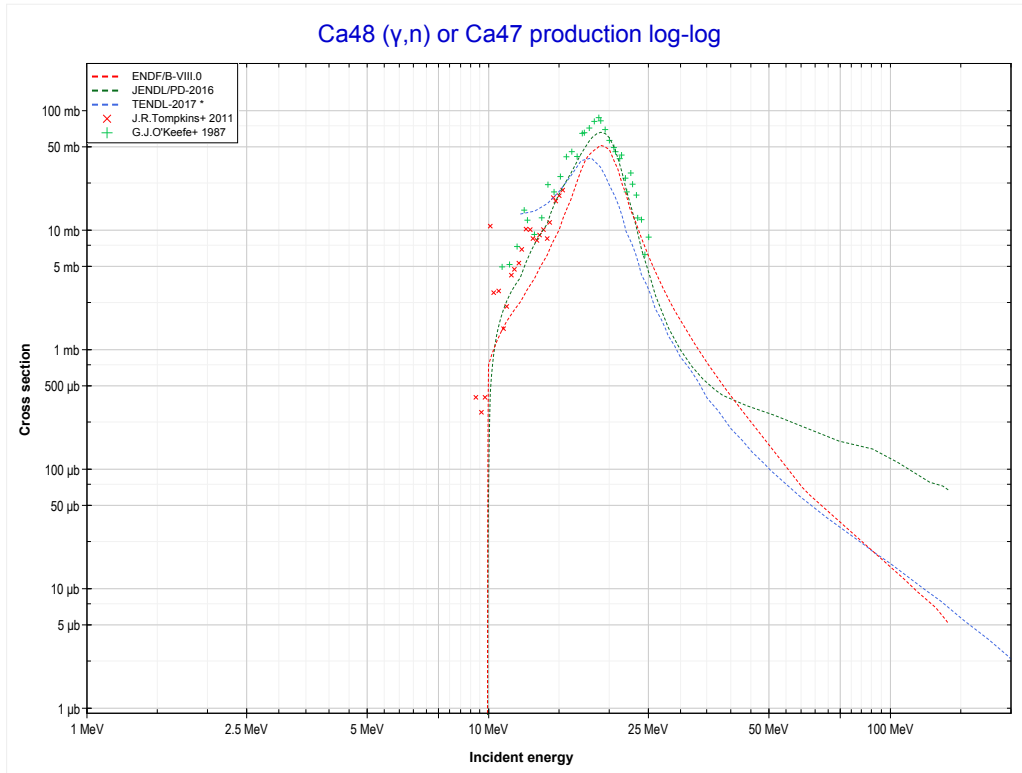
Reaction	Q-Value
Cl35(γ,n)Cl34	-12644.77 keV

<< 17-Cl-35	19-K-39	20-Ca-48 >>
<< 17-Cl-35 MT4 (γ,n)	MT4 (γ,n) or MT5 (K38 production)	20-Ca-48 MT4 (γ,n) >>



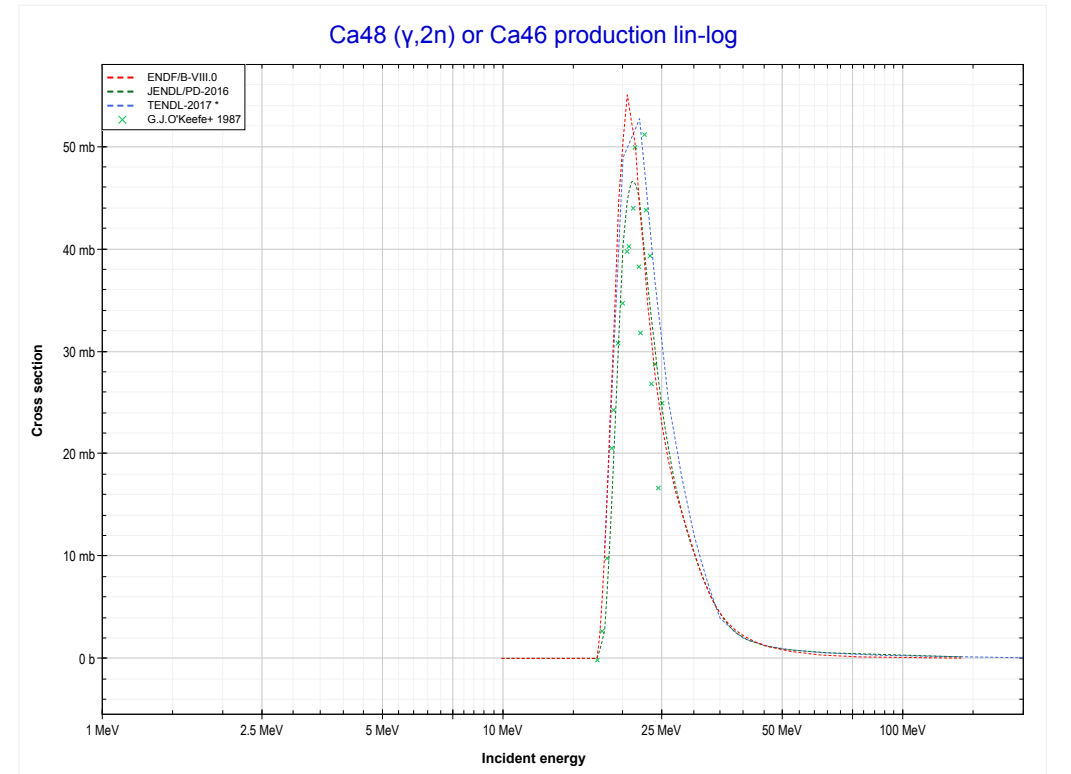
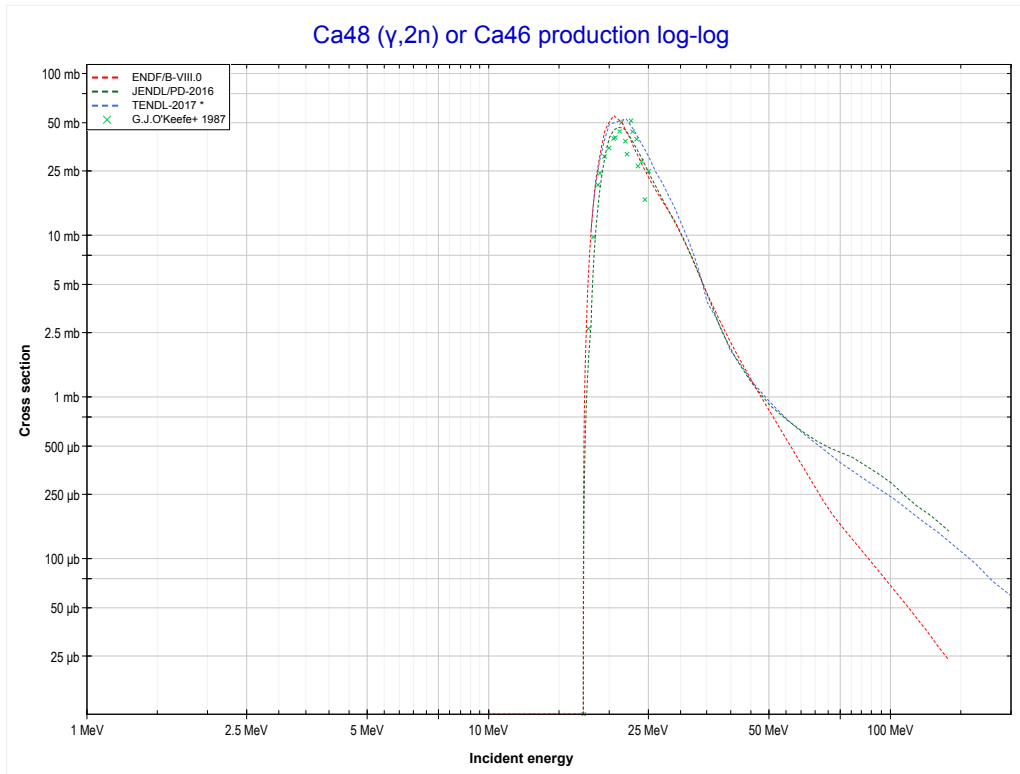
Reaction	Q-Value
K39(γ,n)K38	-13077.76 keV

<< 19-K-39	20-Ca-48	21-Sc-45 >>
<< 19-K-39 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ca47 production)	MT16 (γ,2n) >>



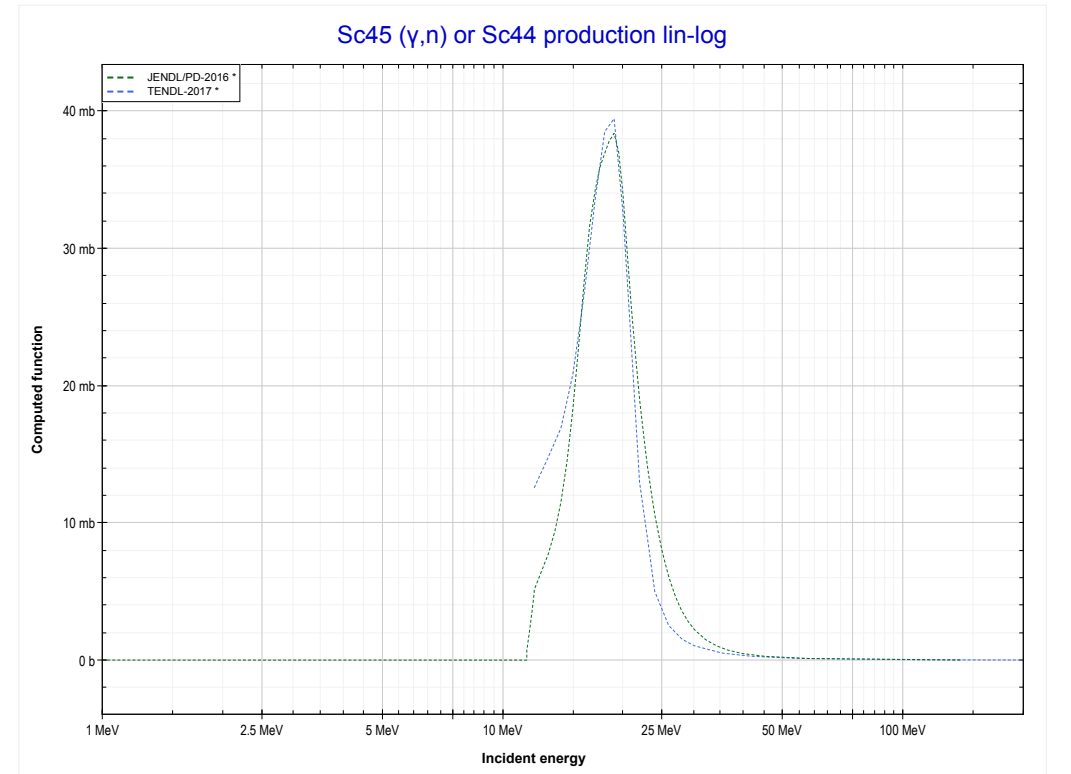
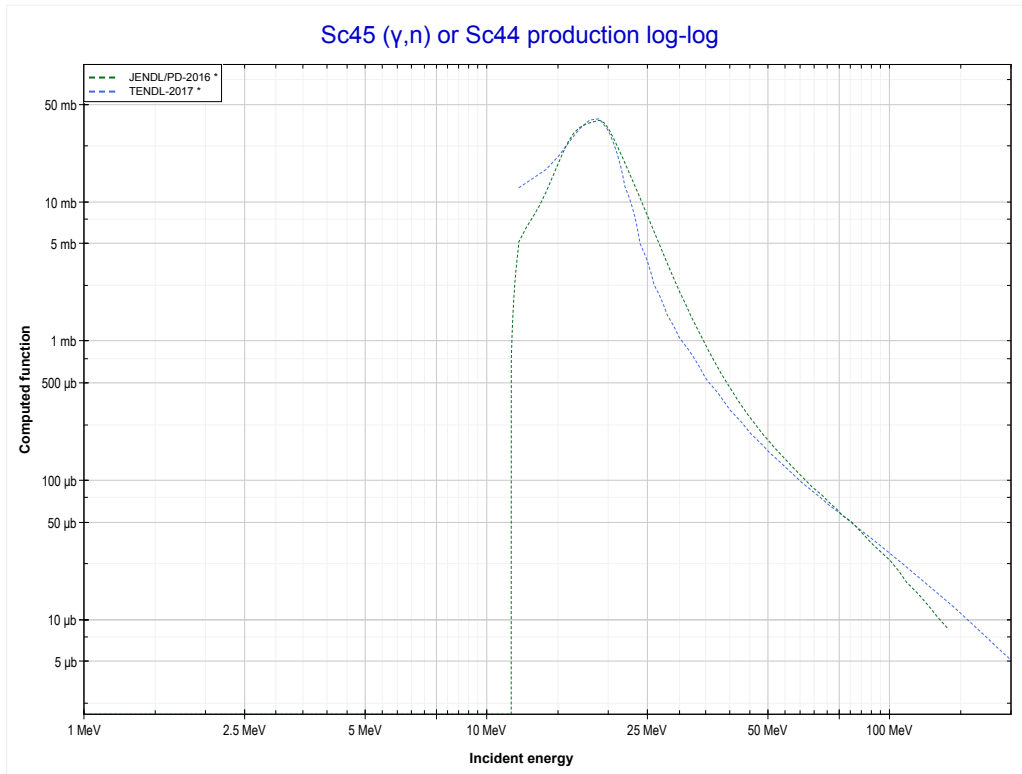
Reaction	Q-Value
Ca48(γ,n)Ca47	-9952.58 keV

<< 16-S-34	20-Ca-48	23-V-51 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ca46 production)	21-Sc-45 MT4 (γ,n) >>



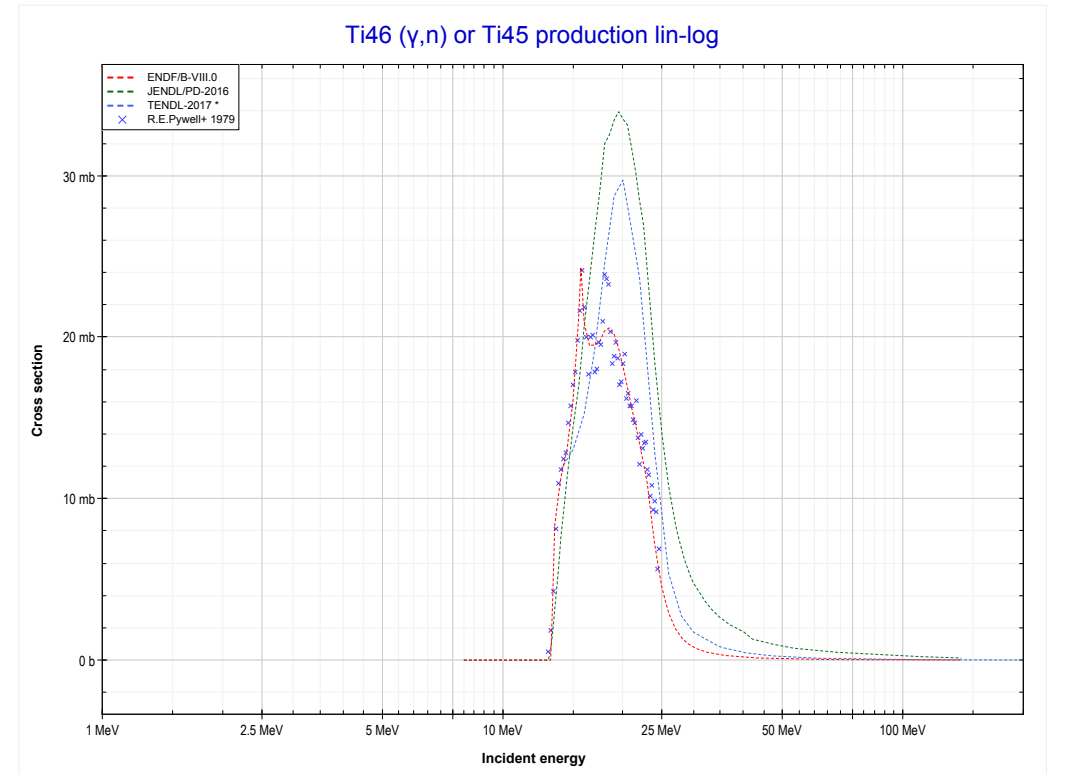
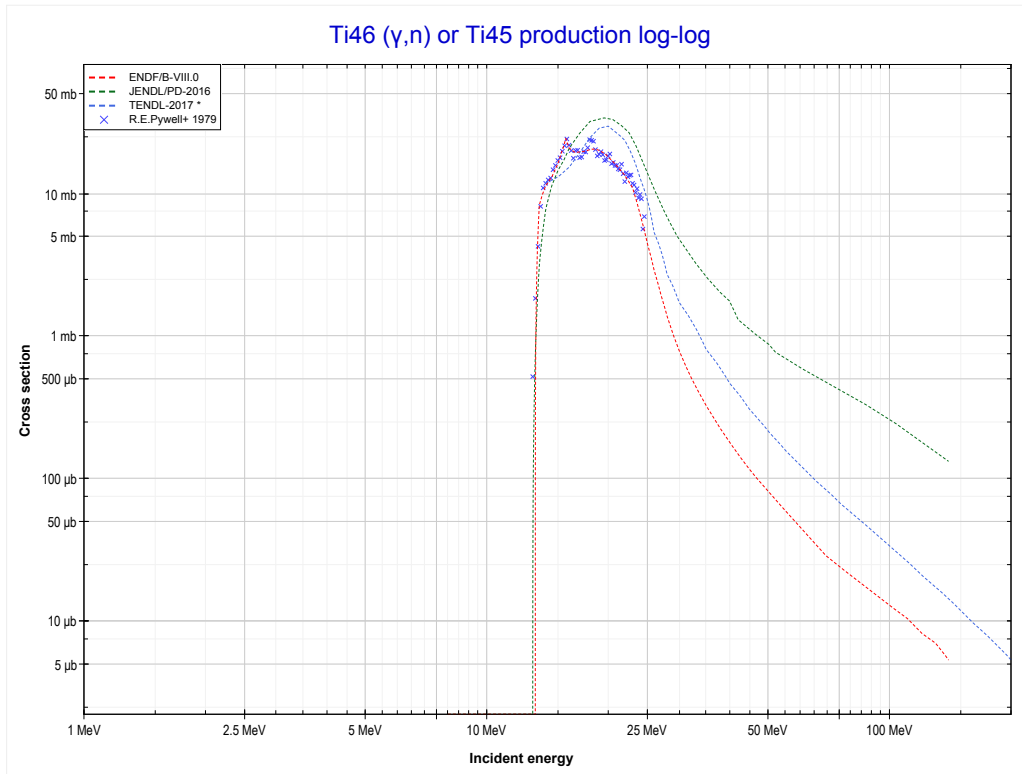
Reaction	Q-Value
Ca48($\gamma,2n$)Ca46	-17228.99 keV

<< 20-Ca-48	21-Sc-45	22-Ti-46 >>
<< 20-Ca-48 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Sc44 production)	22-Ti-46 MT4 (γ,n) >>



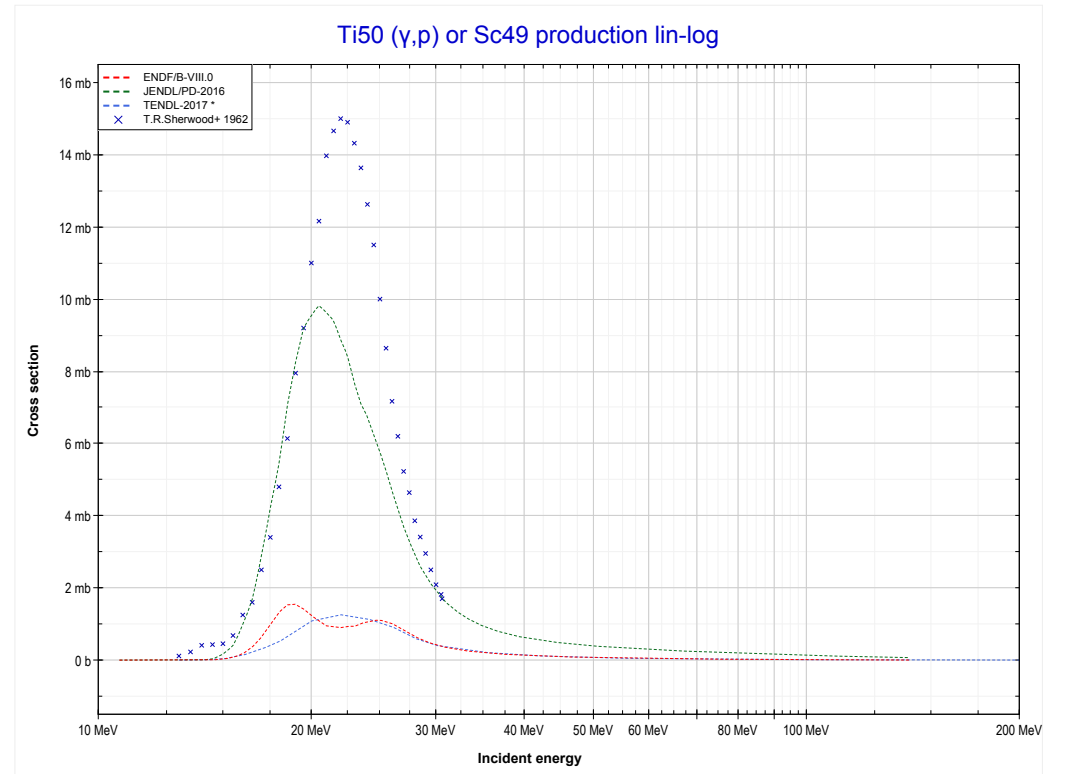
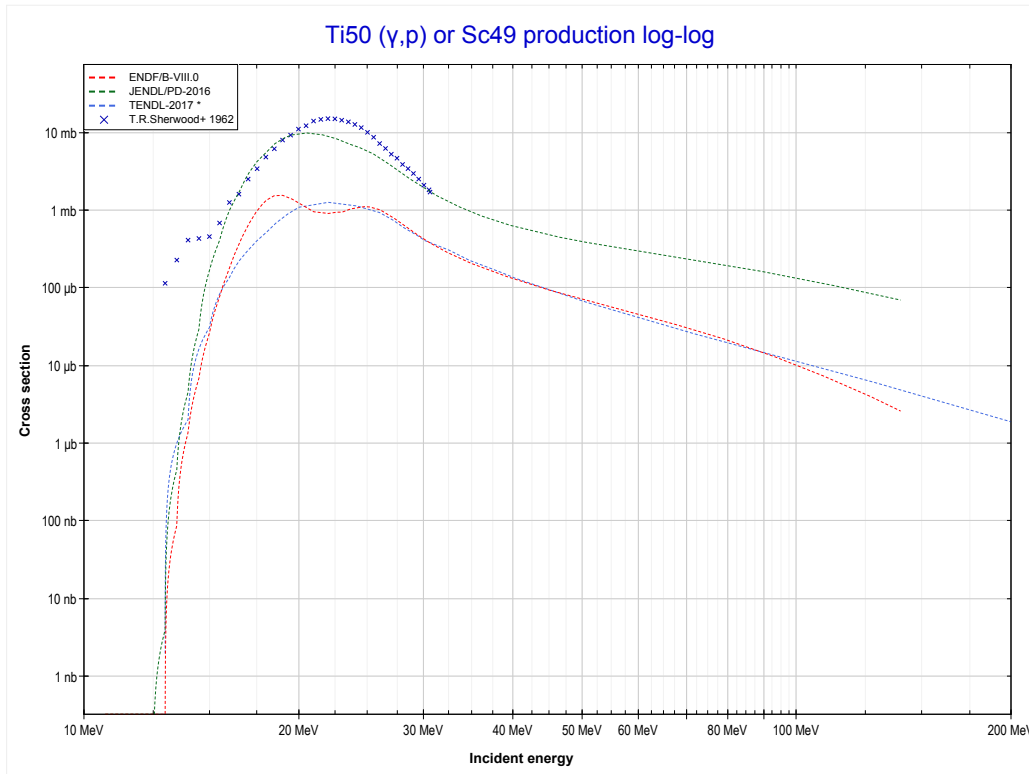
Reaction	Q-Value
Sc45(γ,n)Sc44	-11326.52 keV

<< 21-Sc-45	22-Ti-46	24-Cr-50 >>
<< 21-Sc-45 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ti45 production)	22-Ti-50 MT103 (γ,p) >>



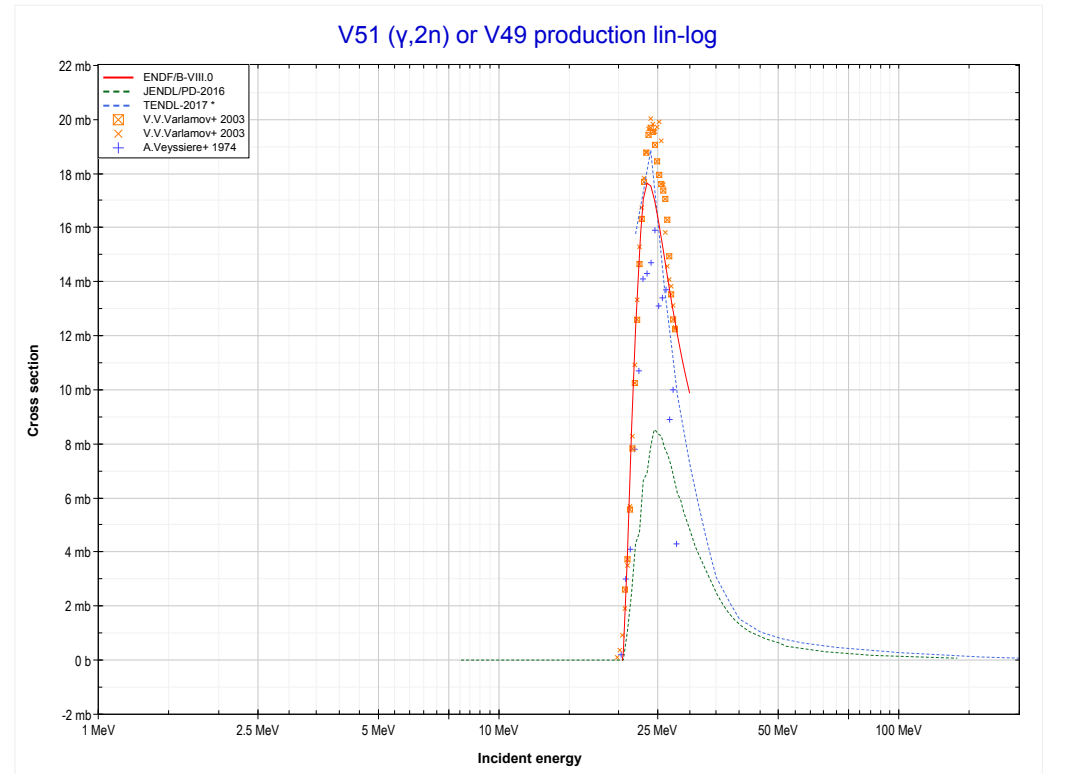
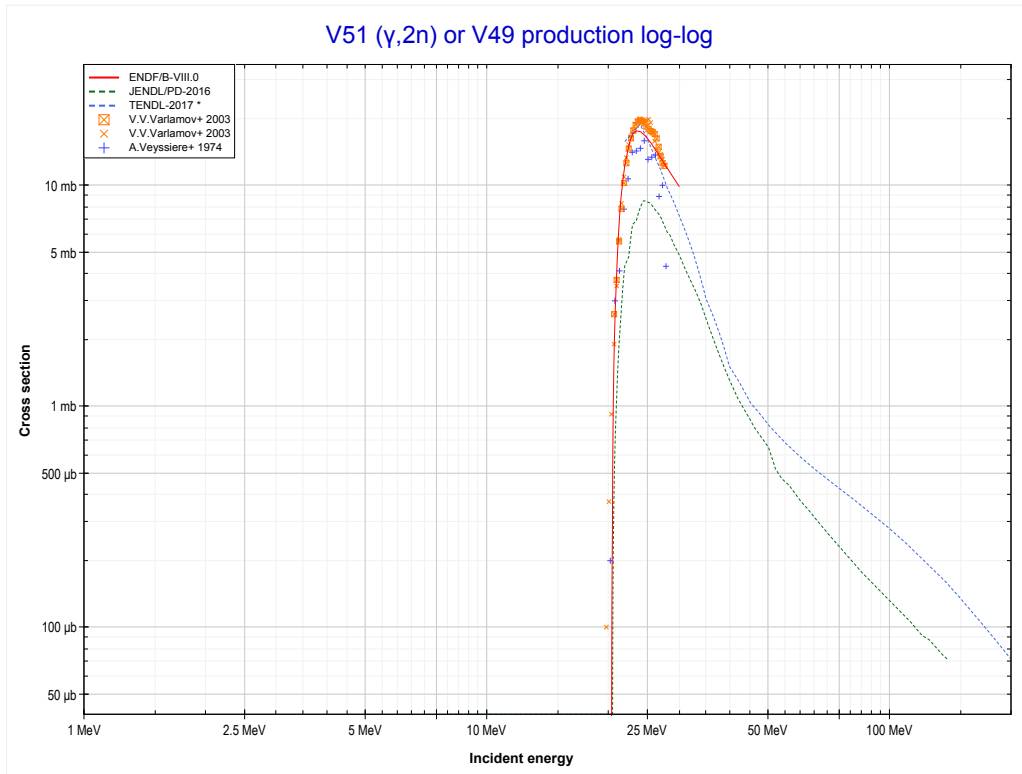
Reaction	Q-Value
Ti46(γ,n)Ti45	-13189.22 keV

<< 16-S-34	22-Ti-50	26-Fe-54 >>
<< 22-Ti-46 MT4 (γ,n)	MT103 (γ,p) or MT5 (Sc49 production)	23-V-51 MT16 (γ,2n) >>



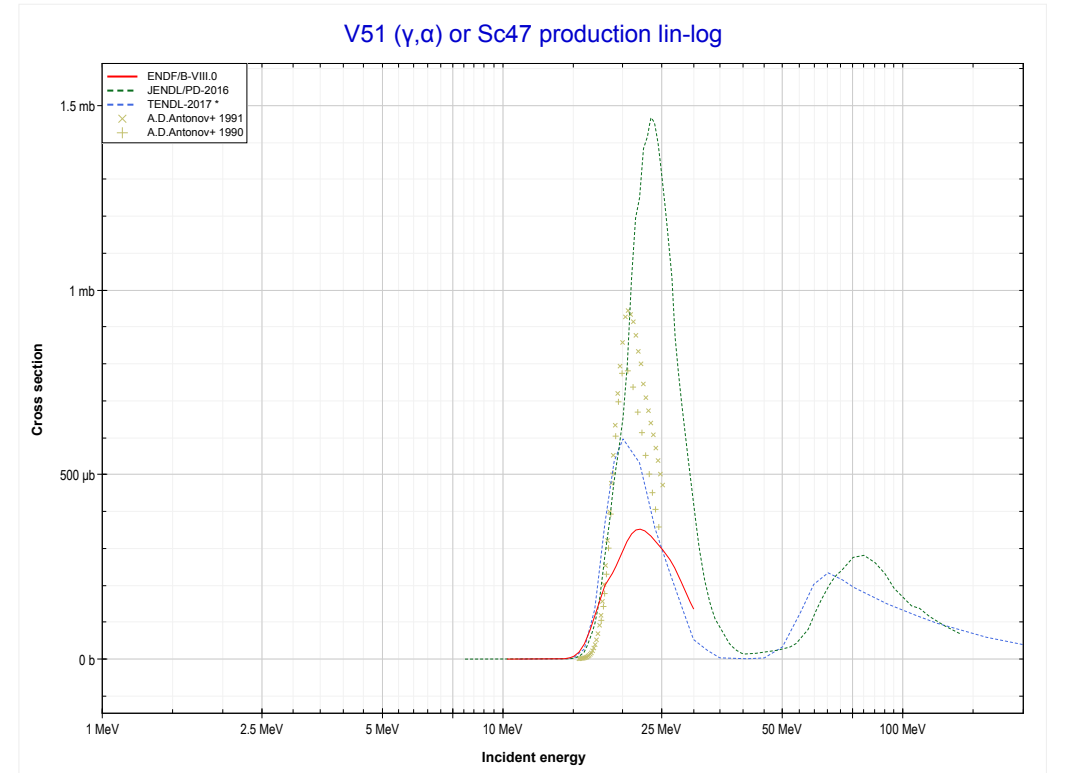
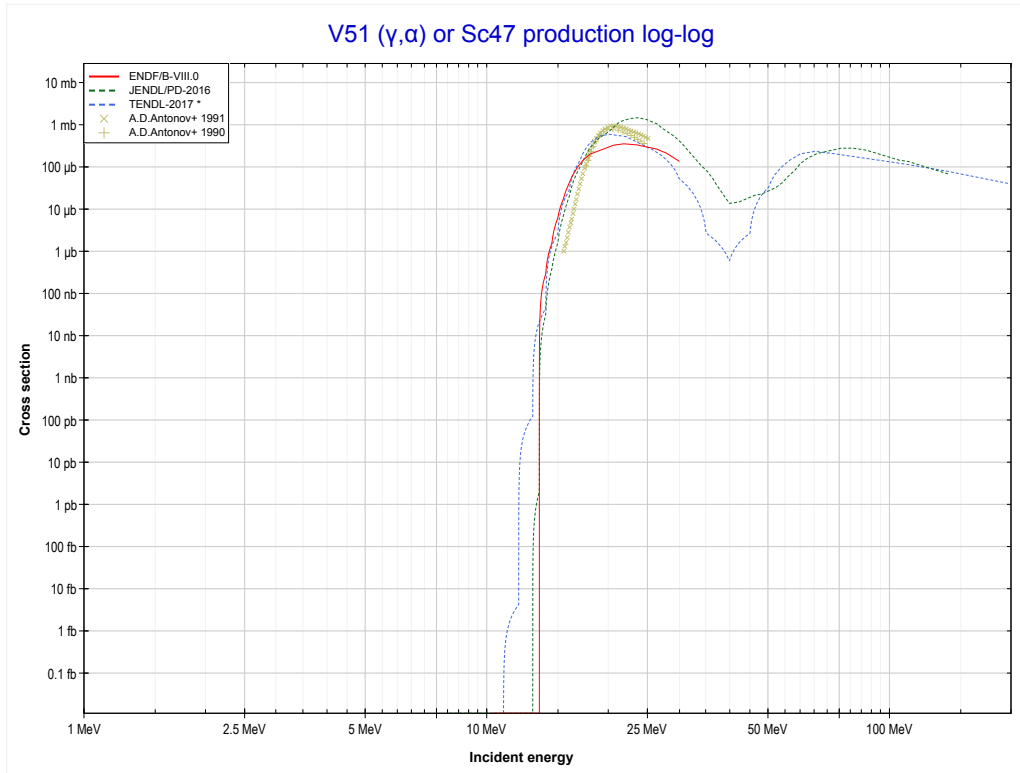
Reaction	Q-Value
Ti50(γ,p)Sc49	-12158.57 keV

<< 20-Ca-48	23-V-51	26-Fe-54 >>
<< 22-Ti-50 MT103 (γ, p)	MT16 ($\gamma, 2n$) or MT5 (V49 production)	MT107 (γ, α) >>



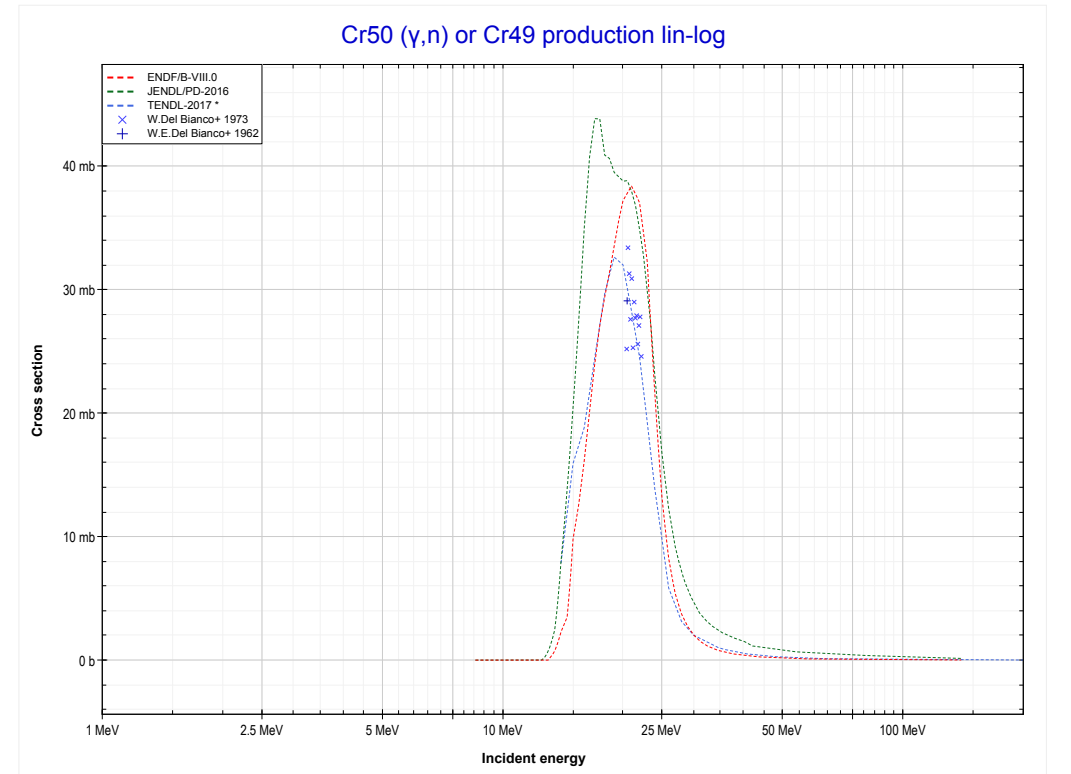
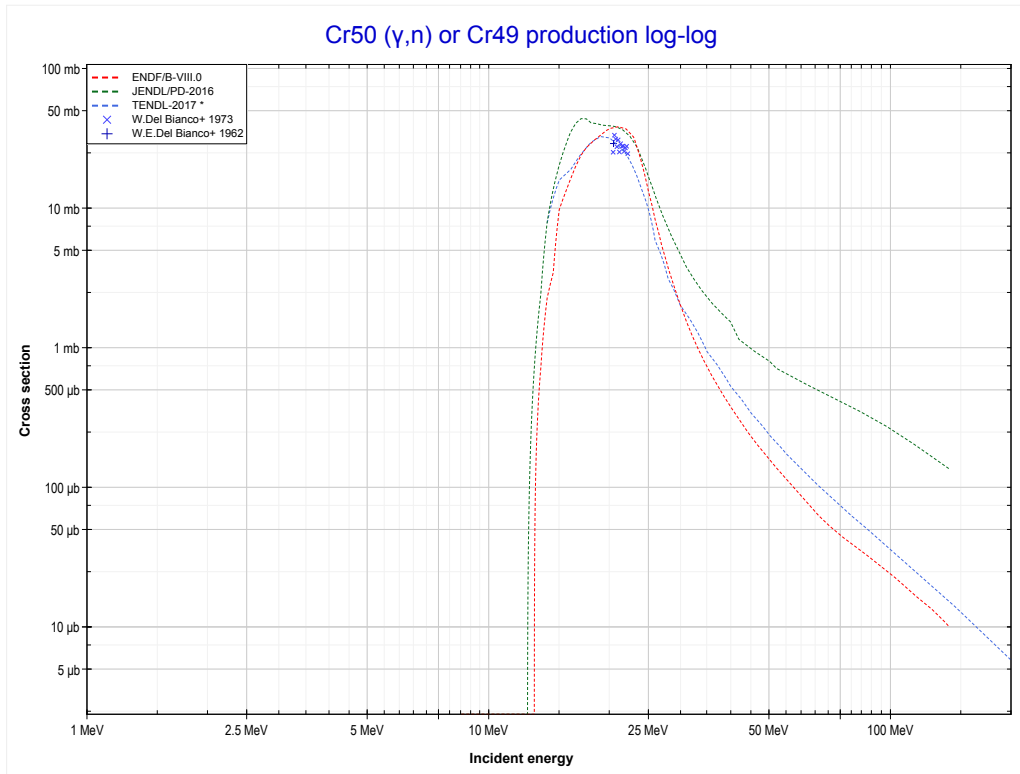
Reaction	Q-Value
V51($\gamma, 2n$)V49	-20385.33 keV

	23-V-51	29-Cu-65 >>
<< MT16 ($\gamma,2n$)	MT107 (γ,α) or MT5 (Sc47 production)	24-Cr-50 MT4 (γ,n) >>



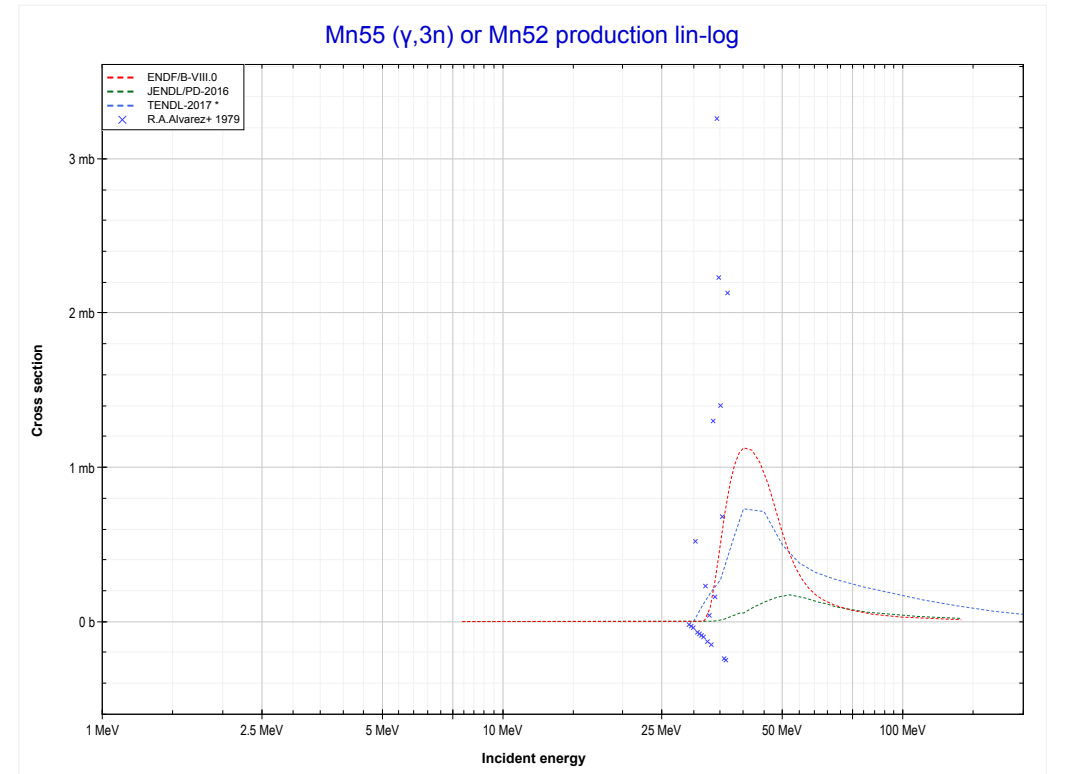
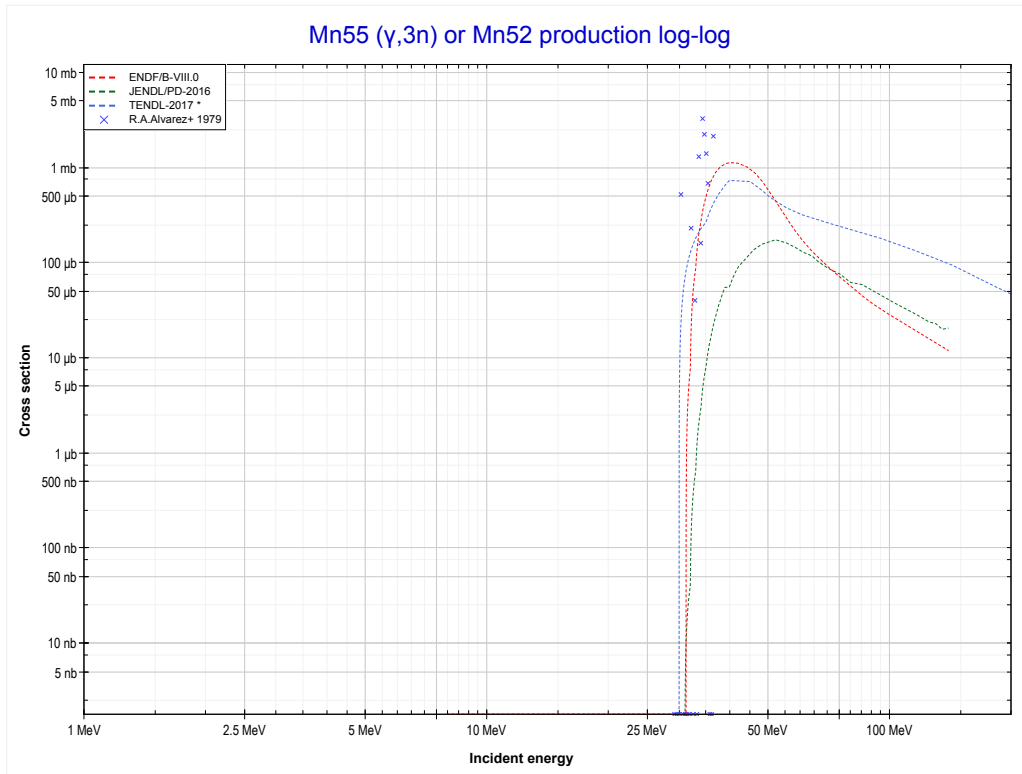
Reaction	Q-Value
V51(γ,α)Sc47	-10293.02 keV
V51($\gamma,p+t$)Sc47	-30106.88 keV
V51($\gamma,n+He3$)Sc47	-30870.63 keV
V51($\gamma,2d$)Sc47	-34139.54 keV
V51($\gamma,n+p+d$)Sc47	-36364.11 keV
V51($\gamma,2n+2p$)Sc47	-38588.68 keV

<< 22-Ti-46	24-Cr-50	26-Fe-54 >>
<< 23-V-51 MT107 (γ,α)	MT4 (γ,n) or MT5 (Cr49 production)	25-Mn-55 MT17 ($\gamma,3n$) >>



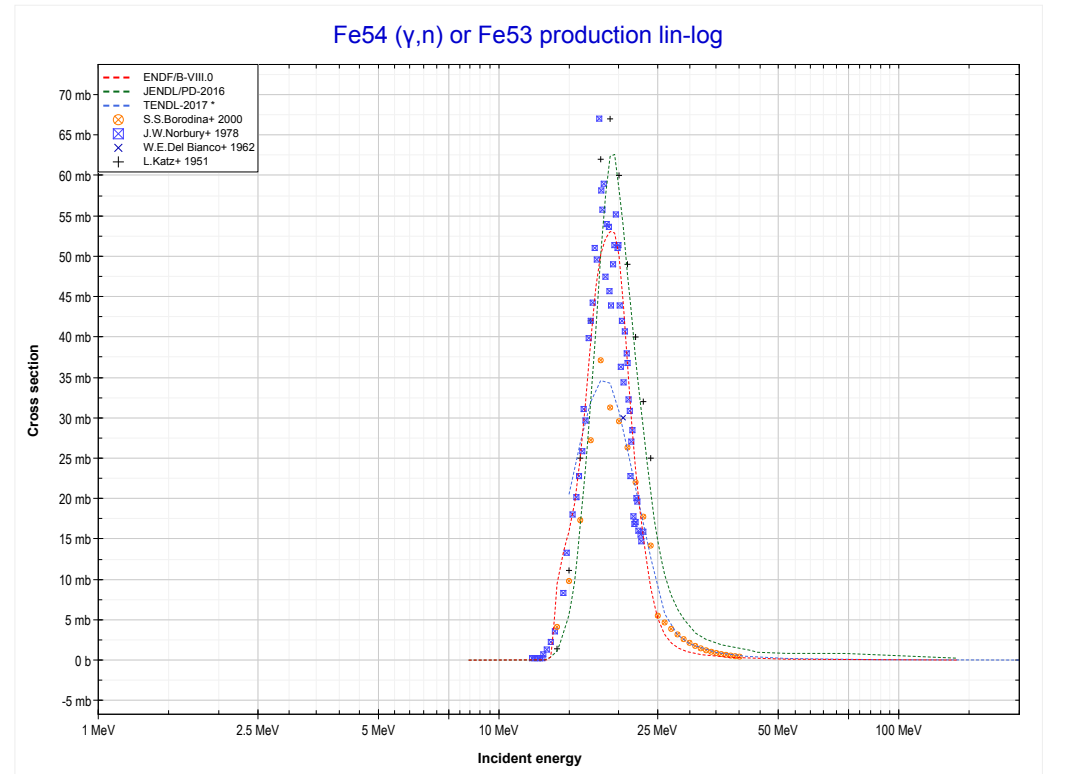
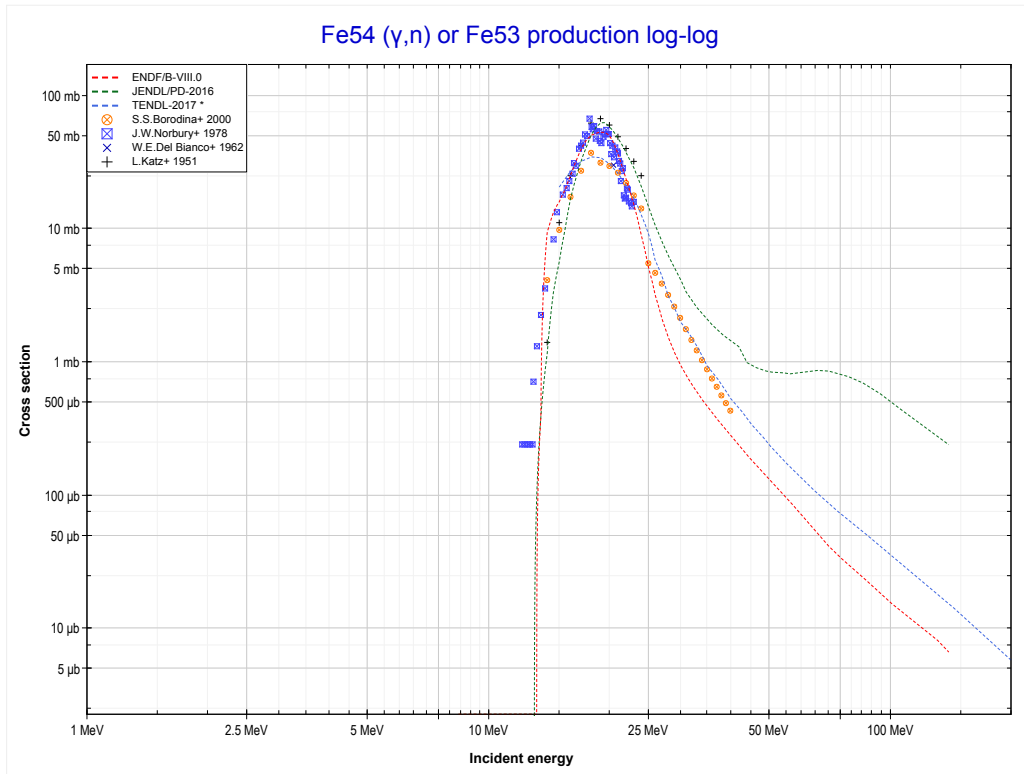
Reaction	Q-Value
Cr50(γ,n)Cr49	-13000.32 keV

	25-Mn-55	27-Co-59 >>
<< 24-Cr-50 MT4 (γ,n)	MT17 (γ,3n) or MT5 (Mn52 production)	26-Fe-54 MT4 (γ,n) >>



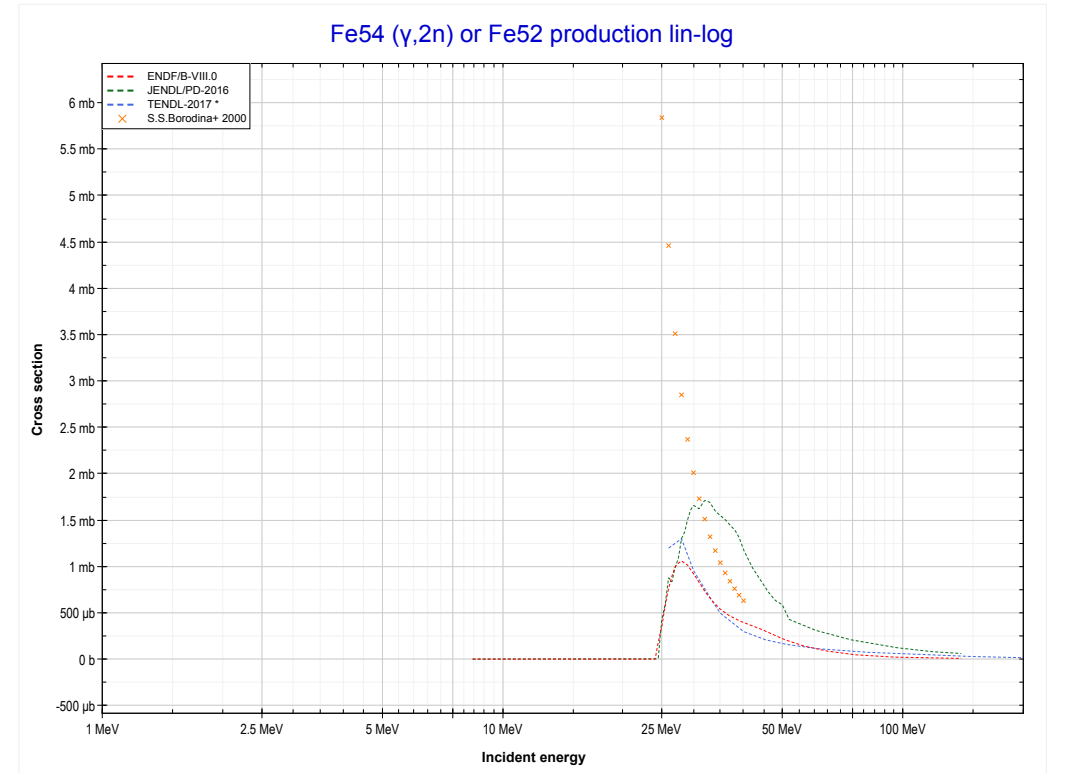
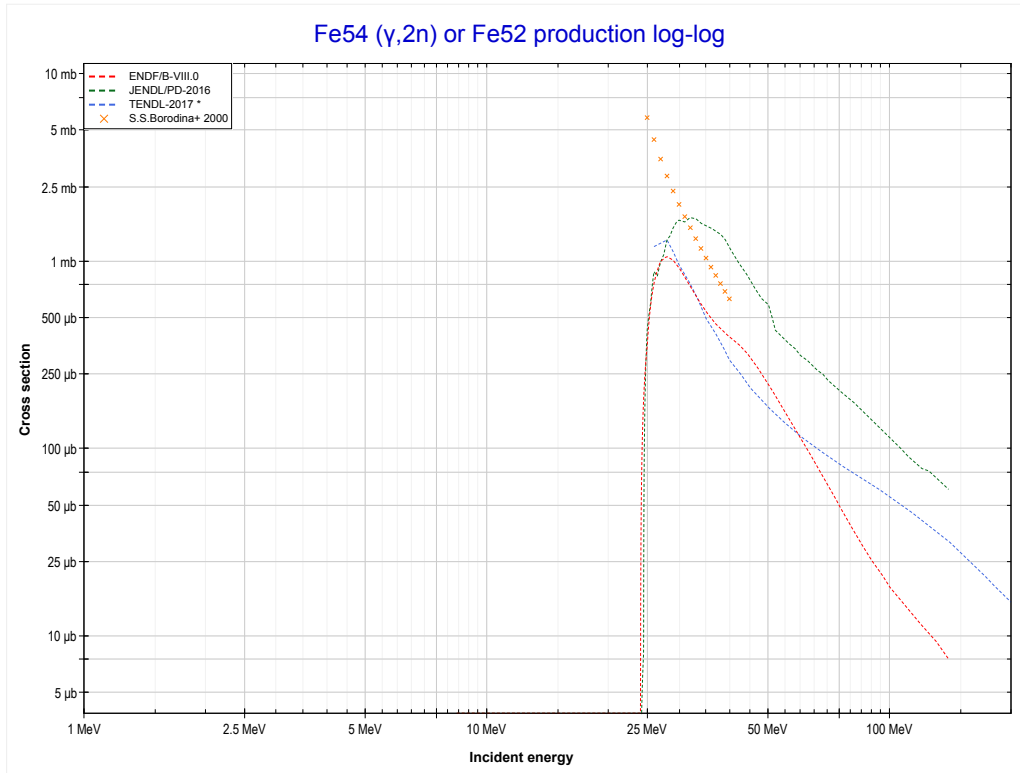
Reaction	Q-Value
Mn55(γ,3n)Mn52	-31218.75 keV

<< 24-Cr-50	26-Fe-54	26-Fe-56 >>
<< 25-Mn-55 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Fe53 production)	MT16 ($\gamma,2n$) >>



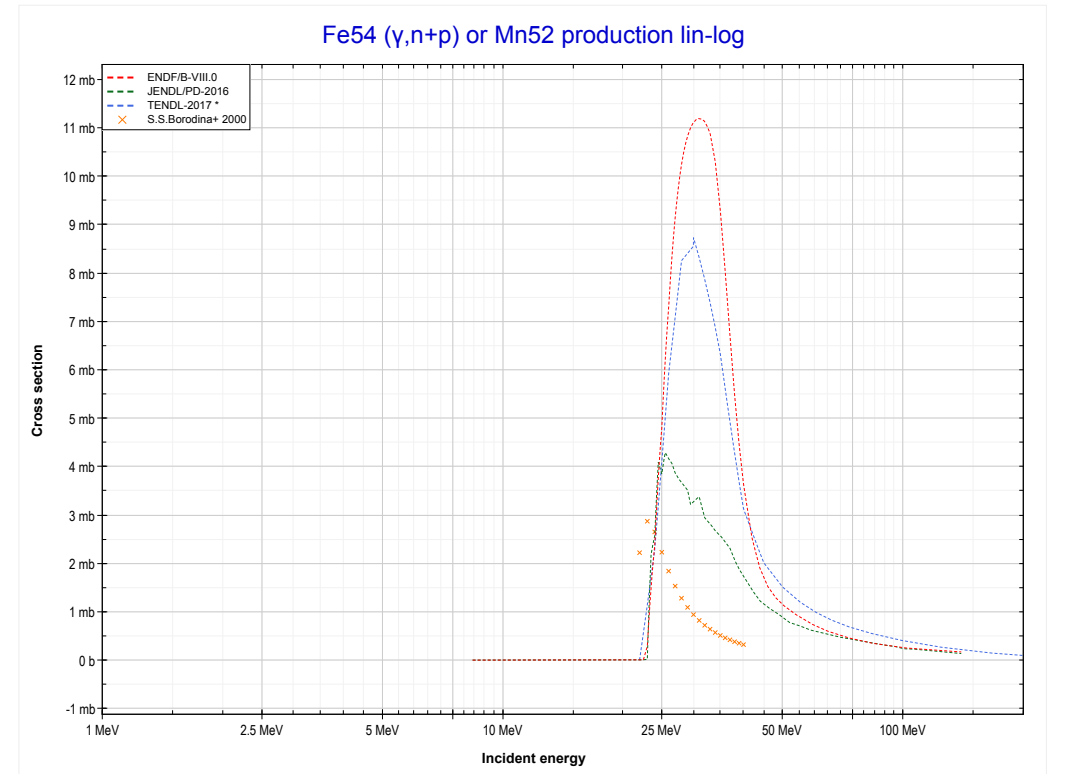
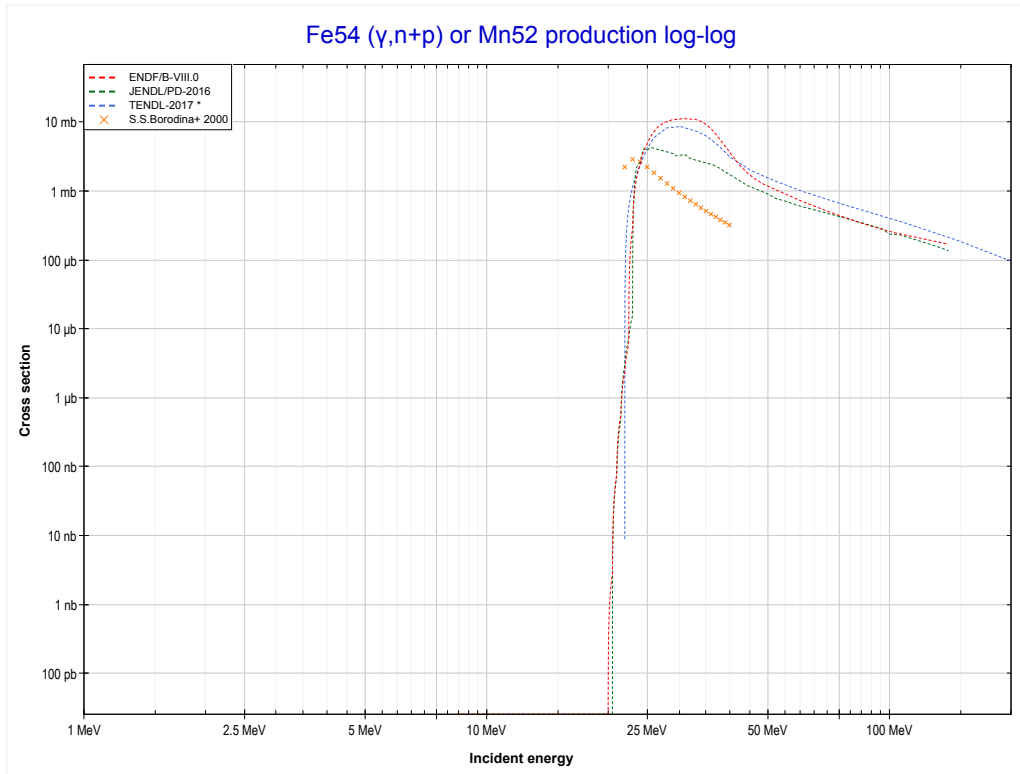
Reaction	Q-Value
Fe54(γ,n)Fe53	-13378.52 keV

<< 23-V-51	26-Fe-54	26-Fe-56 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Fe52 production)	MT28 ($\gamma,n+p$) >>



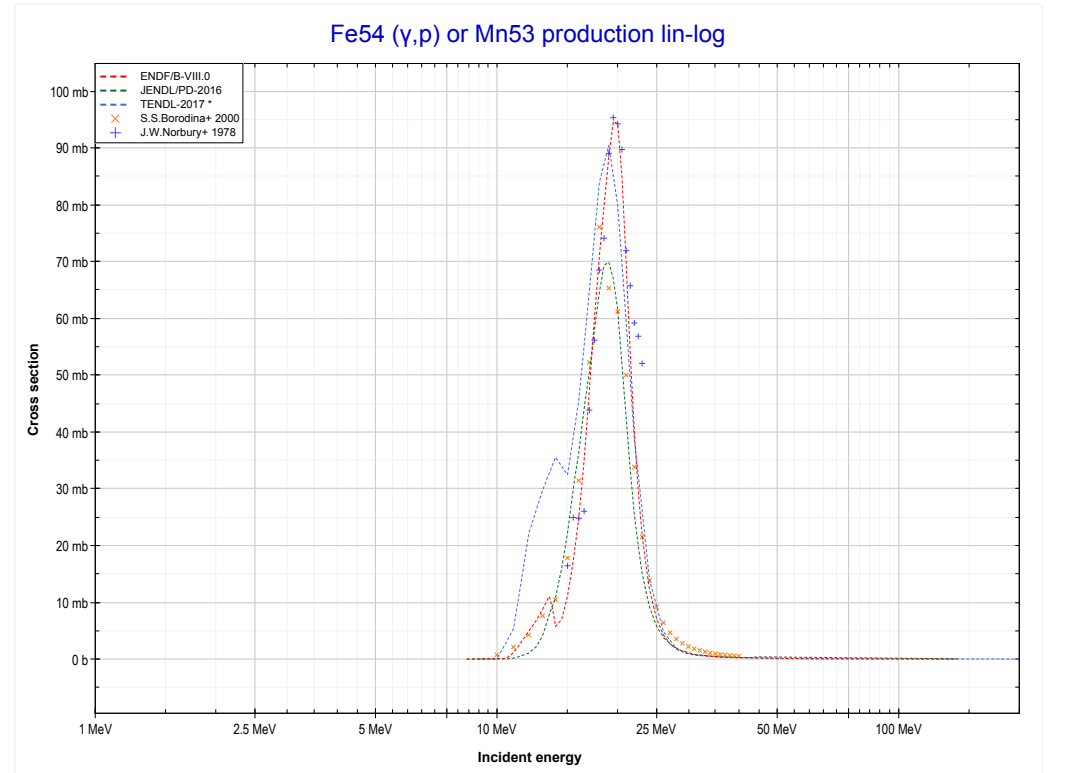
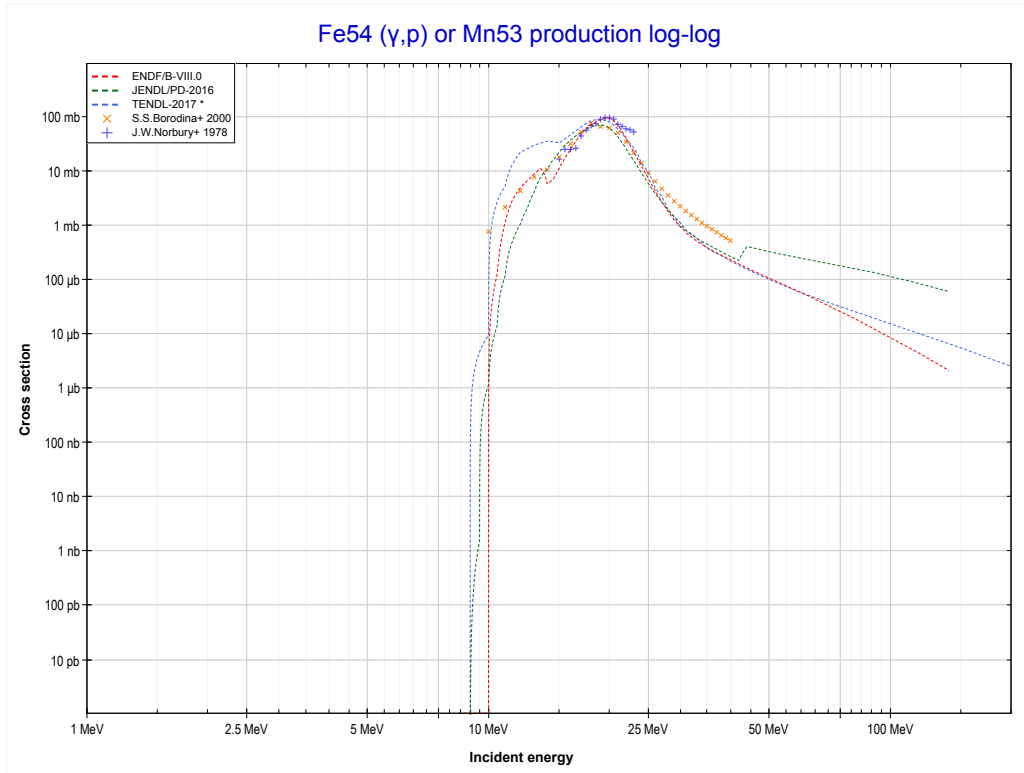
Reaction	Q-Value
Fe54($\gamma,2n$)Fe52	-24064.53 keV

<< 16-S-34	26-Fe-54	26-Fe-56 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Mn52 production)	MT103 (γ,p) >>



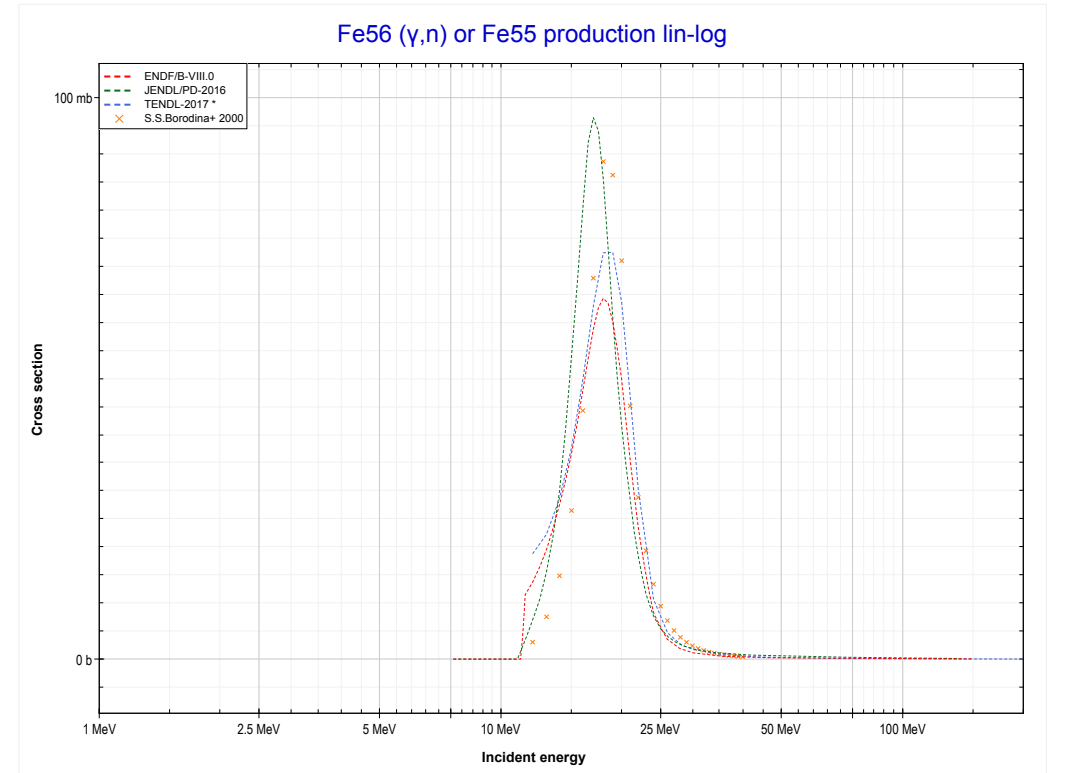
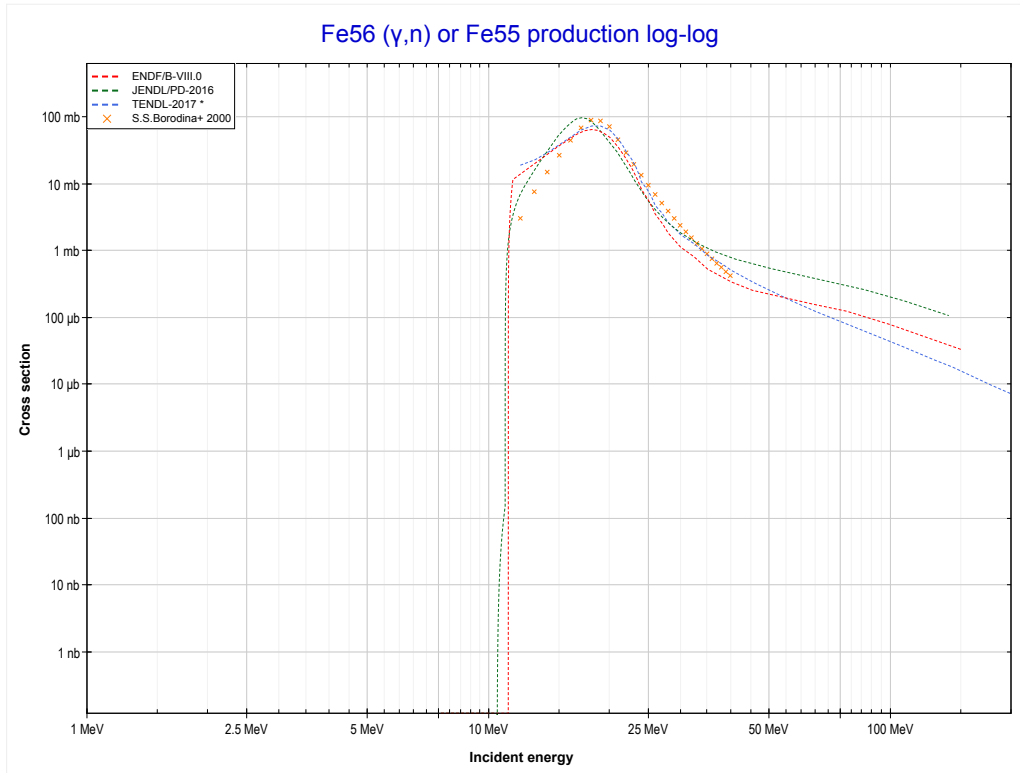
Reaction	Q-Value
Fe54(γ,d)Mn52	-18682.72 keV
Fe54($\gamma,n+p$)Mn52	-20907.29 keV

<< 22-Ti-50	26-Fe-54	26-Fe-56 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Mn53 production)	26-Fe-56 MT4 (γ, n) >>



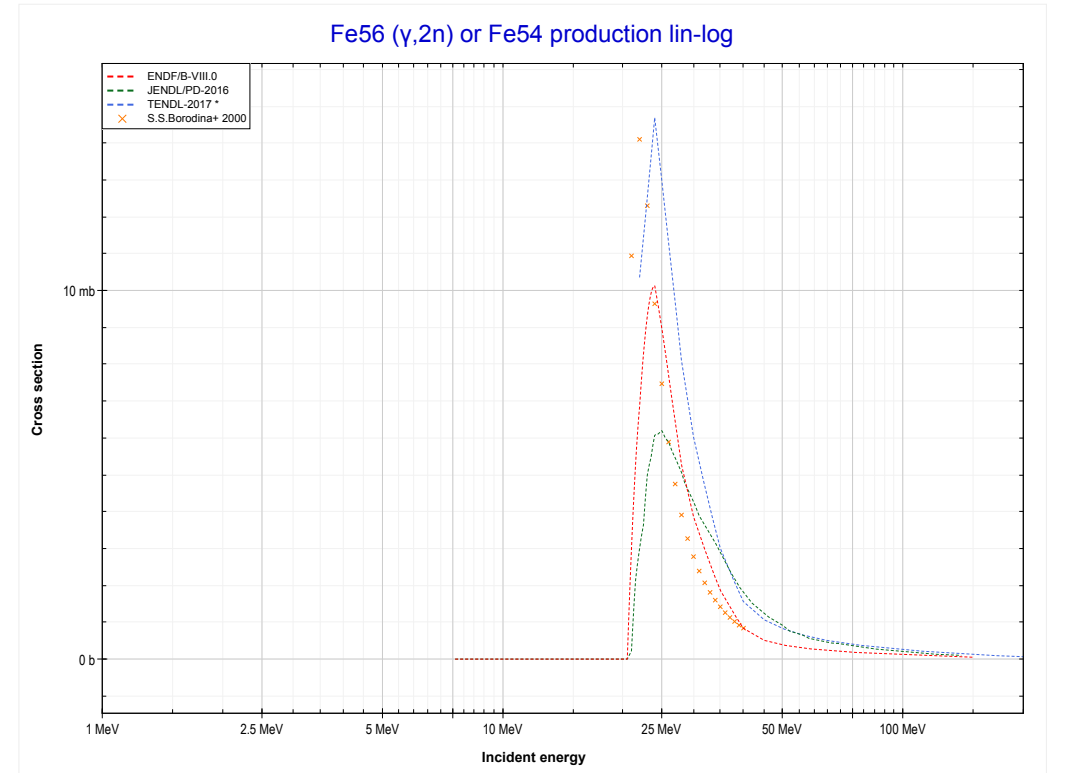
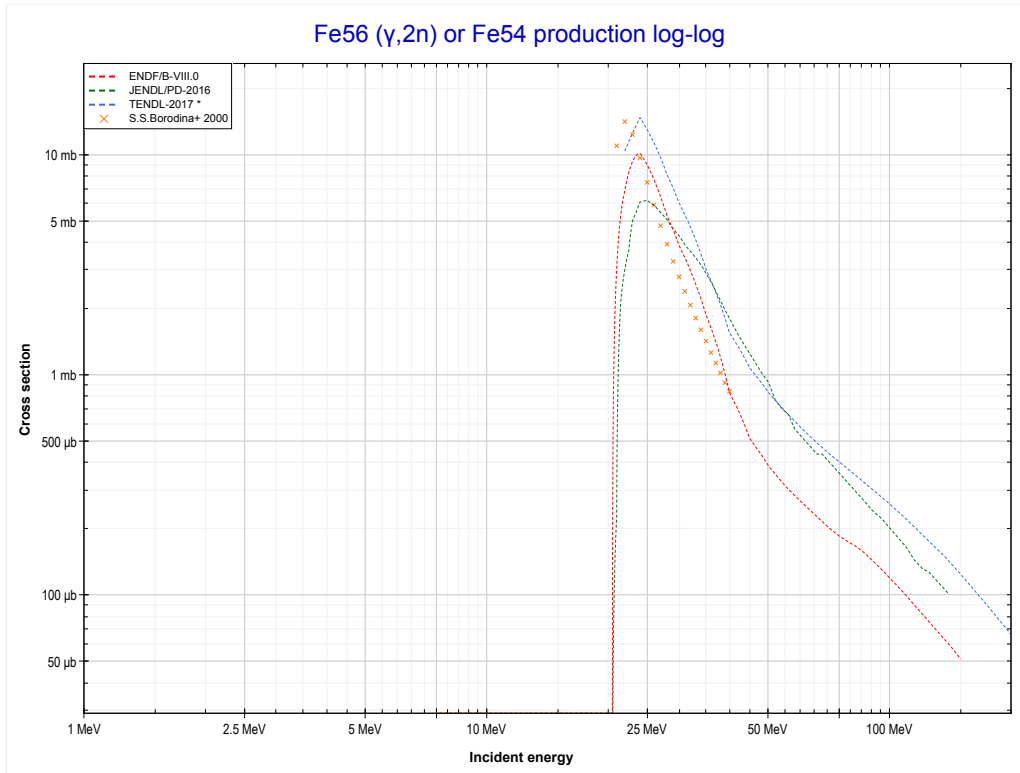
Reaction	Q-Value
Fe54(γ, p)Mn53	-8853.87 keV

<< 26-Fe-54	26-Fe-56	27-Co-59 >>
<< 26-Fe-54 MT103 (γ,p)	MT4 (γ,n) or MT5 (Fe55 production)	MT16 ($\gamma,2n$) >>



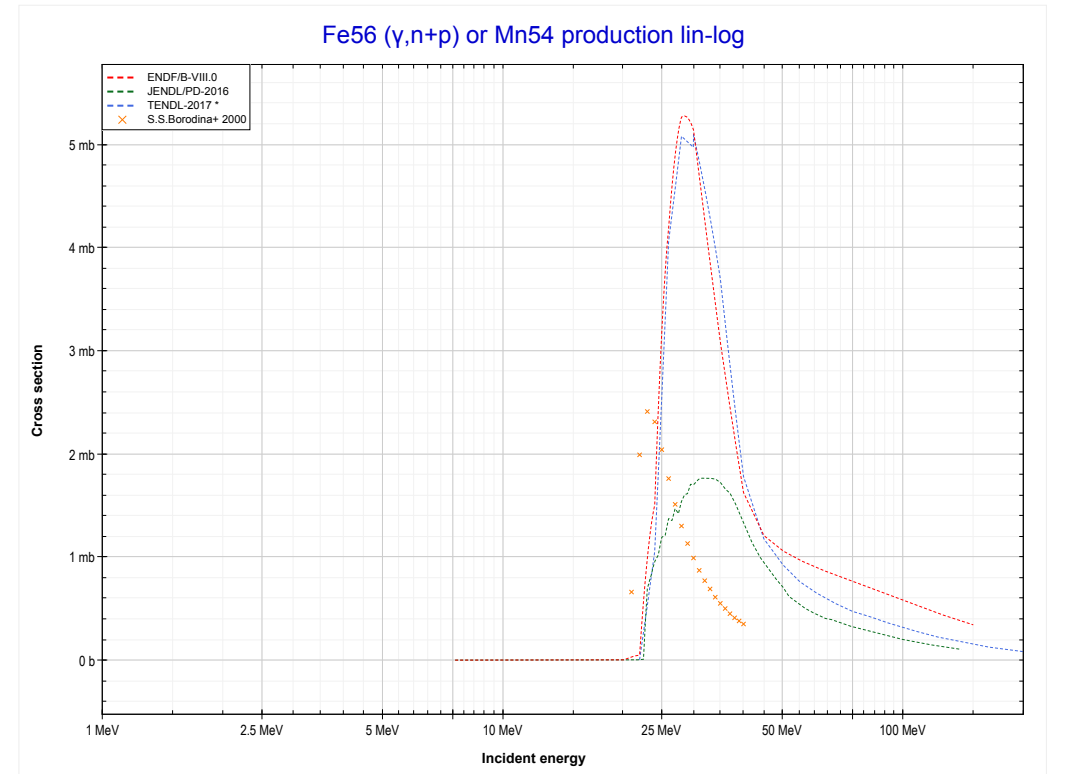
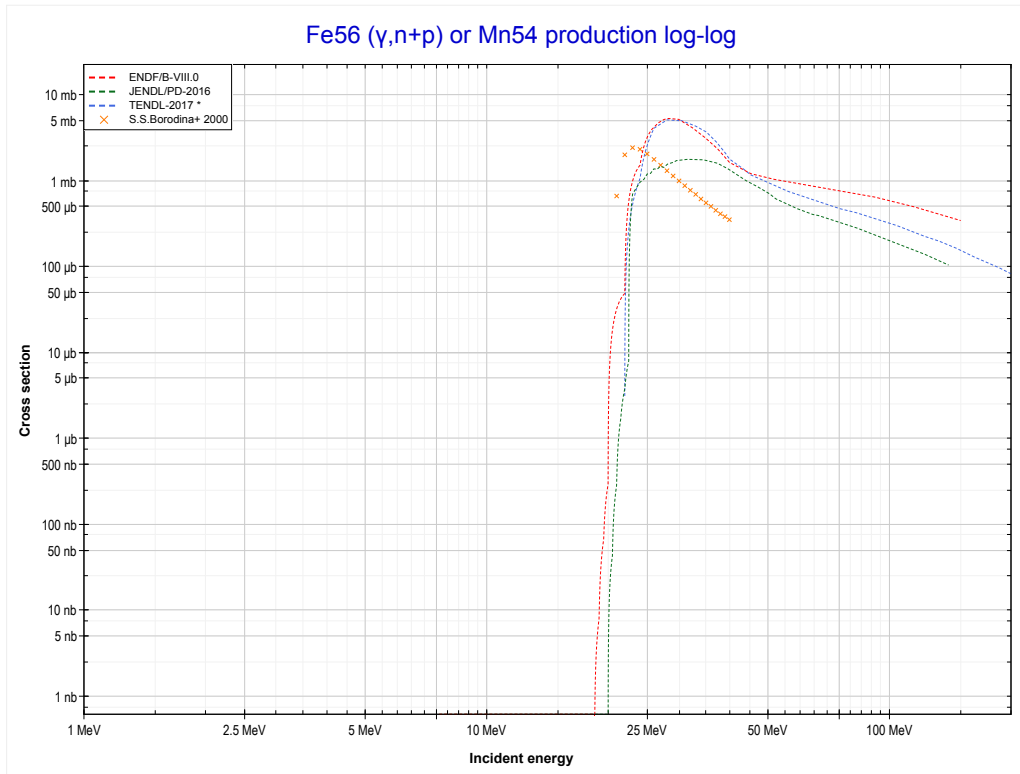
Reaction	Q-Value
$^{56}\text{Fe}(\gamma,n)^{55}\text{Fe}$	-11197.12 keV

<< 26-Fe-54	26-Fe-56	27-Co-59 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Fe54 production)	MT28 ($\gamma,n+p$) >>



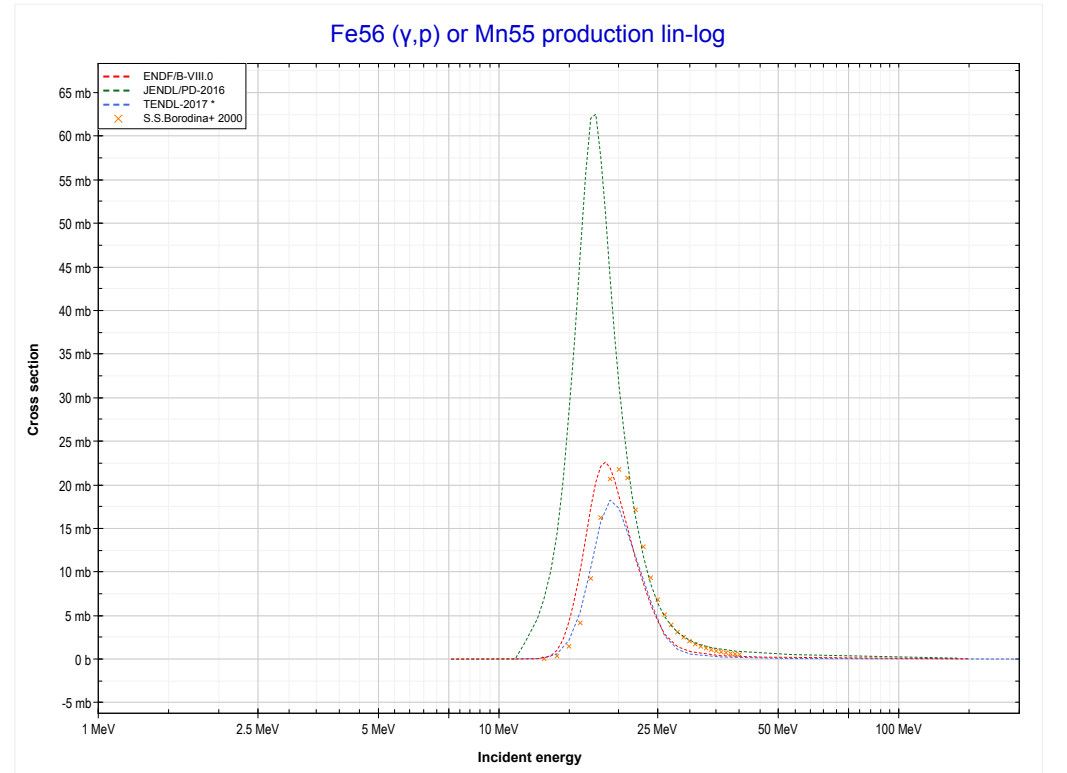
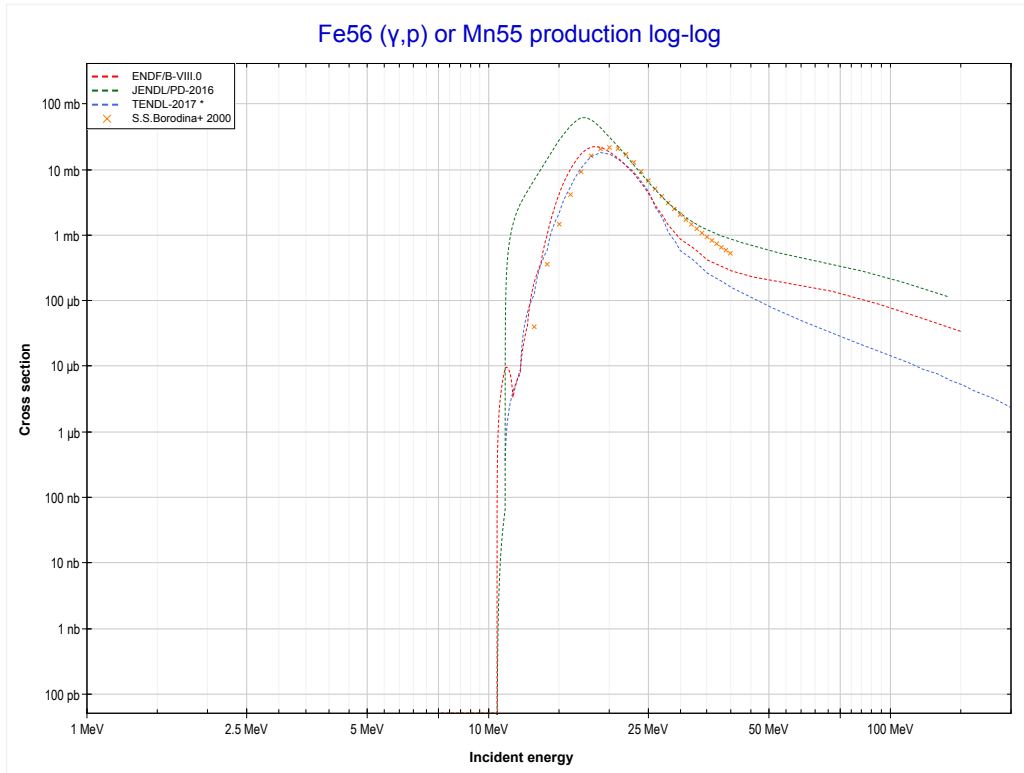
Reaction	Q-Value
Fe56($\gamma,2n$)Fe54	-20495.13 keV

<< 26-Fe-54	26-Fe-56	28-Ni-58 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Mn54 production)	MT103 (γ,p) >>



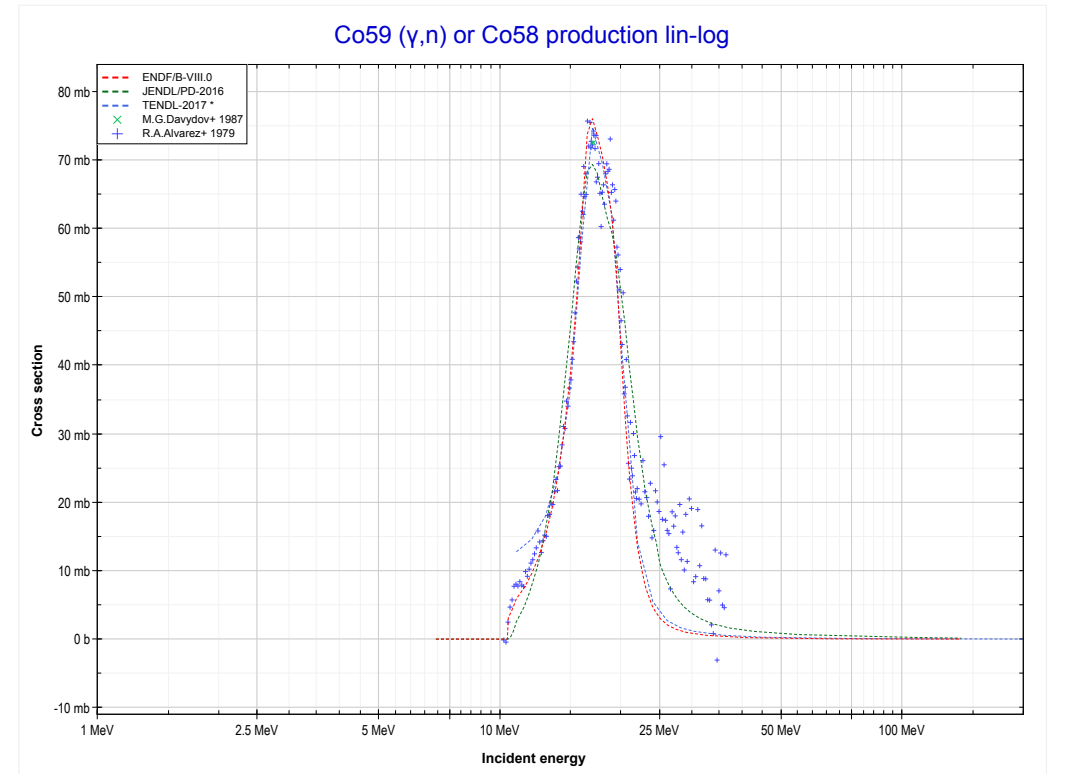
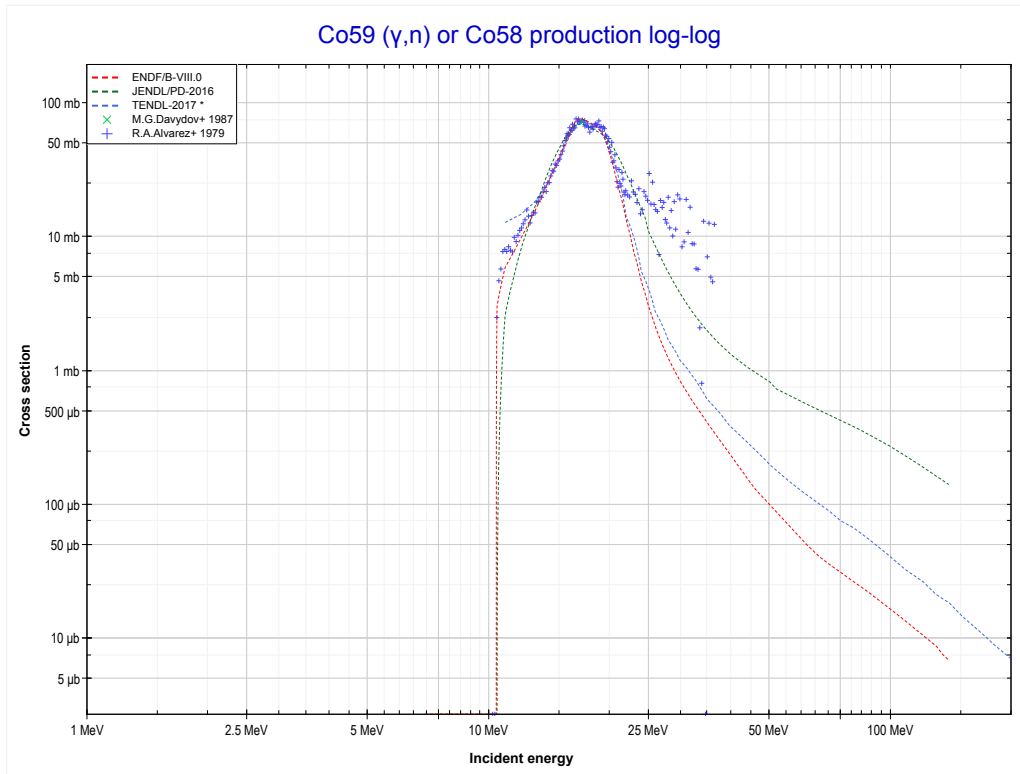
Reaction	Q-Value
Fe56(γ,d)Mn54	-18185.62 keV
Fe56($\gamma,n+p$)Mn54	-20410.19 keV

<< 26-Fe-54	26-Fe-56	28-Ni-58 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Mn55 production)	27-Co-59 MT4 (γ, n) >>



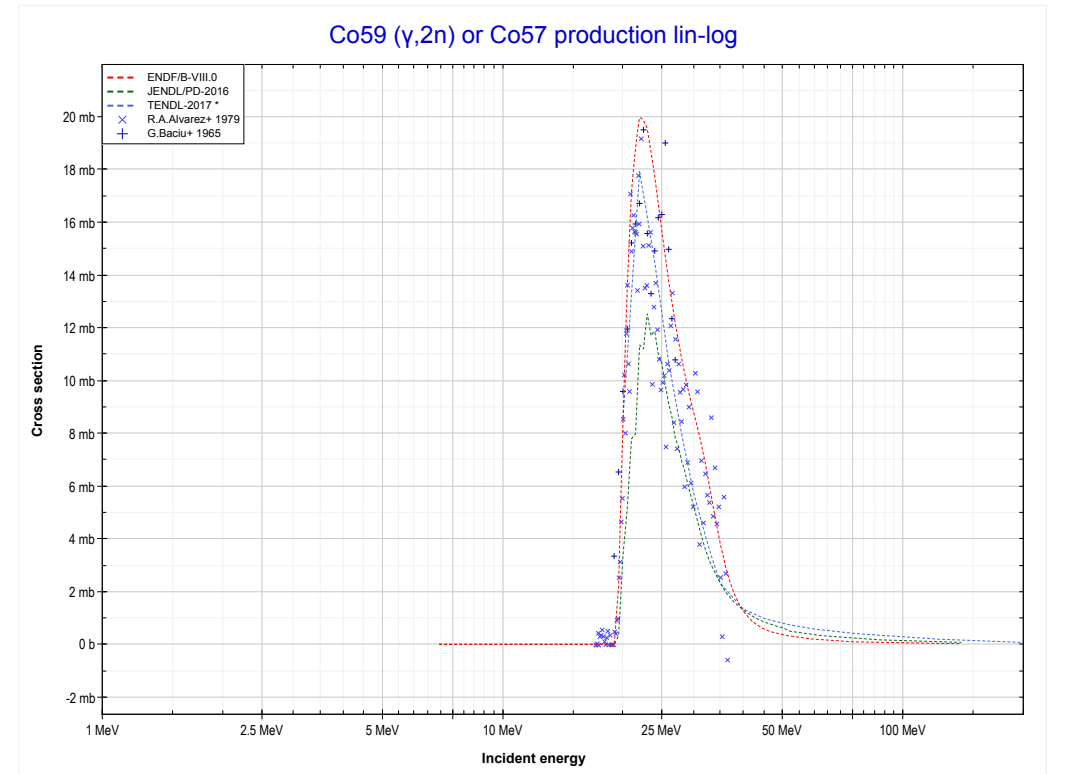
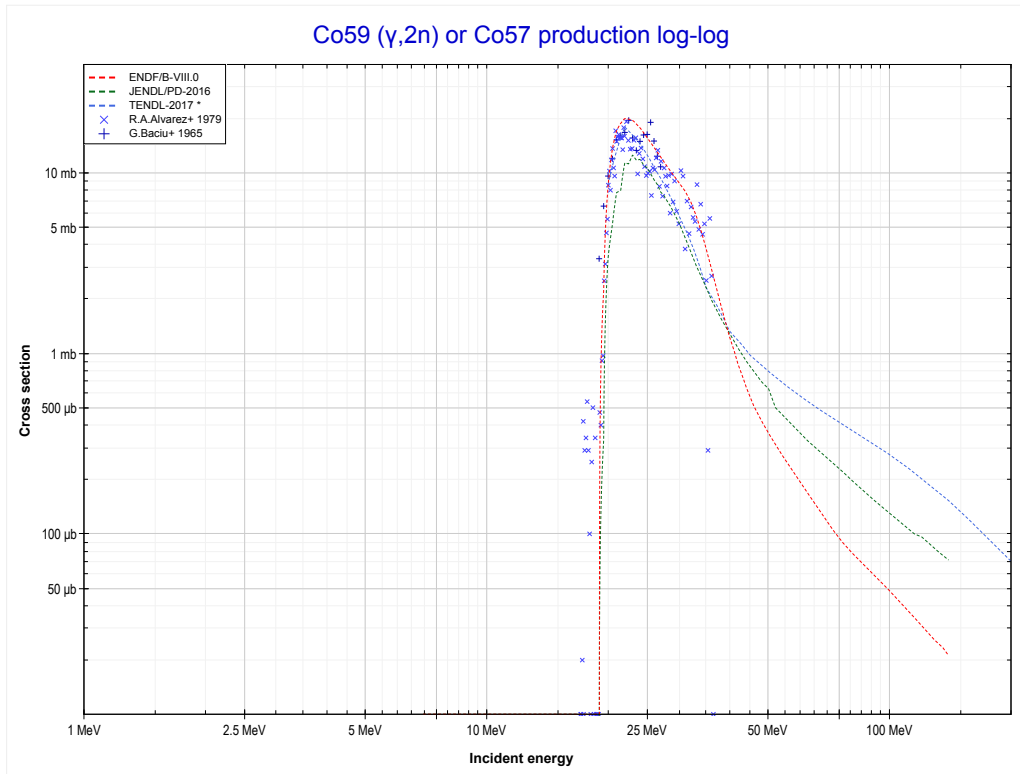
Reaction	Q-Value
Fe56(γ, p)Mn55	-10183.67 keV

<< 26-Fe-56	27-Co-59	28-Ni-58 >>
<< 26-Fe-56 MT103 (γ, p)	MT4 (γ, n) or MT5 (Co58 production)	MT16 ($\gamma, 2n$) >>



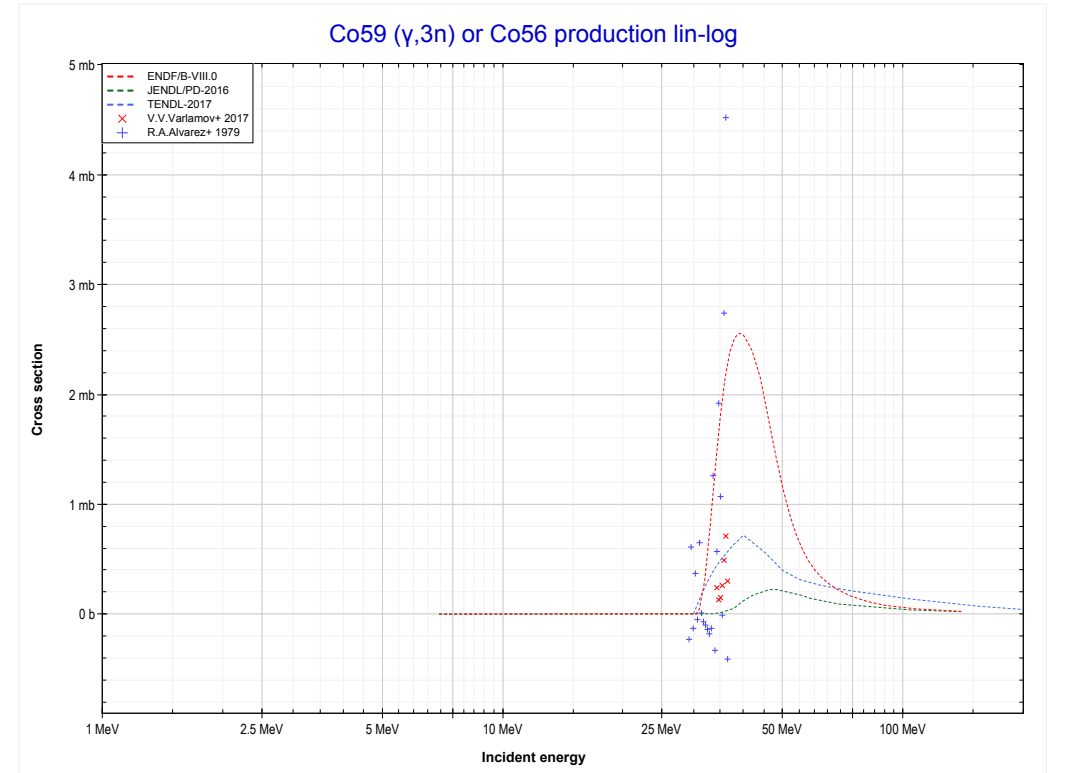
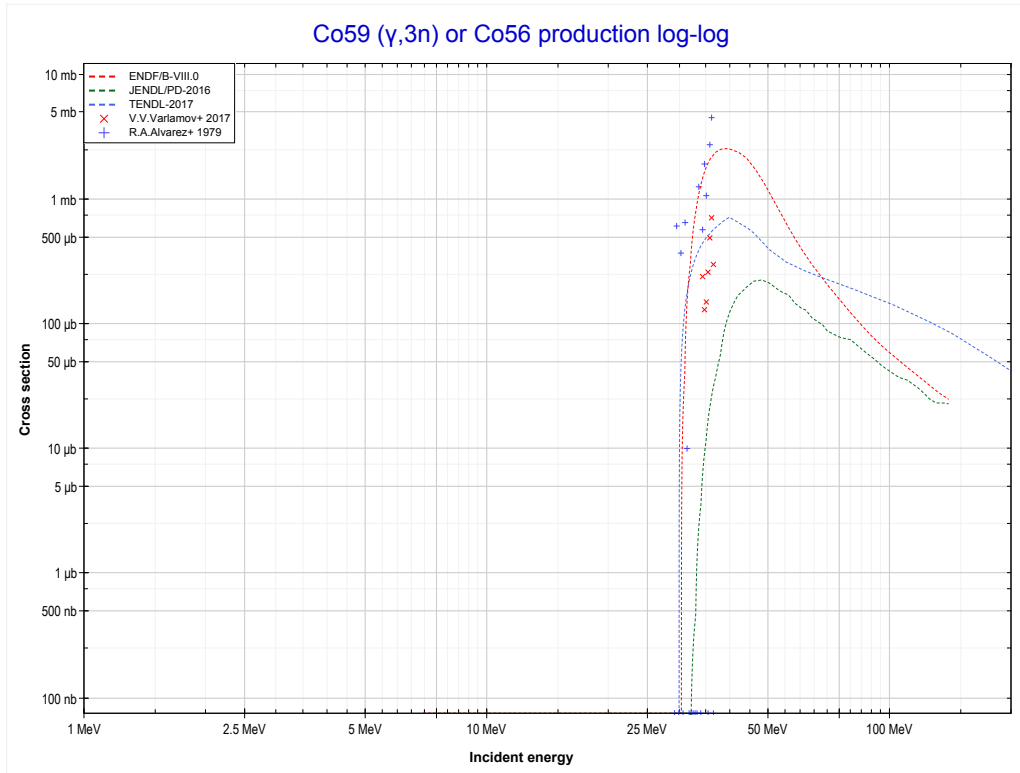
Reaction	Q-Value
Co59(γ, n)Co58	-10453.82 keV

<< 26-Fe-56	27-Co-59	28-Ni-58 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Co57 production)	MT17 ($\gamma, 3n$) >>



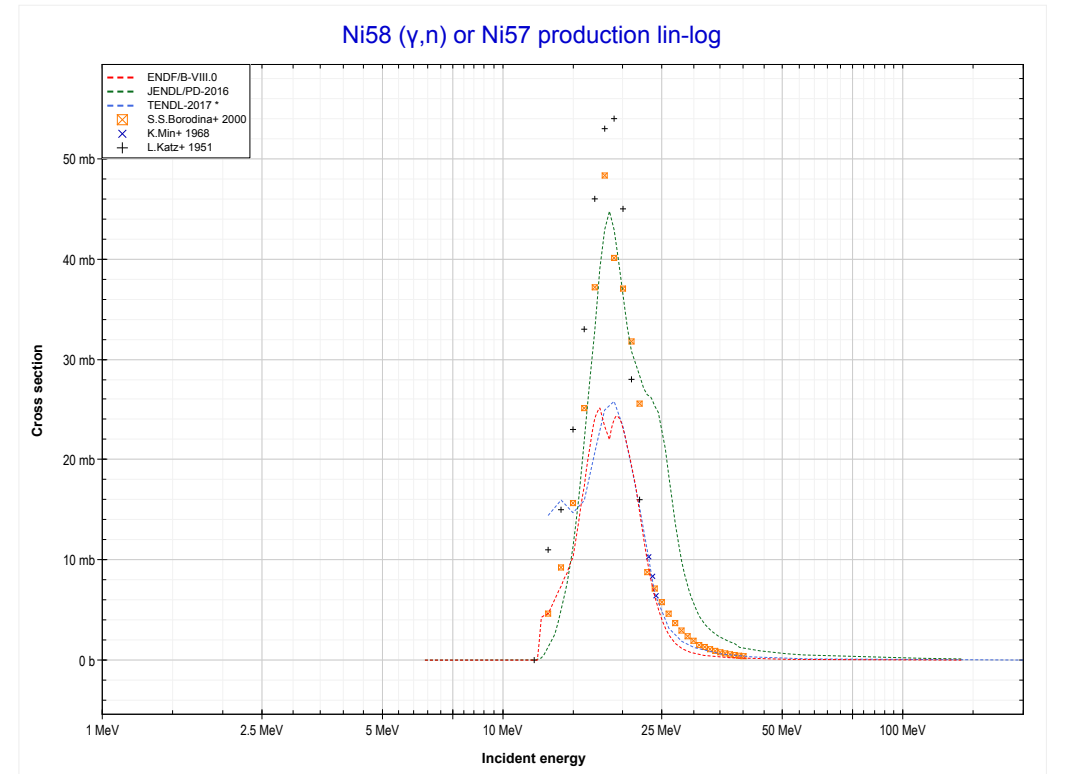
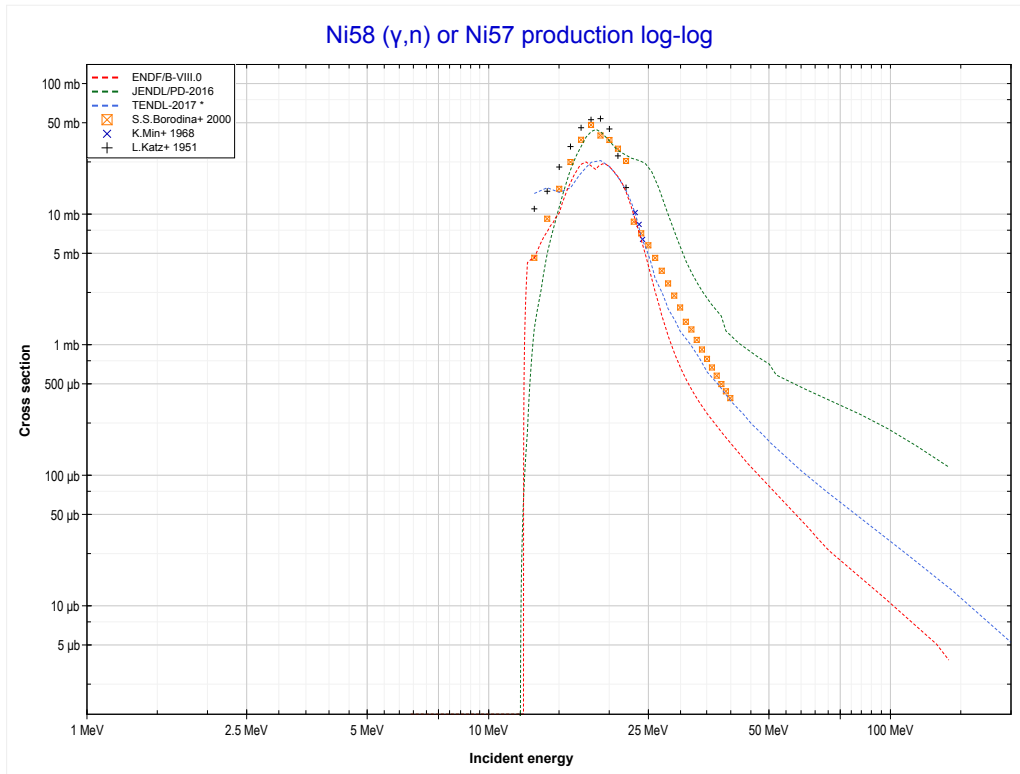
Reaction	Q-Value
Co59($\gamma, 2n$)Co57	-19026.83 keV

<< 25-Mn-55	27-Co-59	40-Zr-94 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Co56 production)	28-Ni-58 MT4 (γ,n) >>



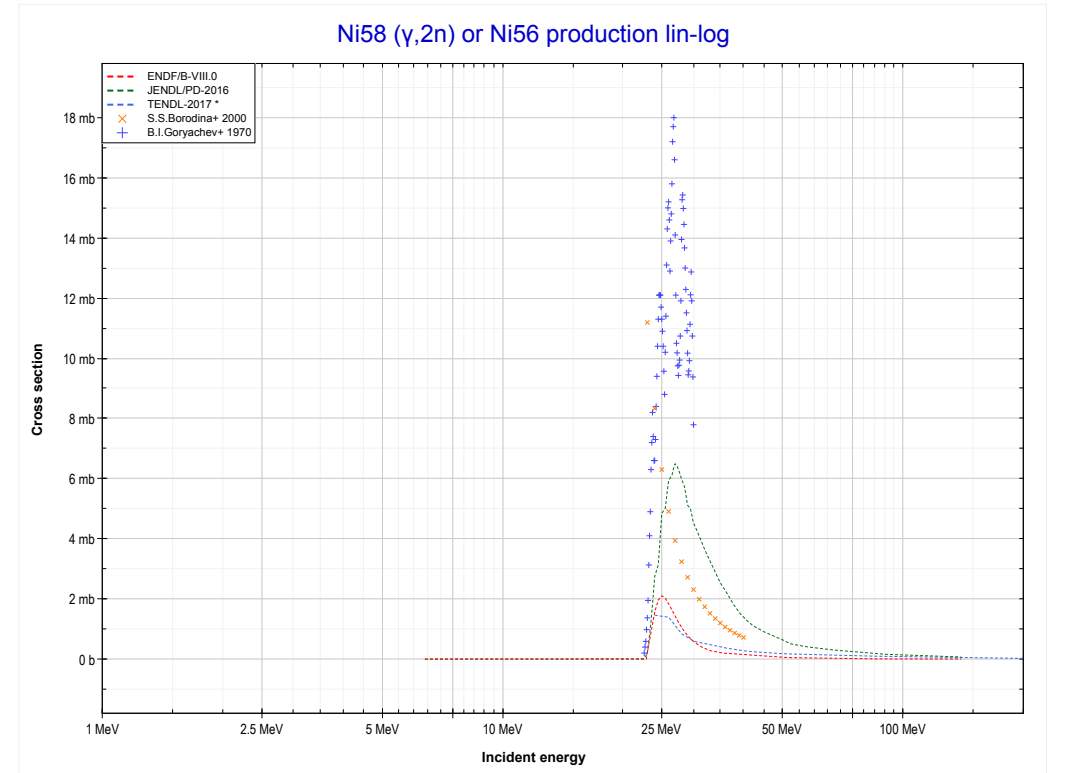
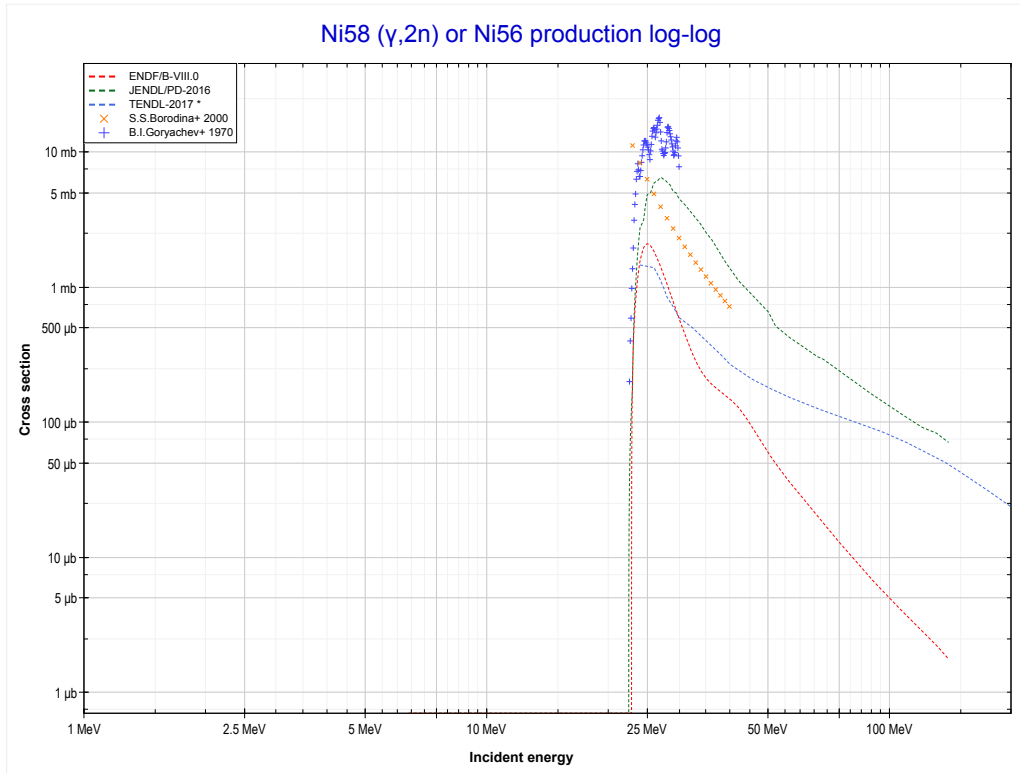
Reaction	Q-Value
Co59($\gamma,3n$)Co56	-30403.25 keV

<< 27-Co-59	28-Ni-58	28-Ni-60 >>
<< 27-Co-59 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Ni57 production)	MT16 ($\gamma,2n$) >>



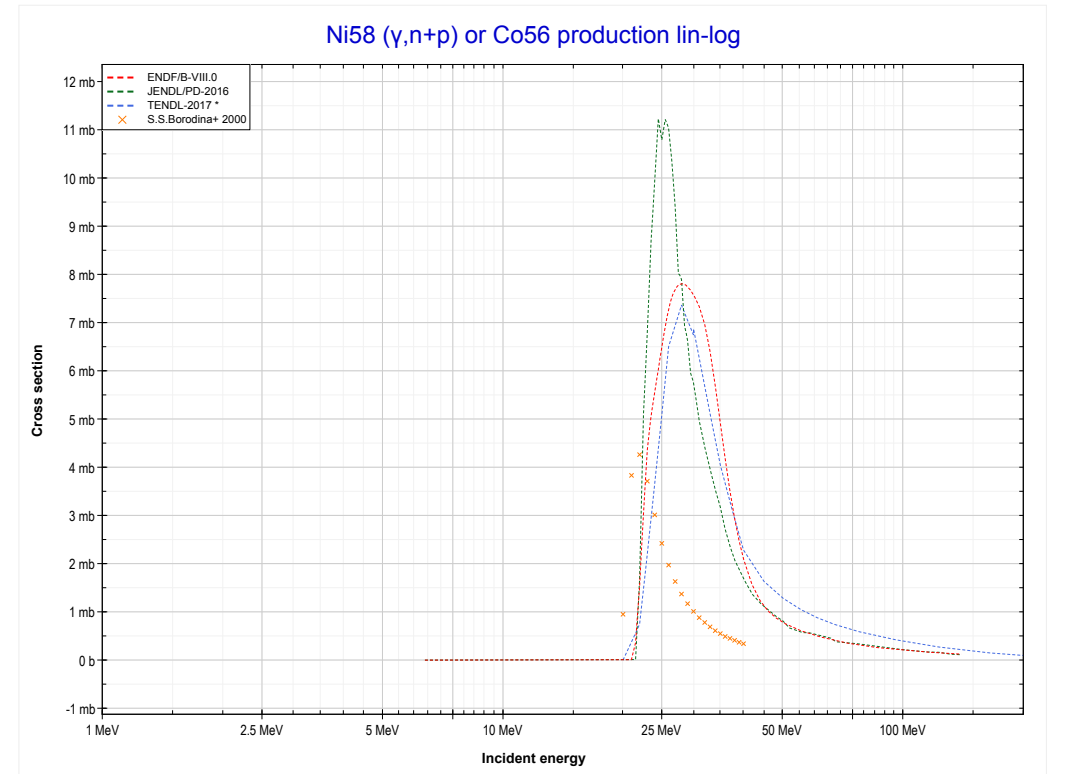
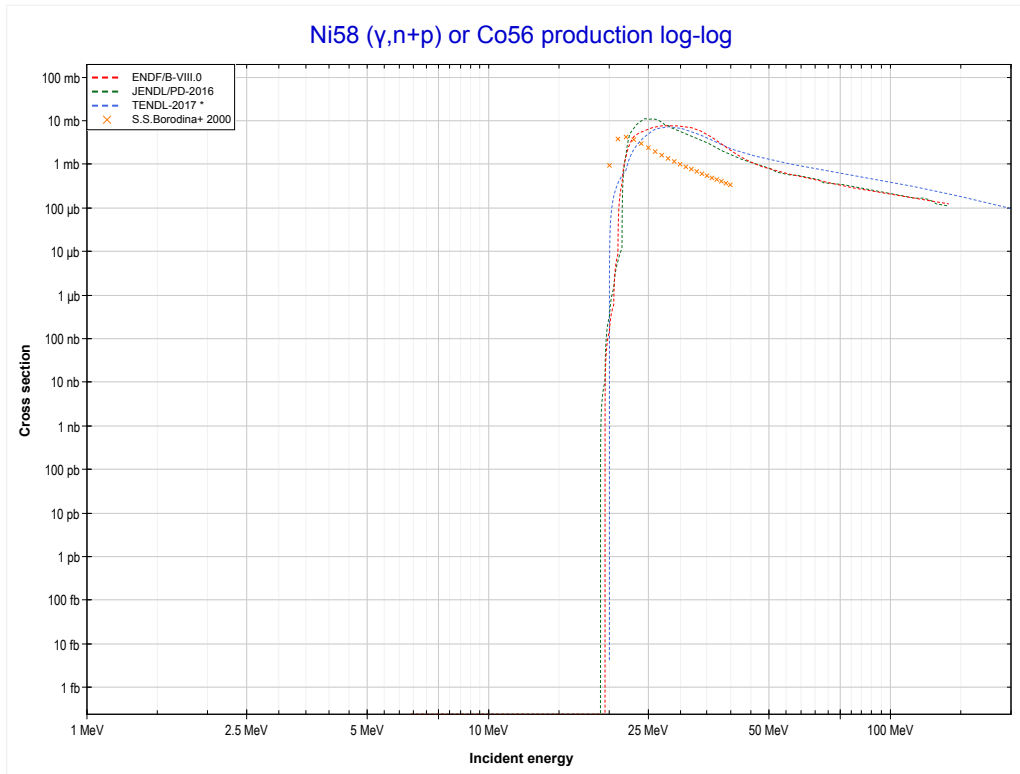
Reaction	Q-Value
Ni58(γ,n)Ni57	-12216.32 keV

<< 27-Co-59	28-Ni-58	28-Ni-60 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ni56 production)	MT28 ($\gamma,n+p$) >>



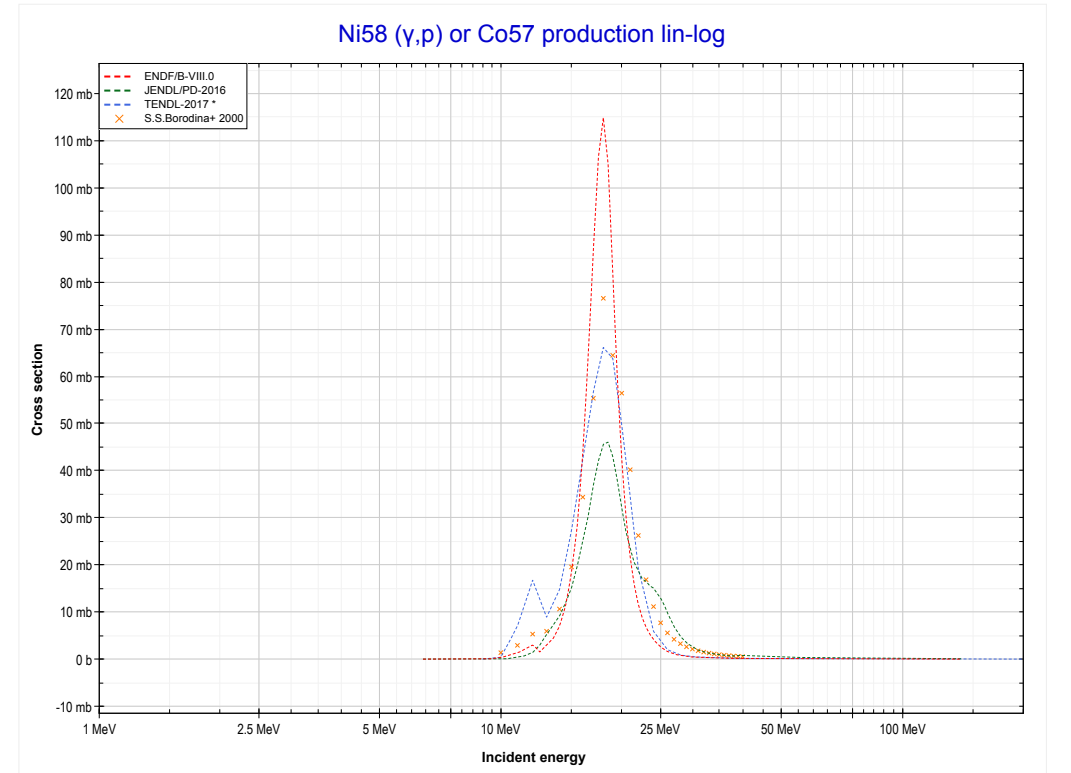
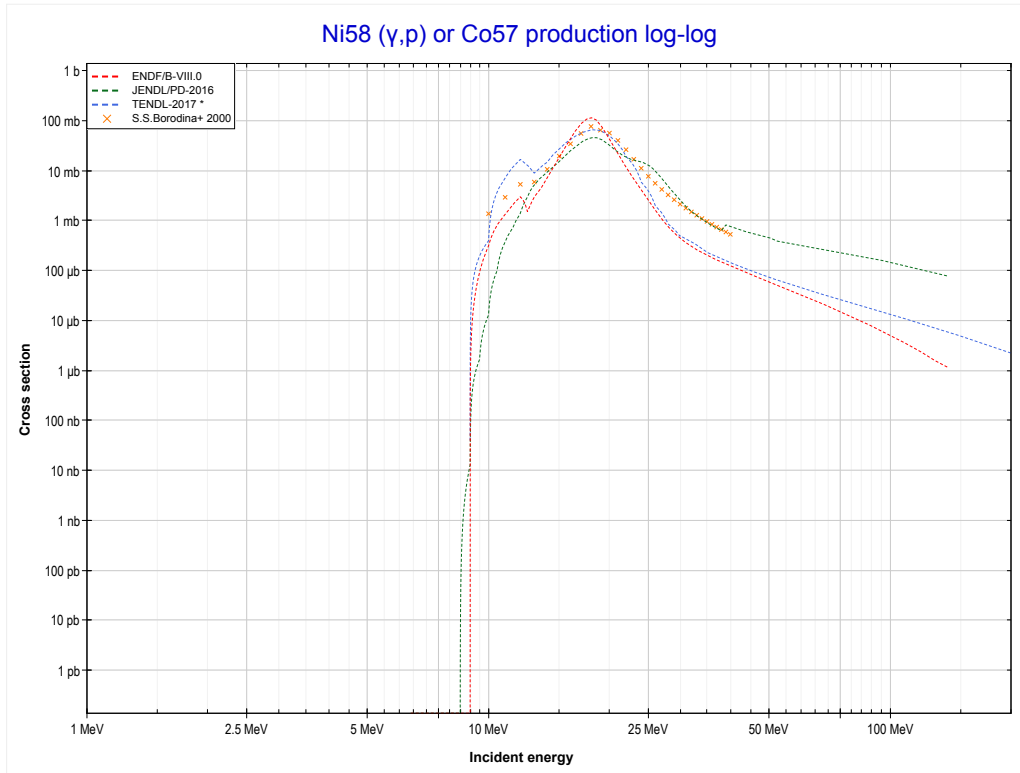
Reaction	Q-Value
Ni58($\gamma,2n$)Ni56	-22463.93 keV

<< 26-Fe-56	28-Ni-58	28-Ni-60 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Co56 production)	MT103 (γ,p) >>



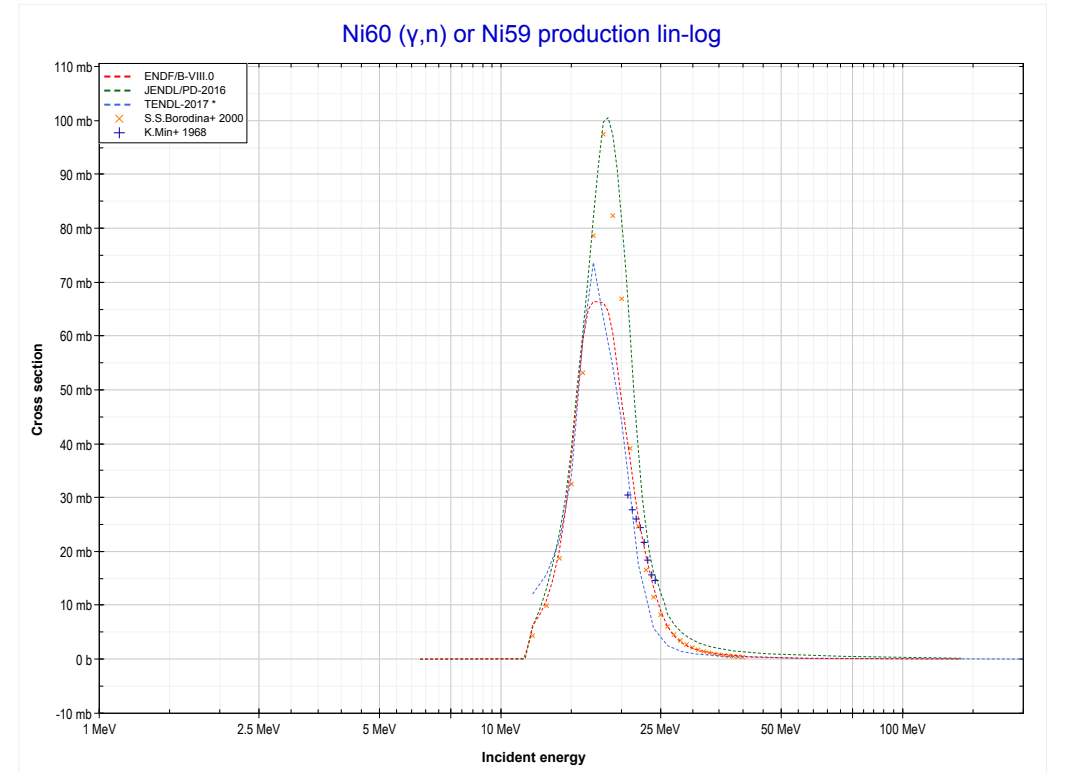
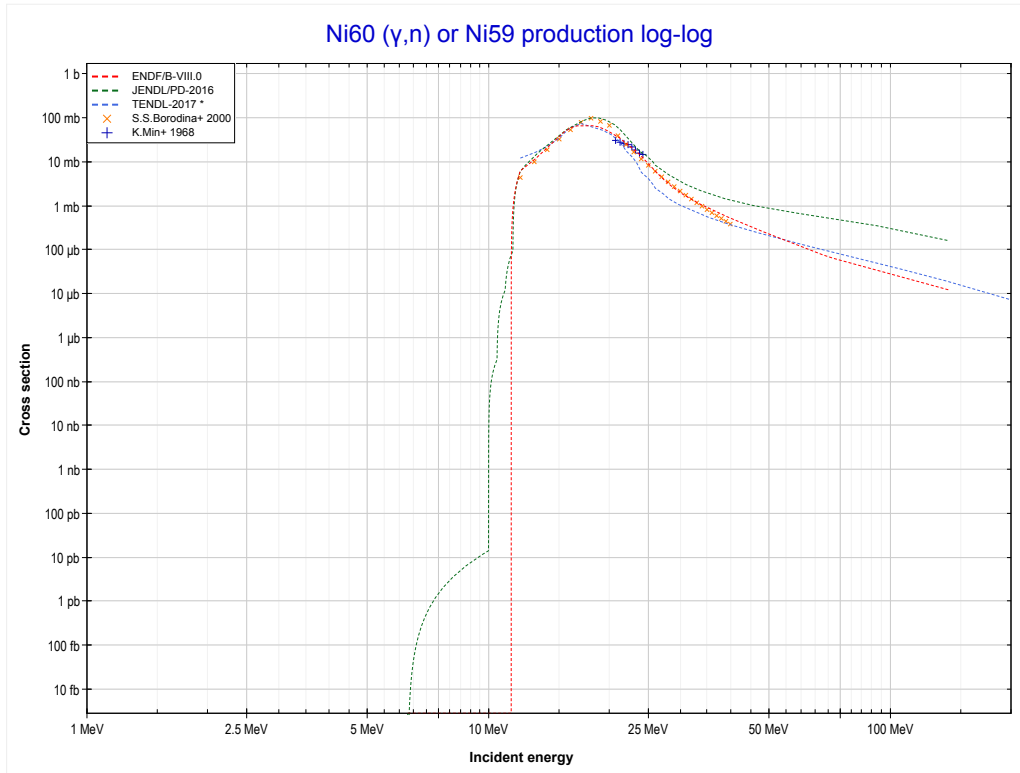
Reaction	Q-Value
Ni58(γ,d)Co56	-17324.12 keV
Ni58($\gamma,n+p$)Co56	-19548.69 keV

<< 26-Fe-56	28-Ni-58	28-Ni-60 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Co57 production)	28-Ni-60 MT4 (γ, n) >>



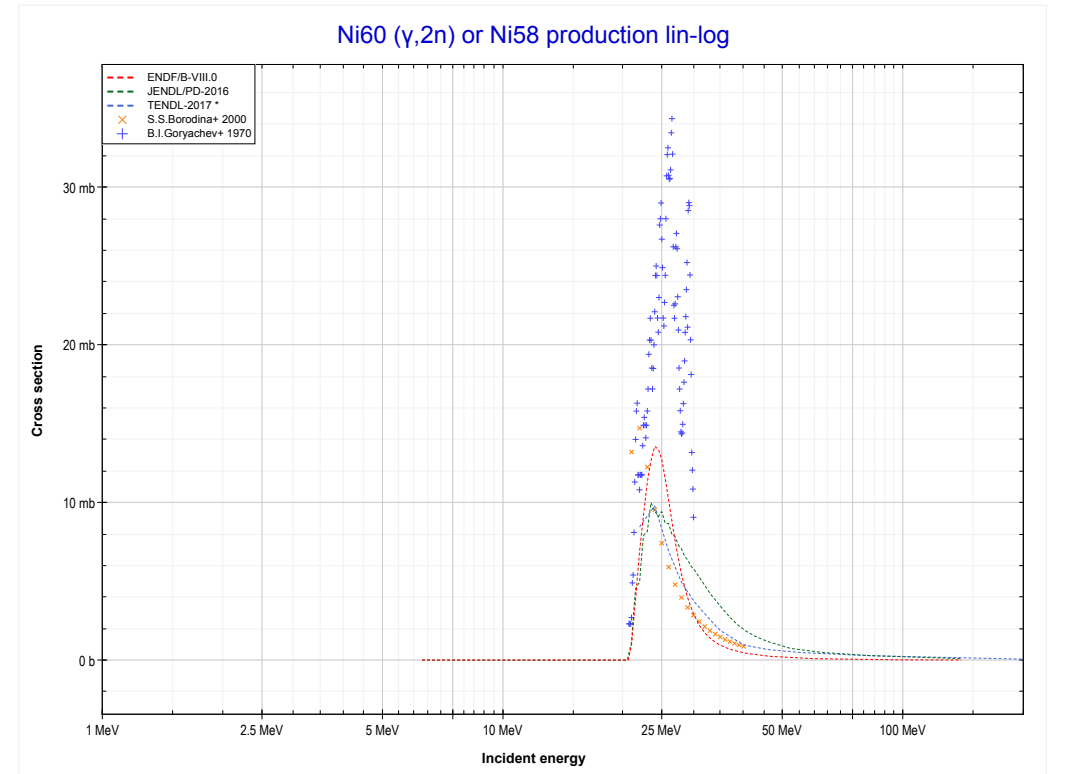
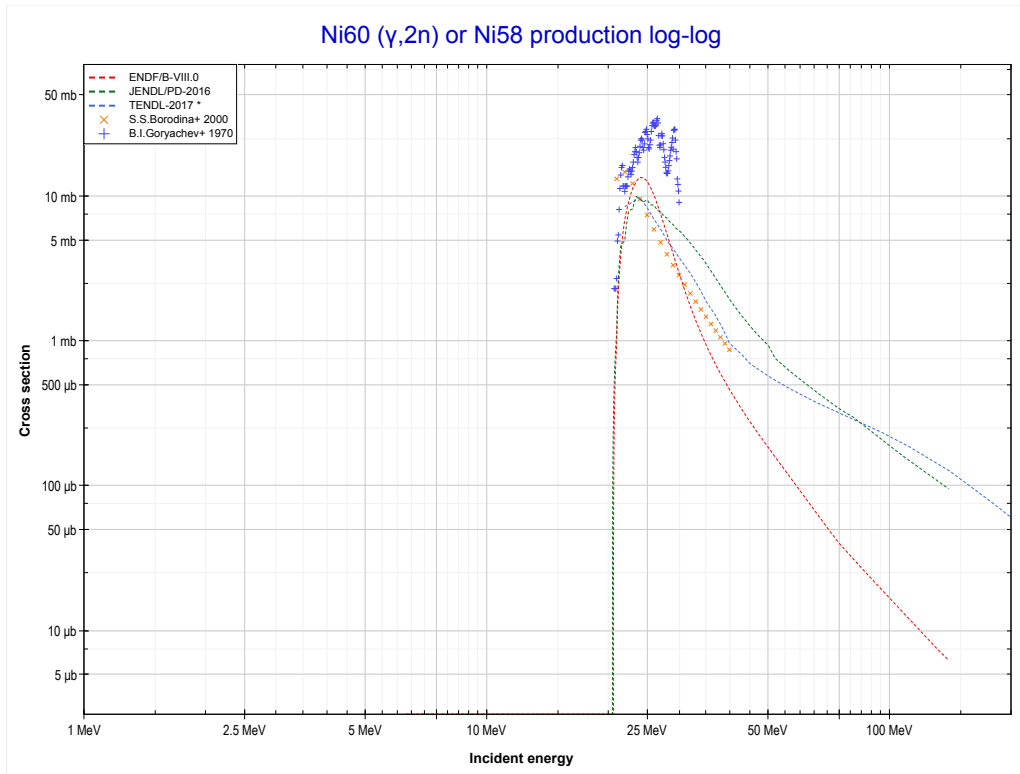
Reaction	Q-Value
Ni58(γ, p)Co57	-8172.27 keV

<< 28-Ni-58	28-Ni-60	29-Cu-63 >>
<< 28-Ni-58 MT103 (γ,p)	MT4 (γ,n) or MT5 (Ni59 production)	MT16 (γ,2n) >>



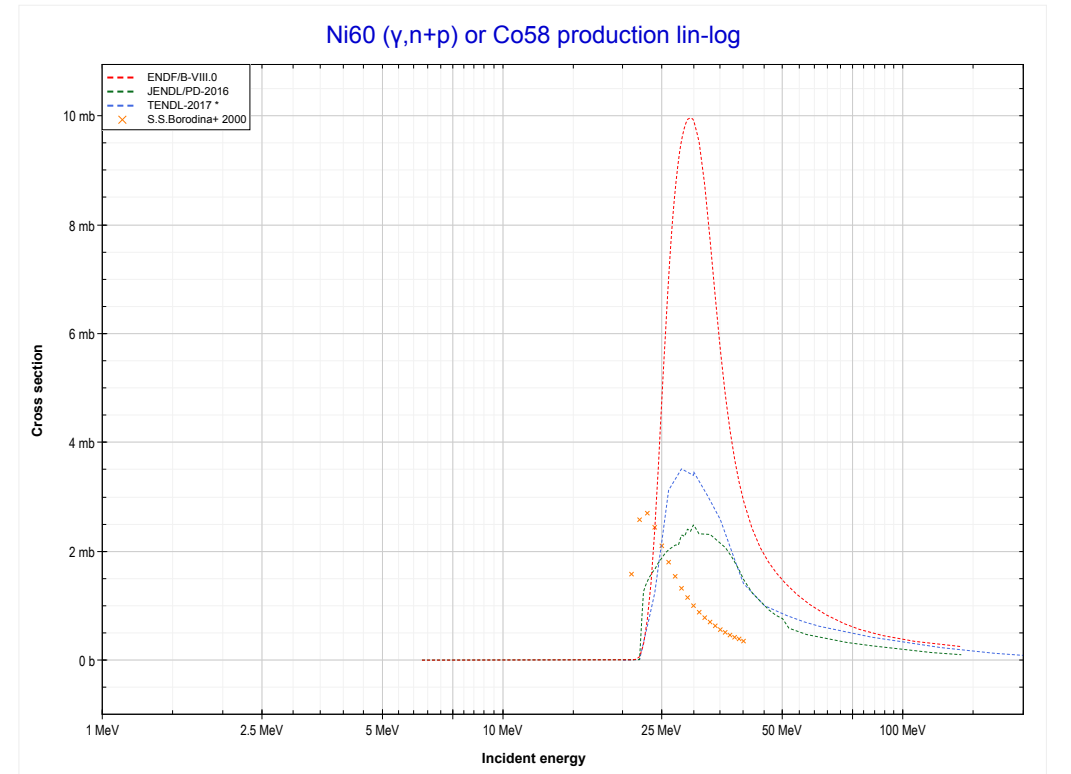
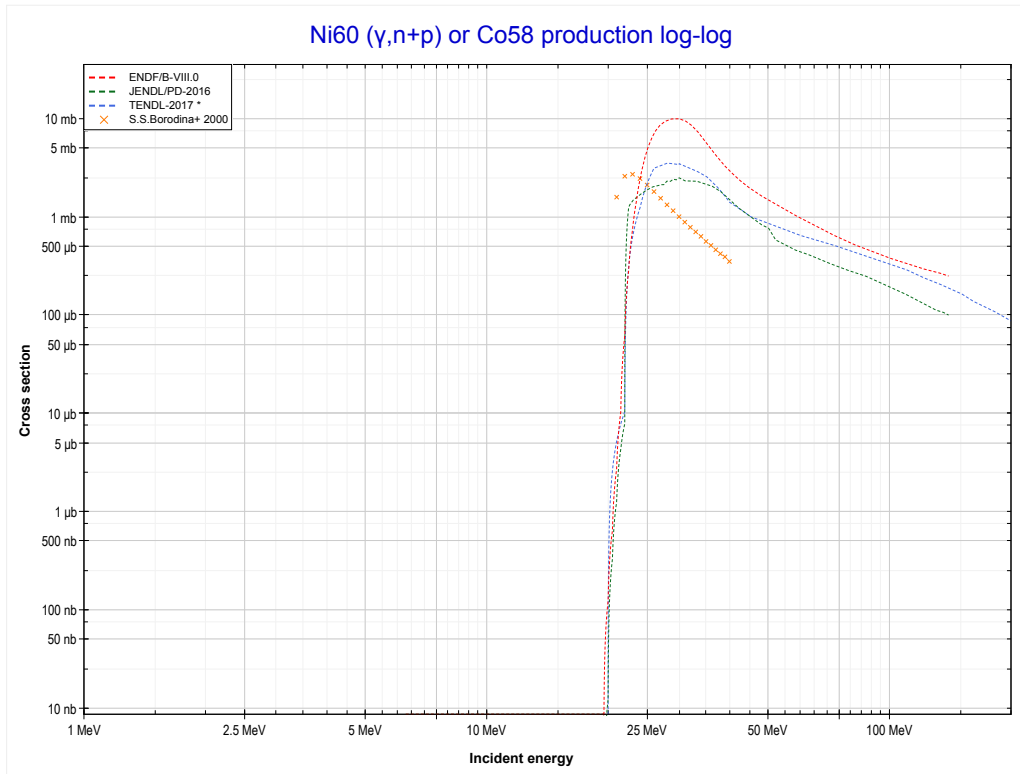
Reaction	Q-Value
Ni60(γ,n)Ni59	-11387.72 keV

<< 28-Ni-58	28-Ni-60	29-Cu-63 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ni58 production)	MT28 ($\gamma,n+p$) >>



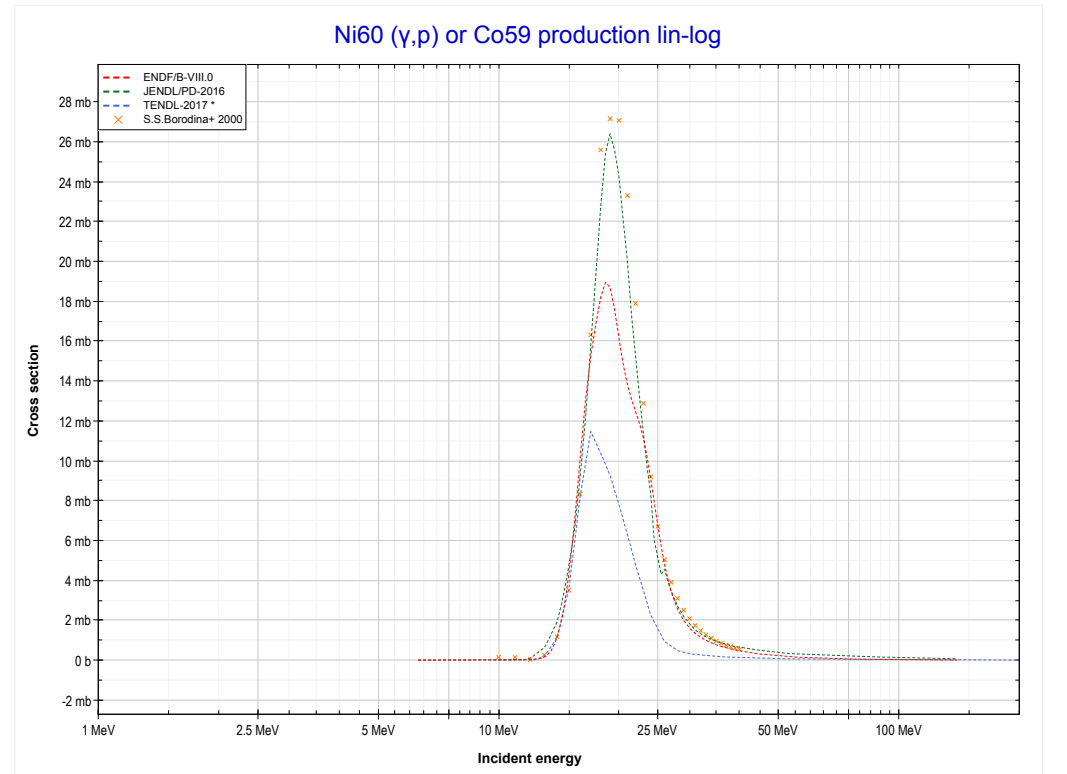
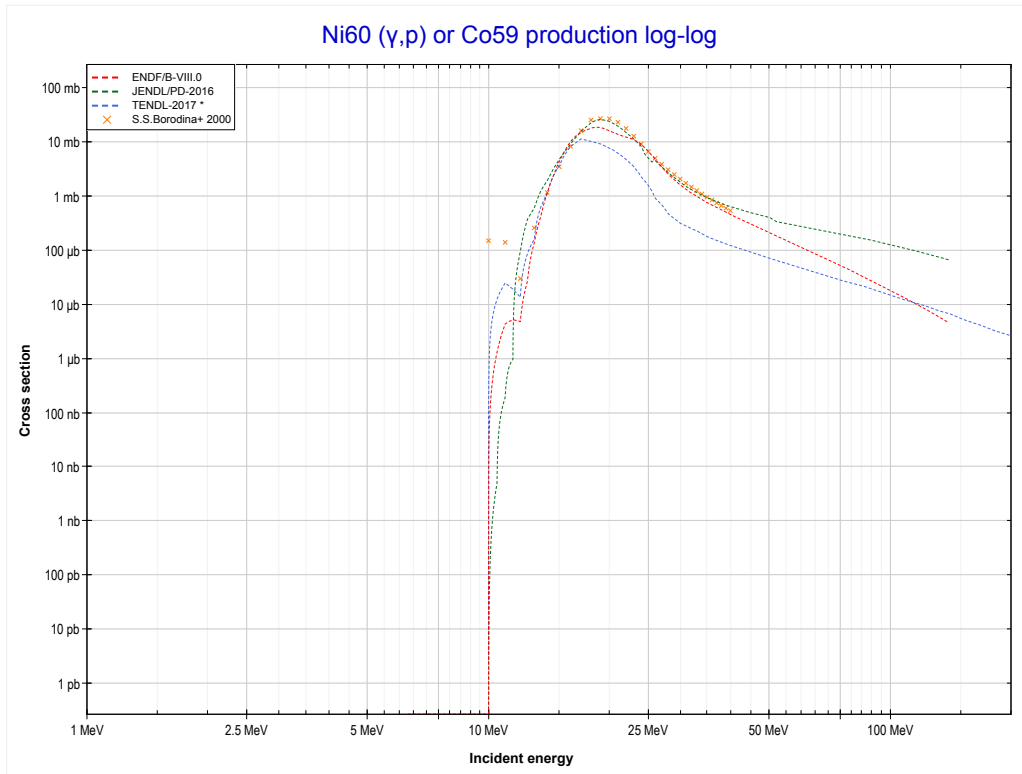
Reaction	Q-Value
Ni60($\gamma,2n$)Ni58	-20386.93 keV

<< 28-Ni-58	28-Ni-60	29-Cu-63 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Co58 production)	MT103 (γ,p) >>



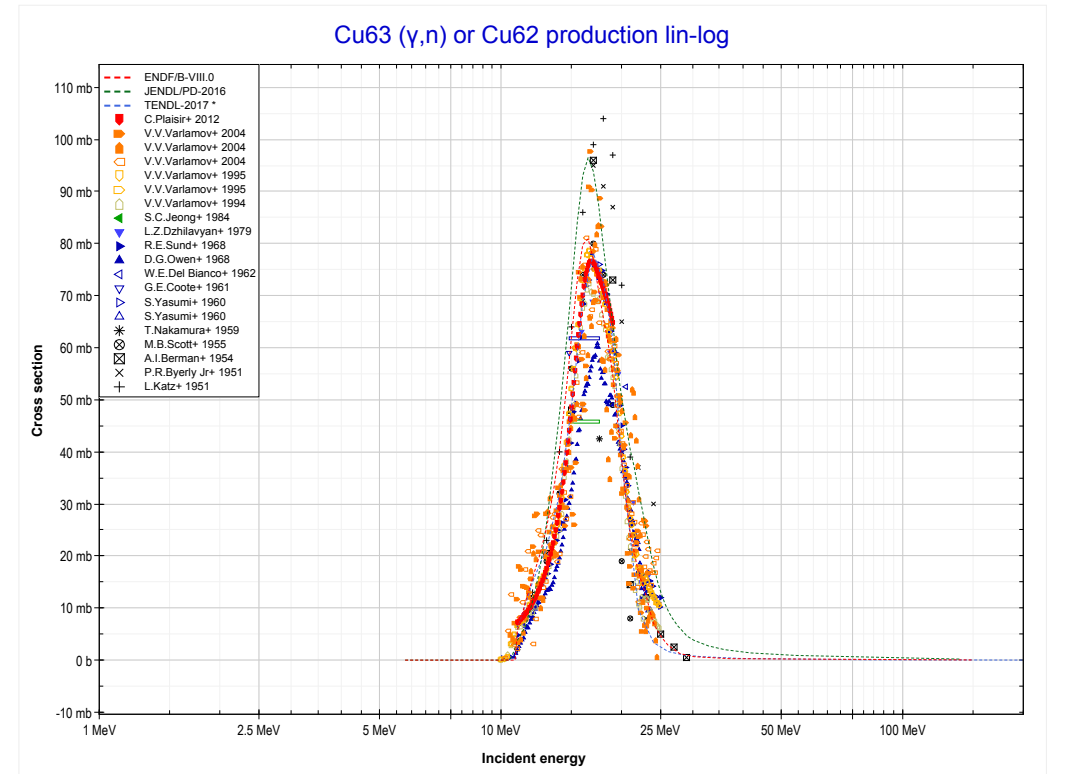
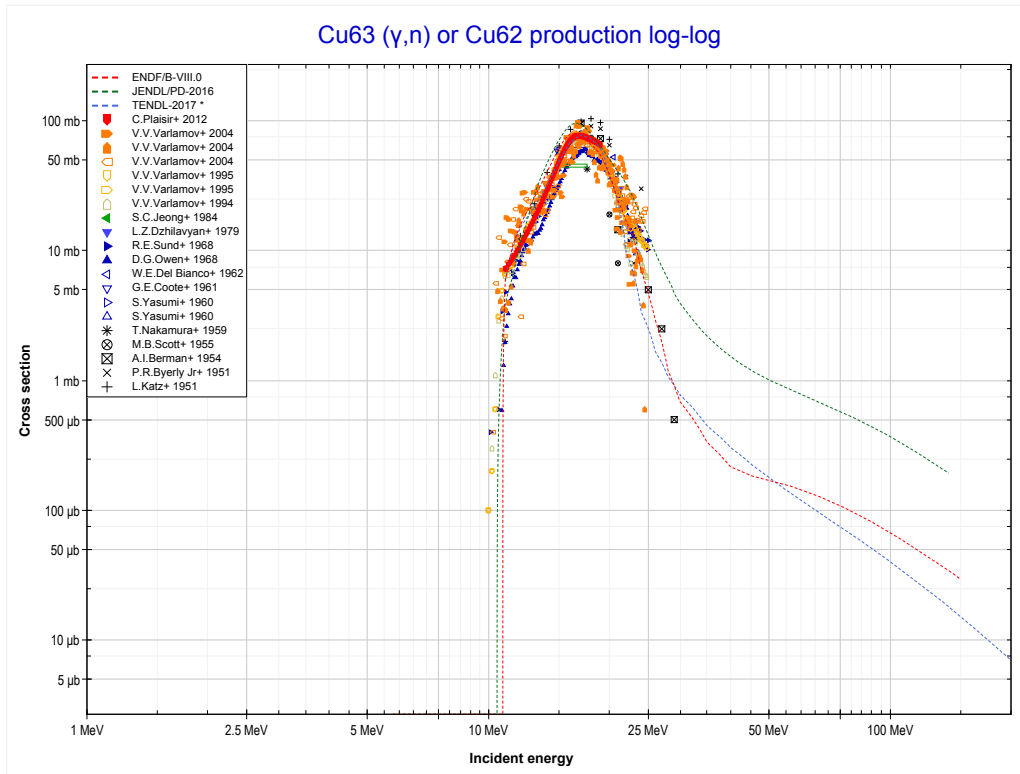
Reaction	Q-Value
Ni60(γ,d)Co58	-17761.62 keV
Ni60($\gamma,n+p$)Co58	-19986.19 keV

<< 28-Ni-58	28-Ni-60	29-Cu-63 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Co59 production)	29-Cu-63 MT4 (γ, n) >>



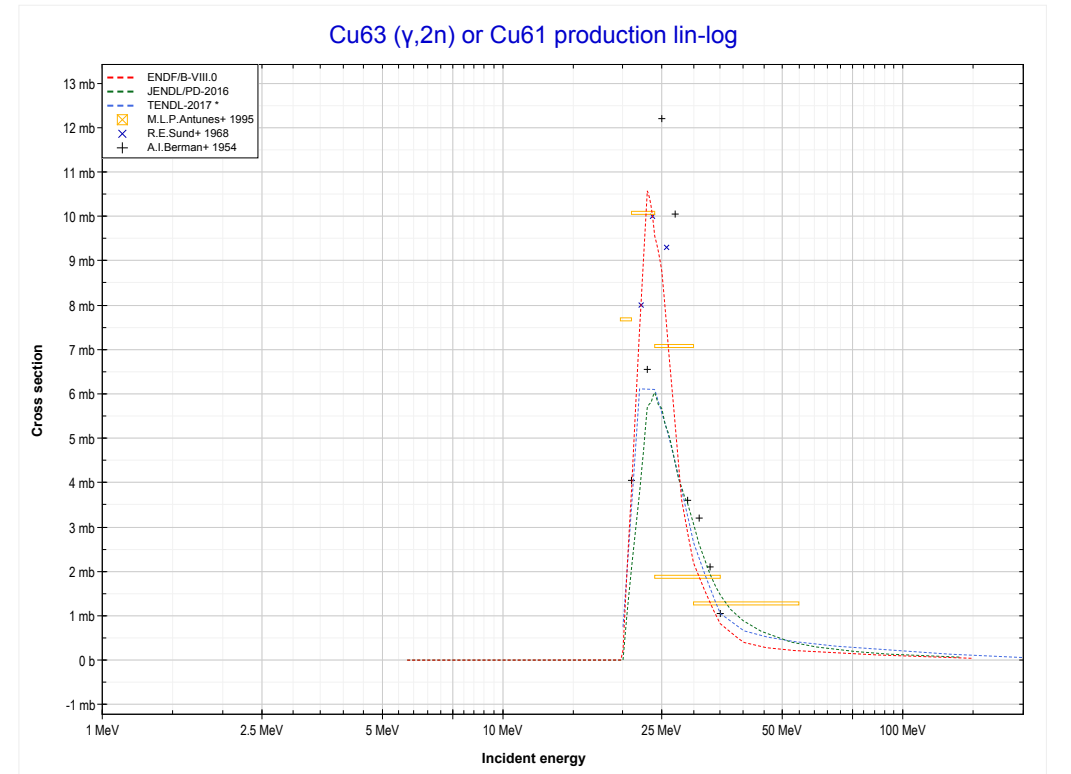
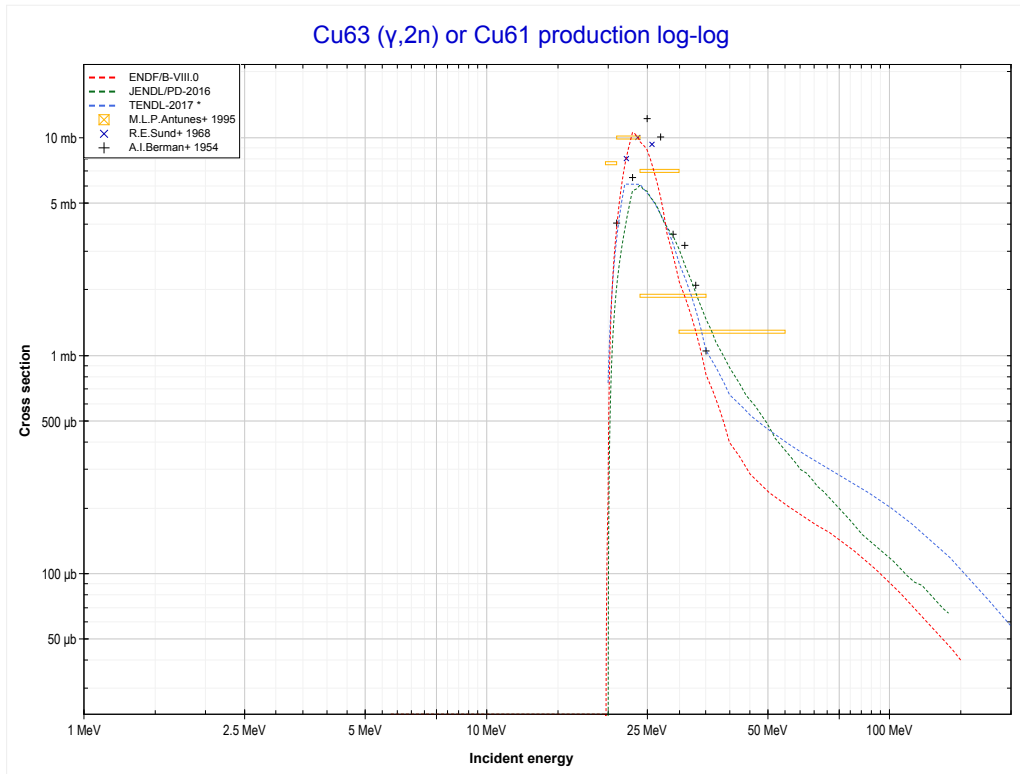
Reaction	Q-Value
Ni60(γ, p)Co59	-9532.37 keV

<< 28-Ni-60	29-Cu-63	29-Cu-65 >>
<< 28-Ni-60 MT103 (γ,p)	MT4 (γ,n) or MT5 (Cu62 production)	MT16 (γ,2n) >>



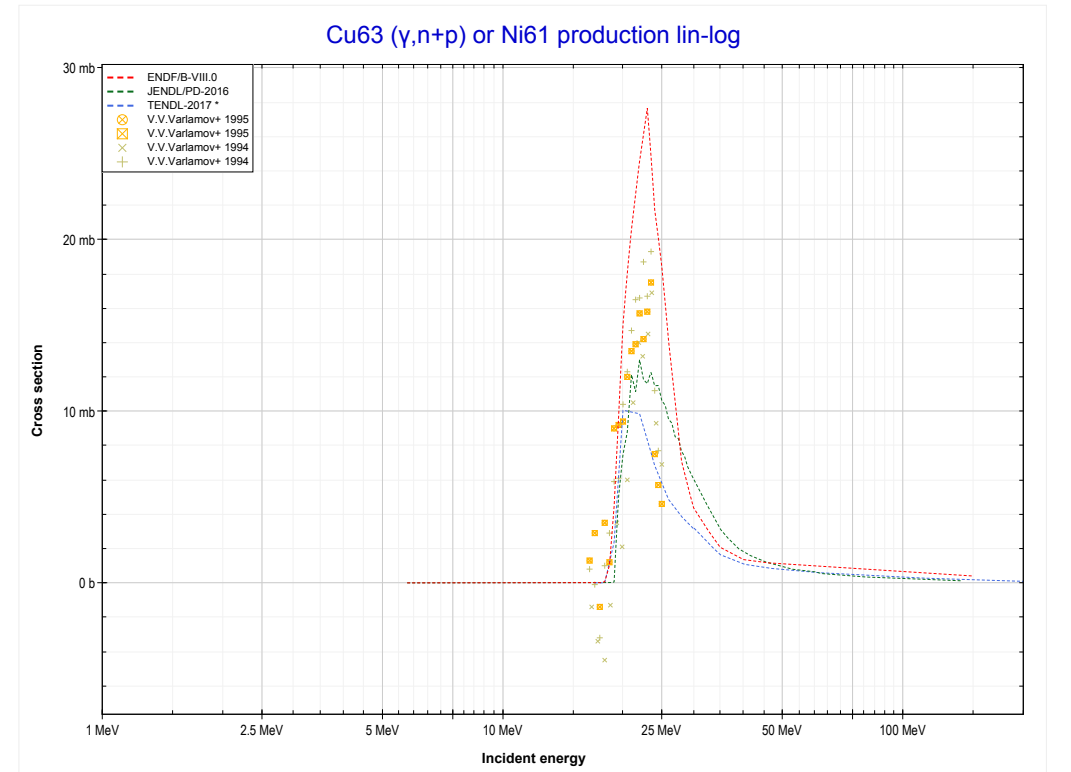
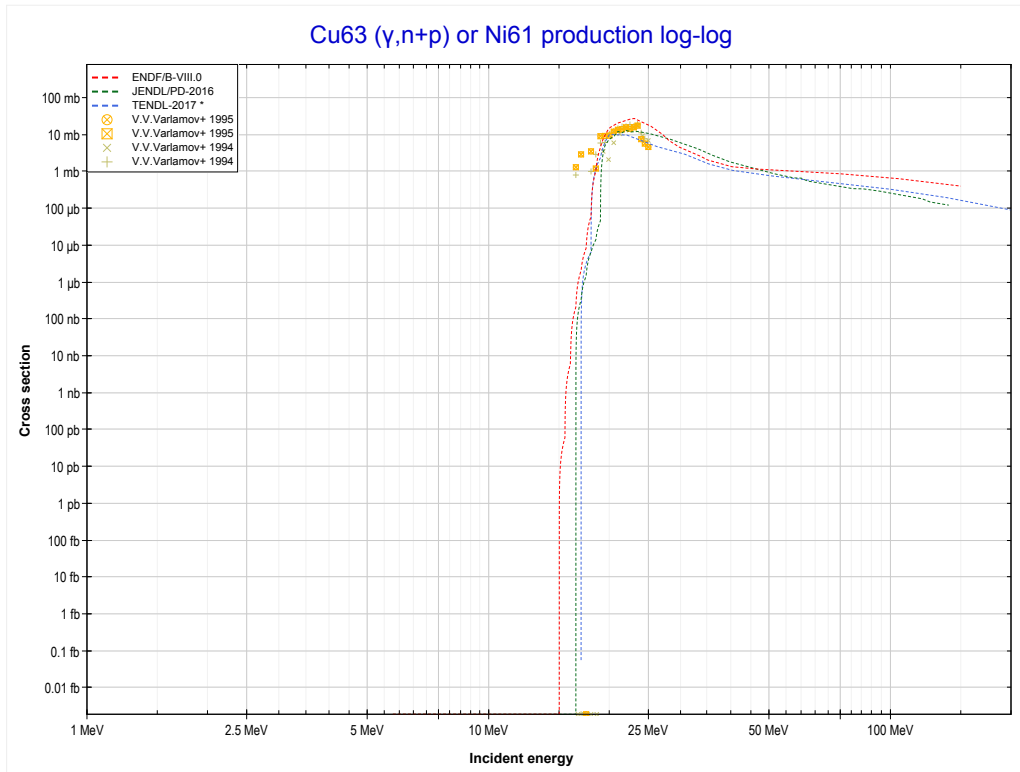
Reaction	Q-Value
Cu63(γ,n)Cu62	-10863.62 keV

<< 28-Ni-60	29-Cu-63	32-Ge-70 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Cu61 production)	MT28 ($\gamma,n+p$) >>



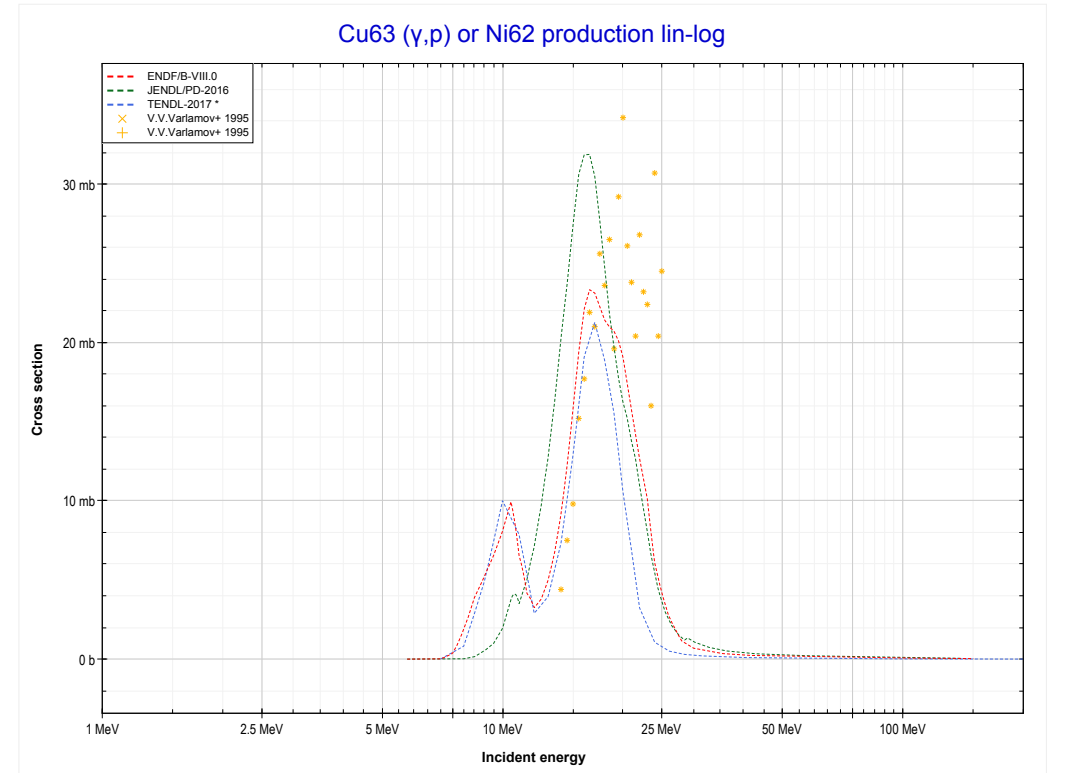
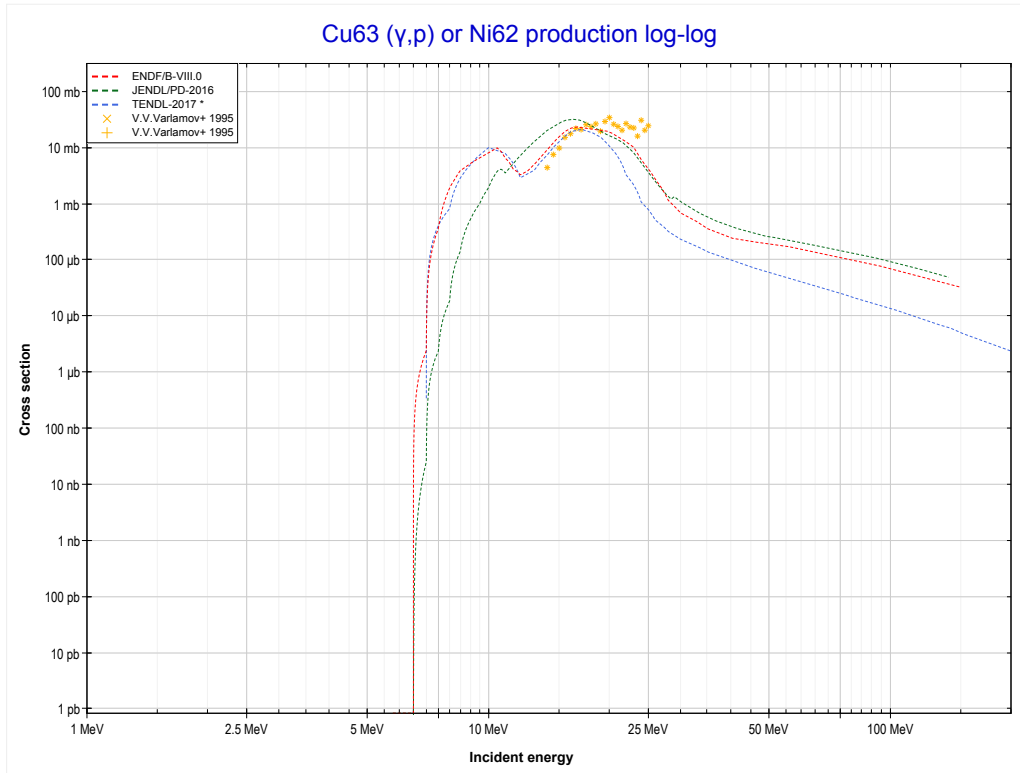
Reaction	Q-Value
Cu63($\gamma,2n$)Cu61	-19738.13 keV

<< 28-Ni-60	29-Cu-63	29-Cu-65 >>
<< MT16 ($\gamma,2n$)	MT28 ($\gamma,n+p$) or MT5 (Ni61 production)	MT103 (γ,p) >>



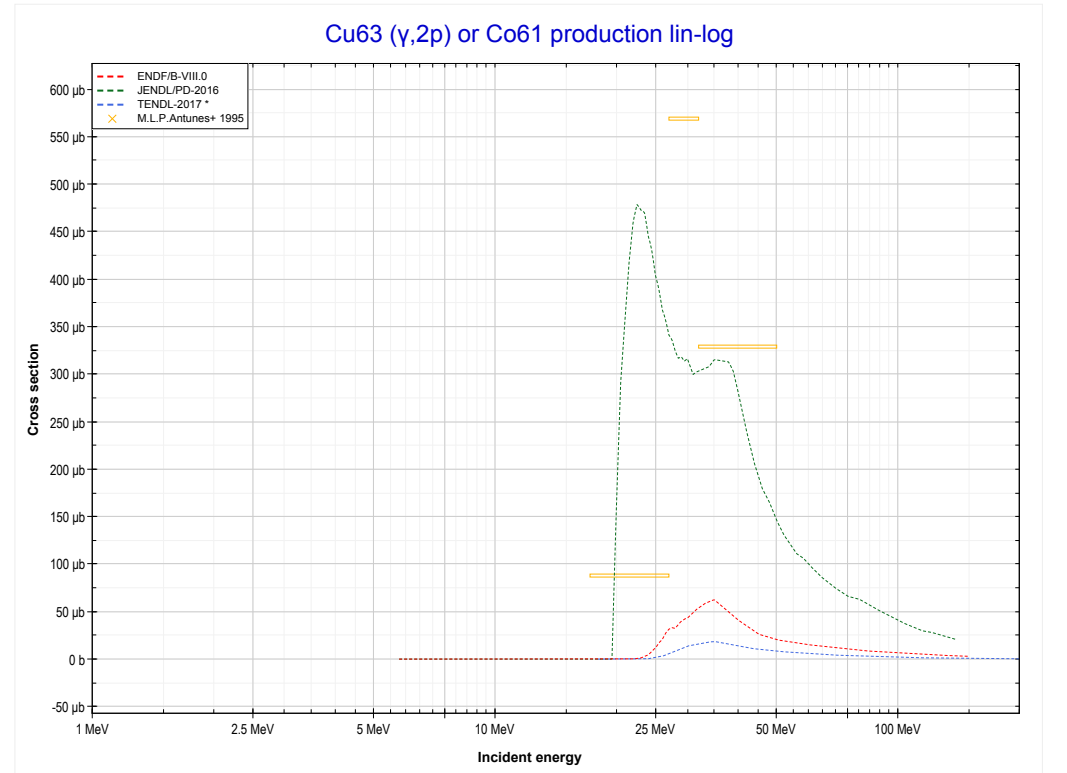
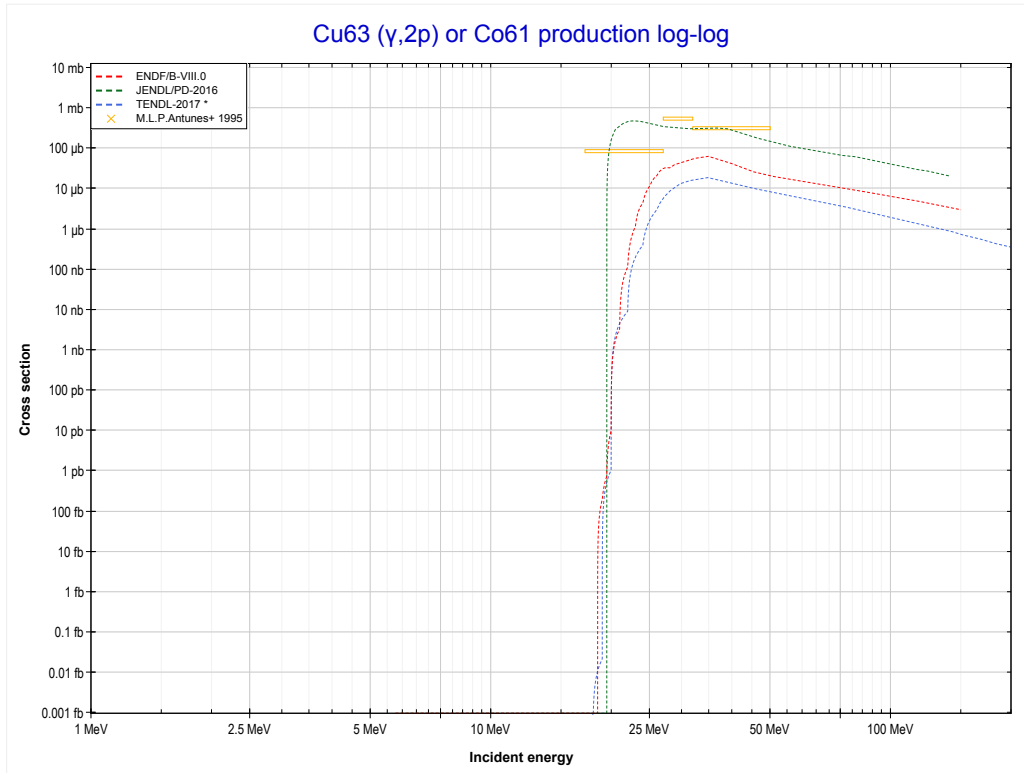
Reaction	Q-Value
Cu63(γ,d)Ni61	-14493.72 keV
Cu63($\gamma,n+p$)Ni61	-16718.29 keV

<< 28-Ni-60	29-Cu-63	29-Cu-65 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Ni62 production)	MT111 ($\gamma, 2p$) >>



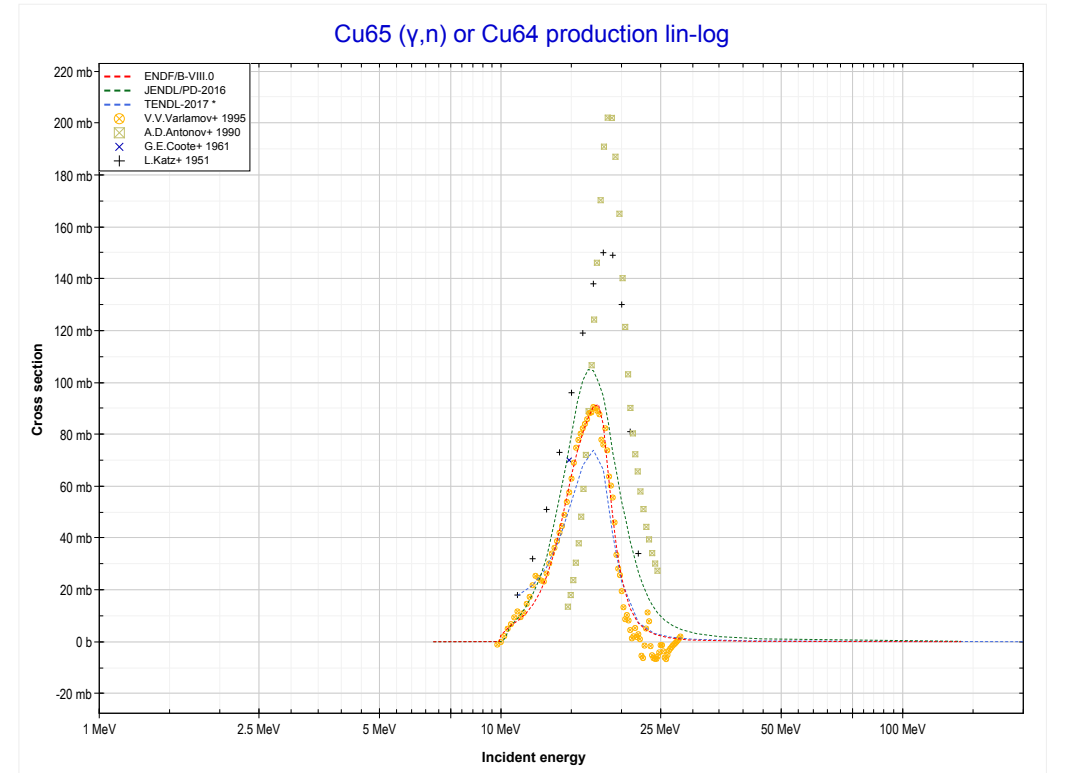
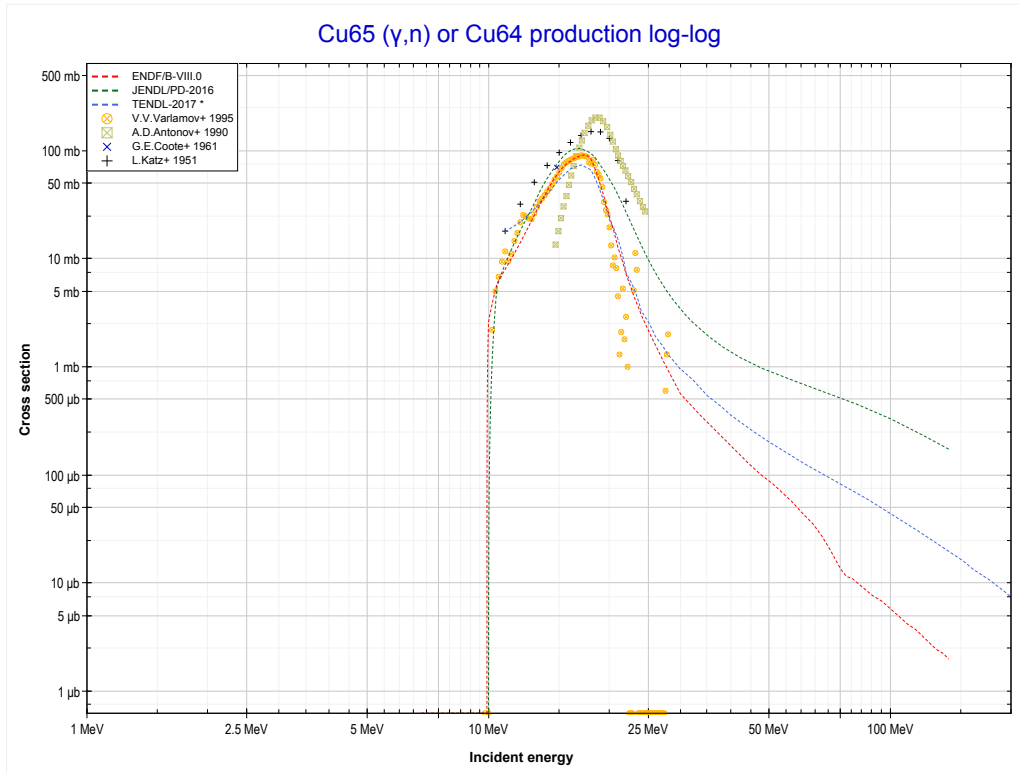
Reaction	Q-Value
Cu63(γ, p)Ni62	-6122.37 keV

	29-Cu-63	
<< MT103 (γ,p)	MT111 (γ,2p) or MT5 (Co61 production)	29-Cu-65 MT4 (γ,n) >>



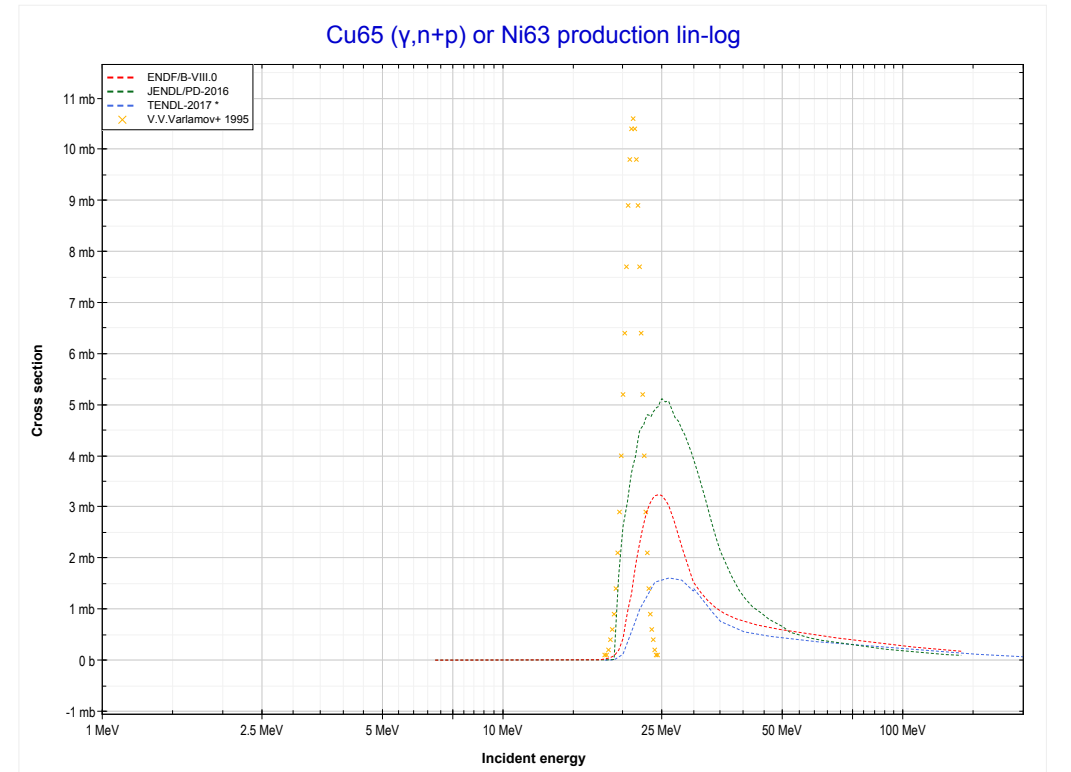
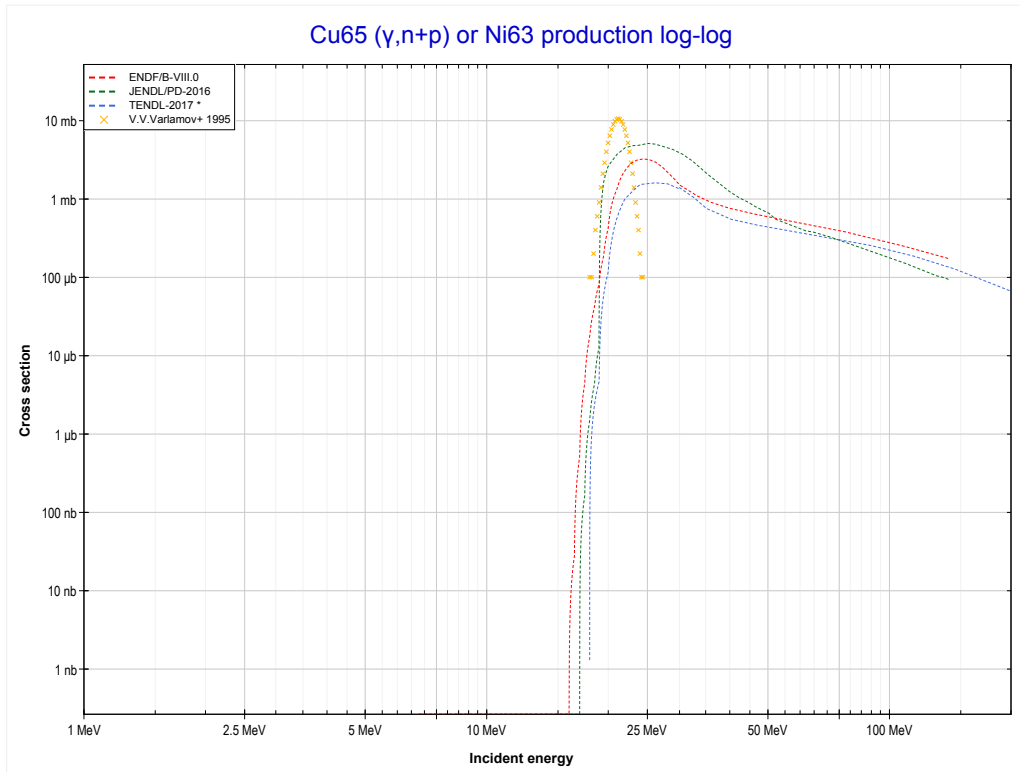
Reaction	Q-Value
Cu63(γ,2p)Co61	-17259.64 keV

<< 29-Cu-63	29-Cu-65	30-Zn-64 >>
<< 29-Cu-63 MT111 ($\gamma,2p$)	MT4 (γ,n) or MT5 (Cu64 production)	MT28 ($\gamma,n+p$) >>



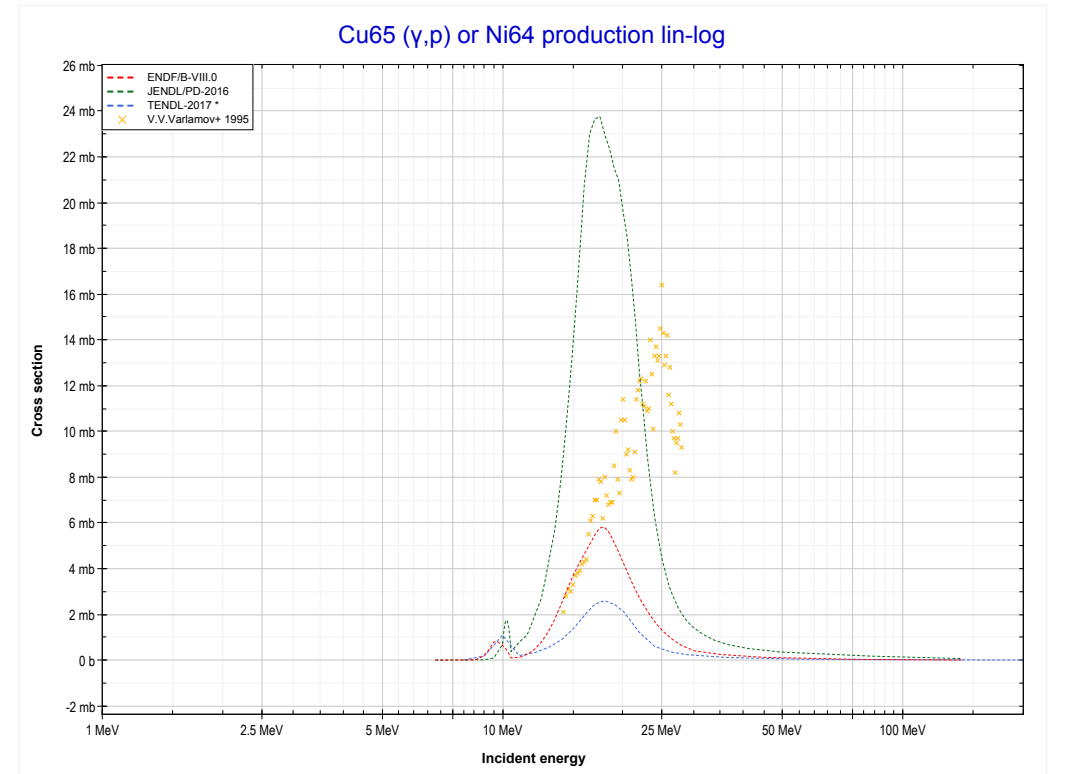
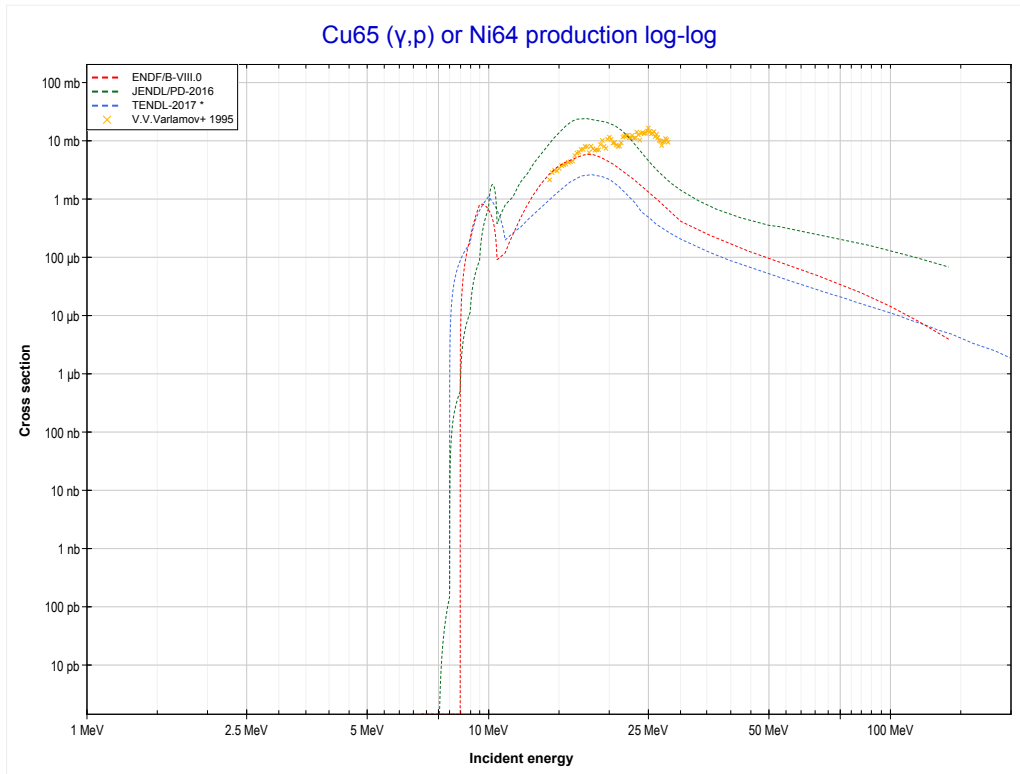
Reaction	Q-Value
Cu65(γ,n)Cu64	-9910.72 keV

<< 29-Cu-63	29-Cu-65	30-Zn-64 >>
<< MT4 (γ,n)	MT28 ($\gamma,n+p$) or MT5 (Ni63 production)	MT103 (γ,p) >>



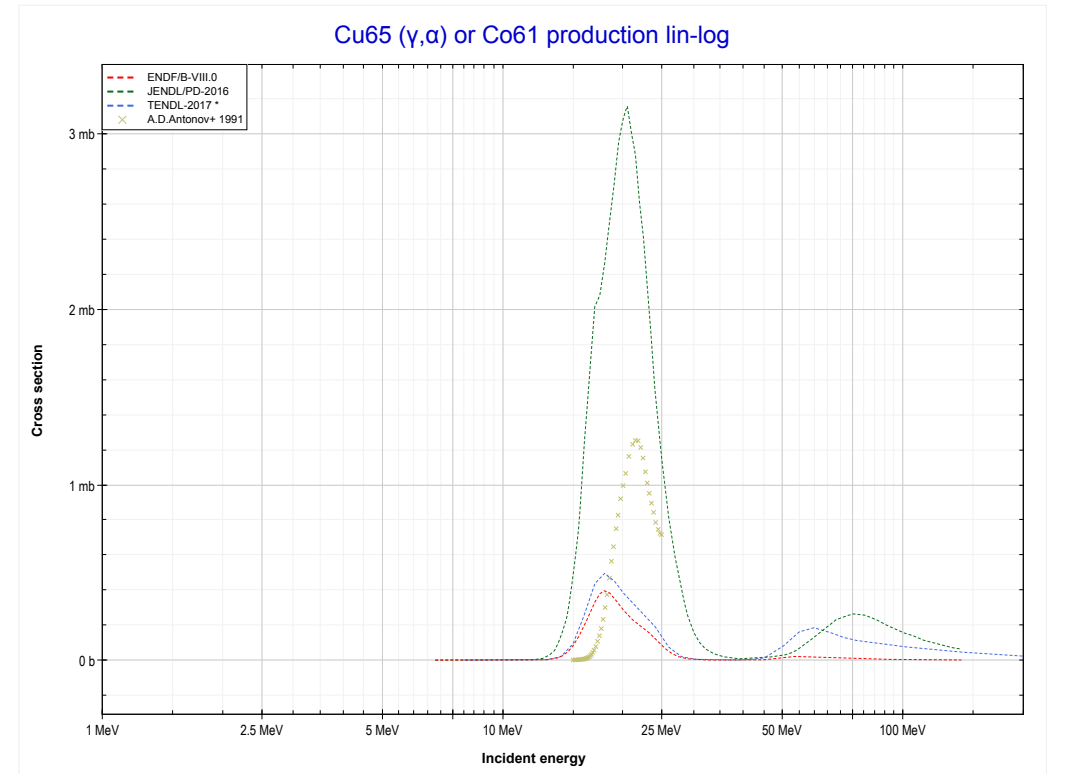
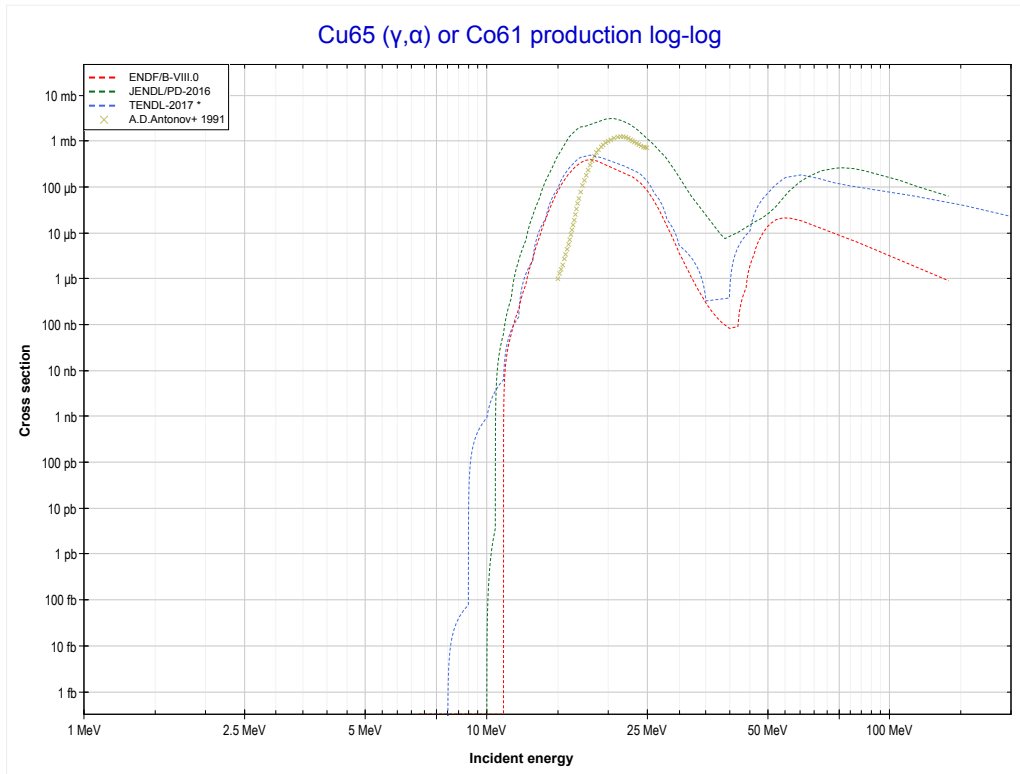
Reaction	Q-Value
Cu65(γ,d)Ni63	-14886.92 keV
Cu65($\gamma,n+p$)Ni63	-17111.49 keV

<< 29-Cu-63	29-Cu-65	30-Zn-68 >>
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Ni64 production)	MT107 (γ, α) >>



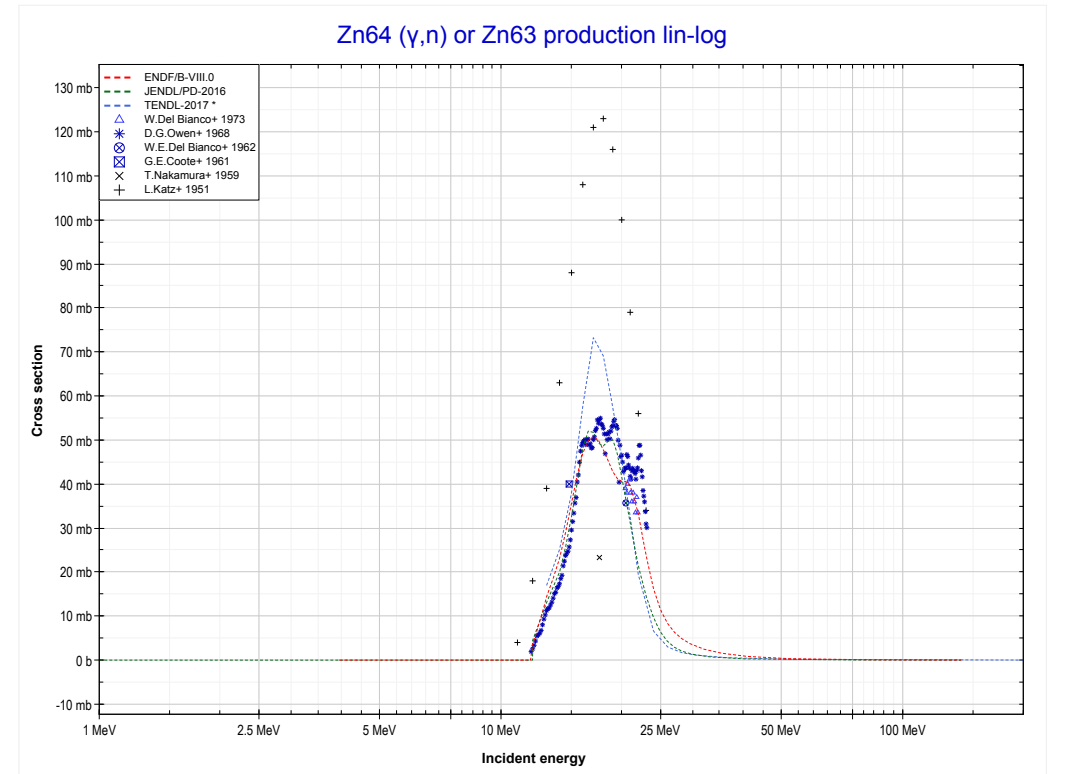
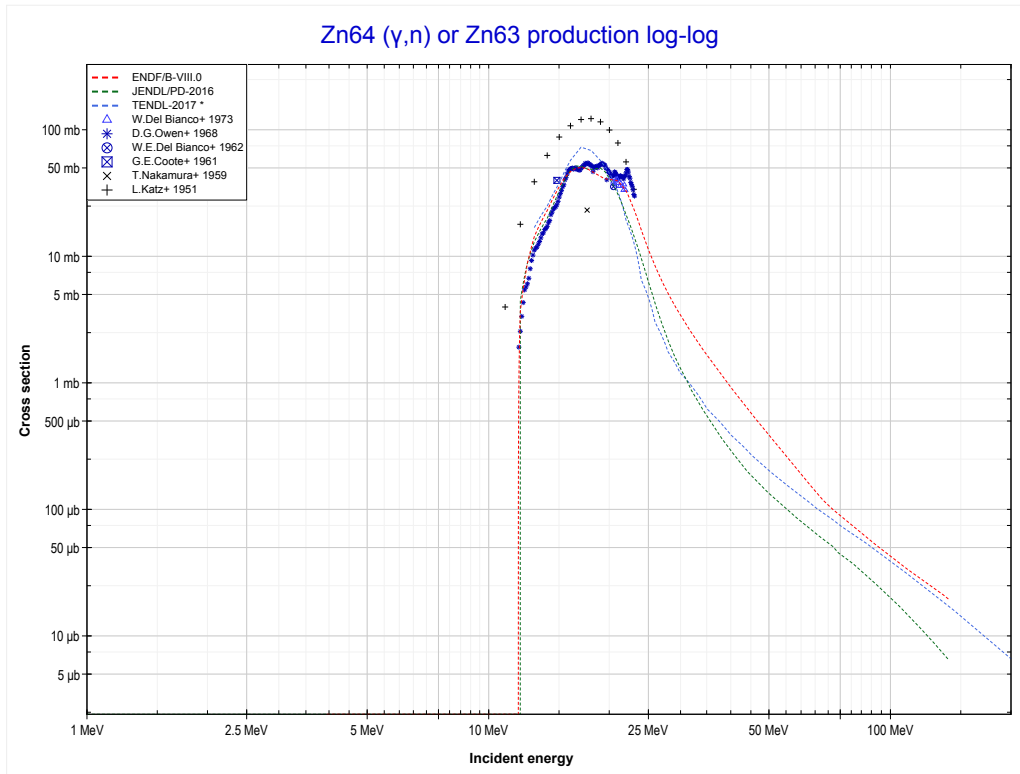
Reaction	Q-Value
Cu65(γ, p)Ni64	-7453.97 keV

<< 23-V-51	29-Cu-65	32-Ge-76 >>
<< MT103 (γ,p)	MT107 (γ,α) or MT5 (Co61 production)	30-Zn-64 MT4 (γ,n) >>



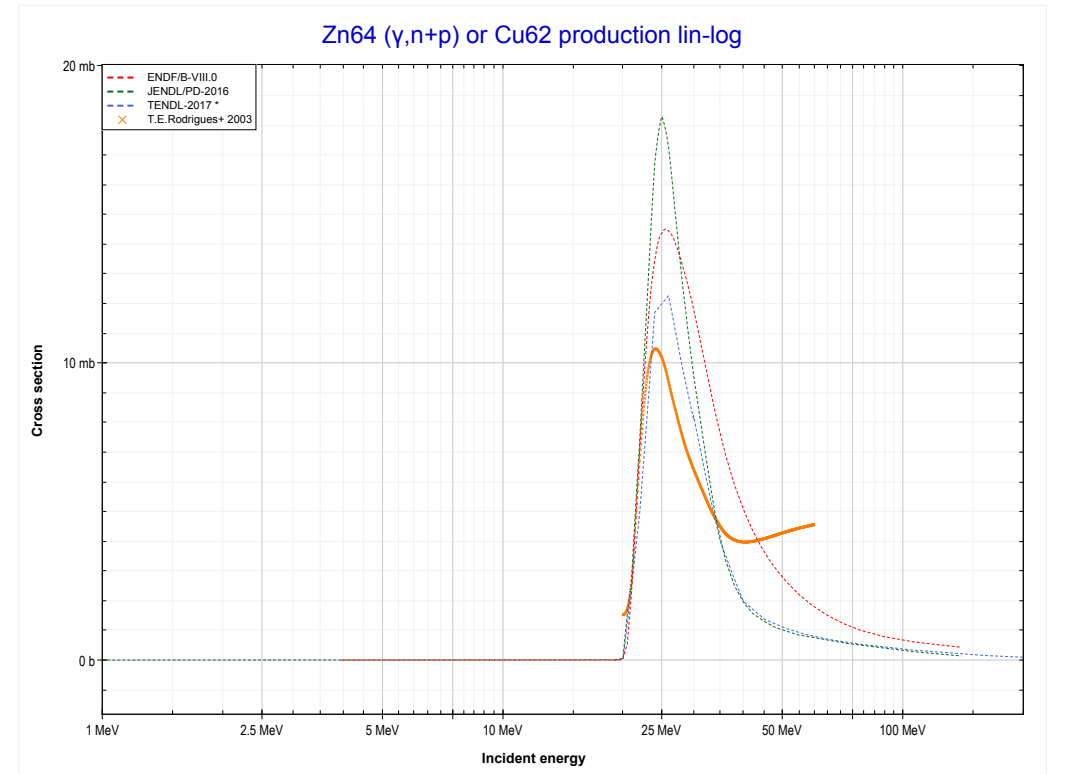
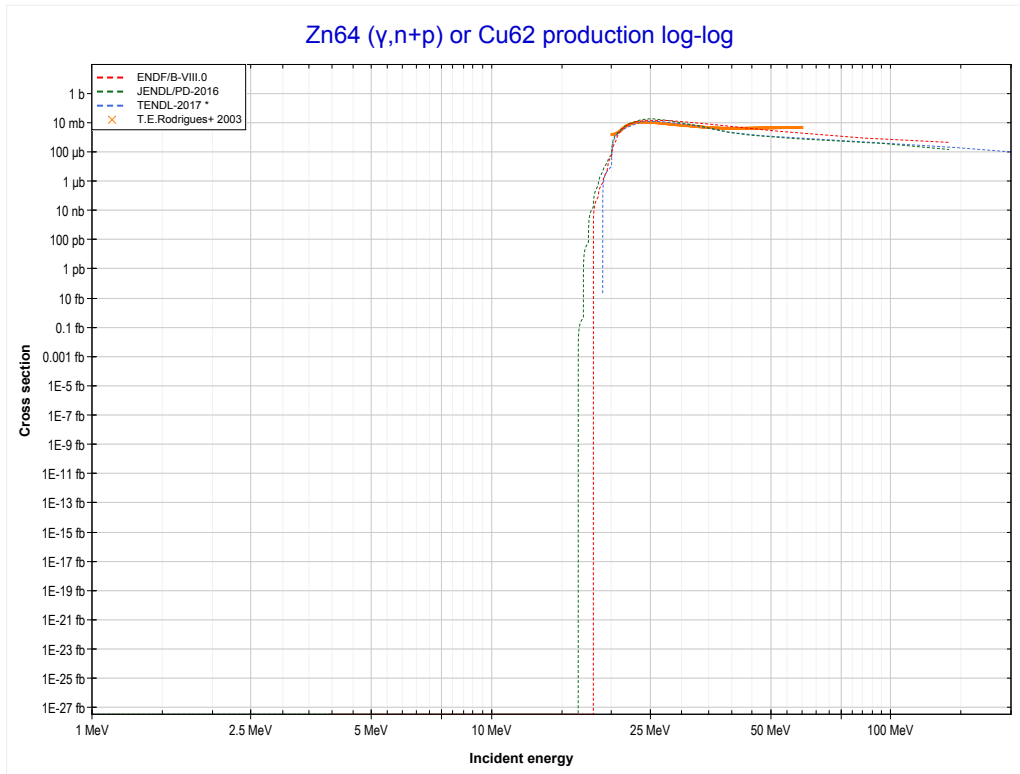
Reaction	Q-Value
Cu65(γ,α)Co61	-6790.82 keV
Cu65(γ,p+t)Co61	-26604.68 keV
Cu65(γ,n+He3)Co61	-27368.43 keV
Cu65(γ,2d)Co61	-30637.34 keV
Cu65(γ,n+p+d)Co61	-32861.91 keV
Cu65(γ,2n+2p)Co61	-35086.48 keV

<< 29-Cu-65	30-Zn-64	30-Zn-65 >>
<< 29-Cu-65 MT107 (γ,α)	MT4 (γ,n) or MT5 (Zn63 production)	MT28 ($\gamma,n+p$) >>



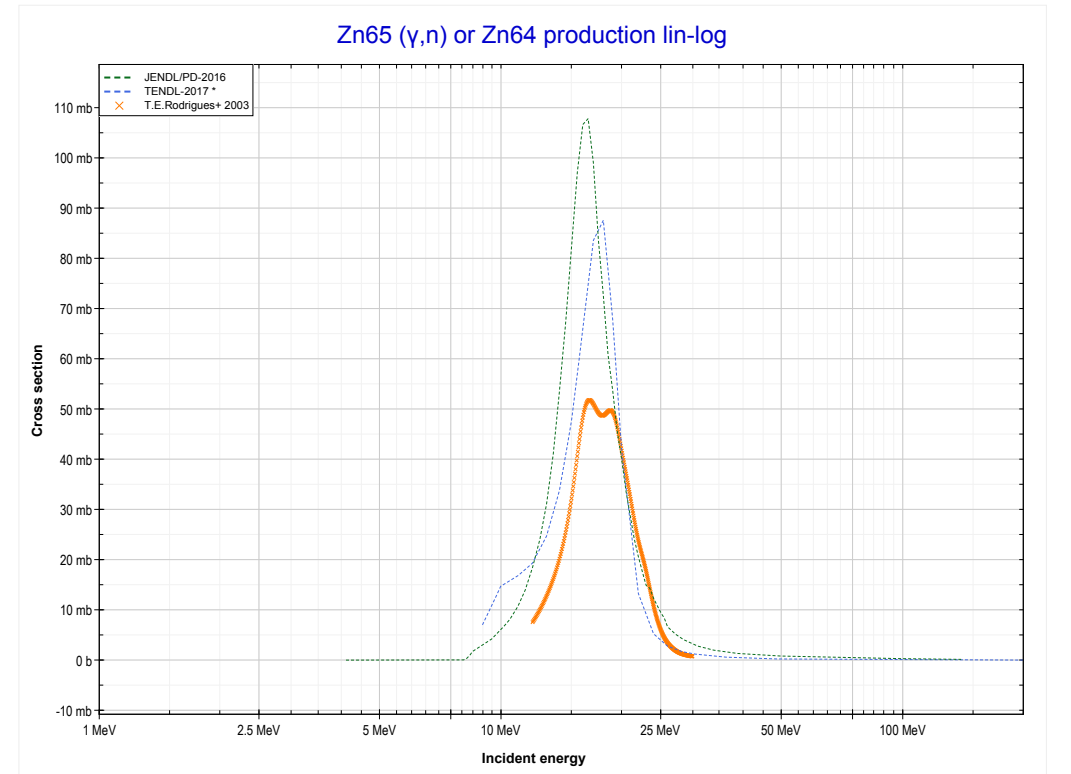
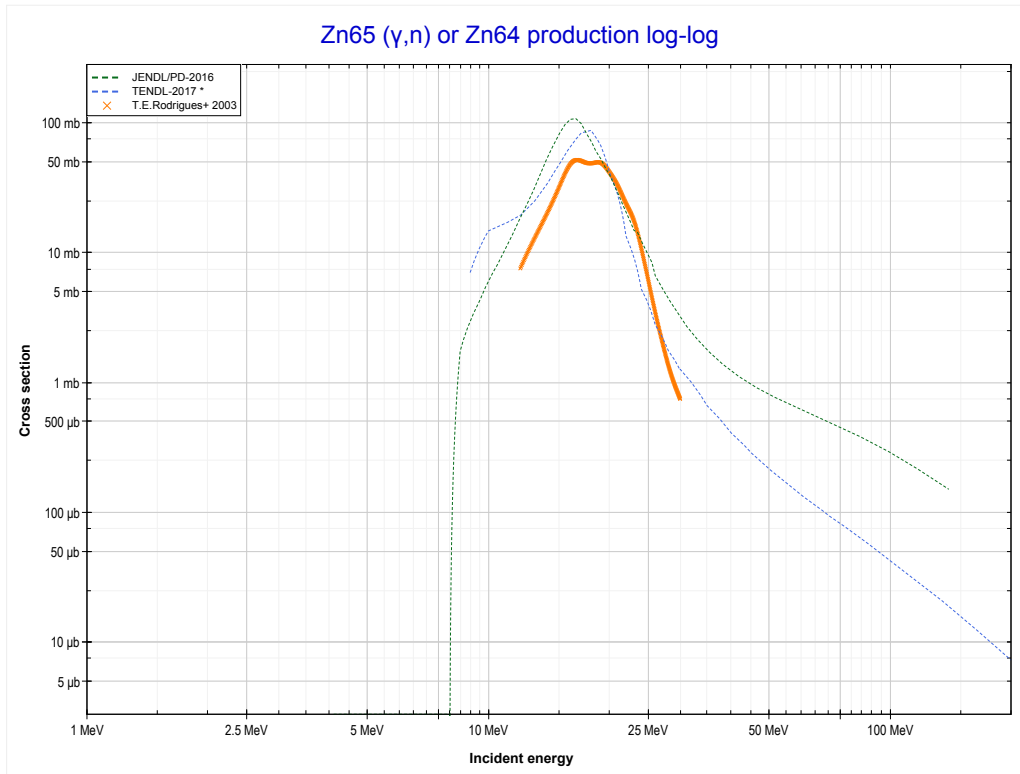
Reaction	Q-Value
Zn64(γ,n)Zn63	-11862.02 keV

<< 29-Cu-65	30-Zn-64	64-Gd-160 >>
<< MT4 (γ, n)	MT28 ($\gamma, n+p$) or MT5 (Cu62 production)	30-Zn-65 MT4 (γ, n) >>



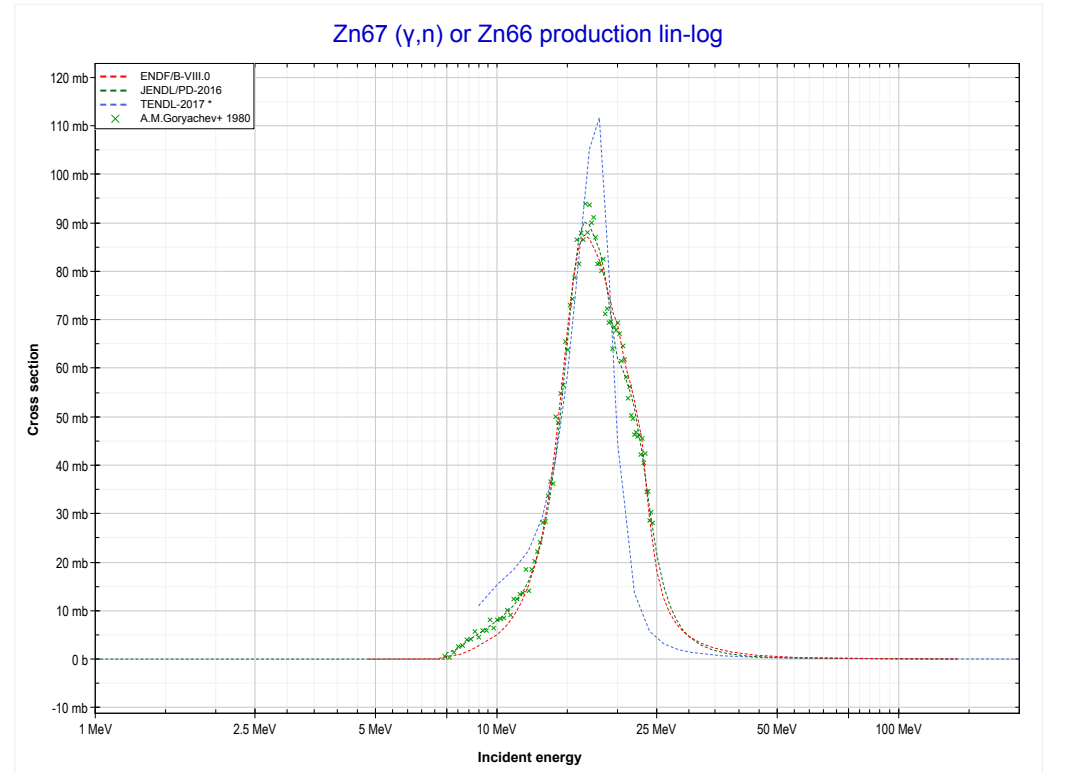
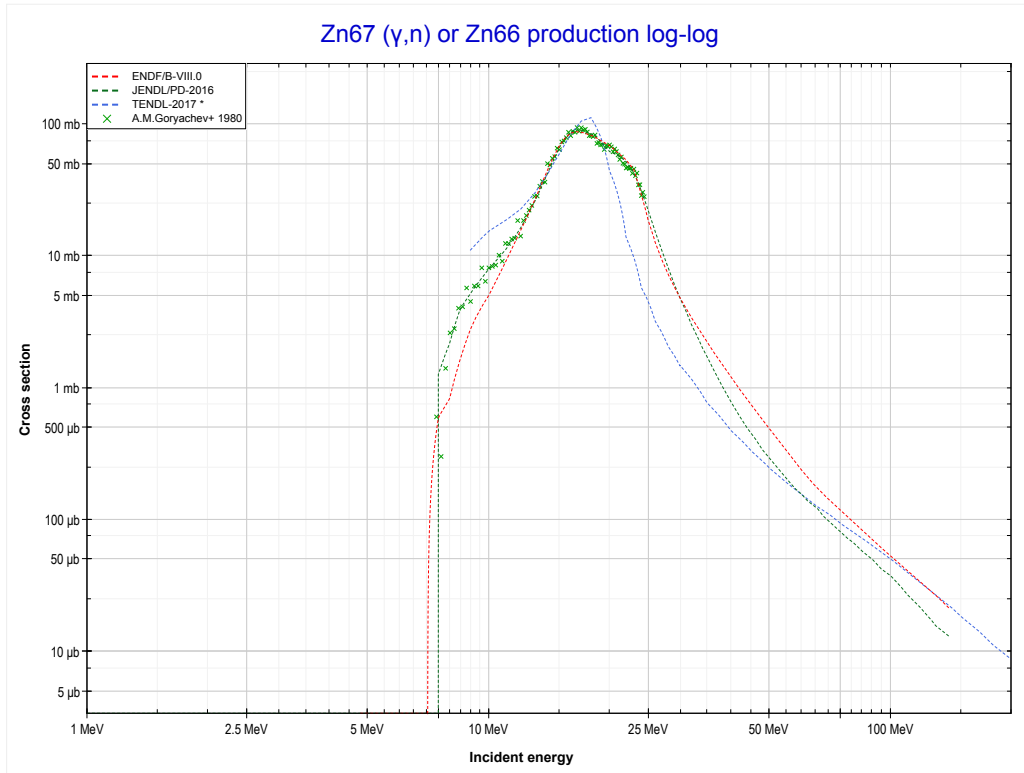
Reaction	Q-Value
Zn64(γ, d)Cu62	-16352.52 keV
Zn64($\gamma, n+p$)Cu62	-18577.09 keV

<< 30-Zn-64	30-Zn-65	30-Zn-67 >>
<< 30-Zn-64 MT28 ($\gamma, n+p$)	MT4 (γ, n) or MT5 (Zn64 production)	30-Zn-67 MT4 (γ, n) >>



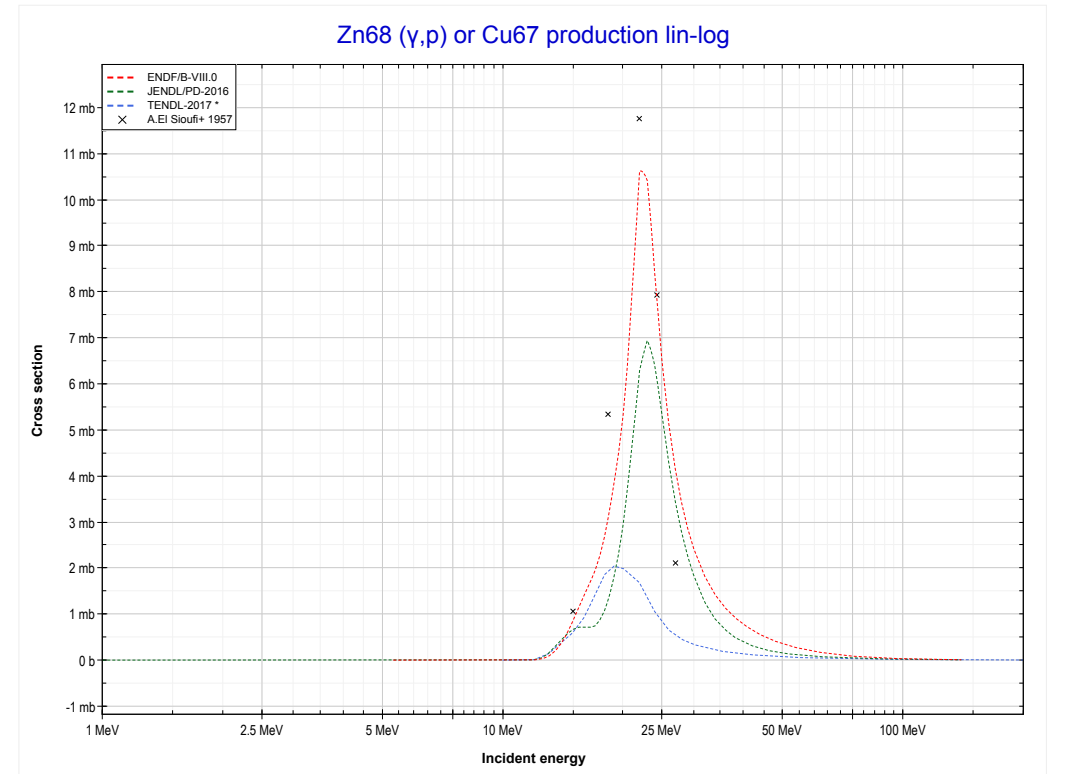
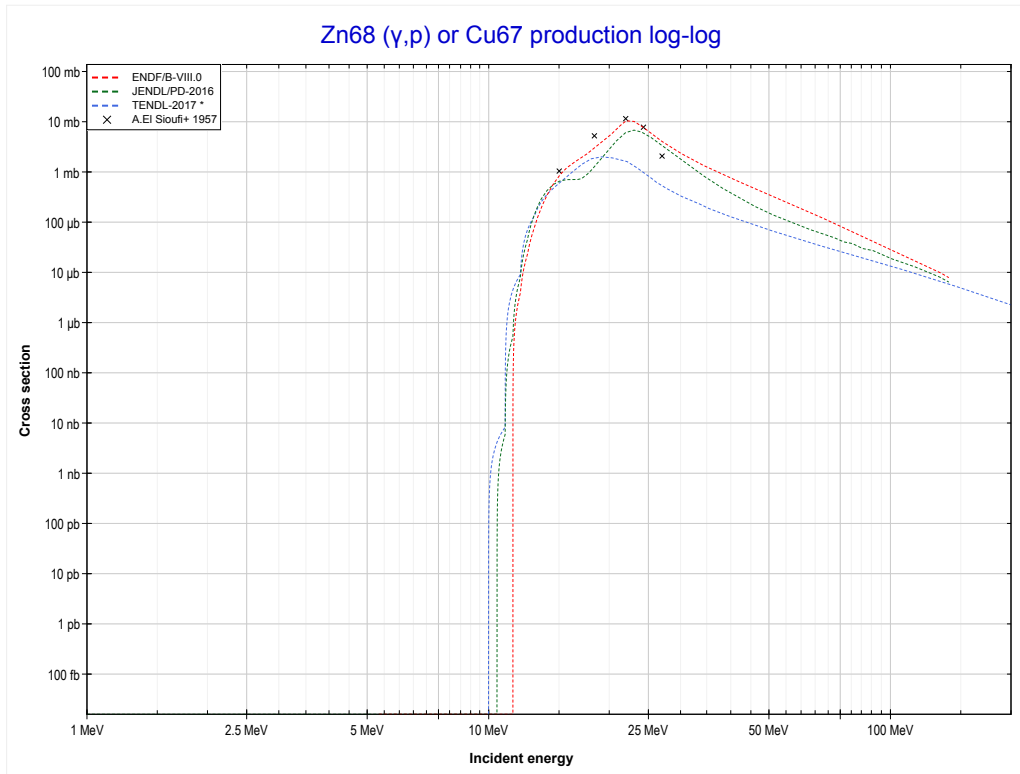
Reaction	Q-Value
Zn65(γ, n)Zn64	-7979.32 keV

<< 30-Zn-65	30-Zn-67	30-Zn-70 >>
<< 30-Zn-65 MT4 (γ,n)	MT4 (γ,n) or MT5 (Zn66 production)	30-Zn-68 MT103 (γ,p) >>



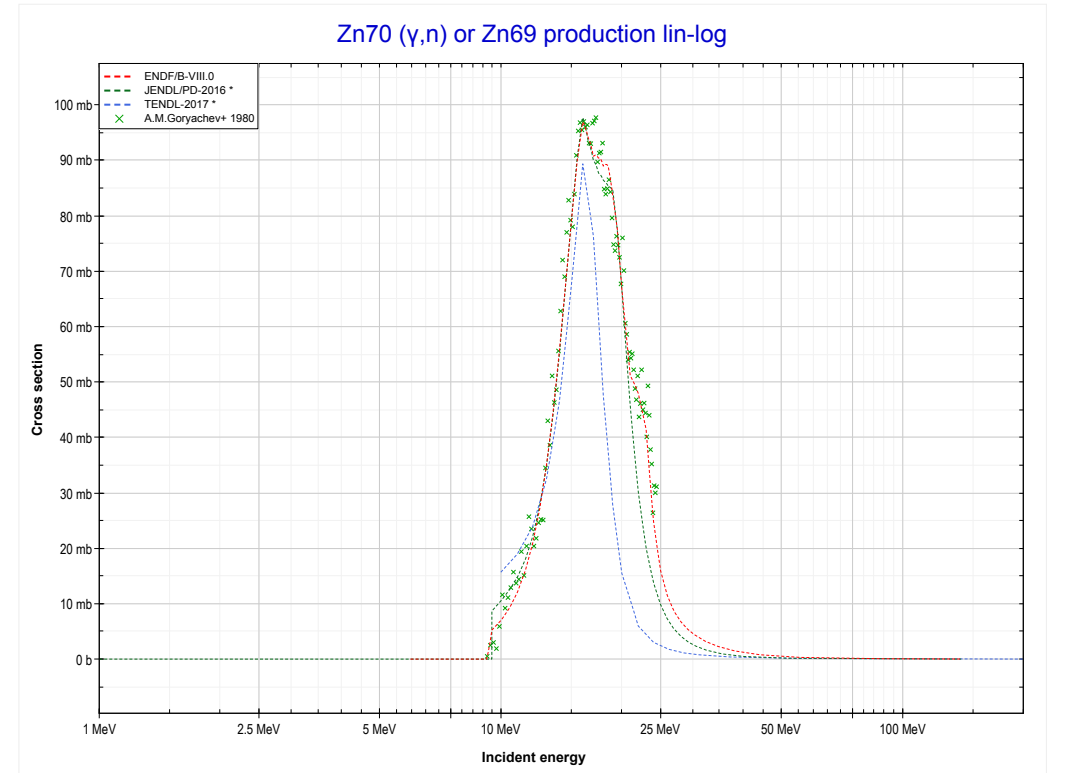
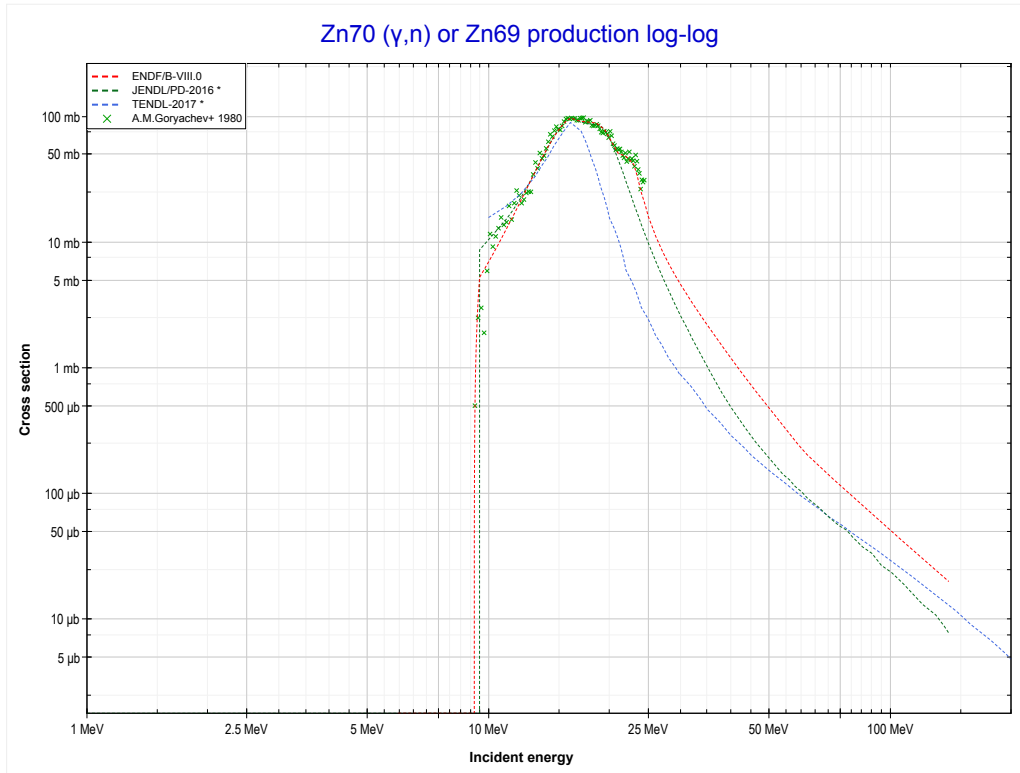
Reaction	Q-Value
Zn67(γ,n)Zn66	-7052.32 keV

<< 29-Cu-65	30-Zn-68	32-Ge-70 >>
<< 30-Zn-67 MT4 (γ, n)	MT103 (γ, p) or MT5 (Cu67 production)	30-Zn-70 MT4 (γ, n) >>



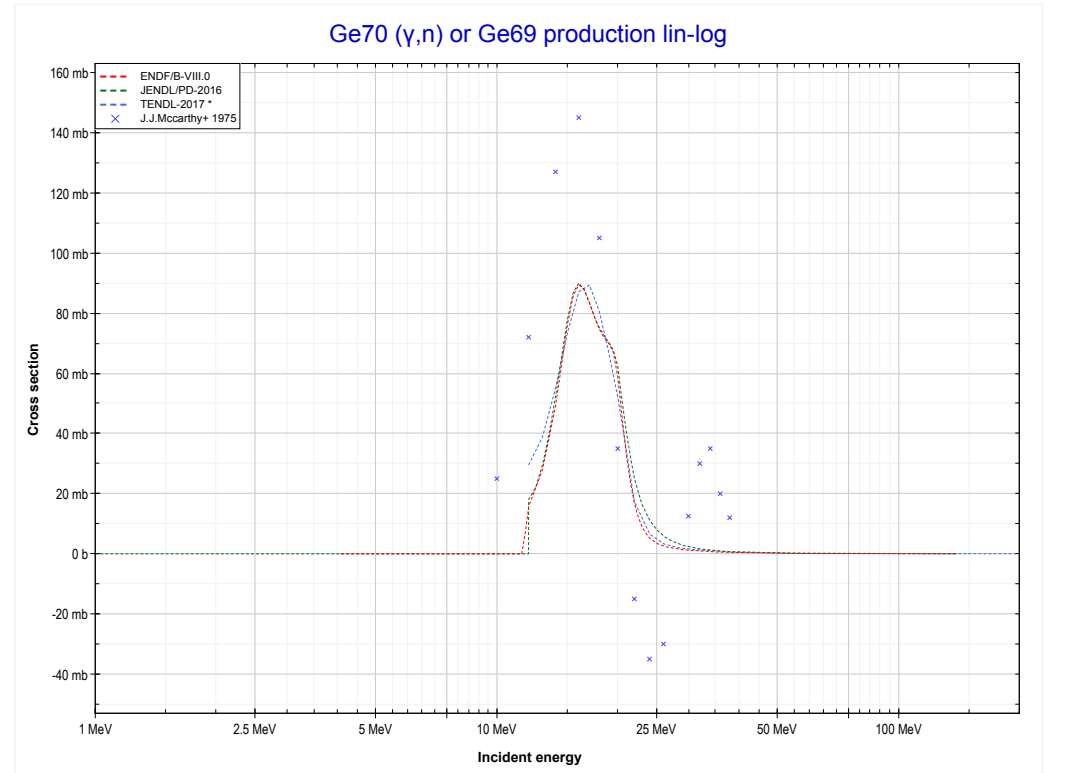
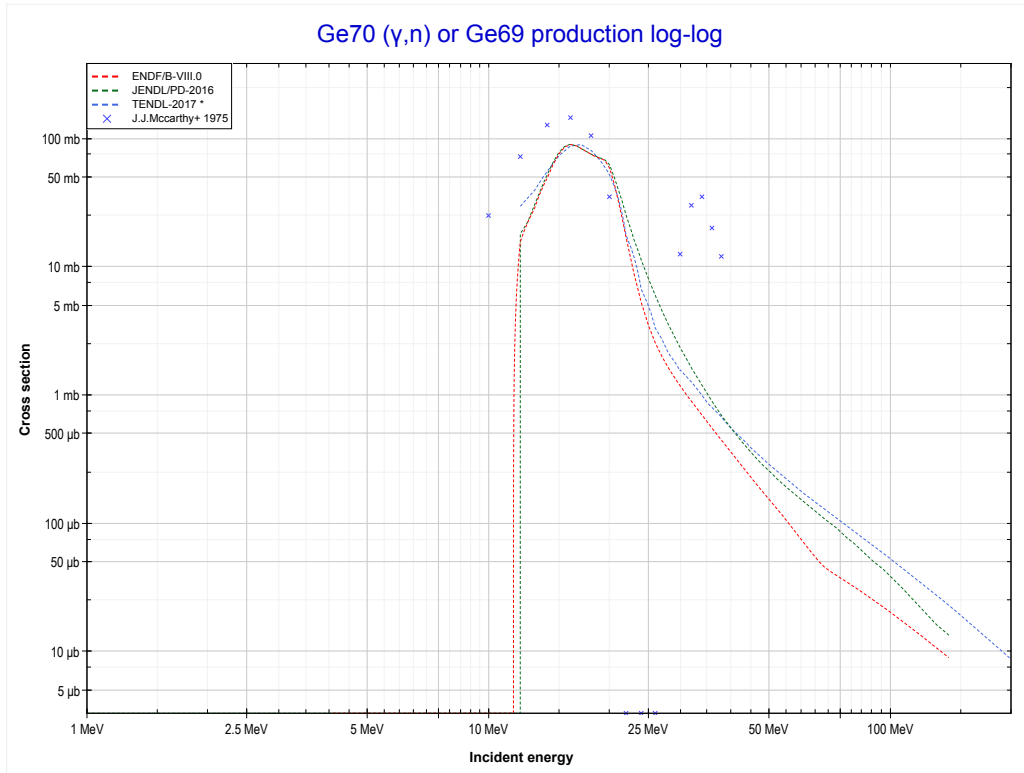
Reaction	Q-Value
Zn68(γ, p)Cu67	-9976.97 keV

<< 30-Zn-67	30-Zn-70	32-Ge-70 >>
<< 30-Zn-68 MT103 (γ,p)	MT4 (γ,n) or MT5 (Zn69 production)	32-Ge-70 MT4 (γ,n) >>



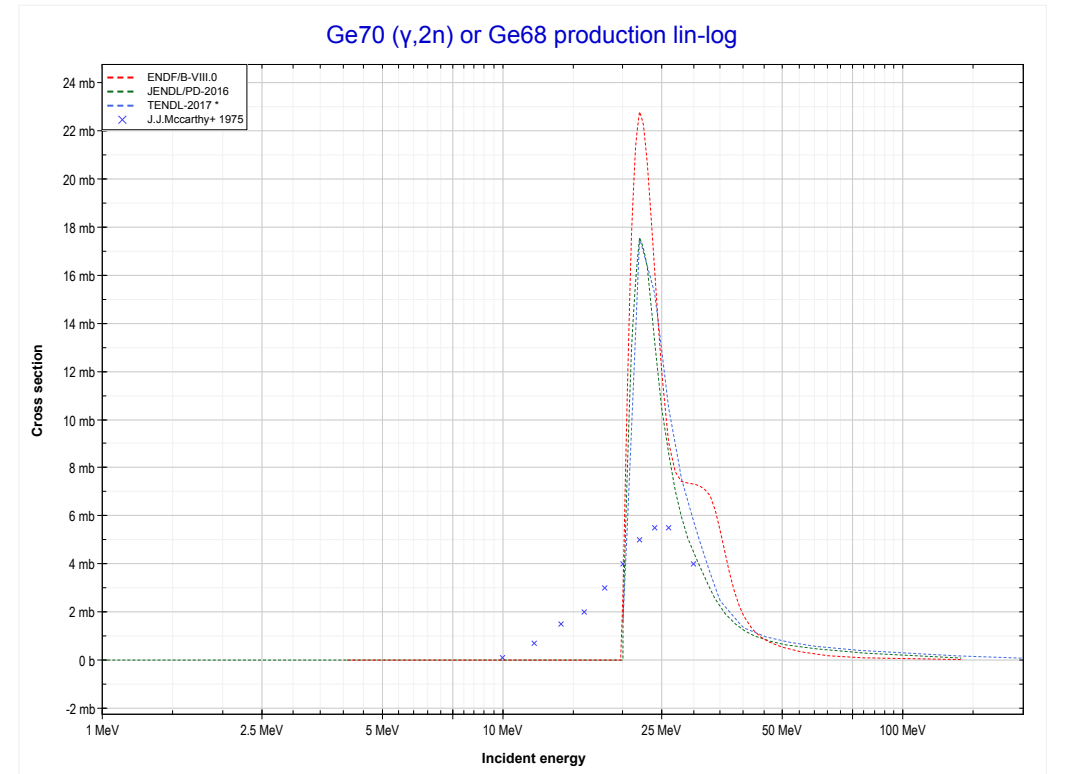
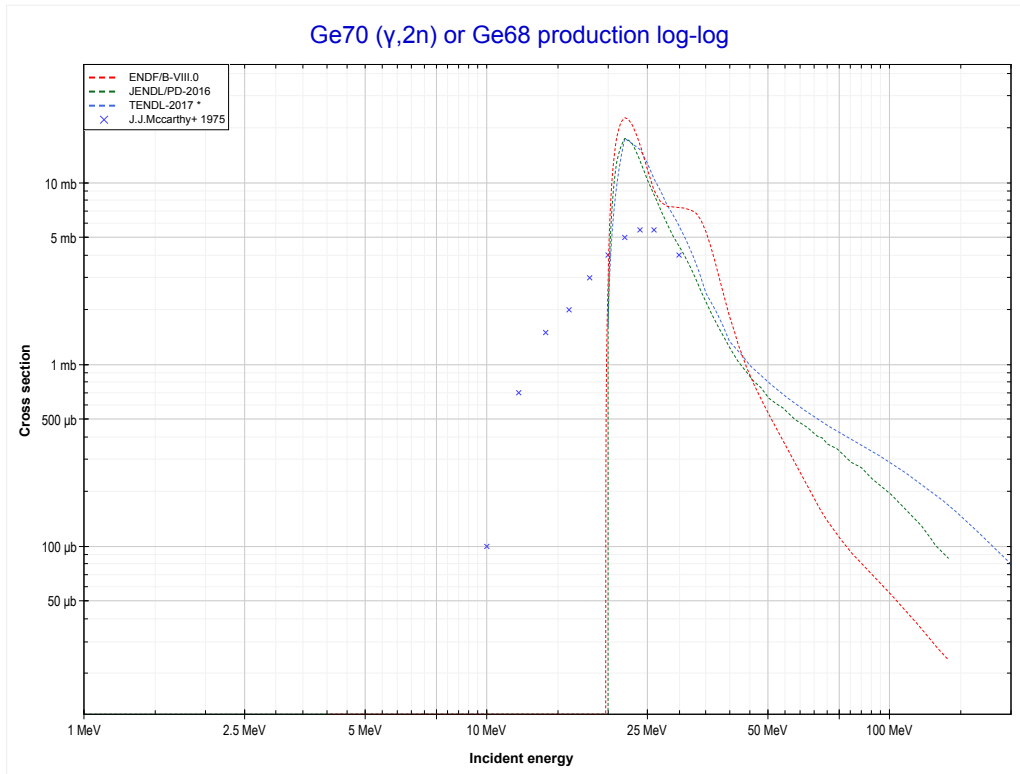
Reaction	Q-Value
Zn70(γ,n)Zn69	-9218.42 keV

<< 30-Zn-70	32-Ge-70	32-Ge-72 >>
<< 30-Zn-70 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ge69 production)	MT16 (γ,2n) >>



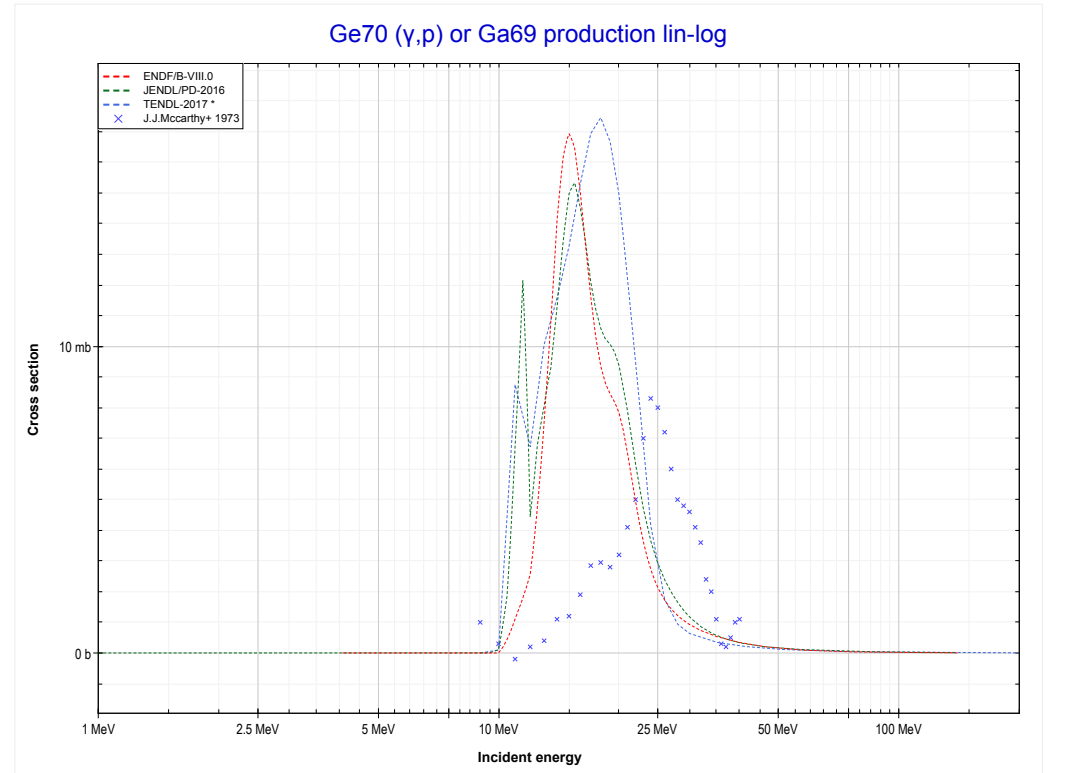
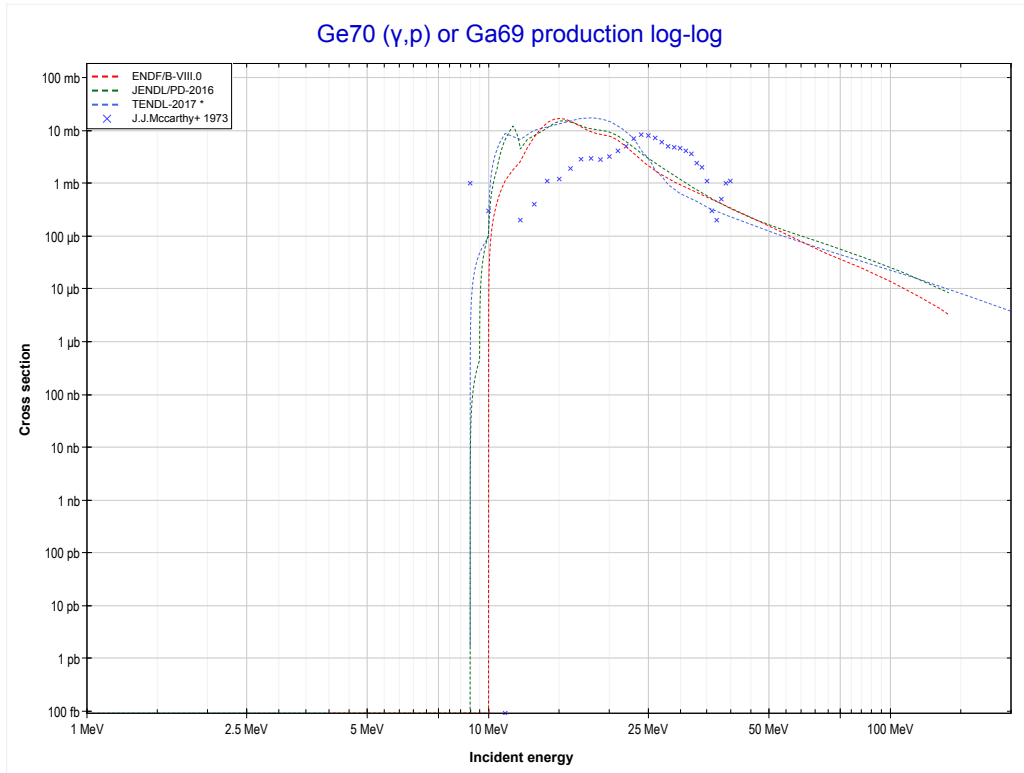
Reaction	Q-Value
Ge70(γ,n)Ge69	-11532.42 keV

<< 29-Cu-63	32-Ge-70	32-Ge-72 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ge68 production)	MT103 (γ,p) >>



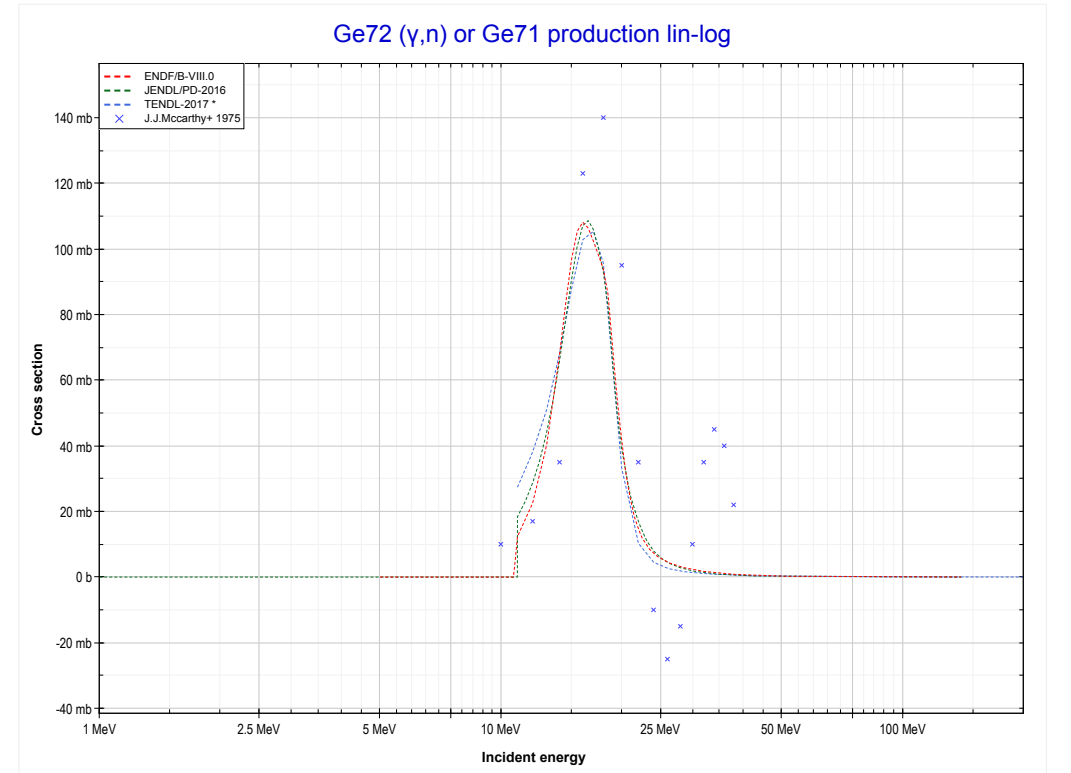
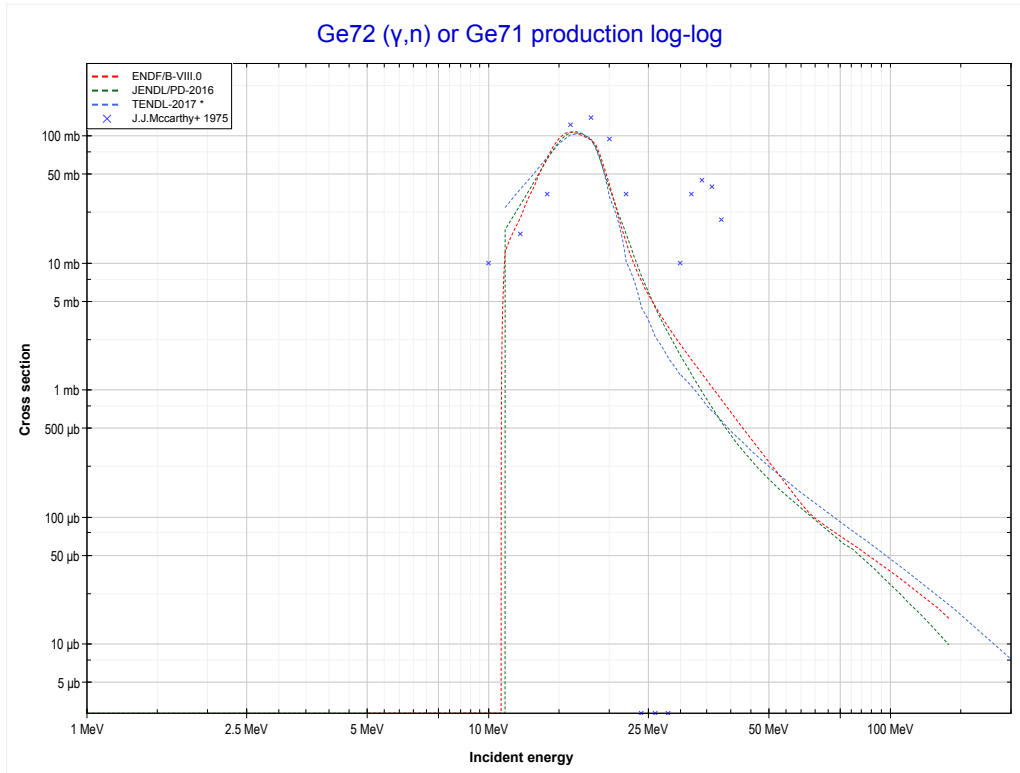
Reaction	Q-Value
Ge70($\gamma,2n$)Ge68	-19725.63 keV

<< 30-Zn-68	32-Ge-70	39-Y-89 >>
<< MT16 ($\gamma,2n$)	MT103 (γ,p) or MT5 (Ga69 production)	32-Ge-72 MT4 (γ,n) >>



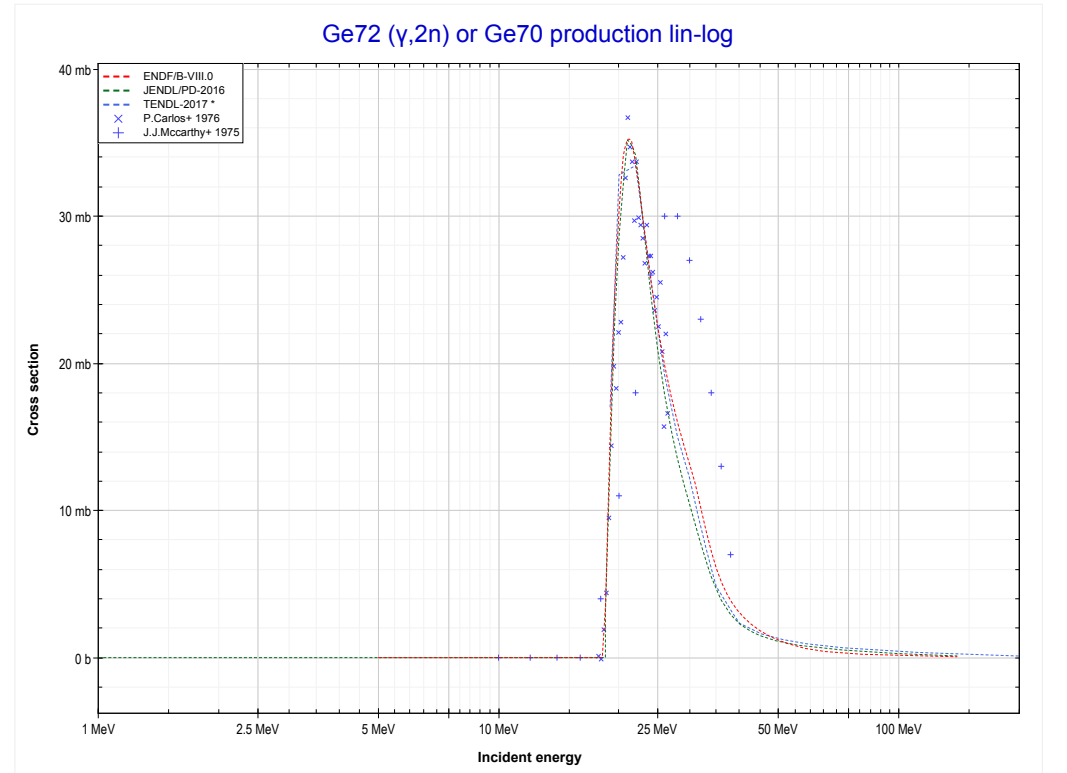
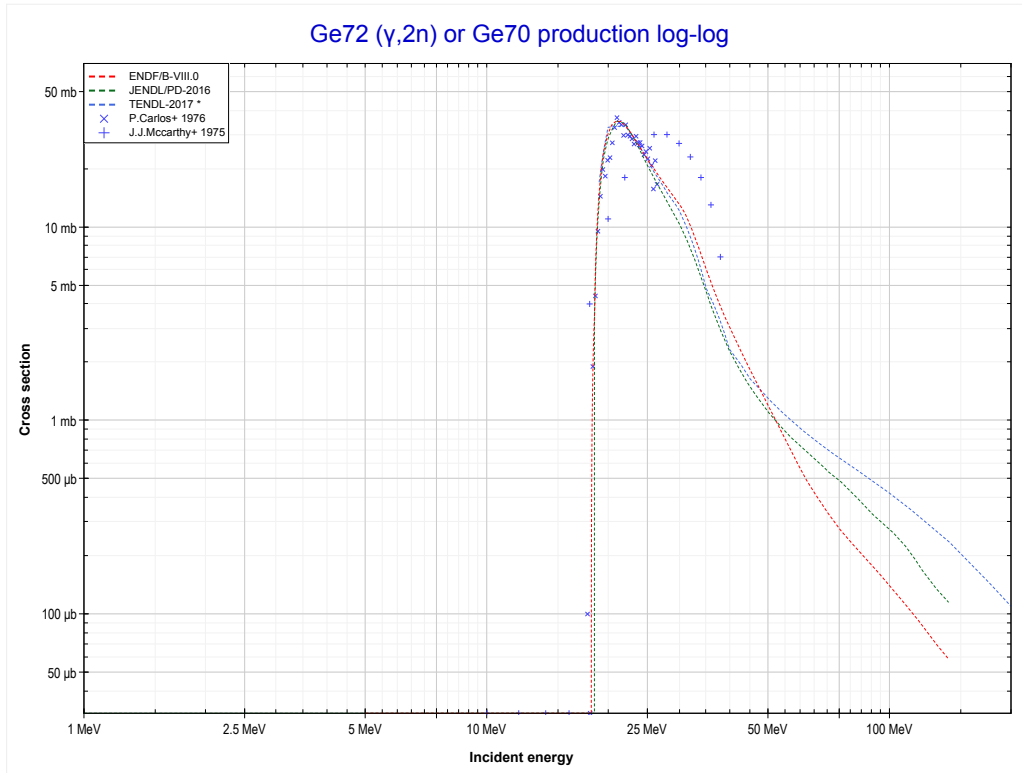
Reaction	Q-Value
Ge70(γ,p)Ga69	-8522.97 keV

<< 32-Ge-70	32-Ge-72	32-Ge-73 >>
<< 32-Ge-70 MT103 (γ, p)	MT4 (γ, n) or MT5 (Ge71 production)	MT16 ($\gamma, 2n$) >>



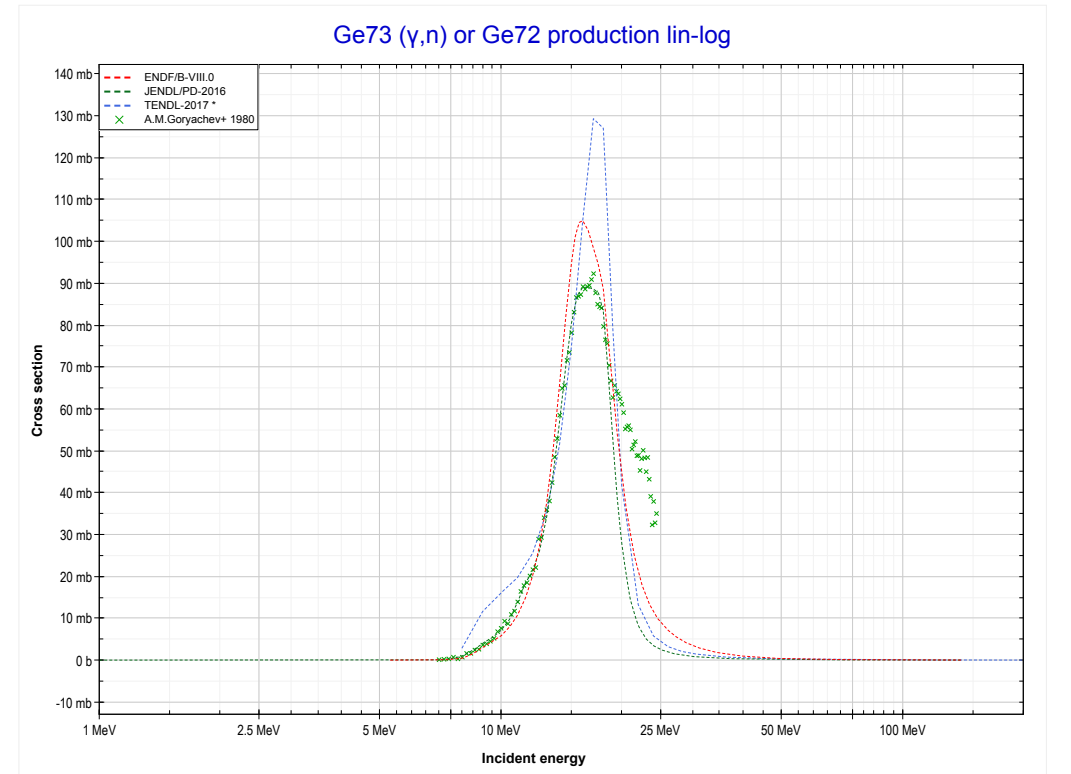
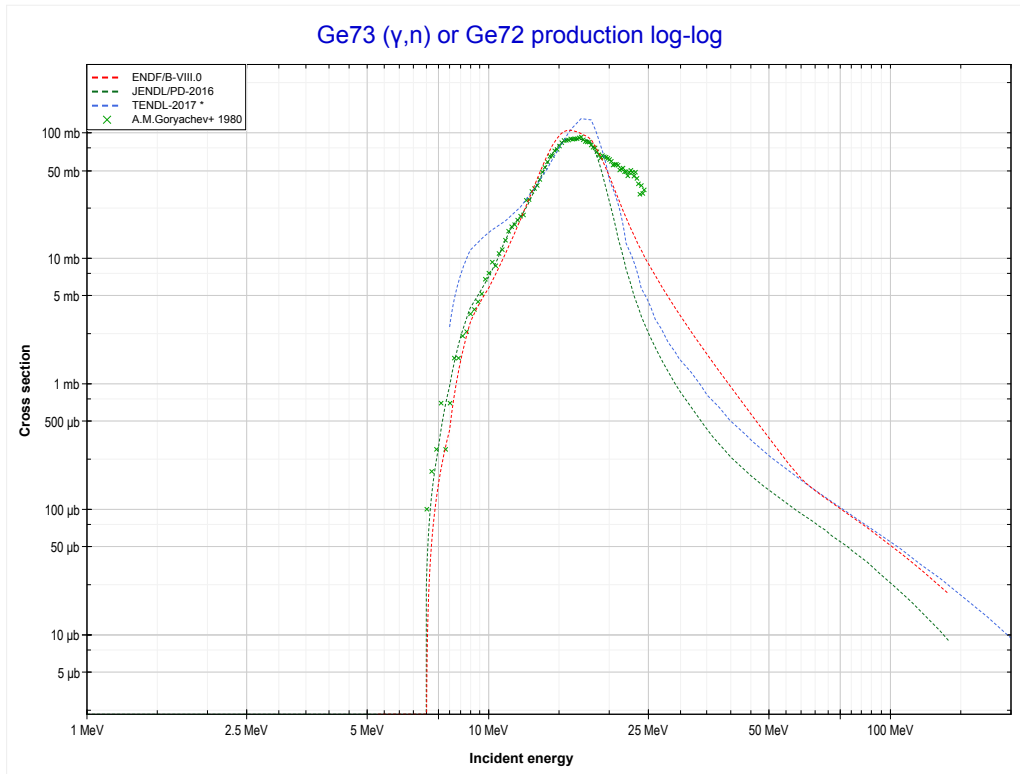
Reaction	Q-Value
Ge72(γ, n)Ge71	-10750.72 keV

<< 32-Ge-70	32-Ge-72	32-Ge-74 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Ge70 production)	32-Ge-73 MT4 (γ, n) >>



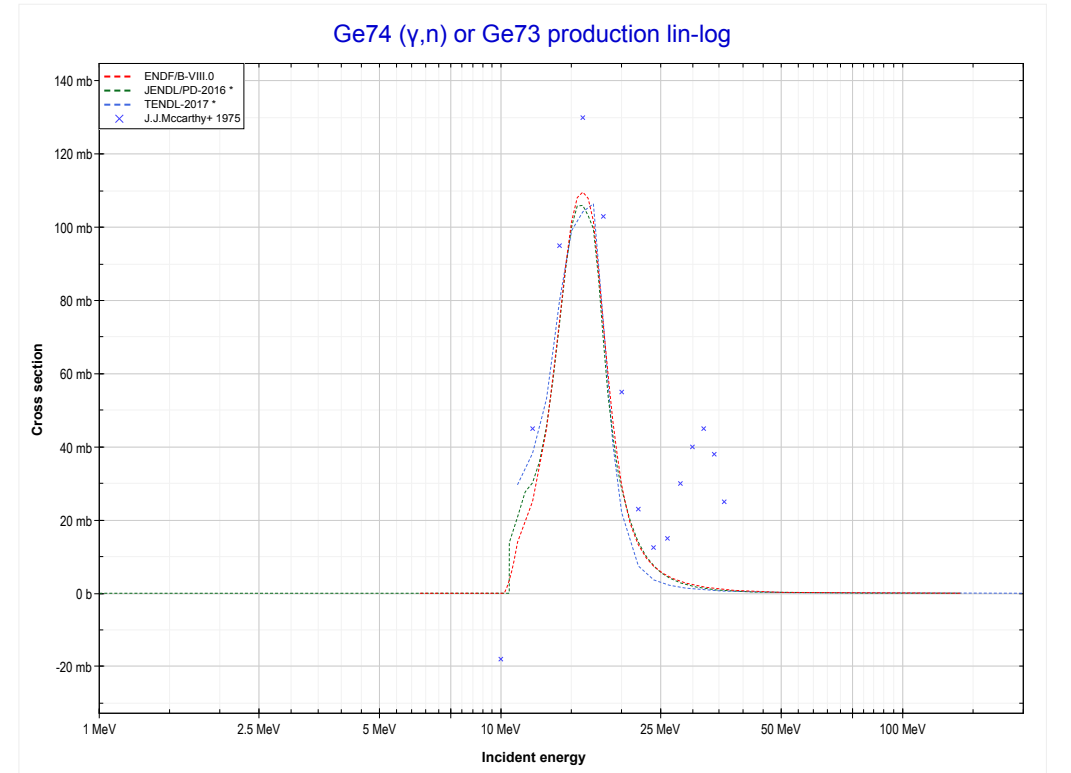
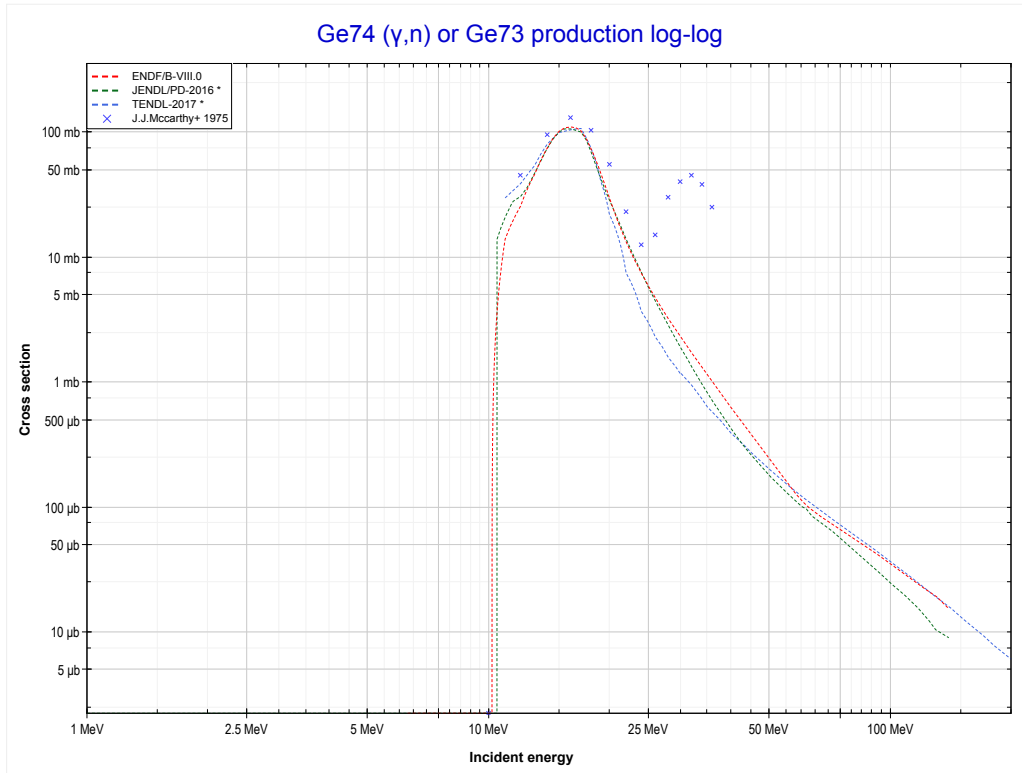
Reaction	Q-Value
Ge72($\gamma, 2n$)Ge70	-18166.73 keV

<< 32-Ge-72	32-Ge-73	32-Ge-74 >>
<< 32-Ge-72 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Ge72 production)	32-Ge-74 MT4 (γ,n) >>



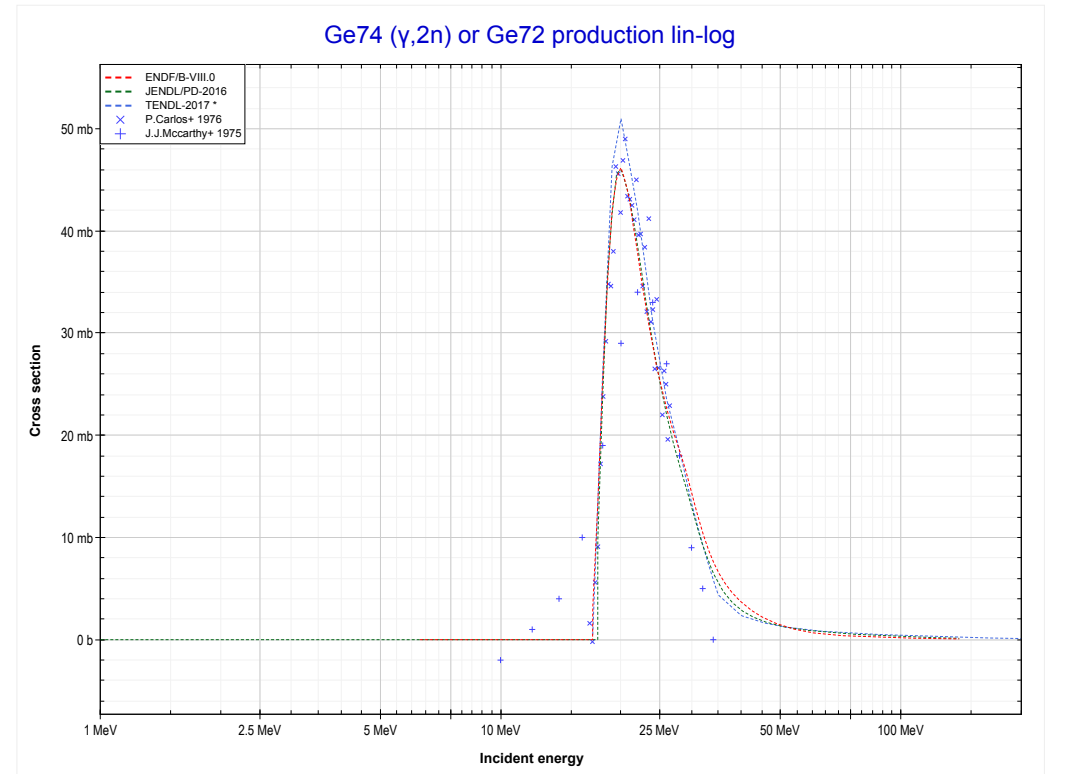
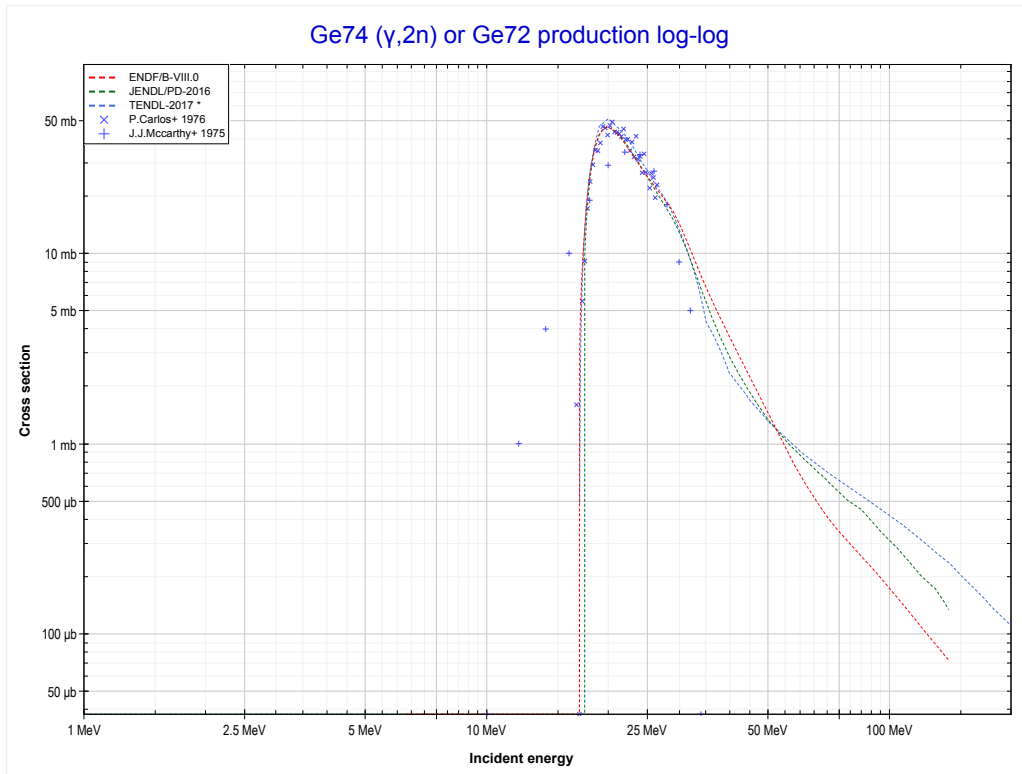
Reaction	Q-Value
Ge73(γ,n)Ge72	-6782.94 keV

<< 32-Ge-73	32-Ge-74	32-Ge-76 >>
<< 32-Ge-73 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ge73 production)	MT16 (γ,2n) >>



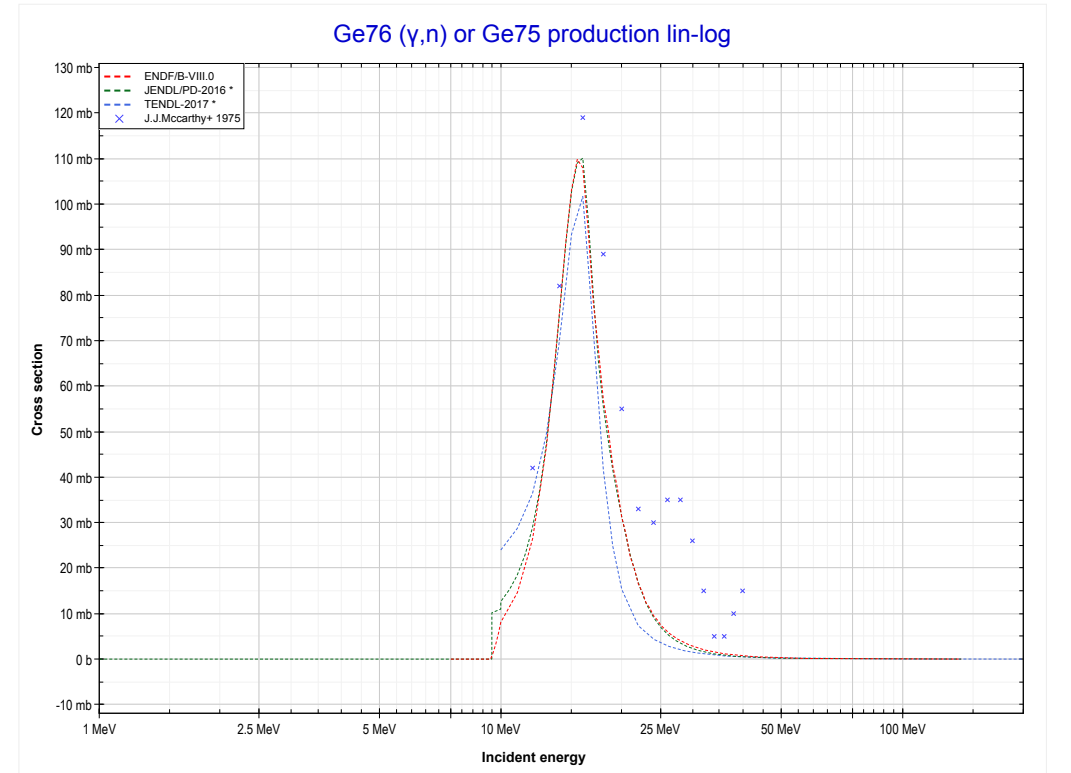
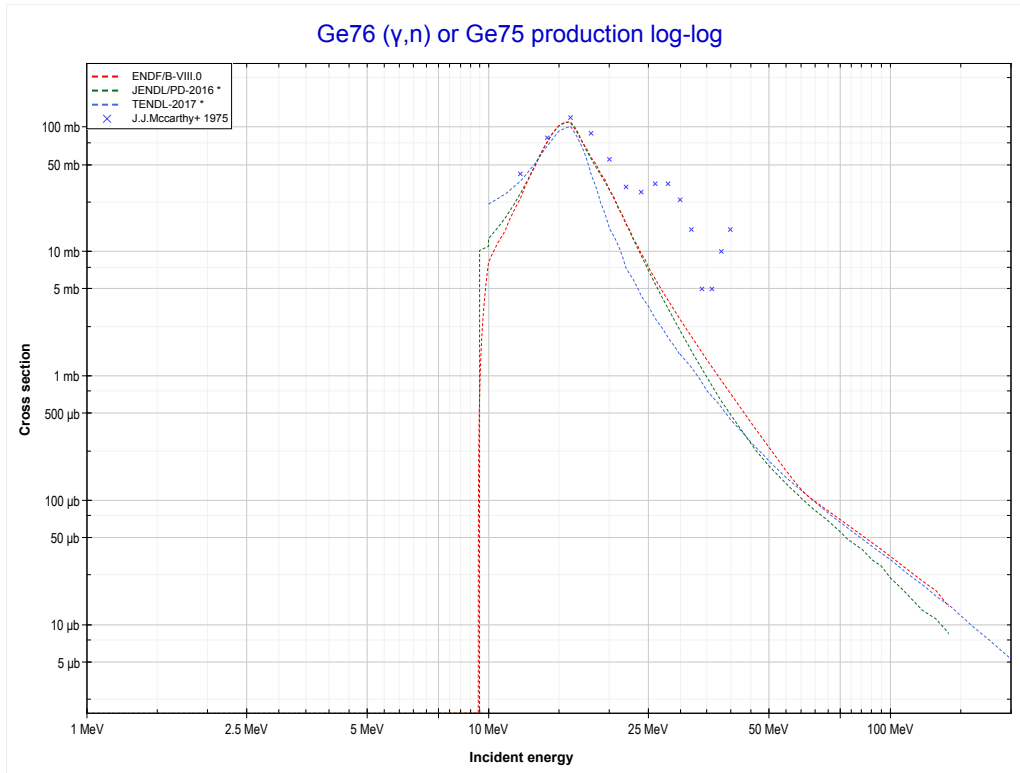
Reaction	Q-Value
Ge74(γ,n)Ge73	-10196.24 keV

<< 32-Ge-72	32-Ge-74	32-Ge-76 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ge72 production)	32-Ge-76 MT4 (γ,n) >>



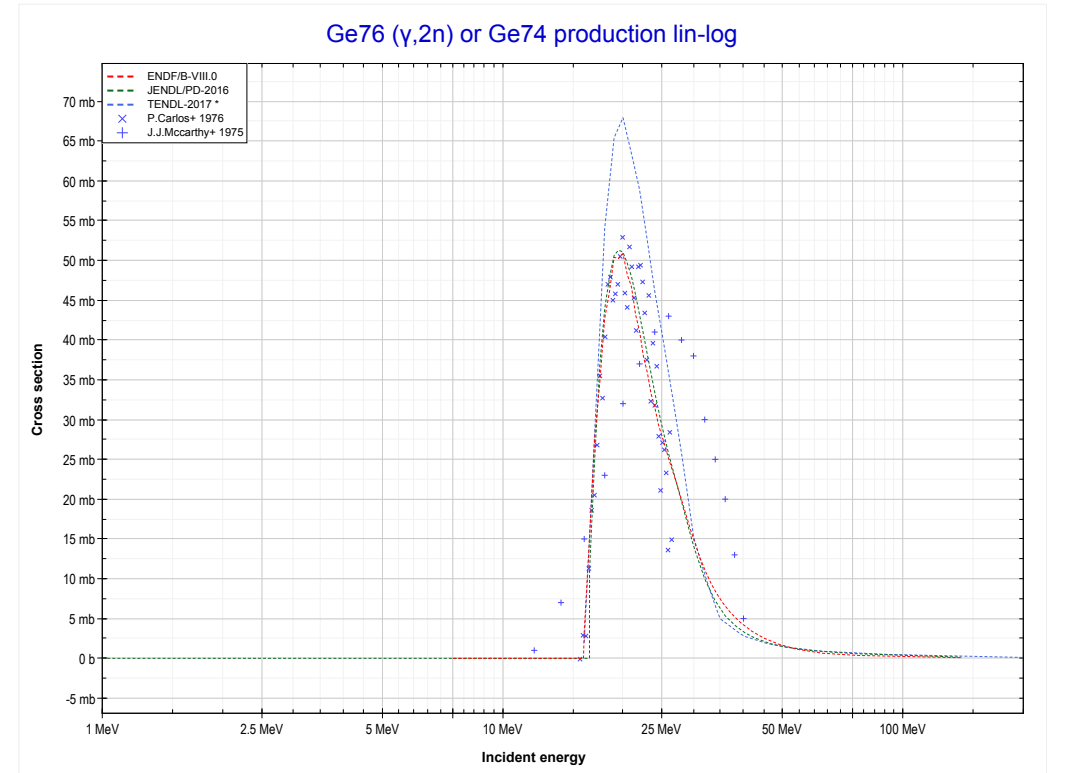
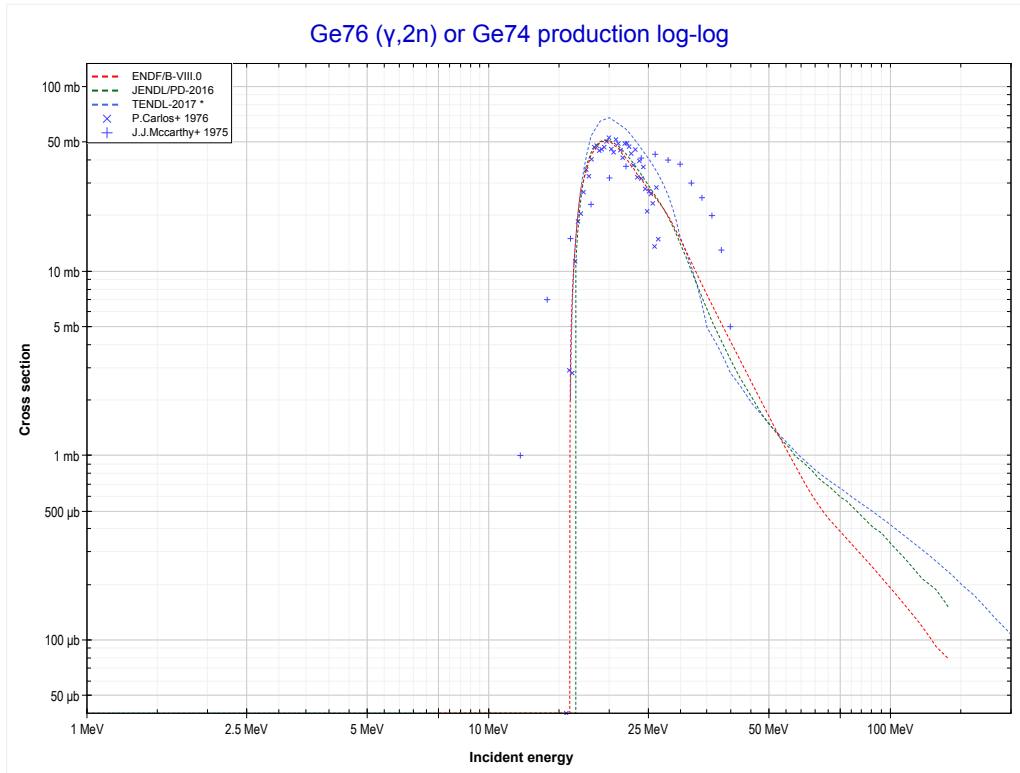
Reaction	Q-Value
Ge74($\gamma,2n$)Ge72	-16979.18 keV

<< 32-Ge-74	32-Ge-76	34-Se-74 >>
<< 32-Ge-74 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Ge75 production)	MT16 ($\gamma,2n$) >>



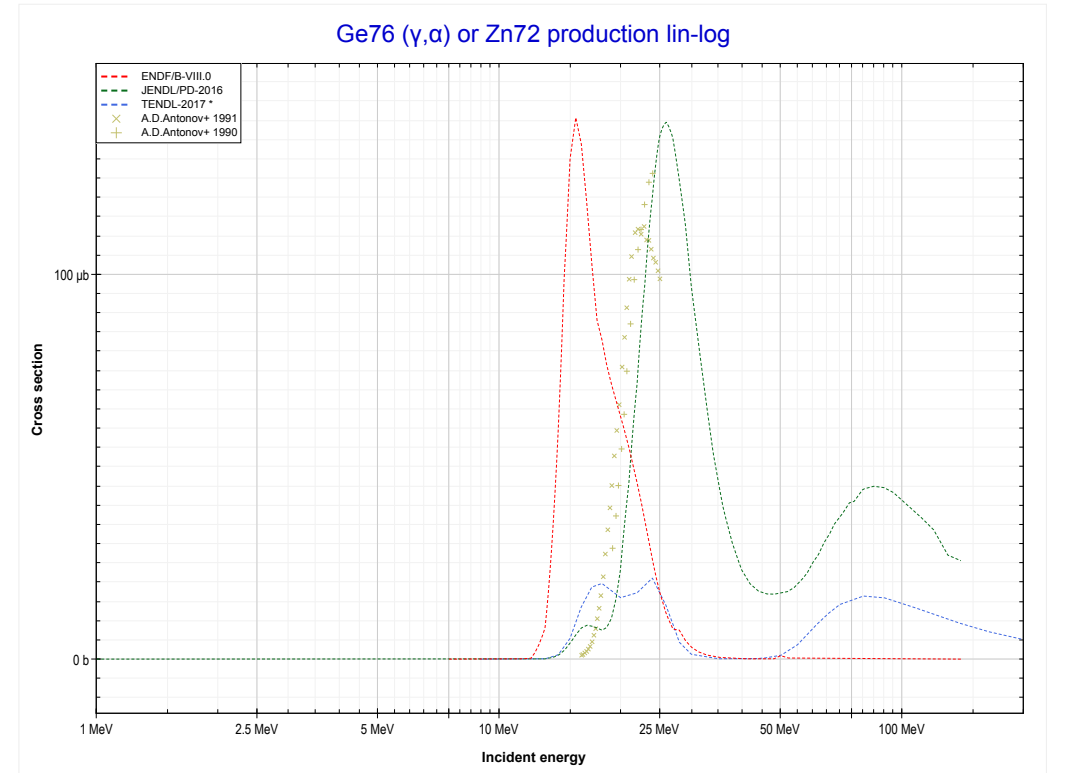
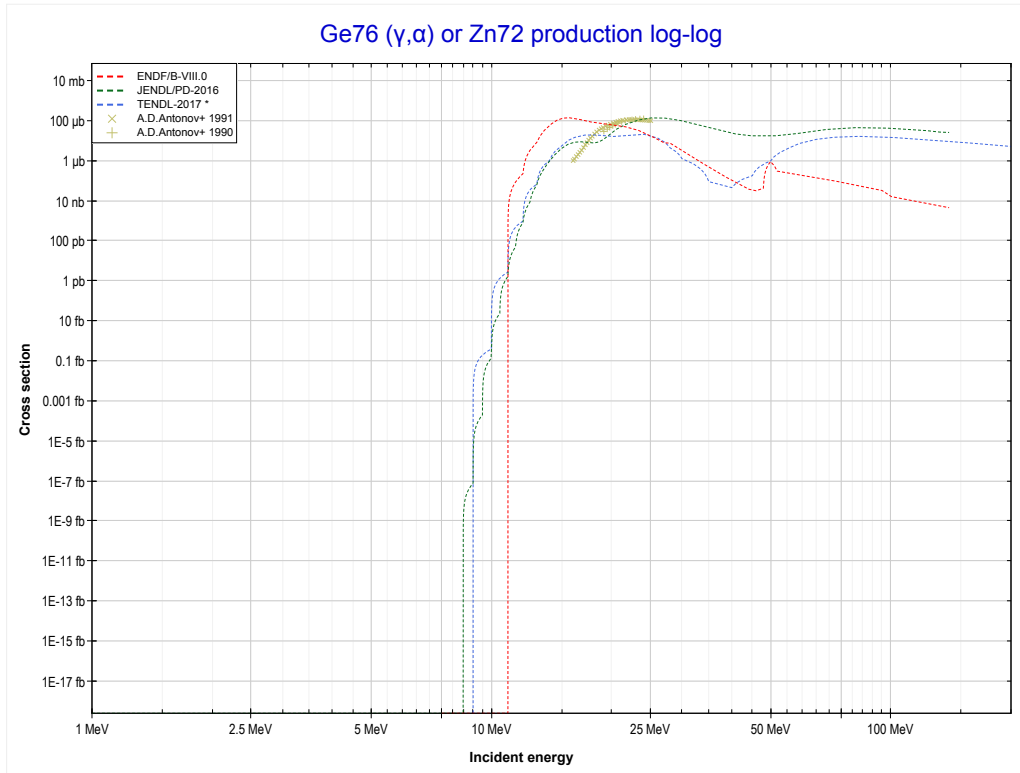
Reaction	Q-Value
Ge76(γ,n)Ge75	-9427.25 keV

<< 32-Ge-74	32-Ge-76	33-As-75 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ge74 production)	MT107 (γ,α) >>



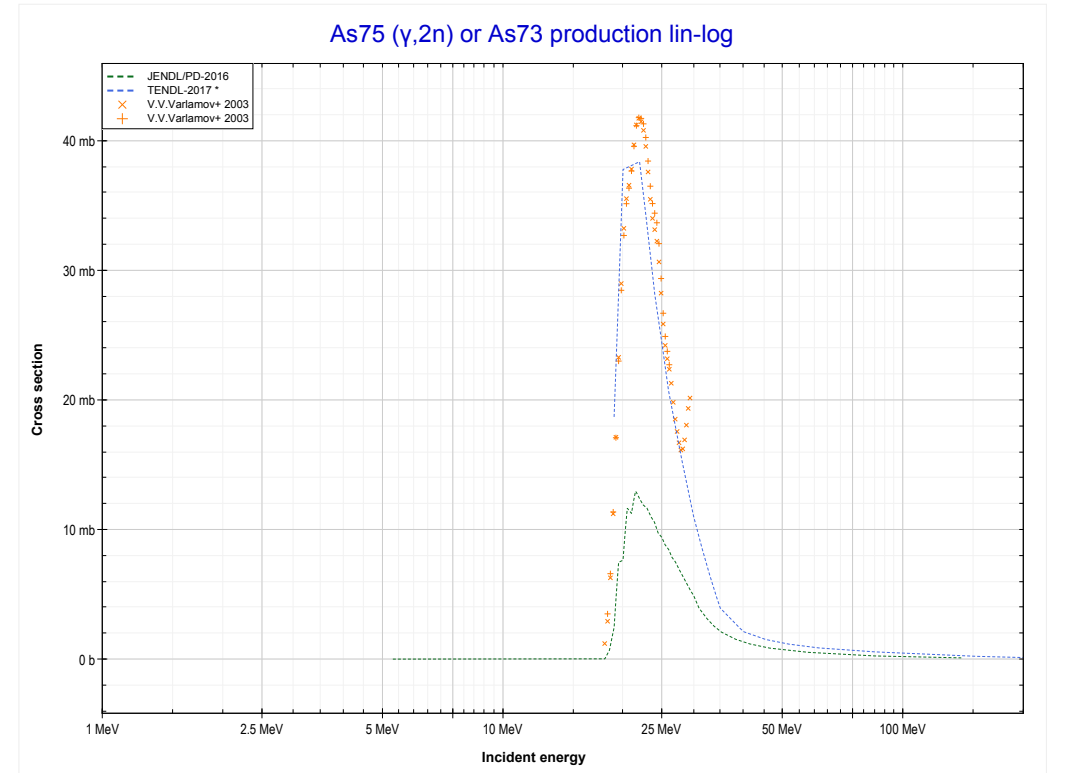
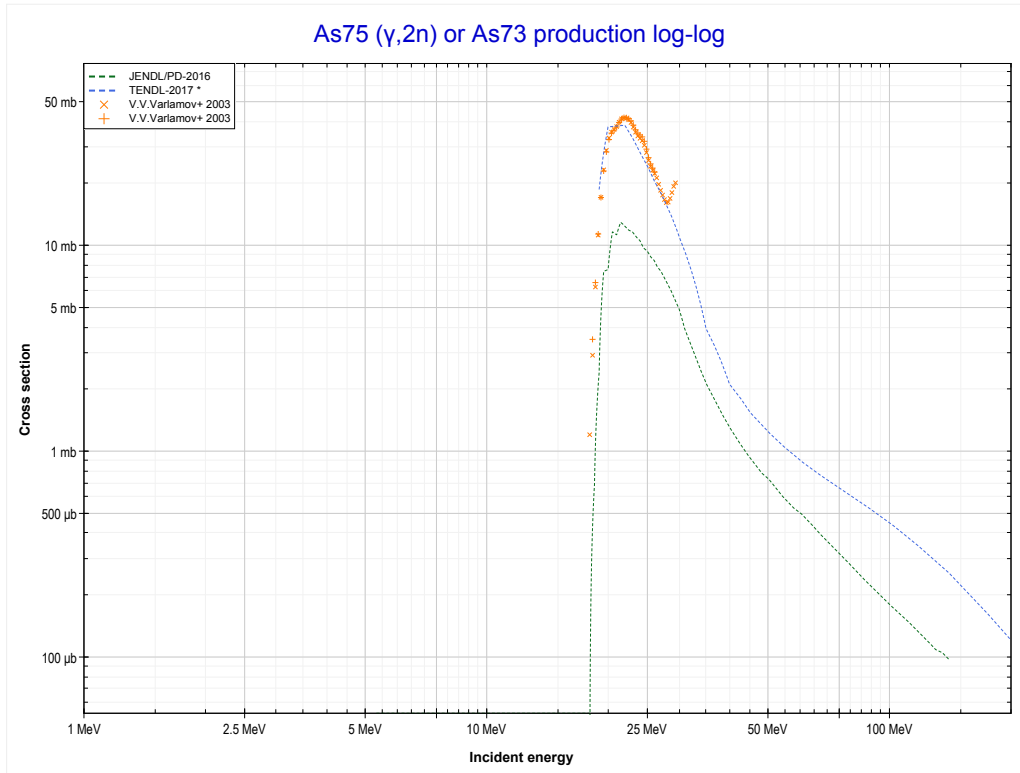
Reaction	Q-Value
Ge76($\gamma,2n$)Ge74	-15933.08 keV

<< 29-Cu-65	32-Ge-76	37-Rb-87 >>
<< MT16 ($\gamma,2n$)	MT107 (γ,α) or MT5 (Zn72 production)	33-As-75 MT16 ($\gamma,2n$) >>



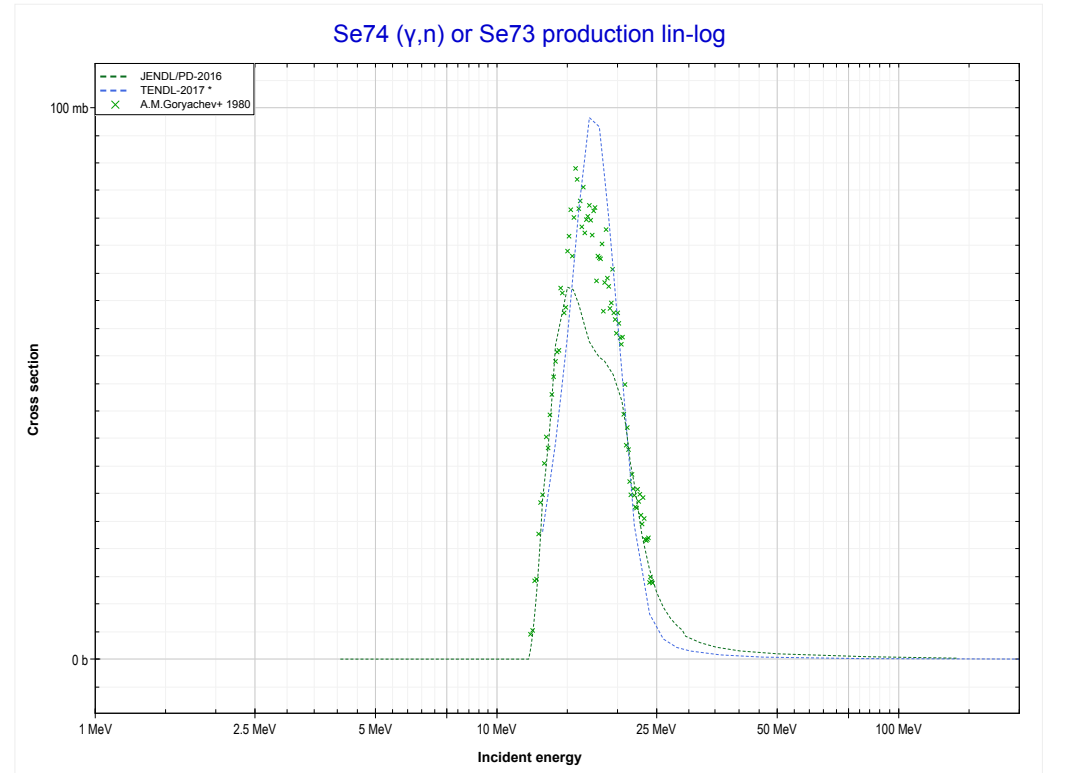
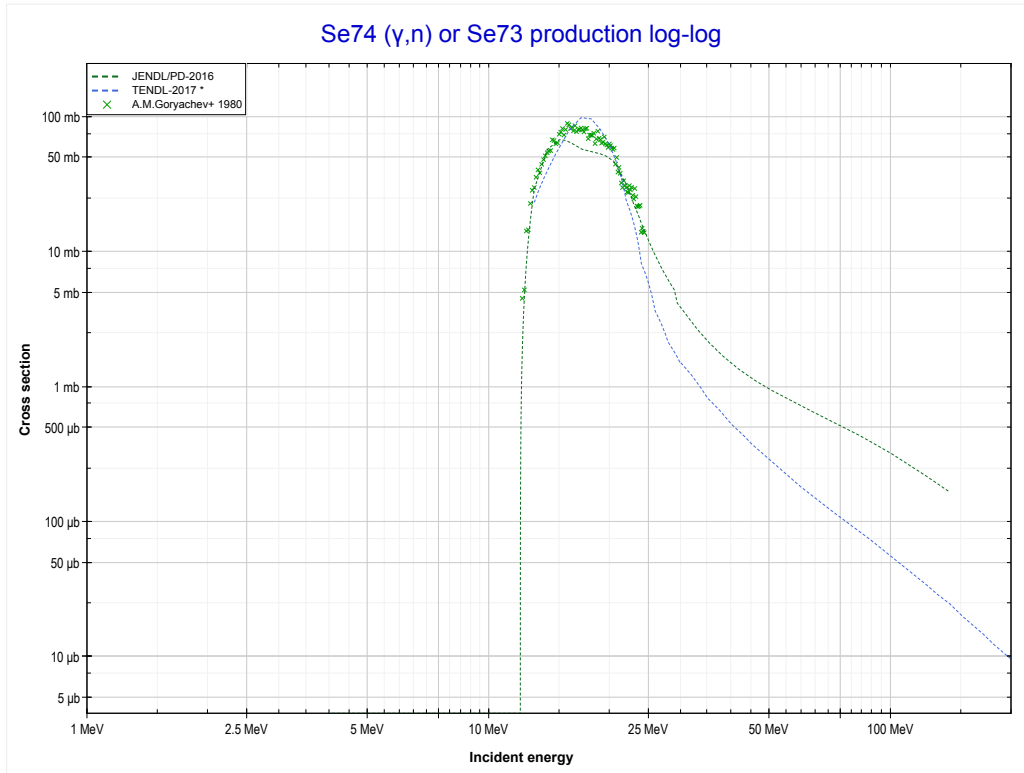
Reaction	Q-Value
$^{76}\text{Ge}(\gamma,\alpha)^{72}\text{Zn}$	-7492.30 keV
$^{76}\text{Ge}(\gamma,p+t)^{72}\text{Zn}$	-27306.17 keV
$^{76}\text{Ge}(\gamma,n+^3\text{He})^{72}\text{Zn}$	-28069.92 keV
$^{76}\text{Ge}(\gamma,2d)^{72}\text{Zn}$	-31338.83 keV
$^{76}\text{Ge}(\gamma,n+p+d)^{72}\text{Zn}$	-33563.40 keV
$^{76}\text{Ge}(\gamma,2n+2p)^{72}\text{Zn}$	-35787.96 keV

<< 32-Ge-76	33-As-75	34-Se-76 >>
<< 32-Ge-76 MT107 (γ,α)	MT16 ($\gamma,2n$) or MT5 (As73 production)	34-Se-74 MT4 (γ,n) >>



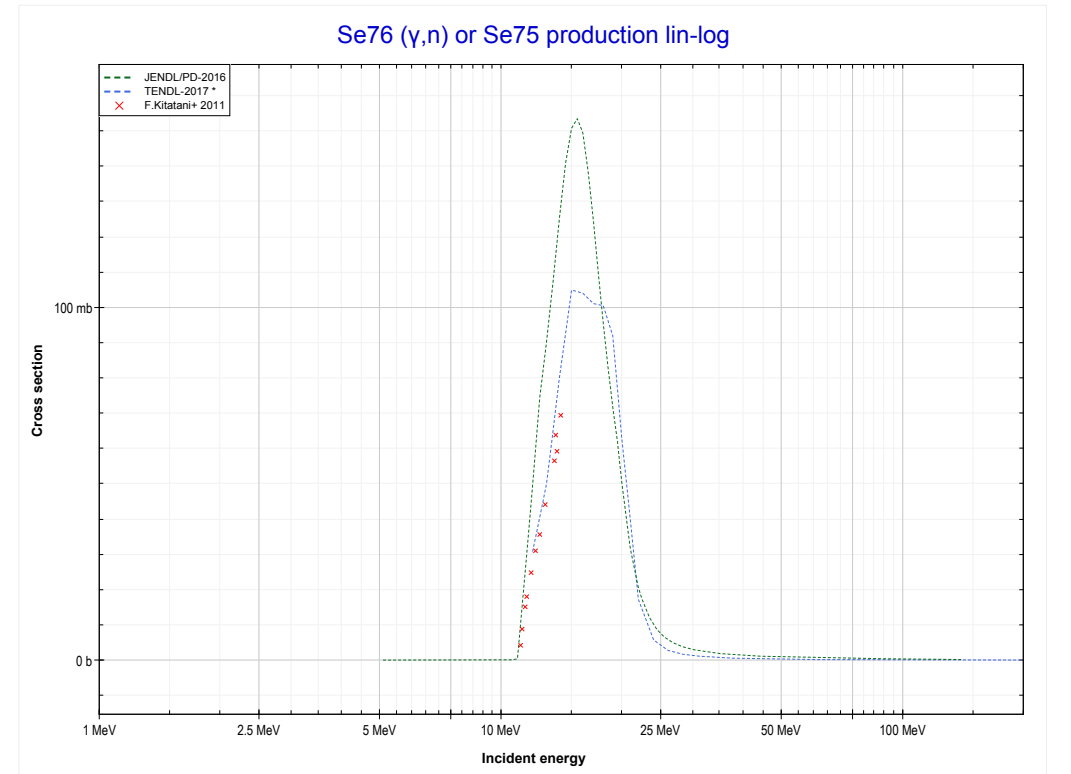
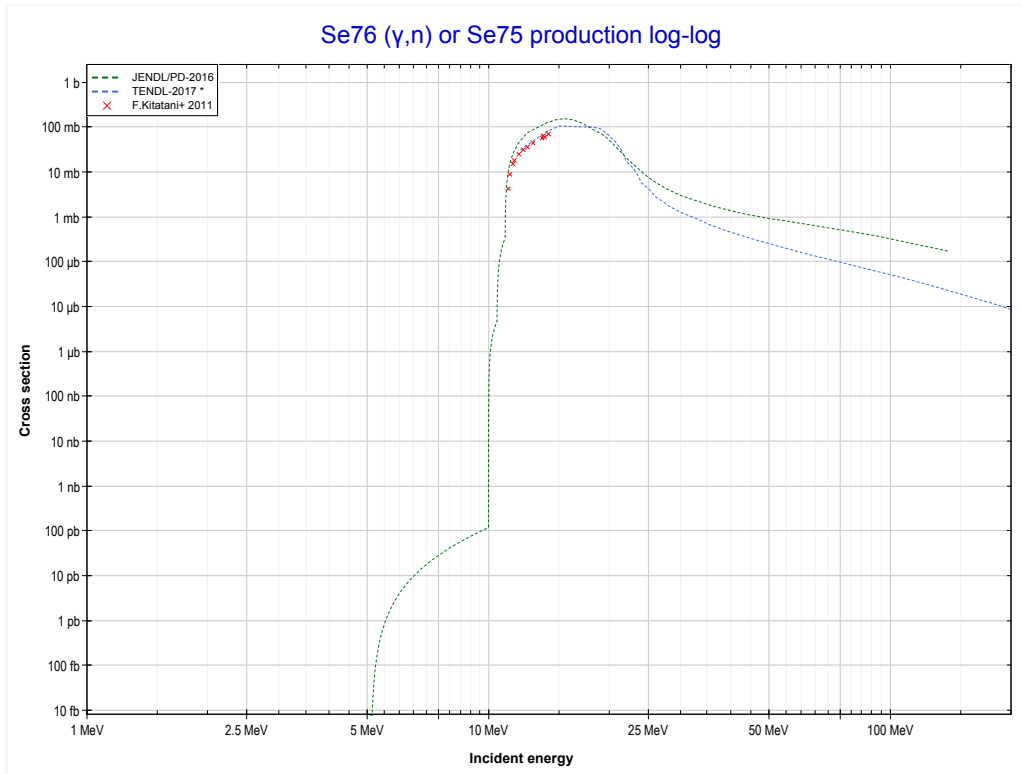
Reaction	Q-Value
As75($\gamma,2n$)As73	-18223.83 keV

<< 32-Ge-76	34-Se-74	34-Se-76 >>
<< 33-As-75 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Se73 production)	34-Se-76 MT4 (γ,n) >>



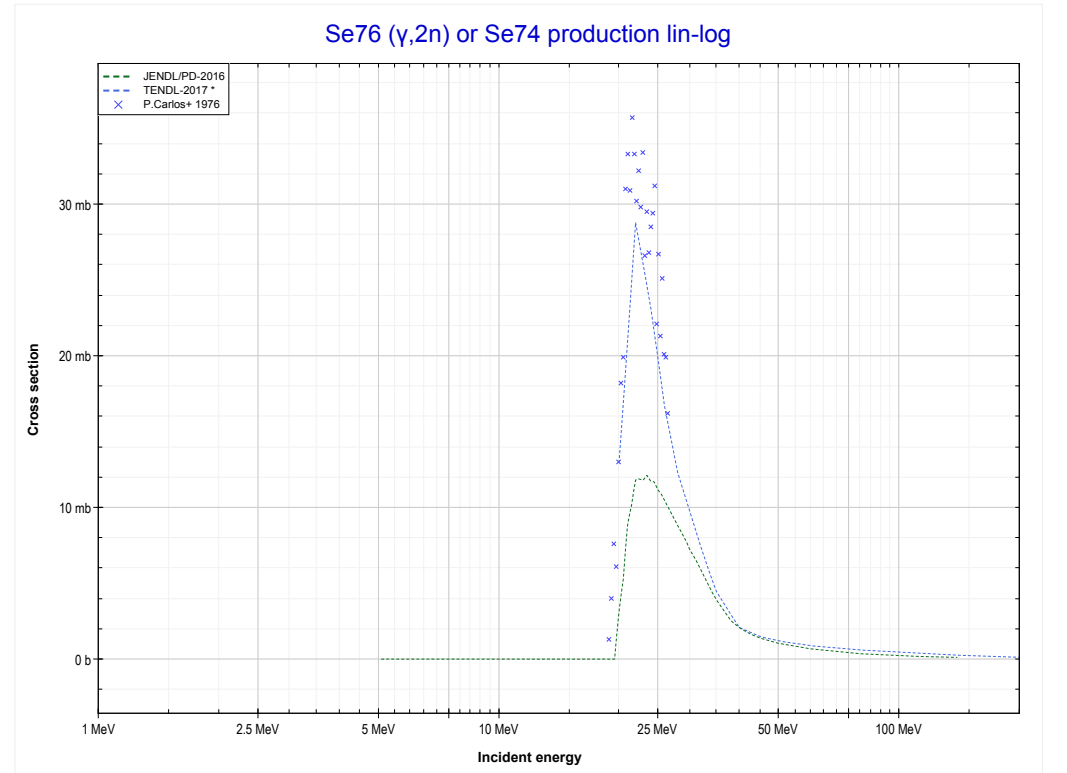
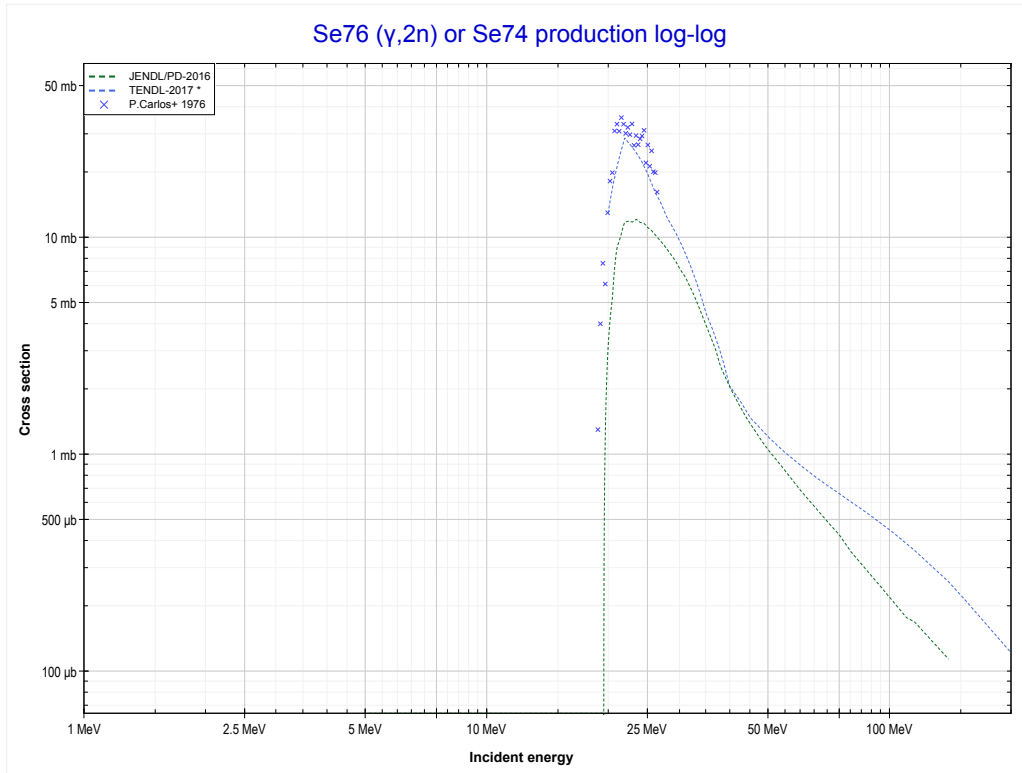
Reaction	Q-Value
Se74(γ,n)Se73	-12057.52 keV

<< 34-Se-74	34-Se-76	34-Se-77 >>
<< 34-Se-74 MT4 (γ,n)	MT4 (γ,n) or MT5 (Se75 production)	MT16 ($\gamma,2n$) >>



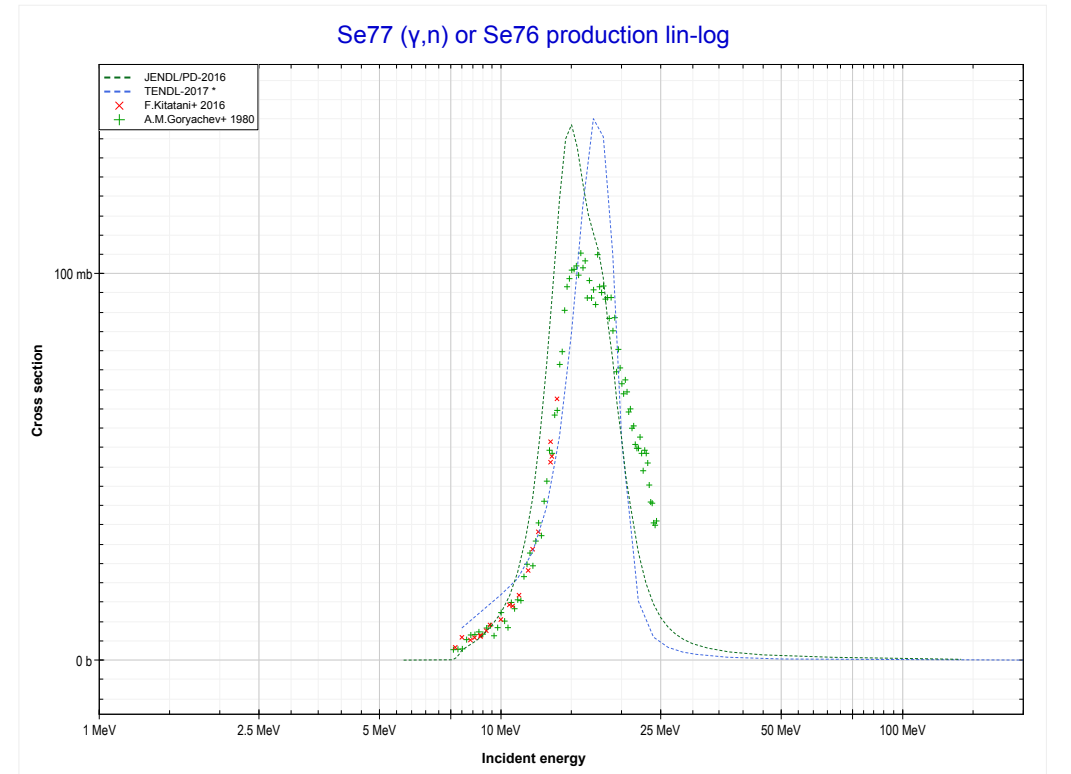
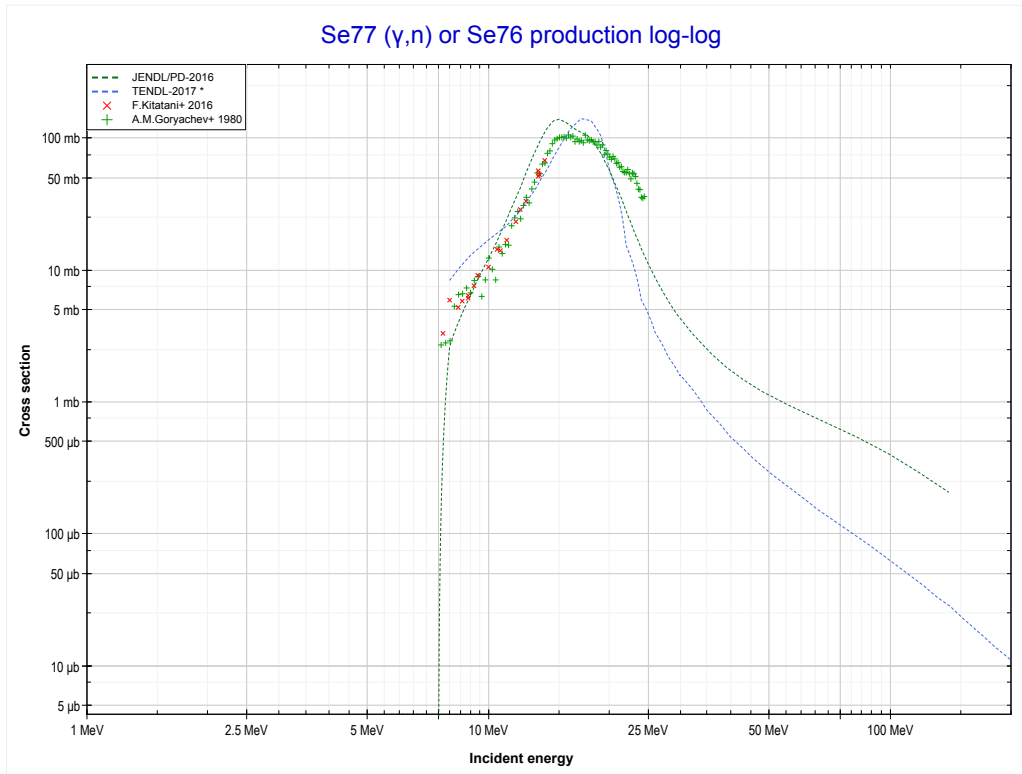
Reaction	Q-Value
Se76(γ,n)Se75	-11153.79 keV

<< 33-As-75	34-Se-76	34-Se-78 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Se74 production)	34-Se-77 MT4 (γ,n) >>



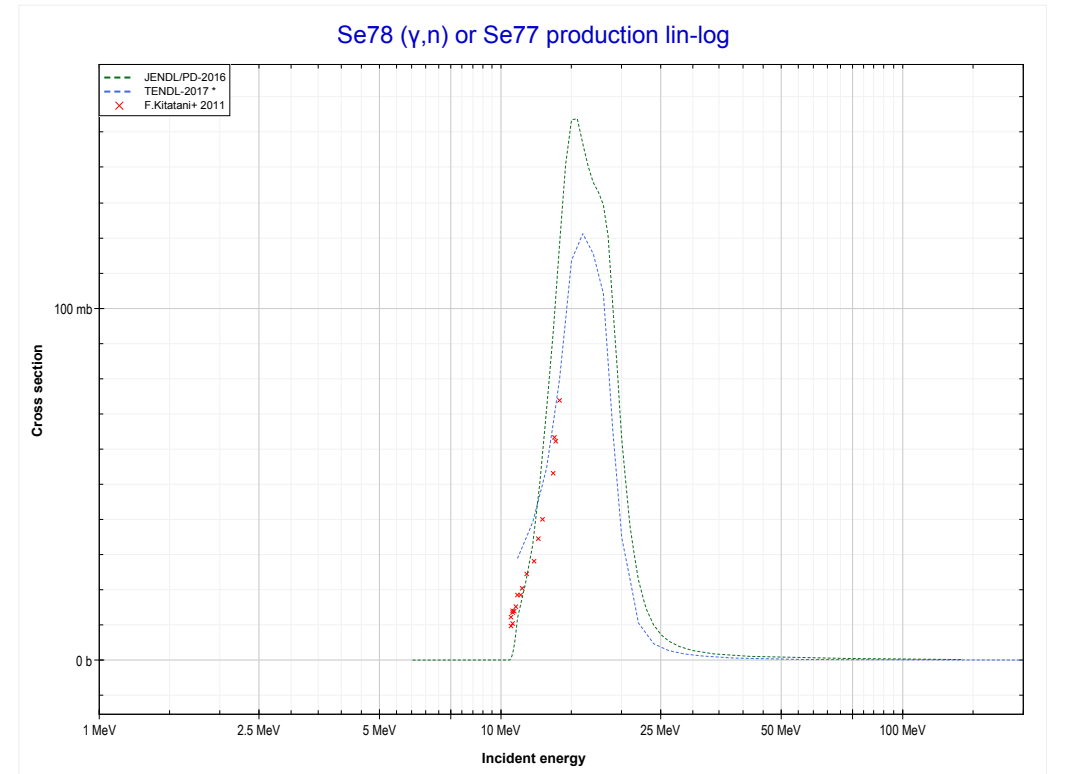
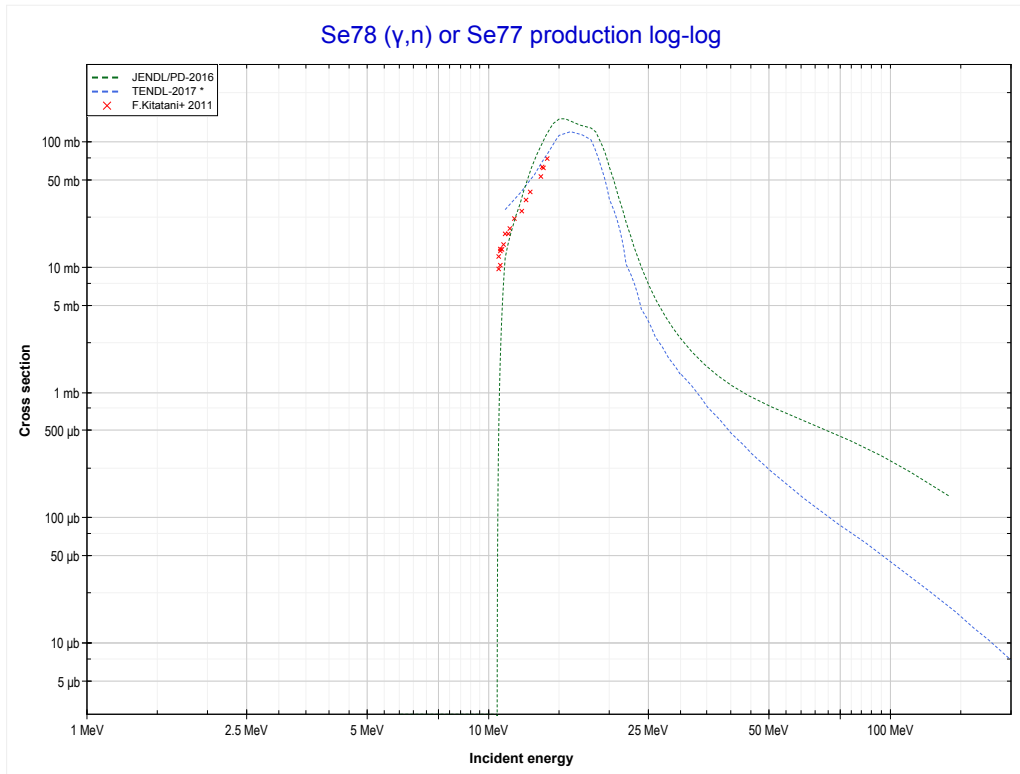
Reaction	Q-Value
Se76($\gamma,2n$)Se74	-19181.38 keV

<< 34-Se-76	34-Se-77	34-Se-78 >>
<< 34-Se-76 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Se76 production)	34-Se-78 MT4 (γ,n) >>



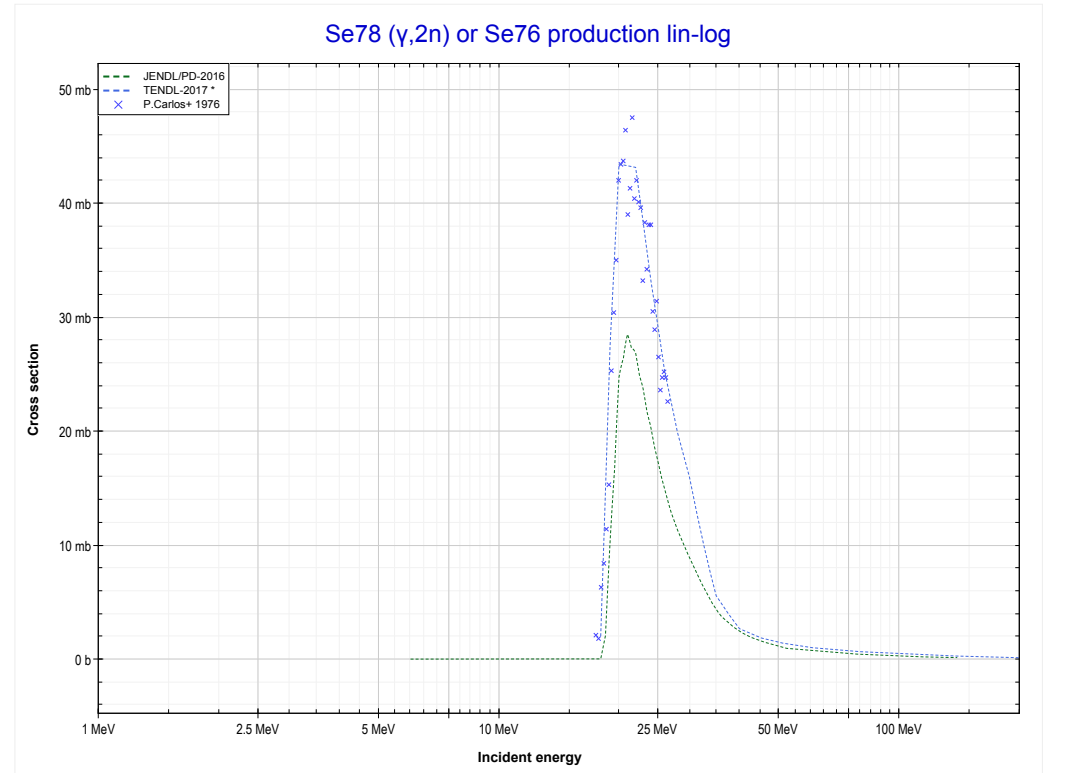
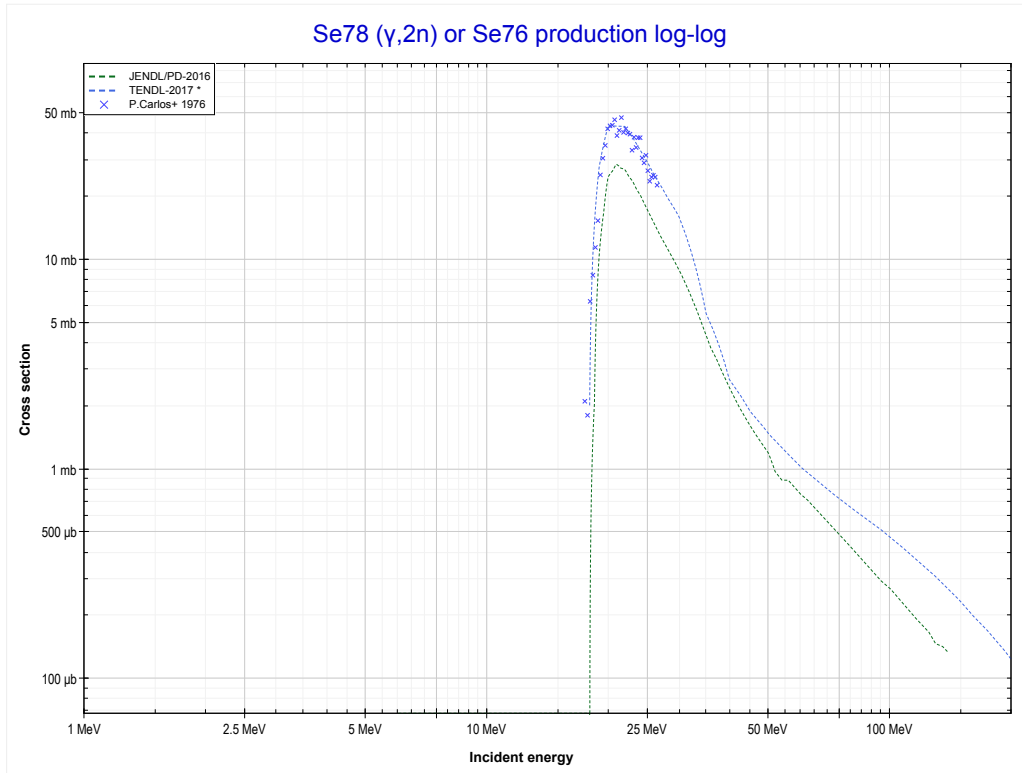
Reaction	Q-Value
Se77(γ,n)Se76	-7418.85 keV

<< 34-Se-77	34-Se-78	34-Se-80 >>
<< 34-Se-77 MT4 (γ,n)	MT4 (γ,n) or MT5 (Se77 production)	MT16 (γ,2n) >>



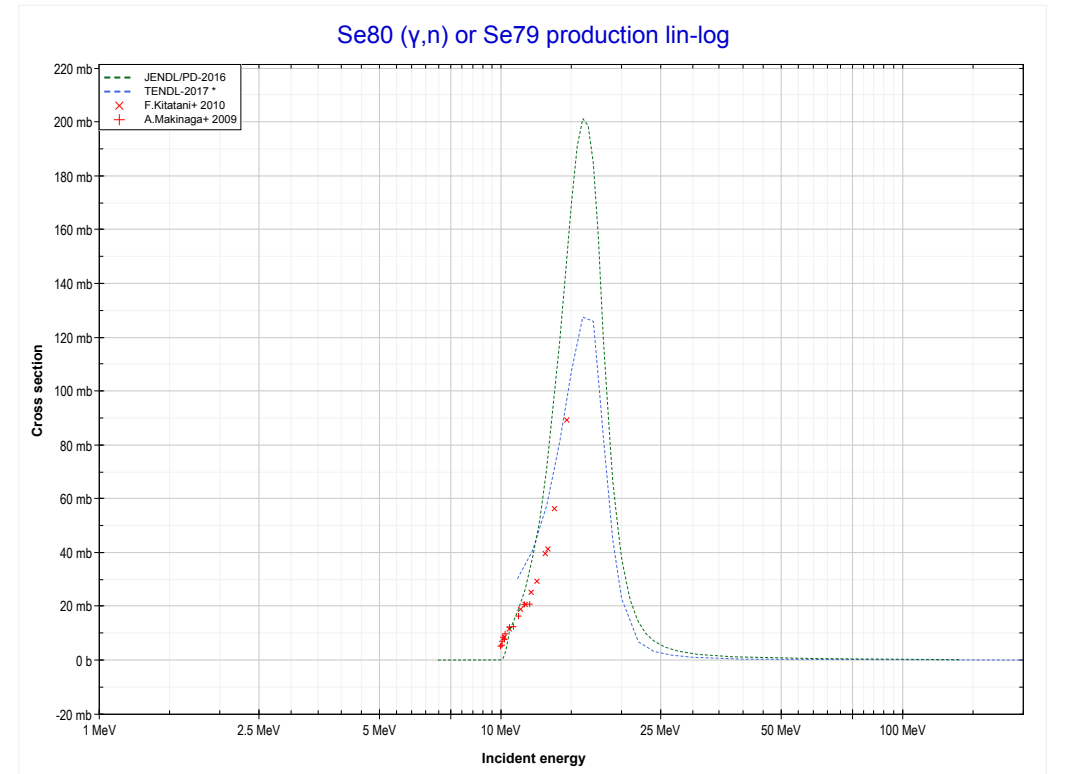
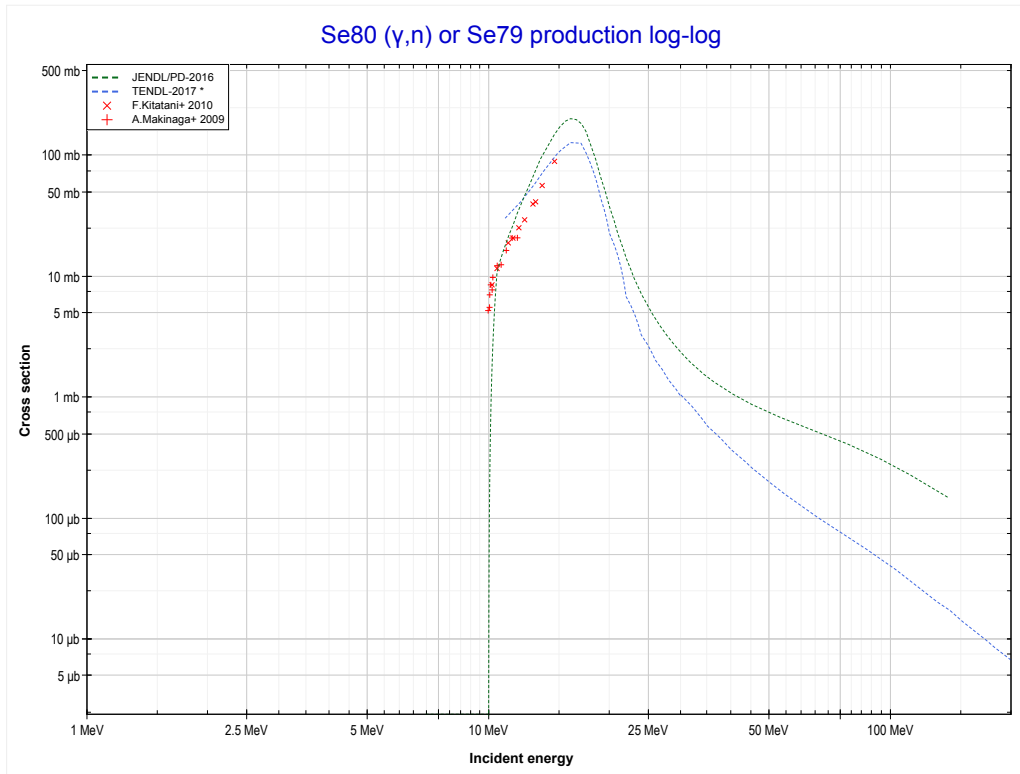
Reaction	Q-Value
Se78(γ,n)Se77	-10497.75 keV

<< 34-Se-76	34-Se-78	34-Se-80 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Se76 production)	34-Se-80 MT4 (γ,n) >>



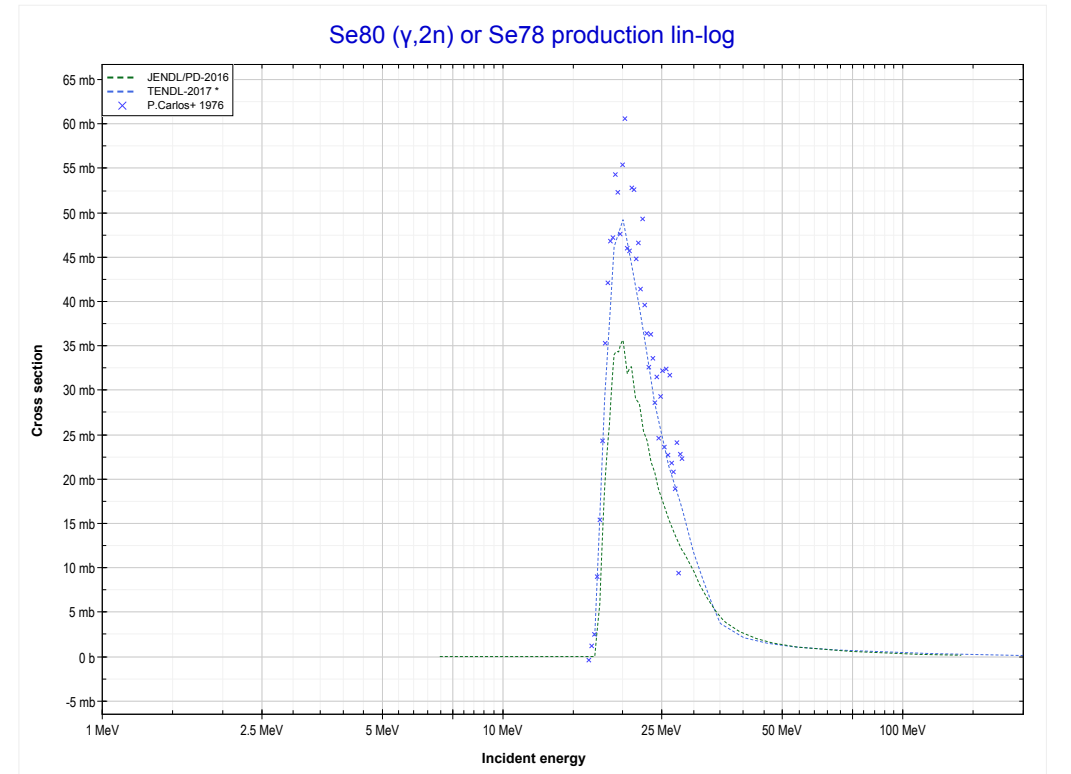
Reaction	Q-Value
Se78($\gamma,2n$)Se76	-17916.59 keV

<< 34-Se-78	34-Se-80	34-Se-82 >>
<< 34-Se-78 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Se79 production)	MT16 ($\gamma,2n$) >>



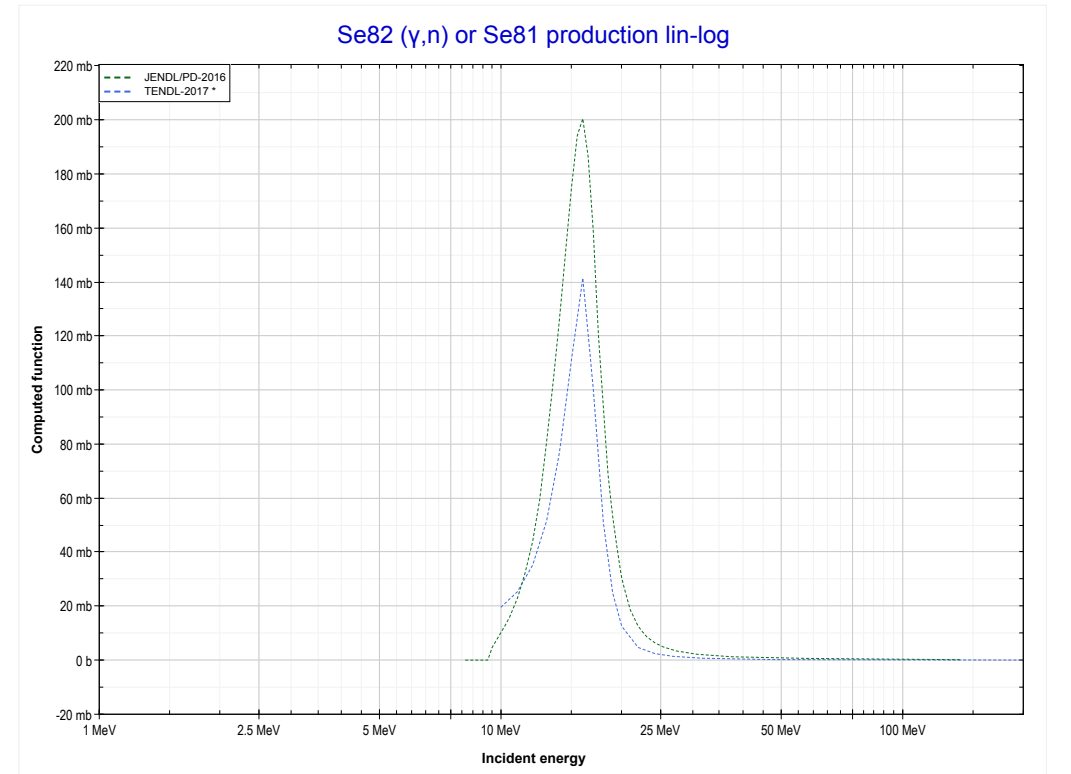
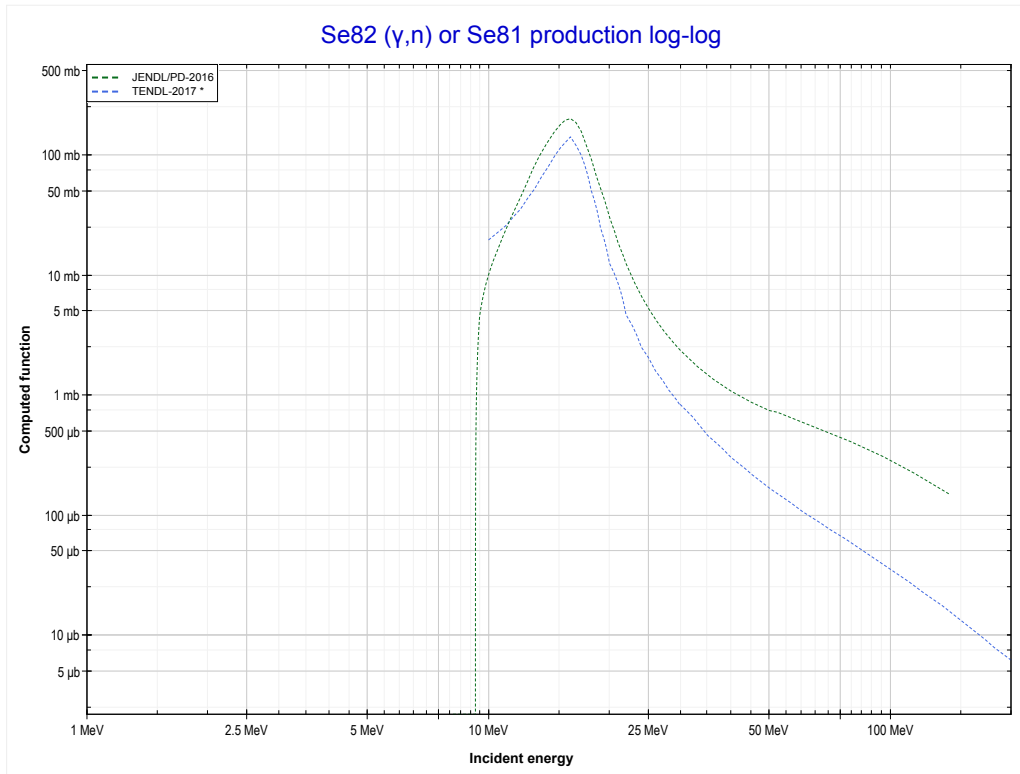
Reaction	Q-Value
Se80(γ,n)Se79	-9913.40 keV

<< 34-Se-78	34-Se-80	34-Se-82 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Se78 production)	34-Se-82 MT4 (γ,n) >>



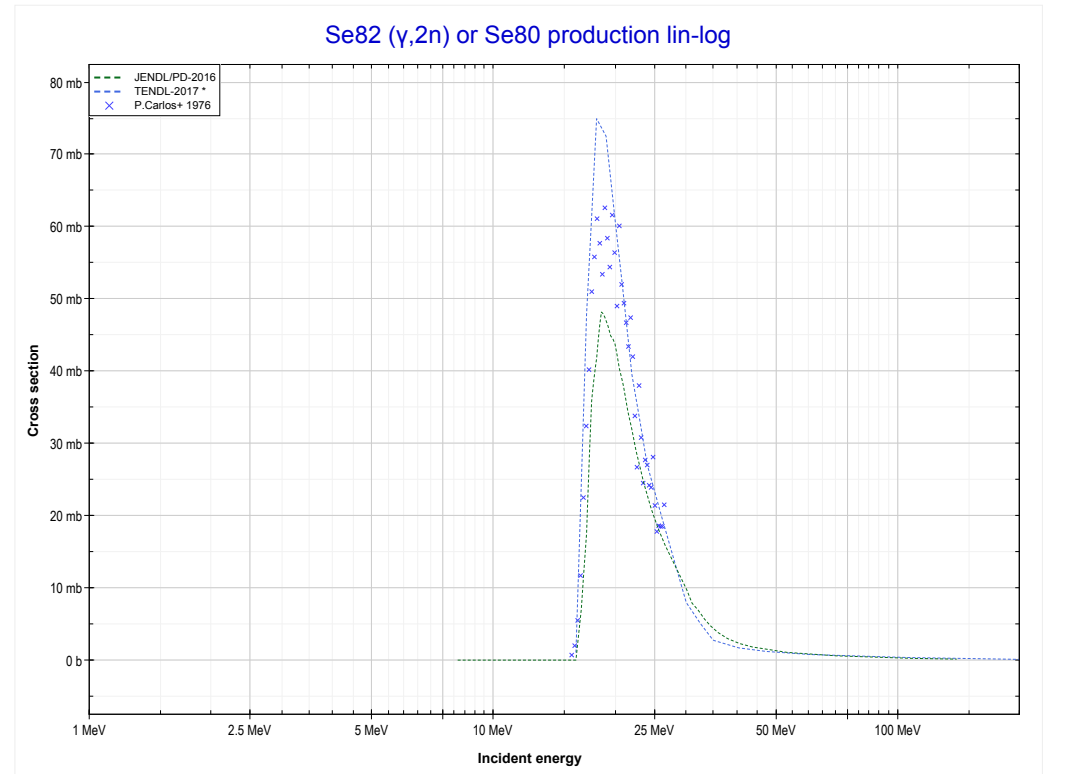
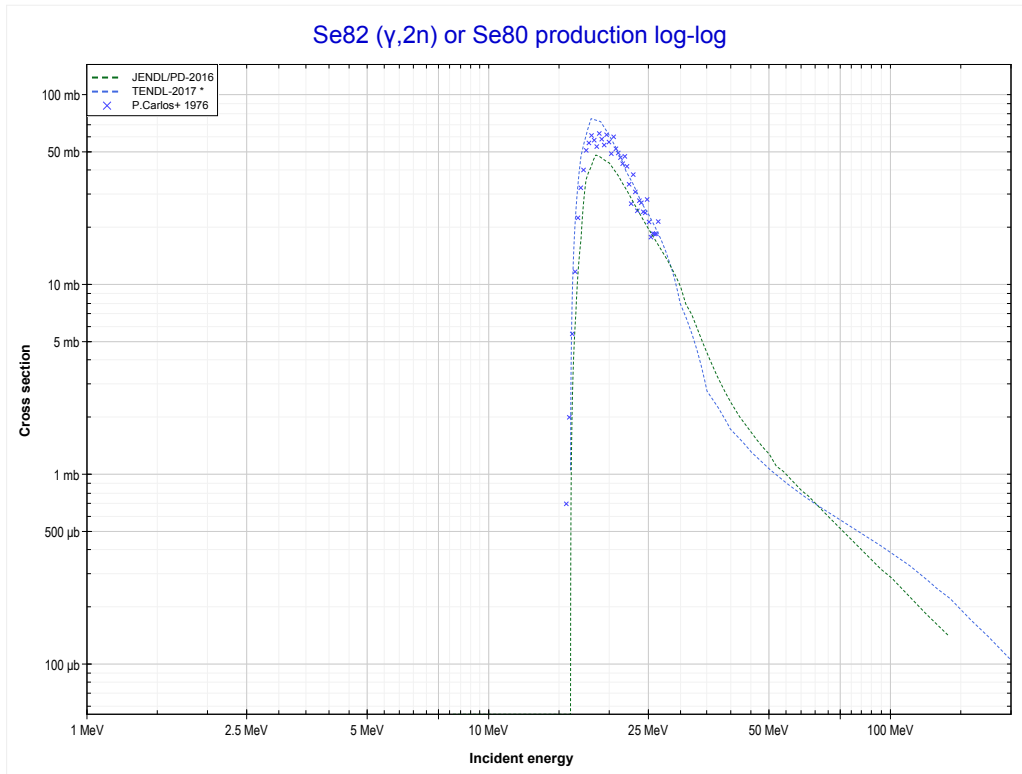
Reaction	Q-Value
Se80($\gamma,2n$)Se78	-16876.22 keV

<< 34-Se-80	34-Se-82	35-Br-79 >>
<< 34-Se-80 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Se81 production)	MT16 ($\gamma,2n$) >>



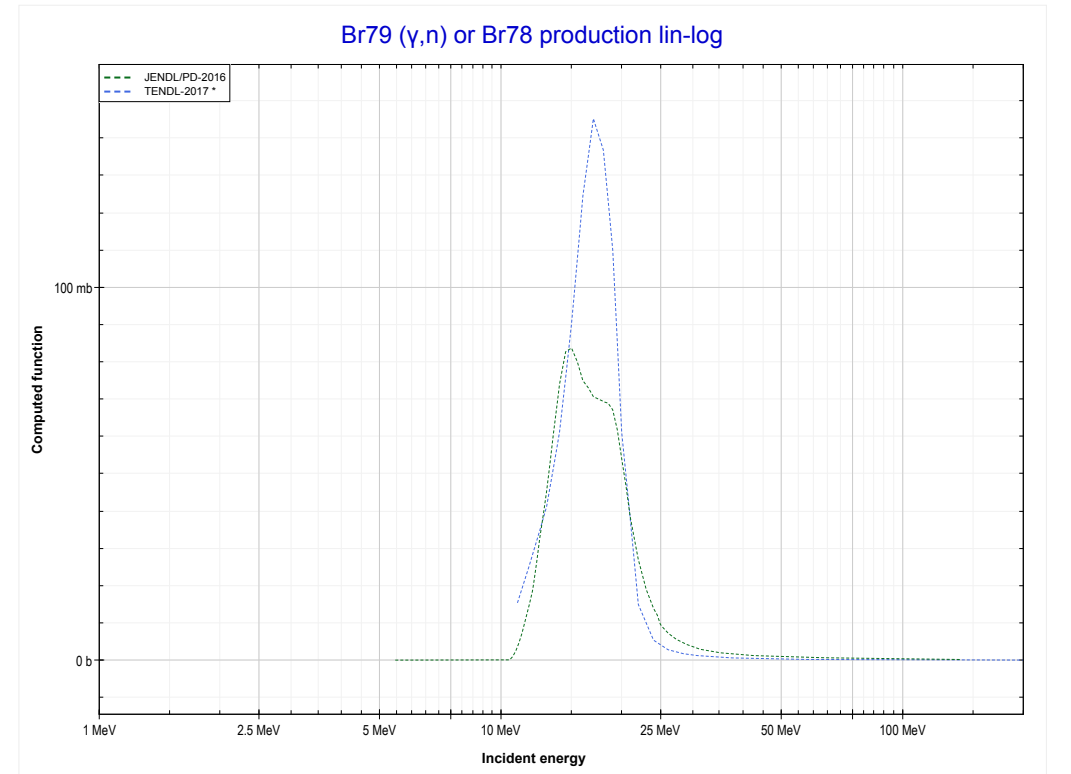
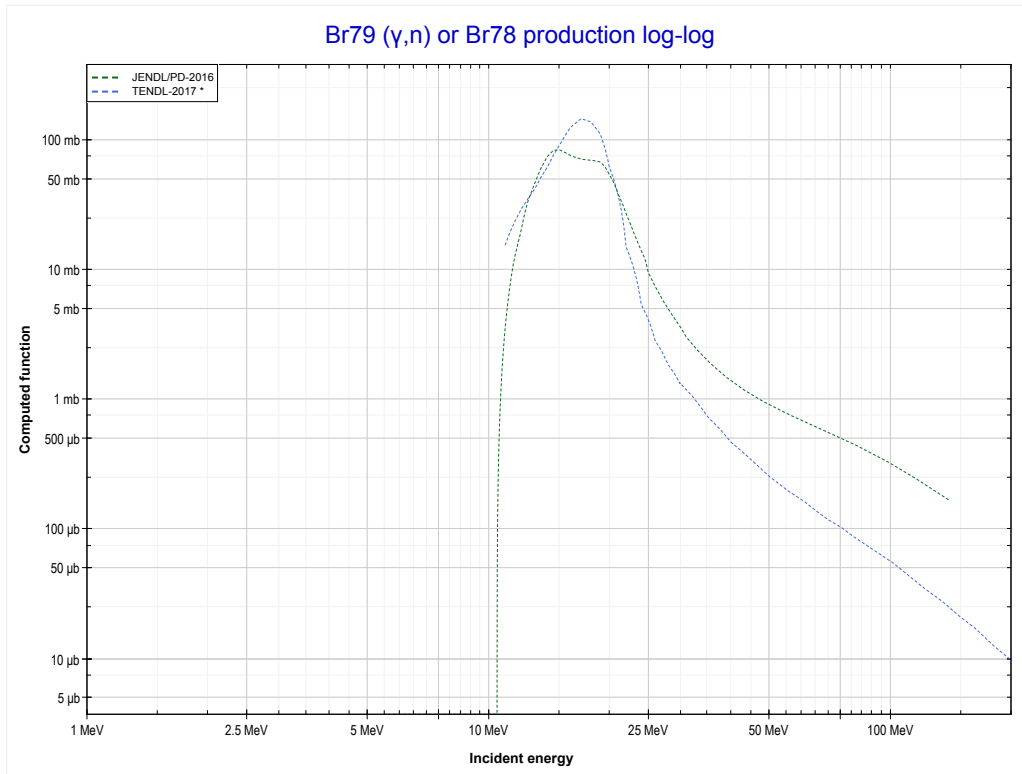
Reaction	Q-Value
Se82(γ,n)Se81	-9276.22 keV

<< 34-Se-80	34-Se-82	39-Y-89 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Se80 production)	35-Br-79 MT4 (γ,n) >>



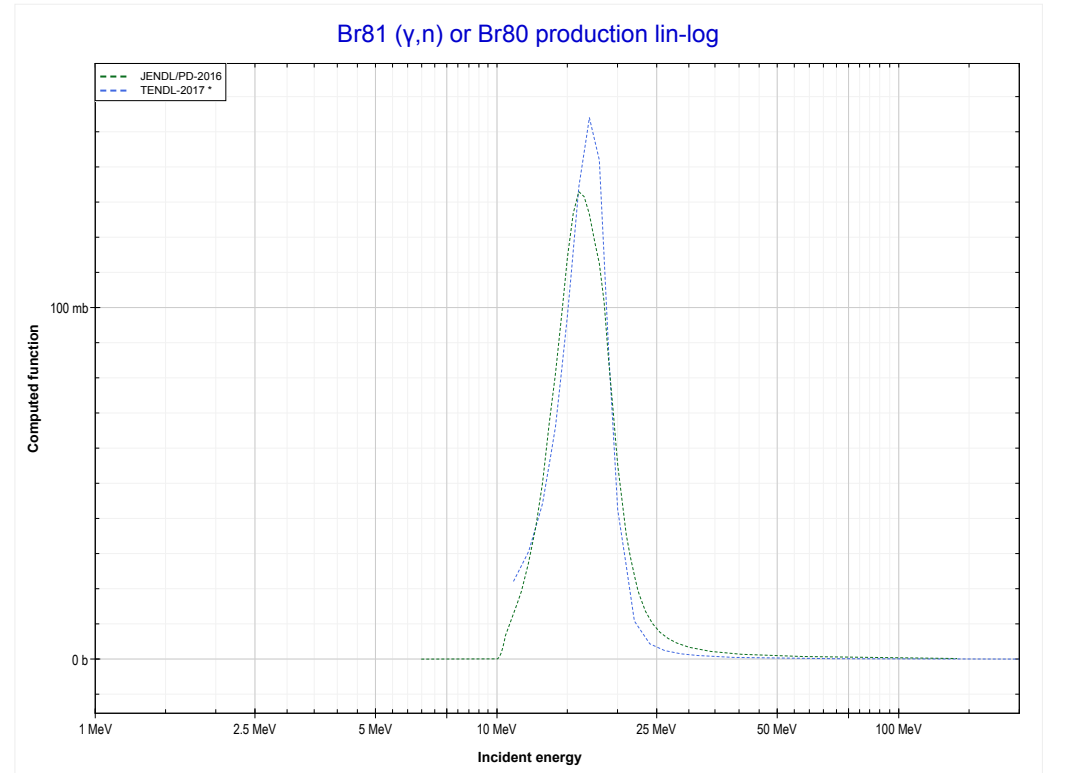
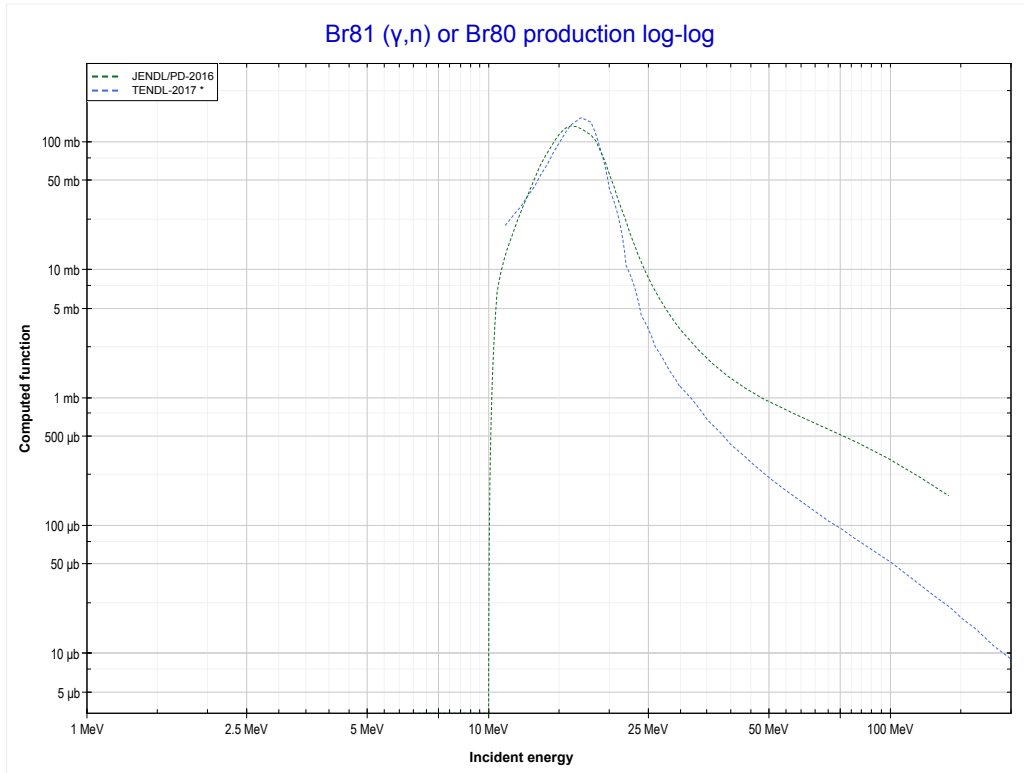
Reaction	Q-Value
Se82($\gamma,2n$)Se80	-15977.03 keV

<< 34-Se-82	35-Br-79	35-Br-81 >>
<< 34-Se-82 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Br78 production)	35-Br-81 MT4 (γ,n) >>



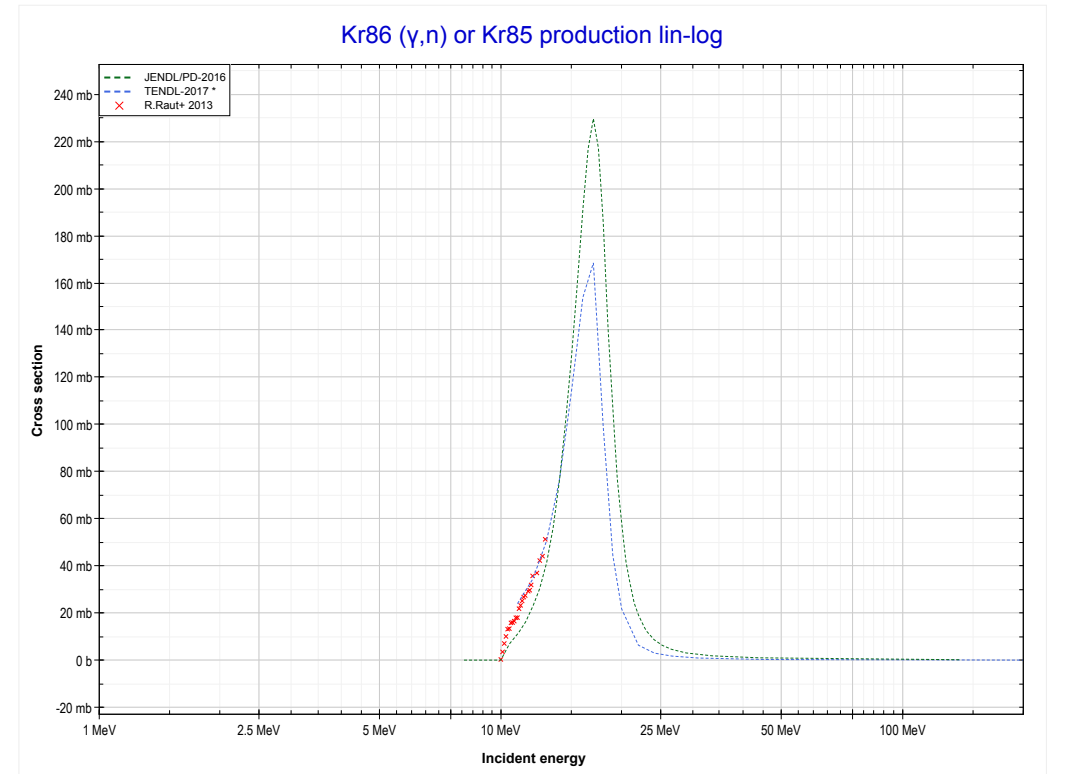
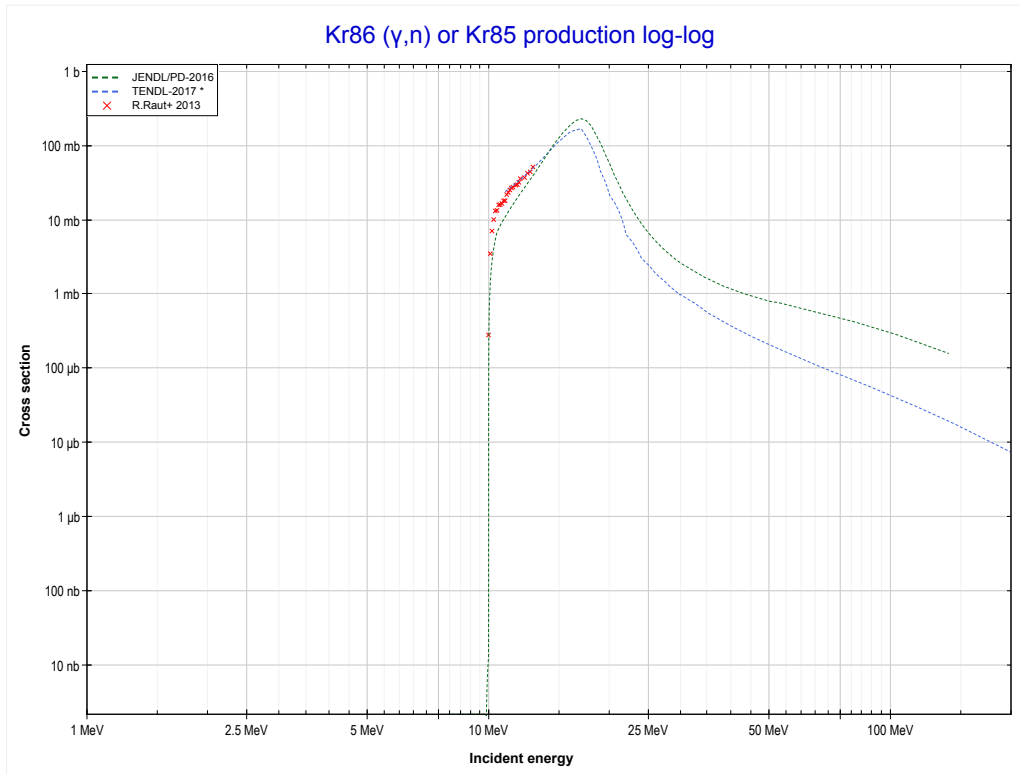
Reaction	Q-Value
Br79(γ,n)Br78	-10687.42 keV

<< 35-Br-79	35-Br-81	36-Kr-86 >>
<< 35-Br-79 MT4 (γ,n)	MT4 (γ,n) or MT5 (Br80 production)	36-Kr-86 MT4 (γ,n) >>



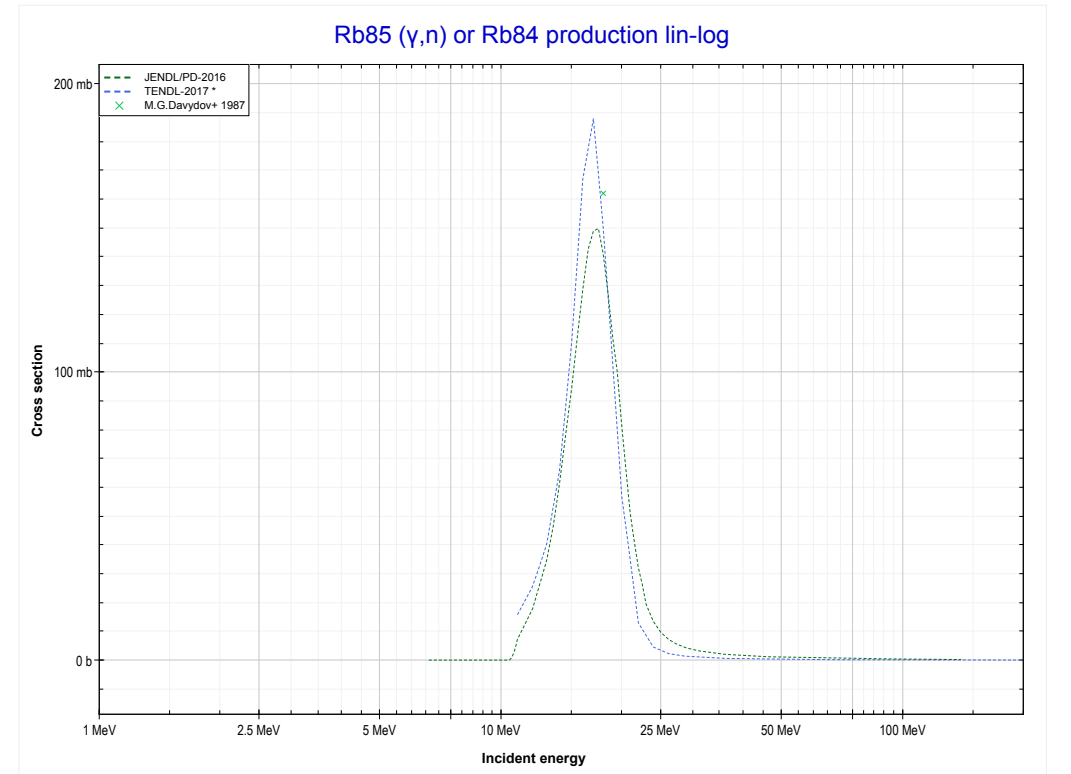
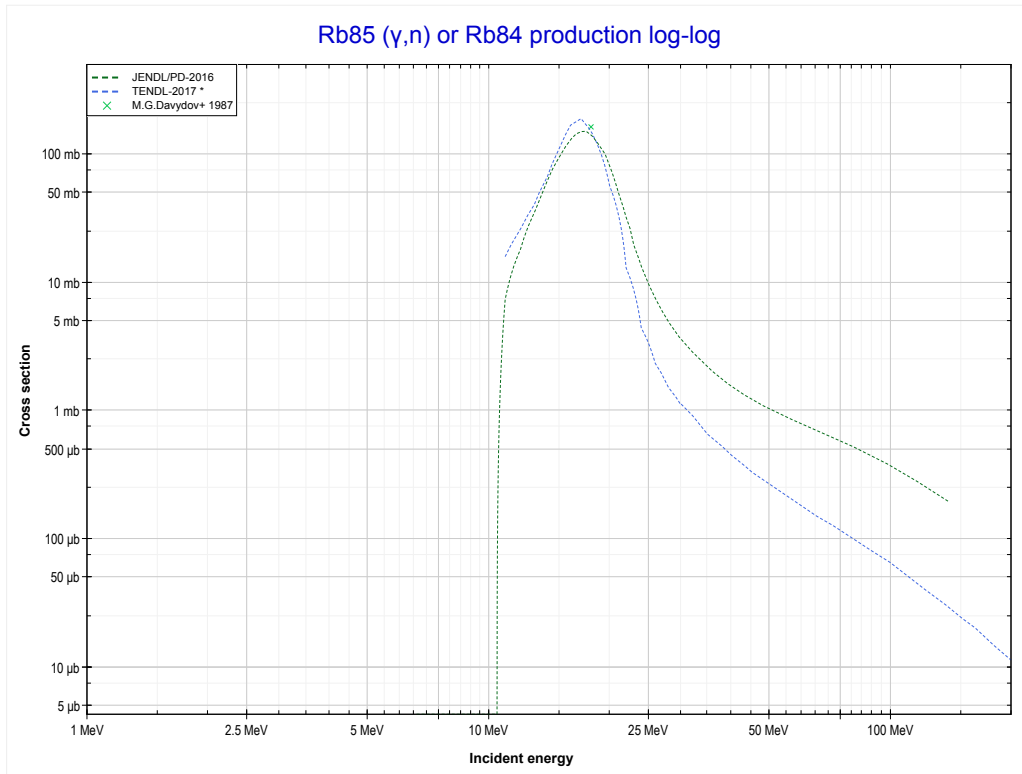
Reaction	Q-Value
Br81(γ,n)Br80	-10158.02 keV

<< 35-Br-81	36-Kr-86	37-Rb-85 >>
<< 35-Br-81 MT4 (γ,n)	MT4 (γ,n) or MT5 (Kr85 production)	37-Rb-85 MT4 (γ,n) >>



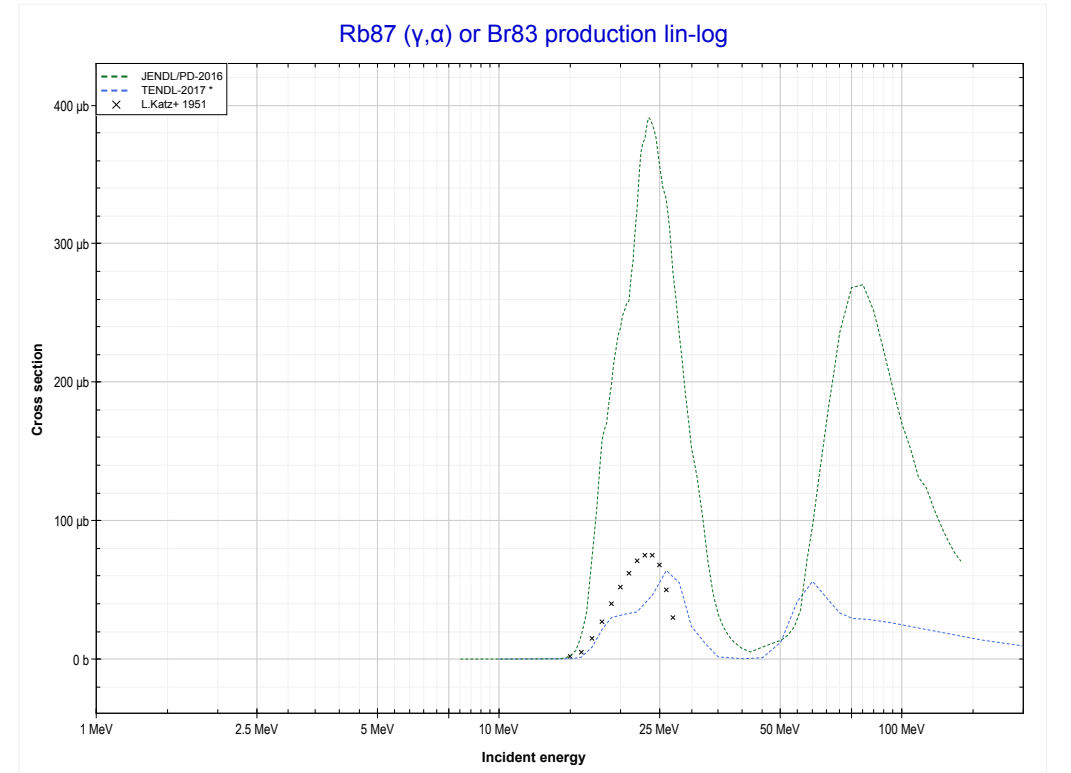
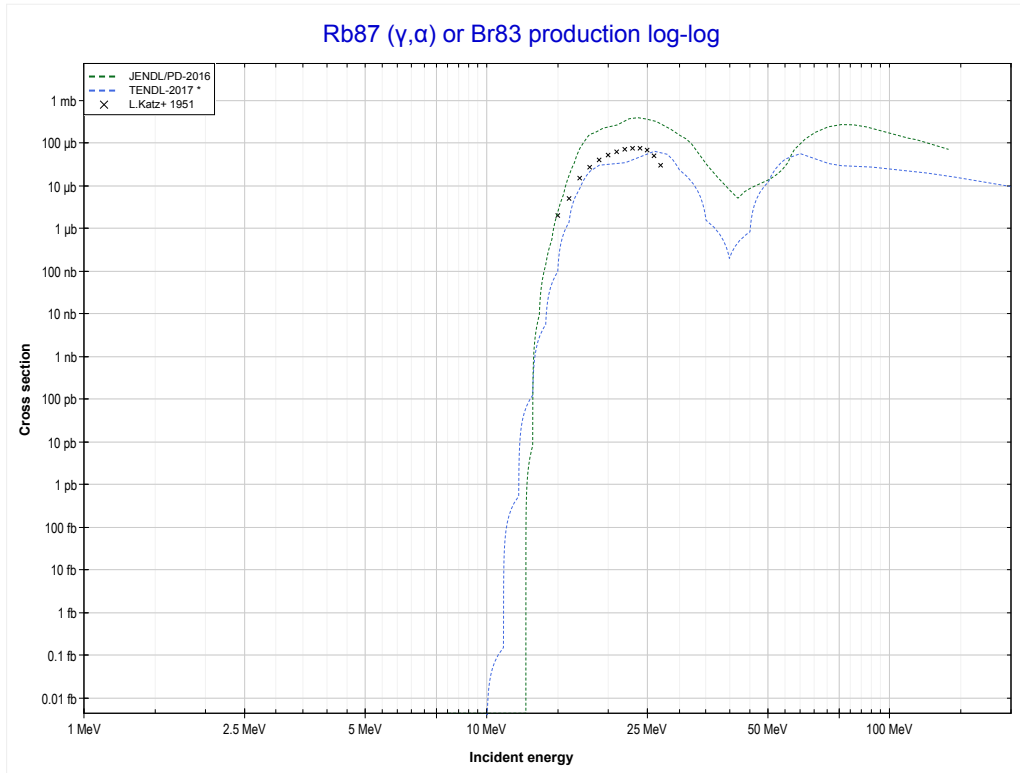
Reaction	Q-Value
Kr86(γ,n)Kr85	-9856.68 keV

<< 36-Kr-86	37-Rb-85	39-Y-89 >>
<< 36-Kr-86 MT4 (γ,n)	MT4 (γ,n) or MT5 (Rb84 production)	37-Rb-87 MT107 (γ,α) >>



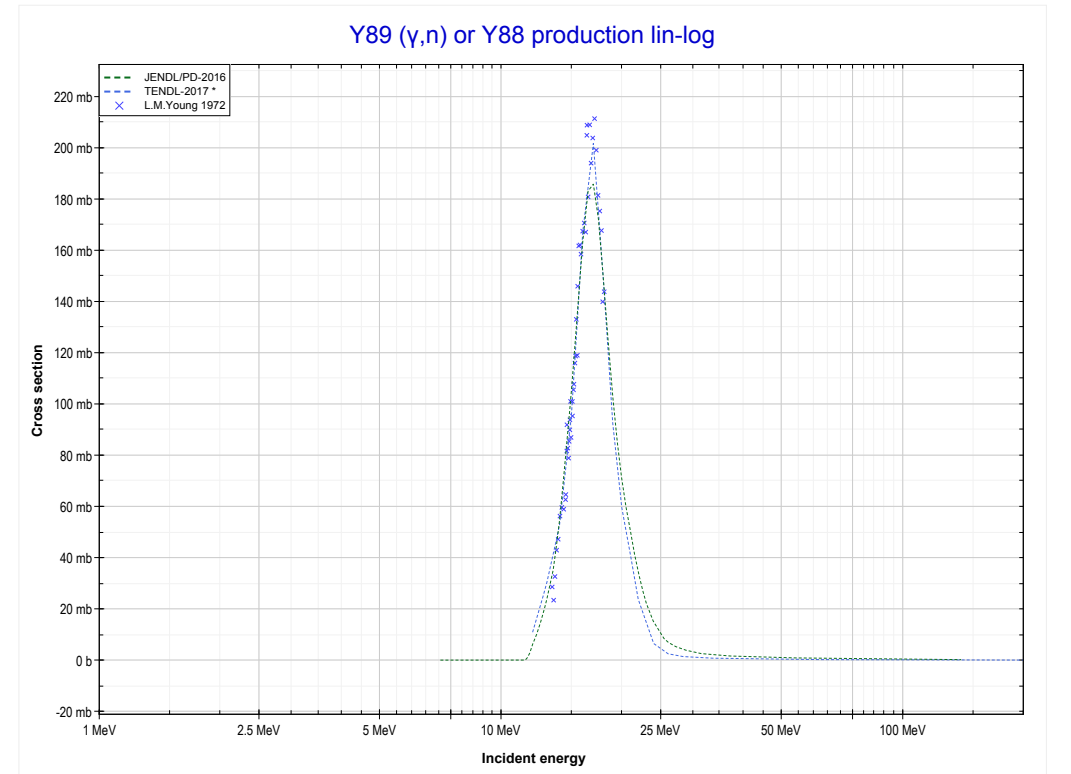
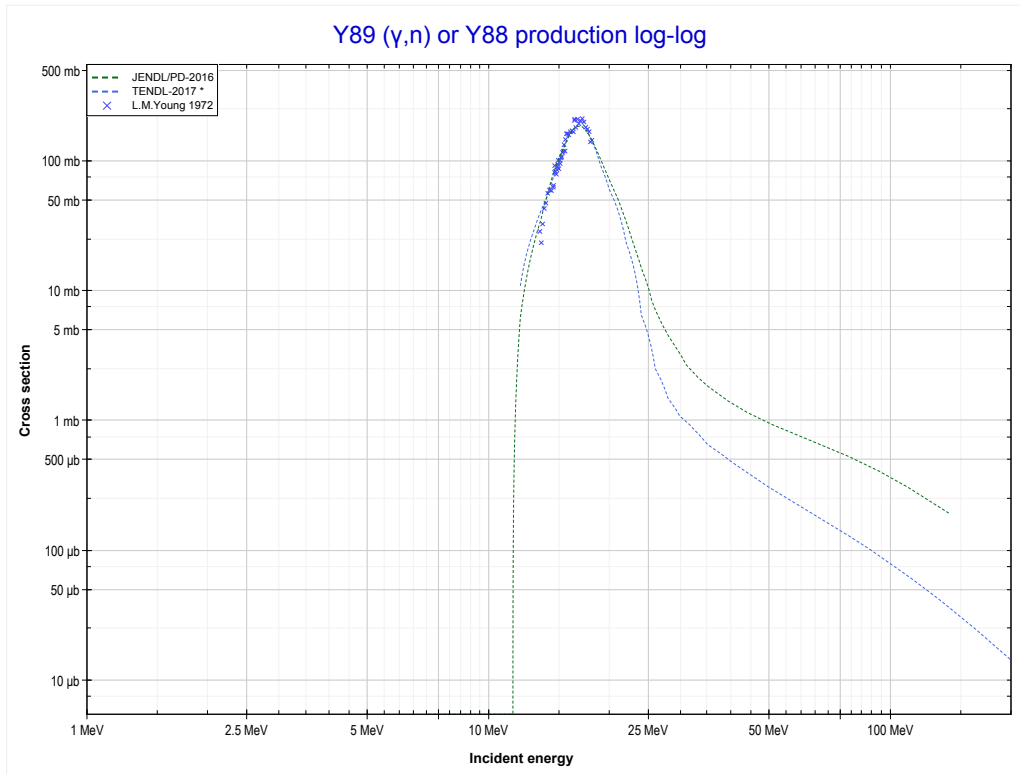
Reaction	Q-Value
Rb85(γ,n)Rb84	-10479.65 keV

<< 32-Ge-76	37-Rb-87	40-Zr-96 >>
<< 37-Rb-85 MT4 (γ,n)	MT107 (γ,α) or MT5 (Br83 production)	39-Y-89 MT4 (γ,n) >>



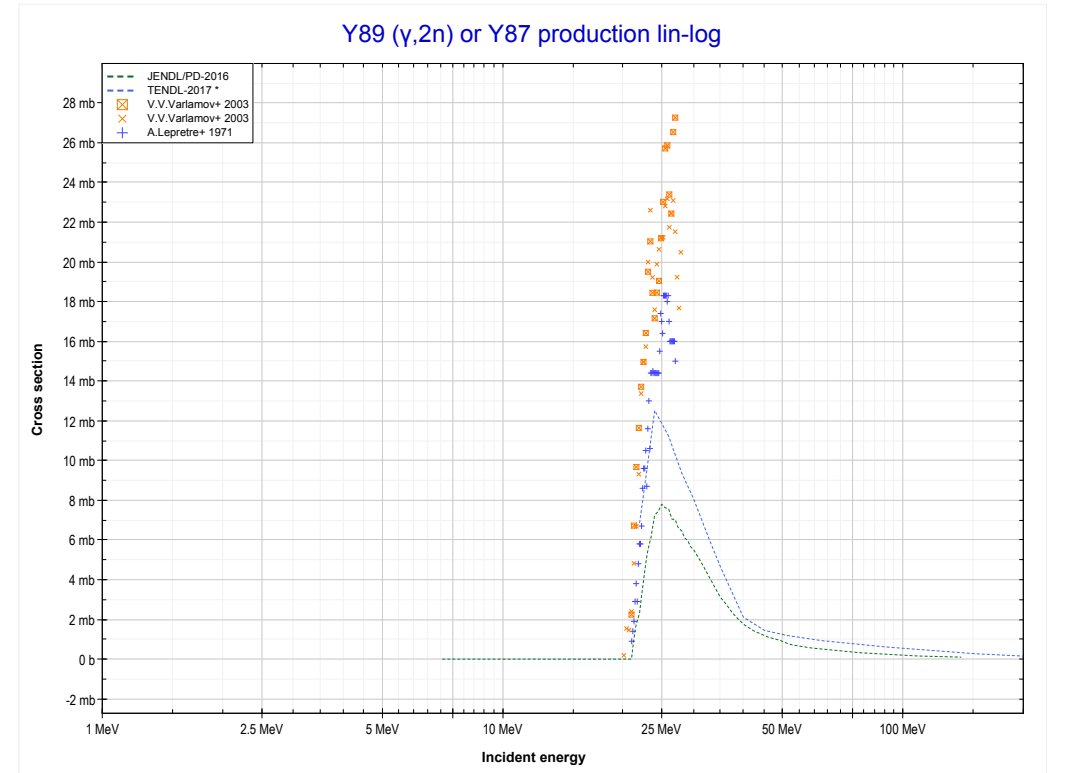
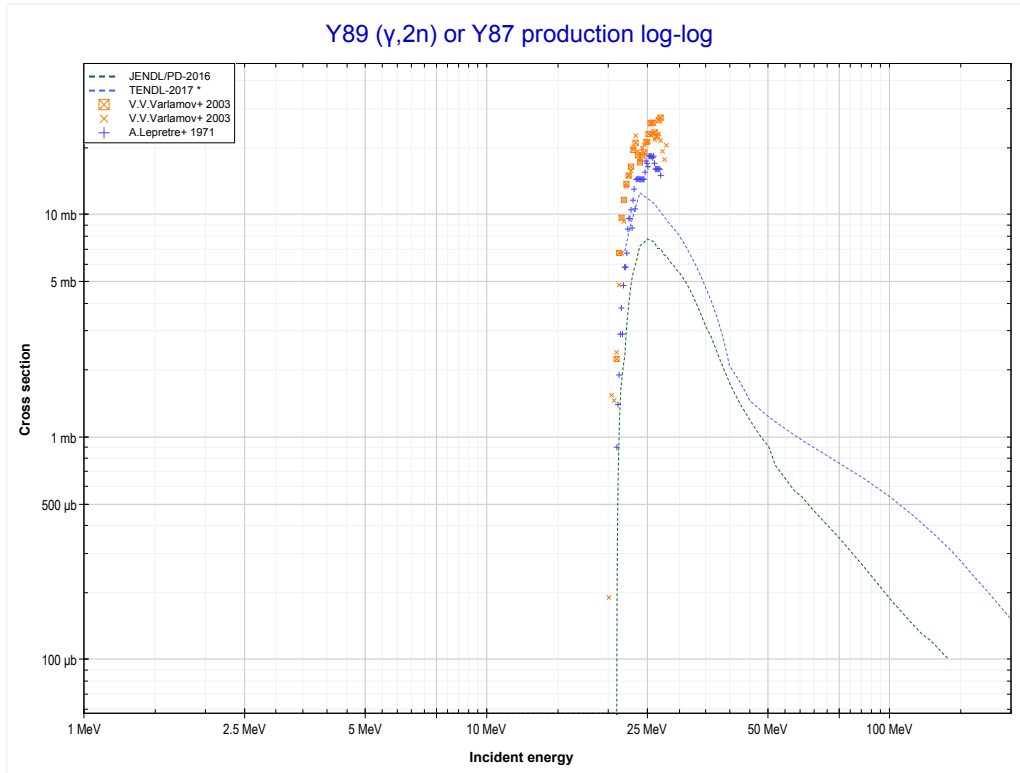
Reaction	Q-Value
Rb87(γ,α)Br83	-8009.71 keV
Rb87(γ,p+t)Br83	-27823.57 keV
Rb87(γ,n+He3)Br83	-28587.32 keV
Rb87(γ,2d)Br83	-31856.23 keV
Rb87(γ,n+p+d)Br83	-34080.80 keV
Rb87(γ,2n+2p)Br83	-36305.37 keV

<< 37-Rb-85	39-Y-89	40-Zr-90 >>
<< 37-Rb-87 MT107 (γ,α)	MT4 (γ,n) or MT5 (Y88 production)	MT16 (γ,2n) >>



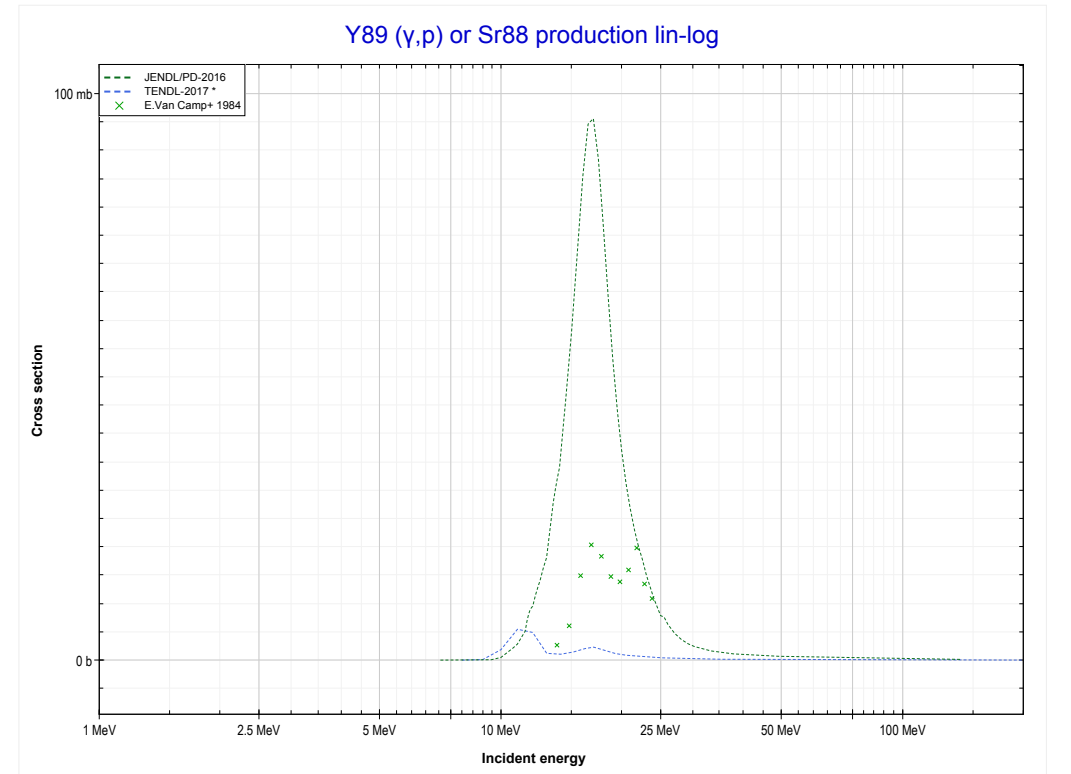
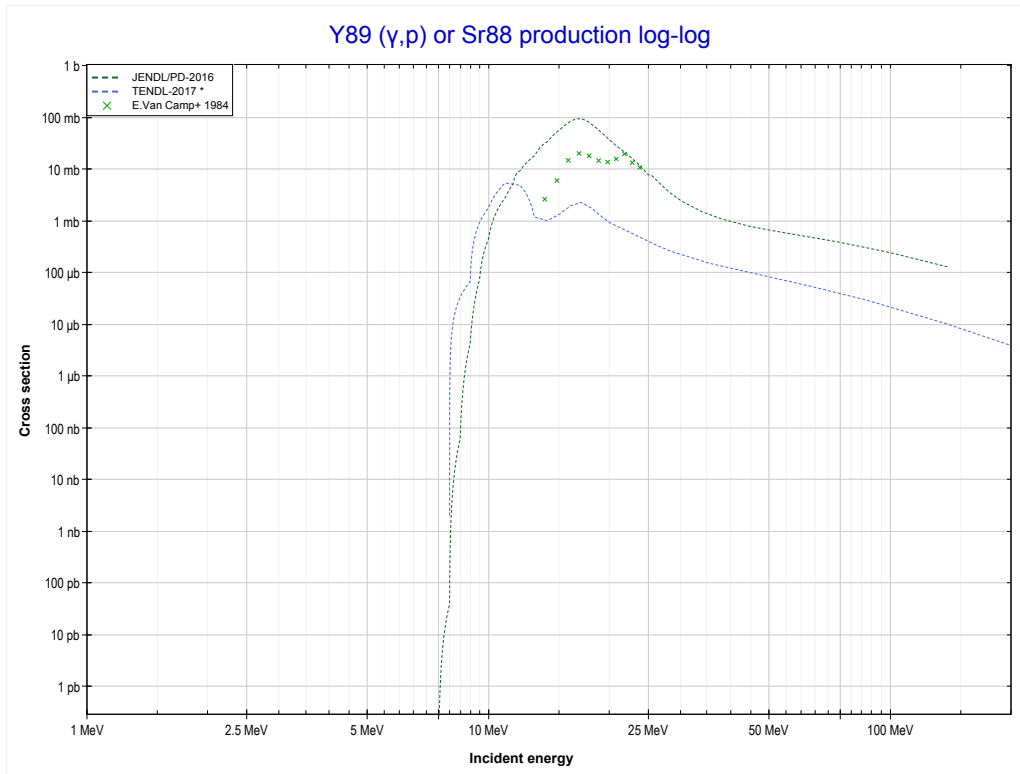
Reaction	Q-Value
Y89(γ,n)Y88	-11481.72 keV

<< 34-Se-82	39-Y-89	40-Zr-90 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Y87 production)	MT103 (γ,p) >>



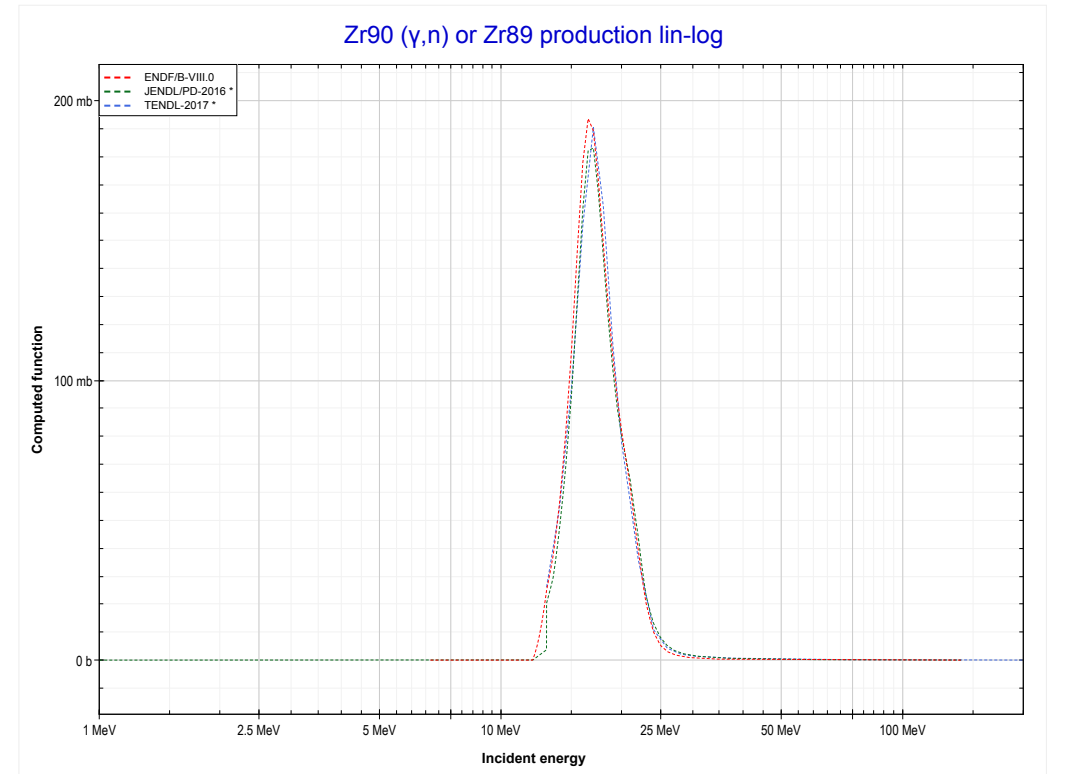
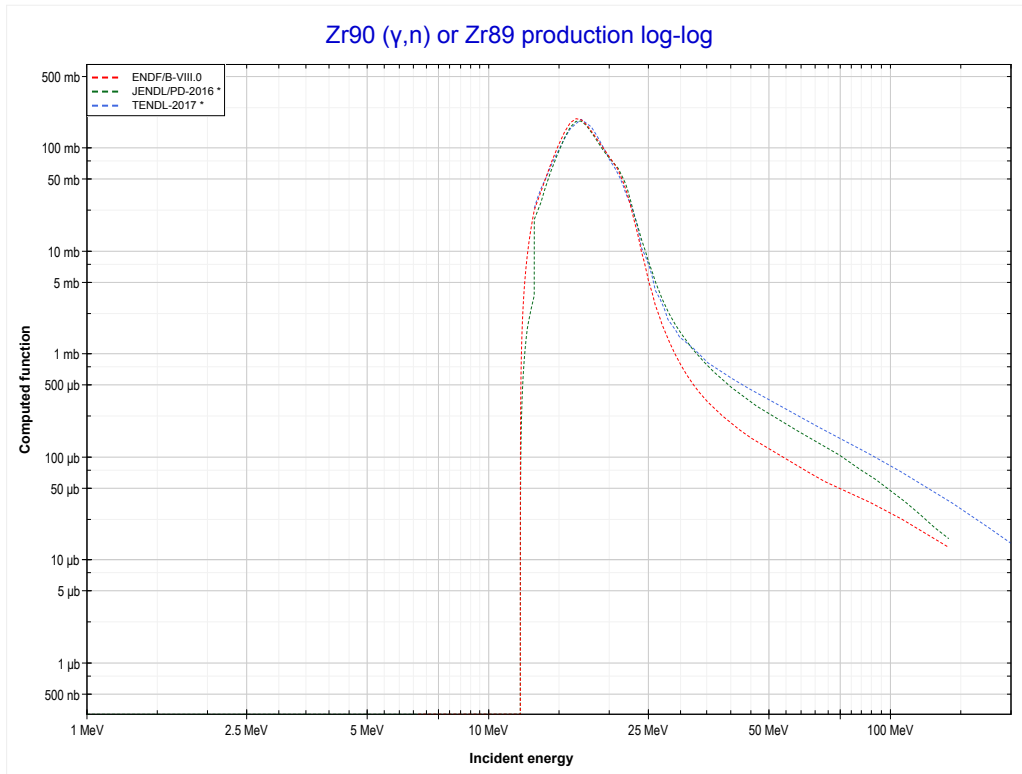
Reaction	Q-Value
Y89($\gamma,2n$)Y87	-20833.53 keV

<< 32-Ge-70	39-Y-89	40-Zr-90 >>
<< MT16 ($\gamma,2n$)	MT103 (γ,p) or MT5 (Sr88 production)	40-Zr-90 MT4 (γ,n) >>



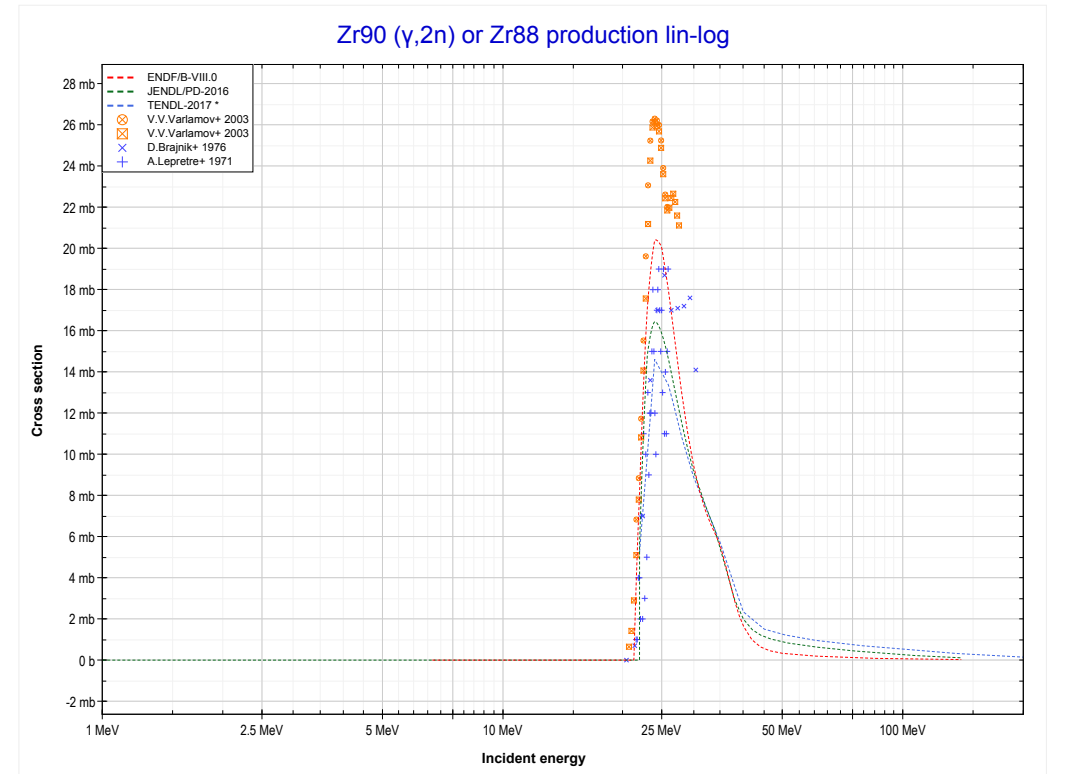
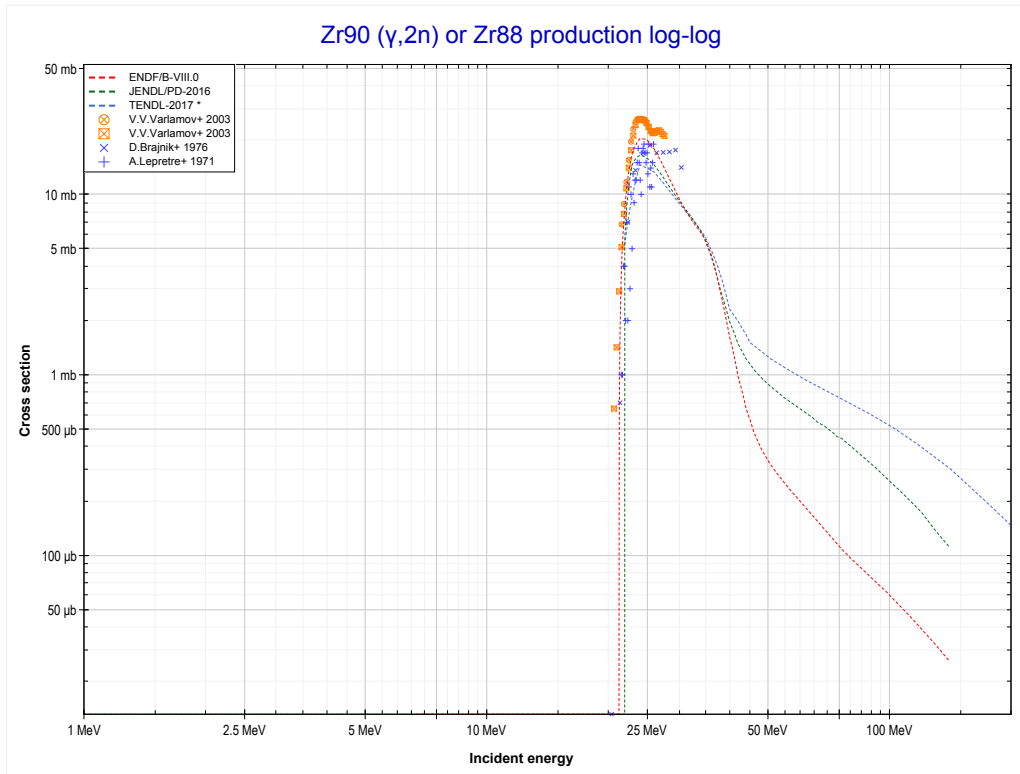
Reaction	Q-Value
Y89(γ,p)Sr88	-7076.77 keV

<< 39-Y-89	40-Zr-90	40-Zr-91 >>
<< 39-Y-89 MT103 (γ,p)	MT4 (γ,n) or MT5 (Zr89 production)	MT16 ($\gamma,2n$) >>



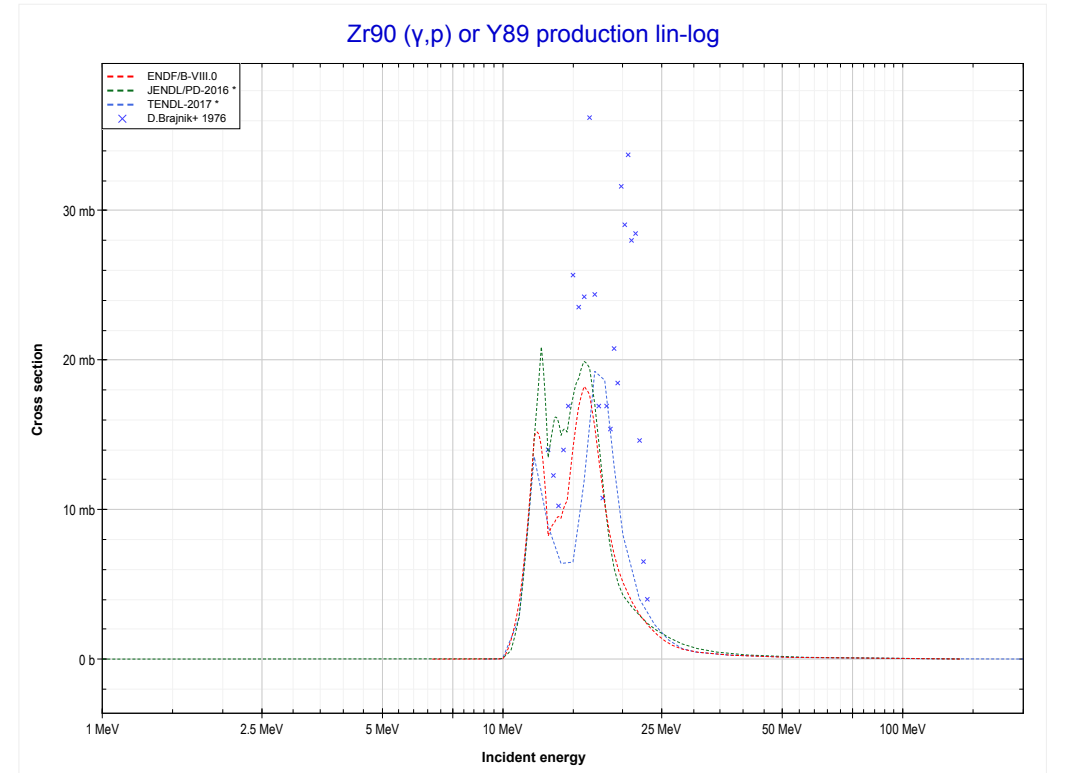
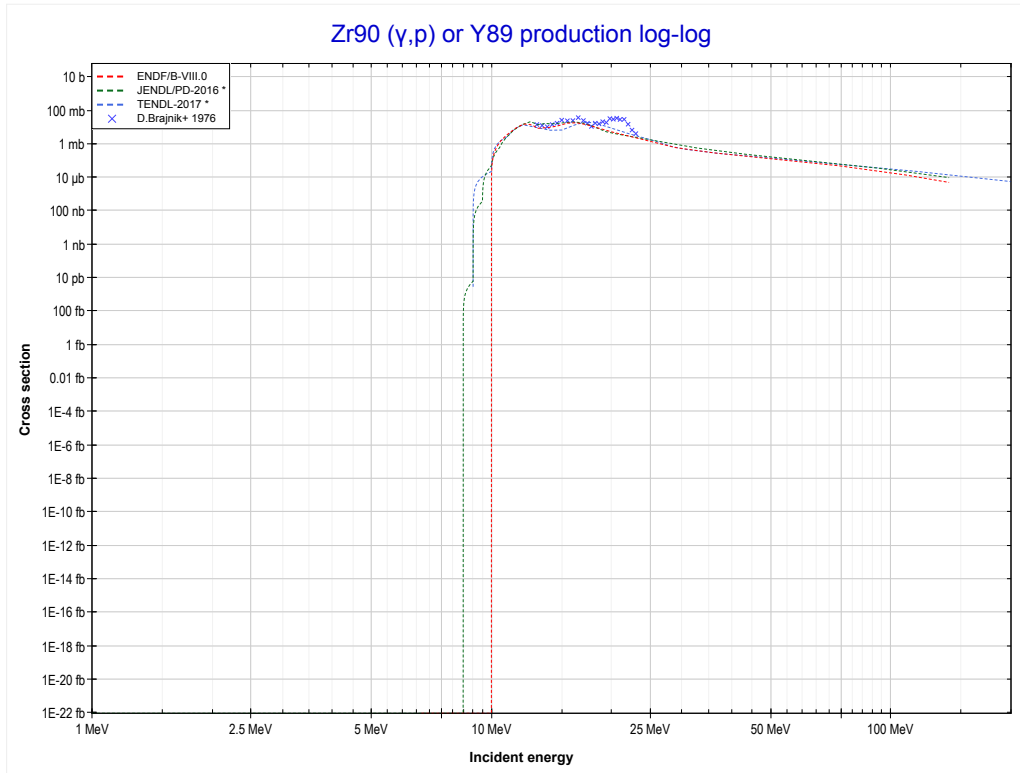
Reaction	Q-Value
Zr90(γ,n)Zr89	-11968.92 keV

<< 39-Y-89	40-Zr-90	45-Rh-103 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Zr88 production)	MT103 (γ, p) >>



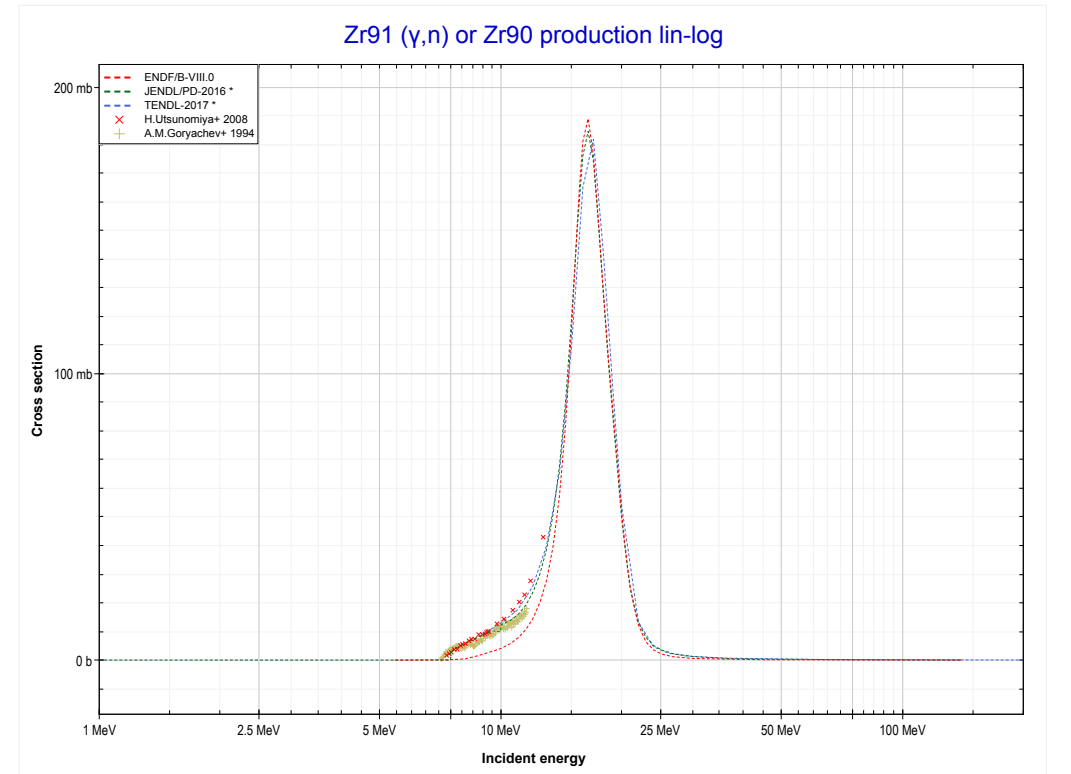
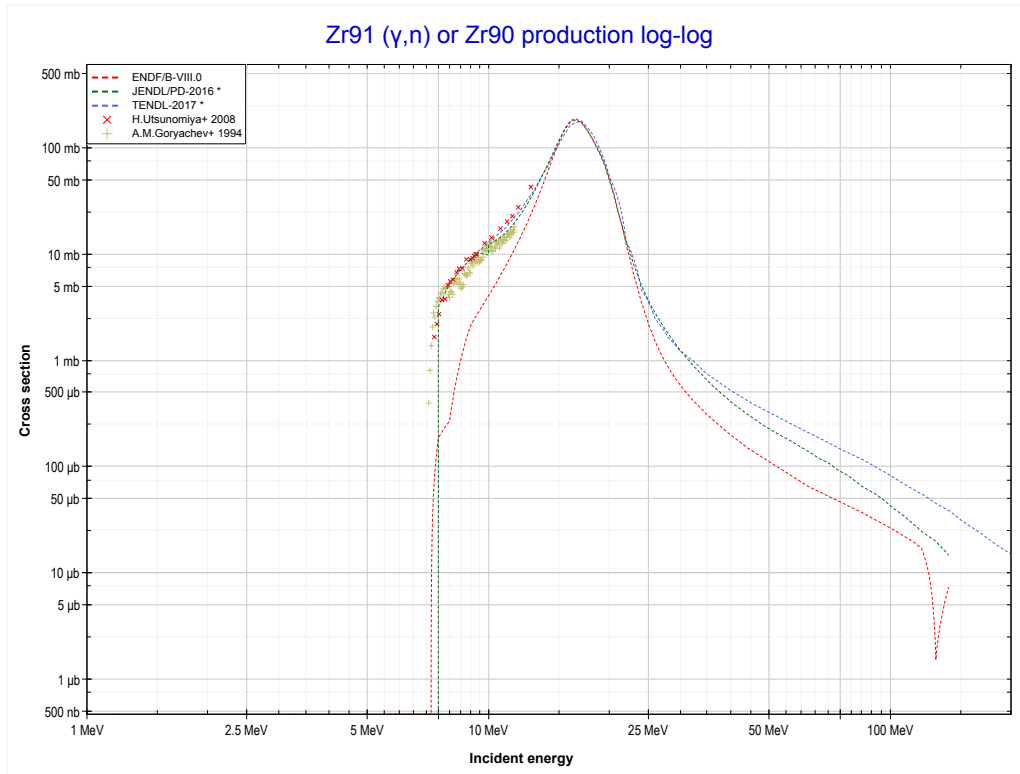
Reaction	Q-Value
Zr90($\gamma, 2n$)Zr88	-21288.23 keV

<< 39-Y-89	40-Zr-90	45-Rh-103 >>
<< MT16 ($\gamma,2n$)	MT103 (γ,p) or MT5 (Y89 production)	40-Zr-91 MT4 (γ,n) >>



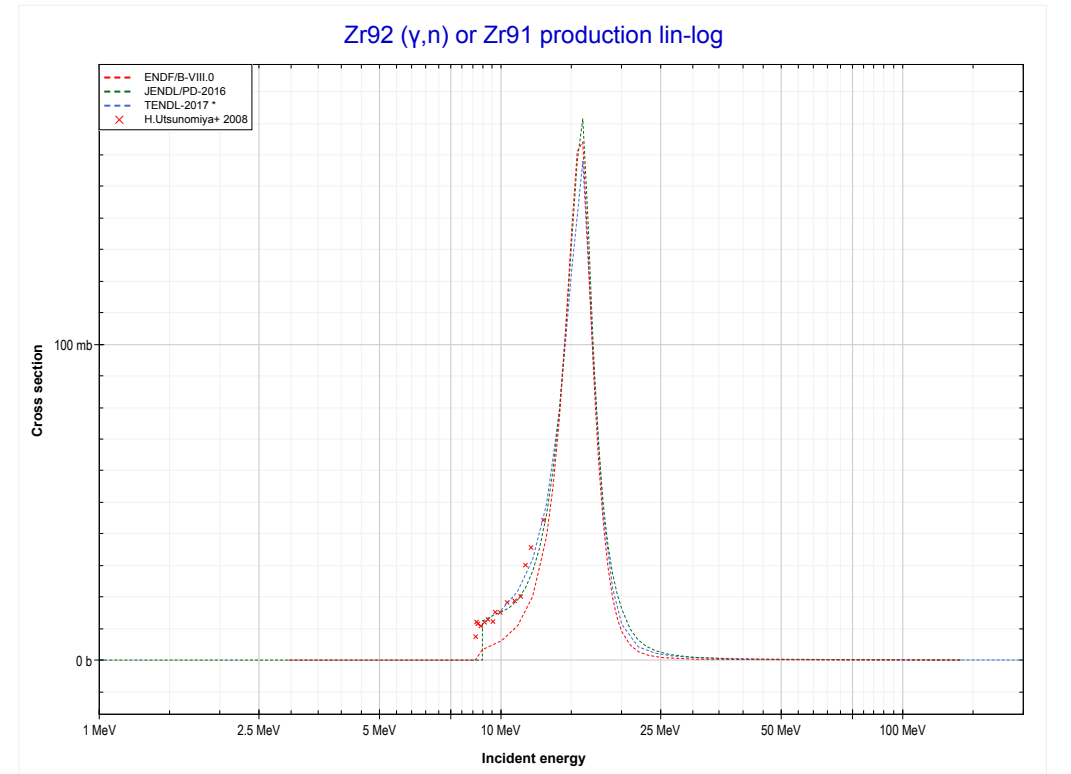
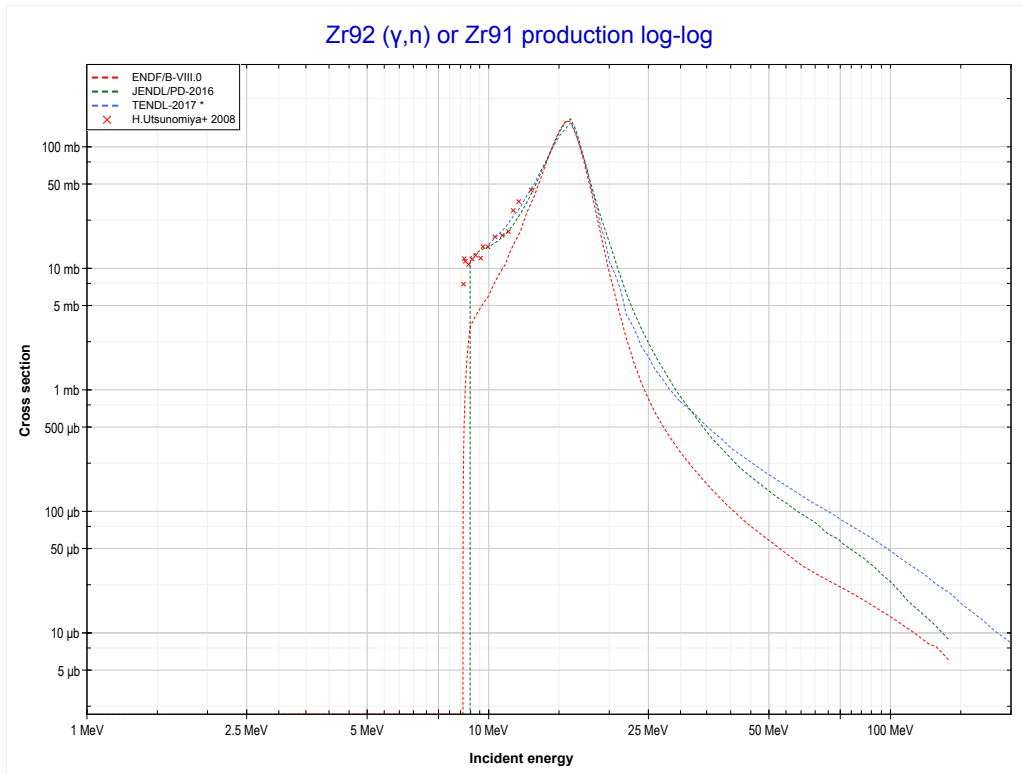
Reaction	Q-Value
Zr90(γ,p)Y89	-8353.37 keV

<< 40-Zr-90	40-Zr-91	40-Zr-92 >>
<< 40-Zr-90 MT103 (γ,p)	MT4 (γ,n) or MT5 (Zr90 production)	40-Zr-92 MT4 (γ,n) >>



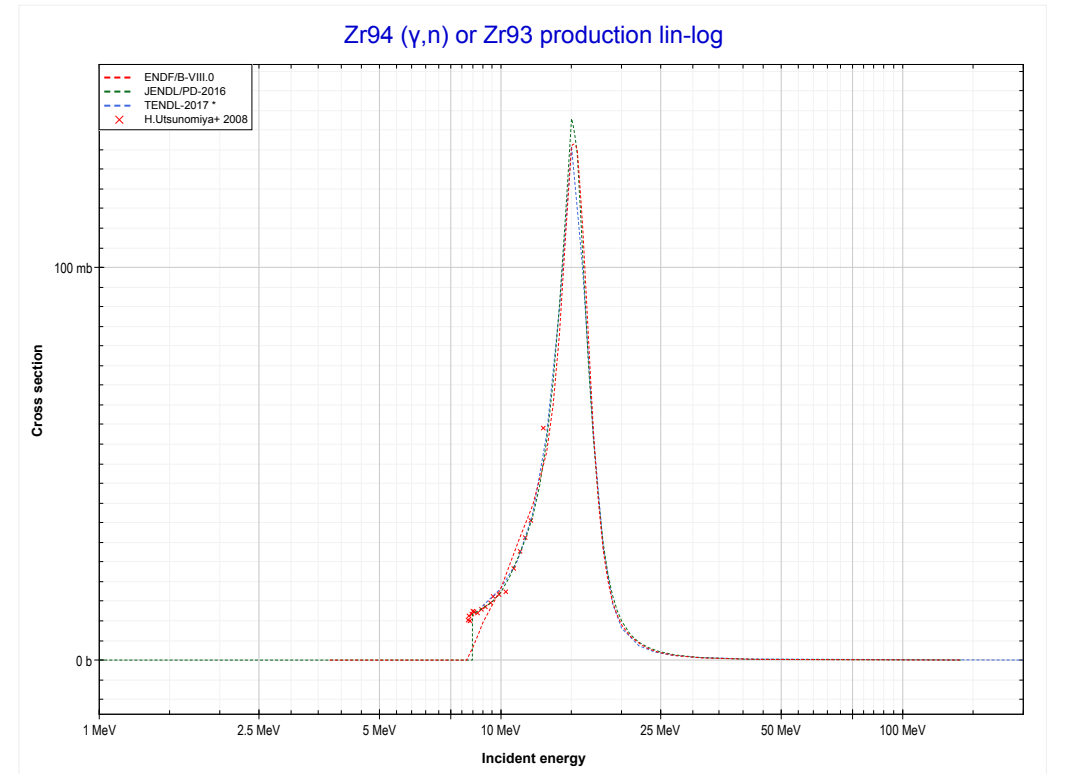
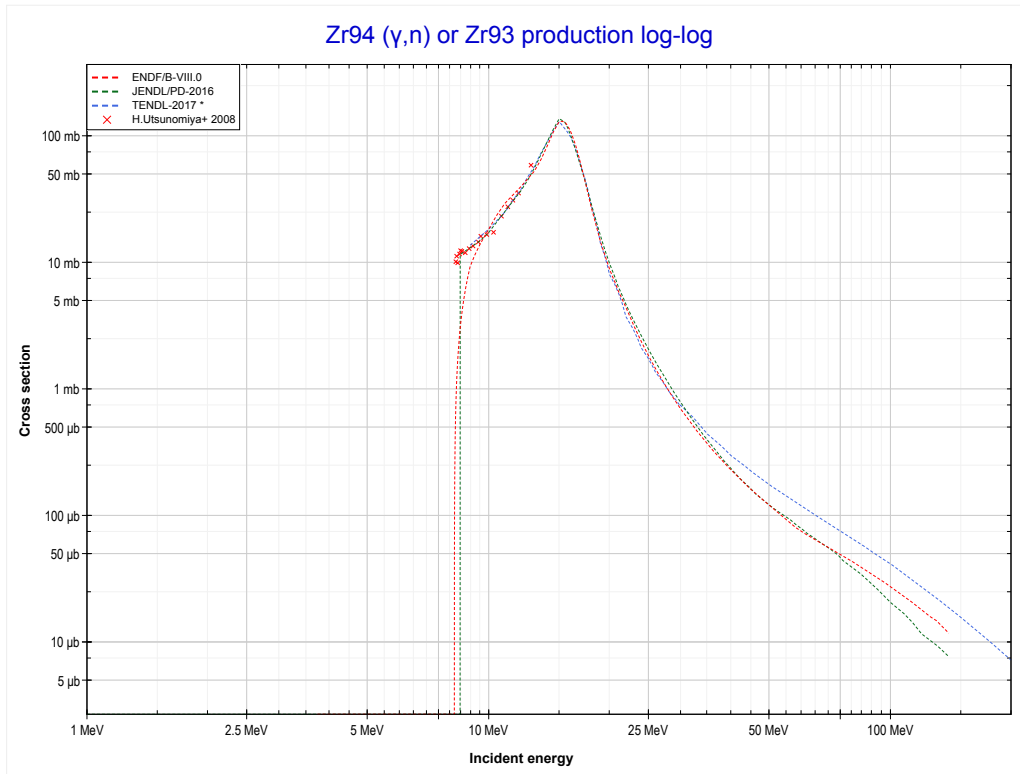
Reaction	Q-Value
Zr91(γ,n)Zr90	-7193.92 keV

<< 40-Zr-91	40-Zr-92	40-Zr-94 >>
<< 40-Zr-91 MT4 (γ,n)	MT4 (γ,n) or MT5 (Zr91 production)	40-Zr-94 MT4 (γ,n) >>



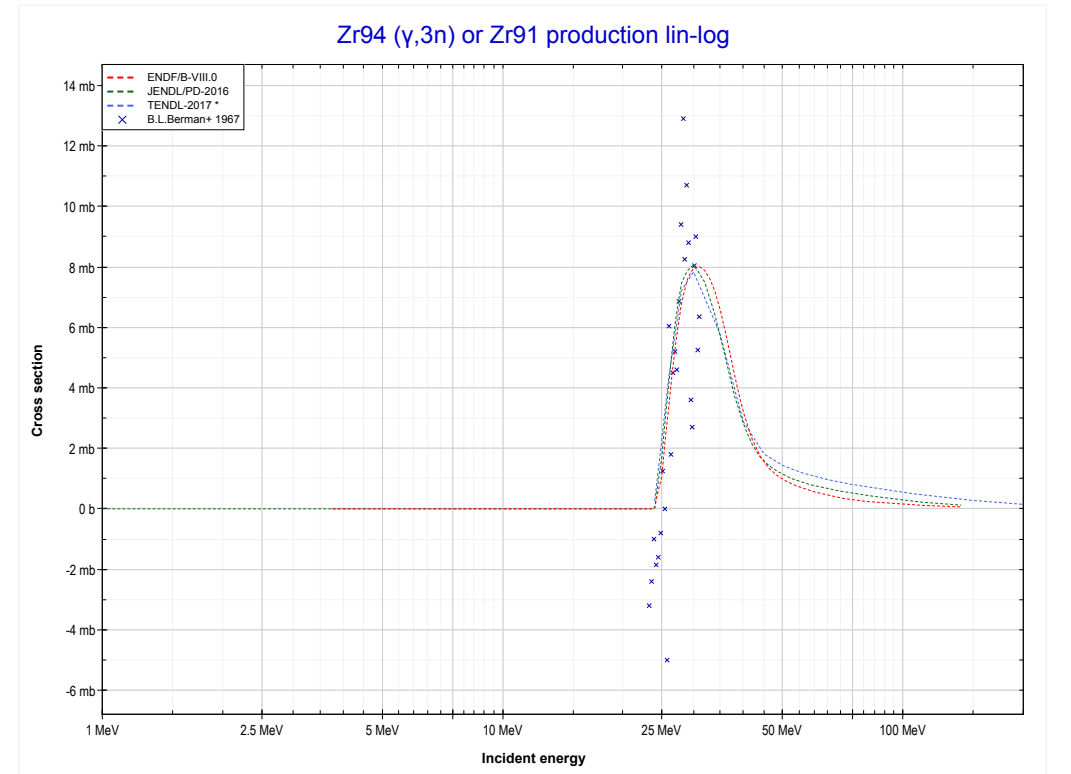
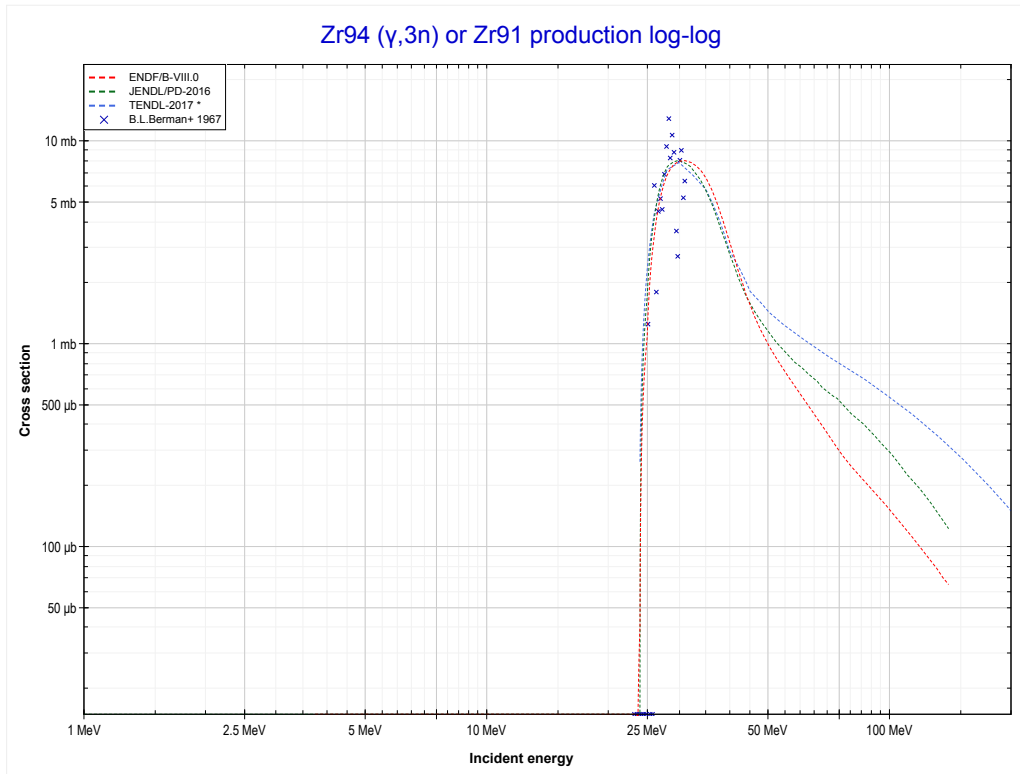
Reaction	Q-Value
Zr92(γ,n)Zr91	-8634.72 keV

<< 40-Zr-92	40-Zr-94	40-Zr-96 >>
<< 40-Zr-92 MT4 (γ,n)	MT4 (γ,n) or MT5 (Zr93 production)	MT17 (γ,3n) >>



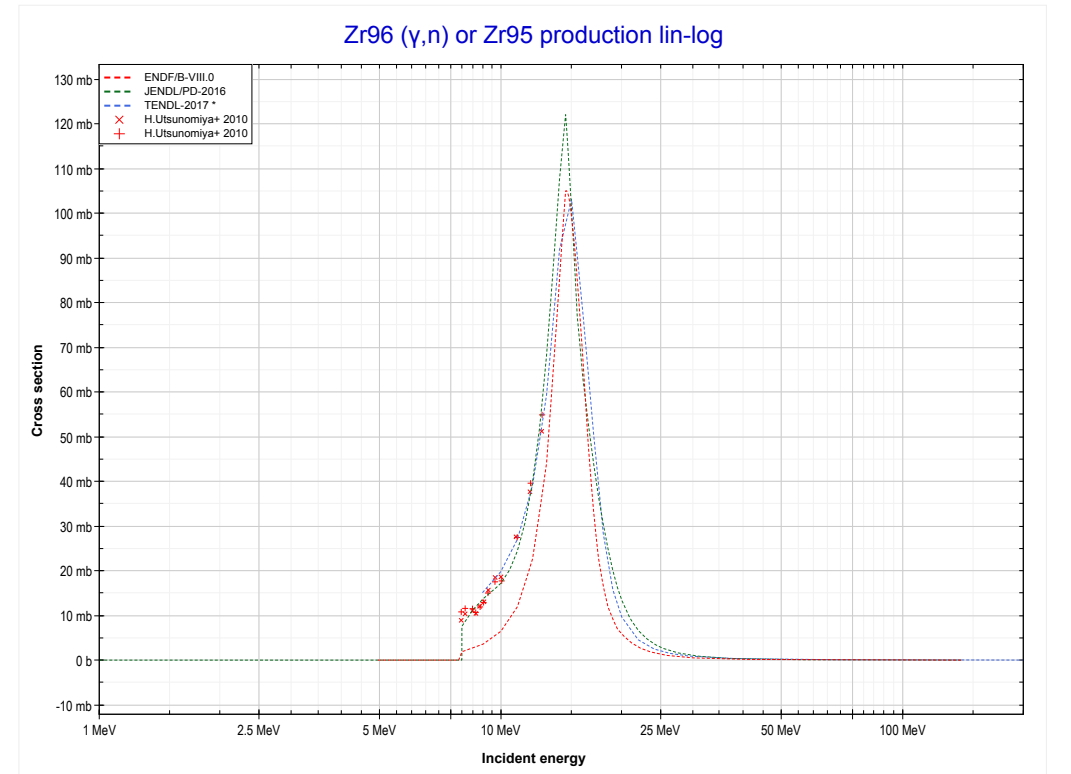
Reaction	Q-Value
Zr94(γ,n)Zr93	-8219.52 keV

<< 27-Co-59	40-Zr-94	42-Mo-96 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Zr91 production)	40-Zr-96 MT4 (γ,n) >>



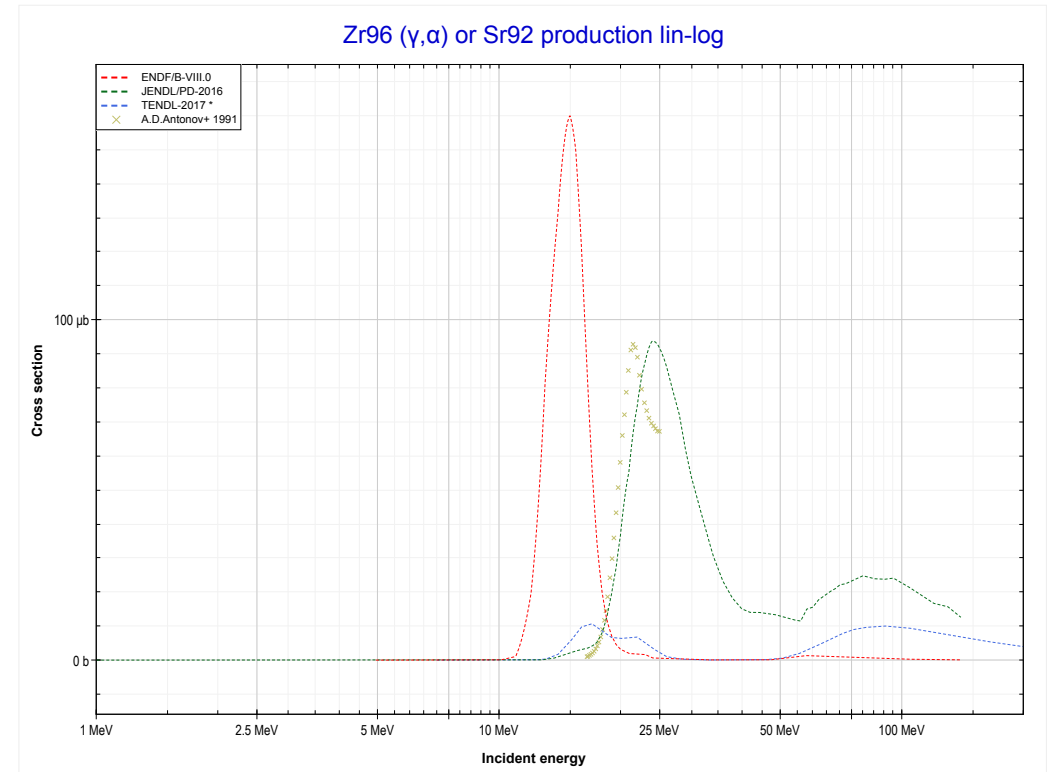
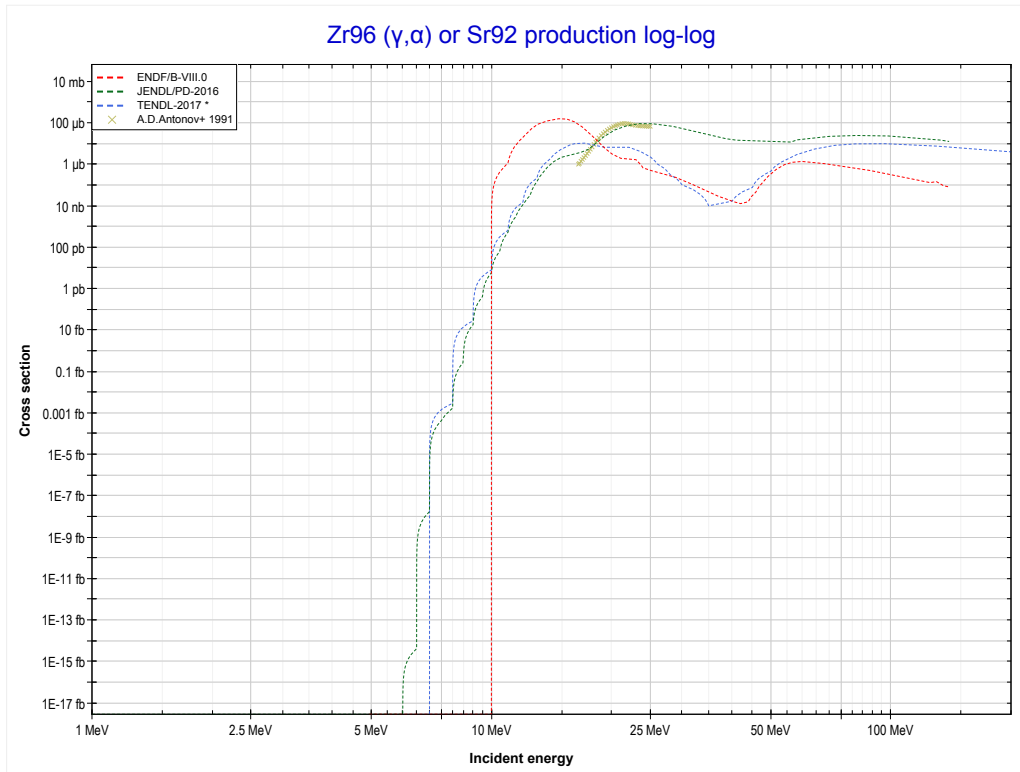
Reaction	Q-Value
Zr94($\gamma,3n$)Zr91	-23588.65 keV

<< 40-Zr-94	40-Zr-96	42-Mo-92 >>
<< 40-Zr-94 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Zr95 production)	MT107 (γ,α) >>



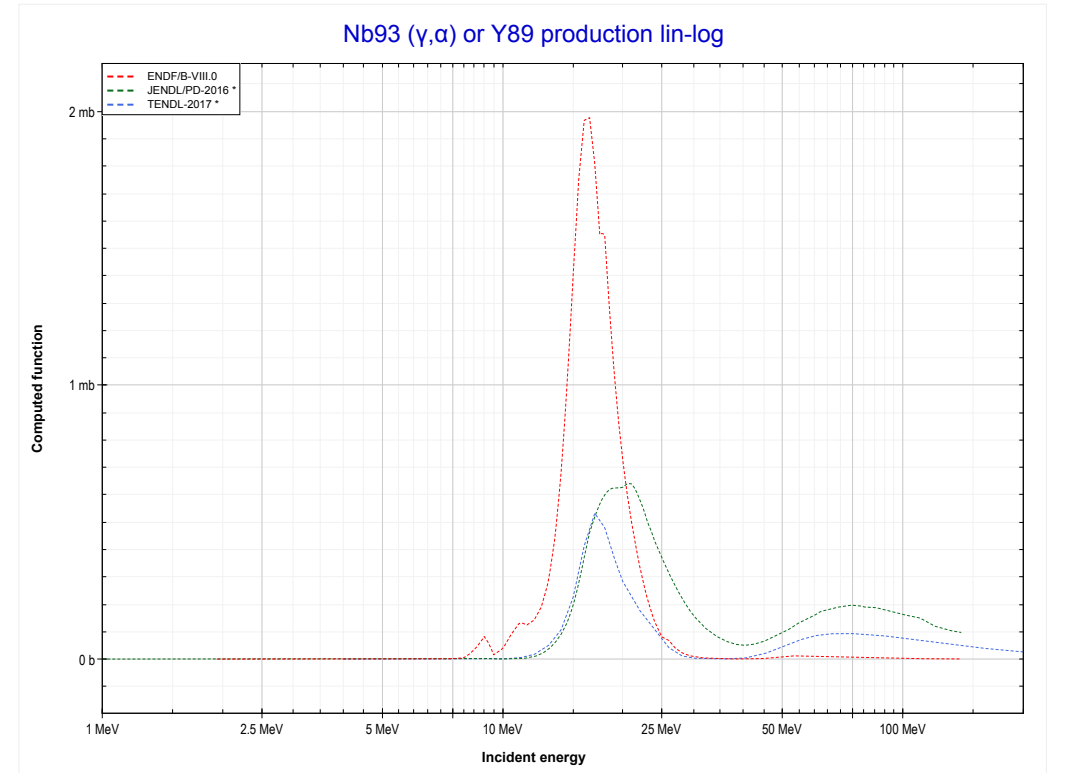
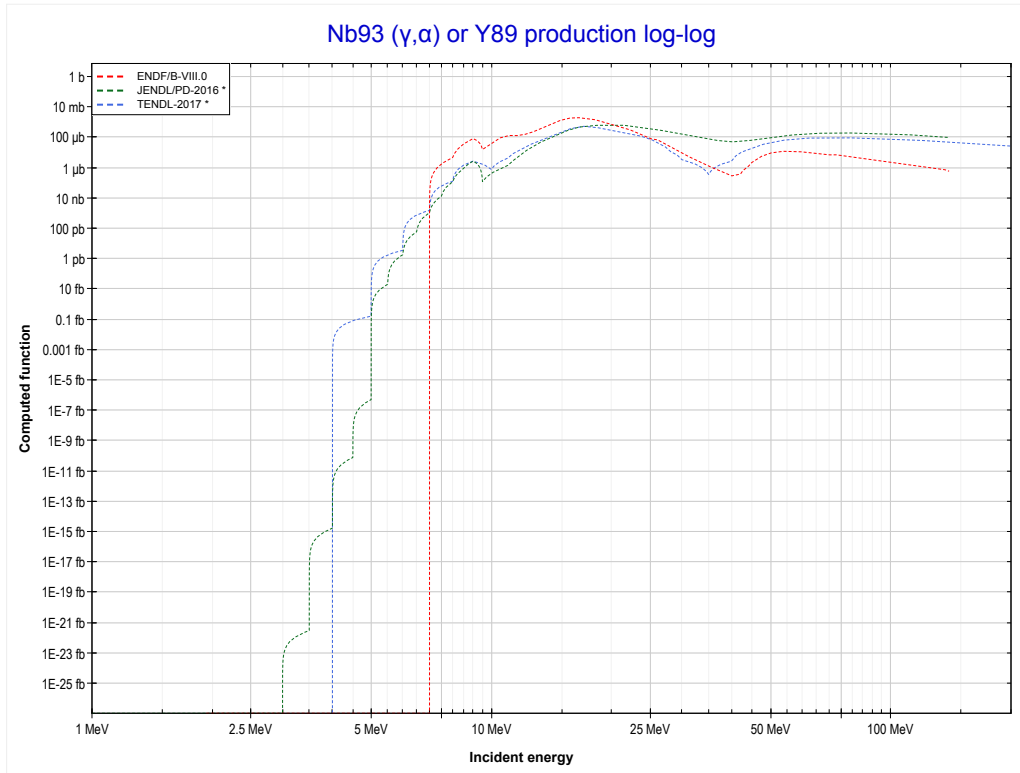
Reaction	Q-Value
Zr96(γ,n)Zr95	-7854.32 keV

<< 37-Rb-87	40-Zr-96	41-Nb-93 >>
<< MT4 (γ, n)	MT107 (γ, α) or MT5 (Sr92 production)	41-Nb-93 MT107 (γ, α) >>



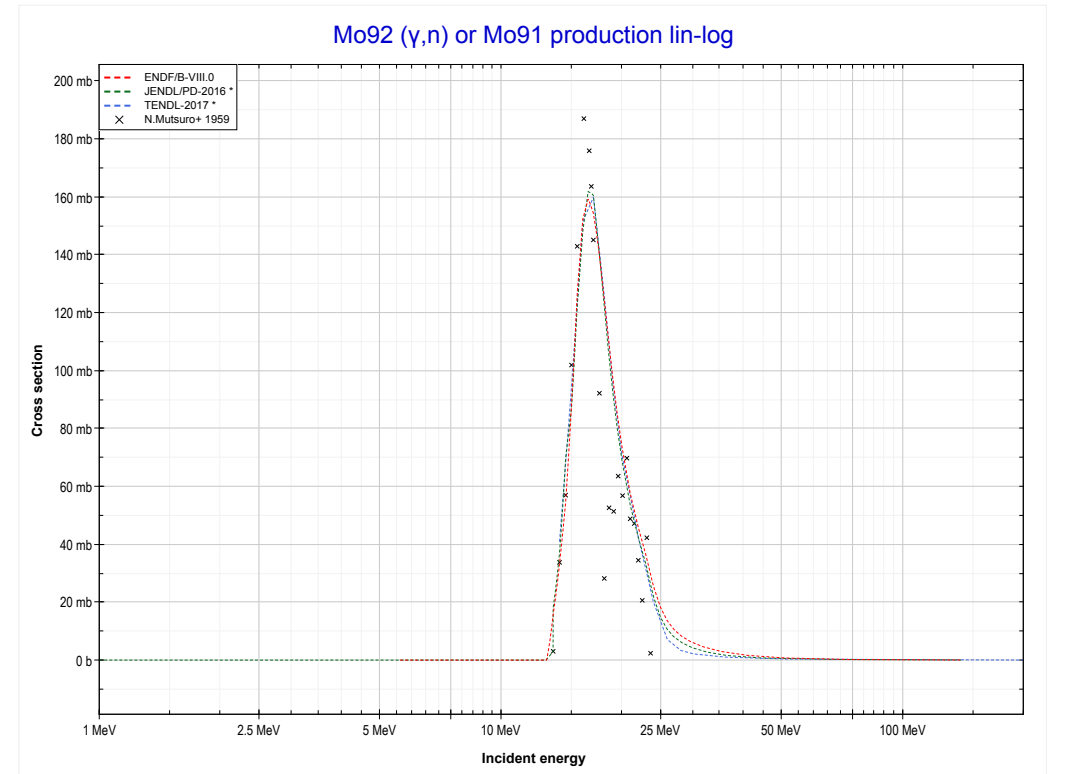
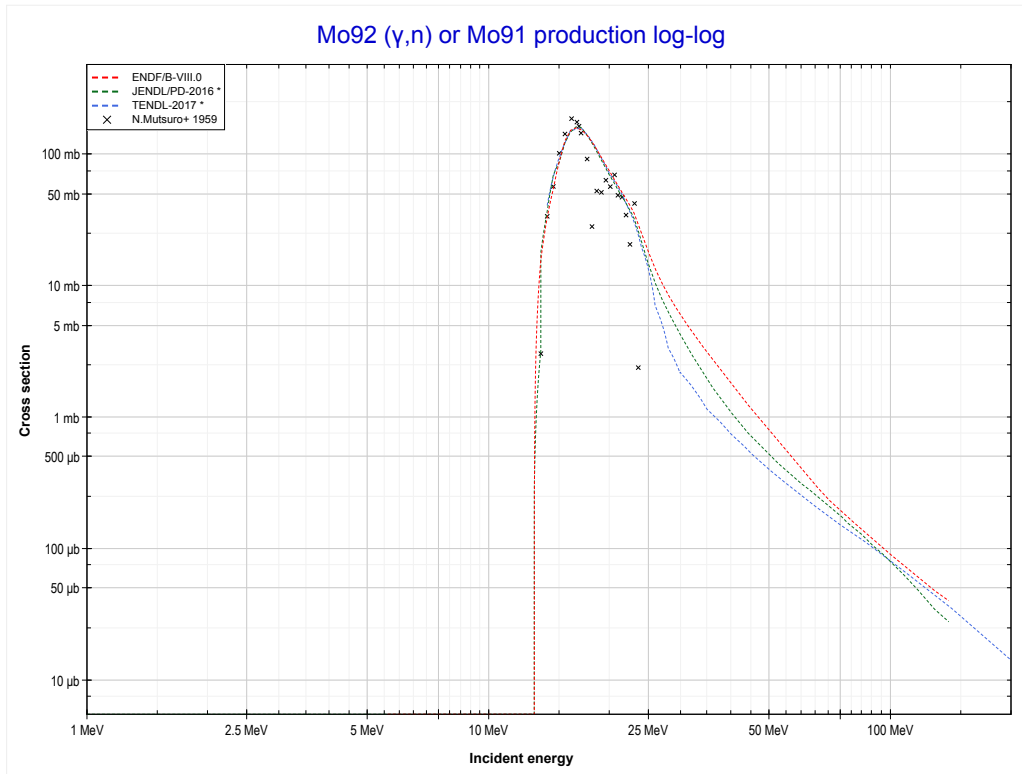
Reaction	Q-Value
Zr96(γ, α)Sr92	-5002.52 keV
Zr96($\gamma, p+t$)Sr92	-24816.38 keV
Zr96($\gamma, n+He3$)Sr92	-25580.13 keV
Zr96($\gamma, 2d$)Sr92	-28849.04 keV
Zr96($\gamma, n+p+d$)Sr92	-31073.61 keV
Zr96($\gamma, 2n+2p$)Sr92	-33298.18 keV

<< 40-Zr-96	41-Nb-93	68-Er-170 >>
<< 40-Zr-96 MT107 (γ,α)	MT107 (γ,α) or MT5 (Y89 production)	42-Mo-92 MT4 (γ,n) >>



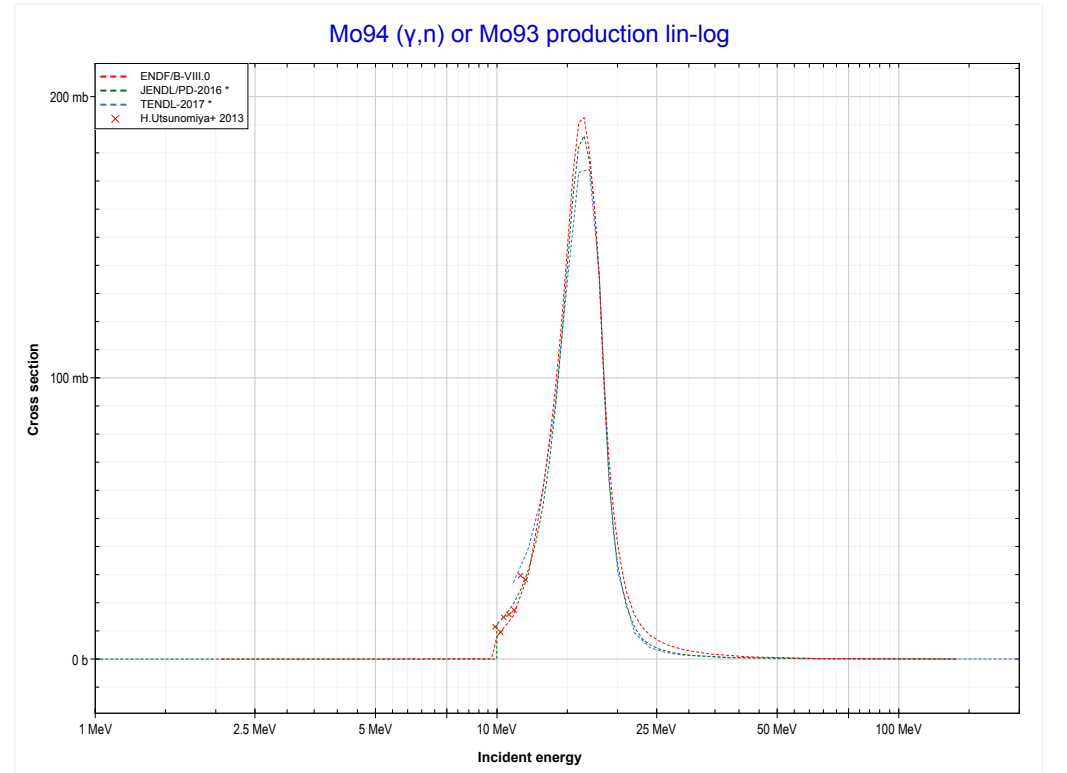
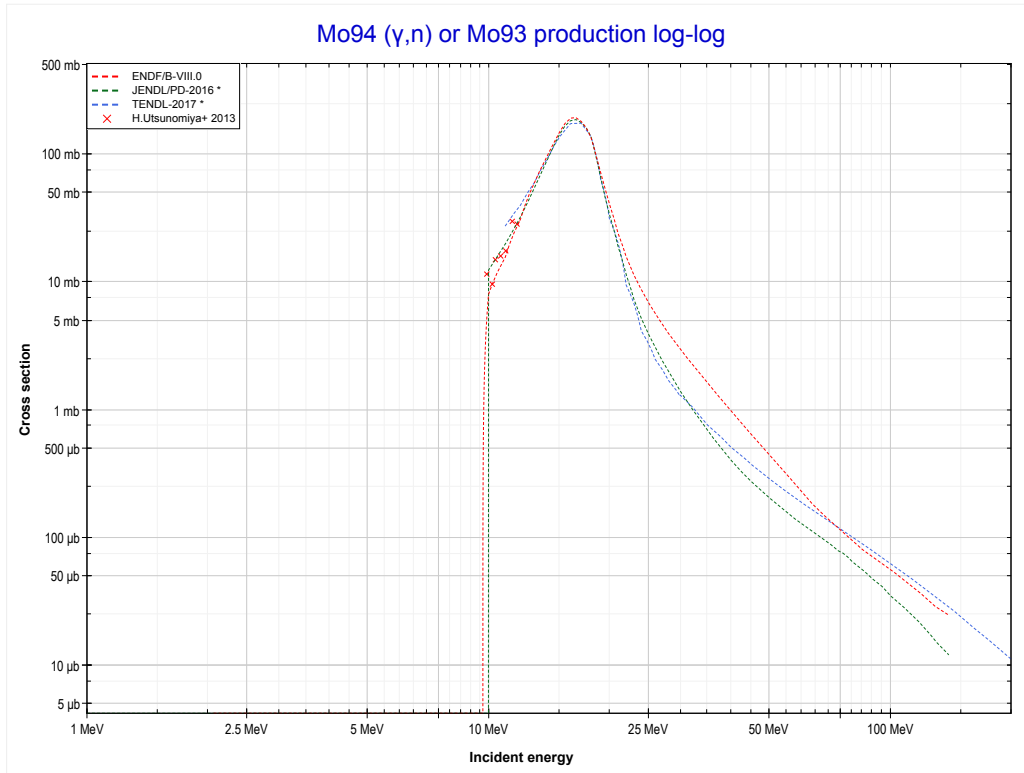
Reaction	Q-Value
Nb93(γ,α)Y89	-1928.72 keV
Nb93($\gamma,p+t$)Y89	-21742.58 keV
Nb93($\gamma,n+He3$)Y89	-22506.33 keV
Nb93($\gamma,2d$)Y89	-25775.24 keV
Nb93($\gamma,n+p+d$)Y89	-27999.81 keV
Nb93($\gamma,2n+2p$)Y89	-30224.38 keV

<< 40-Zr-96	42-Mo-92	42-Mo-94 >>
<< 41-Nb-93 MT107 (γ,α)	MT4 (γ,n) or MT5 (Mo91 production)	42-Mo-94 MT4 (γ,n) >>



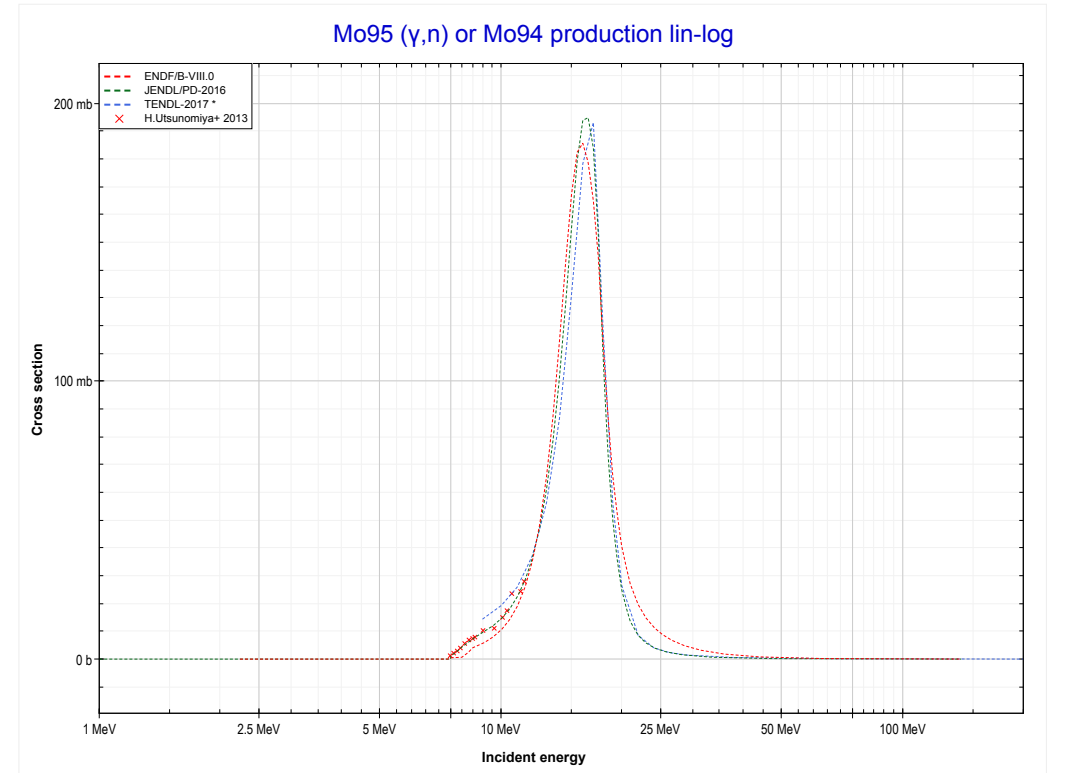
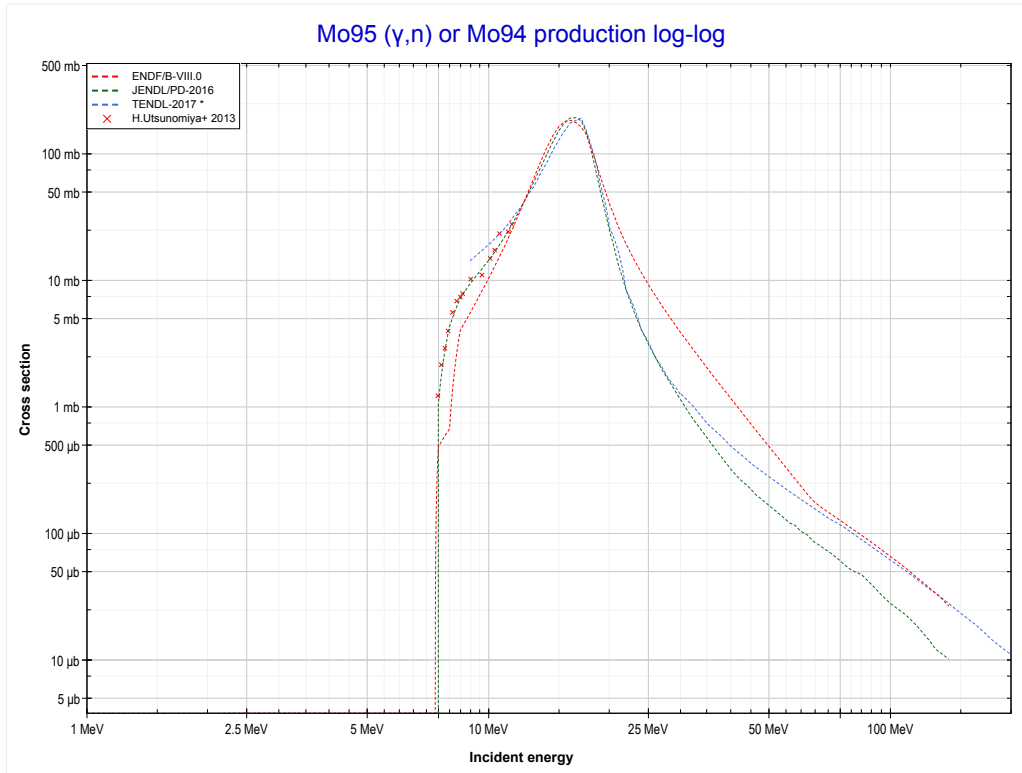
Reaction	Q-Value
Mo92(γ,n)Mo91	-12670.12 keV

<< 42-Mo-92	42-Mo-94	42-Mo-95 >>
<< 42-Mo-92 MT4 (γ,n)	MT4 (γ,n) or MT5 (Mo93 production)	42-Mo-95 MT4 (γ,n) >>



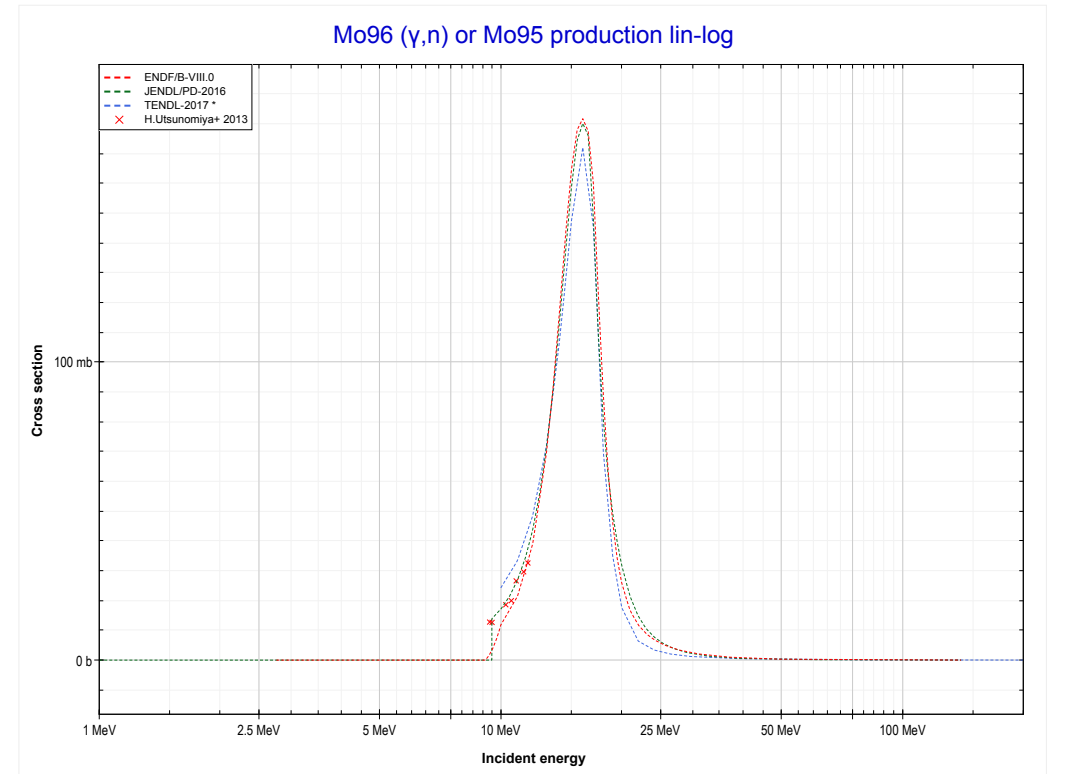
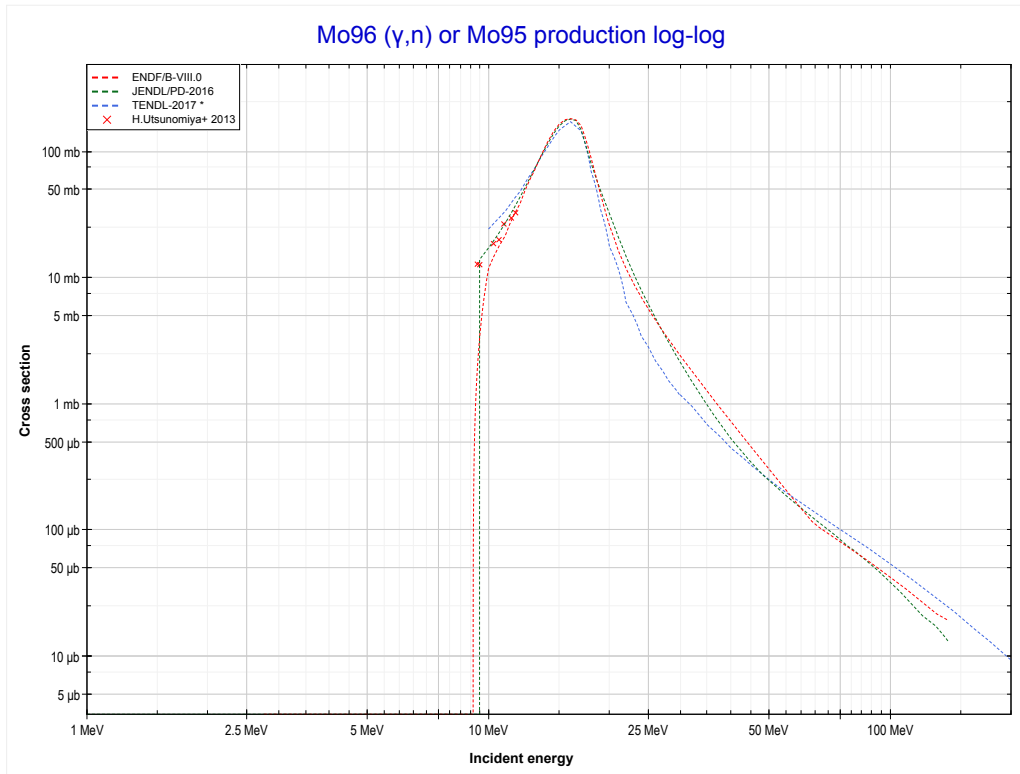
Reaction	Q-Value
Mo94(γ,n)Mo93	-9677.82 keV

<< 42-Mo-94	42-Mo-95	42-Mo-96 >>
<< 42-Mo-94 MT4 (γ,n)	MT4 (γ,n) or MT5 (Mo94 production)	42-Mo-96 MT4 (γ,n) >>



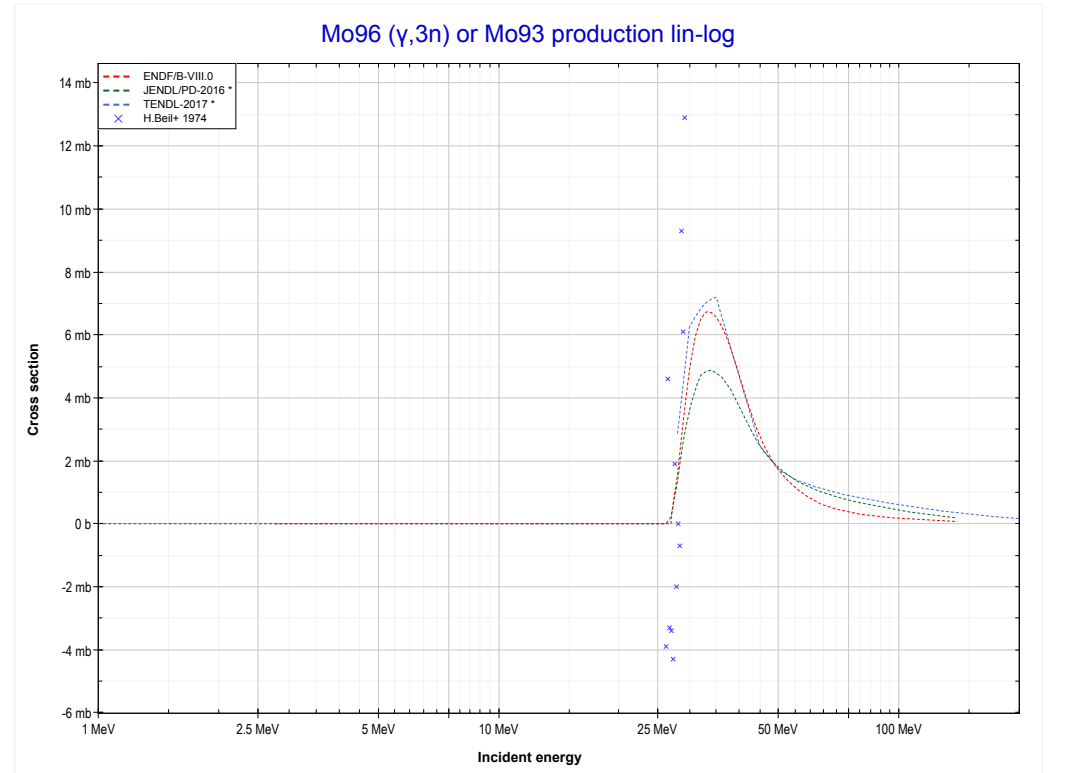
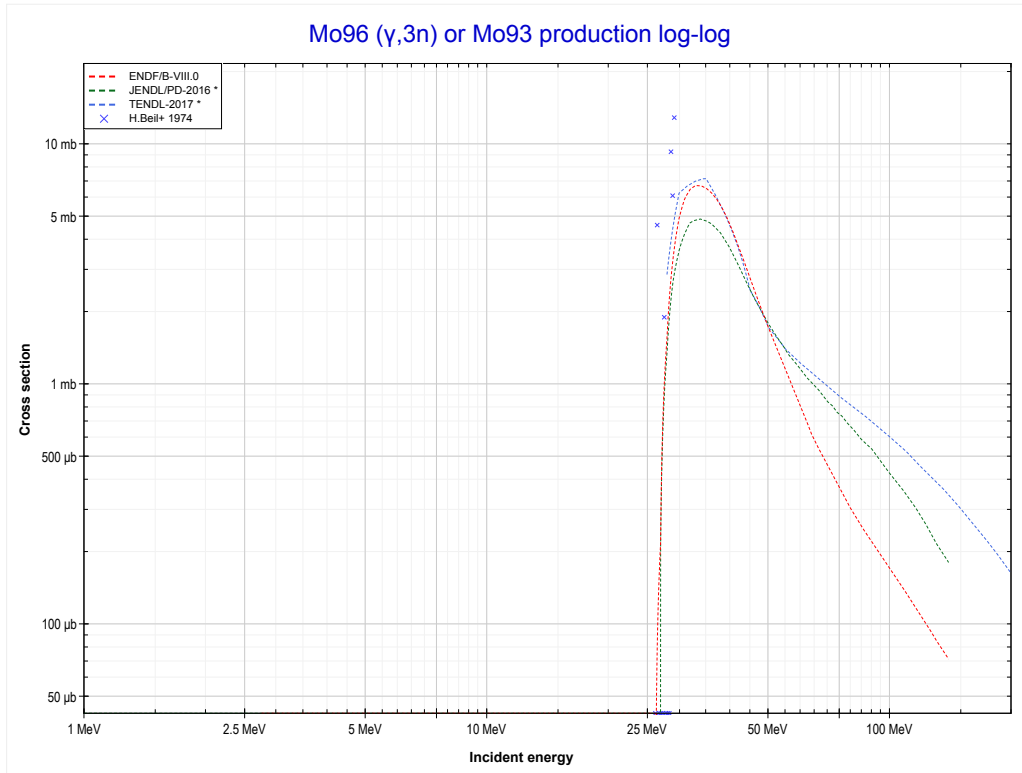
Reaction	Q-Value
Mo95(γ,n)Mo94	-7369.12 keV

<< 42-Mo-95	42-Mo-96	42-Mo-97 >>
<< 42-Mo-95 MT4 (γ,n)	MT4 (γ,n) or MT5 (Mo95 production)	MT17 ($\gamma,3n$) >>



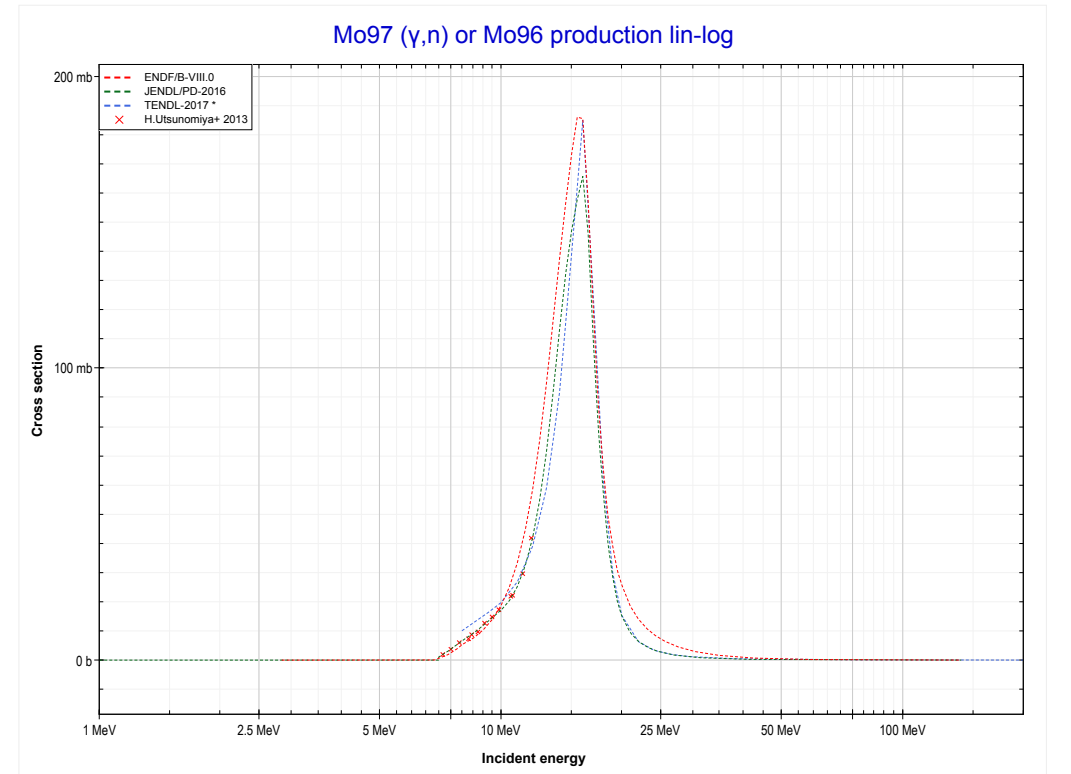
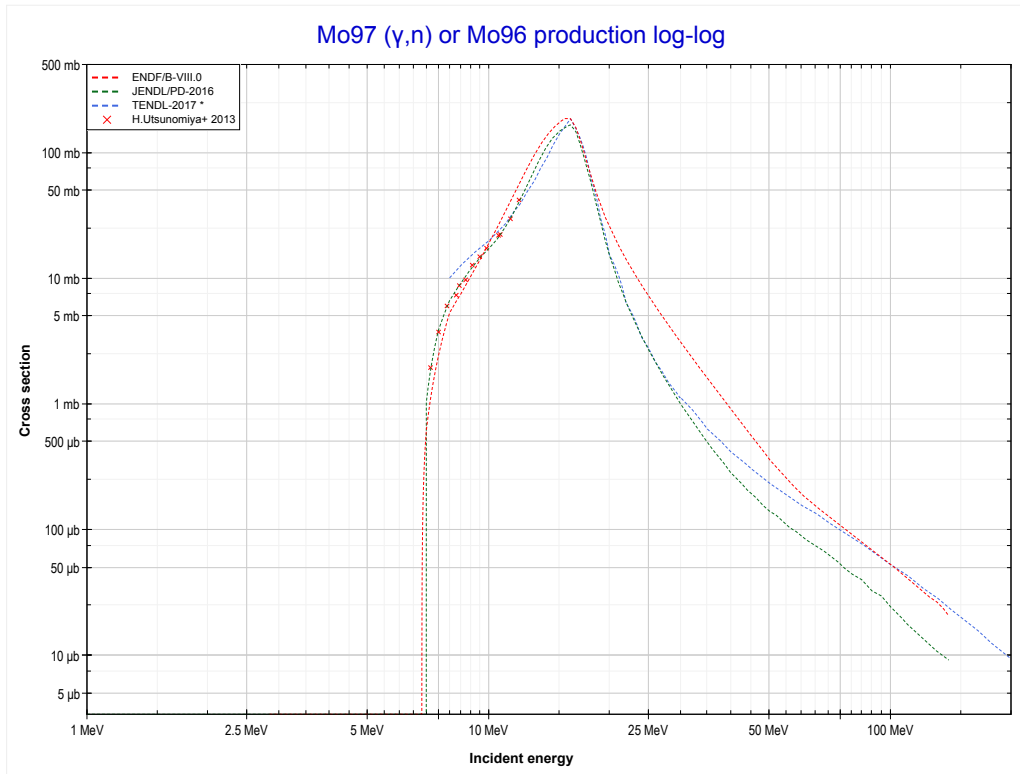
Reaction	Q-Value
Mo96(γ,n)Mo95	-9154.32 keV

<< 40-Zr-94	42-Mo-96	42-Mo-98 >>
<< MT4 (γ, n)	MT17 ($\gamma, 3n$) or MT5 (Mo93 production)	42-Mo-97 MT4 (γ, n) >>



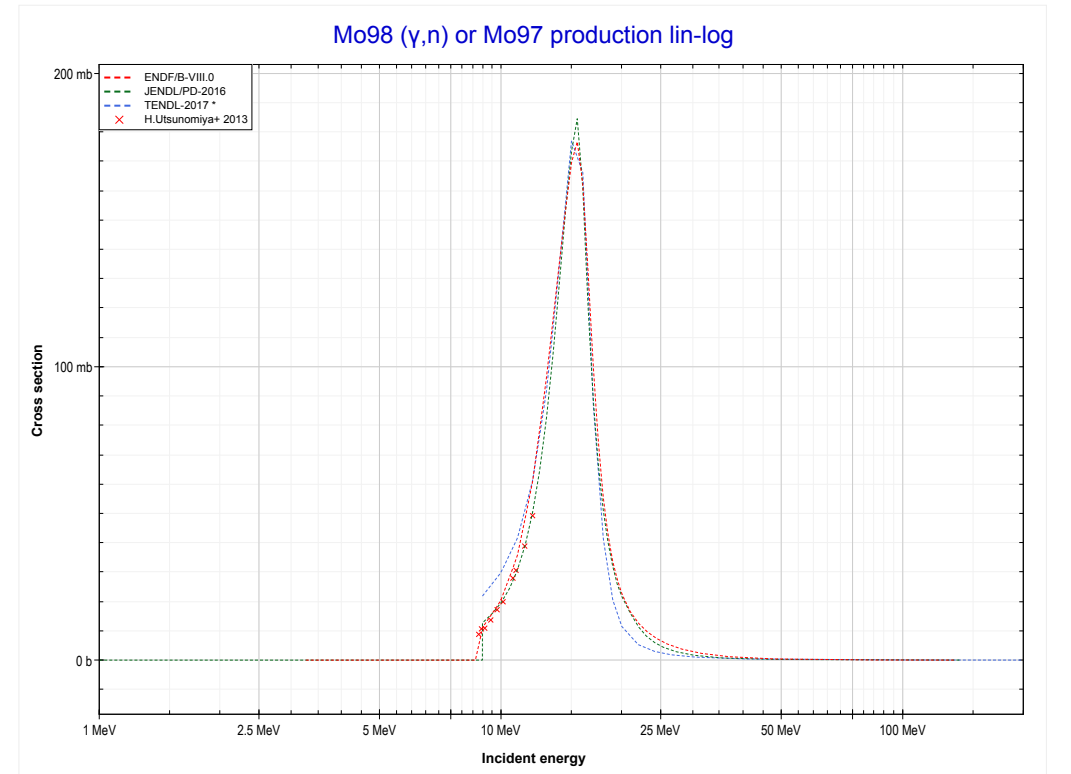
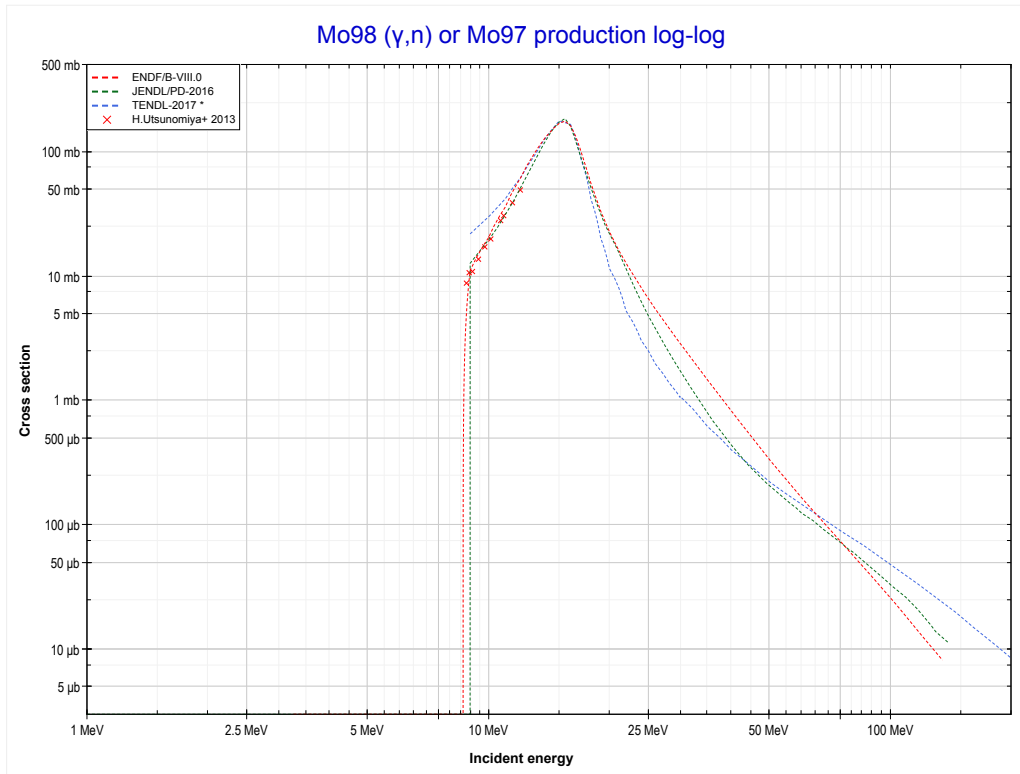
Reaction	Q-Value
Mo96($\gamma, 3n$)Mo93	-26201.25 keV

<< 42-Mo-96	42-Mo-97	42-Mo-98 >>
<< 42-Mo-96 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Mo96 production)	42-Mo-98 MT4 (γ,n) >>



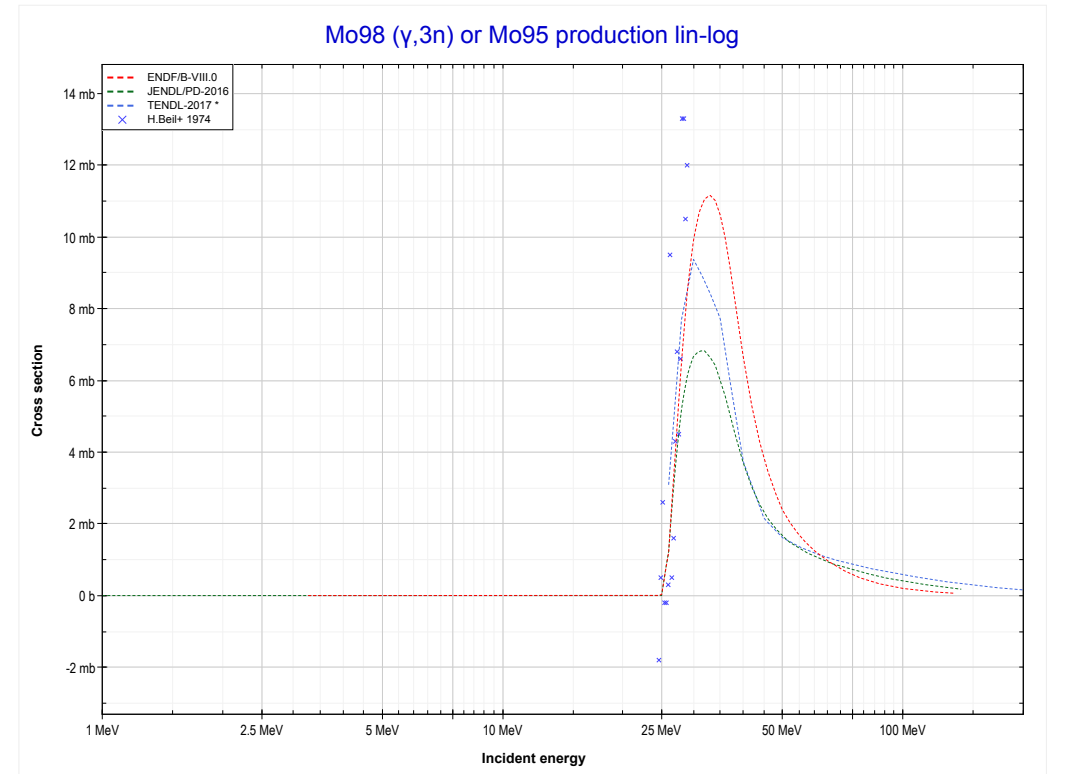
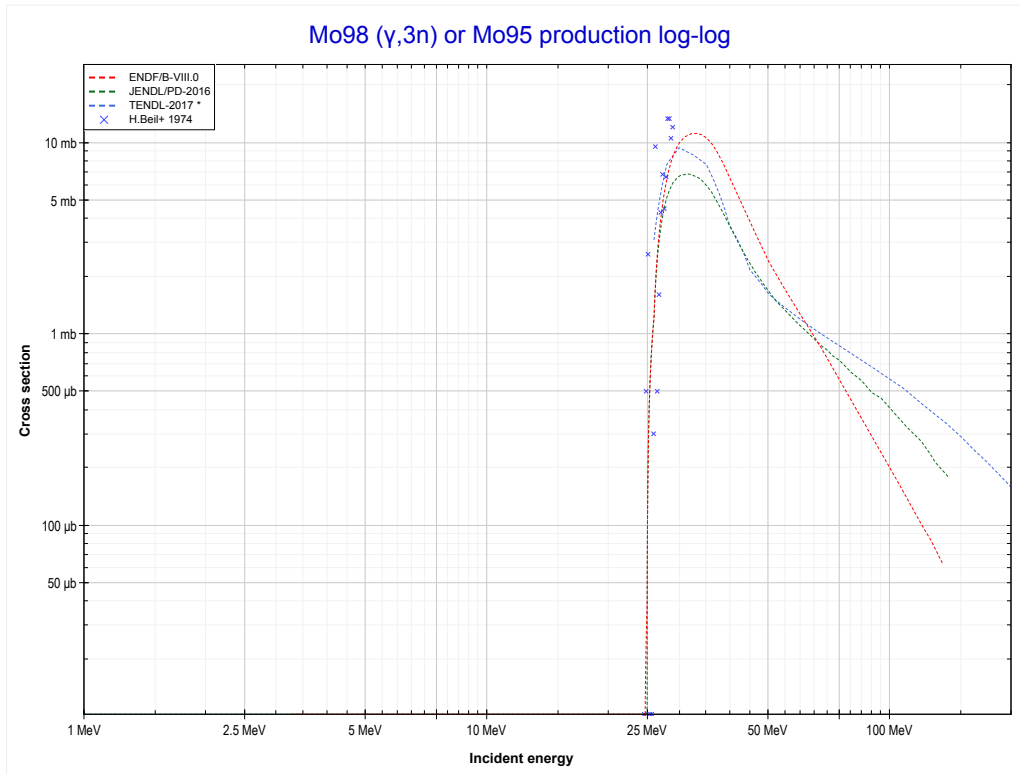
Reaction	Q-Value
Mo97(γ,n)Mo96	-6821.32 keV

<< 42-Mo-97	42-Mo-98	42-Mo-100 >>
<< 42-Mo-97 MT4 (γ,n)	MT4 (γ,n) or MT5 (Mo97 production)	MT17 ($\gamma,3n$) >>



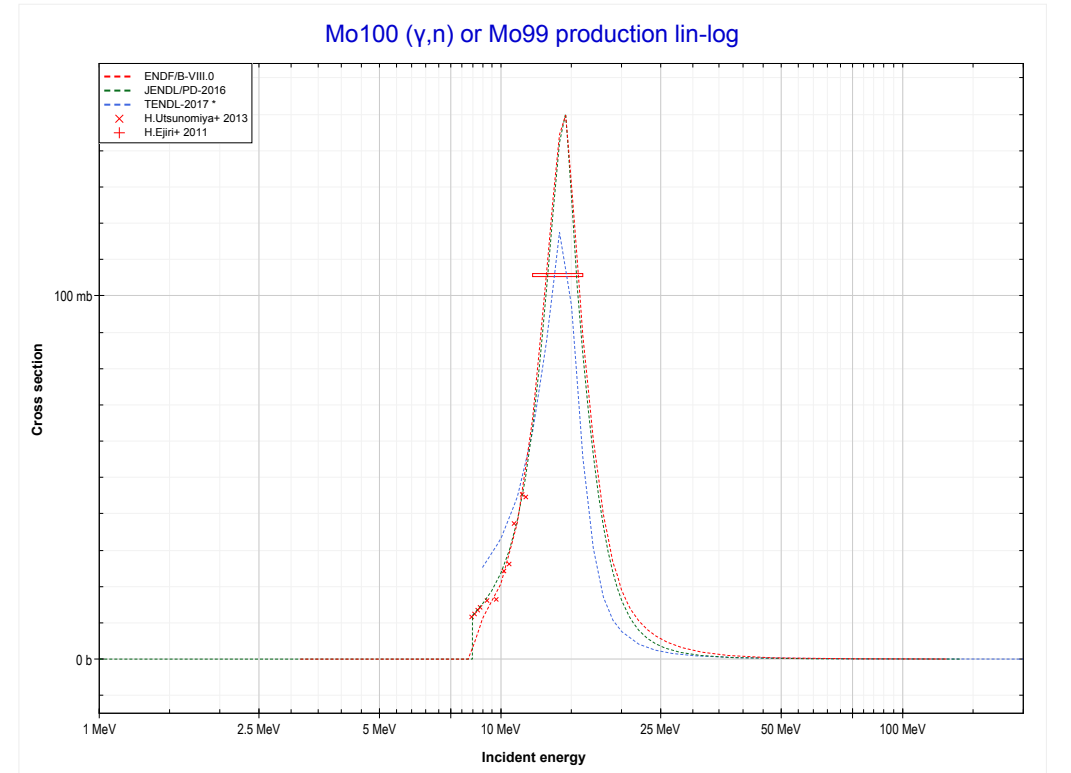
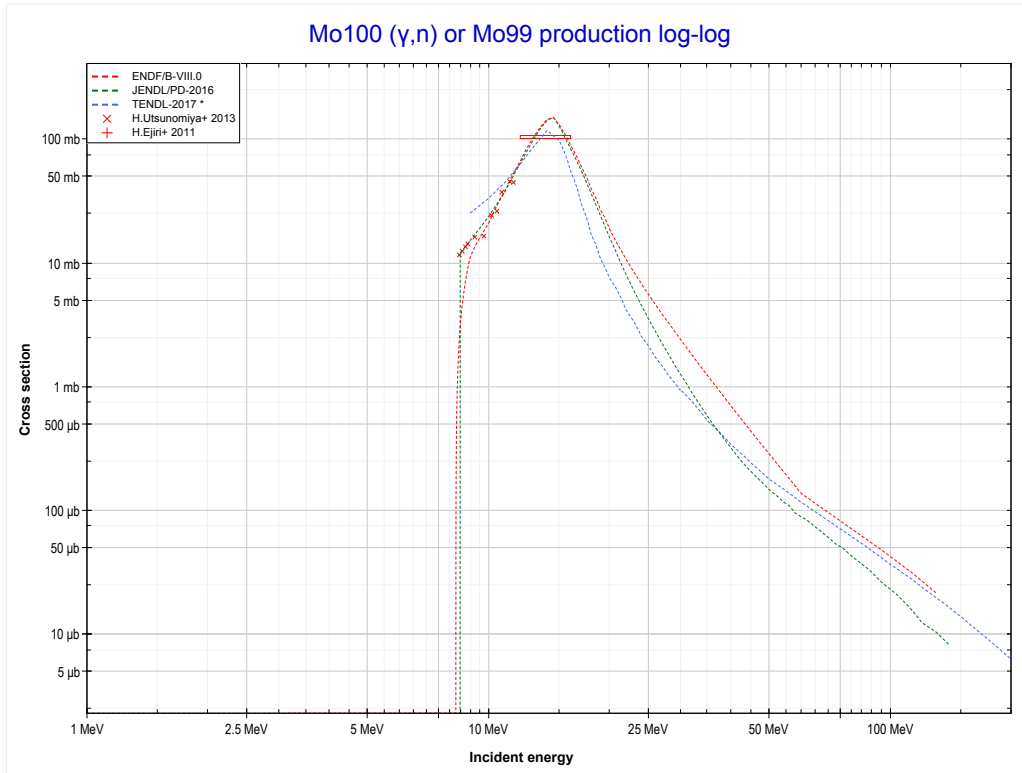
Reaction	Q-Value
Mo98(γ,n)Mo97	-8642.52 keV

<< 42-Mo-96	42-Mo-98	42-Mo-100 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Mo95 production)	42-Mo-100 MT4 (γ,n) >>



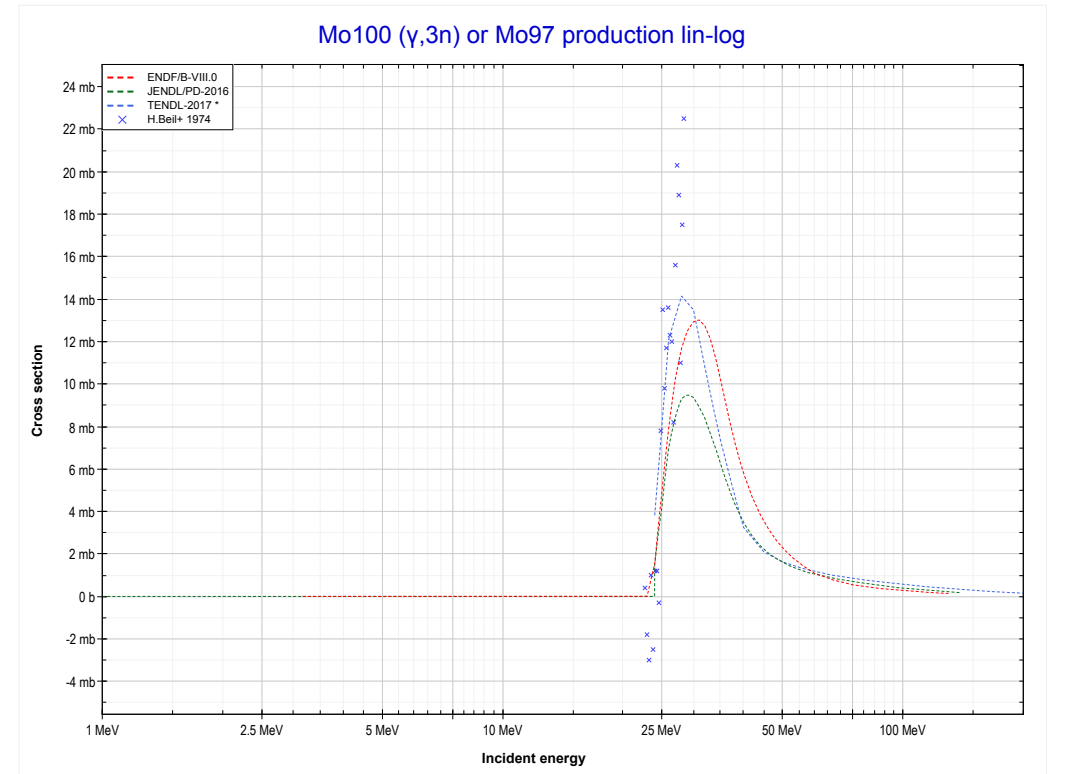
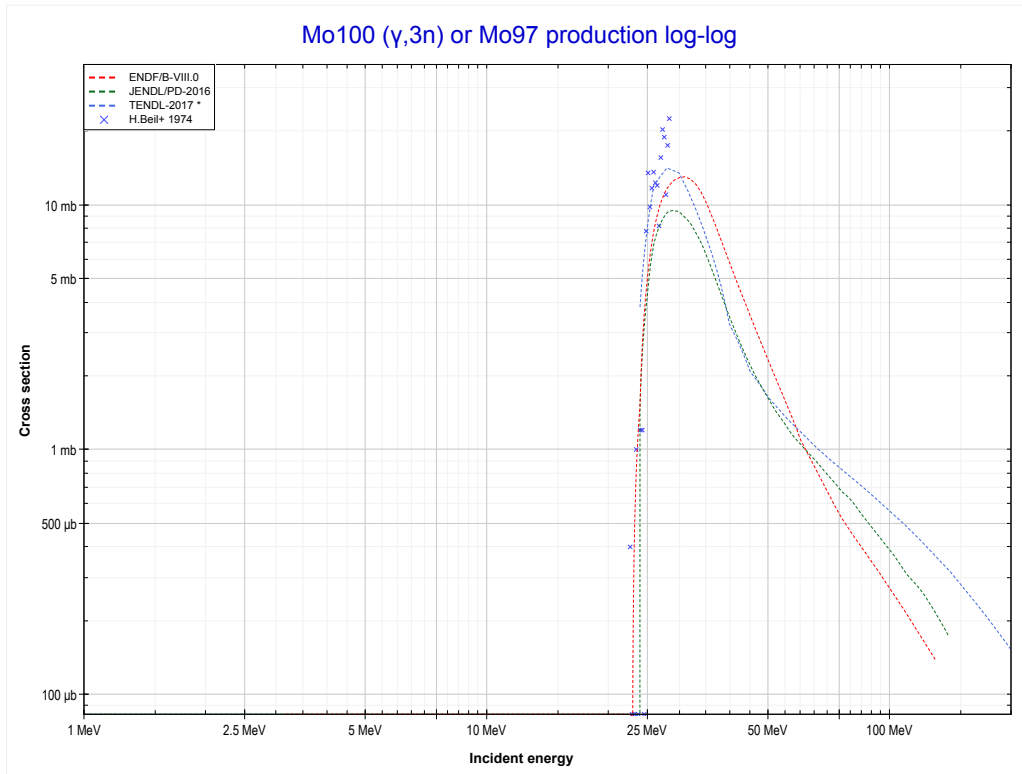
Reaction	Q-Value
Mo98($\gamma,3n$)Mo95	-24618.15 keV

<< 42-Mo-98	42-Mo-100	46-Pd-105 >>
<< 42-Mo-98 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Mo99 production)	MT17 ($\gamma,3n$) >>



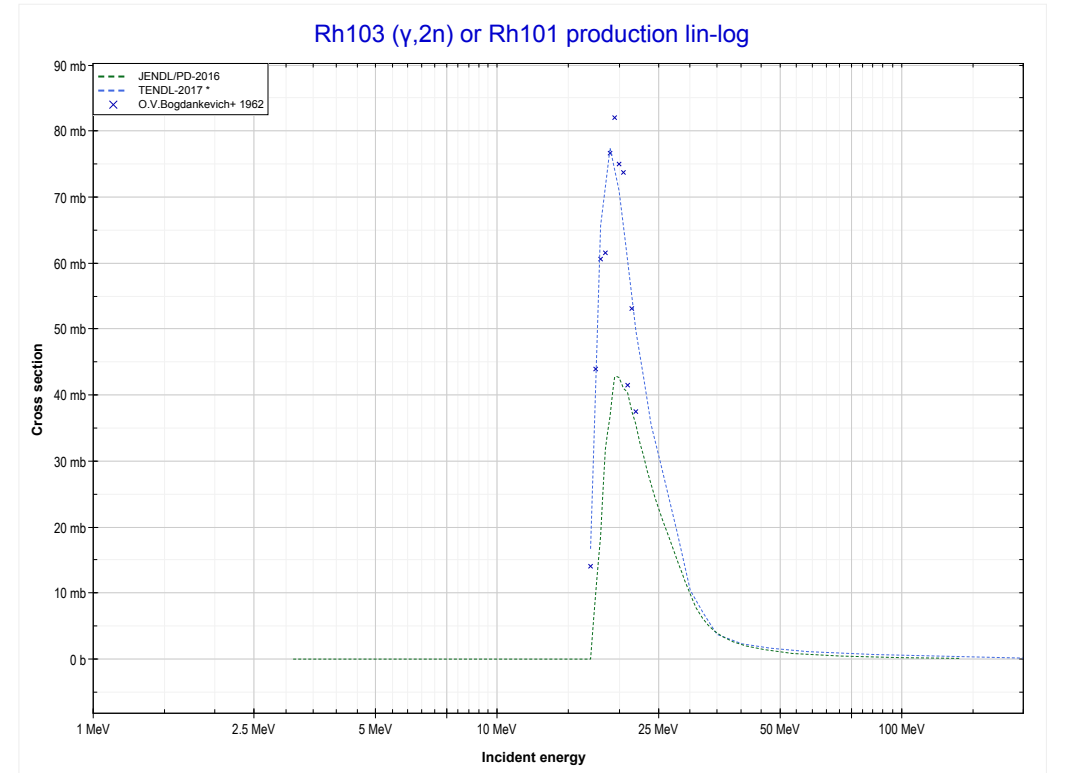
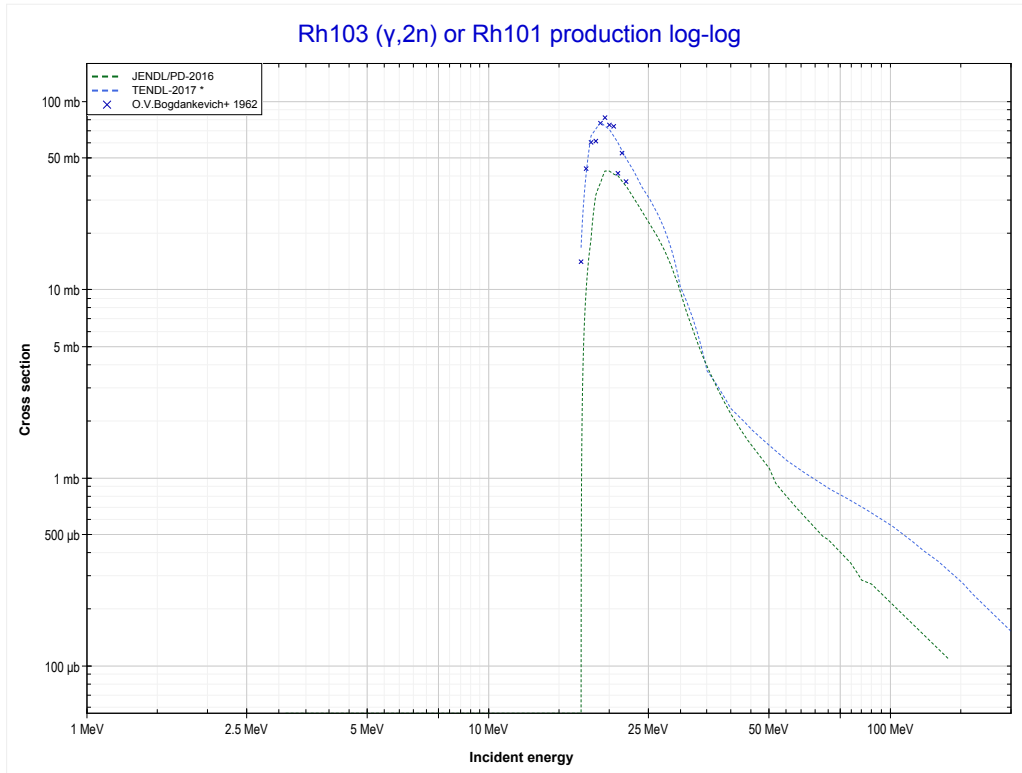
Reaction	Q-Value
Mo100(γ,n)Mo99	-8291.82 keV

<< 42-Mo-98	42-Mo-100	49-In-115 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Mo97 production)	45-Rh-103 MT16 ($\gamma,2n$) >>



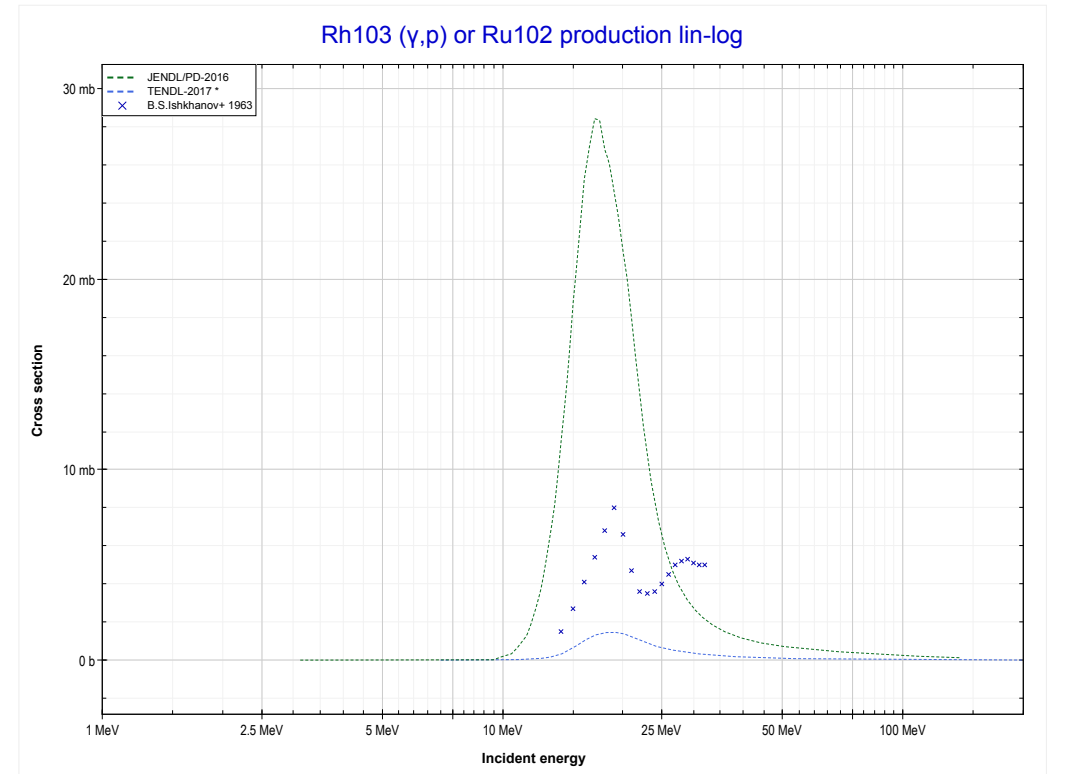
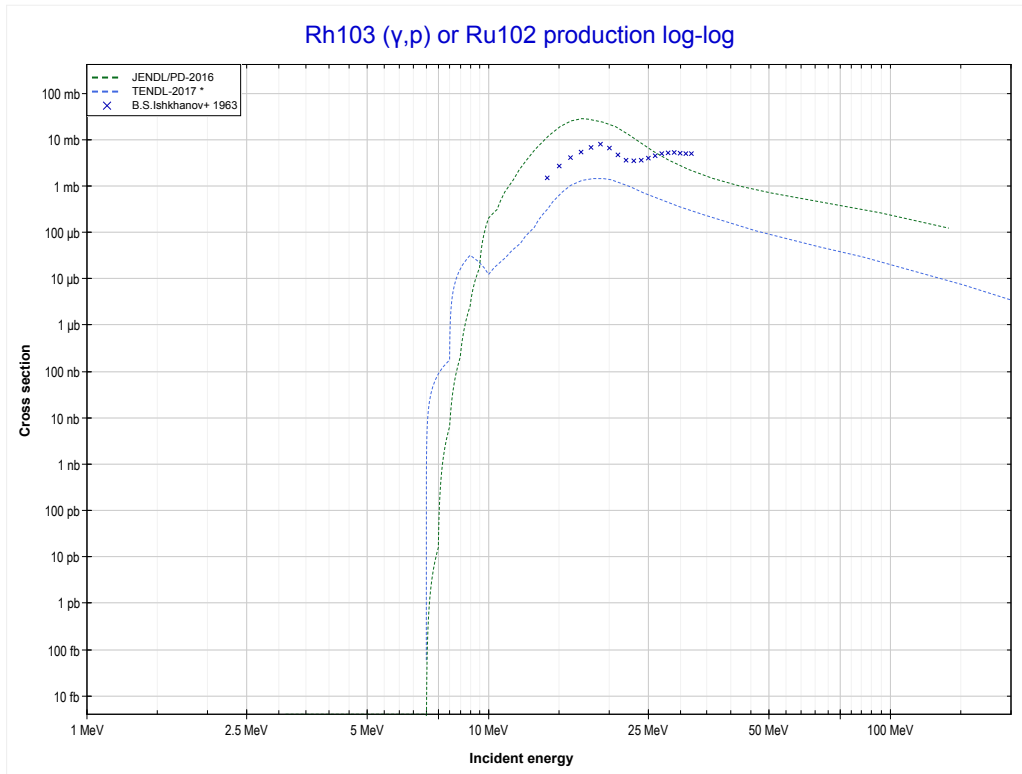
Reaction	Q-Value
Mo100($\gamma,3n$)Mo97	-22859.85 keV

<< 40-Zr-90	45-Rh-103	47-Ag-107 >>
<< 42-Mo-100 MT17 ($\gamma,3n$)	MT16 ($\gamma,2n$) or MT5 (Rh101 production)	MT103 (γ,p) >>



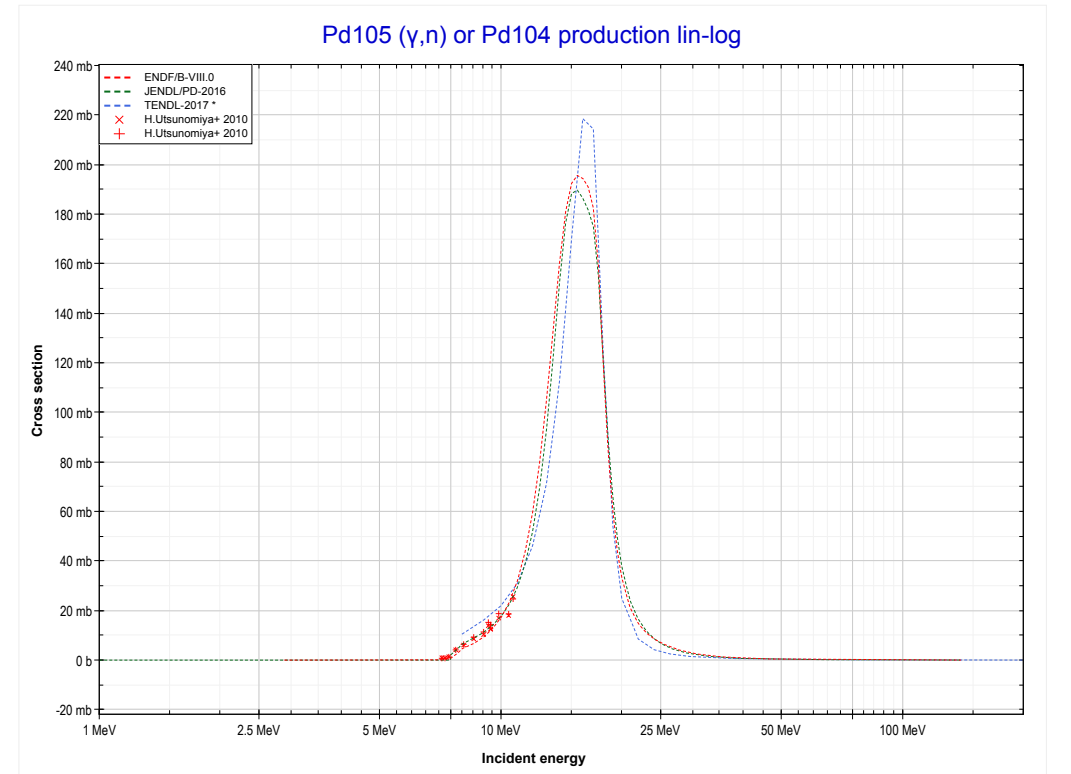
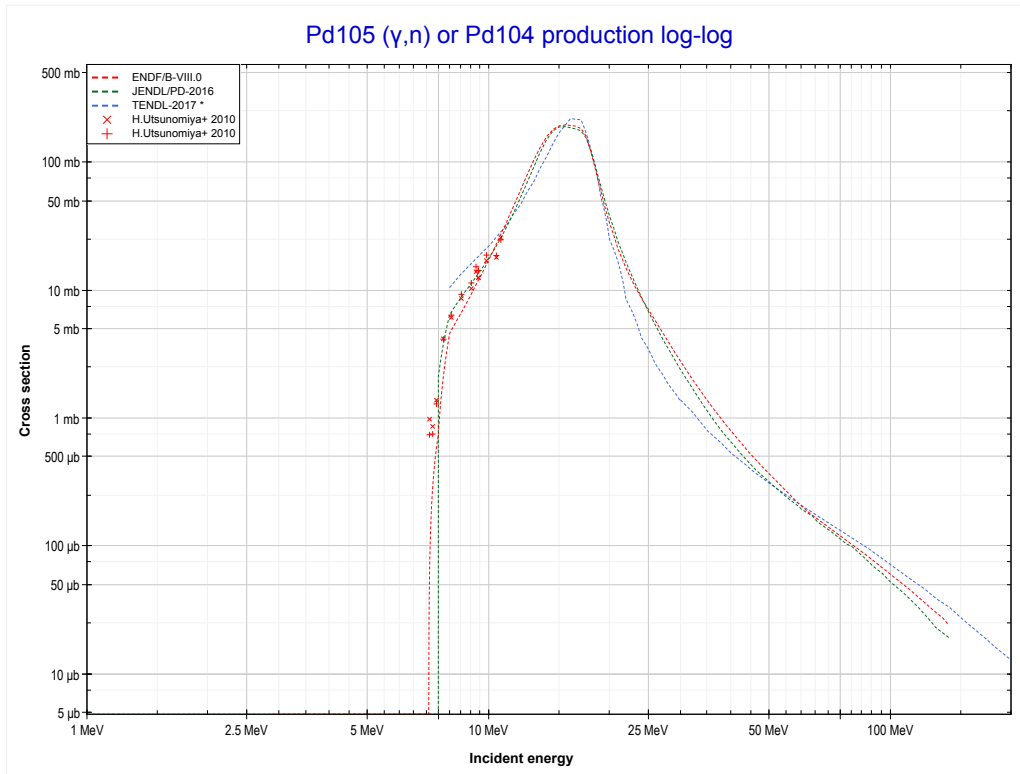
Reaction	Q-Value
Rh103($\gamma,2n$)Rh101	-16759.73 keV

<< 40-Zr-90	45-Rh-103	46-Pd-108 >>
<< MT16 ($\gamma,2n$)	MT103 (γ,p) or MT5 (Ru102 production)	46-Pd-105 MT4 (γ,n) >>



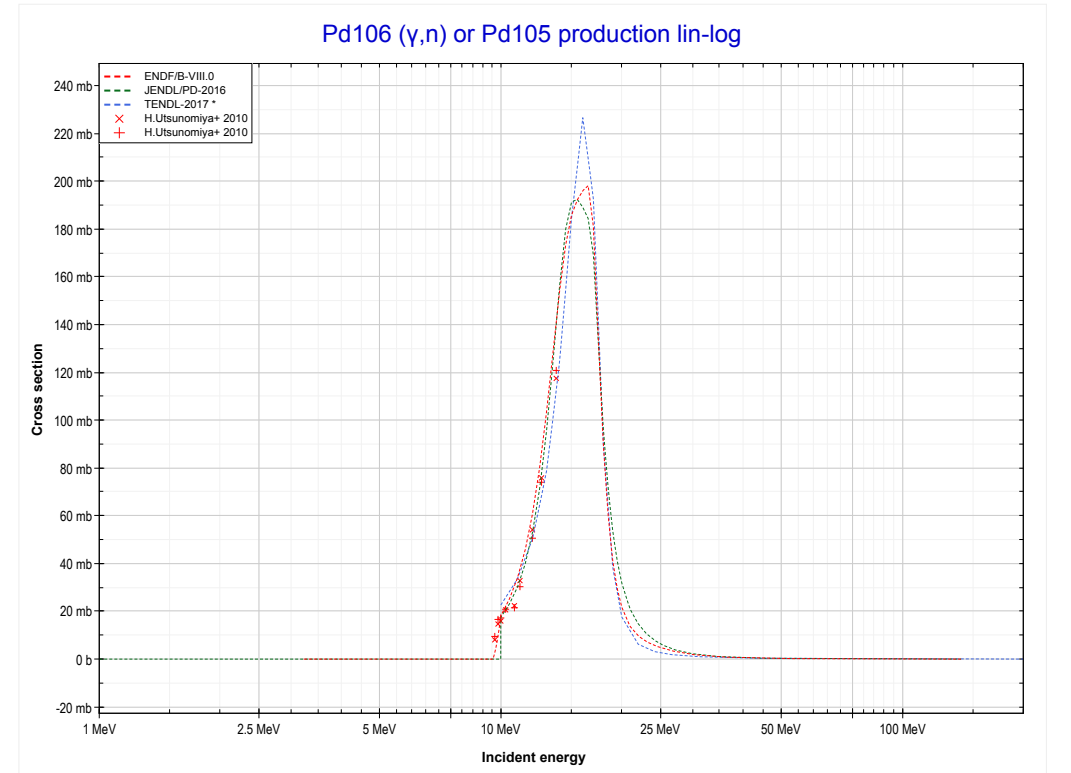
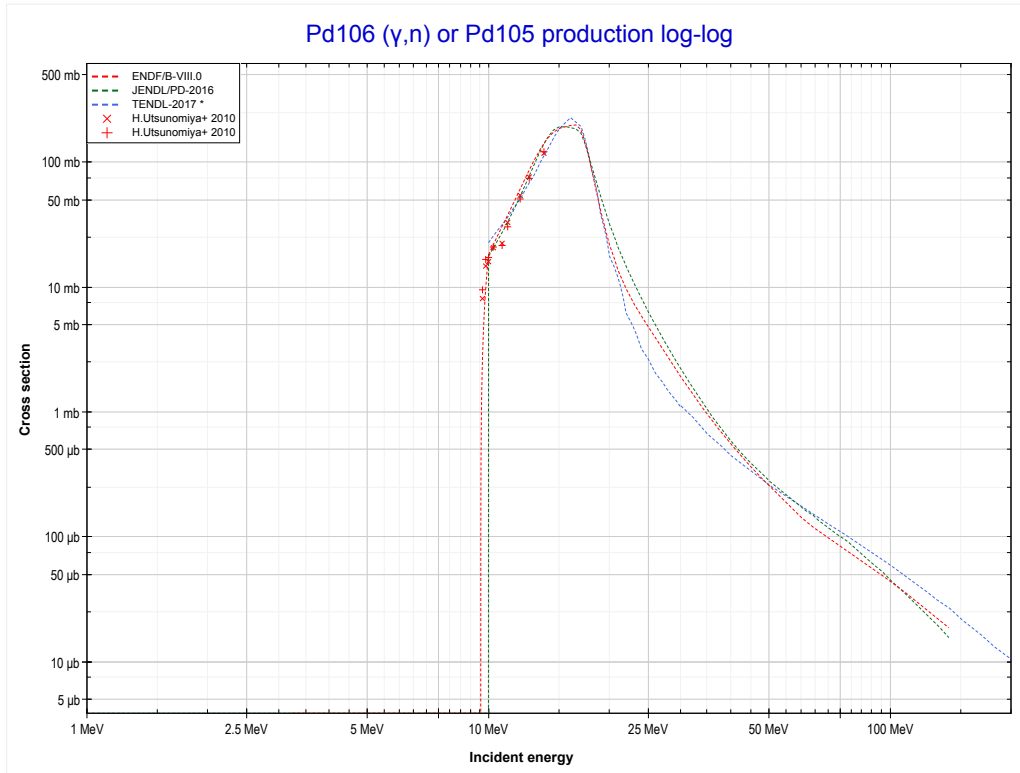
Reaction	Q-Value
Rh103(γ,p)Ru102	-6214.17 keV

<< 42-Mo-100	46-Pd-105	46-Pd-106 >>
<< 45-Rh-103 MT103 (γ,p)	MT4 (γ,n) or MT5 (Pd104 production)	46-Pd-106 MT4 (γ,n) >>



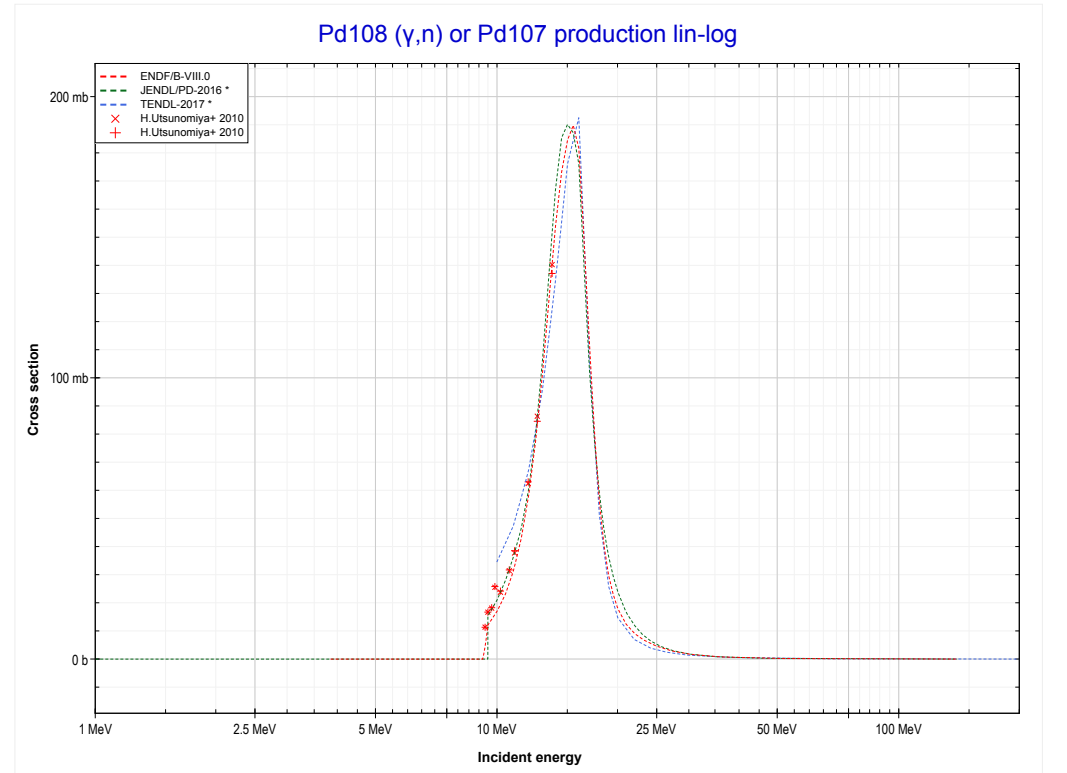
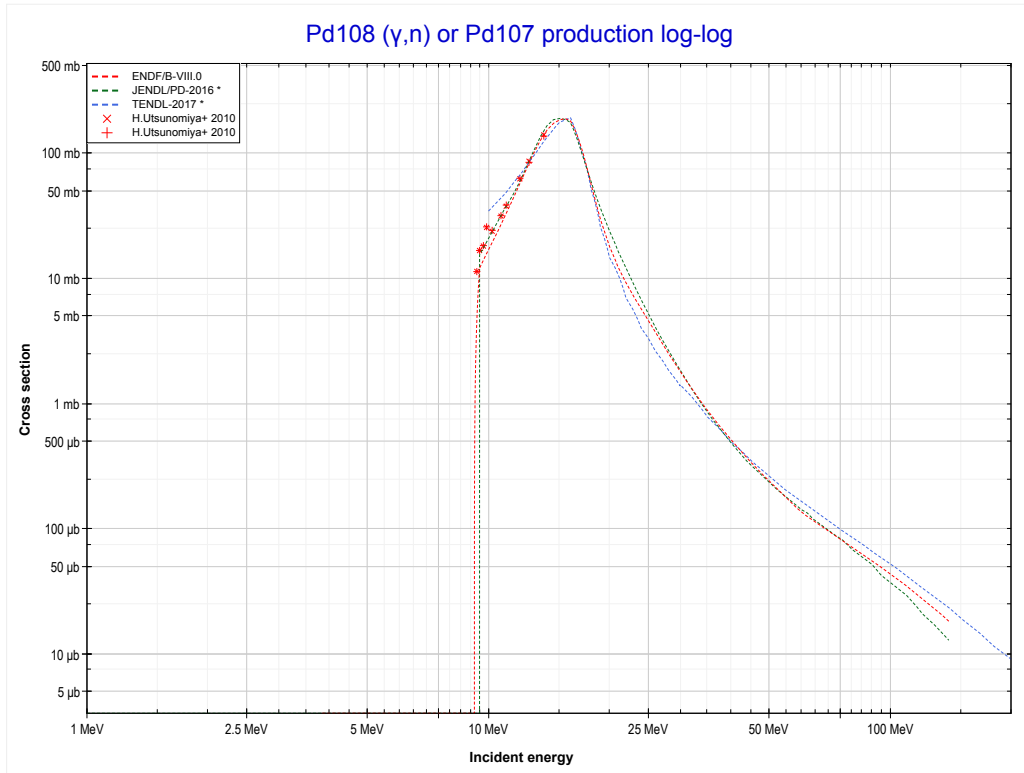
Reaction	Q-Value
Pd105(γ,n)Pd104	-7094.12 keV

<< 46-Pd-105	46-Pd-106	46-Pd-108 >>
<< 46-Pd-105 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pd105 production)	46-Pd-108 MT4 (γ,n) >>



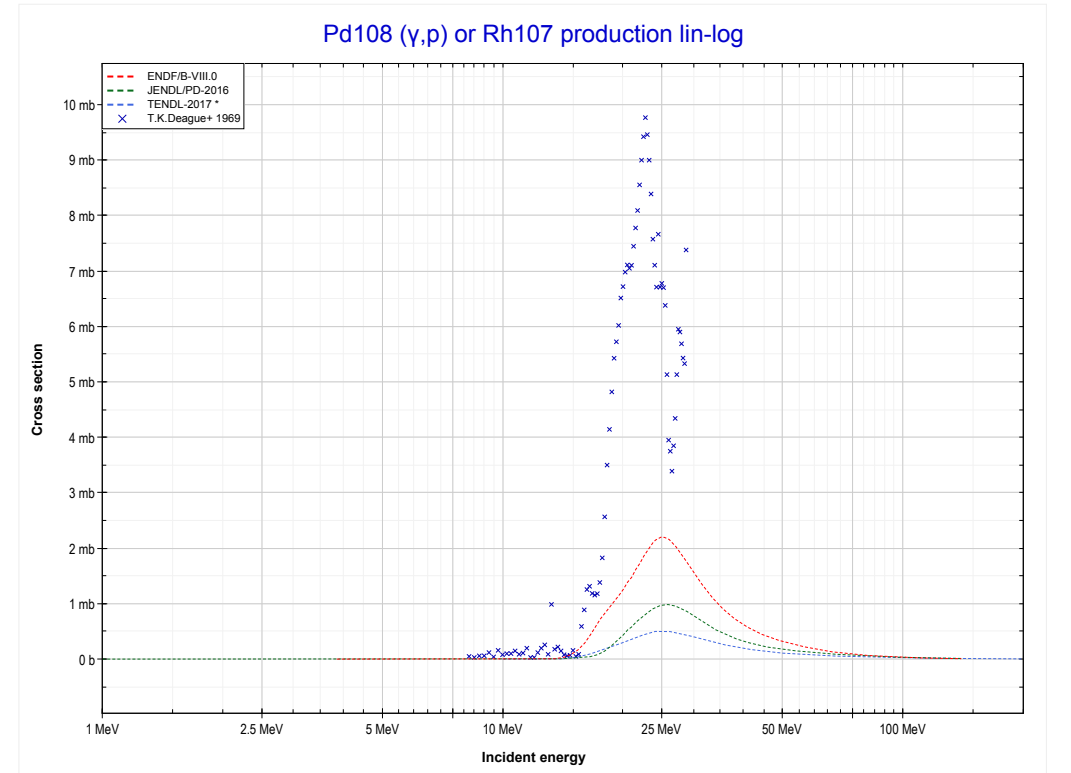
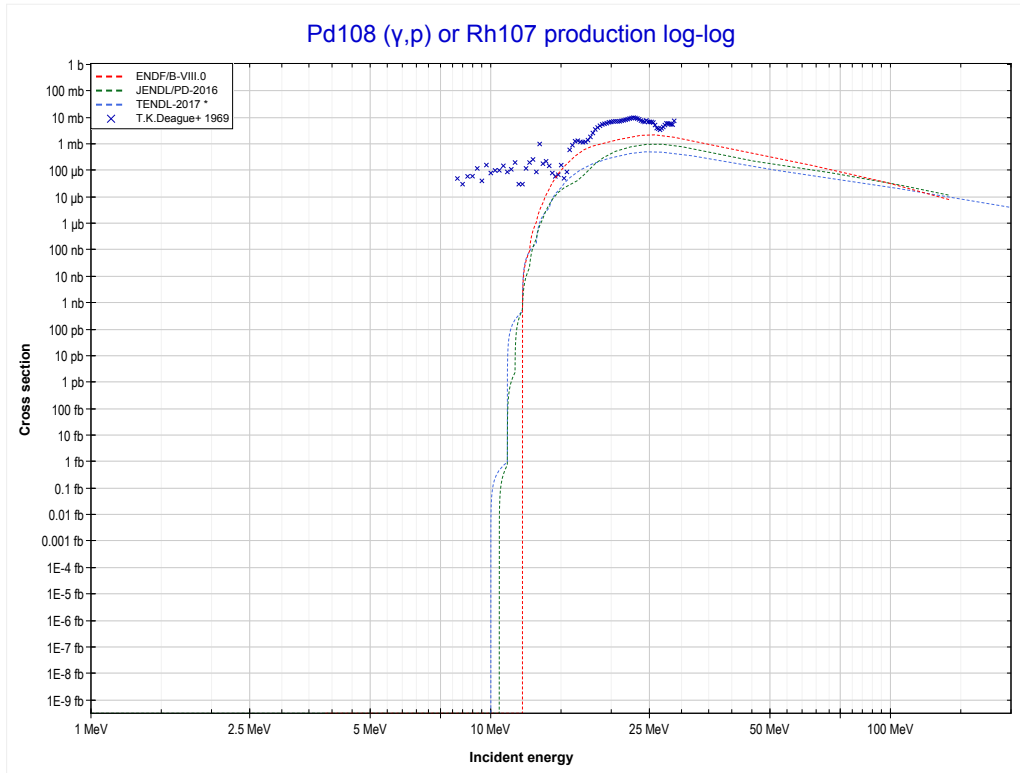
Reaction	Q-Value
Pd106(γ,n)Pd105	-9560.92 keV

<< 46-Pd-106	46-Pd-108	46-Pd-110 >>
<< 46-Pd-106 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pd107 production)	MT103 (γ,p) >>



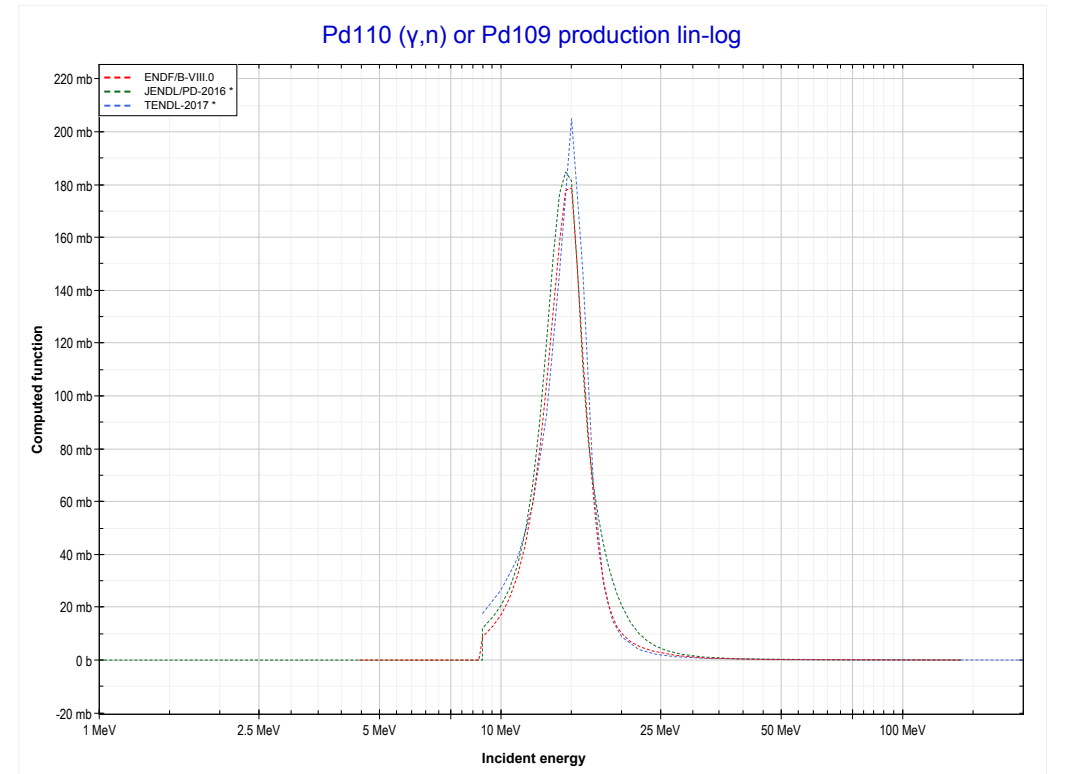
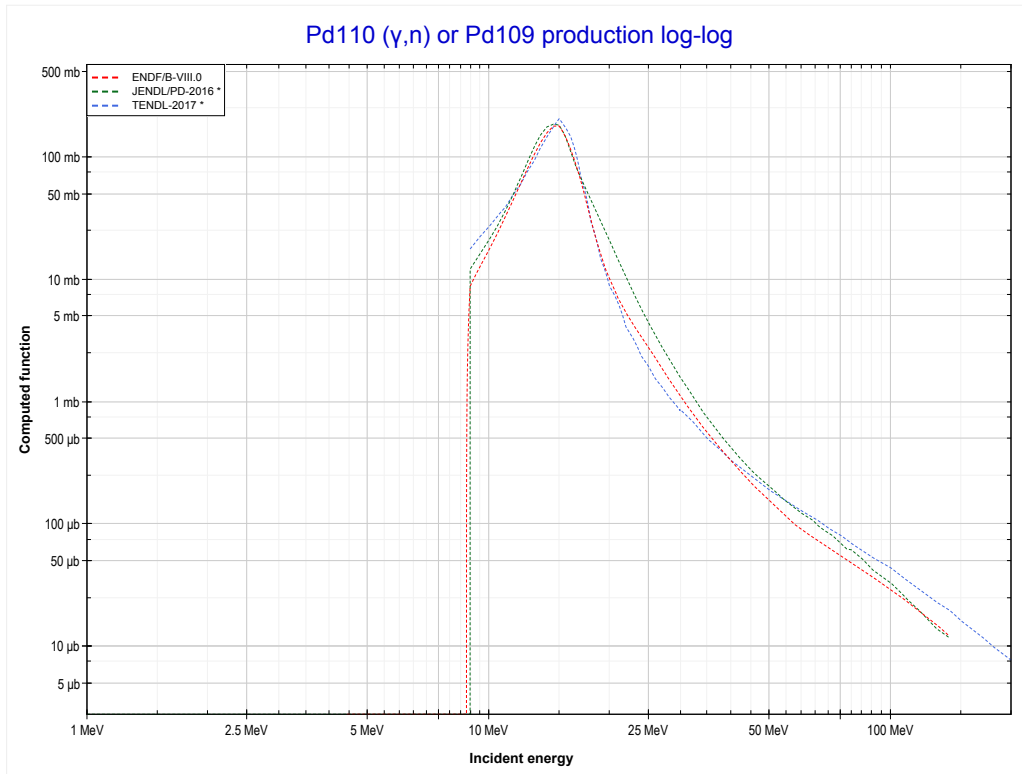
Reaction	Q-Value
Pd108(γ,n)Pd107	-9223.22 keV

<< 45-Rh-103	46-Pd-108	64-Gd-160 >>
<< MT4 (γ,n)	MT103 (γ,p) or MT5 (Rh107 production)	46-Pd-110 MT4 (γ,n) >>



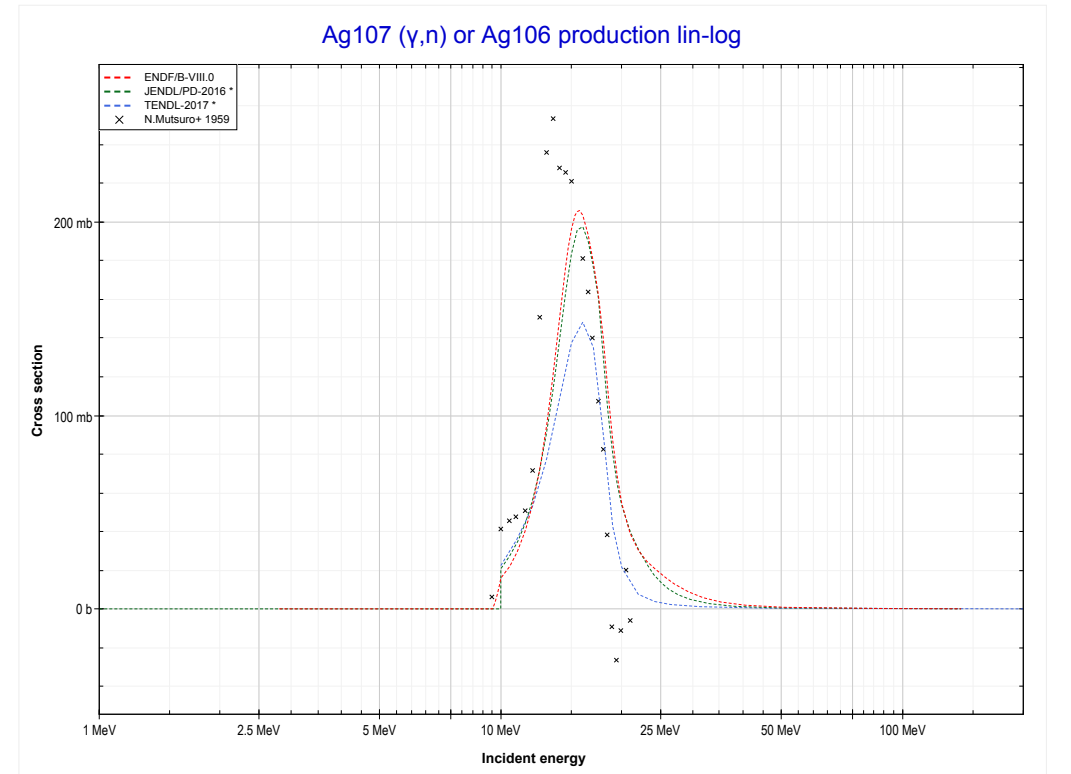
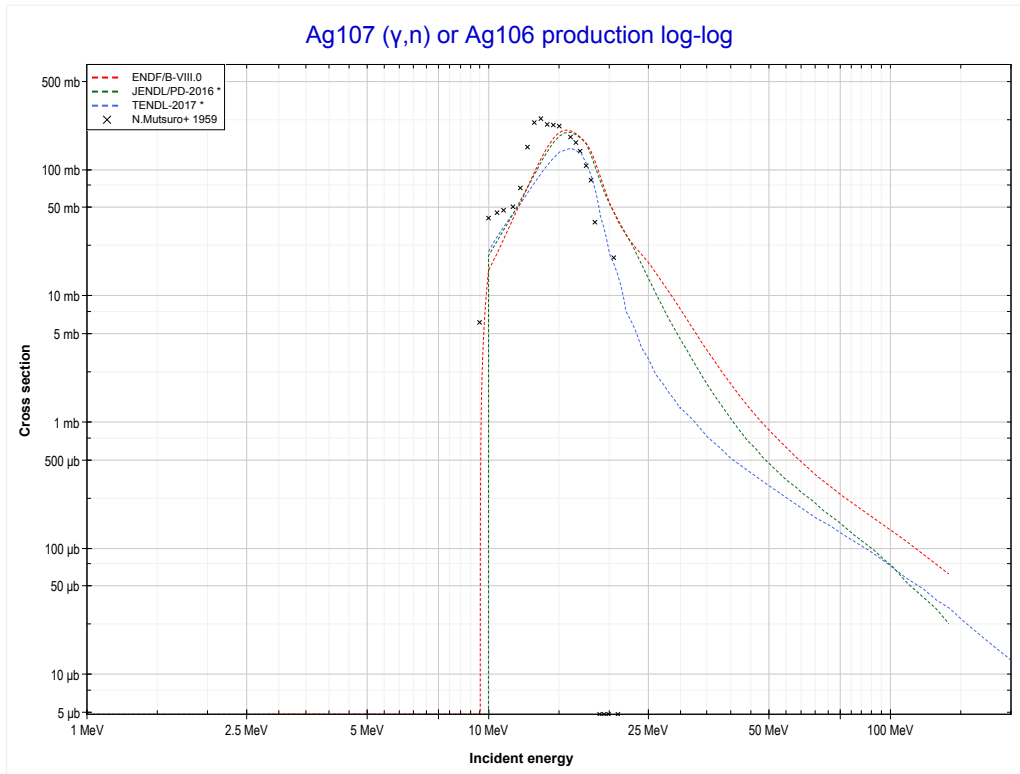
Reaction	Q-Value
Pd108(γ,p)Rh107	-9949.37 keV

<< 46-Pd-108	46-Pd-110	47-Ag-107 >>
<< 46-Pd-108 MT103 (γ,p)	MT4 (γ,n) or MT5 (Pd109 production)	47-Ag-107 MT4 (γ,n) >>



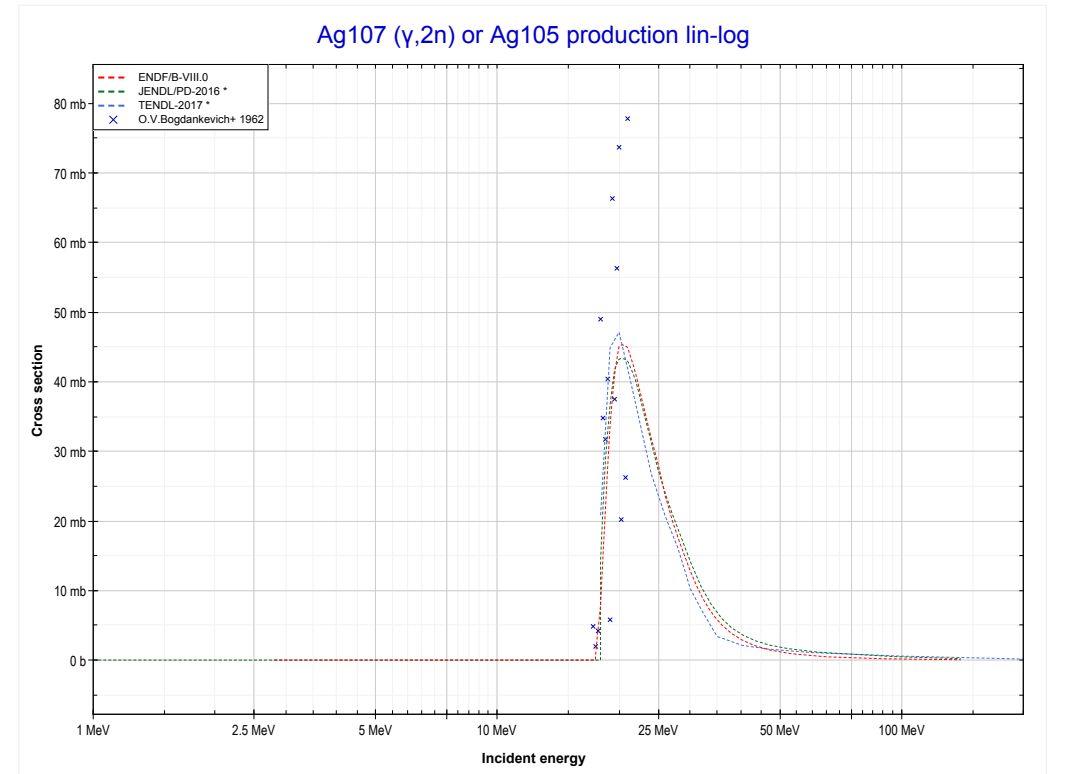
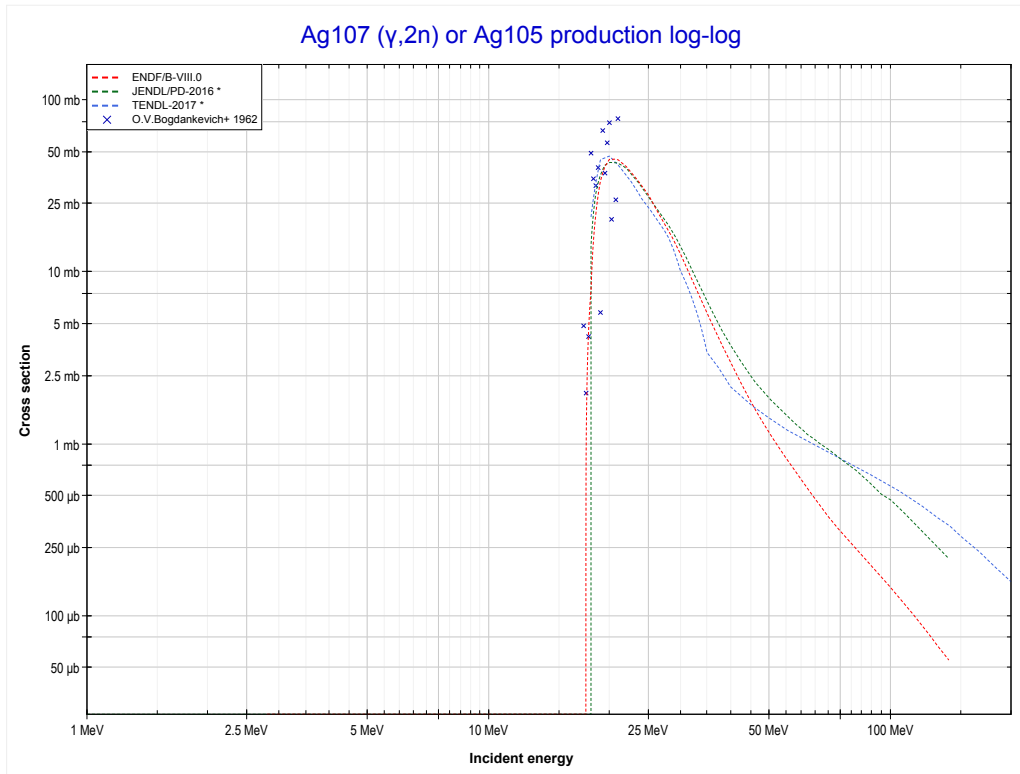
Reaction	Q-Value
Pd110(γ,n)Pd109	-8796.22 keV

<< 46-Pd-110	47-Ag-107	47-Ag-109 >>
<< 46-Pd-110 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ag106 production)	MT16 (γ,2n) >>



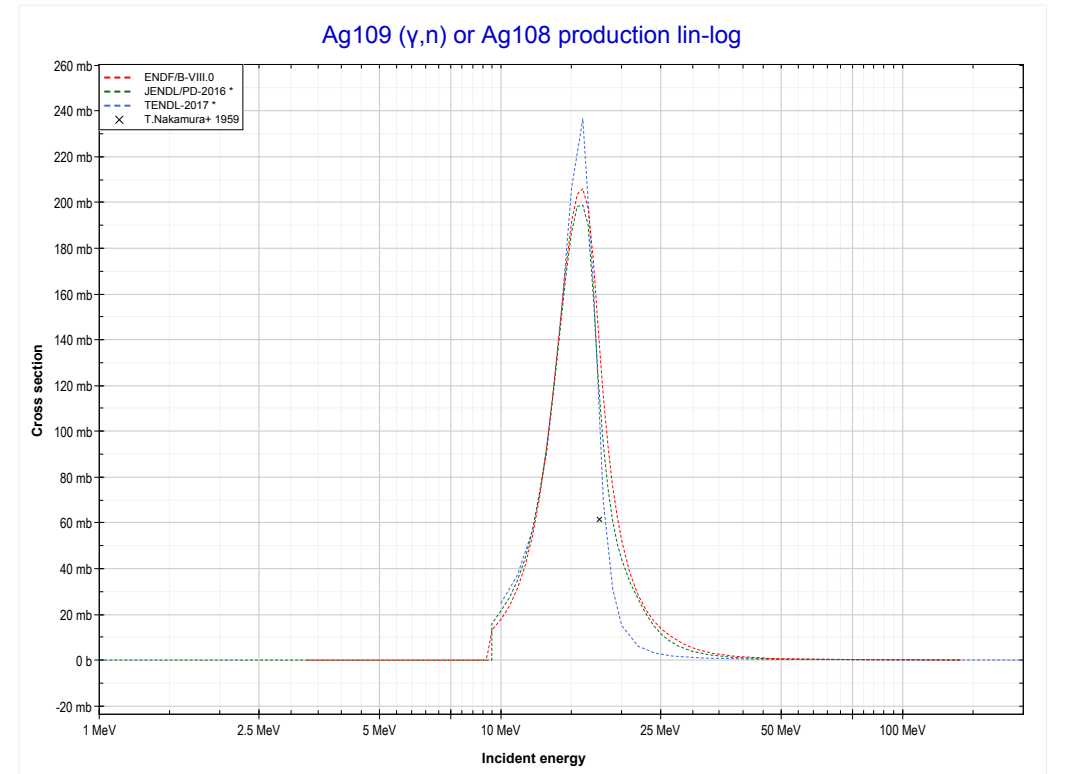
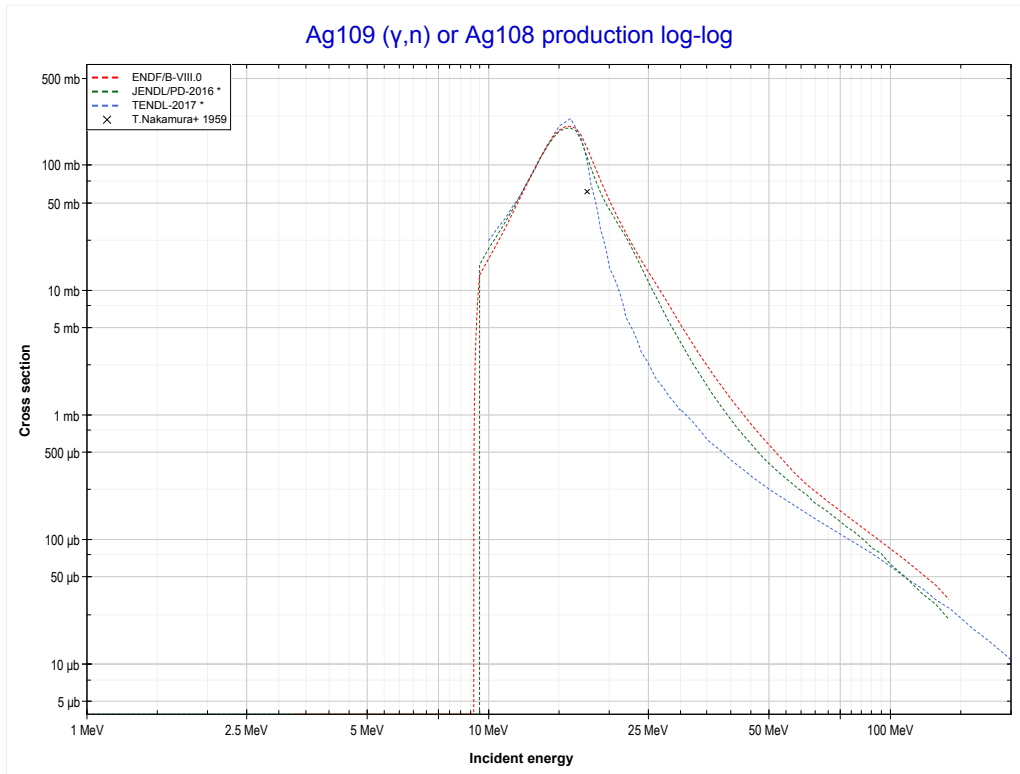
Reaction	Q-Value
Ag107(γ,n)Ag106	-9535.92 keV

<< 45-Rh-103	47-Ag-107	49-In-115 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Ag105 production)	47-Ag-109 MT4 (γ,n) >>



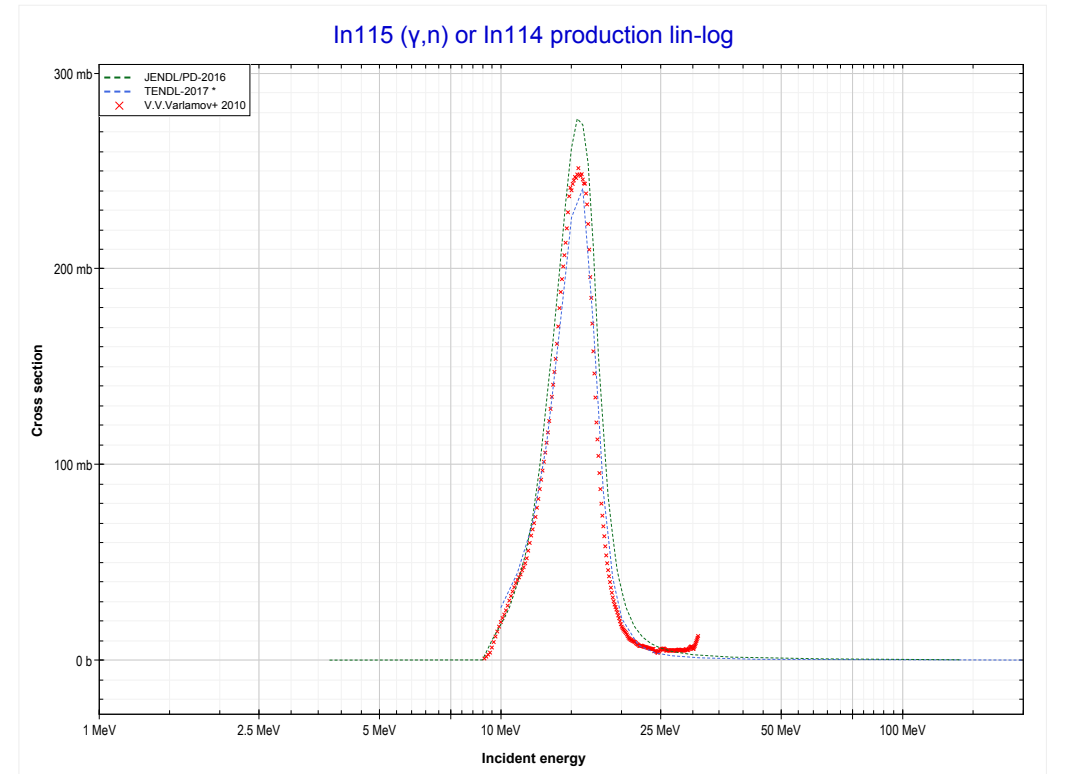
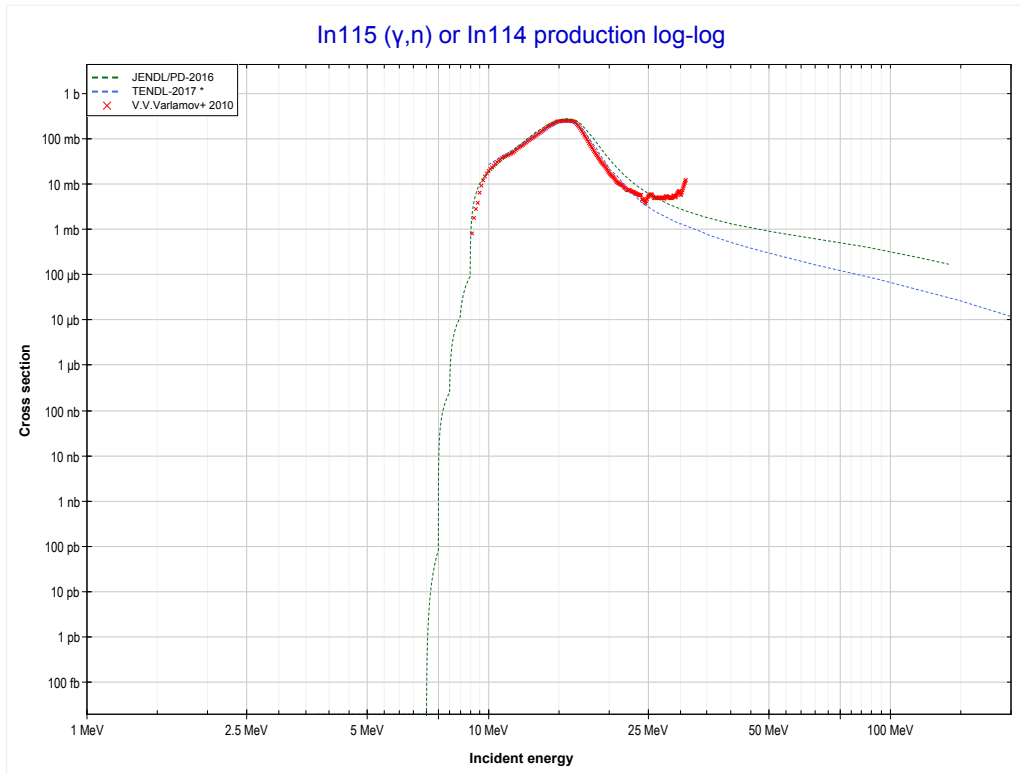
Reaction	Q-Value
Ag107($\gamma,2n$)Ag105	-17478.23 keV

<< 47-Ag-107	47-Ag-109	49-In-115 >>
<< 47-Ag-107 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Ag108 production)	49-In-115 MT4 (γ,n) >>



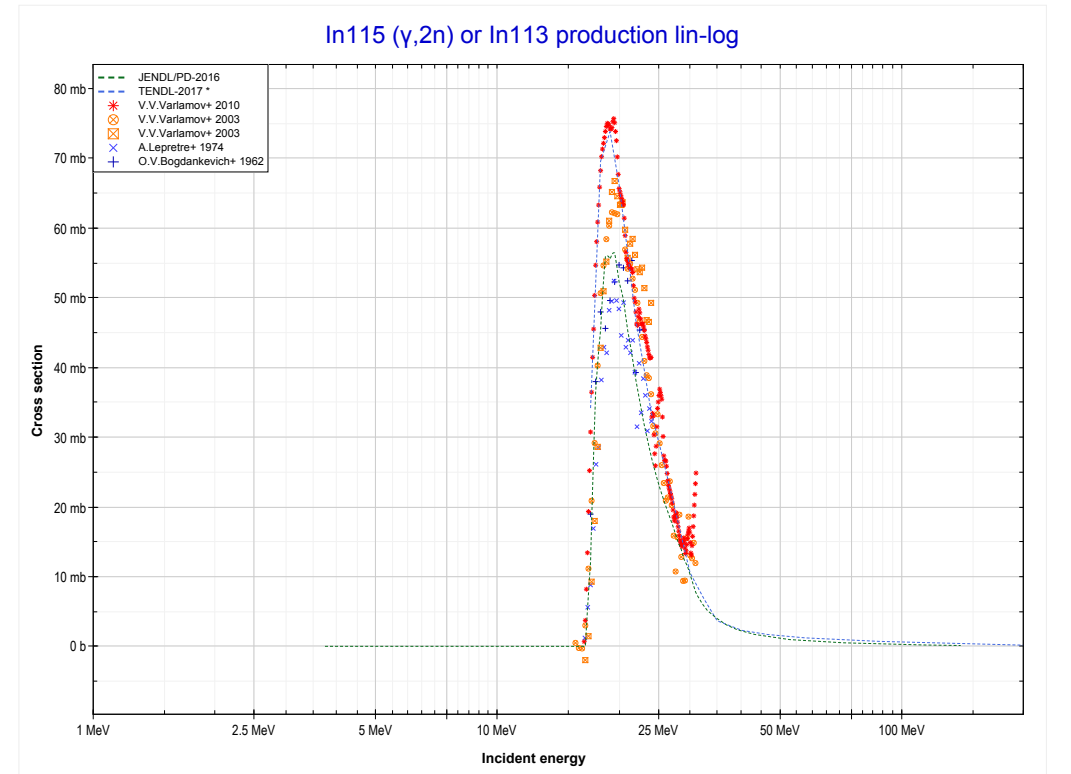
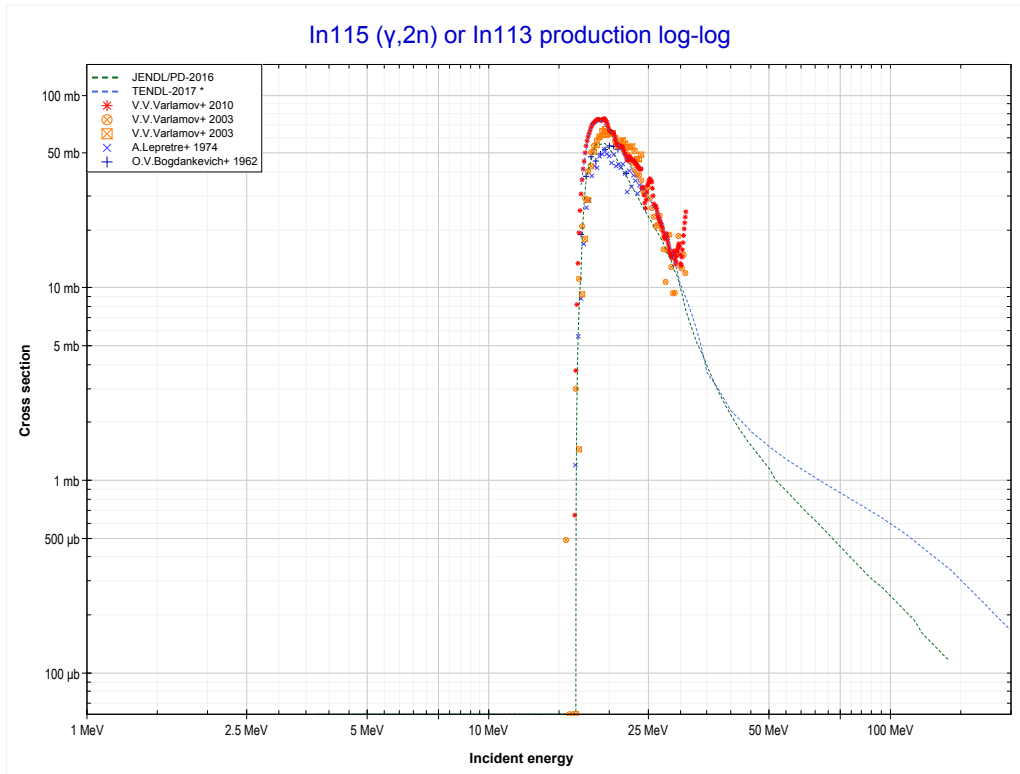
Reaction	Q-Value
Ag109(γ,n)Ag108	-9184.52 keV

<< 47-Ag-109	49-In-115	50-Sn-112 >>
<< 47-Ag-109 MT4 (γ,n)	MT4 (γ,n) or MT5 (In114 production)	MT16 (γ,2n) >>



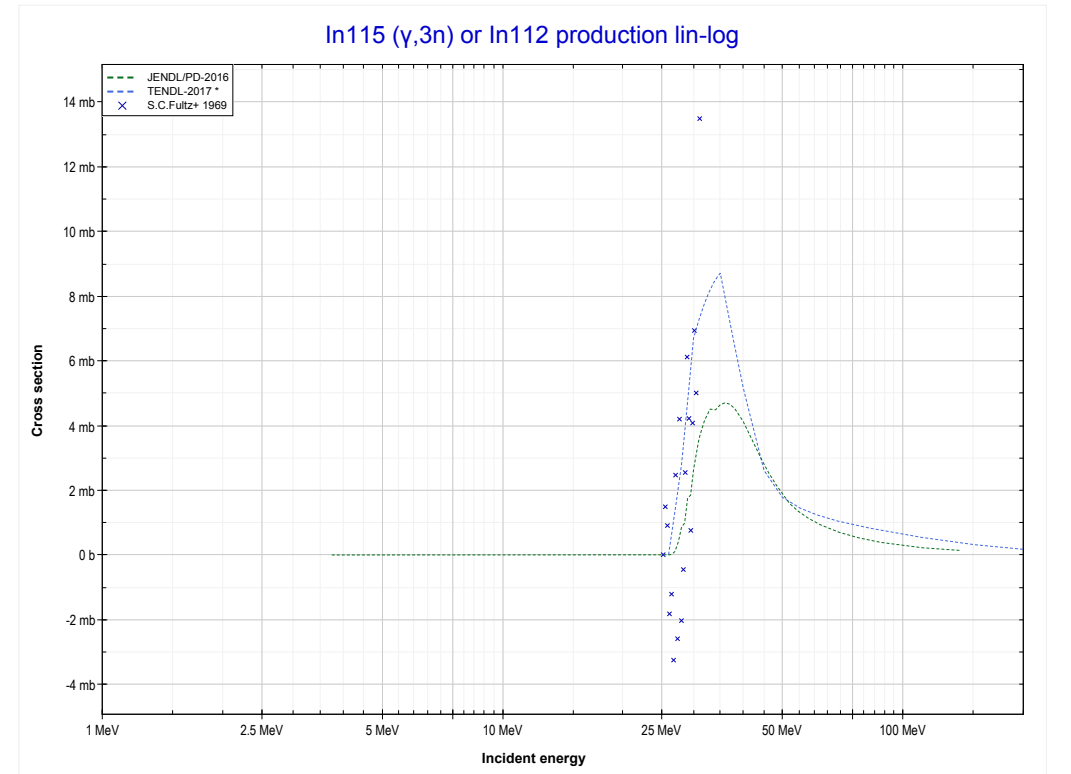
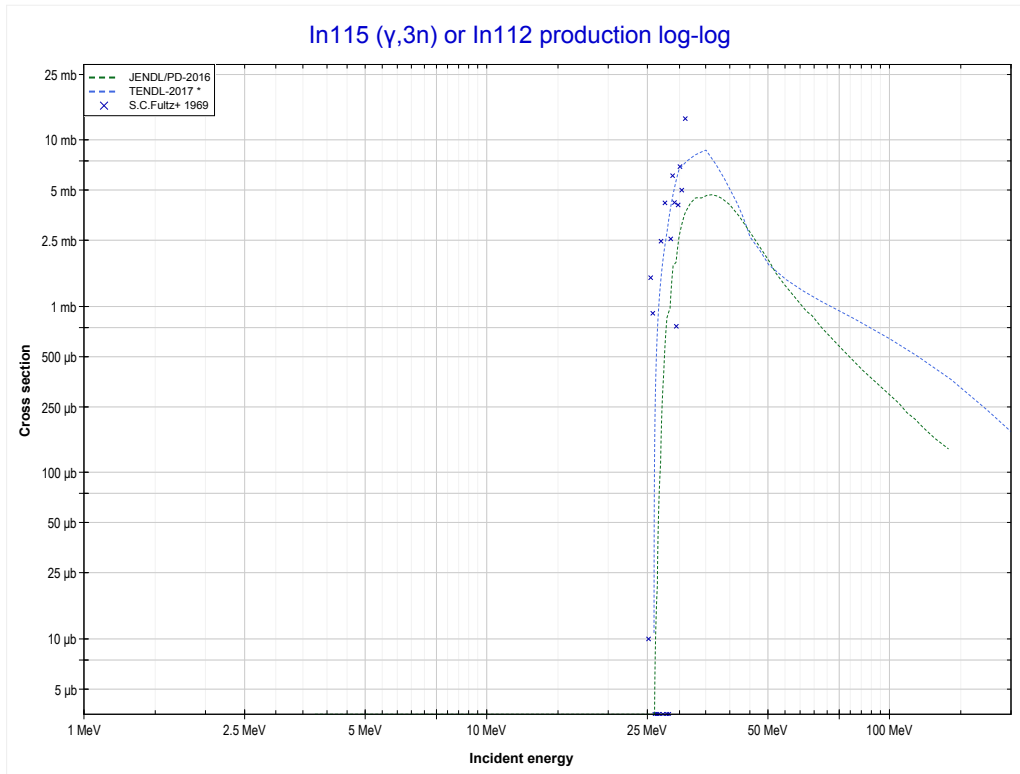
Reaction	Q-Value
In115(γ,n)In114	-9039.26 keV

<< 47-Ag-107	49-In-115	50-Sn-112 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (In113 production)	MT17 ($\gamma, 3n$) >>



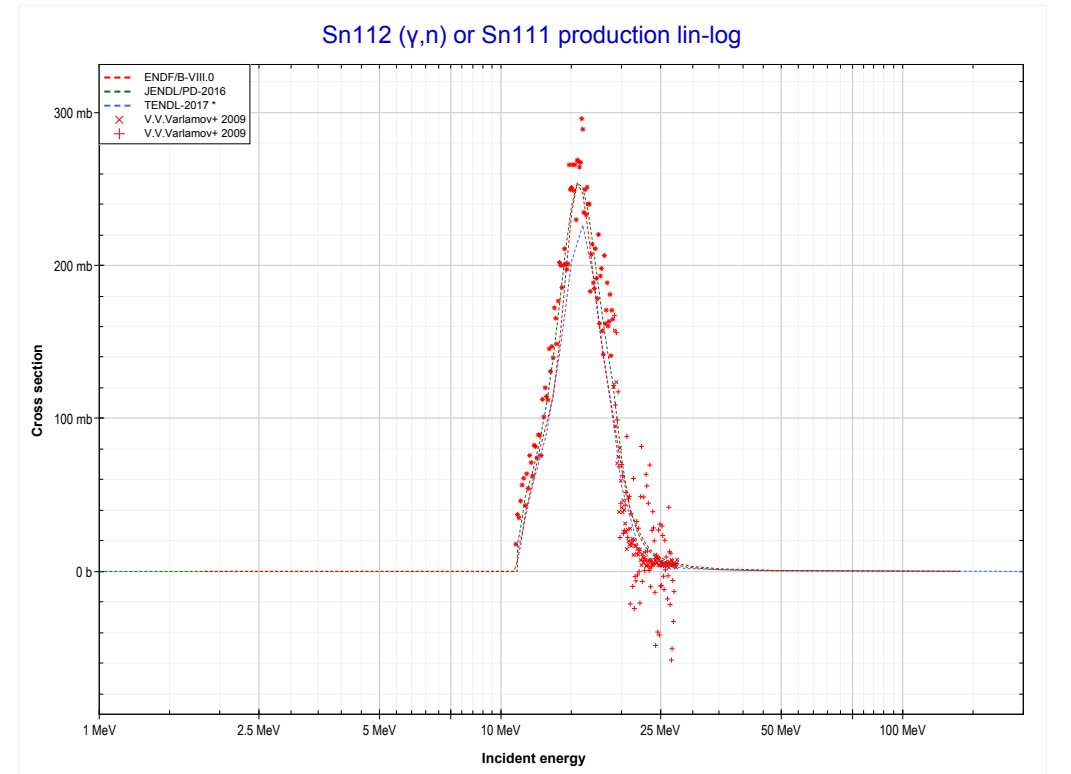
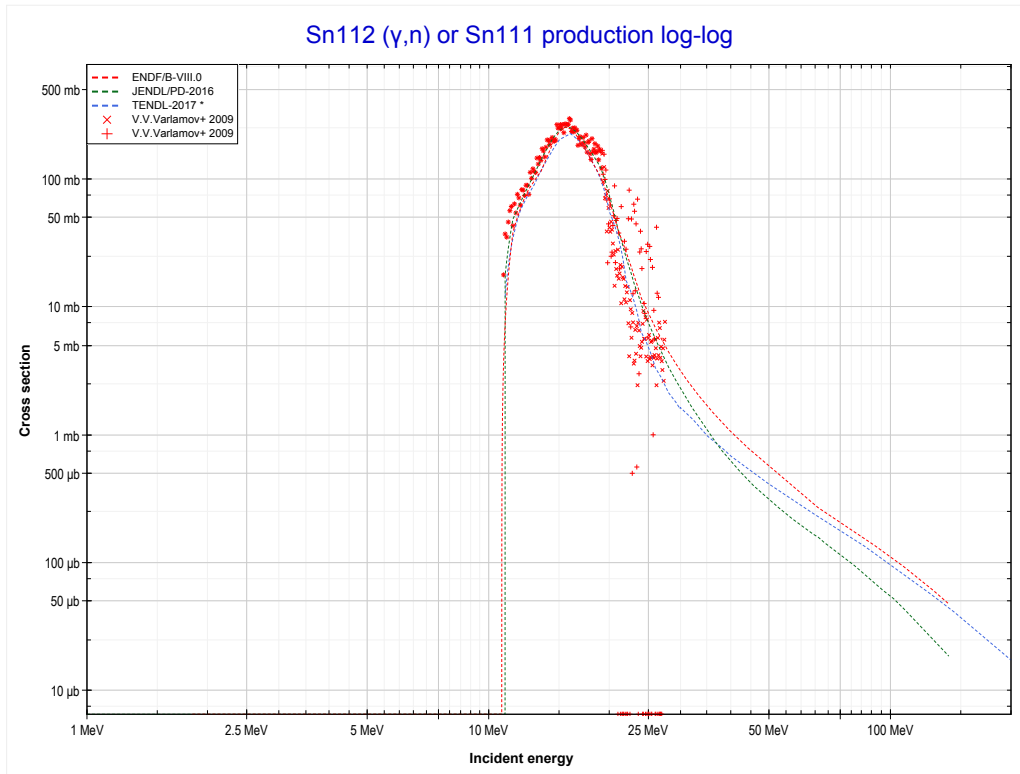
Reaction	Q-Value
In115($\gamma, 2n$)In113	-16313.18 keV

<< 42-Mo-100	49-In-115	50-Sn-117 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (In112 production)	50-Sn-112 MT4 (γ,n) >>



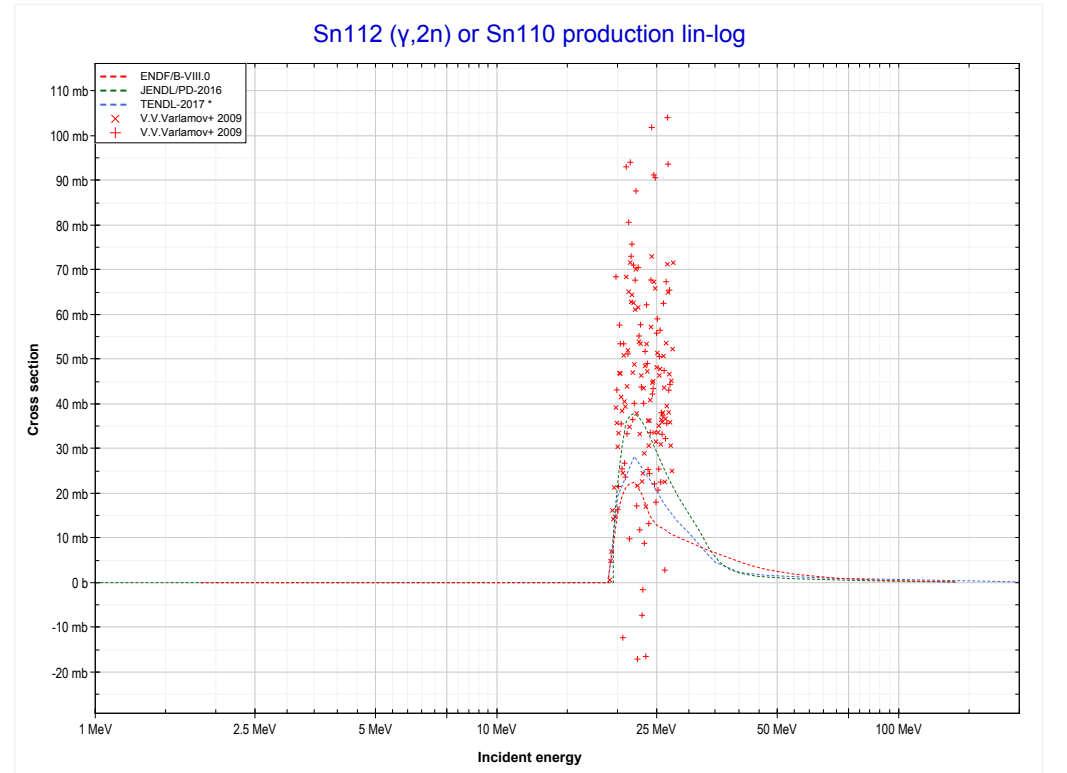
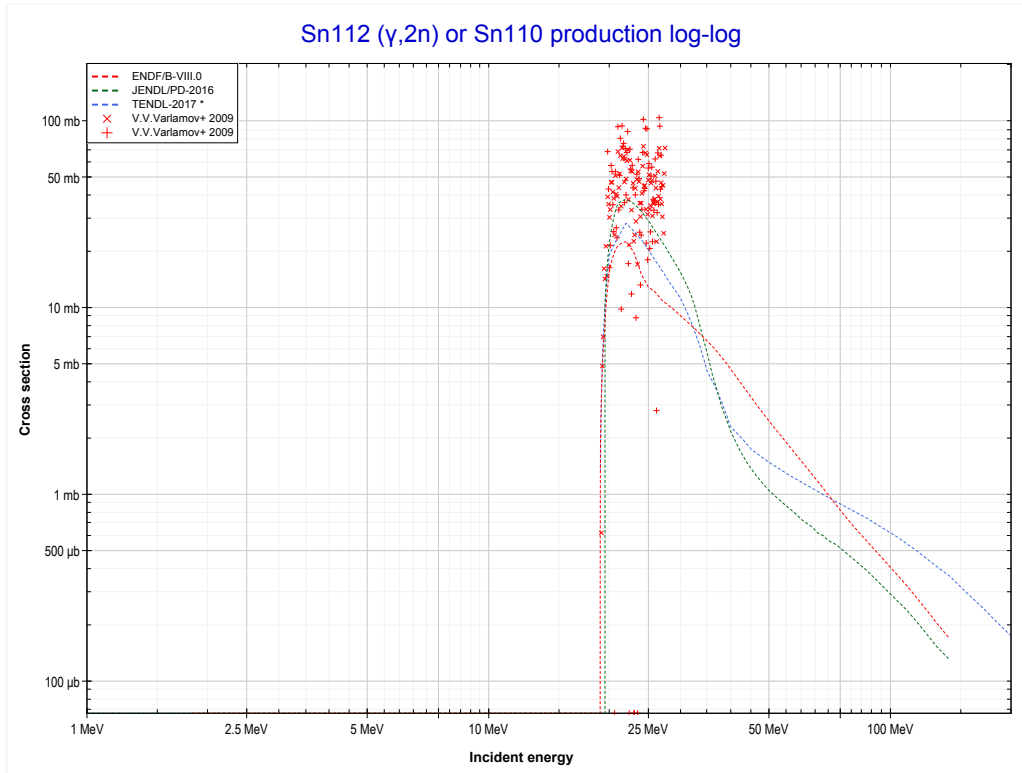
Reaction	Q-Value
In115($\gamma,3n$)In112	-25759.29 keV

<< 49-In-115	50-Sn-112	50-Sn-114 >>
<< 49-In-115 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Sn111 production)	MT16 (γ,2n) >>



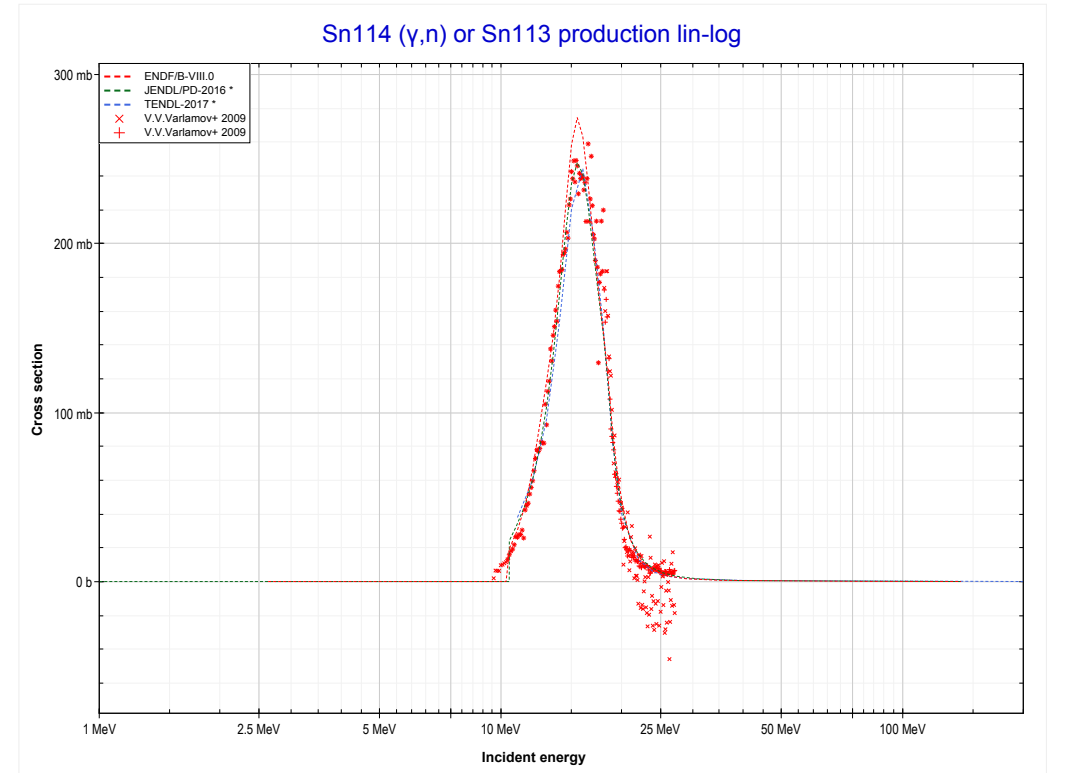
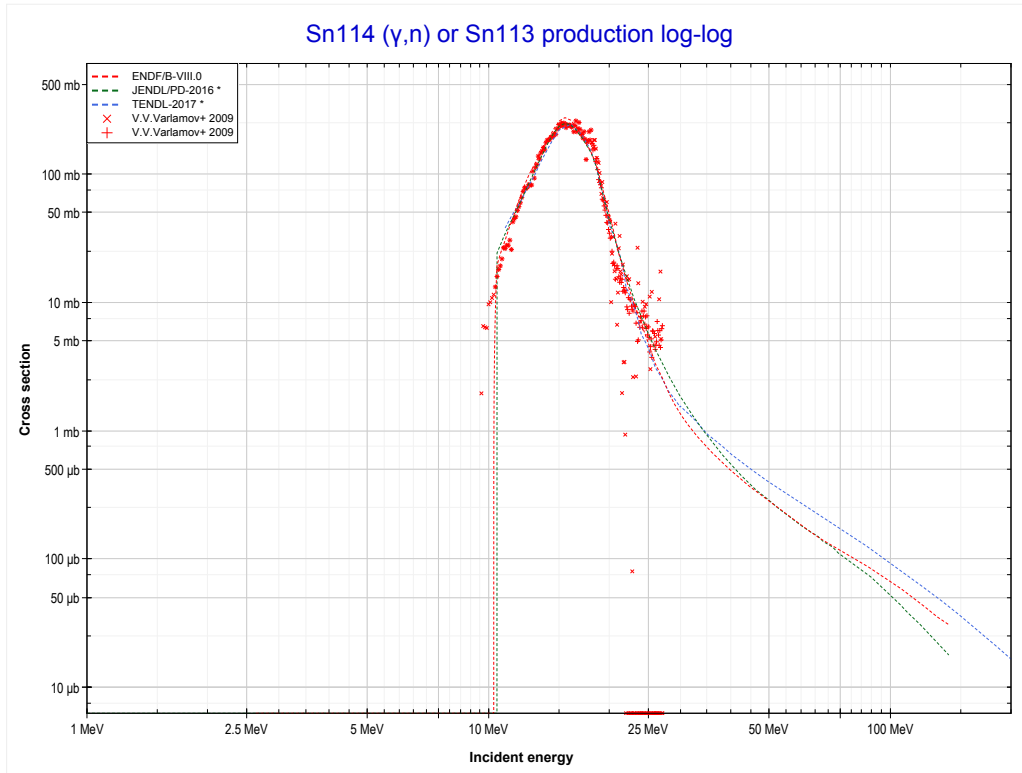
Reaction	Q-Value
Sn112(γ,n)Sn111	-10787.32 keV

<< 49-In-115	50-Sn-112	50-Sn-114 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn110 production)	50-Sn-114 MT4 (γ,n) >>



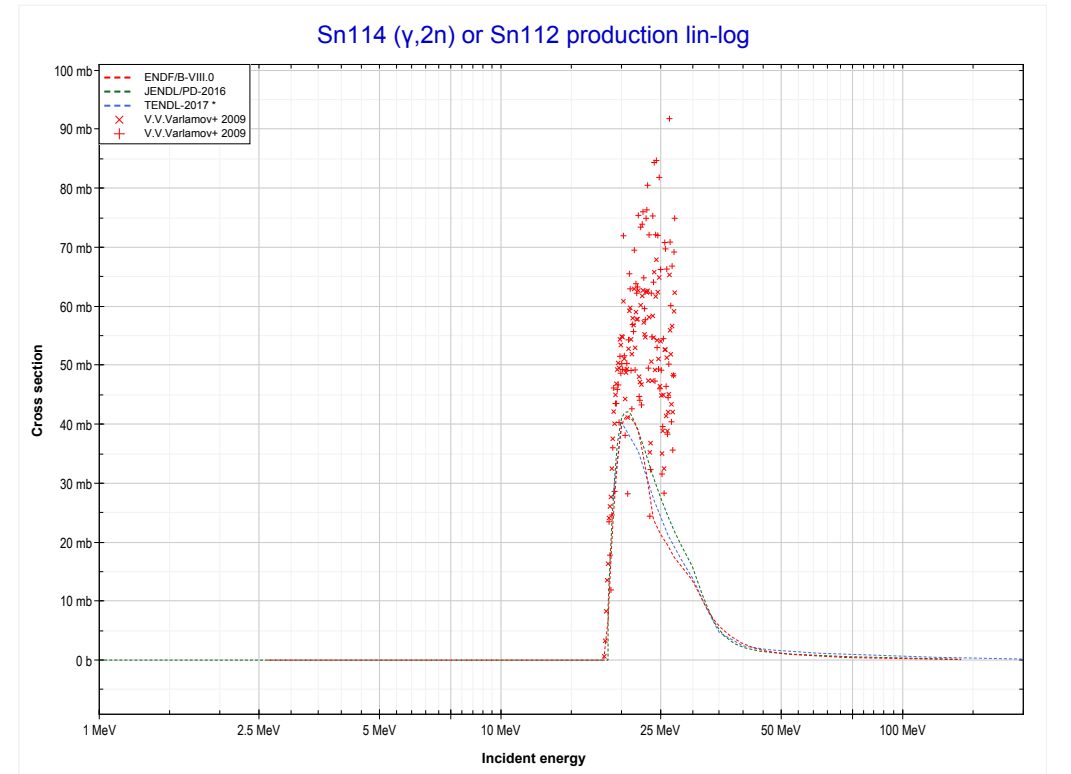
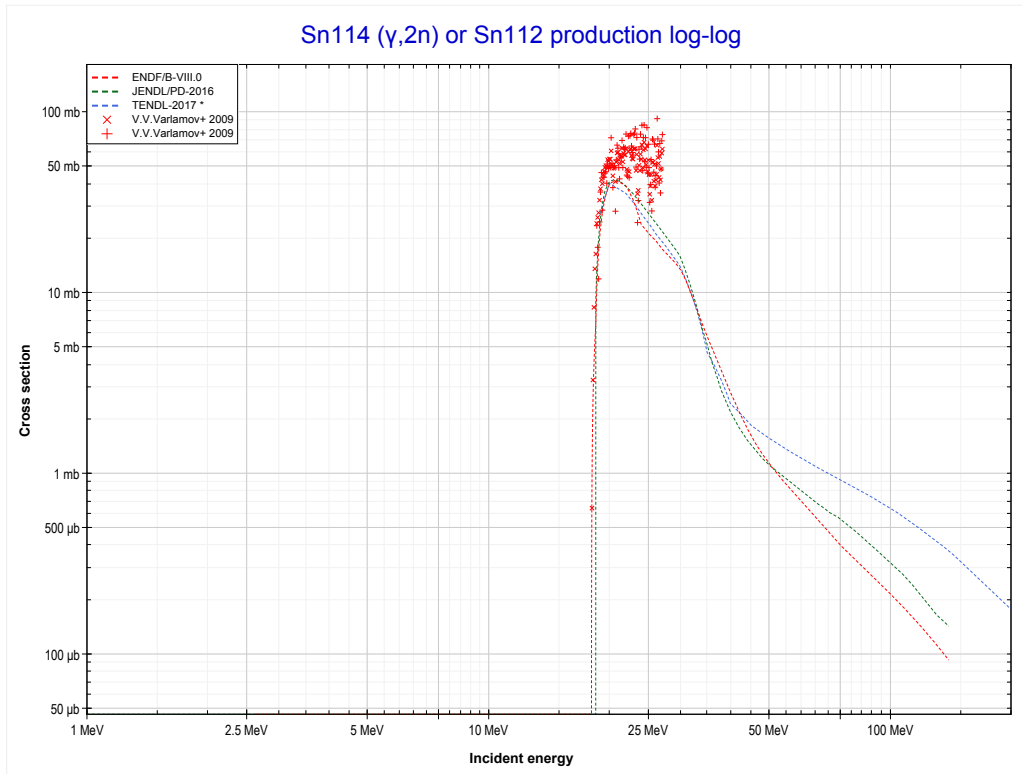
Reaction	Q-Value
Sn112($\gamma,2n$)Sn110	-18956.63 keV

<< 50-Sn-112	50-Sn-114	50-Sn-116 >>
<< 50-Sn-112 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Sn113 production)	MT16 (γ,2n) >>



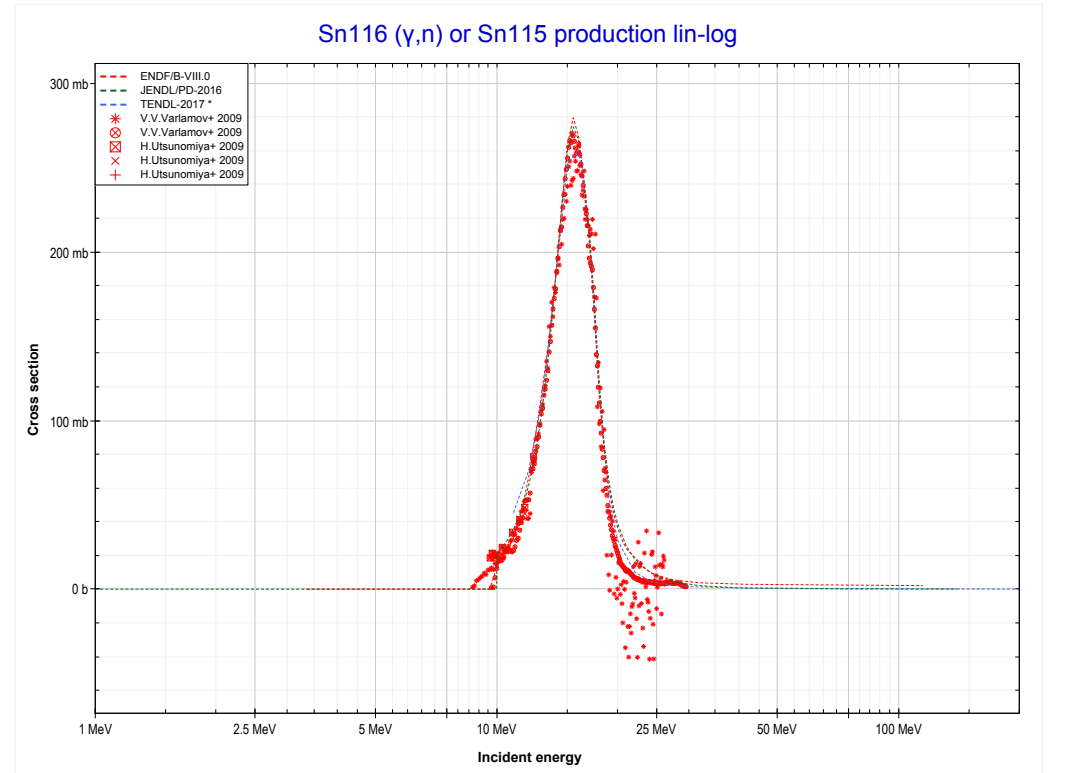
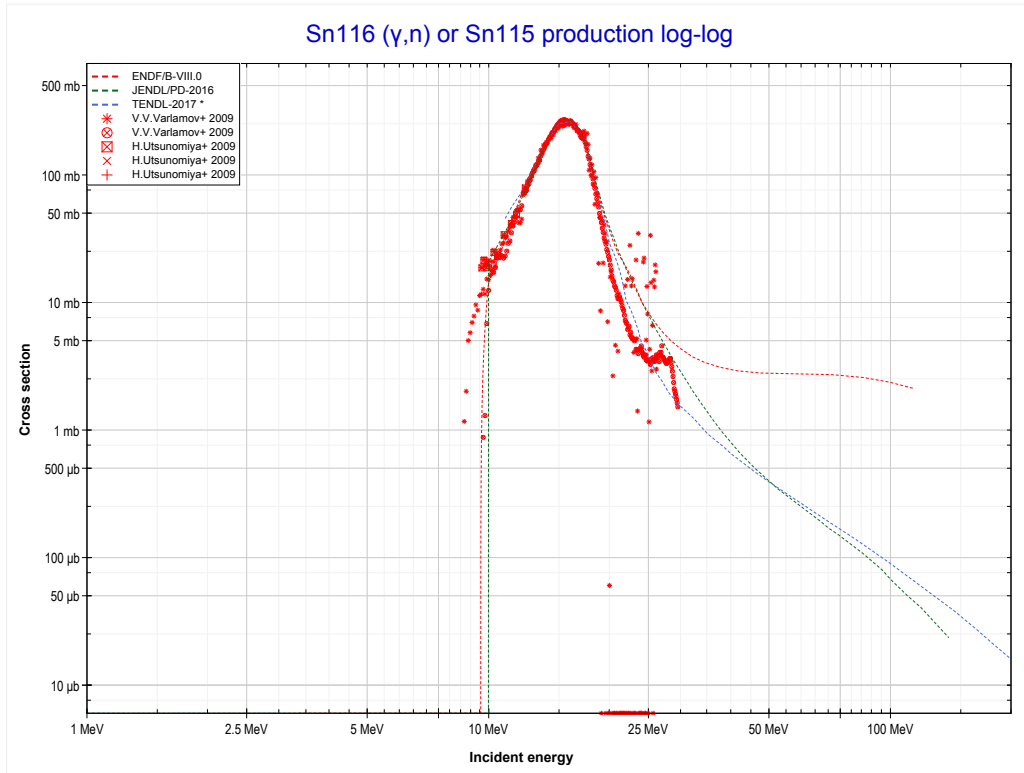
Reaction	Q-Value
Sn114(γ,n)Sn113	-10300.42 keV

<< 50-Sn-112	50-Sn-114	50-Sn-116 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sn112 production)	50-Sn-116 MT4 (γ, n) >>



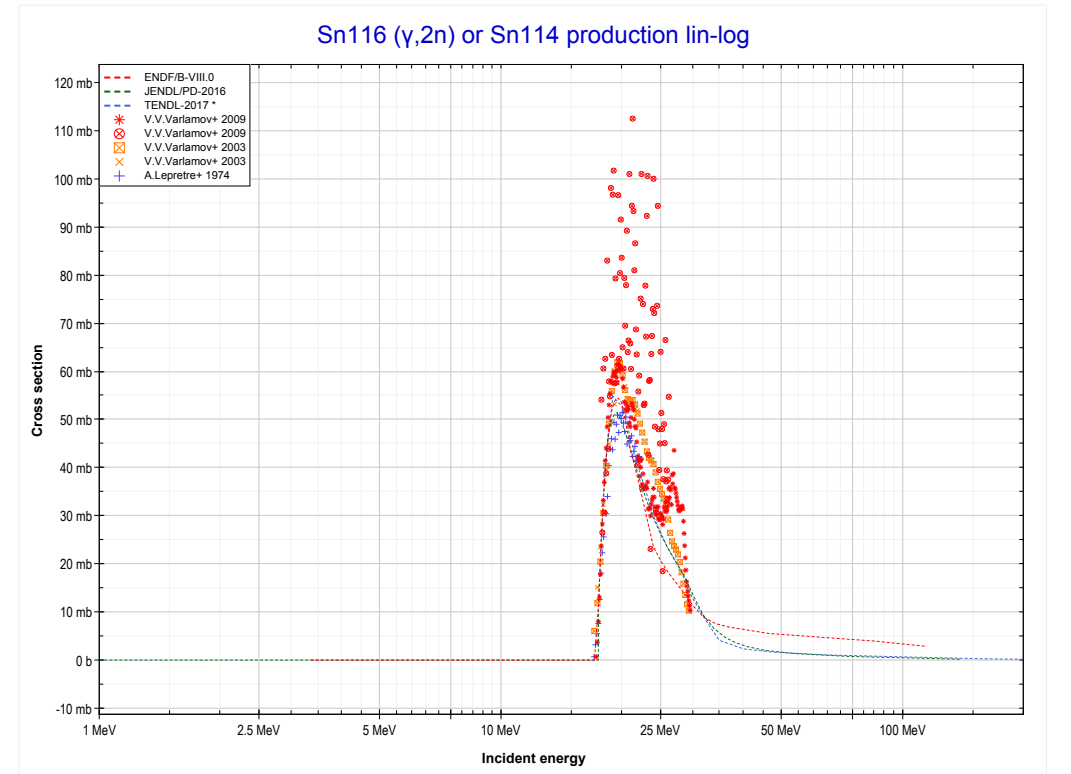
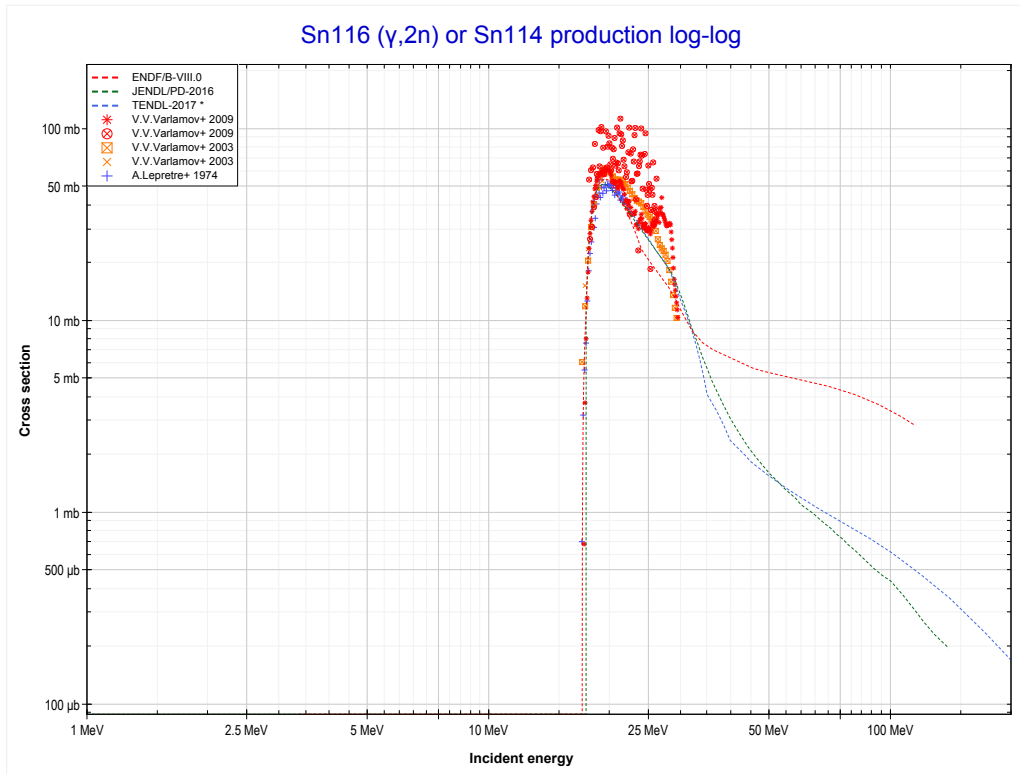
Reaction	Q-Value
Sn114($\gamma, 2n$)Sn112	-18043.93 keV

<< 50-Sn-114	50-Sn-116	50-Sn-117 >>
<< 50-Sn-114 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Sn115 production)	MT16 (γ,2n) >>



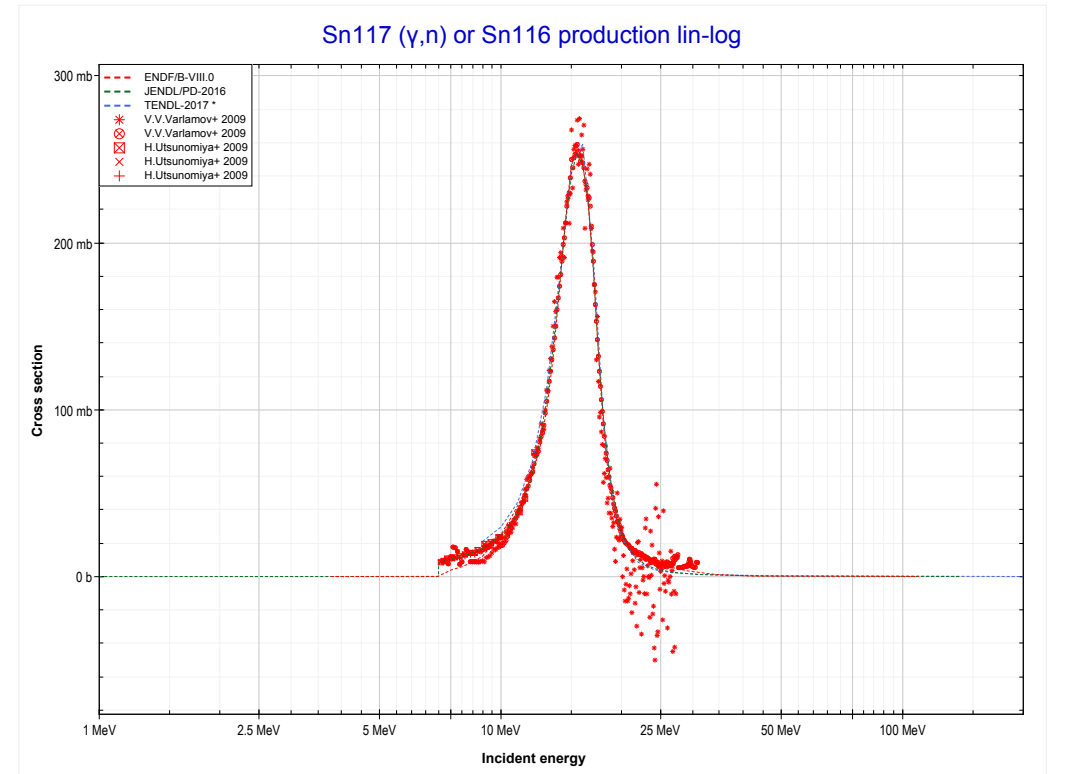
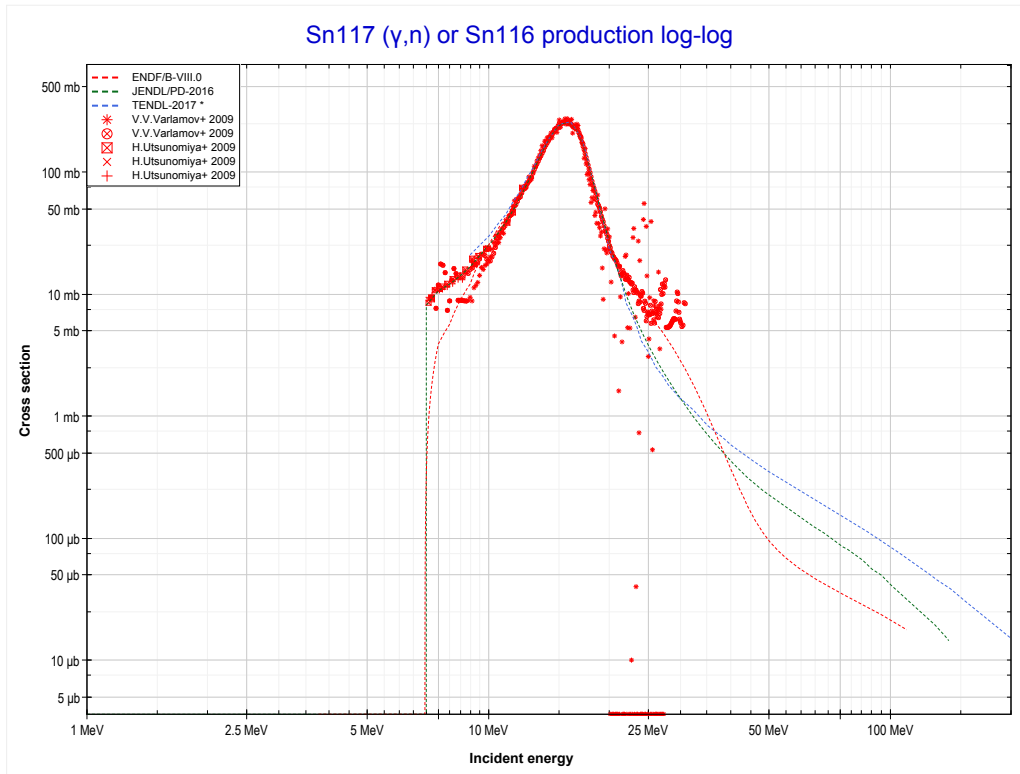
Reaction	Q-Value
Sn116(γ,n)Sn115	-9563.47 keV

<< 50-Sn-114	50-Sn-116	50-Sn-117 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn114 production)	50-Sn-117 MT4 (γ,n) >>



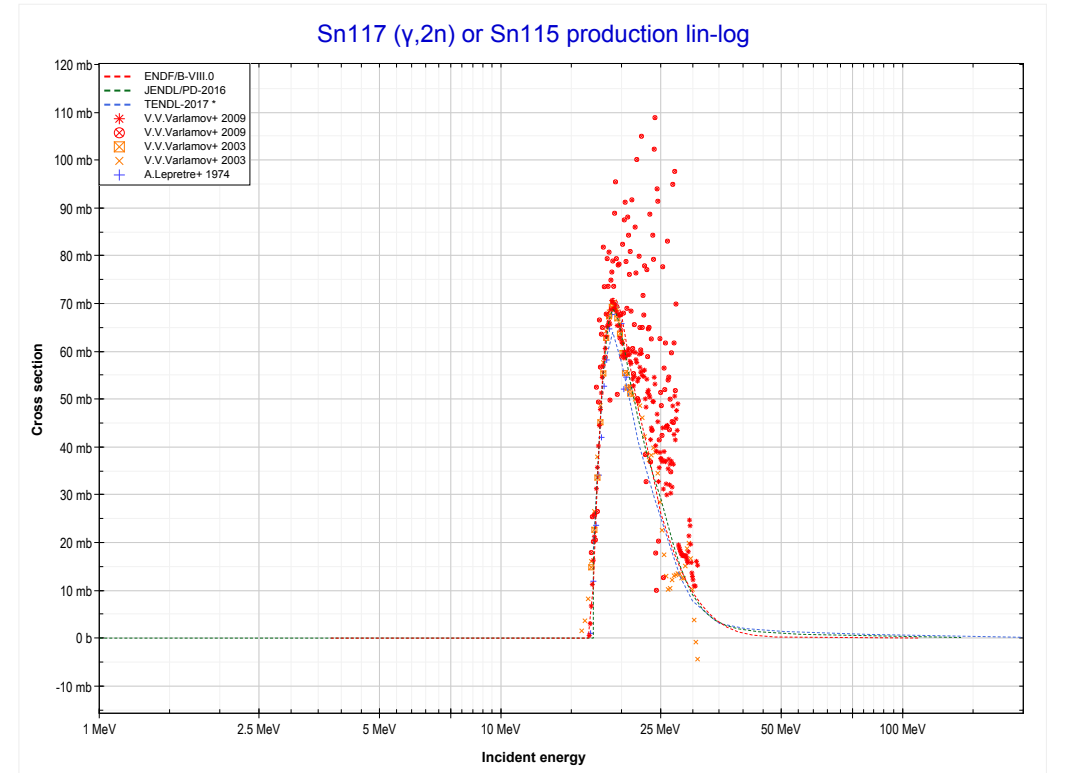
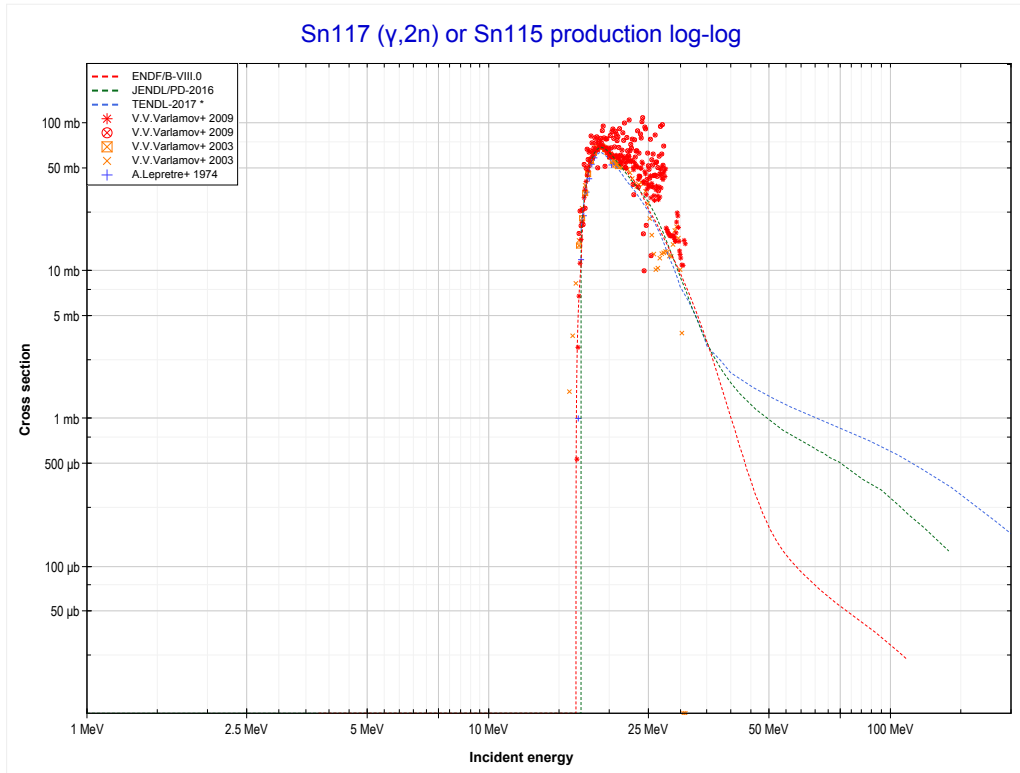
Reaction	Q-Value
Sn116($\gamma,2n$)Sn114	-17111.32 keV

<< 50-Sn-116	50-Sn-117	50-Sn-118 >>
<< 50-Sn-116 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Sn116 production)	MT16 (γ,2n) >>



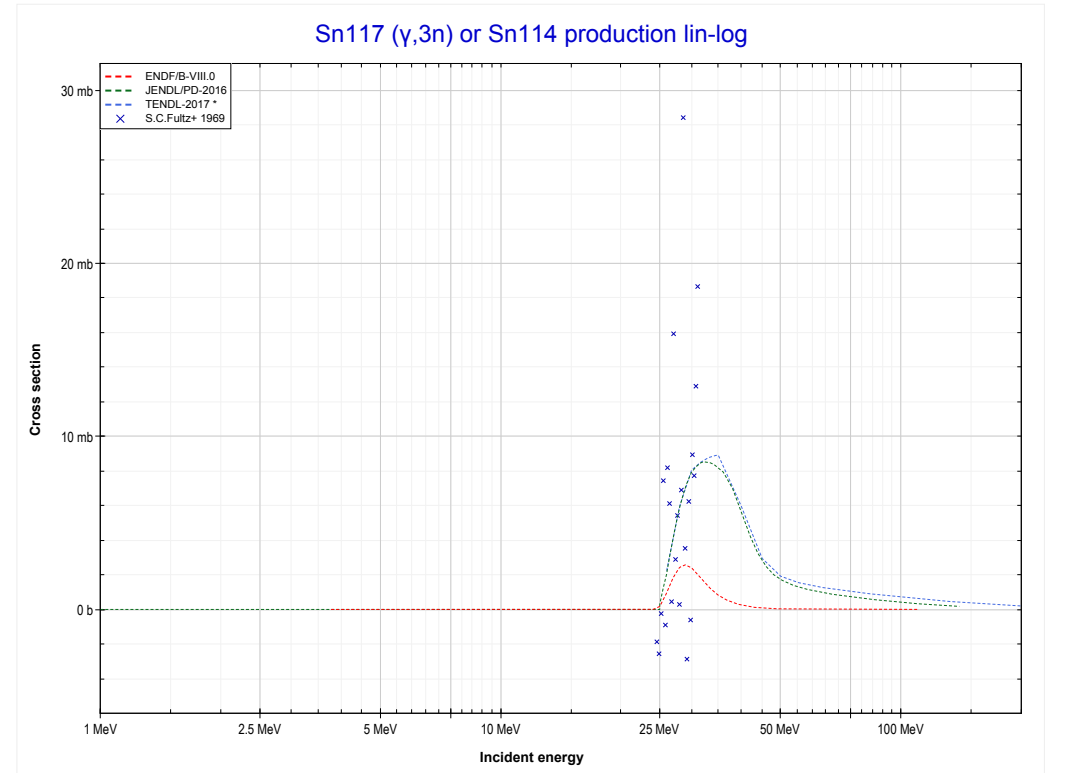
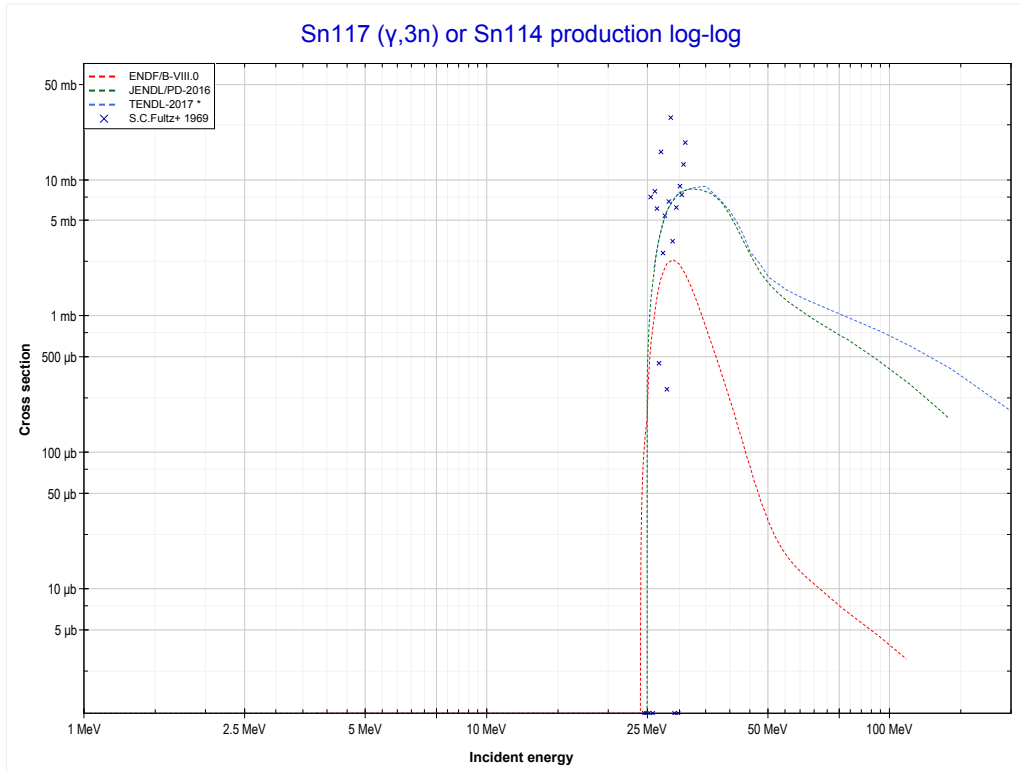
Reaction	Q-Value
Sn117(γ,n)Sn116	-6943.13 keV

<< 50-Sn-116	50-Sn-117	50-Sn-118 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn115 production)	MT17 ($\gamma,3n$) >>



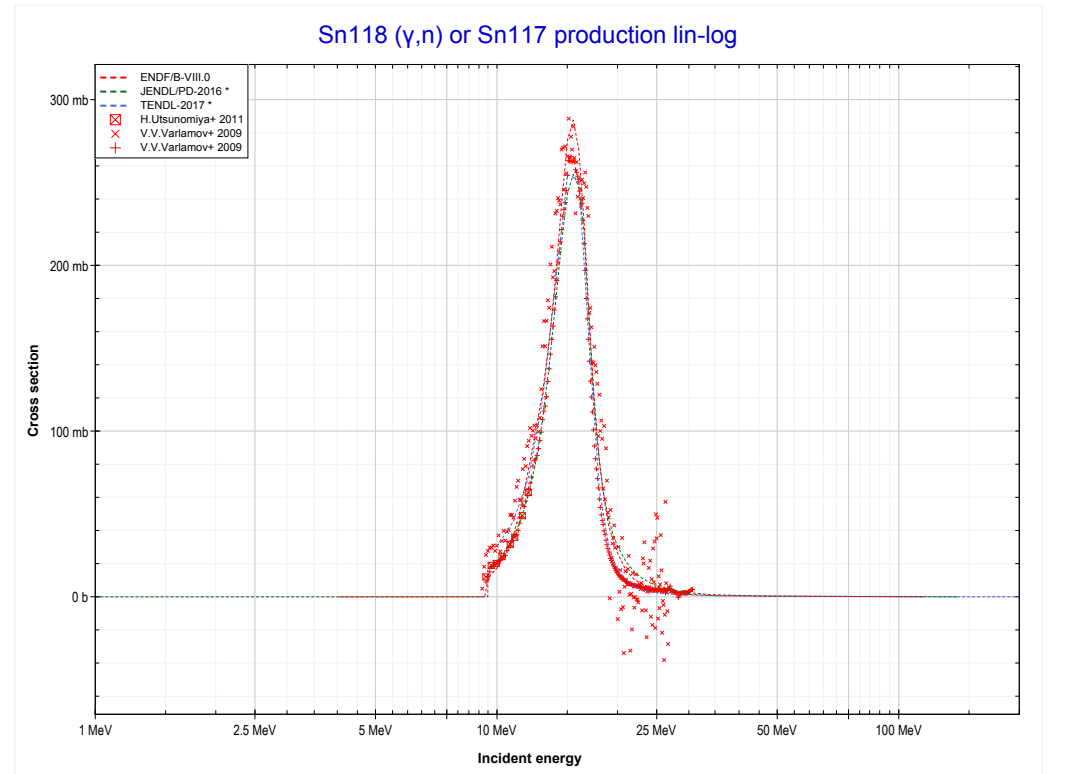
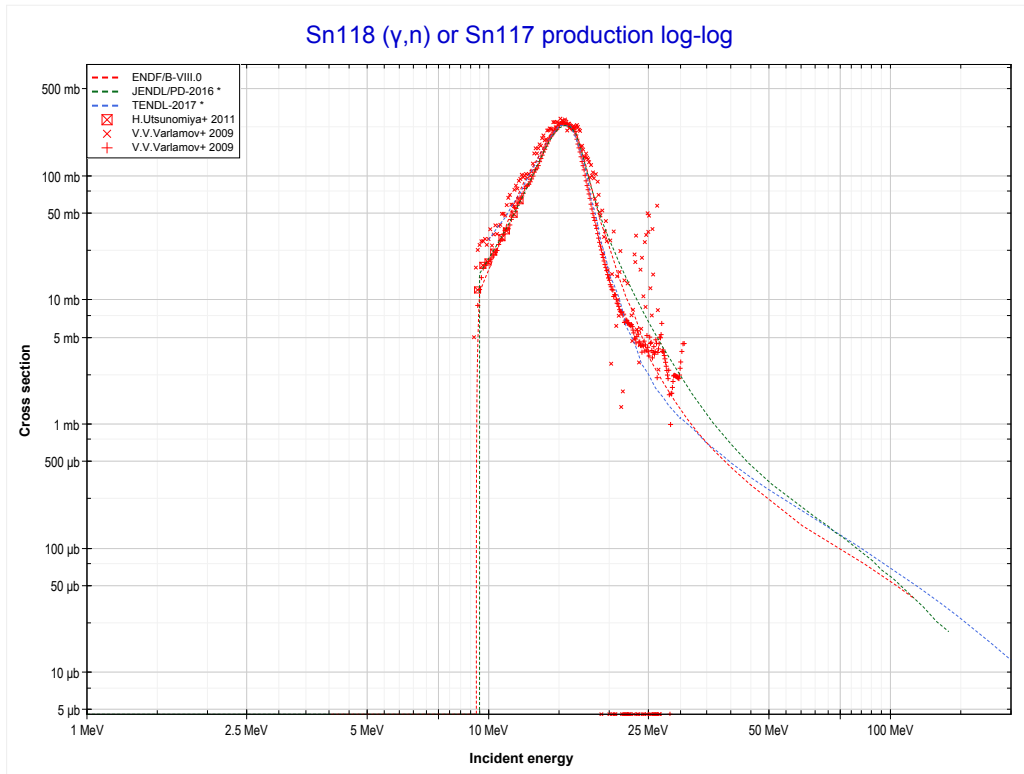
Reaction	Q-Value
Sn117($\gamma,2n$)Sn115	-16506.60 keV

<< 49-In-115	50-Sn-117	50-Sn-118 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Sn114 production)	50-Sn-118 MT4 (γ,n) >>



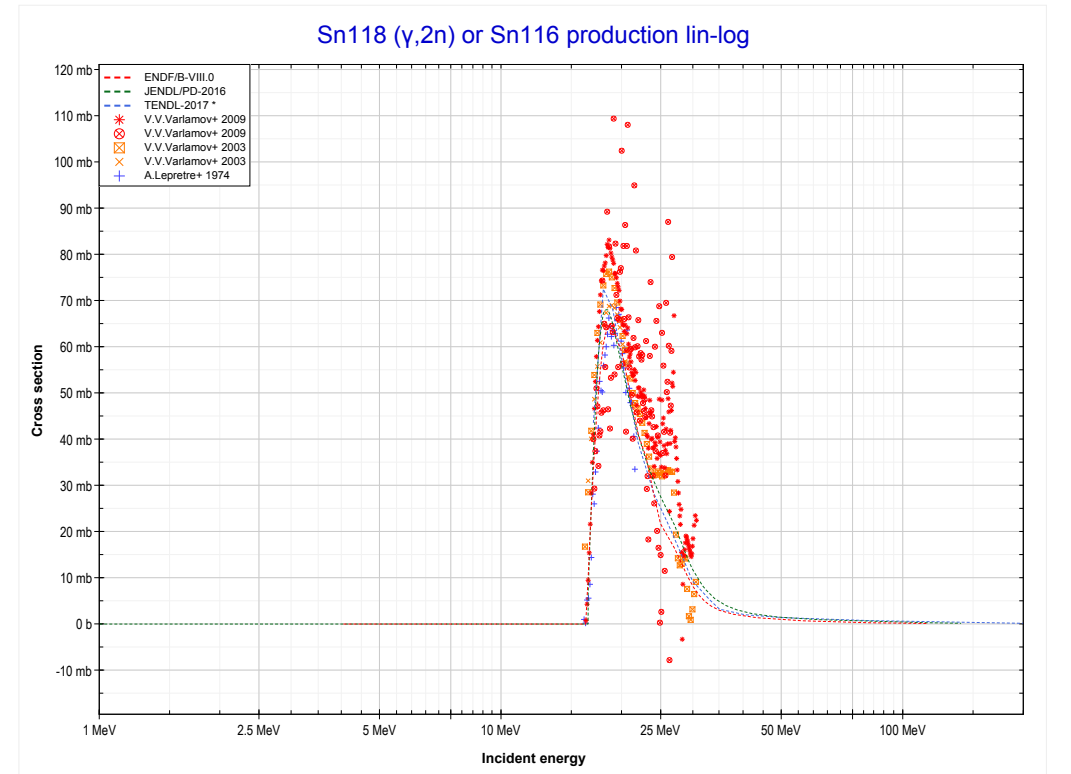
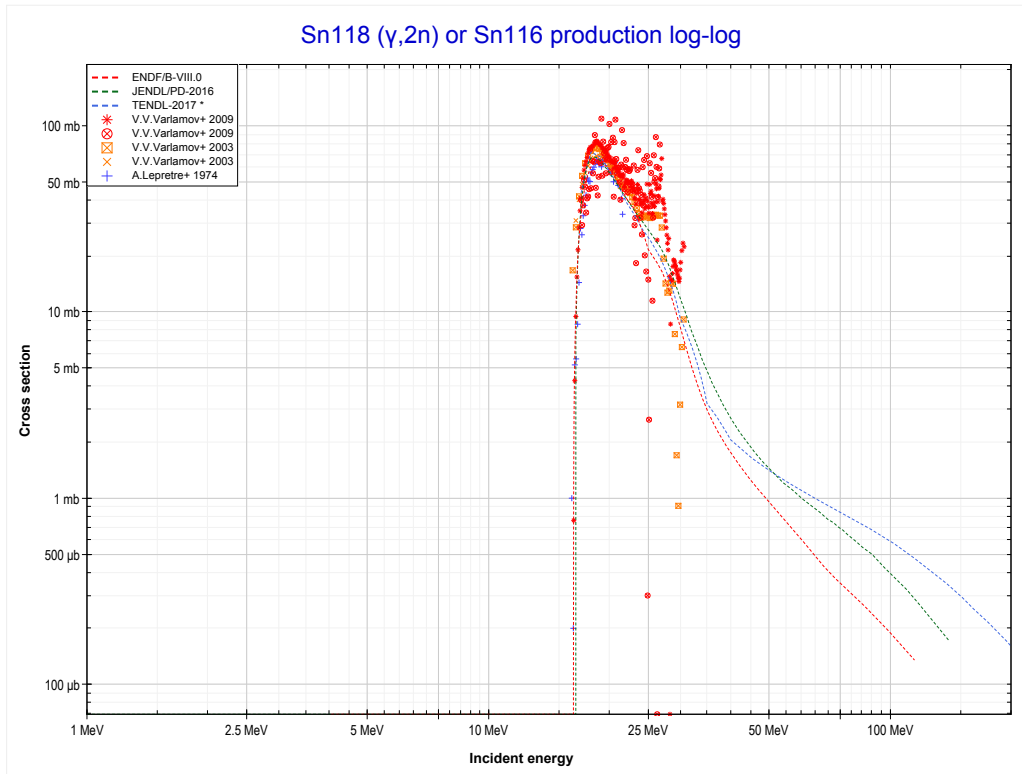
Reaction	Q-Value
Sn117($\gamma,3n$)Sn114	-24054.45 keV

<< 50-Sn-117	50-Sn-118	50-Sn-119 >>
<< 50-Sn-117 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Sn117 production)	MT16 ($\gamma,2n$) >>



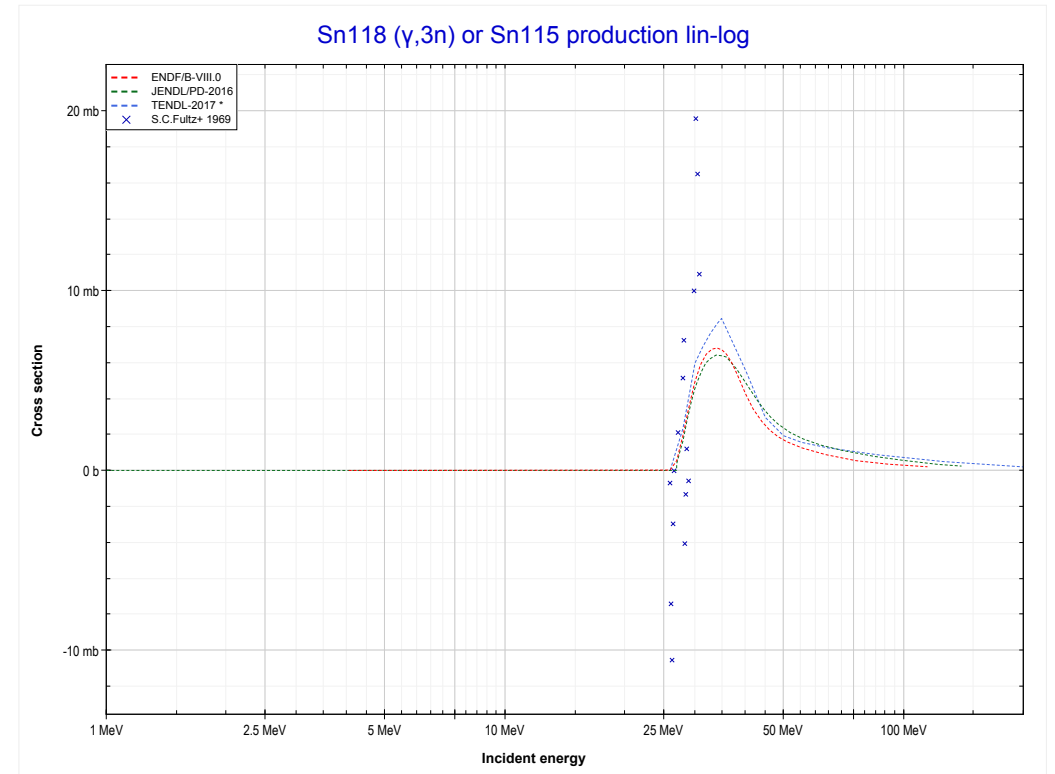
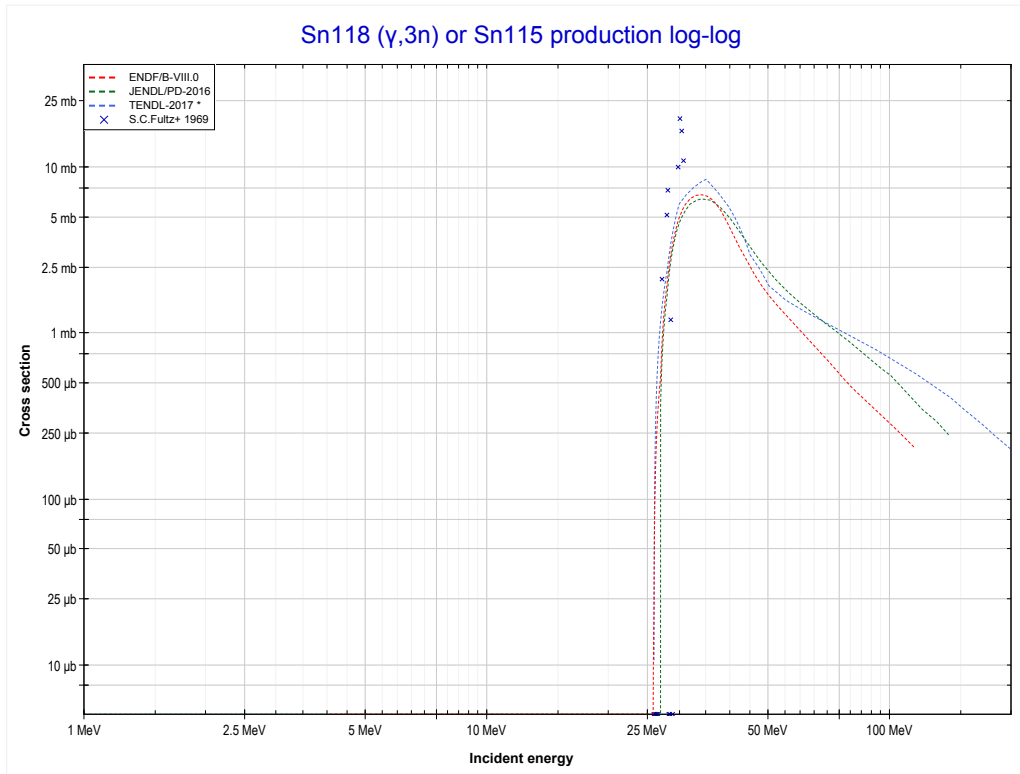
Reaction	Q-Value
Sn118(γ,n)Sn117	-9326.42 keV

<< 50-Sn-117	50-Sn-118	50-Sn-119 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sn116 production)	MT17 ($\gamma, 3n$) >>



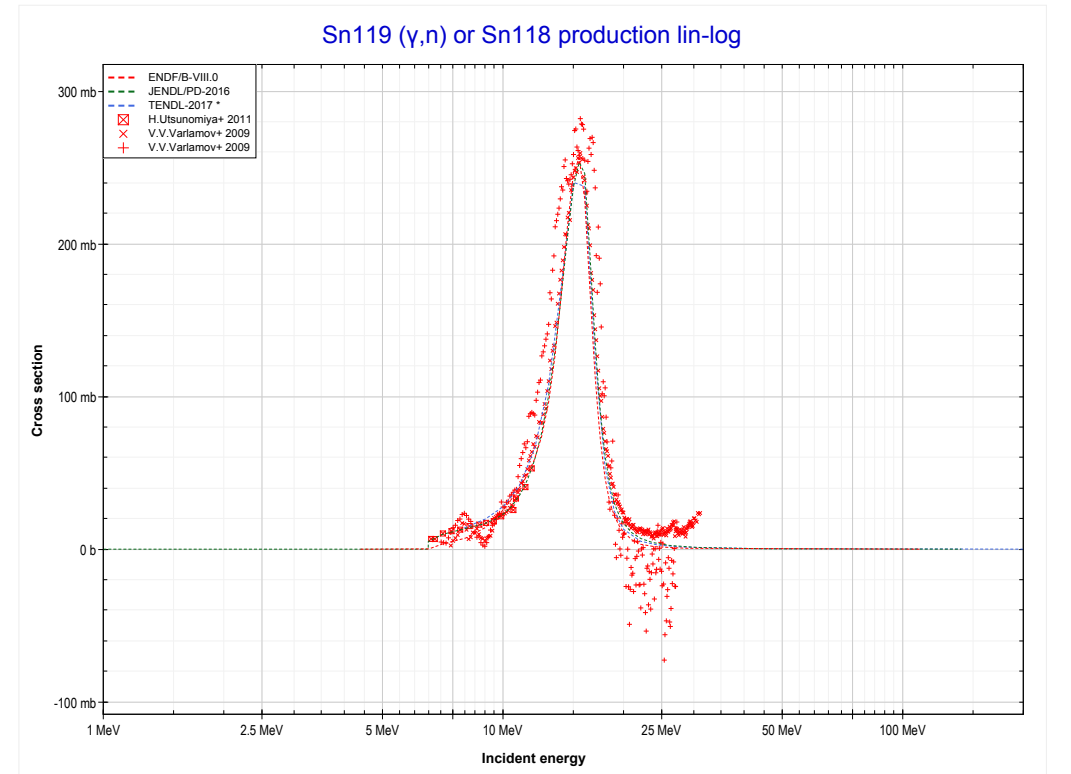
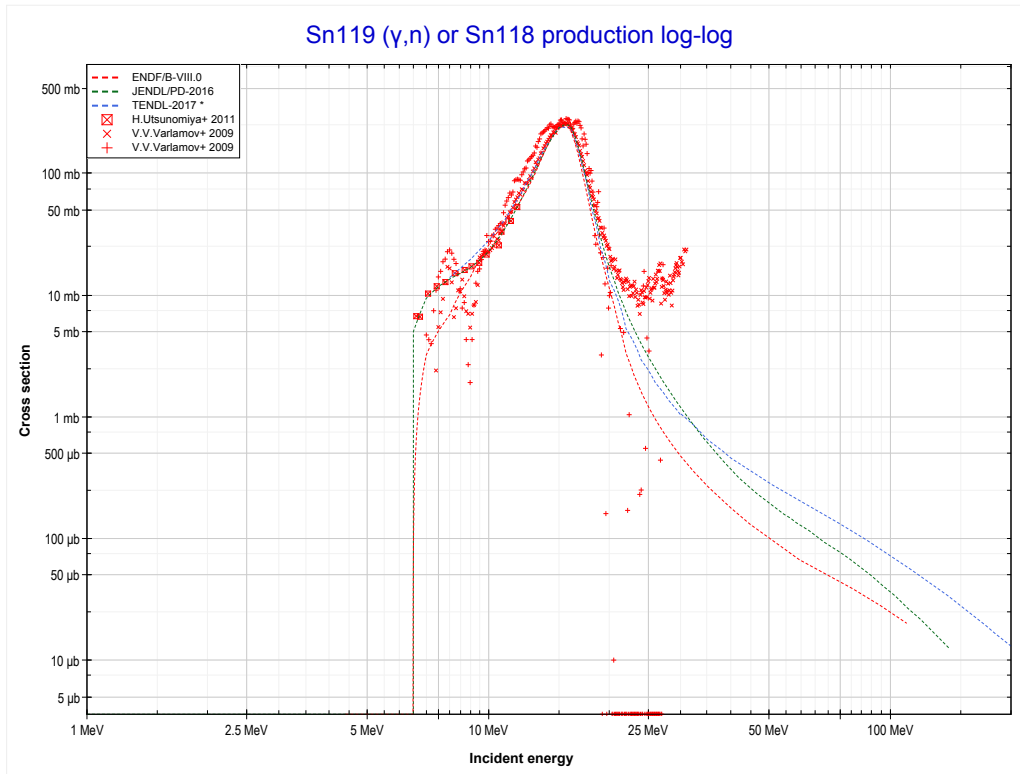
Reaction	Q-Value
Sn118($\gamma, 2n$)Sn116	-16269.54 keV

<< 50-Sn-117	50-Sn-118	50-Sn-119 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Sn115 production)	50-Sn-119 MT4 (γ,n) >>



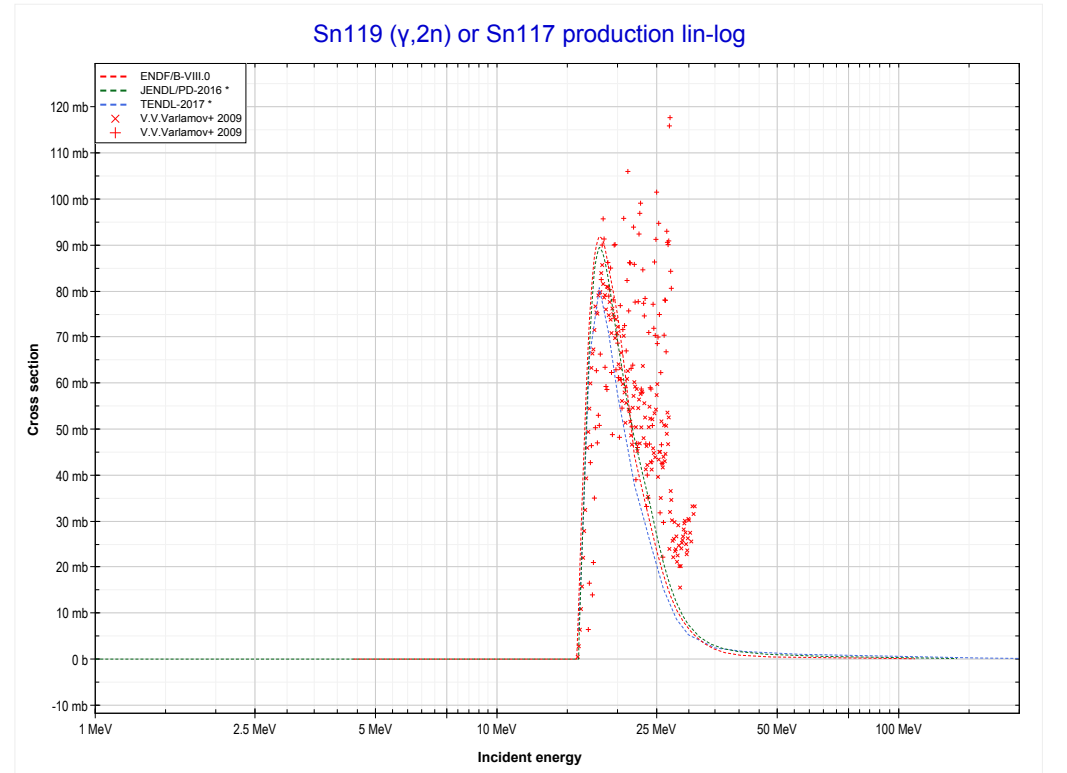
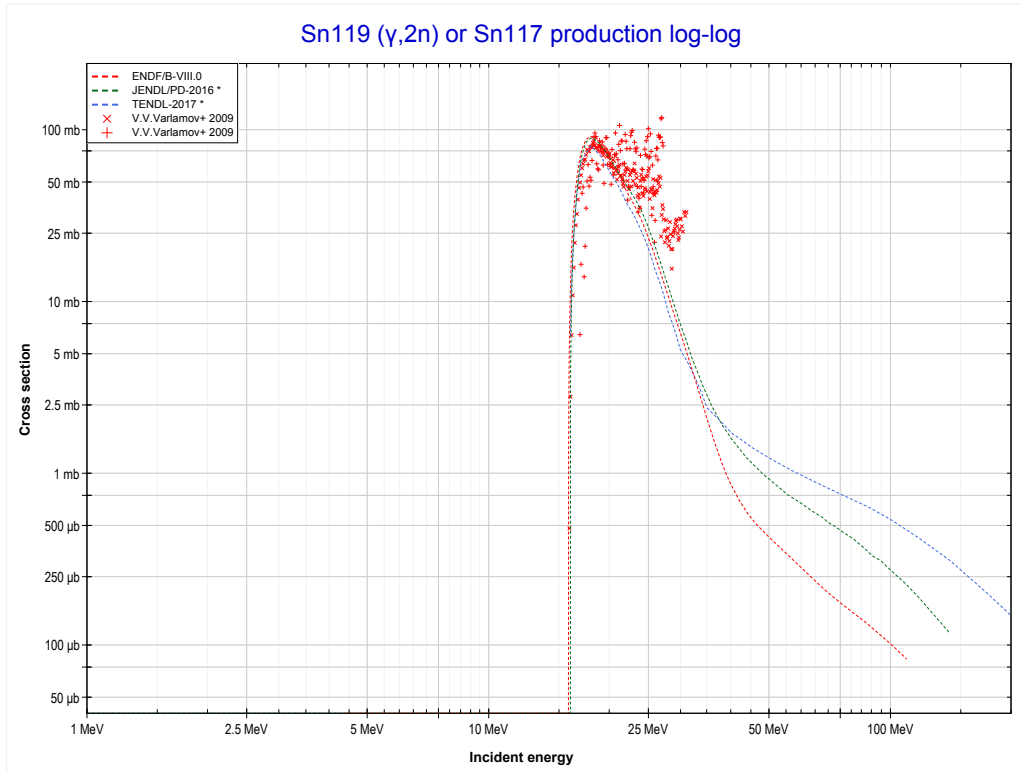
Reaction	Q-Value
Sn118($\gamma,3n$)Sn115	-25833.02 keV

<< 50-Sn-118	50-Sn-119	50-Sn-120 >>
<< 50-Sn-118 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Sn118 production)	MT16 ($\gamma,2n$) >>



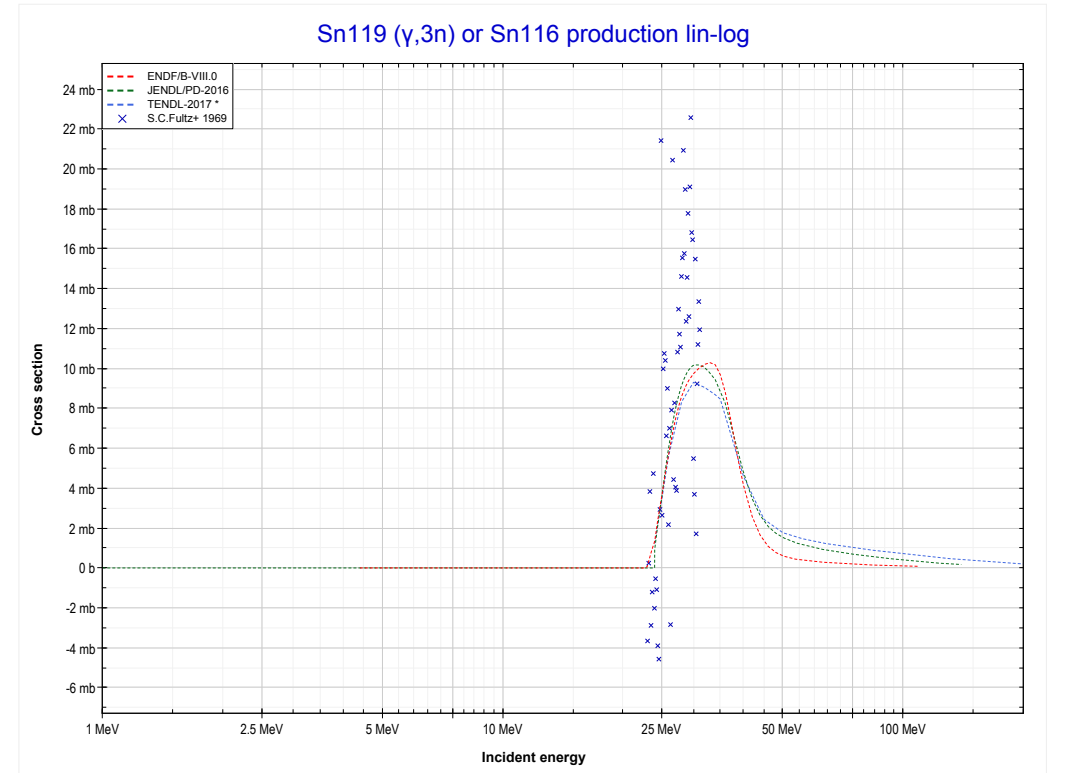
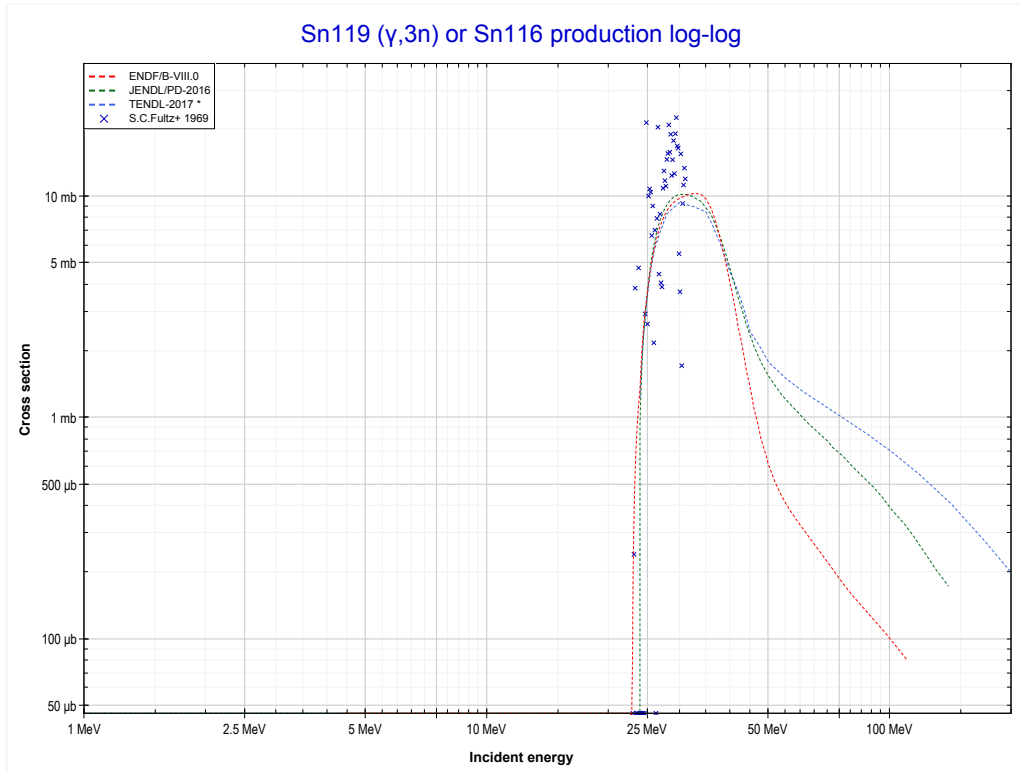
Reaction	Q-Value
Sn119(γ,n)Sn118	-6483.52 keV

<< 50-Sn-118	50-Sn-119	50-Sn-120 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sn117 production)	MT17 ($\gamma, 3n$) >>



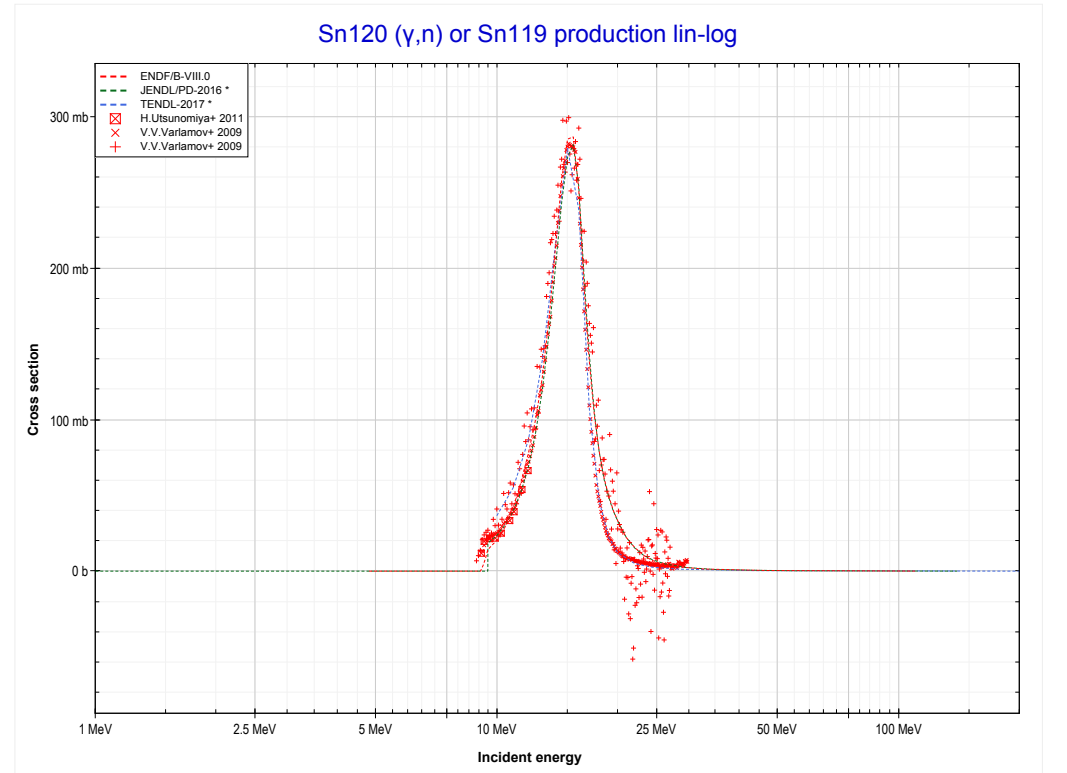
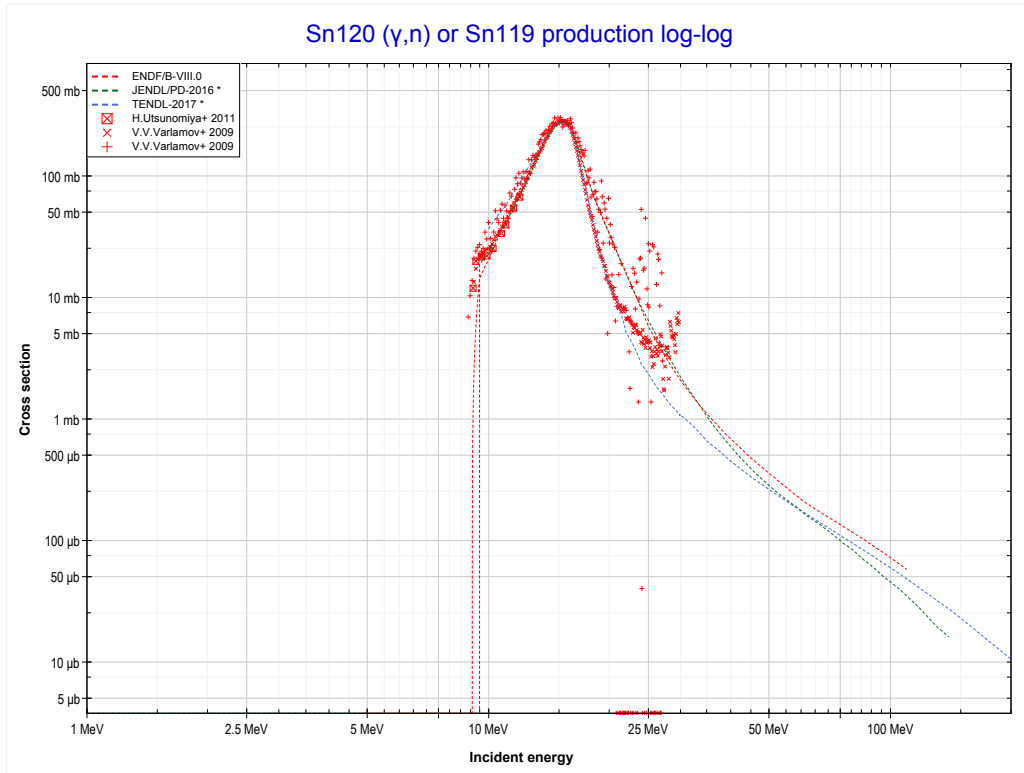
Reaction	Q-Value
Sn119($\gamma, 2n$)Sn117	-15809.93 keV

<< 50-Sn-118	50-Sn-119	50-Sn-120 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Sn116 production)	50-Sn-120 MT4 (γ,n) >>



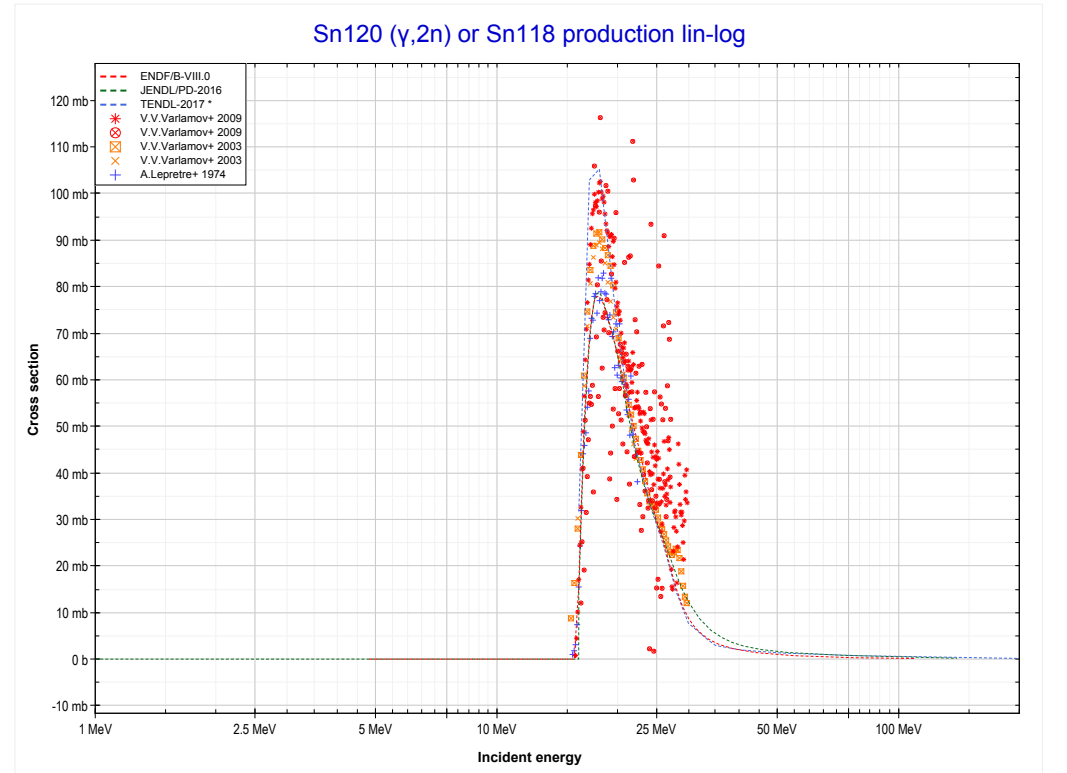
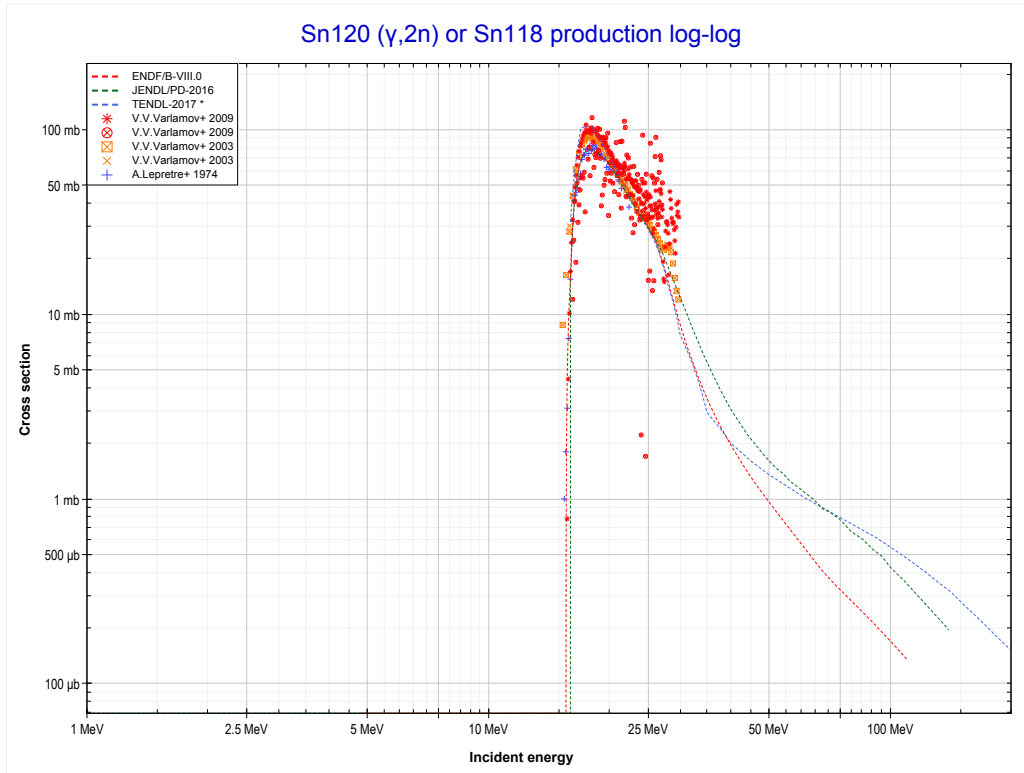
Reaction	Q-Value
Sn119($\gamma,3n$)Sn116	-22753.06 keV

<< 50-Sn-119	50-Sn-120	50-Sn-122 >>
<< 50-Sn-119 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Sn119 production)	MT16 (γ,2n) >>



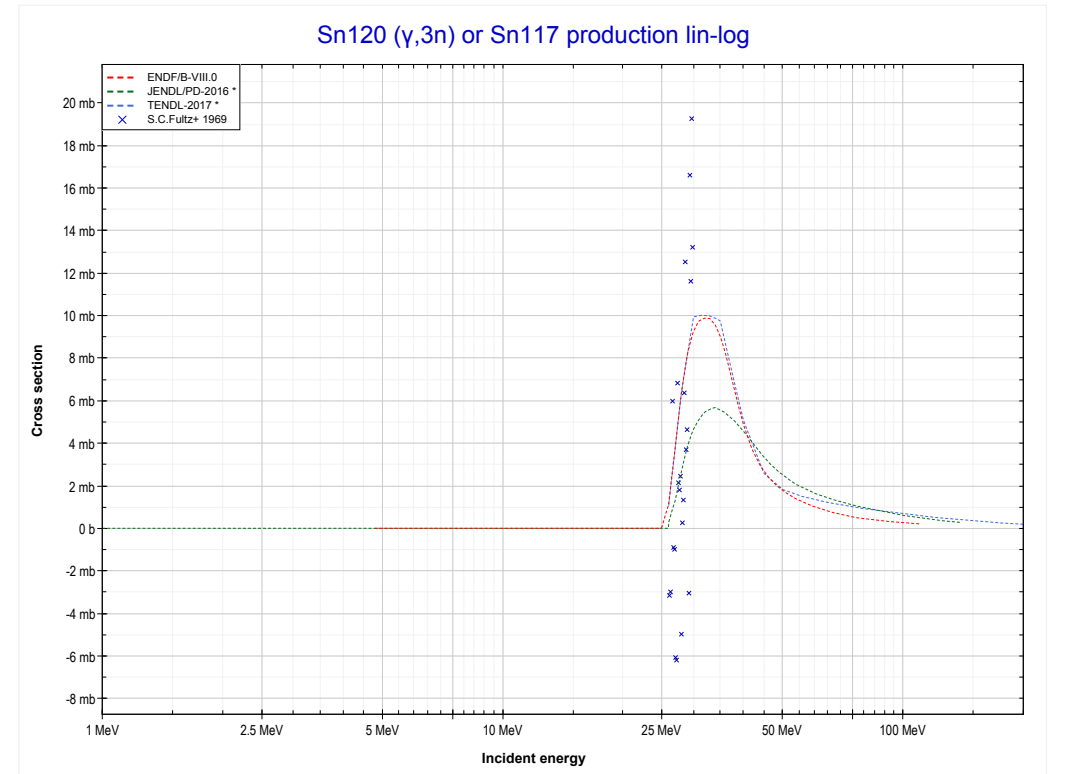
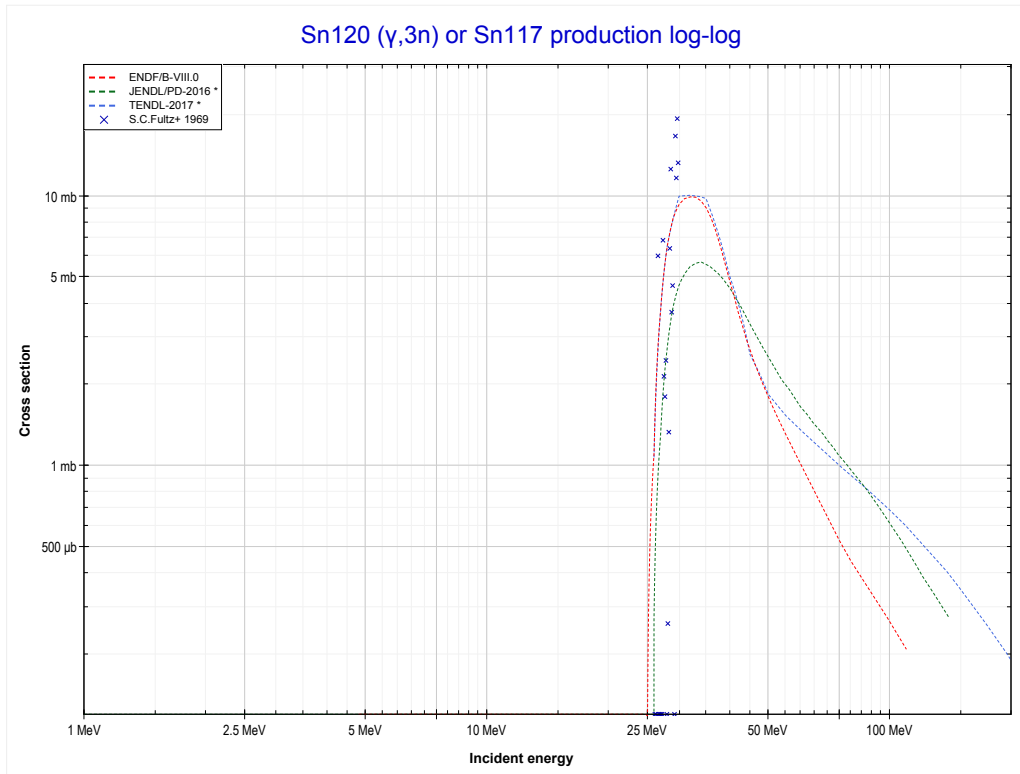
Reaction	Q-Value
Sn120(γ,n)Sn119	-9104.82 keV

<< 50-Sn-119	50-Sn-120	50-Sn-122 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn118 production)	MT17 ($\gamma,3n$) >>



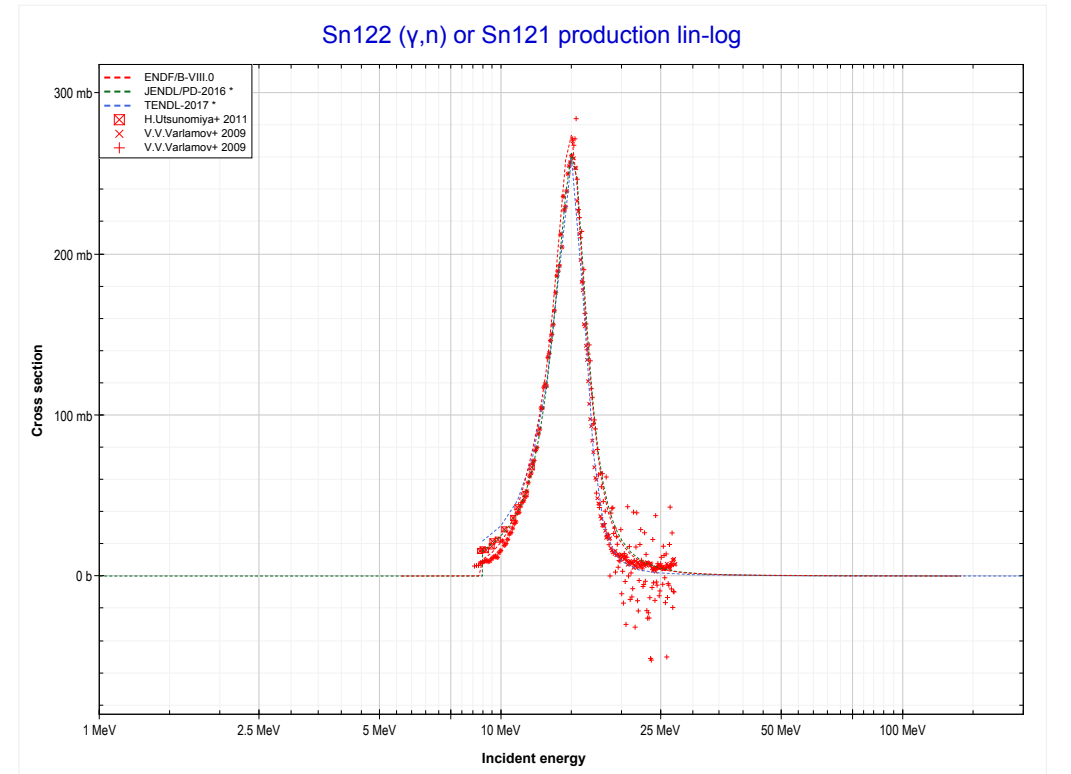
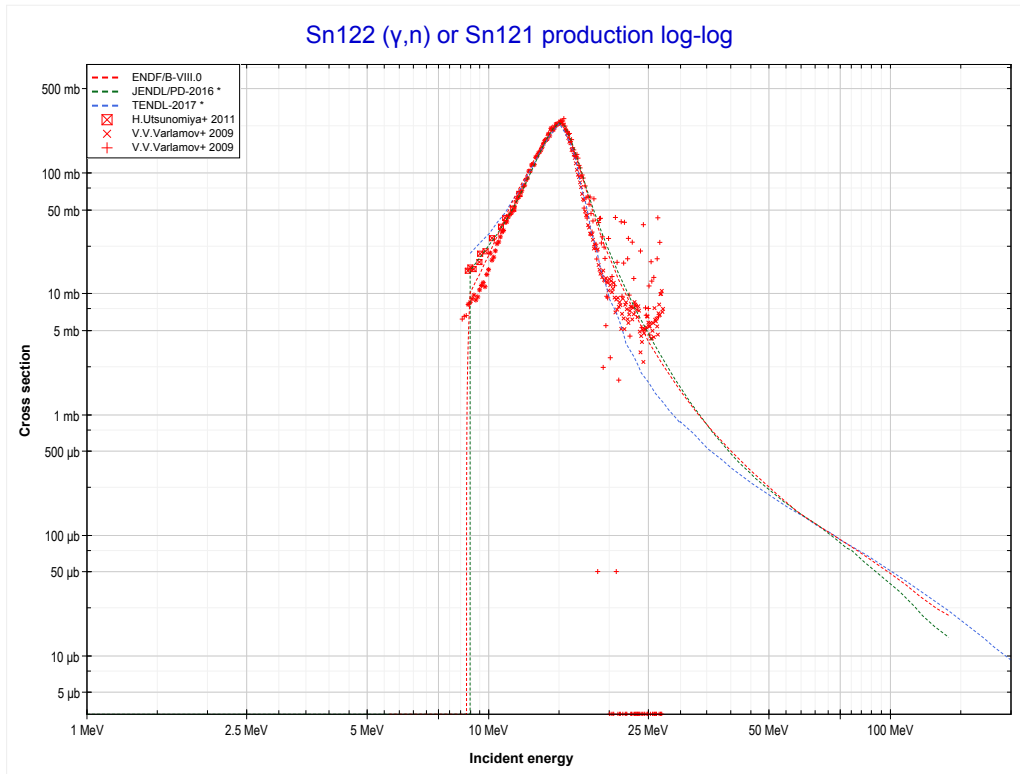
Reaction	Q-Value
Sn120($\gamma,2n$)Sn118	-15588.33 keV

<< 50-Sn-119	50-Sn-120	50-Sn-124 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Sn117 production)	50-Sn-122 MT4 (γ,n) >>



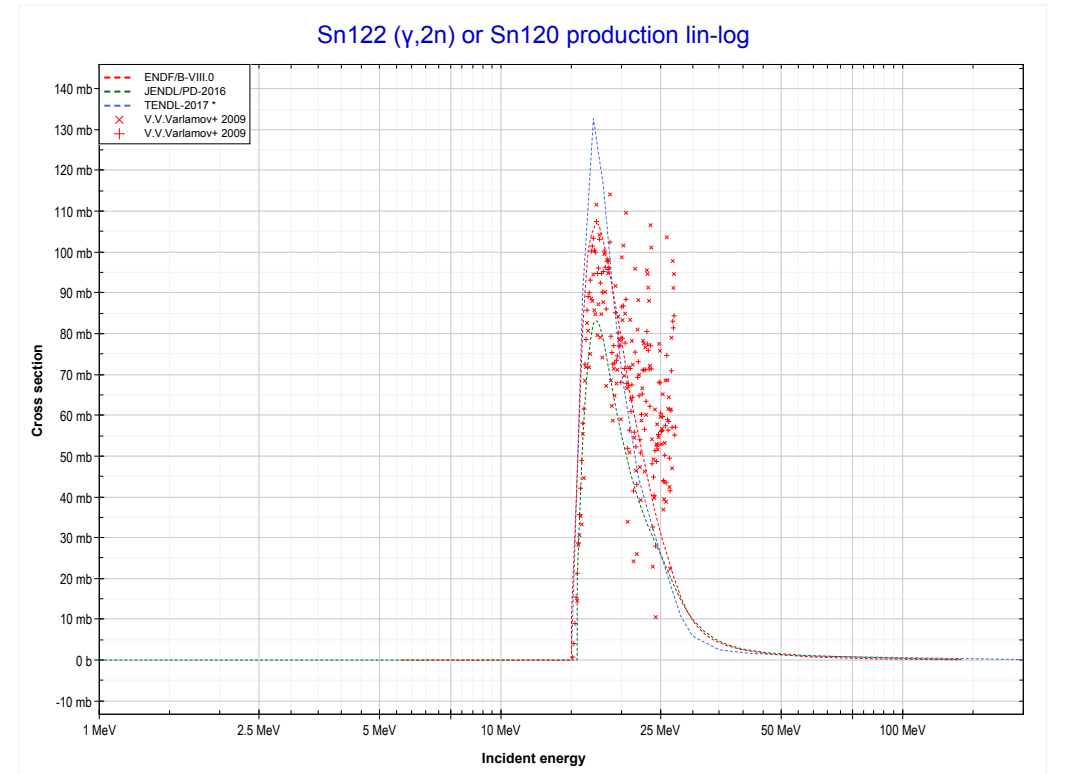
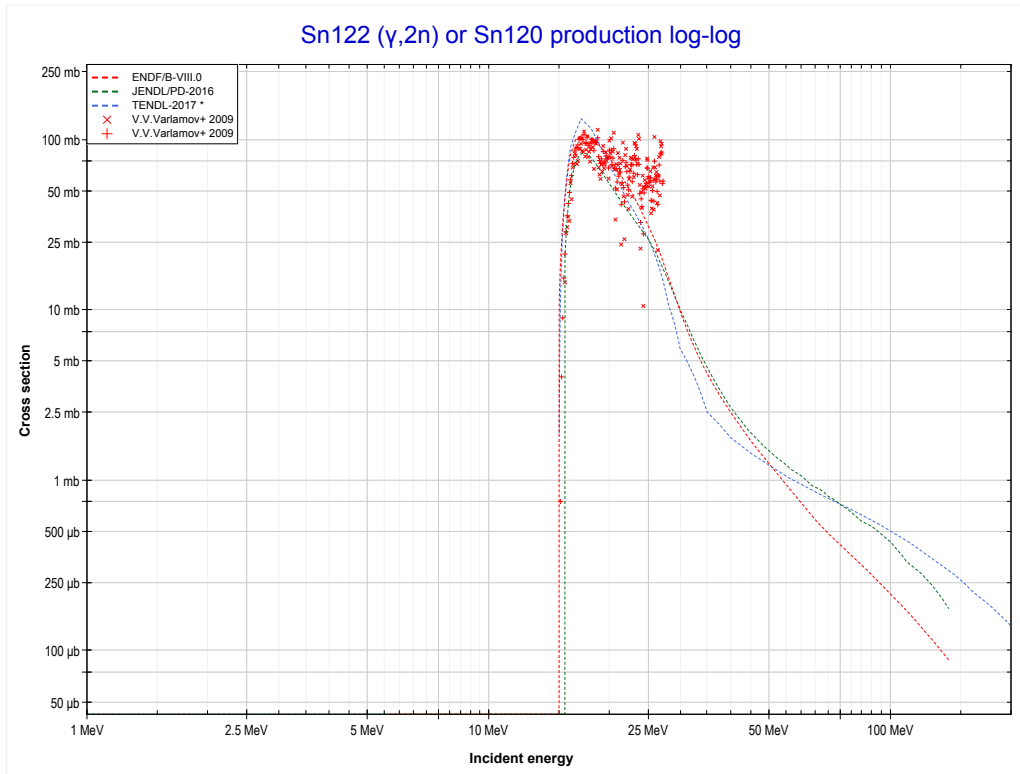
Reaction	Q-Value
Sn120($\gamma,3n$)Sn117	-24914.75 keV

<< 50-Sn-120	50-Sn-122	50-Sn-124 >>
<< 50-Sn-120 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Sn121 production)	MT16 (γ,2n) >>



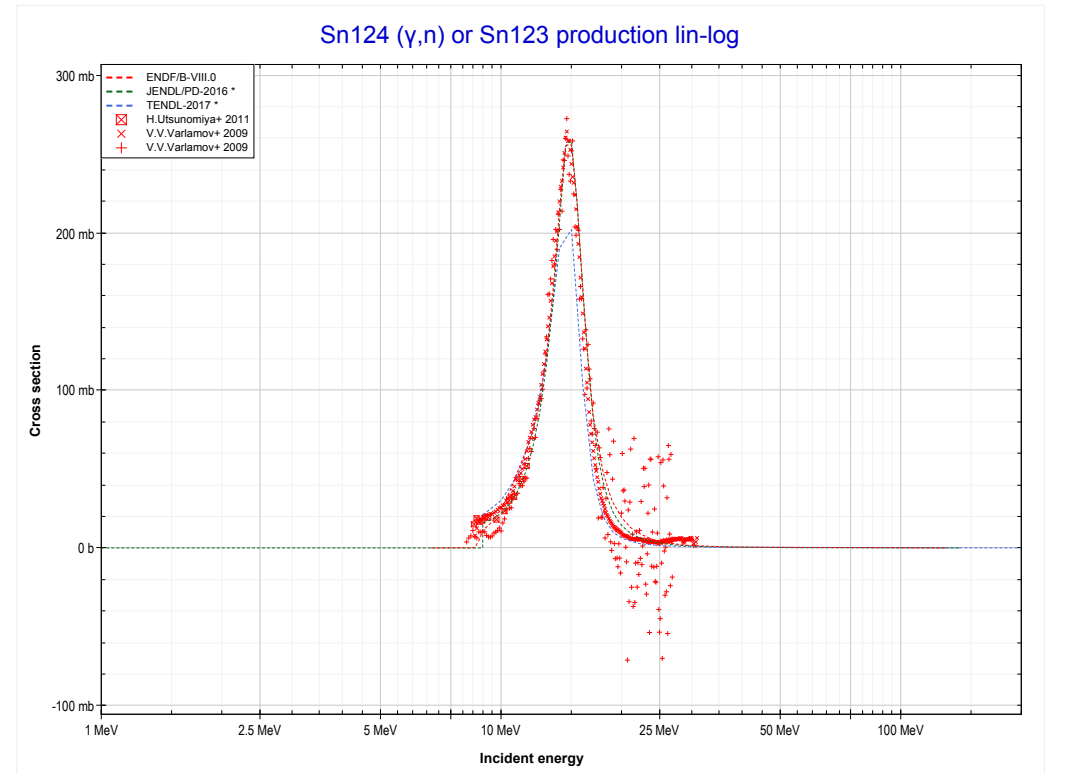
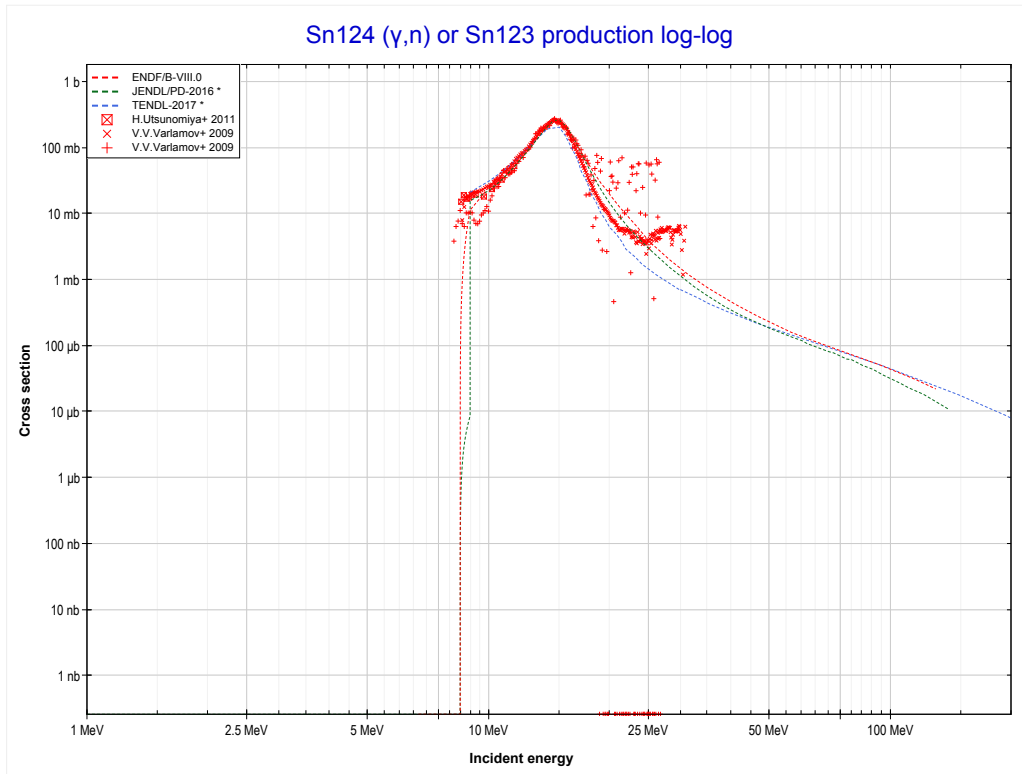
Reaction	Q-Value
Sn122(γ,n)Sn121	-8815.32 keV

<< 50-Sn-120	50-Sn-122	50-Sn-124 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn120 production)	50-Sn-124 MT4 (γ,n) >>



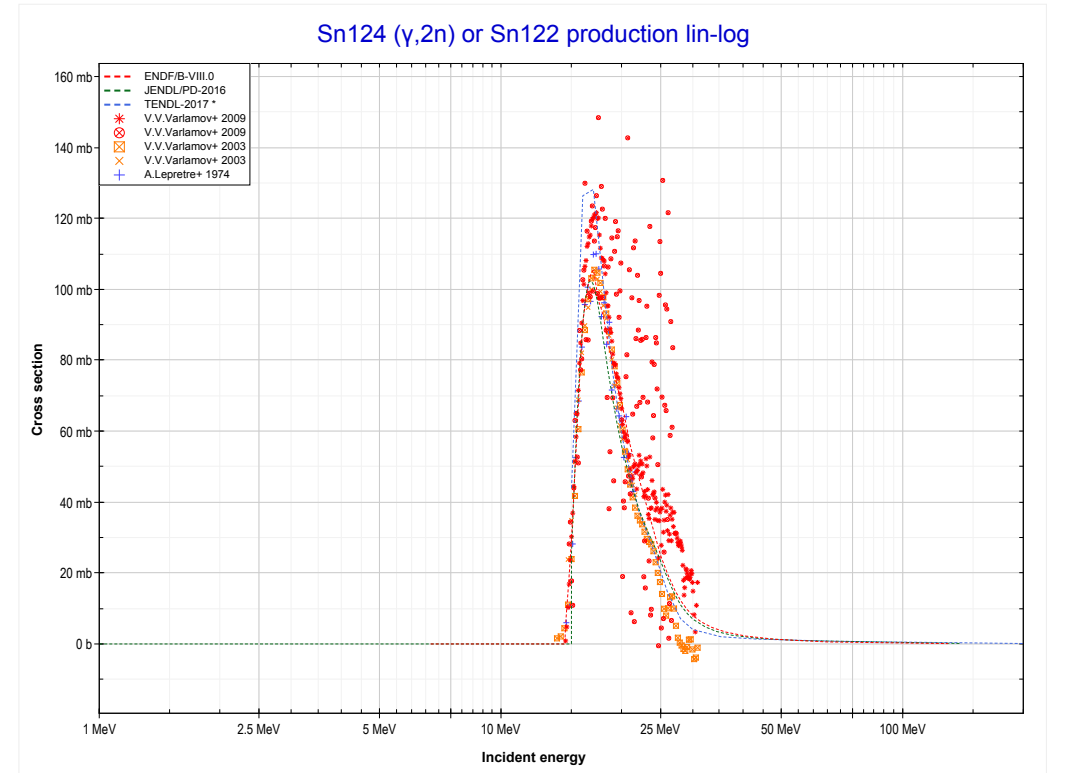
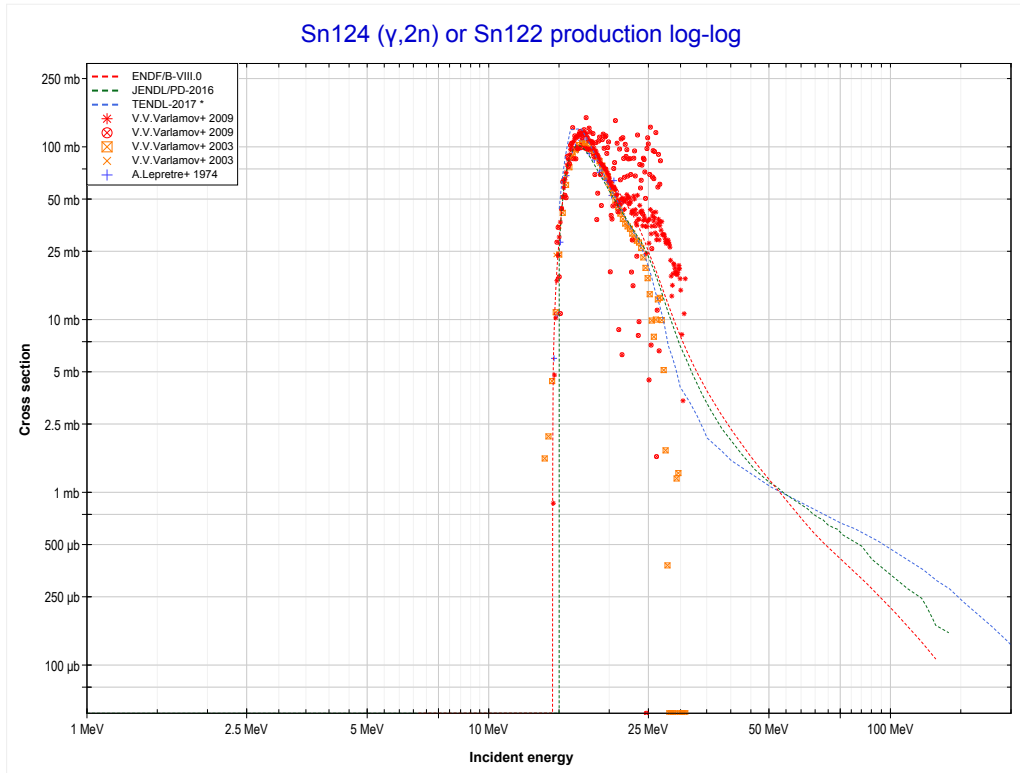
Reaction	Q-Value
Sn122($\gamma,2n$)Sn120	-14985.53 keV

<< 50-Sn-122	50-Sn-124	51-Sb-121 >>
<< 50-Sn-122 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Sn123 production)	MT16 (γ,2n) >>



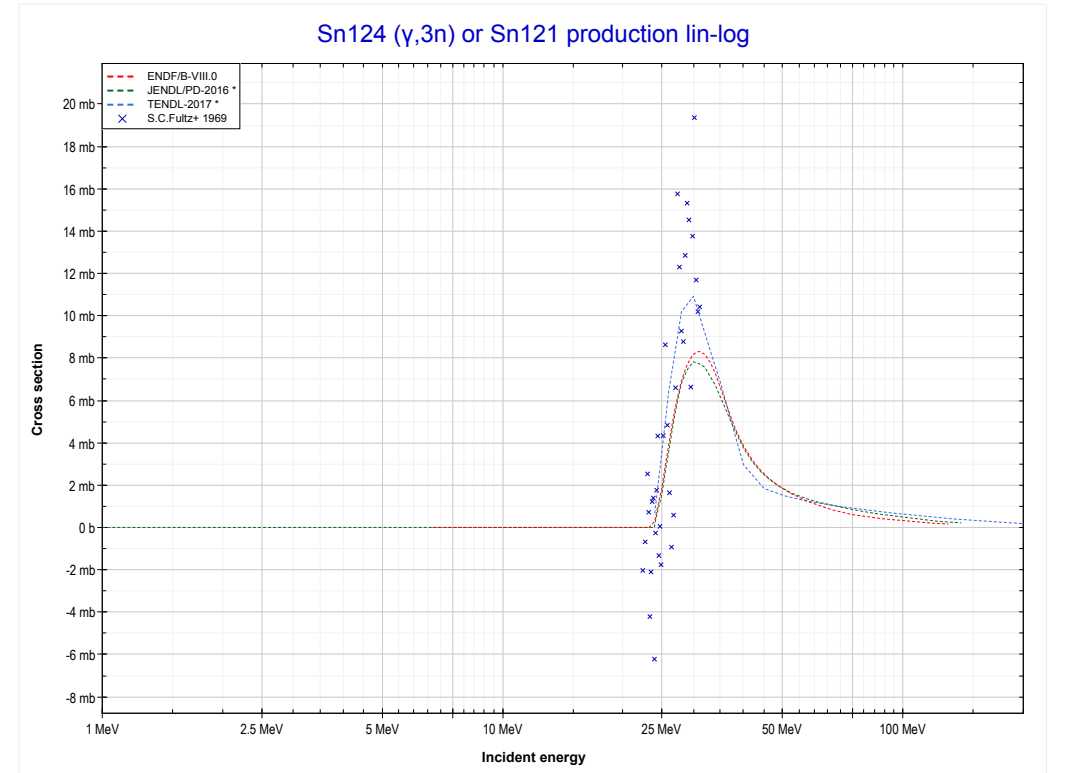
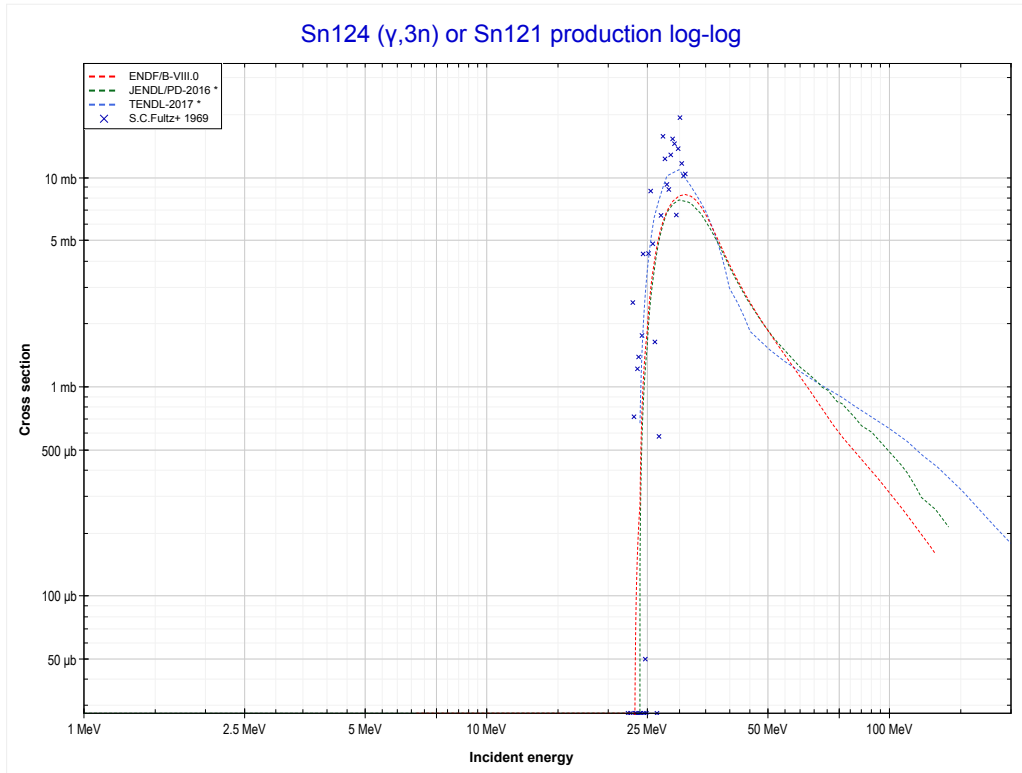
Reaction	Q-Value
Sn124(γ,n)Sn123	-8489.12 keV

<< 50-Sn-122	50-Sn-124	53-I-127 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sn122 production)	MT17 ($\gamma,3n$) >>



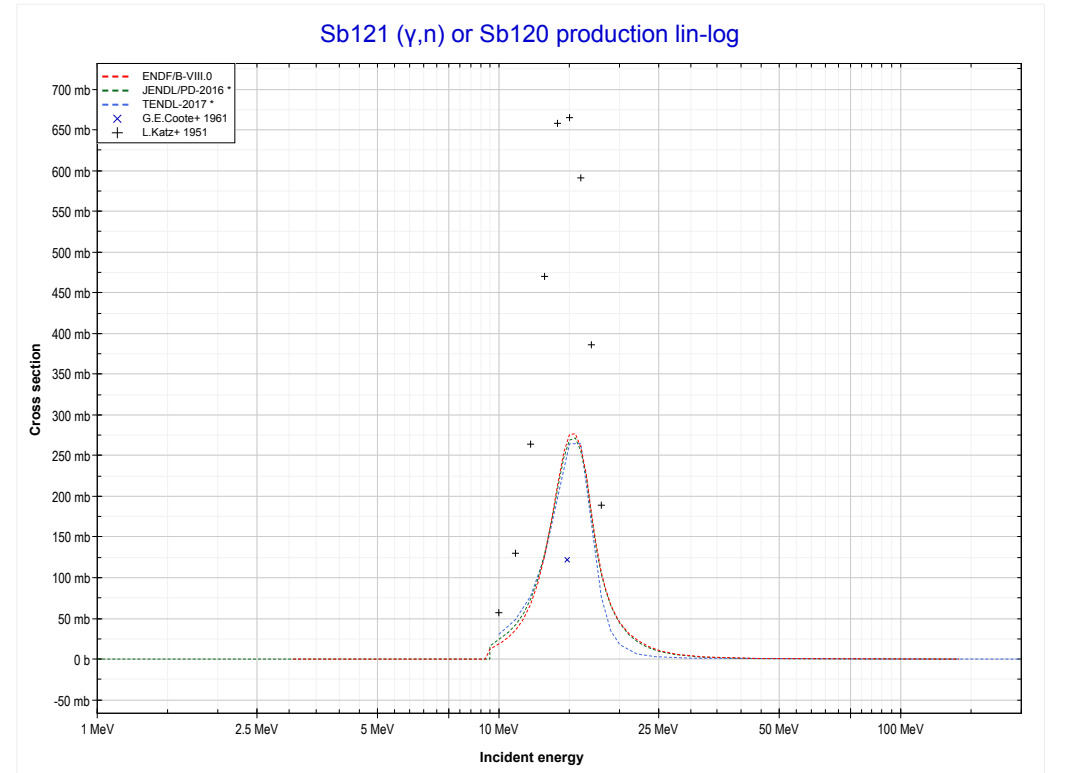
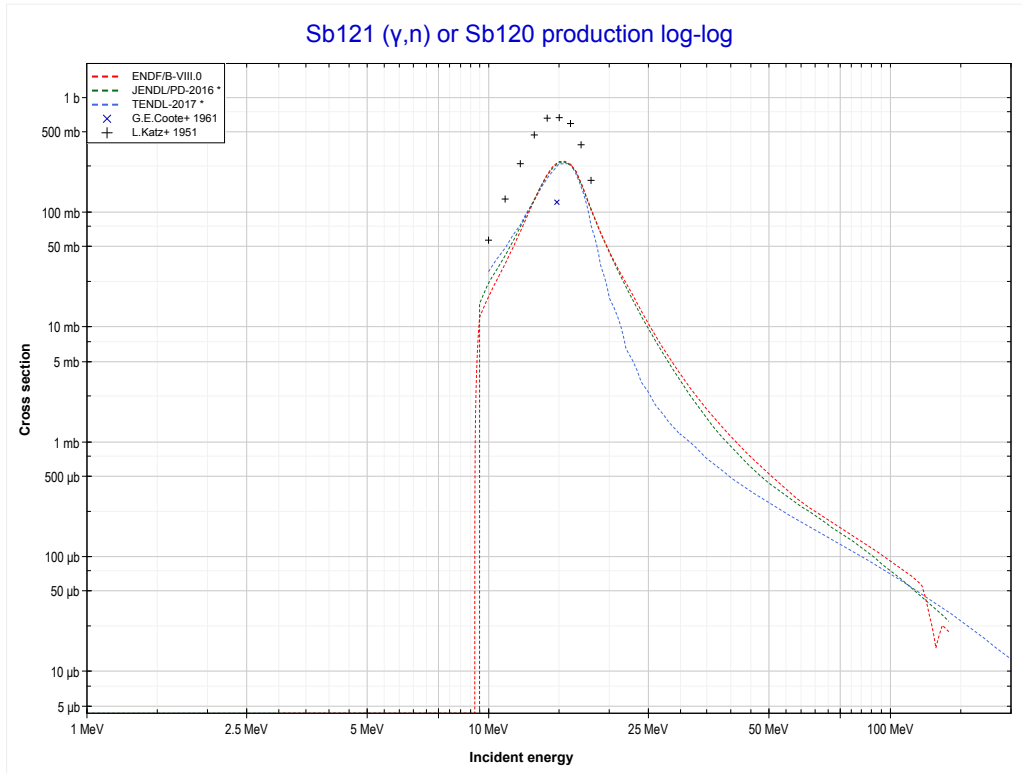
Reaction	Q-Value
Sn124($\gamma,2n$)Sn122	-14435.33 keV

<< 50-Sn-120	50-Sn-124	53-I-127 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Sn121 production)	51-Sb-121 MT4 (γ,n) >>



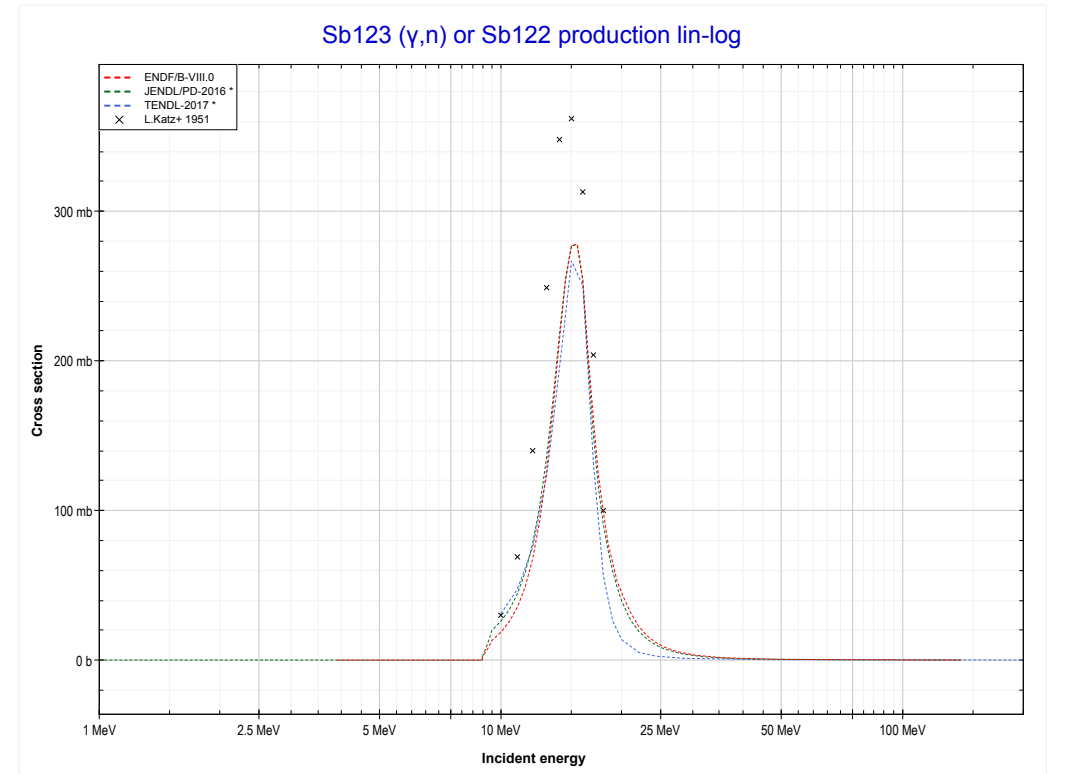
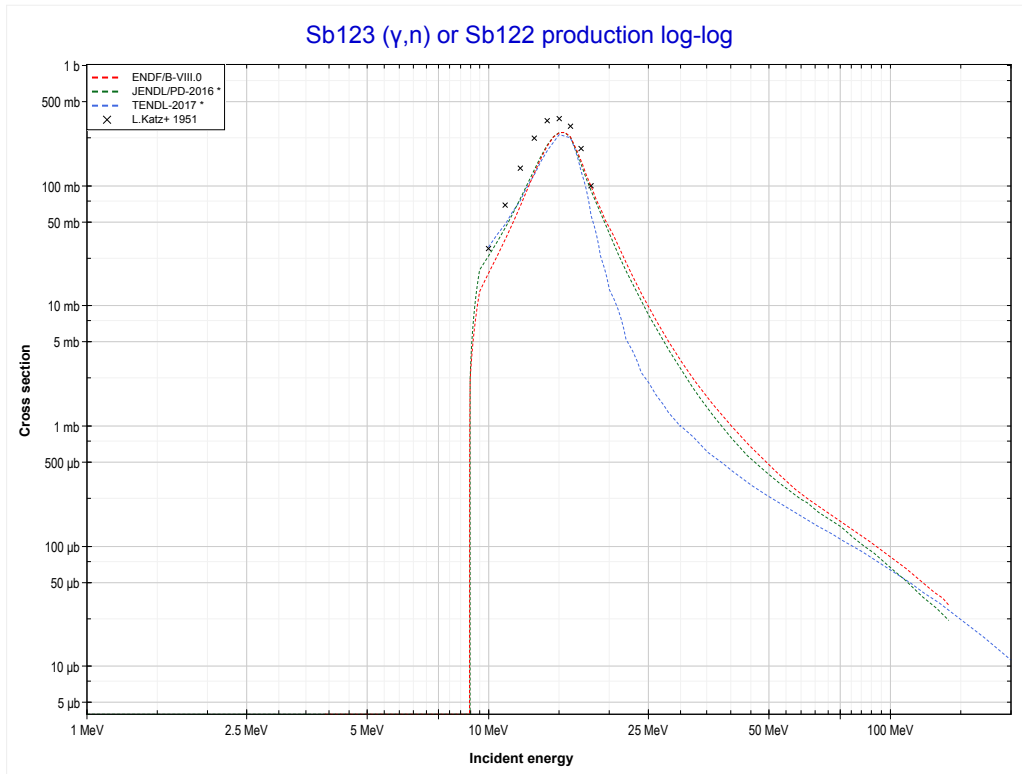
Reaction	Q-Value
Sn124($\gamma,3n$)Sn121	-23250.65 keV

<< 50-Sn-124	51-Sb-121	51-Sb-123 >>
<< 50-Sn-124 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Sb120 production)	51-Sb-123 MT4 (γ,n) >>



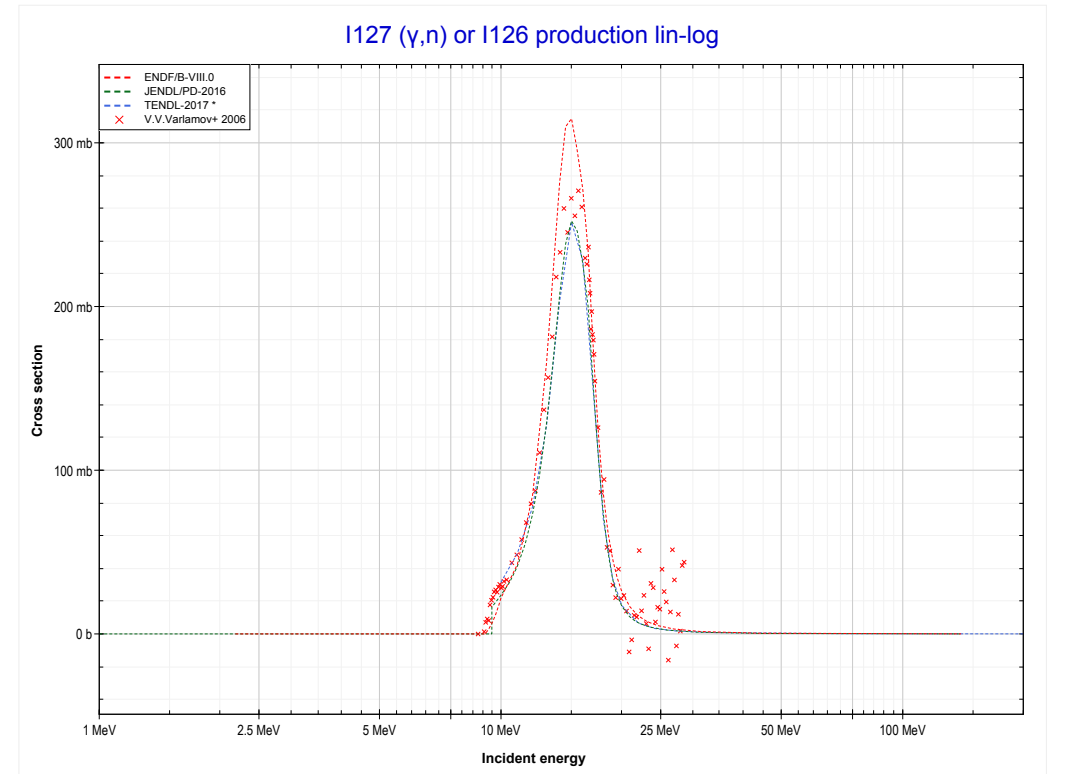
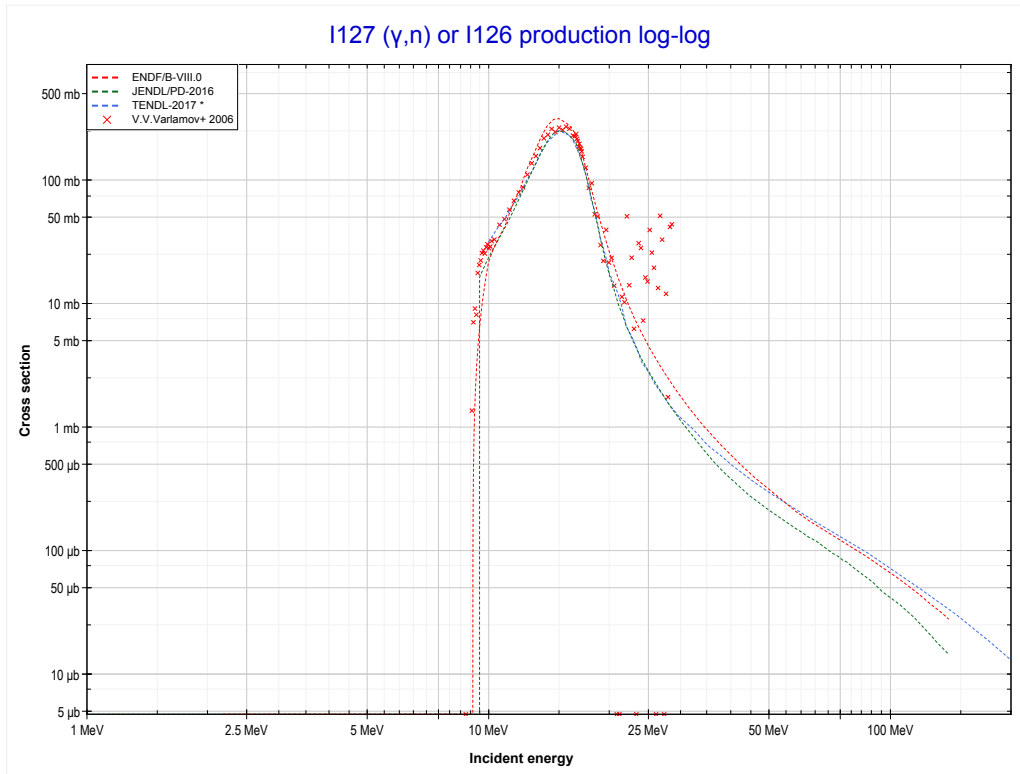
Reaction	Q-Value
Sb121(γ,n)Sb120	-9251.92 keV

<< 51-Sb-121	51-Sb-123	53-I-127 >>
<< 51-Sb-121 MT4 (γ,n)	MT4 (γ,n) or MT5 (Sb122 production)	53-I-127 MT4 (γ,n) >>



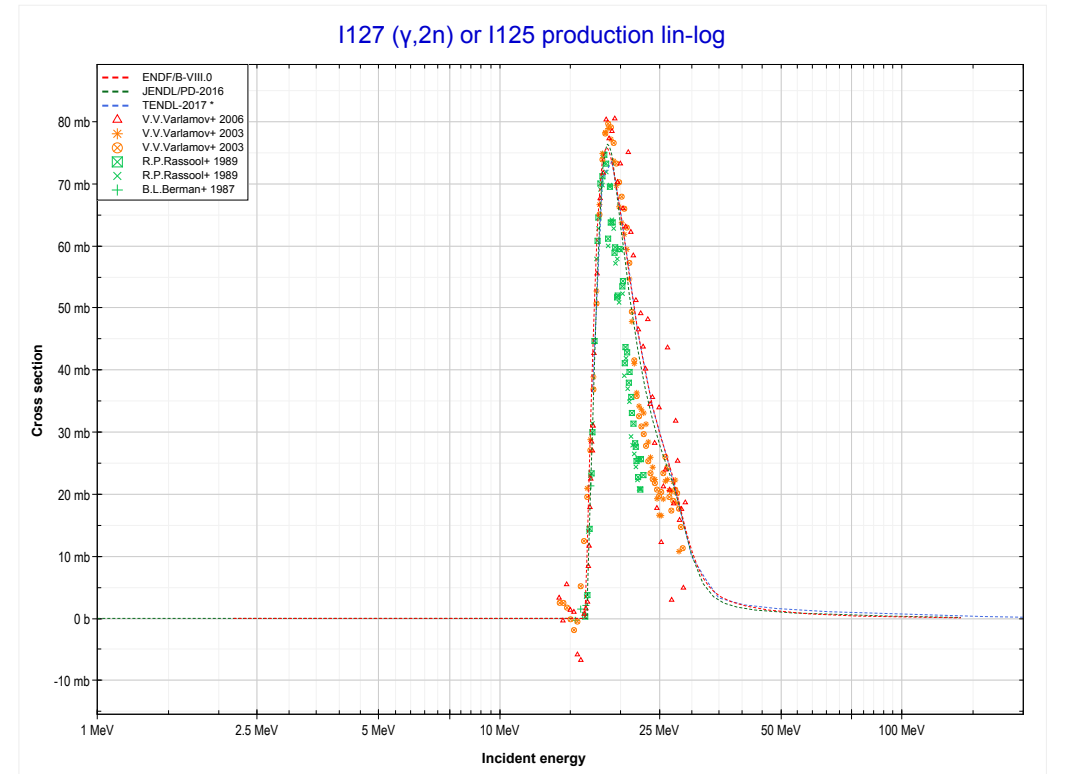
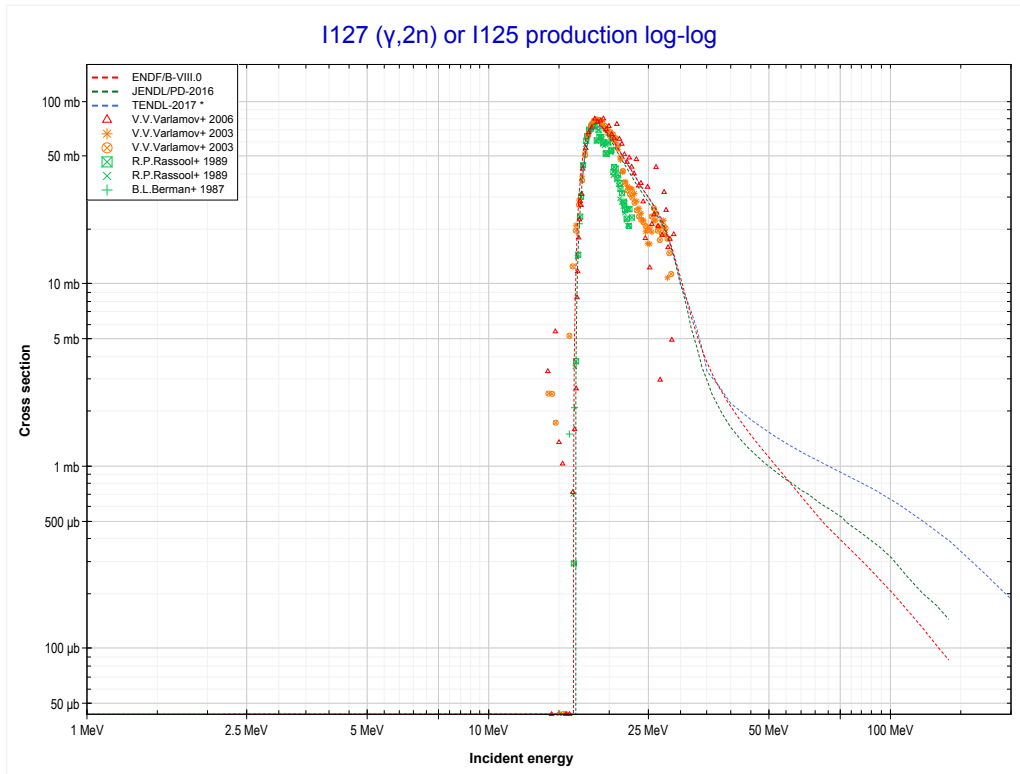
Reaction	Q-Value
Sb123(γ,n)Sb122	-8962.52 keV

<< 51-Sb-123	53-I-127	53-I-129 >>
<< 51-Sb-123 MT4 (γ,n)	MT4 (γ,n) or MT5 (I126 production)	MT16 (γ,2n) >>



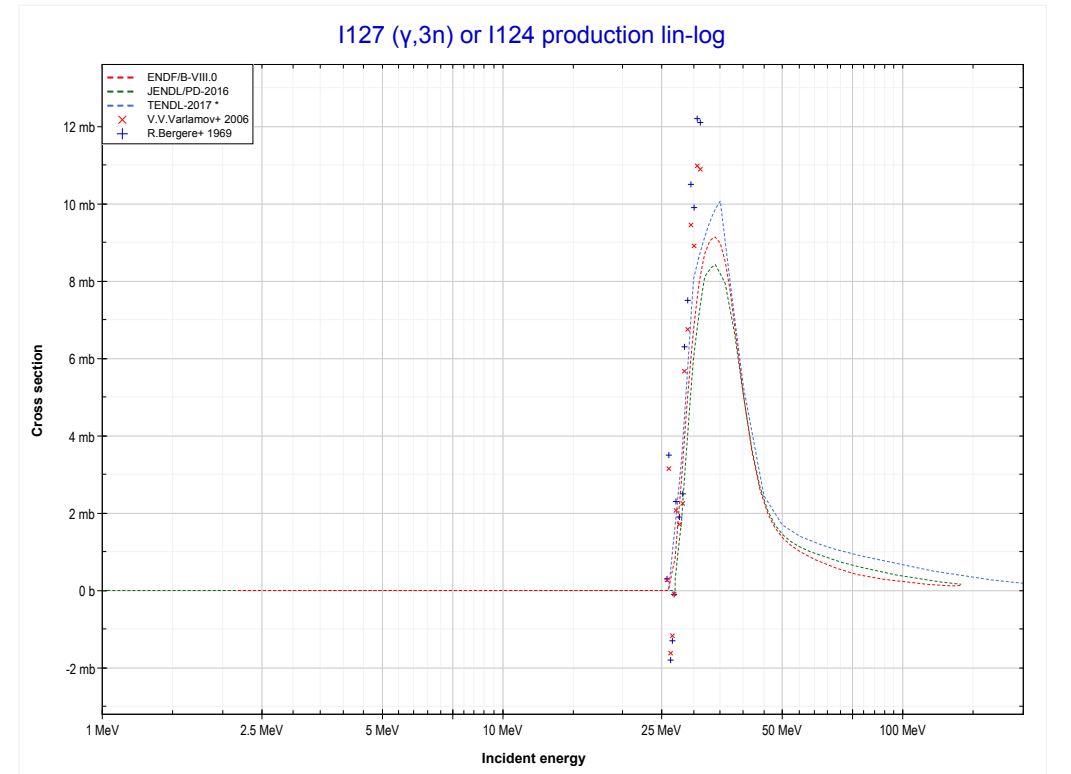
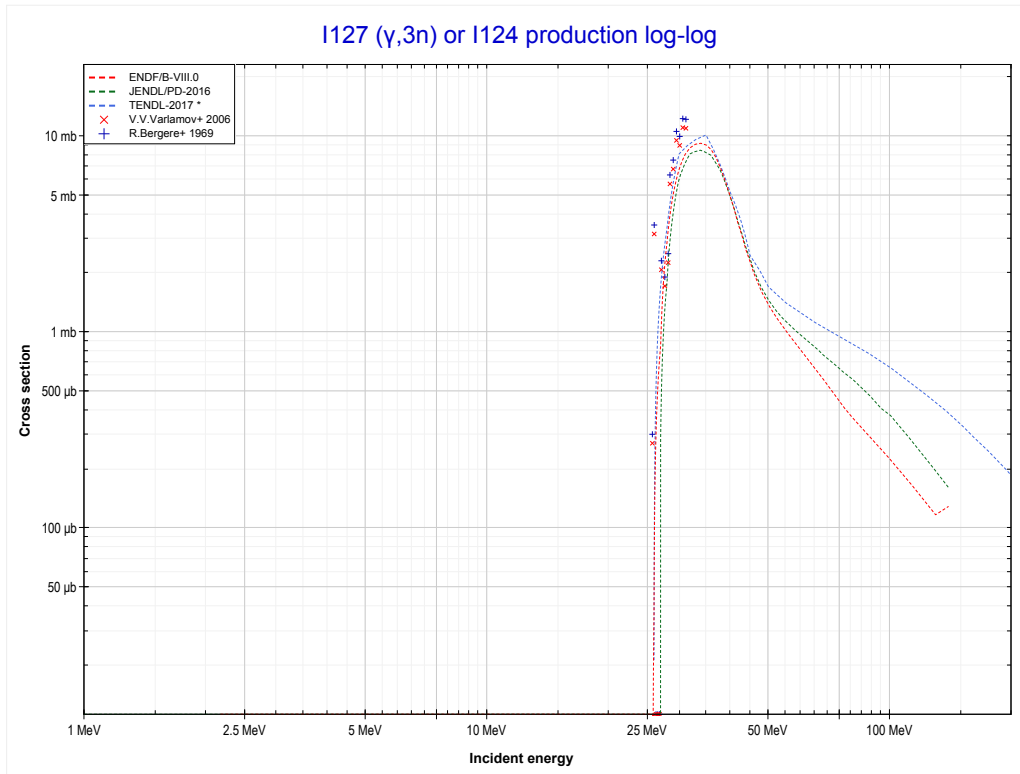
Reaction	Q-Value
I127(γ,n)I126	-9144.32 keV

<< 50-Sn-124	53-I-127	55-Cs-133 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (I125 production)	MT17 ($\gamma,3n$) >>



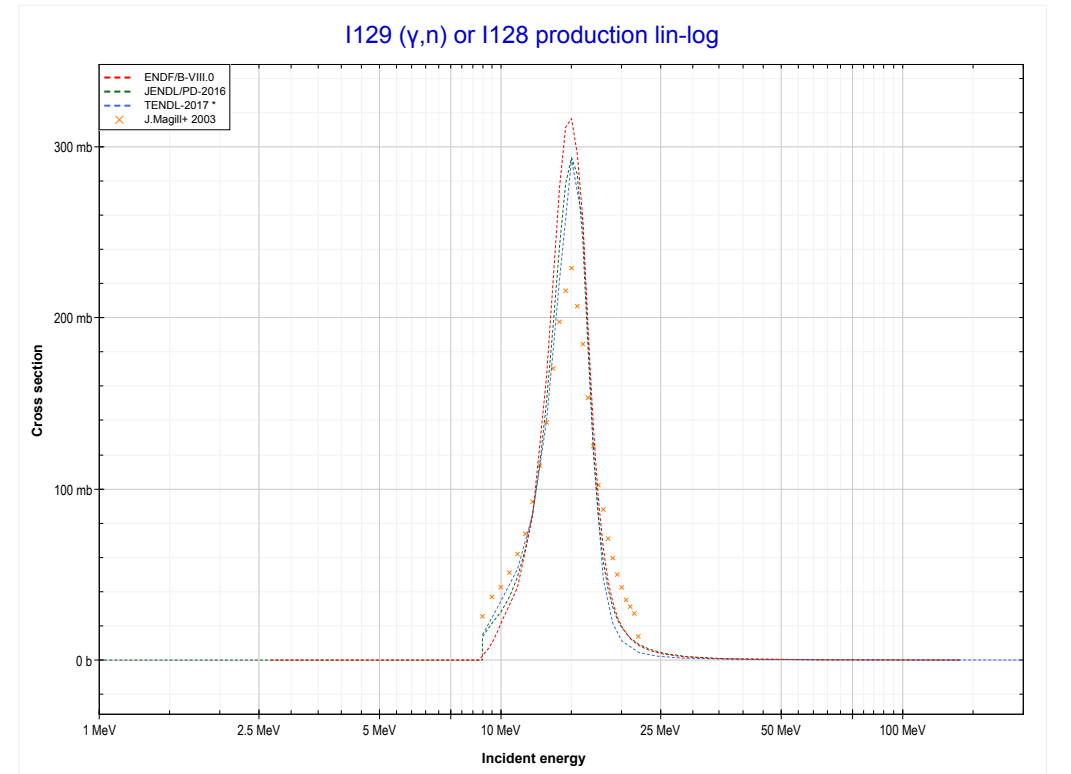
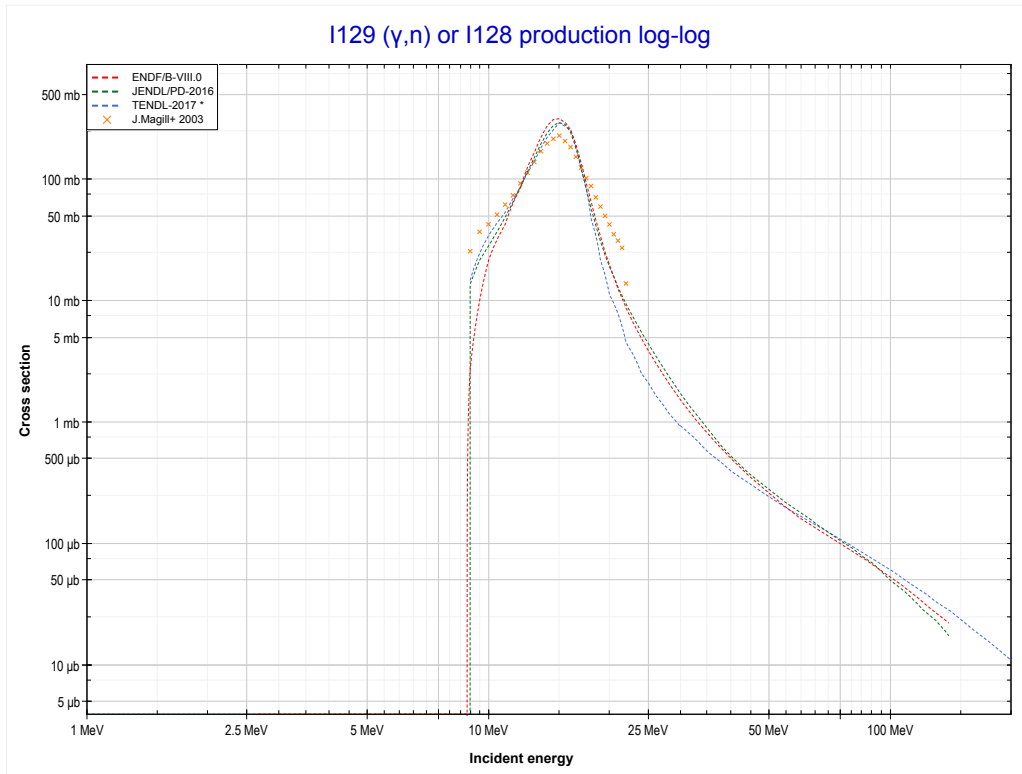
Reaction	Q-Value
I127($\gamma,2n$)I125	-16289.43 keV

<< 50-Sn-124	53-I-127	55-Cs-133 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (I124 production)	53-I-129 MT4 (γ,n) >>



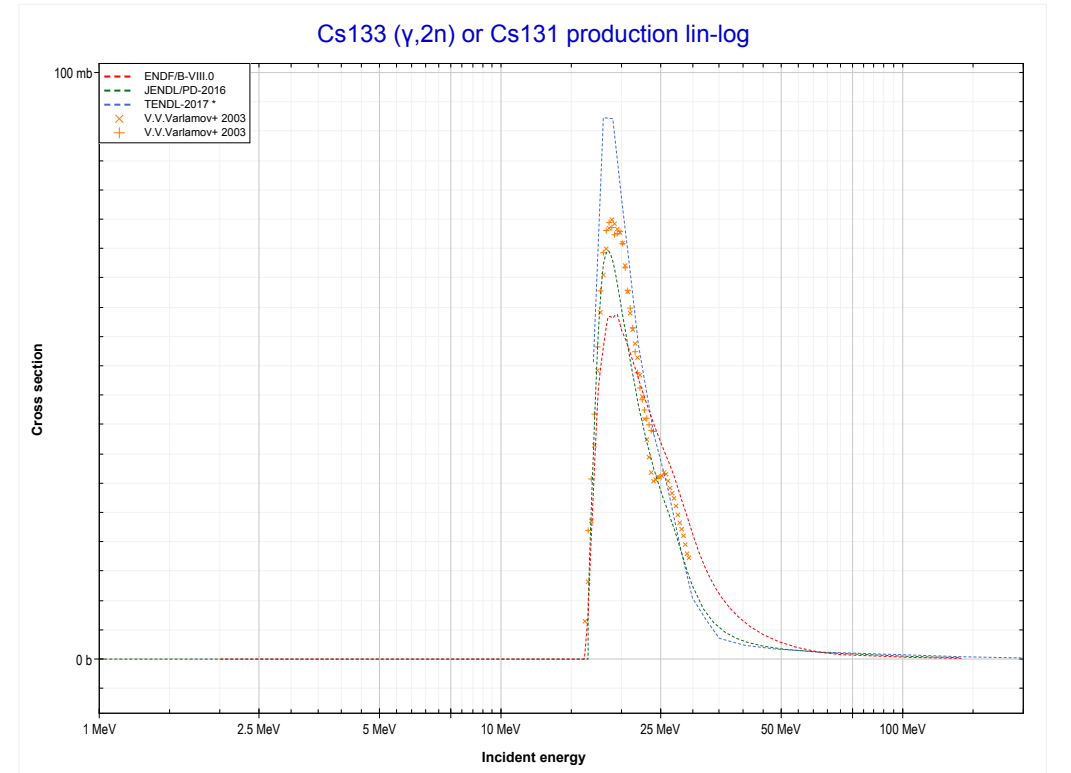
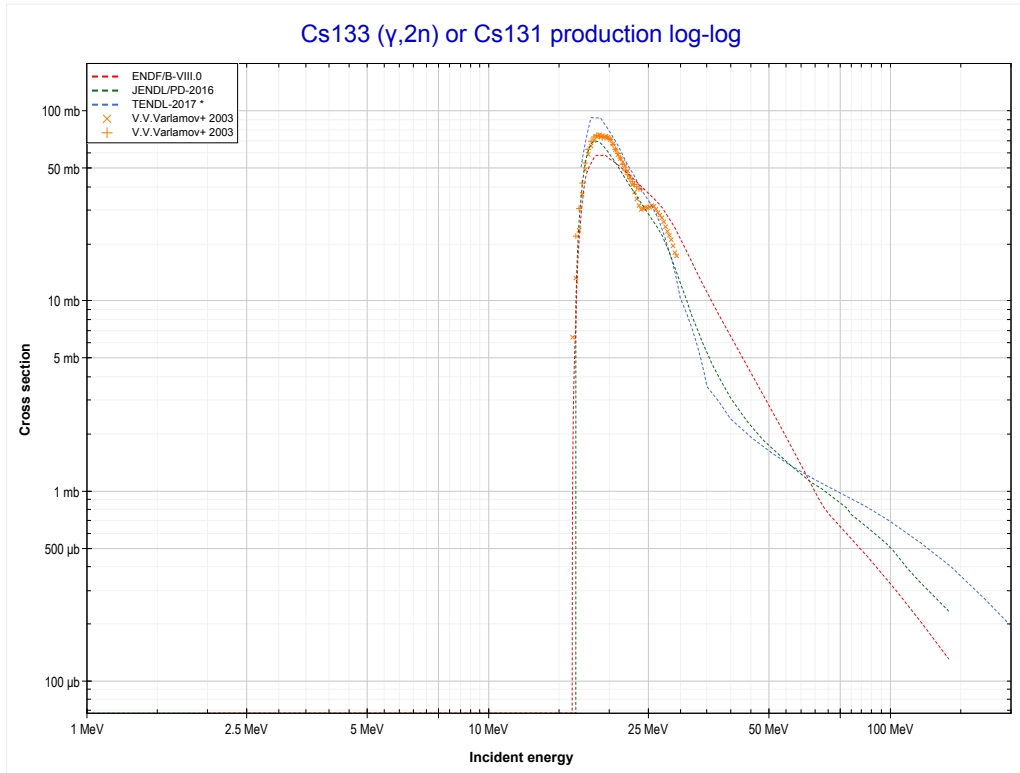
Reaction	Q-Value
I127($\gamma,3n$)I124	-25832.25 keV

<< 53-I-127	53-I-129	56-Ba-130 >>
<< 53-I-127 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (I128 production)	55-Cs-133 MT16 ($\gamma,2n$) >>



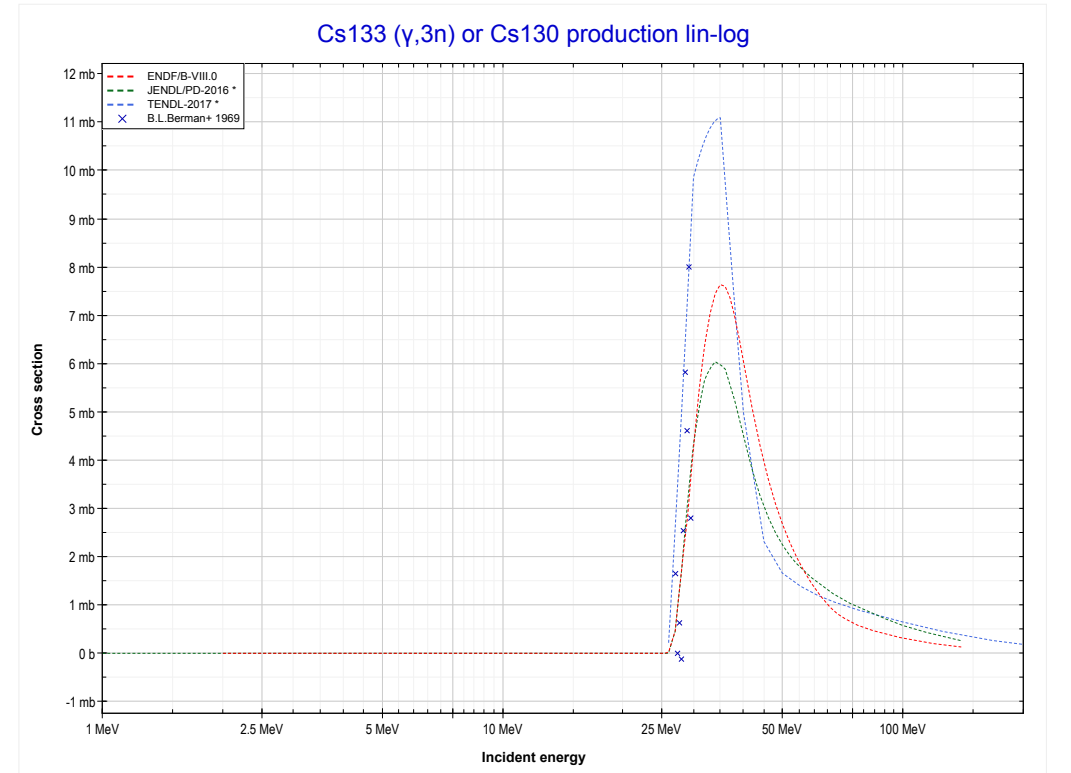
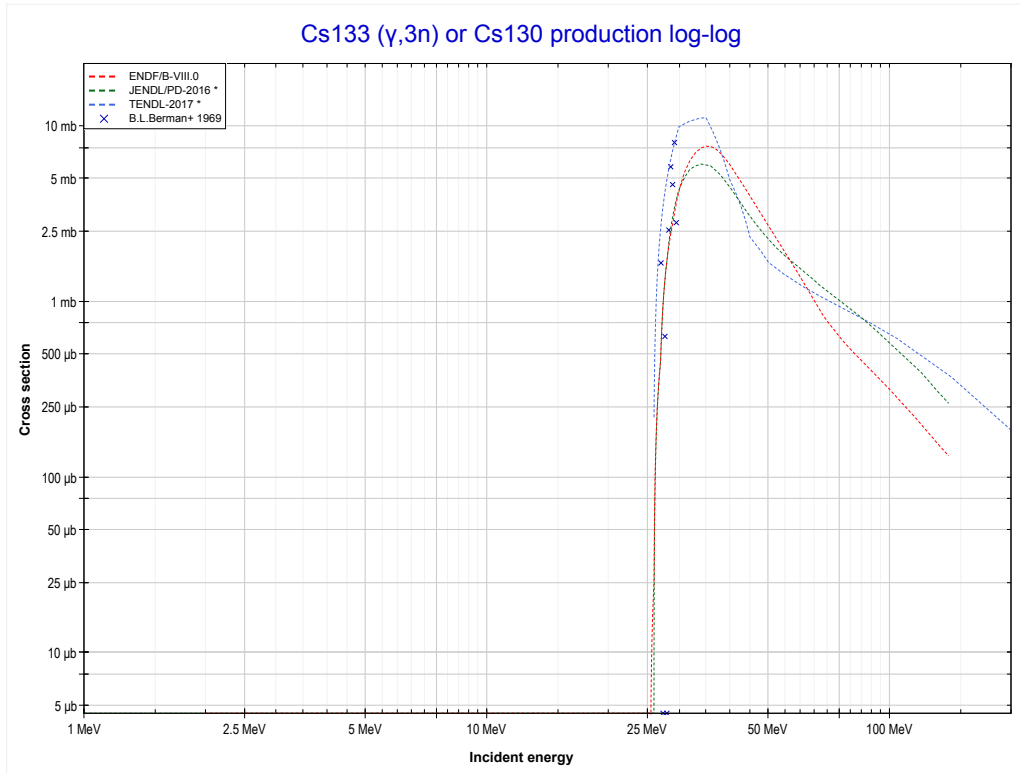
Reaction	Q-Value
I129(γ,n)I128	-8839.32 keV

<< 53-I-127	55-Cs-133	60-Nd-142 >>
<< 53-I-129 MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Cs131 production)	MT17 ($\gamma,3n$) >>



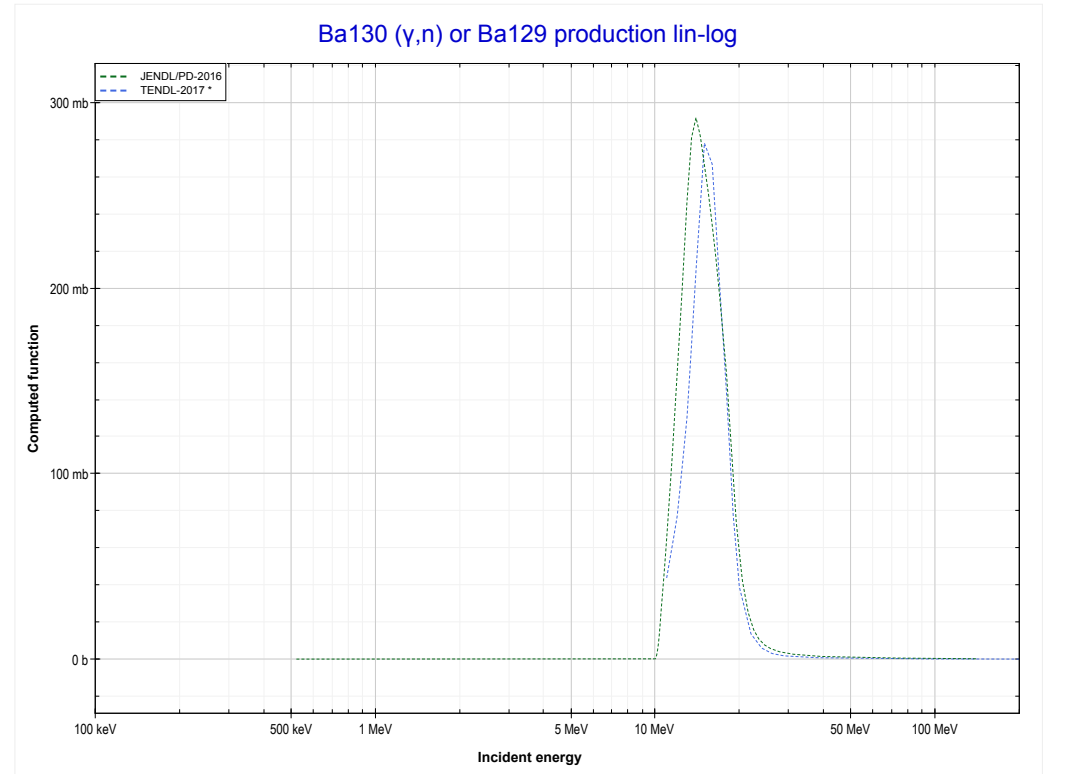
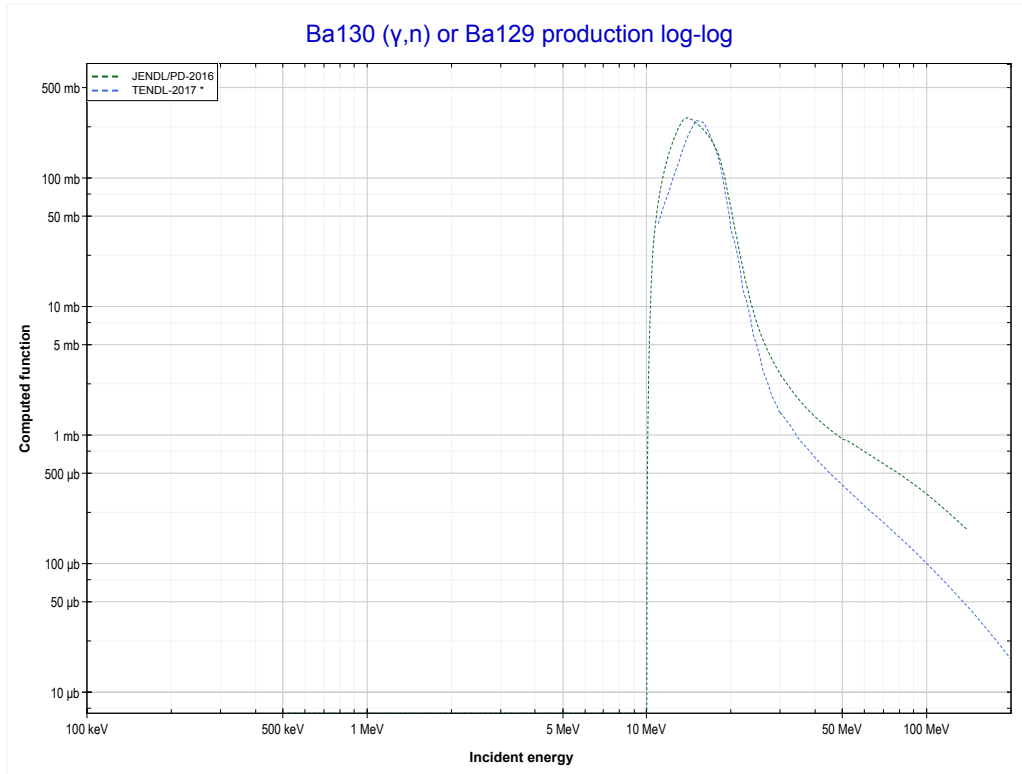
Reaction	Q-Value
Cs133($\gamma,2n$)Cs131	-16154.57 keV

<< 53-I-127	55-Cs-133	56-Ba-138 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Cs130 production)	56-Ba-130 MT4 (γ,n) >>



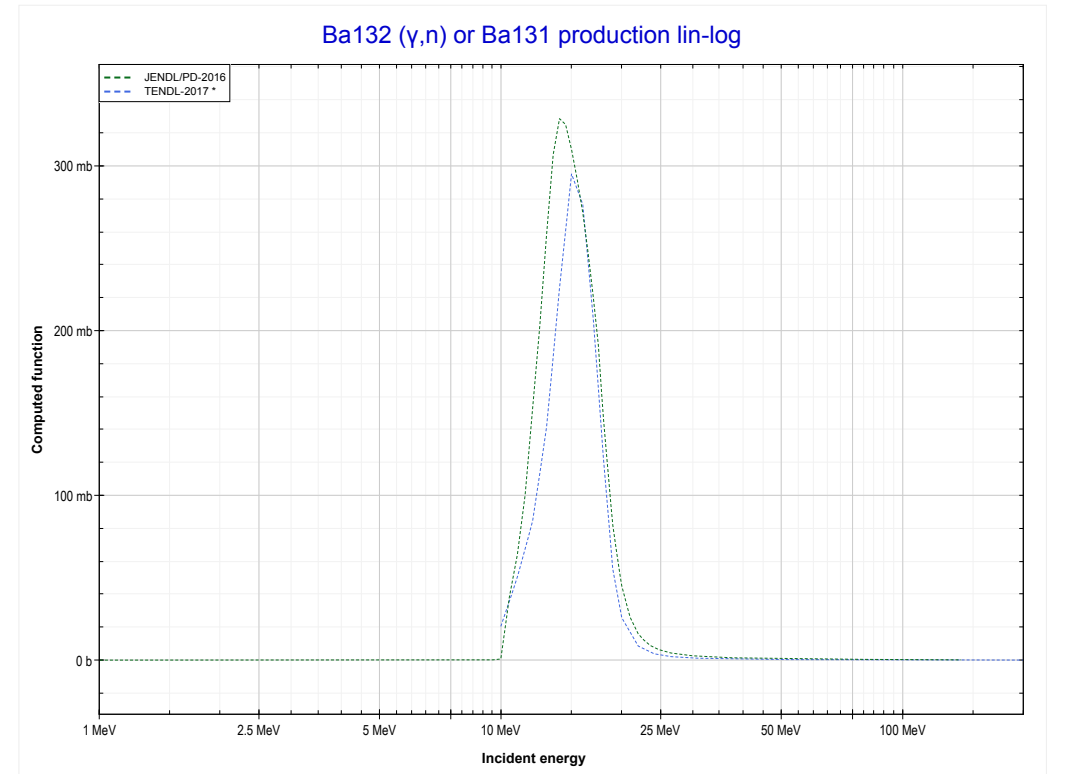
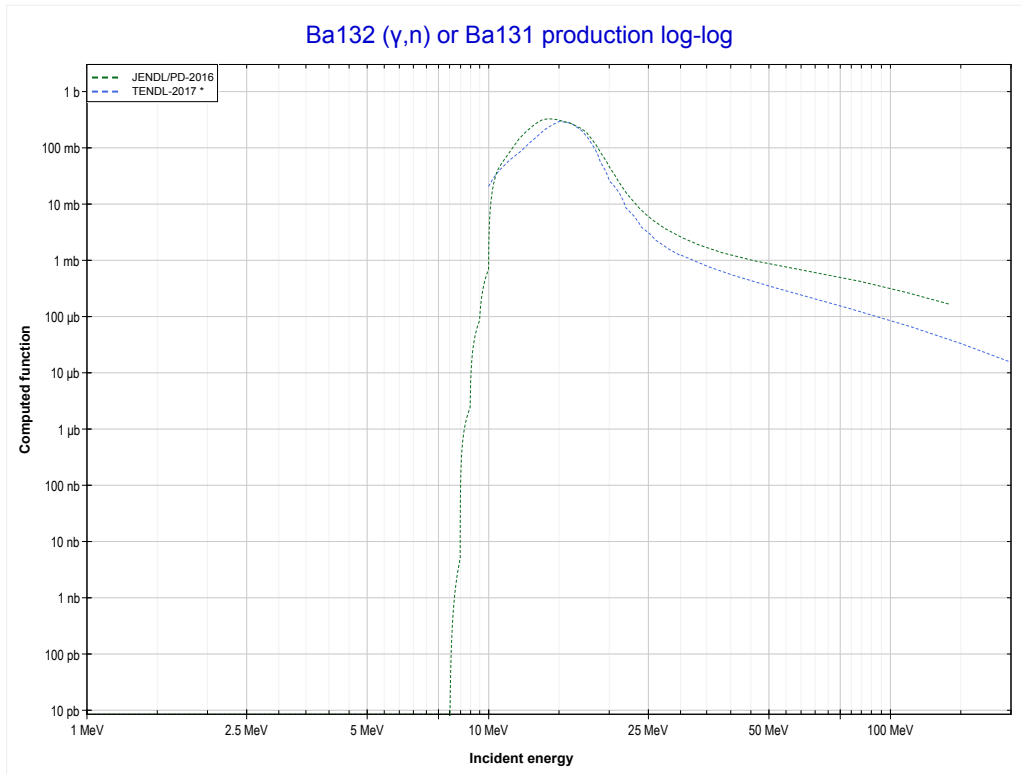
Reaction	Q-Value
Cs133($\gamma,3n$)Cs130	-25384.88 keV

<< 53-I-129	56-Ba-130	56-Ba-132 >>
<< 55-Cs-133 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Ba129 production)	56-Ba-132 MT4 (γ,n) >>



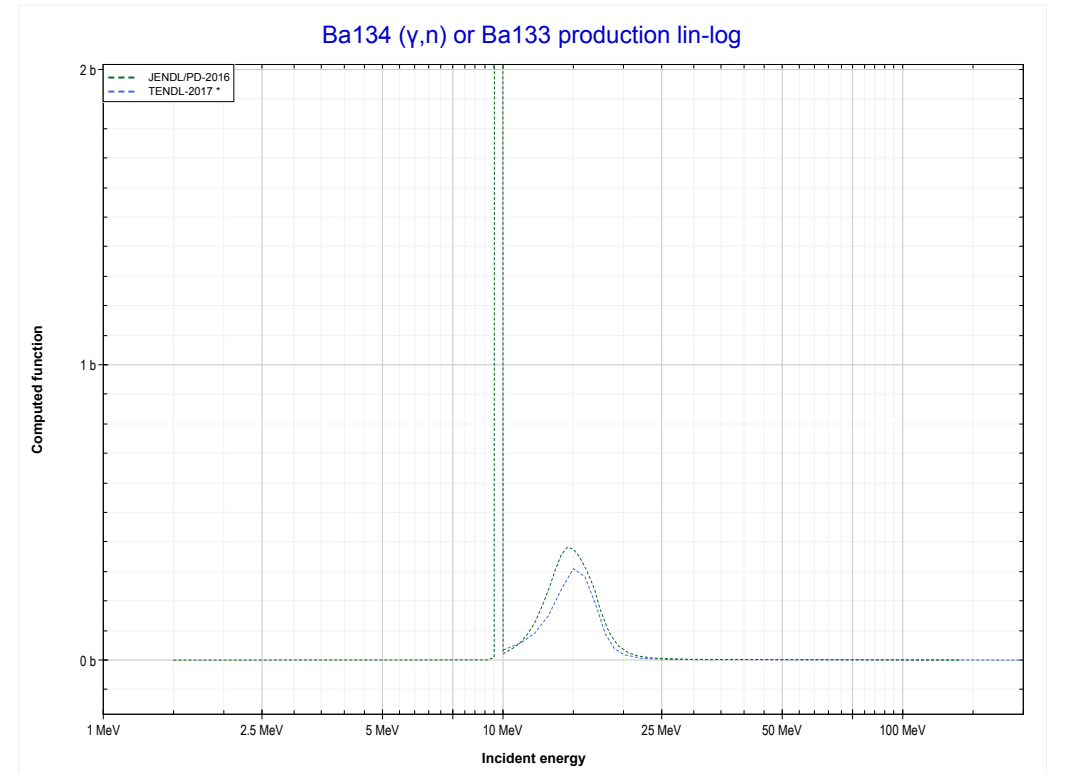
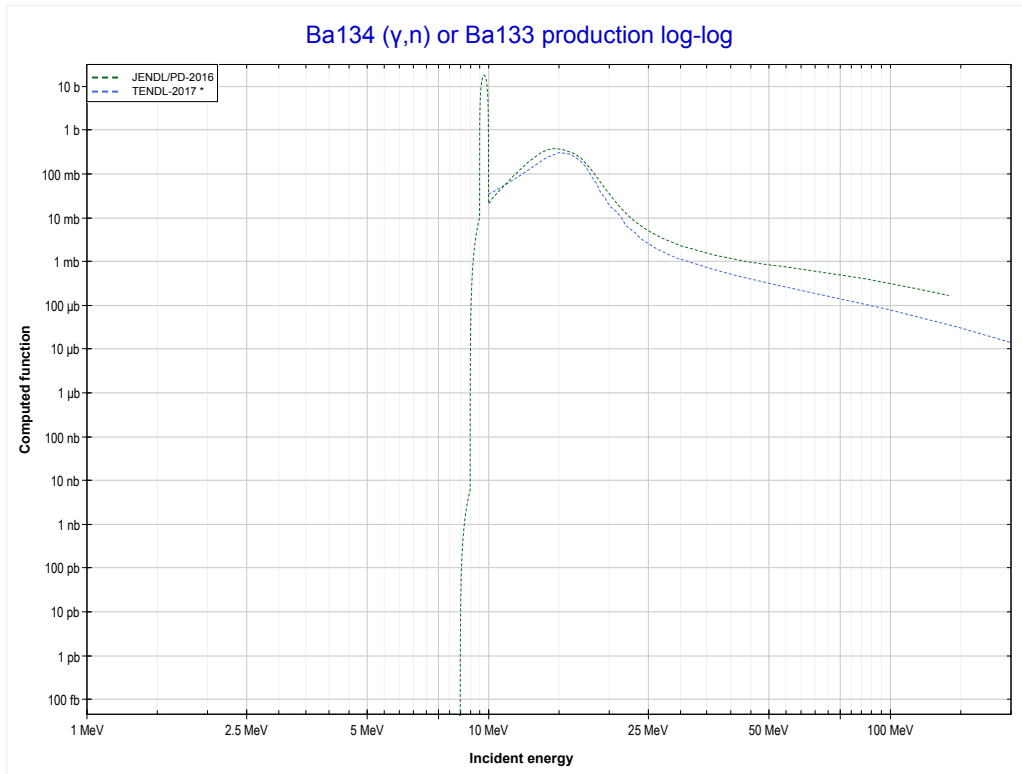
Reaction	Q-Value
Ba130(γ,n)Ba129	-10270.02 keV

<< 56-Ba-130	56-Ba-132	56-Ba-134 >>
<< 56-Ba-130 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ba131 production)	56-Ba-134 MT4 (γ,n) >>



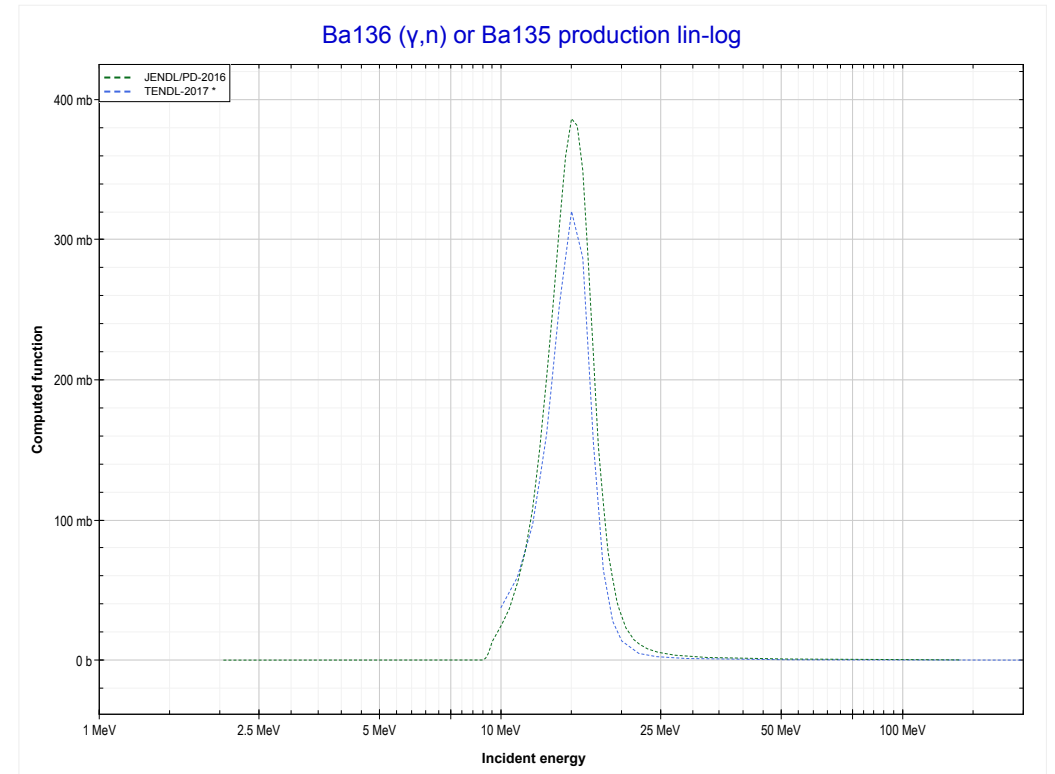
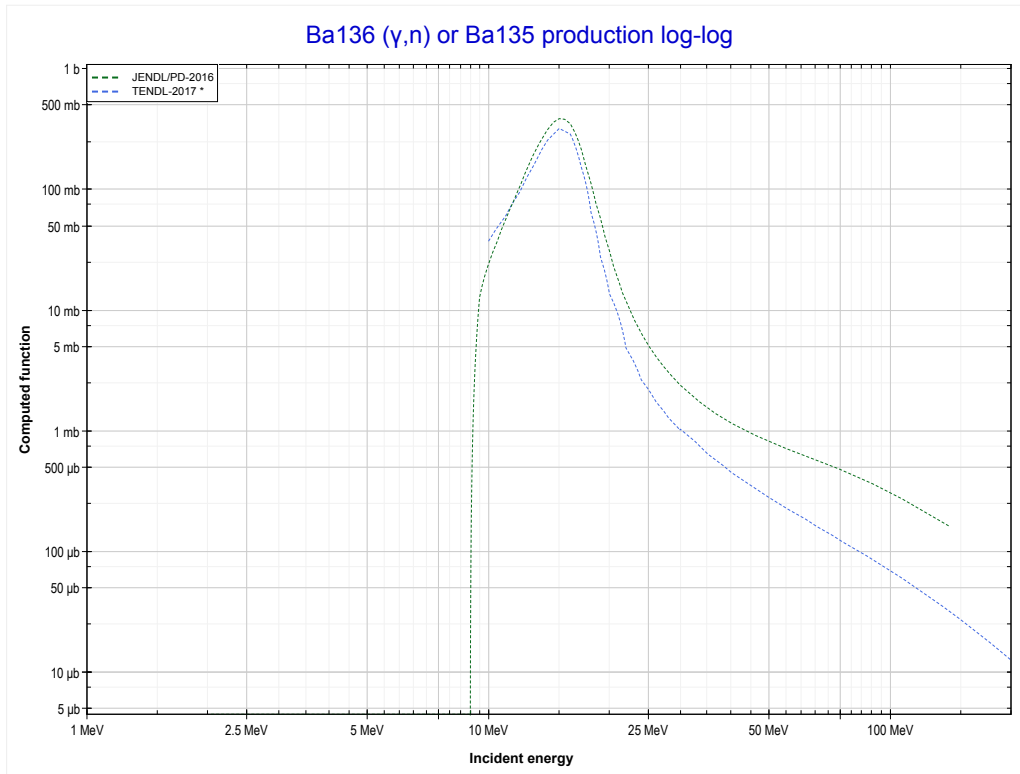
Reaction	Q-Value
Ba132(γ,n)Ba131	-9822.42 keV

<< 56-Ba-132	56-Ba-134	56-Ba-136 >>
<< 56-Ba-132 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ba133 production)	56-Ba-136 MT4 (γ,n) >>



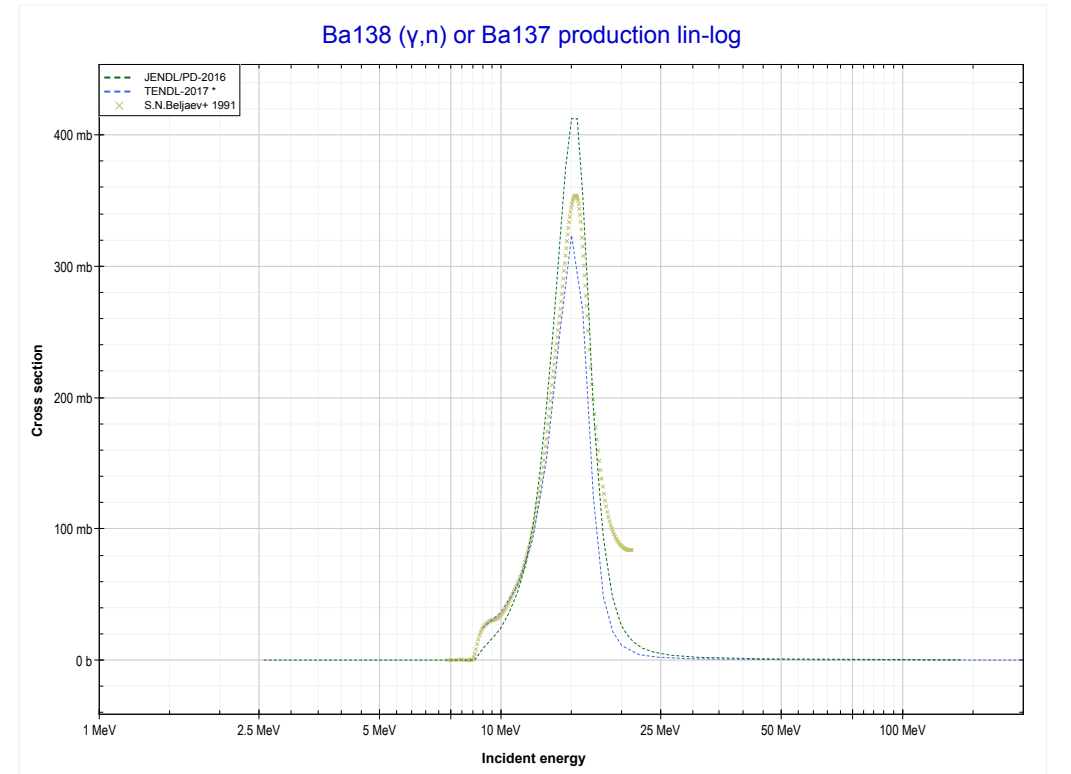
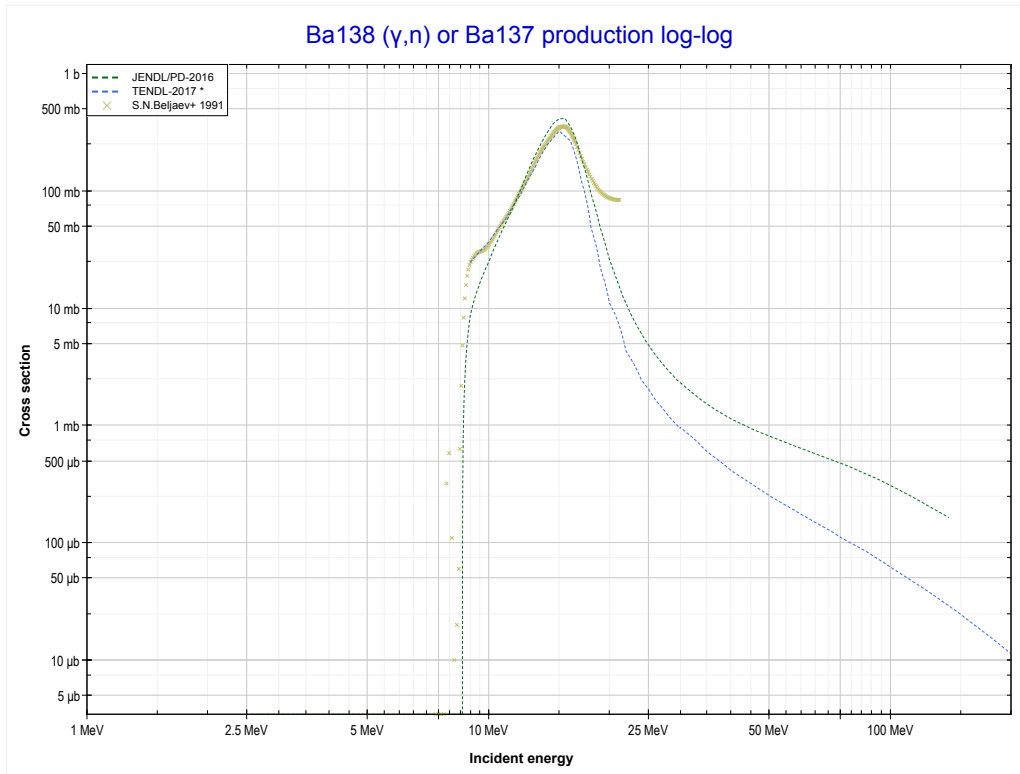
Reaction	Q-Value
Ba134(γ,n)Ba133	-9467.77 keV

<< 56-Ba-134	56-Ba-136	56-Ba-138 >>
<< 56-Ba-134 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ba135 production)	56-Ba-138 MT4 (γ,n) >>



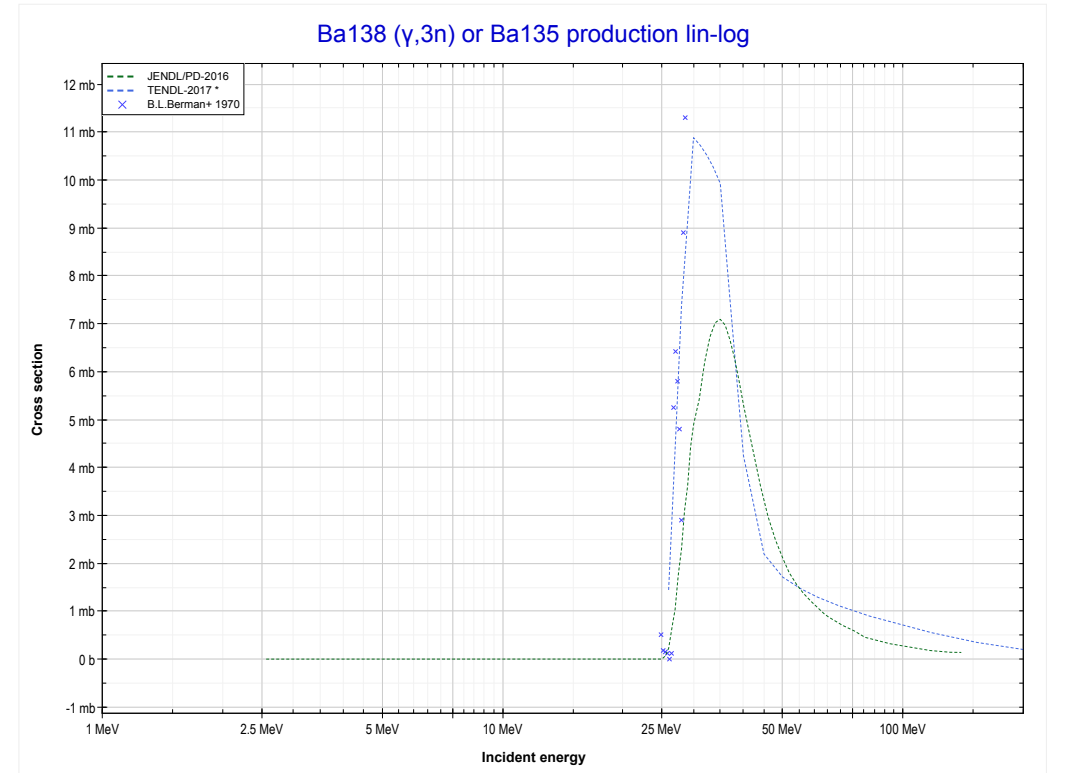
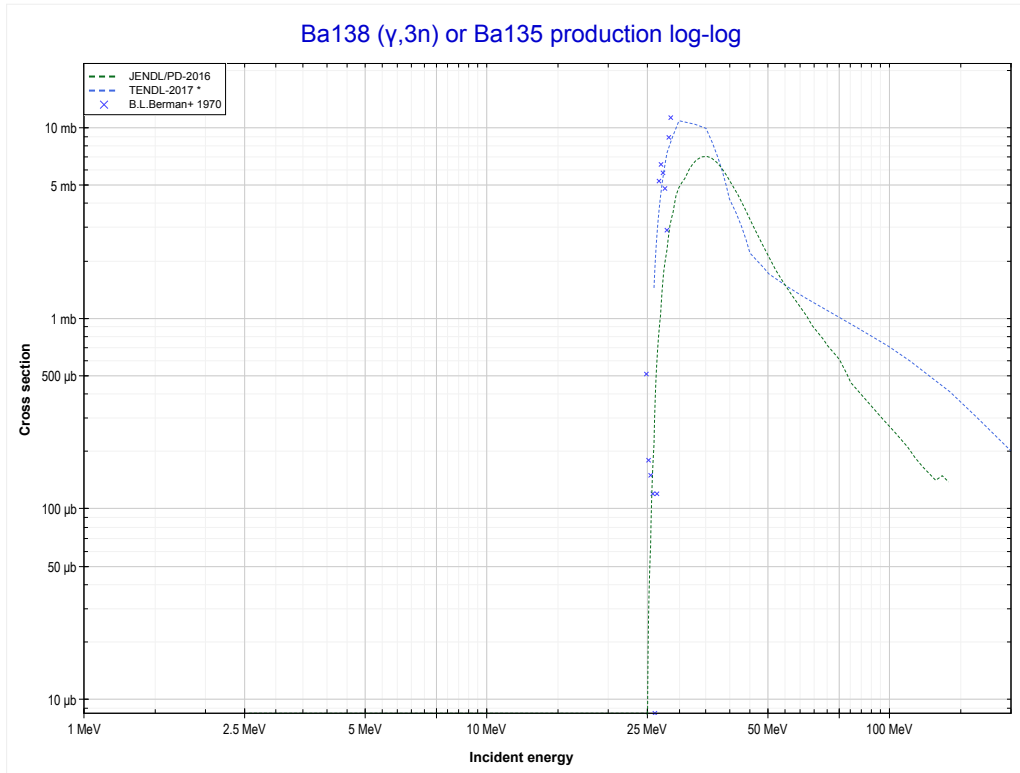
Reaction	Q-Value
Ba136(γ,n)Ba135	-9107.75 keV

<< 56-Ba-136	56-Ba-138	57-La-139 >>
<< 56-Ba-136 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ba137 production)	MT17 (γ,3n) >>



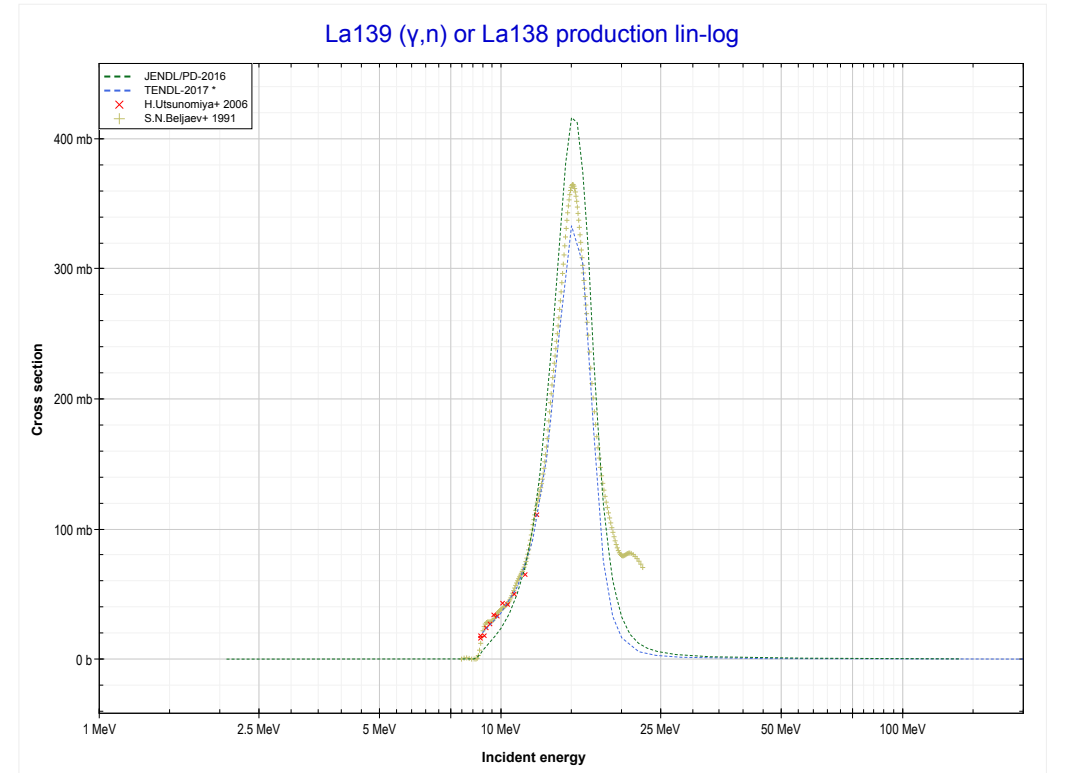
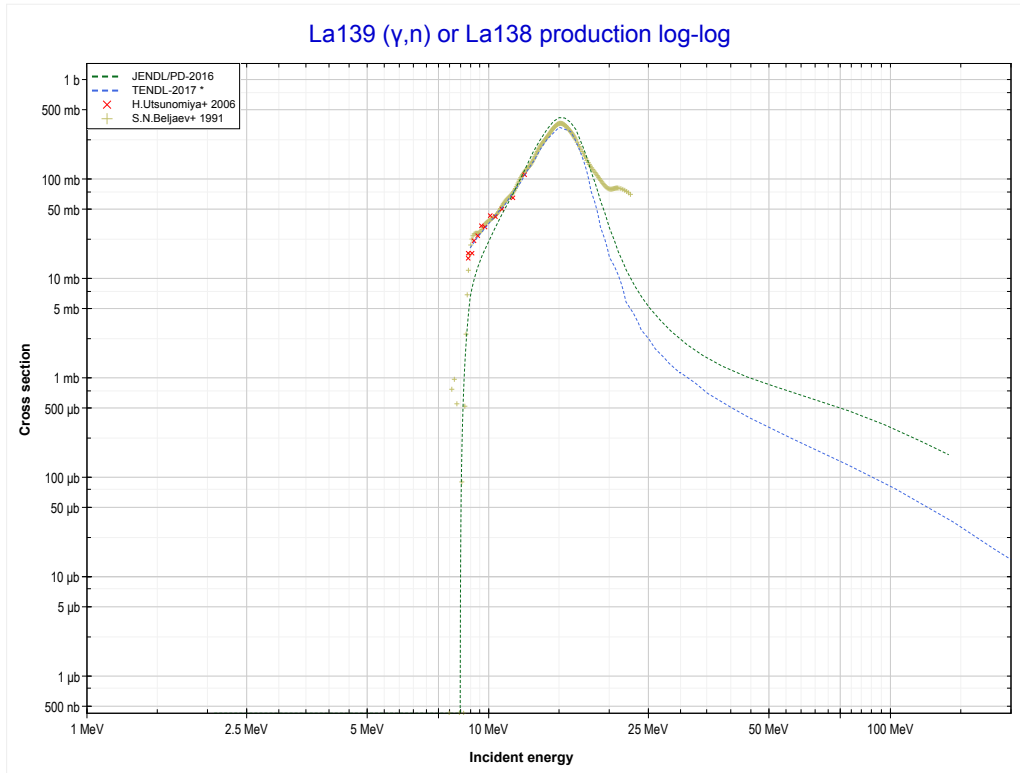
Reaction	Q-Value
Ba138(γ,n)Ba137	-8611.73 keV

<< 55-Cs-133	56-Ba-138	57-La-139 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Ba135 production)	57-La-139 MT4 (γ,n) >>



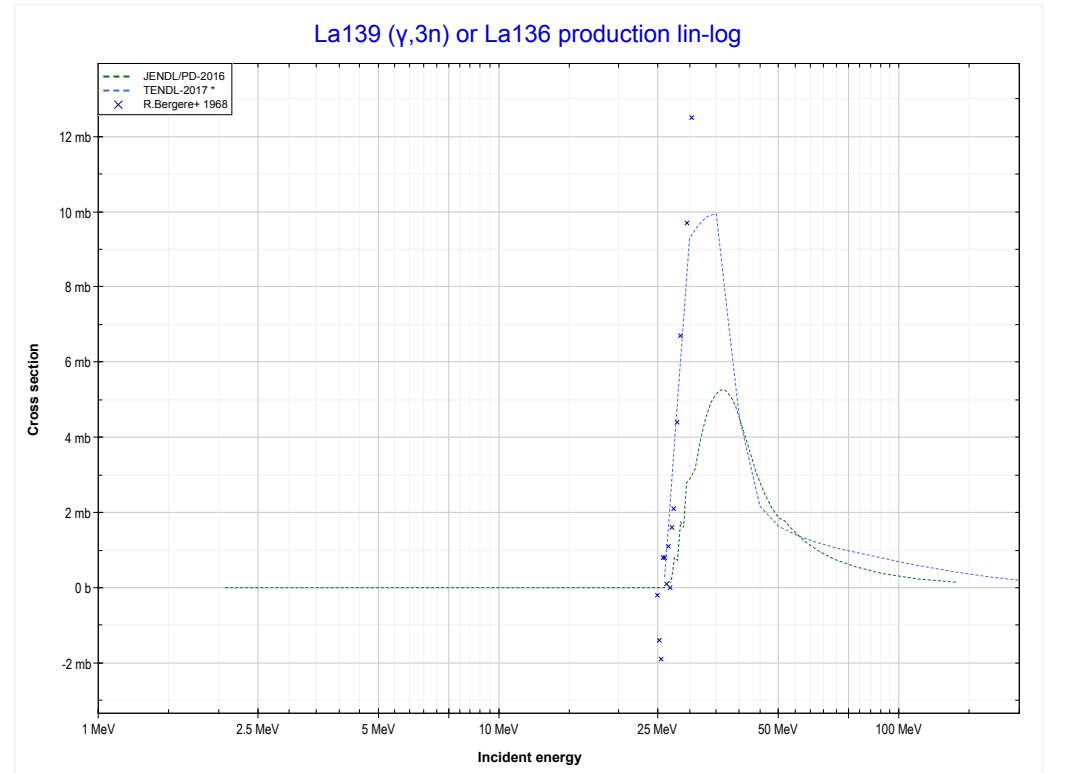
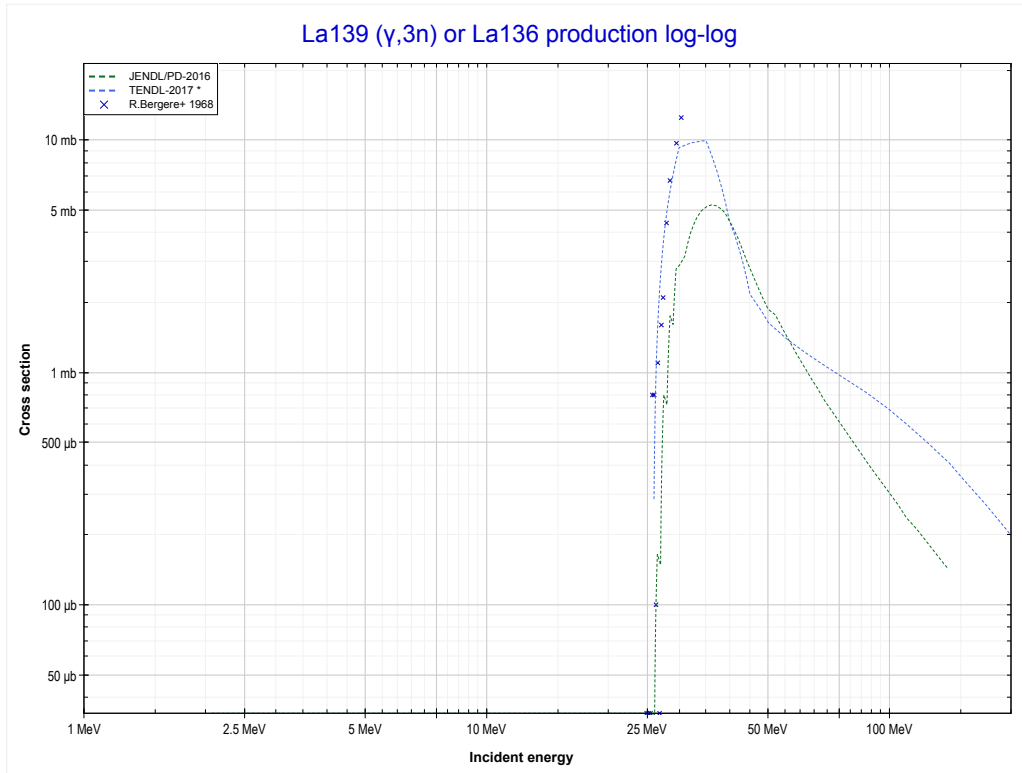
Reaction	Q-Value
Ba138($\gamma,3n$)Ba135	-24625.10 keV

<< 56-Ba-138	57-La-139	58-Ce-140 >>
<< 56-Ba-138 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (La138 production)	MT17 ($\gamma,3n$) >>



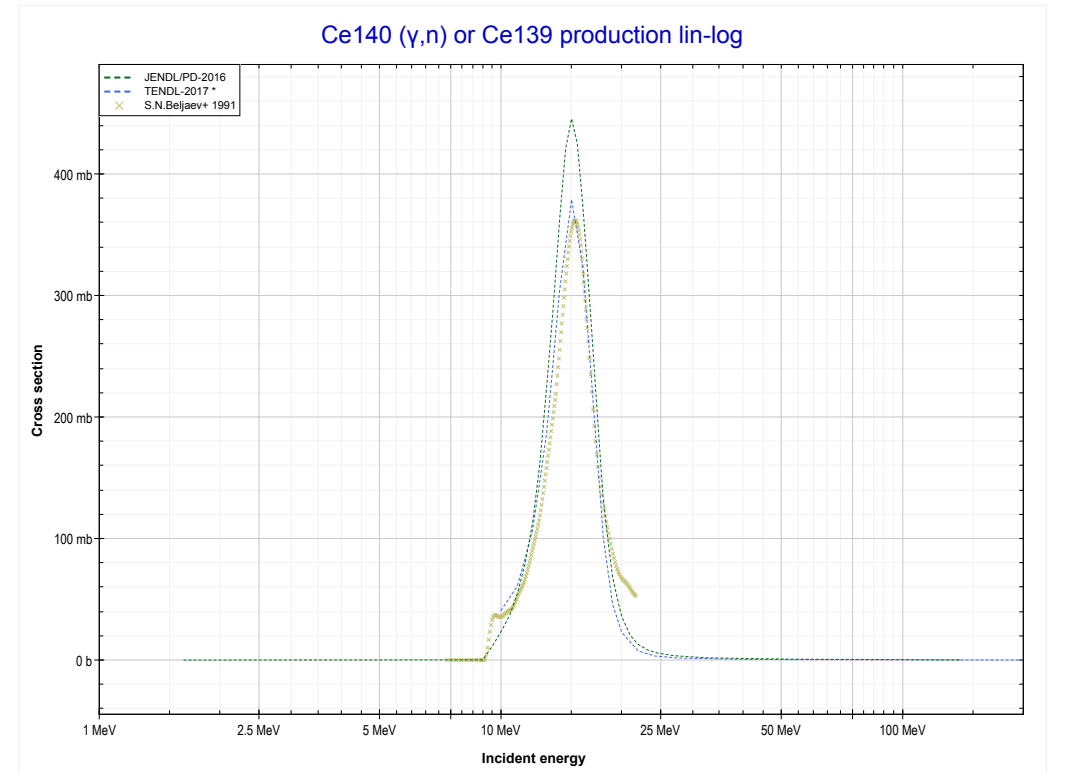
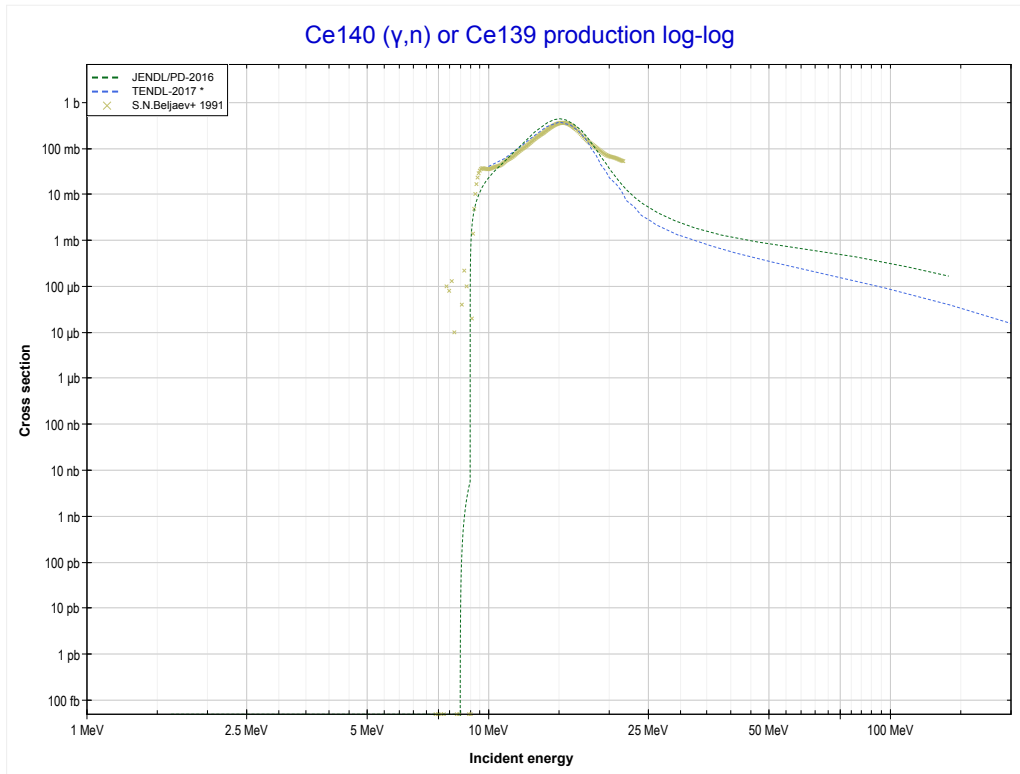
Reaction	Q-Value
La139(γ,n)La138	-8777.92 keV

<< 56-Ba-138	57-La-139	59-Pr-141 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (La136 production)	58-Ce-140 MT4 (γ,n) >>



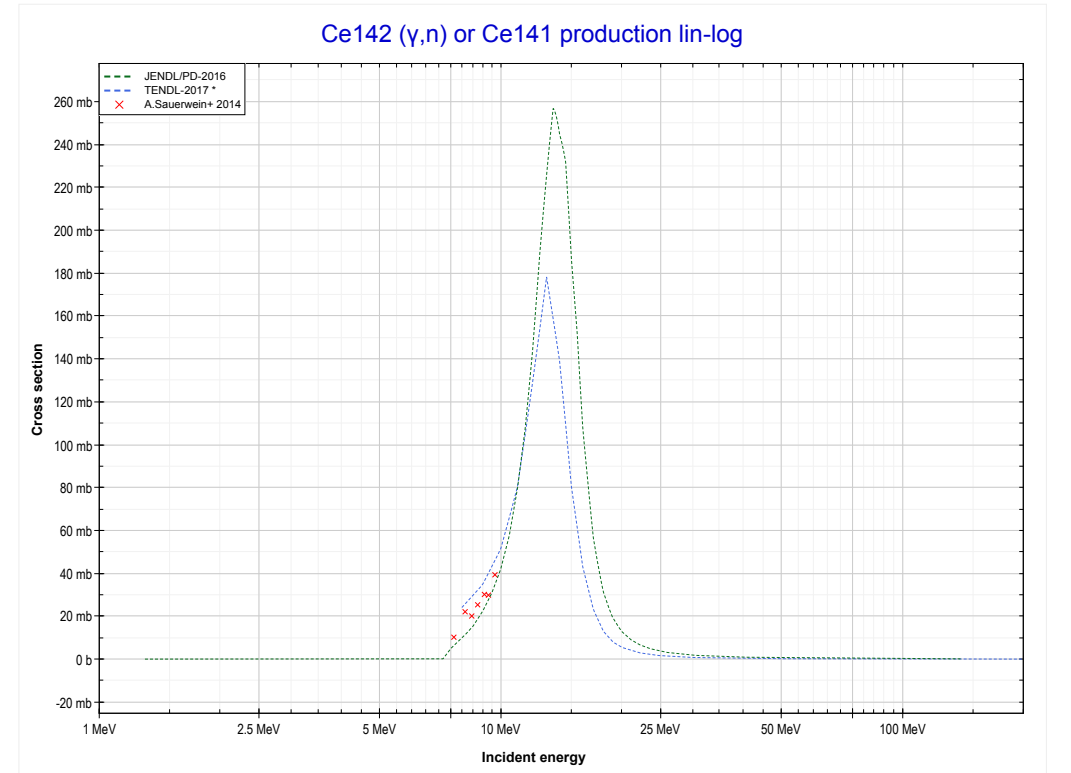
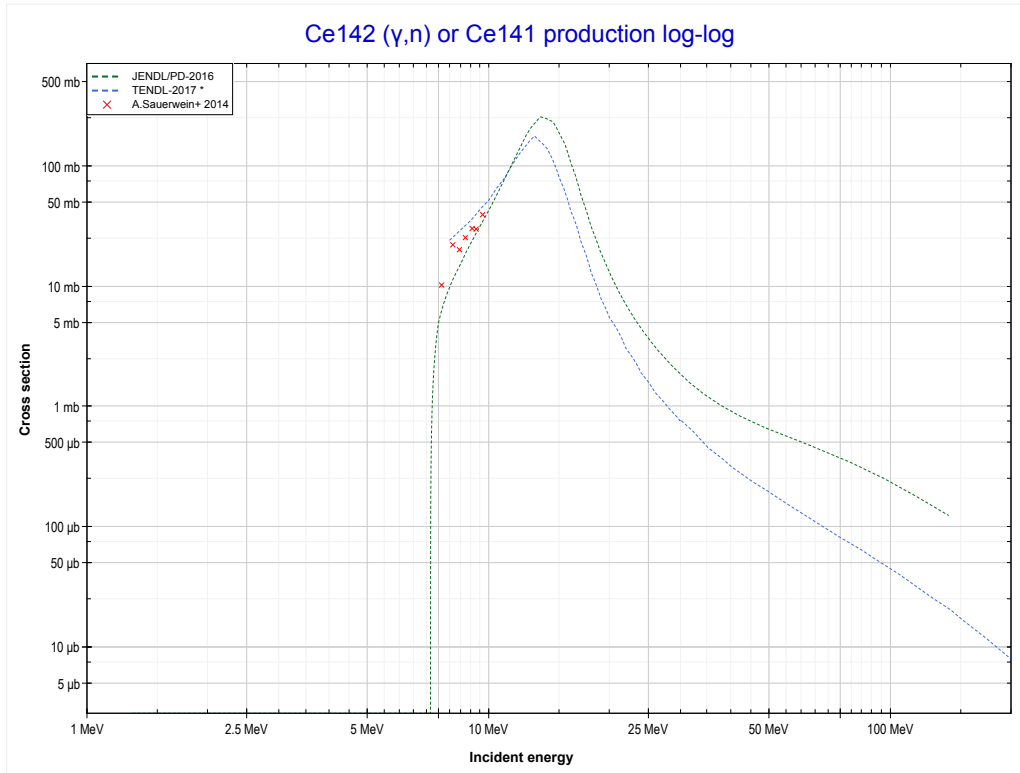
Reaction	Q-Value
La139($\gamma,3n$)La136	-25402.55 keV

<< 57-La-139	58-Ce-140	58-Ce-142 >>
<< 57-La-139 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Ce139 production)	58-Ce-142 MT4 (γ,n) >>



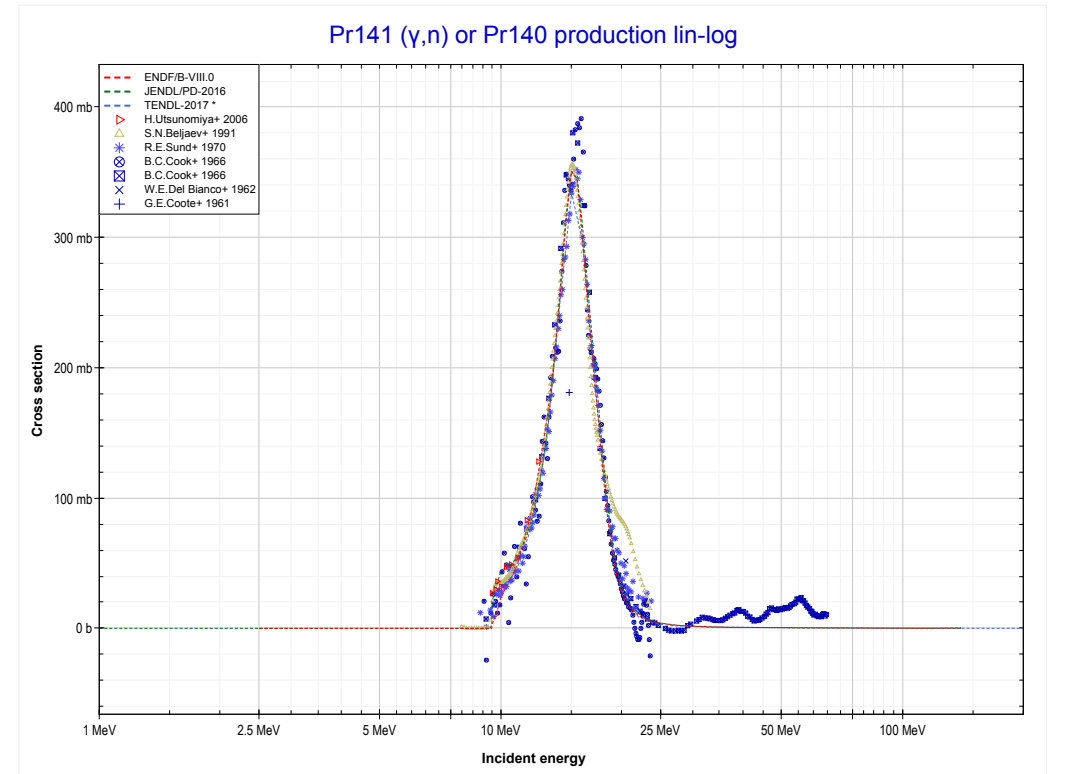
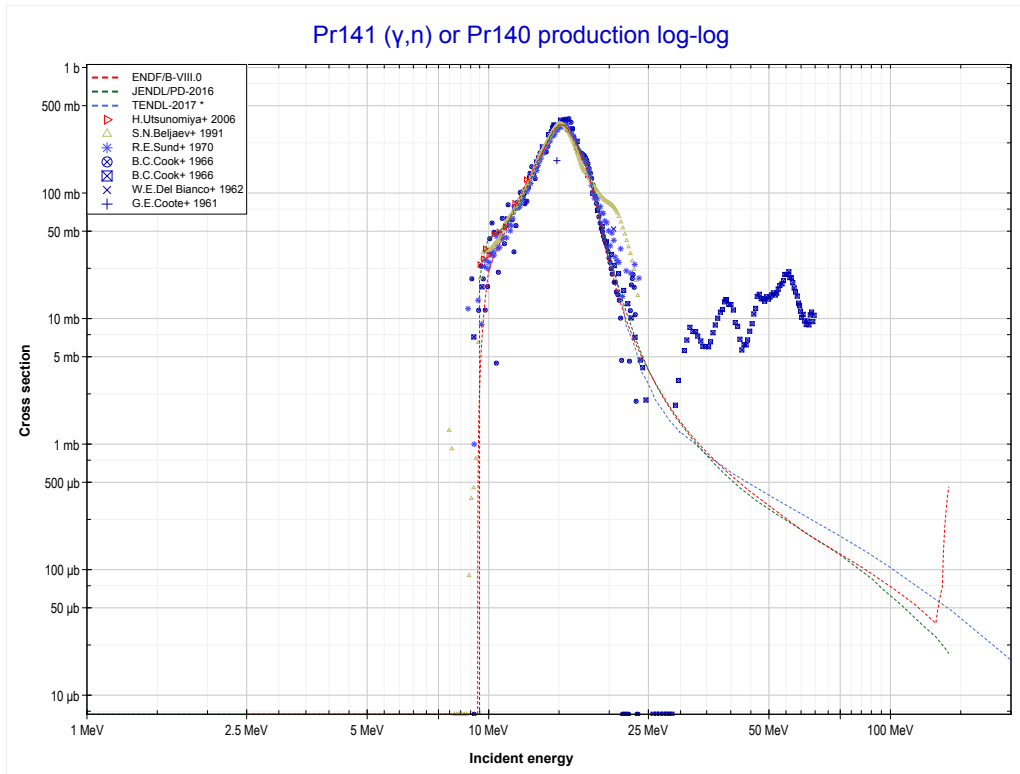
Reaction	Q-Value
Ce140(γ,n)Ce139	-9200.52 keV

<< 58-Ce-140	58-Ce-142	59-Pr-141 >>
<< 58-Ce-140 MT4 (γ,n)	MT4 (γ,n) or MT5 (Ce141 production)	59-Pr-141 MT4 (γ,n) >>



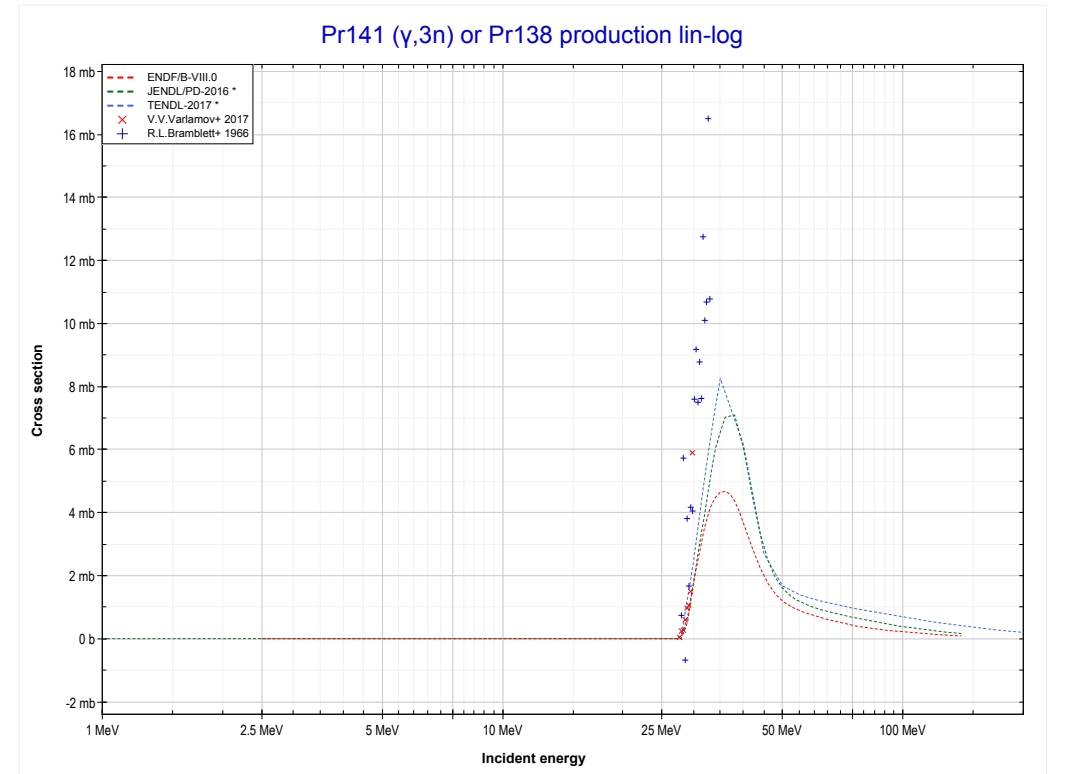
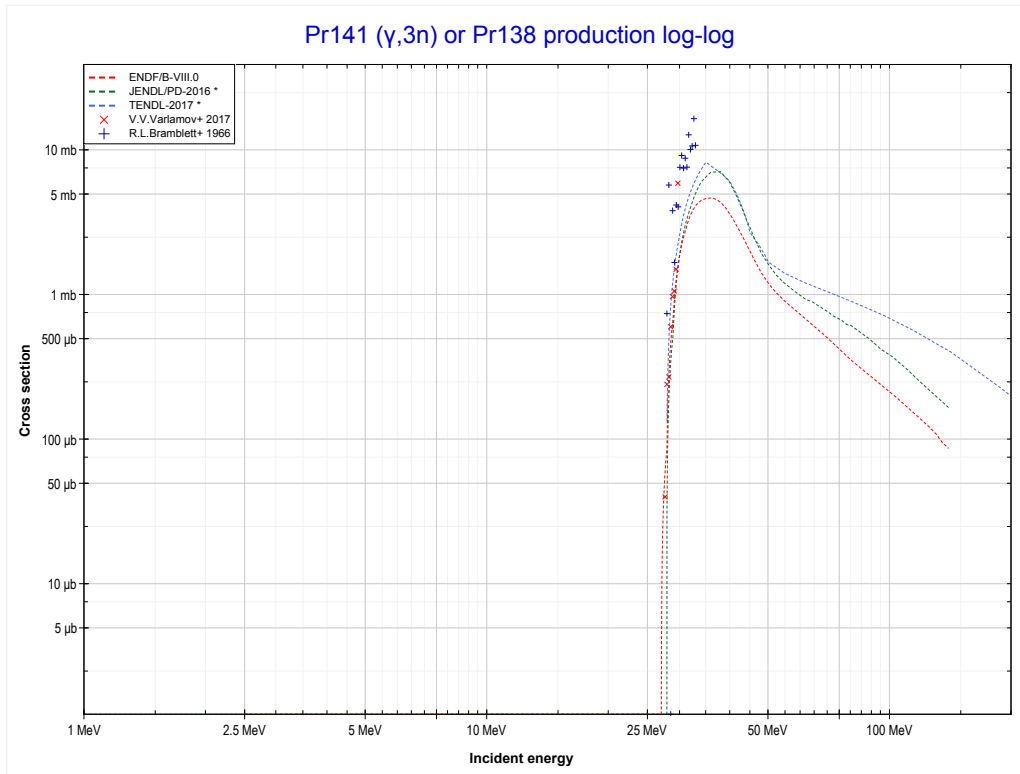
Reaction	Q-Value
Ce142(γ,n)Ce141	-7168.02 keV

<< 58-Ce-142	59-Pr-141	60-Nd-142 >>
<< 58-Ce-142 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pr140 production)	MT17 (γ,3n) >>



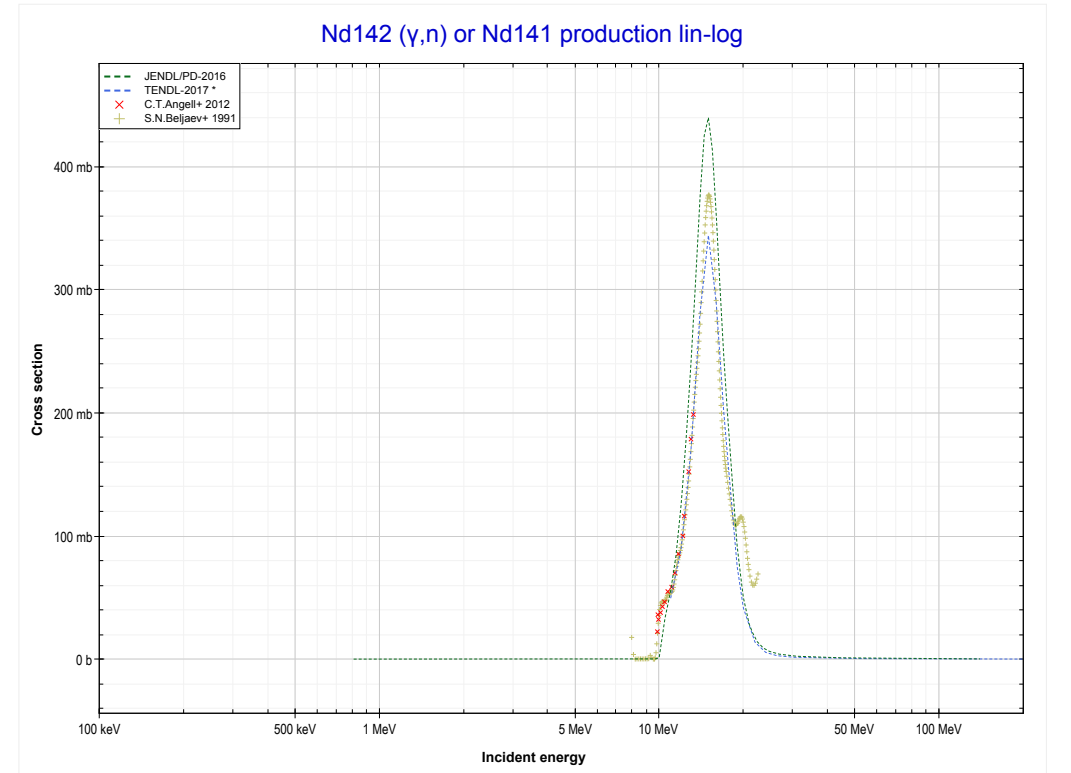
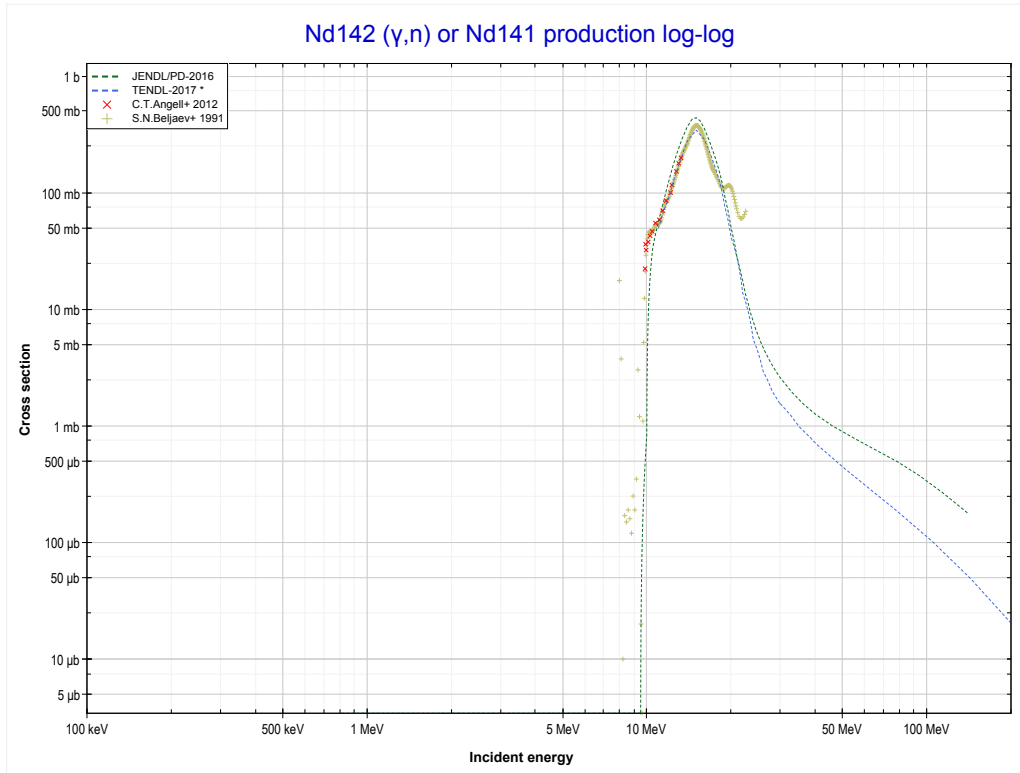
Reaction	Q-Value
Pr141(γ,n)Pr140	-9396.72 keV

<< 57-La-139	59-Pr-141	63-Eu-153 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Pr138 production)	60-Nd-142 MT4 (γ,n) >>



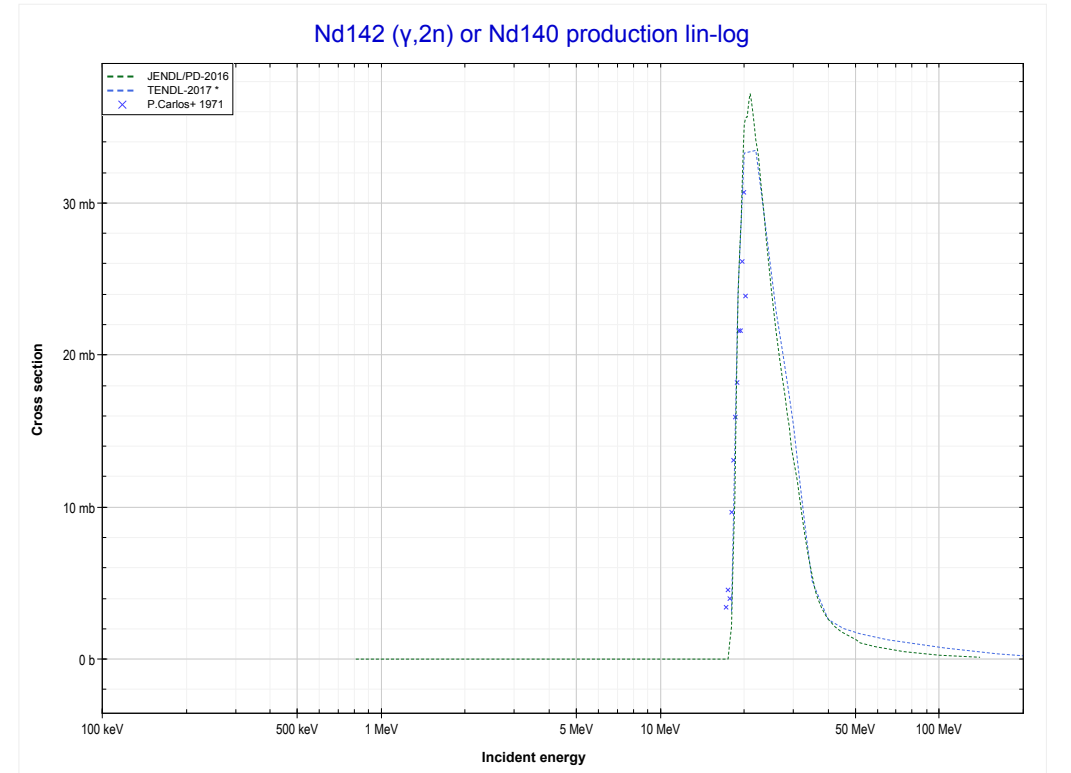
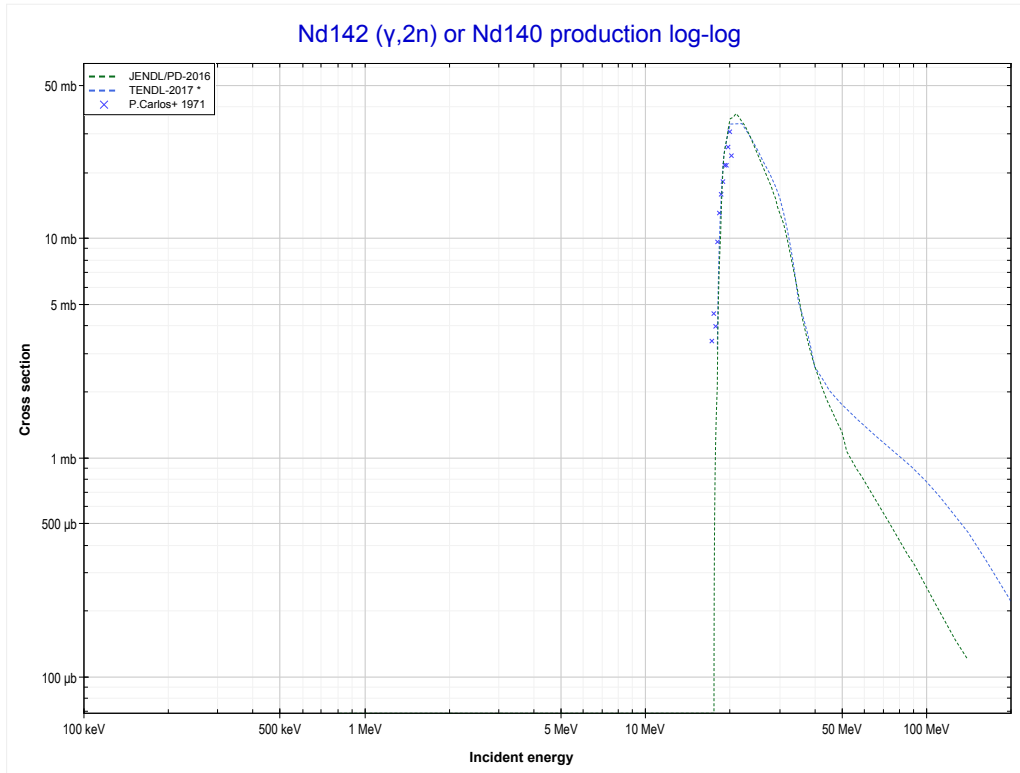
Reaction	Q-Value
Pr141($\gamma,3n$)Pr138	-27098.35 keV

<< 59-Pr-141	60-Nd-142	60-Nd-143 >>
<< 59-Pr-141 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Nd141 production)	MT16 (γ,2n) >>



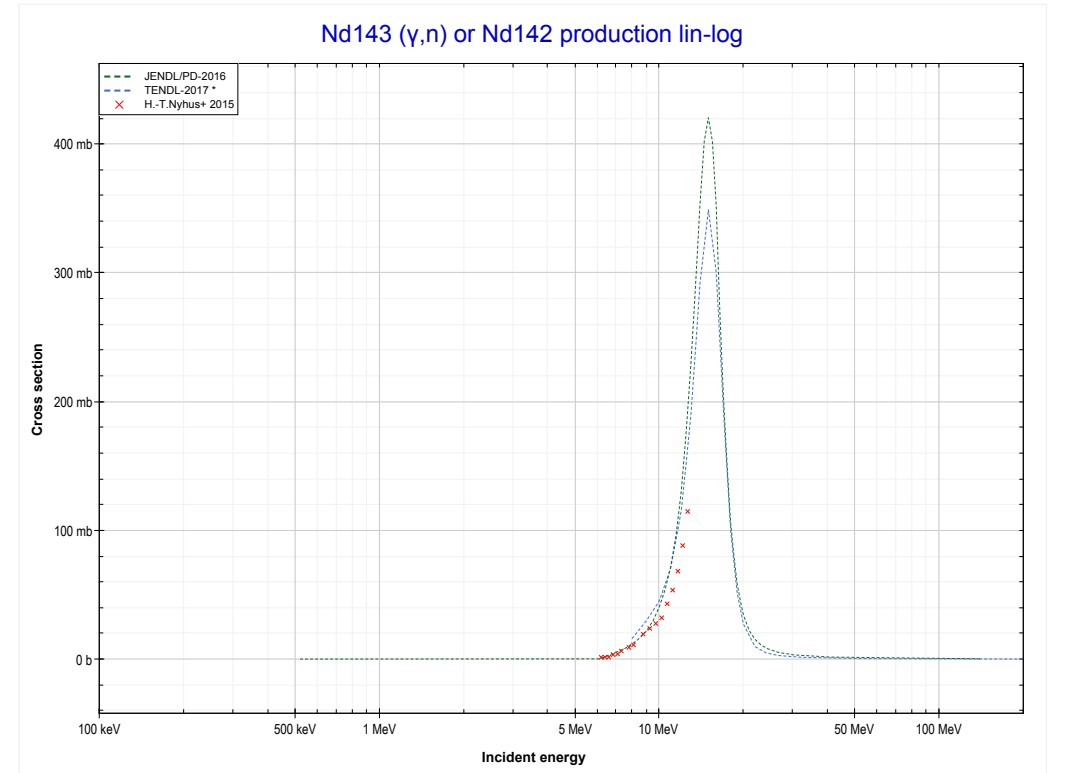
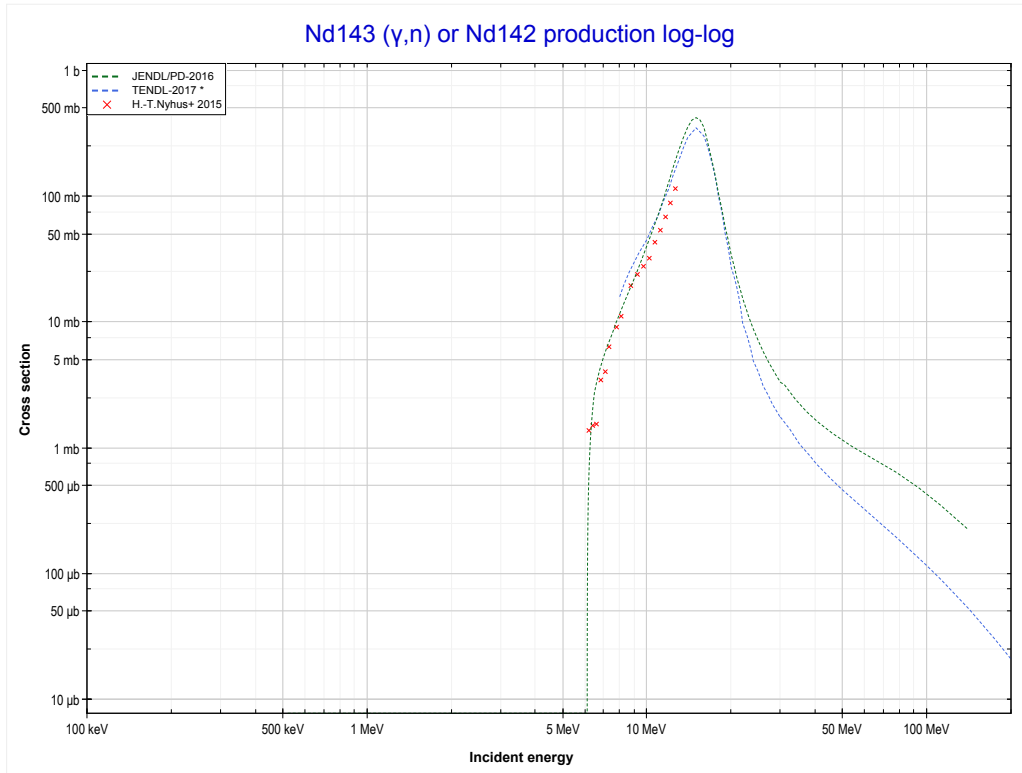
Reaction	Q-Value
Nd142(γ,n)Nd141	-9828.22 keV

<< 55-Cs-133	60-Nd-142	60-Nd-143 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Nd140 production)	60-Nd-143 MT4 (γ,n) >>



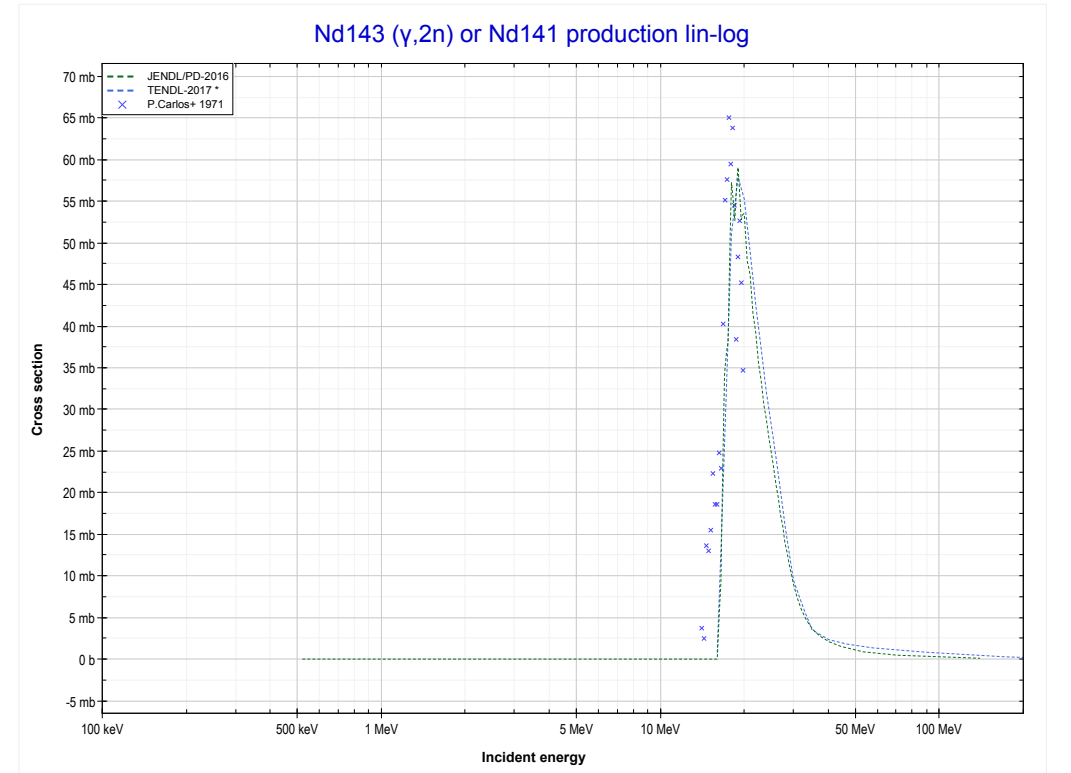
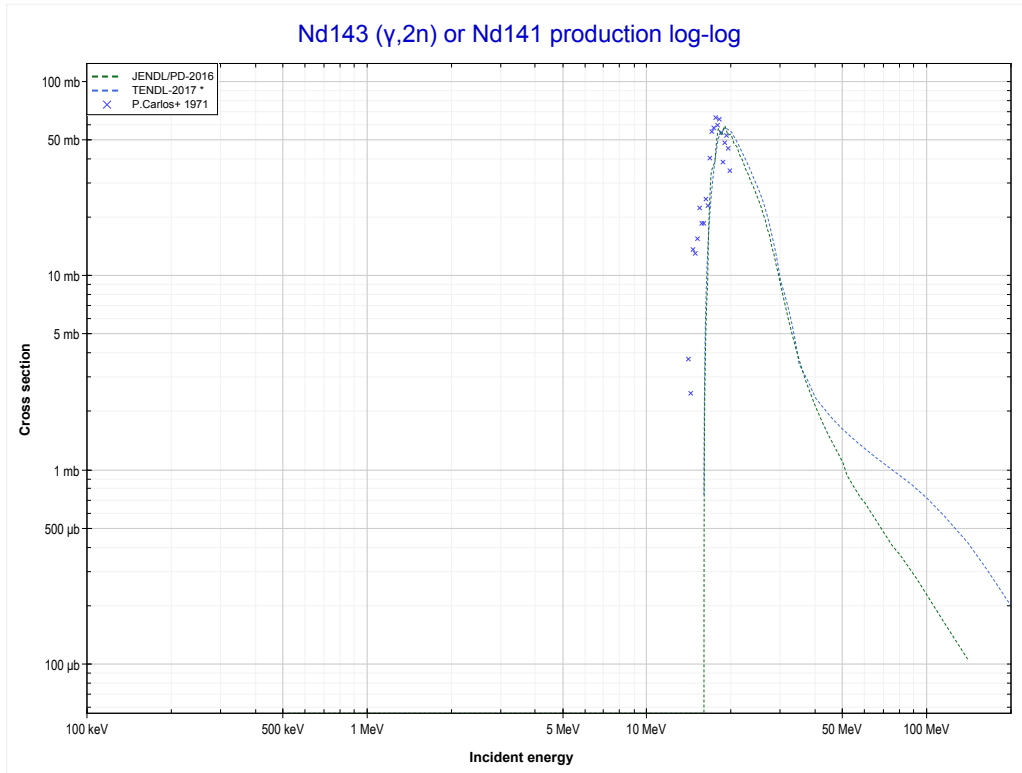
Reaction	Q-Value
Nd142($\gamma,2n$)Nd140	-17838.53 keV

<< 60-Nd-142	60-Nd-143	60-Nd-144 >>
<< 60-Nd-142 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Nd142 production)	MT16 (γ,2n) >>



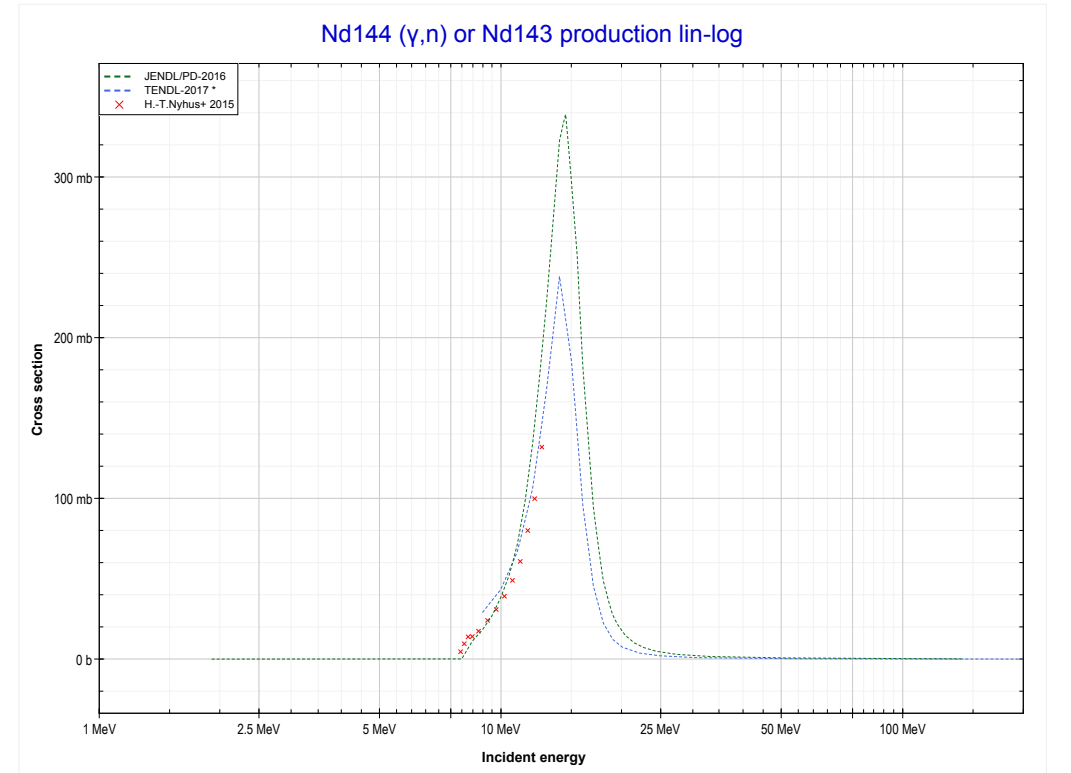
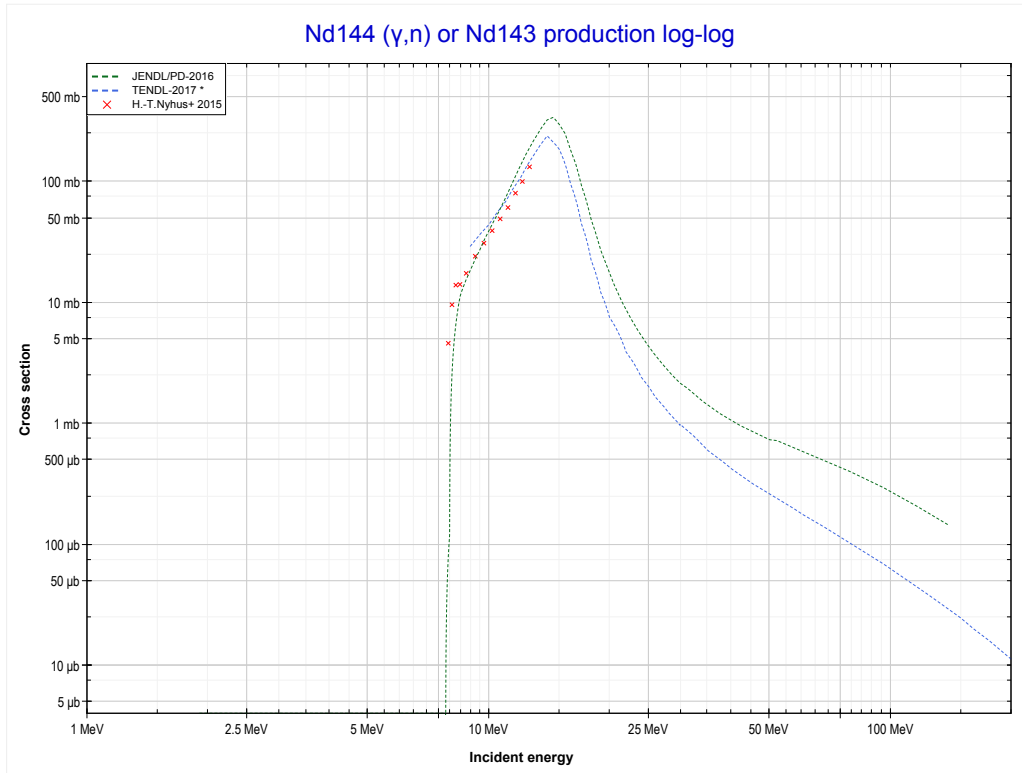
Reaction	Q-Value
Nd143(γ,n)Nd142	-6123.52 keV

<< 60-Nd-142	60-Nd-143	60-Nd-144 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Nd141 production)	60-Nd-144 MT4 (γ,n) >>



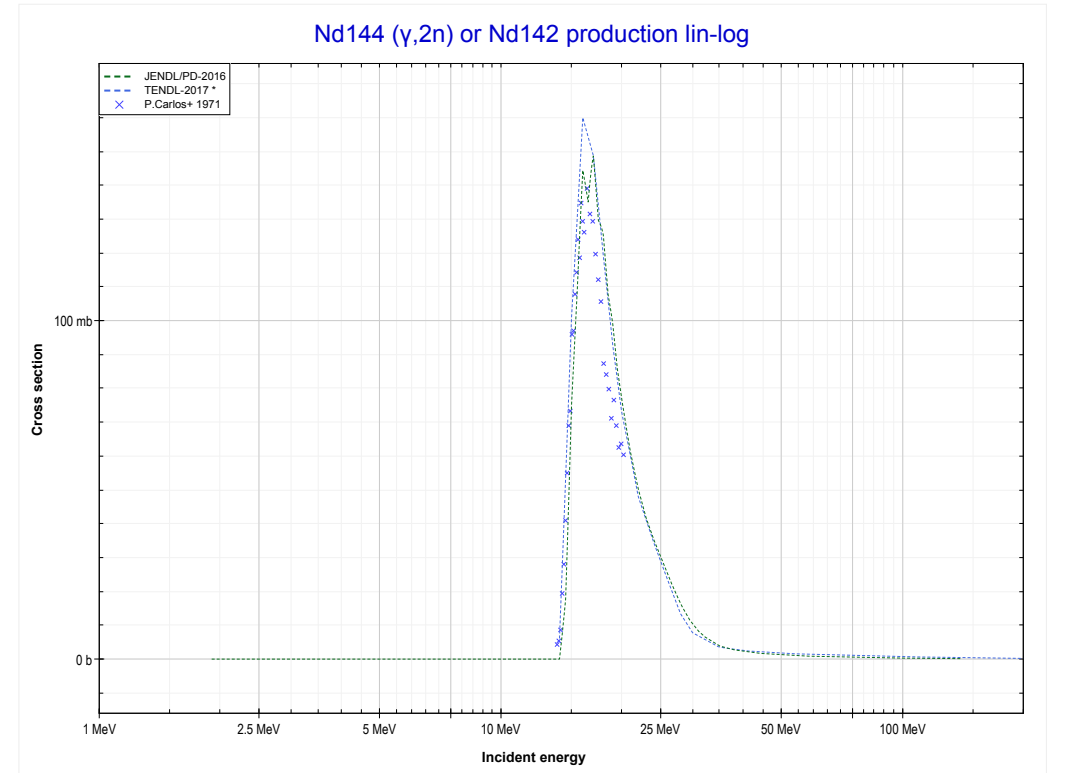
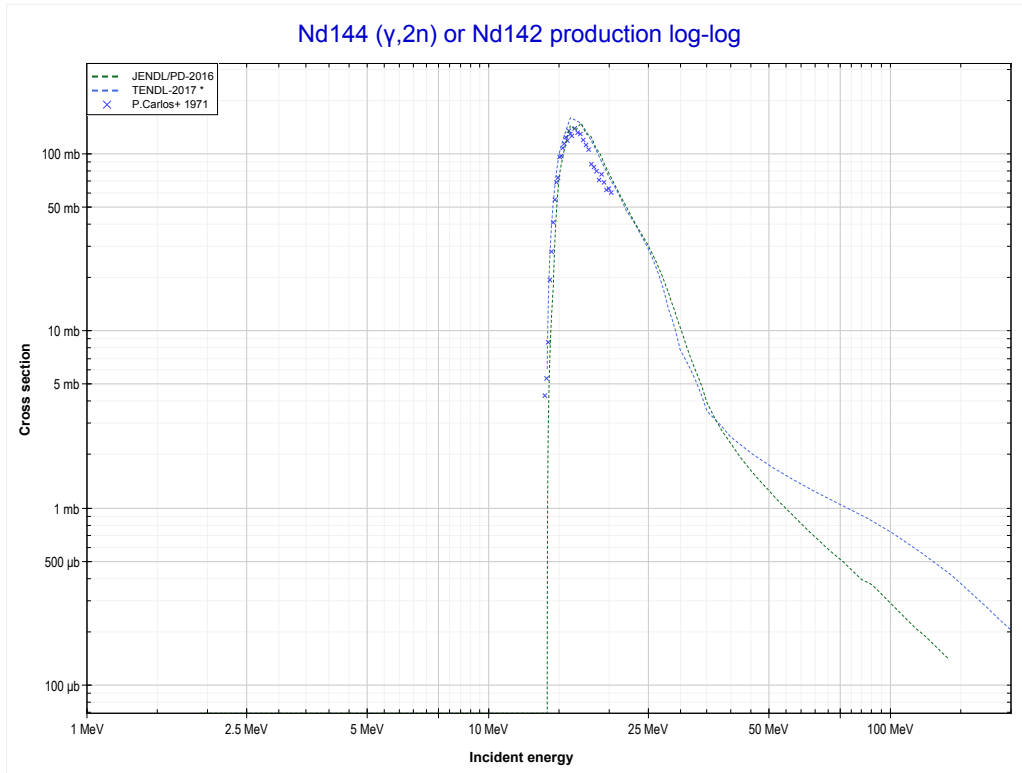
Reaction	Q-Value
Nd143($\gamma,2n$)Nd141	-15951.73 keV

<< 60-Nd-143	60-Nd-144	60-Nd-145 >>
<< 60-Nd-143 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Nd143 production)	MT16 ($\gamma,2n$) >>



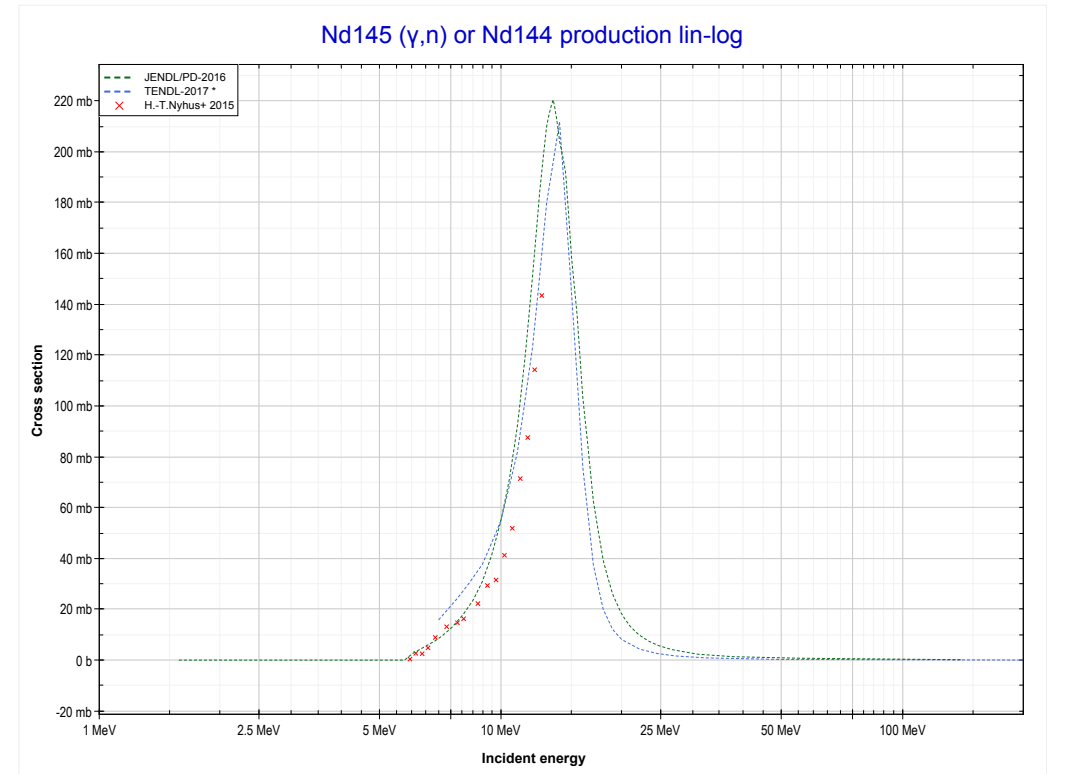
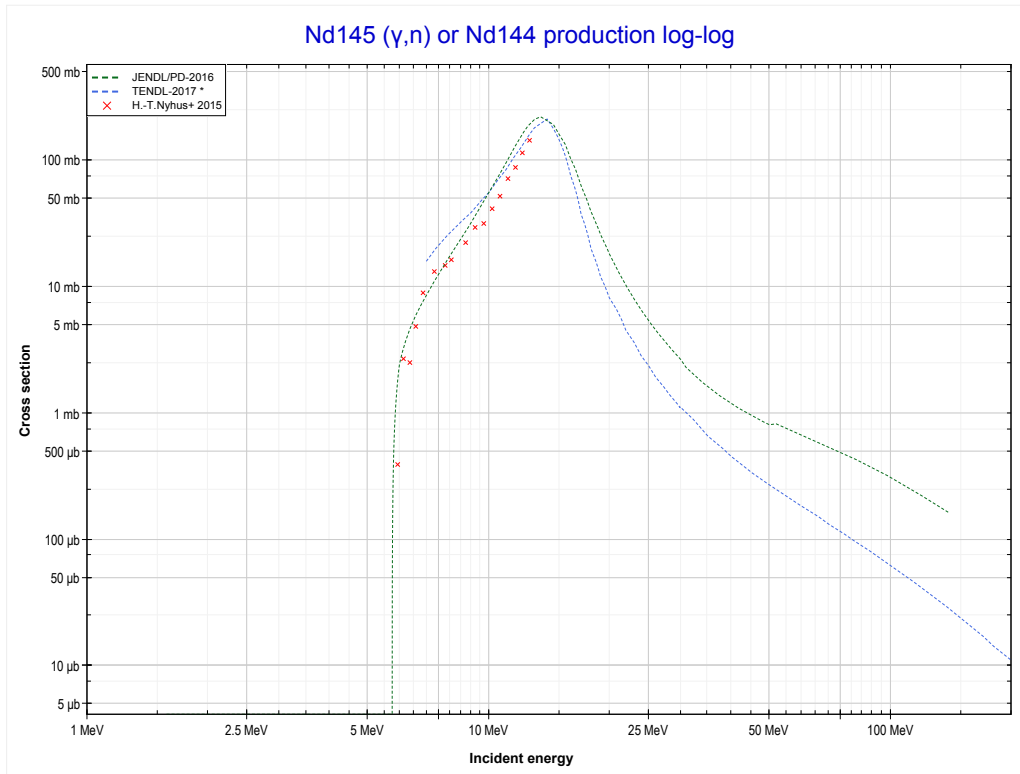
Reaction	Q-Value
Nd144(γ,n)Nd143	-7817.12 keV

<< 60-Nd-143	60-Nd-144	60-Nd-145 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Nd142 production)	60-Nd-145 MT4 (γ,n) >>



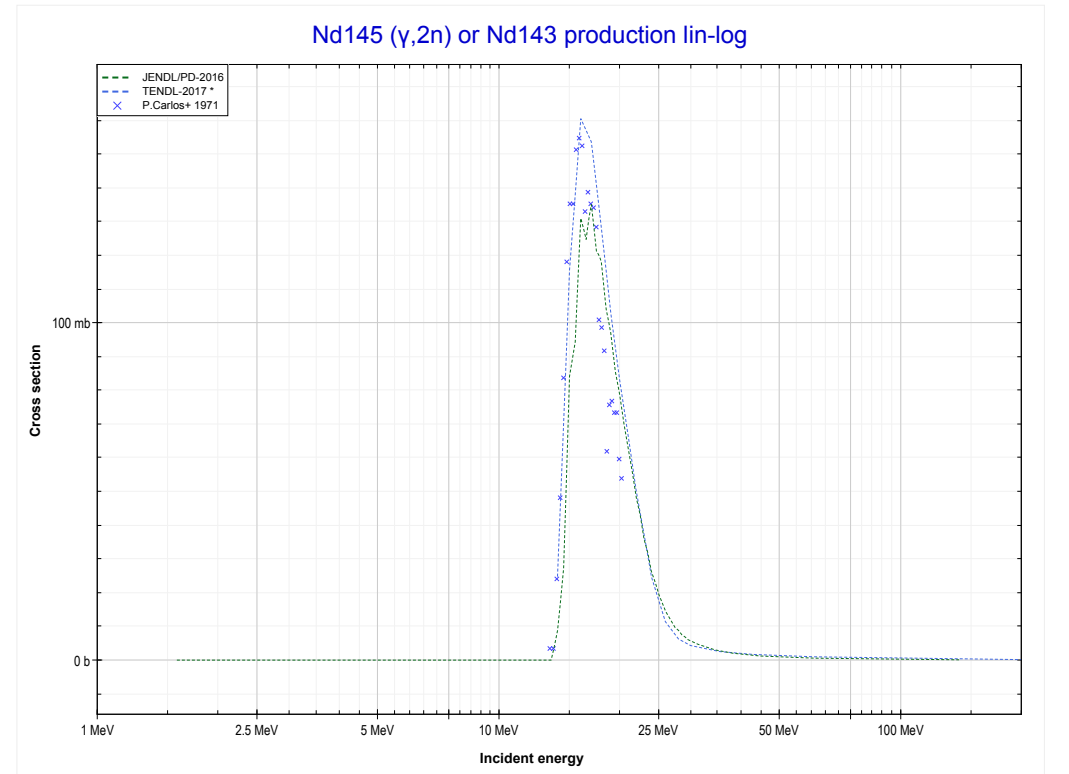
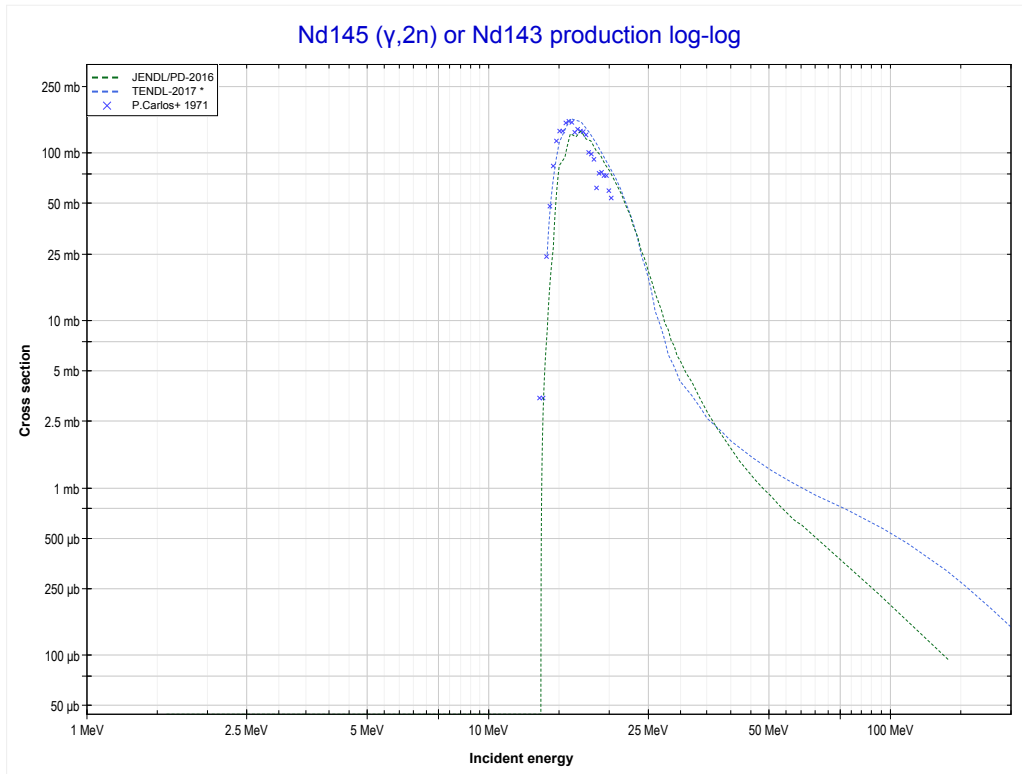
Reaction	Q-Value
Nd144($\gamma,2n$)Nd142	-13940.63 keV

<< 60-Nd-144	60-Nd-145	60-Nd-146 >>
<< 60-Nd-144 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Nd144 production)	MT16 (γ,2n) >>



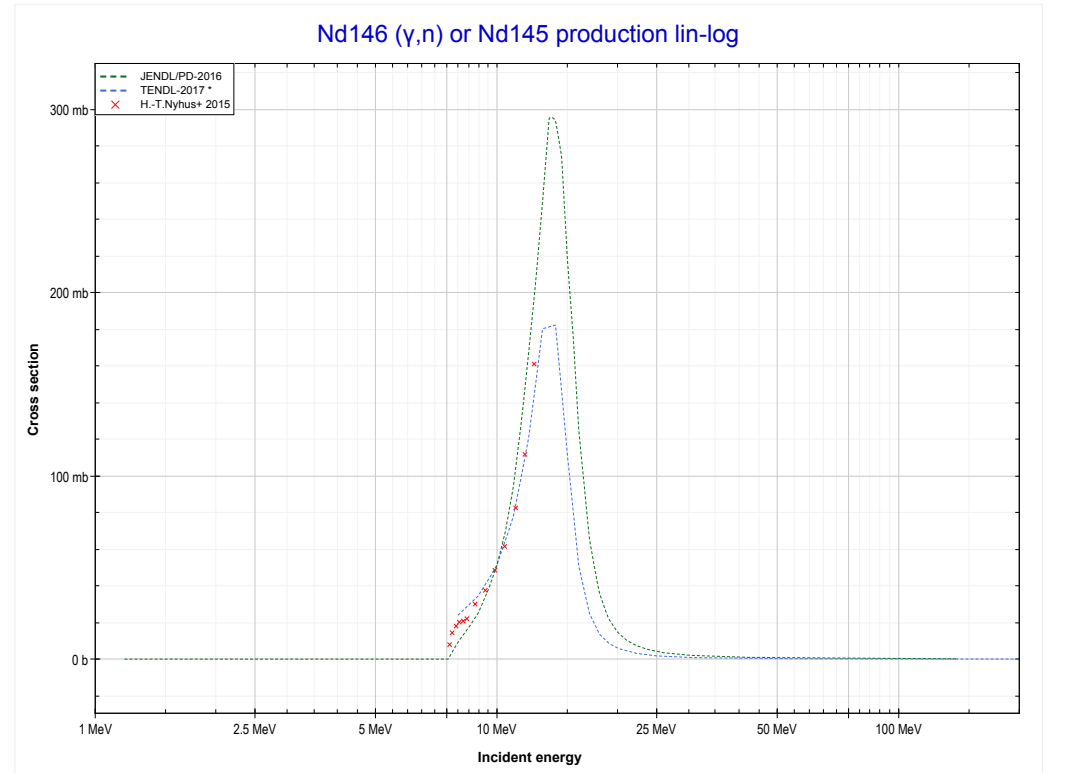
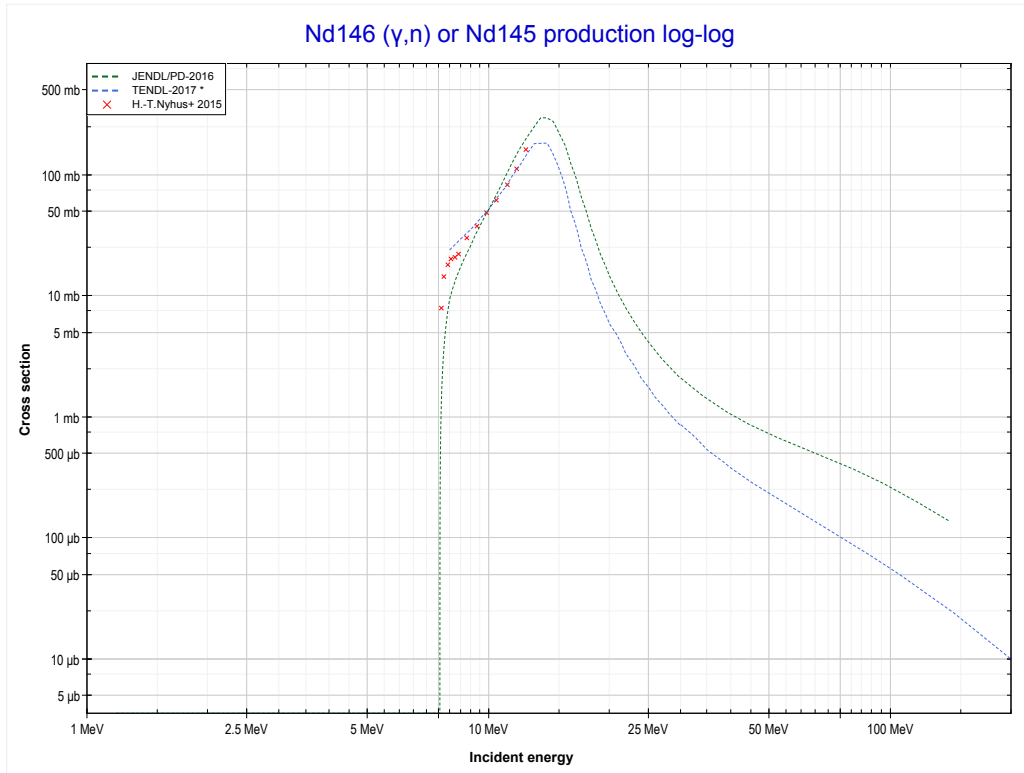
Reaction	Q-Value
Nd145(γ,n)Nd144	-5755.22 keV

<< 60-Nd-144	60-Nd-145	60-Nd-146 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Nd143 production)	60-Nd-146 MT4 (γ,n) >>



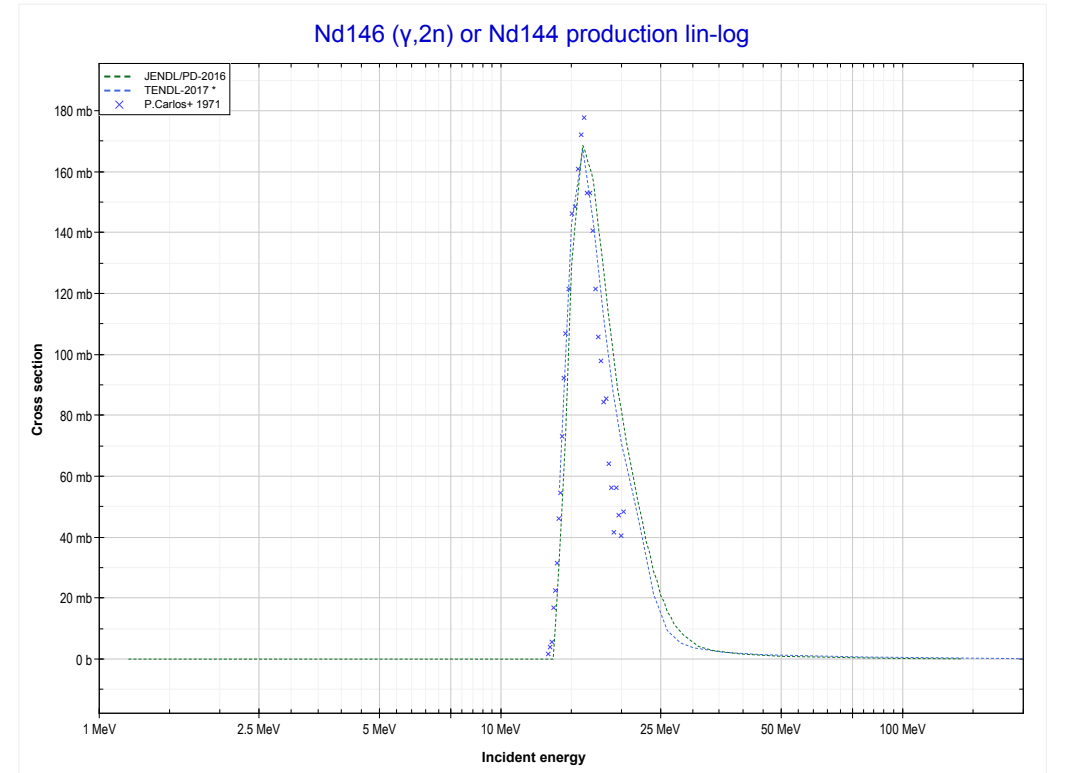
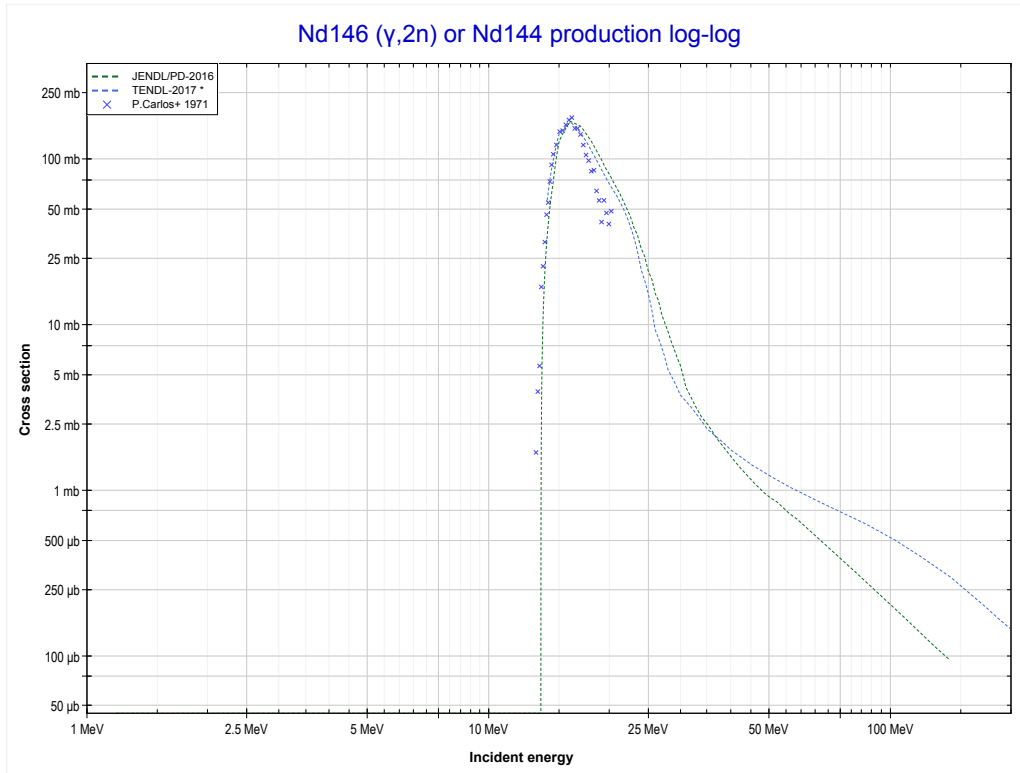
Reaction	Q-Value
Nd145($\gamma,2n$)Nd143	-13572.33 keV

<< 60-Nd-145	60-Nd-146	60-Nd-148 >>
<< 60-Nd-145 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Nd145 production)	MT16 (γ,2n) >>



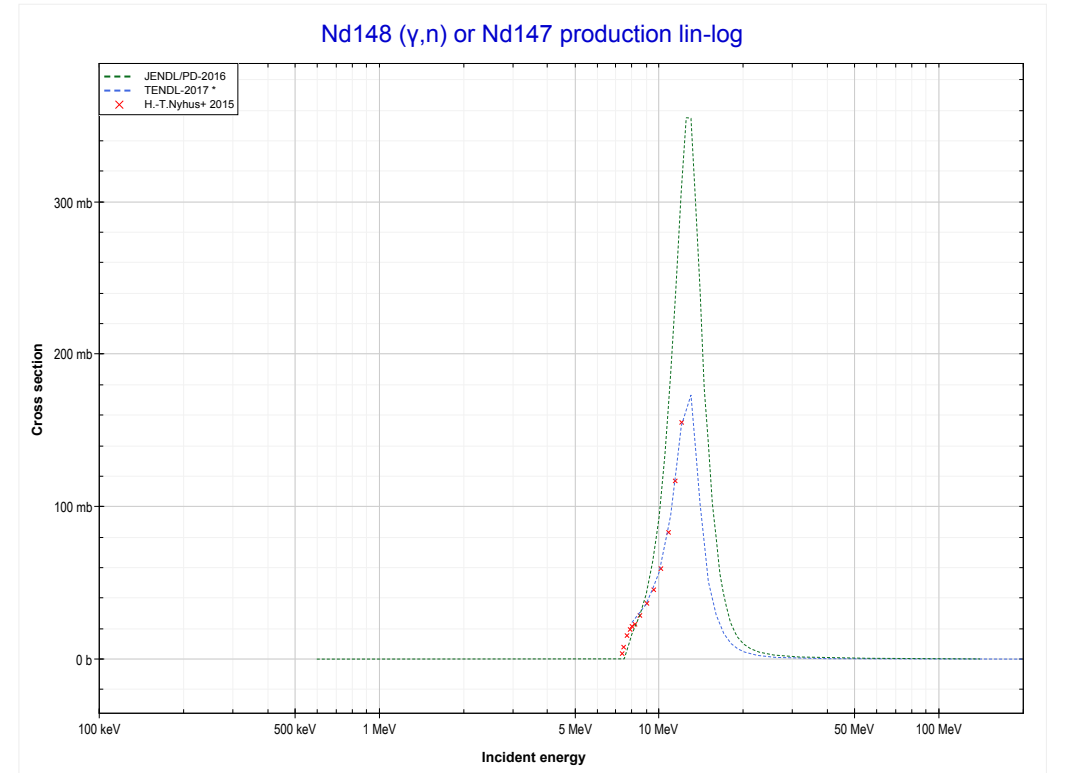
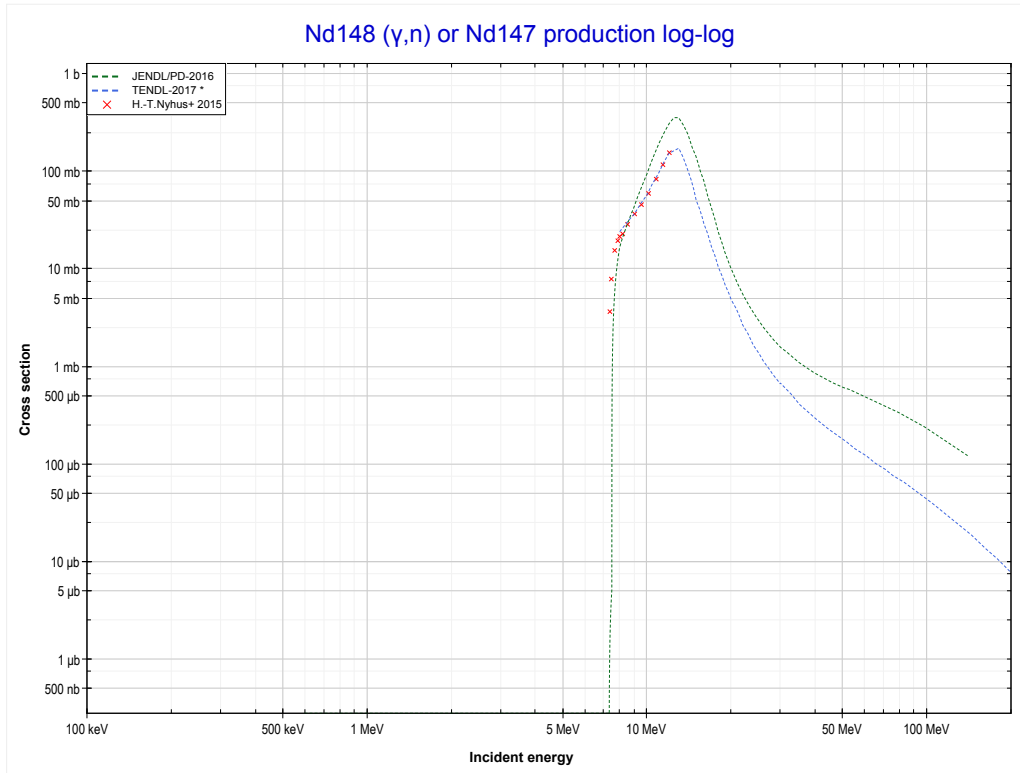
Reaction	Q-Value
Nd146(γ,n)Nd145	-7565.32 keV

<< 60-Nd-145	60-Nd-146	60-Nd-148 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Nd144 production)	60-Nd-148 MT4 (γ, n) >>



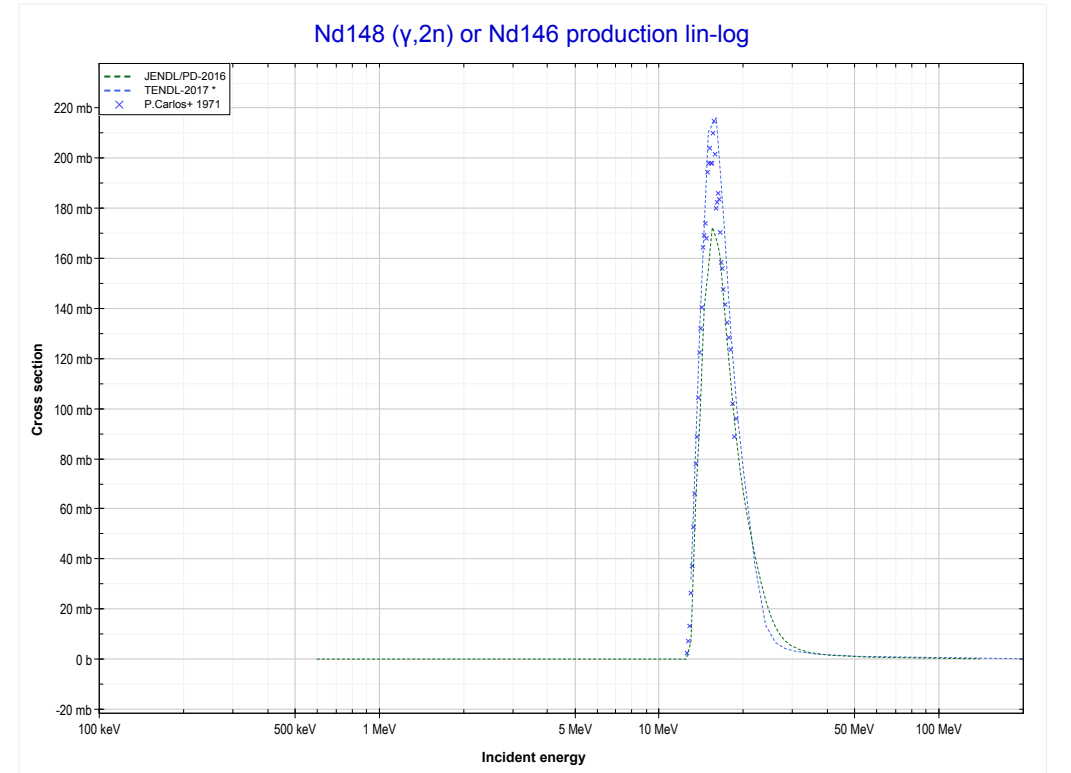
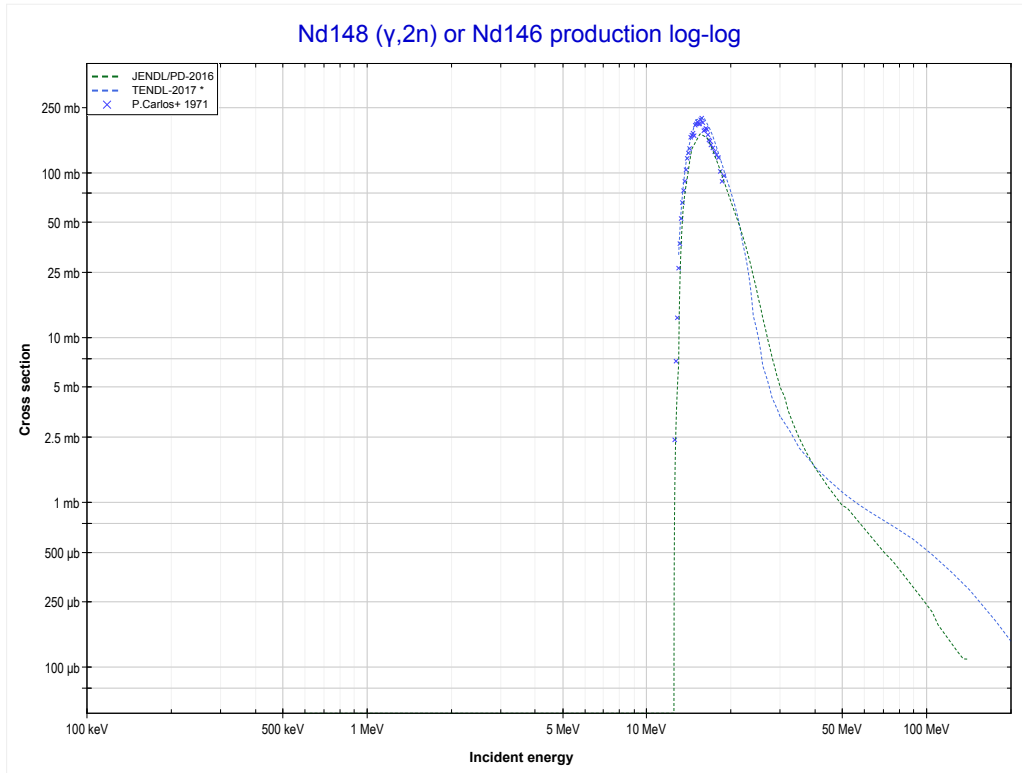
Reaction	Q-Value
Nd146($\gamma, 2n$)Nd144	-13320.53 keV

<< 60-Nd-146	60-Nd-148	62-Sm-144 >>
<< 60-Nd-146 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Nd147 production)	MT16 ($\gamma,2n$) >>



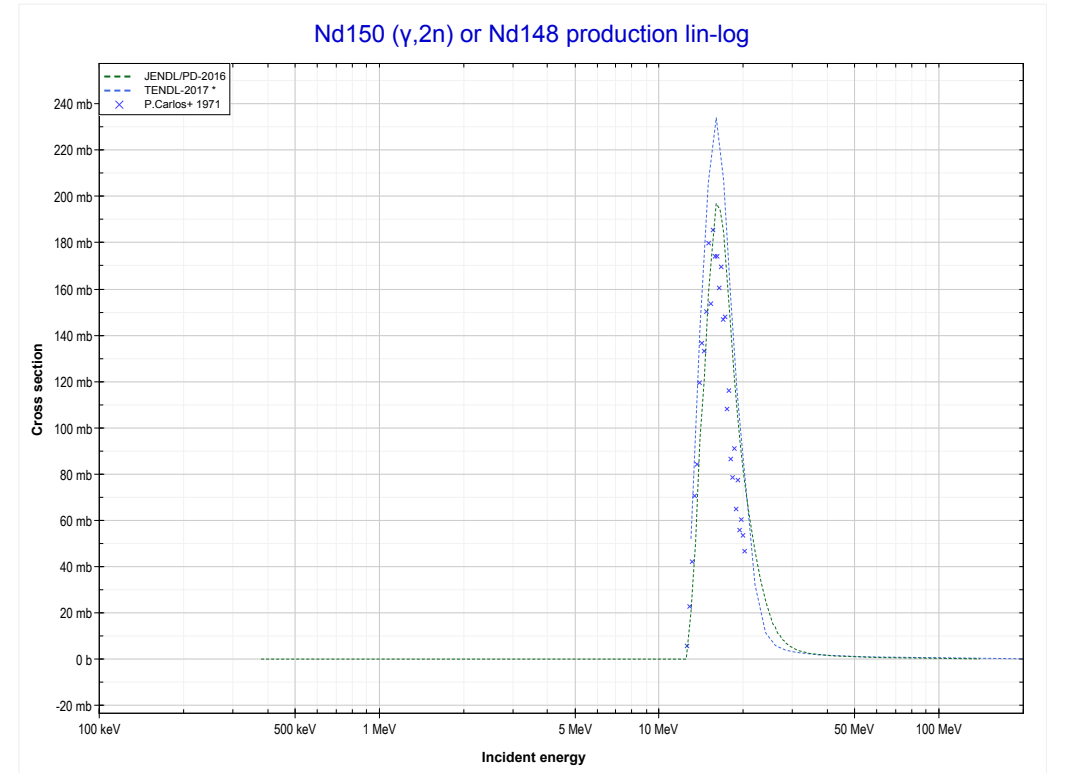
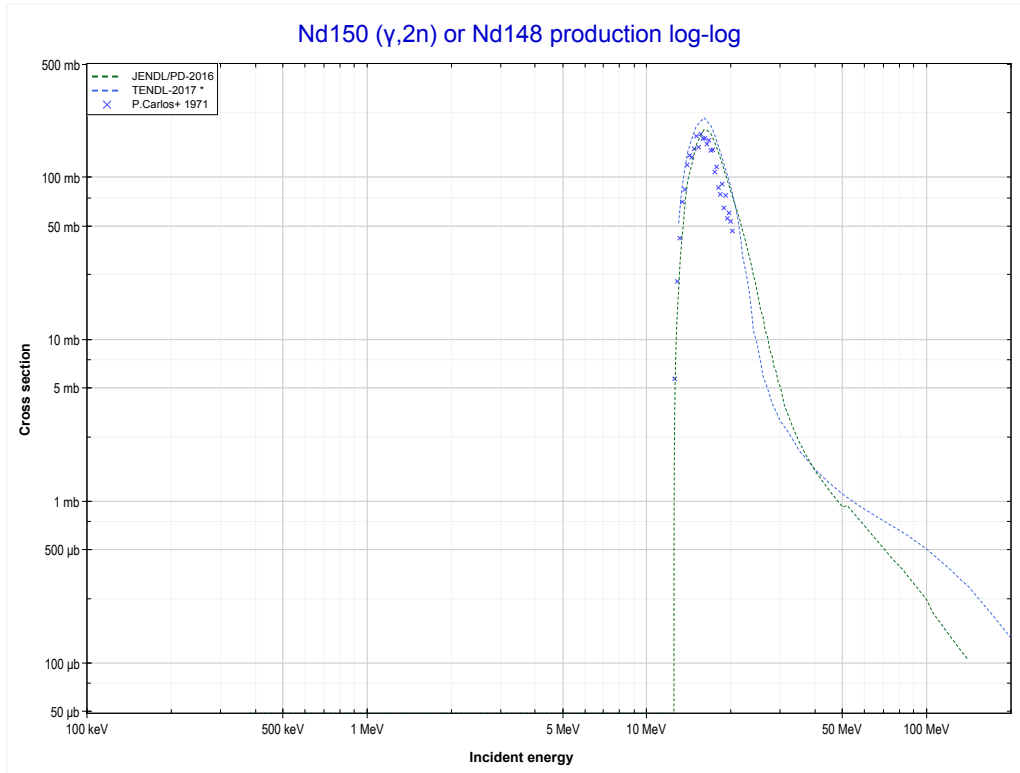
Reaction	Q-Value
Nd148(γ,n)Nd147	-7332.52 keV

<< 60-Nd-146	60-Nd-148	60-Nd-150 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Nd146 production)	60-Nd-150 MT16 ($\gamma,2n$) >>



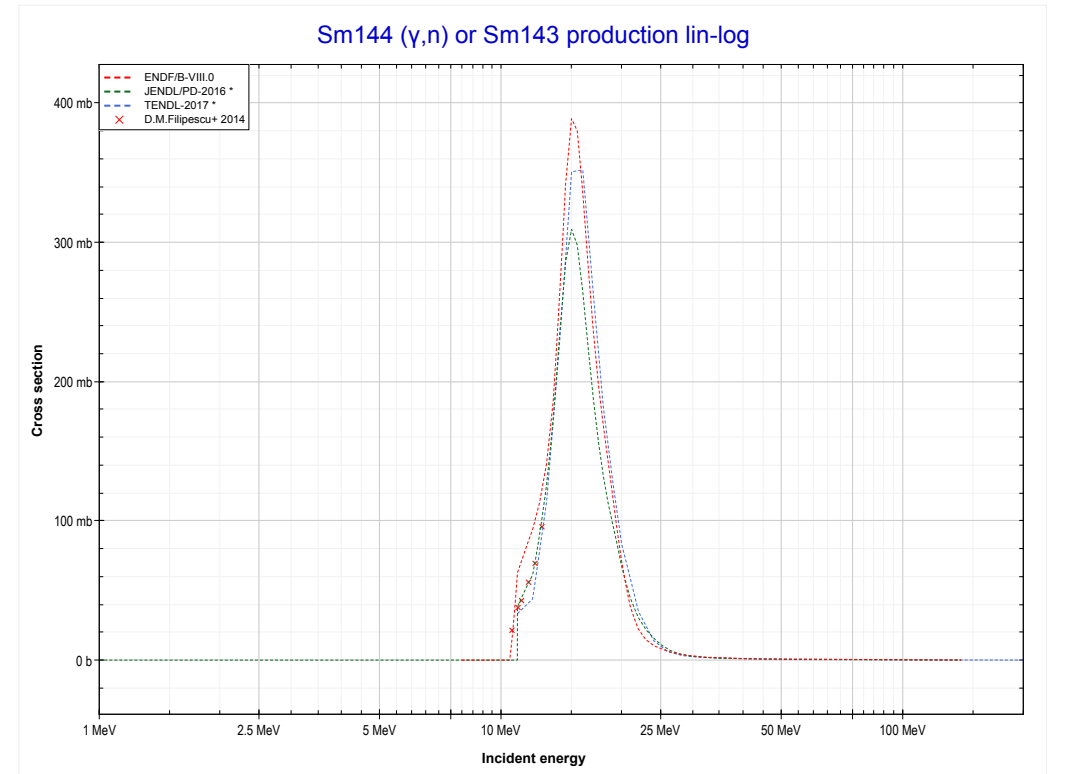
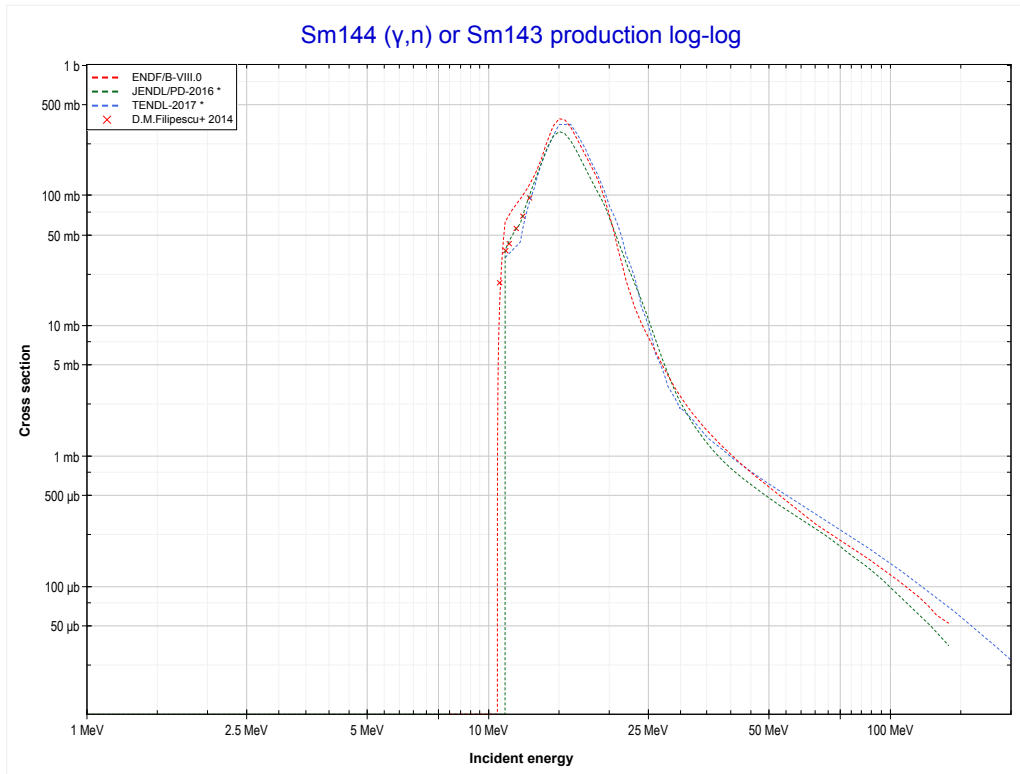
Reaction	Q-Value
Nd148($\gamma,2n$)Nd146	-12624.63 keV

<< 60-Nd-148	60-Nd-150	62-Sm-144 >>
<< 60-Nd-148 MT16 ($\gamma,2n$)	MT16 ($\gamma,2n$) or MT5 (Nd148 production)	62-Sm-144 MT4 (γ,n) >>



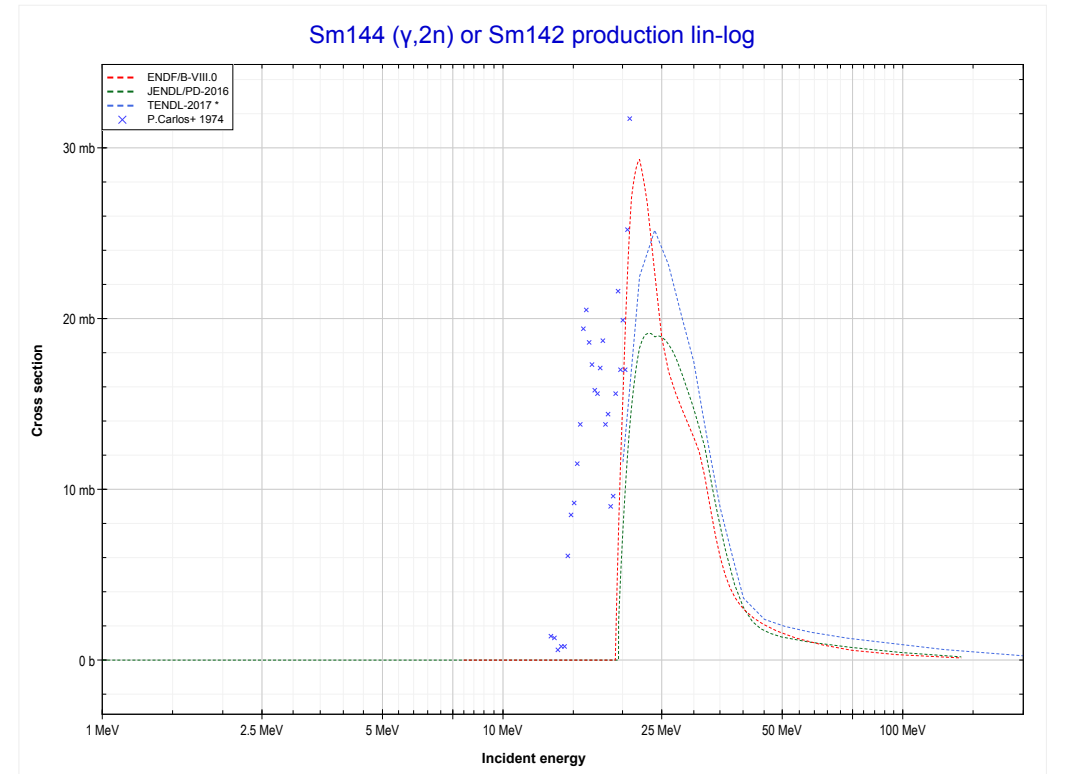
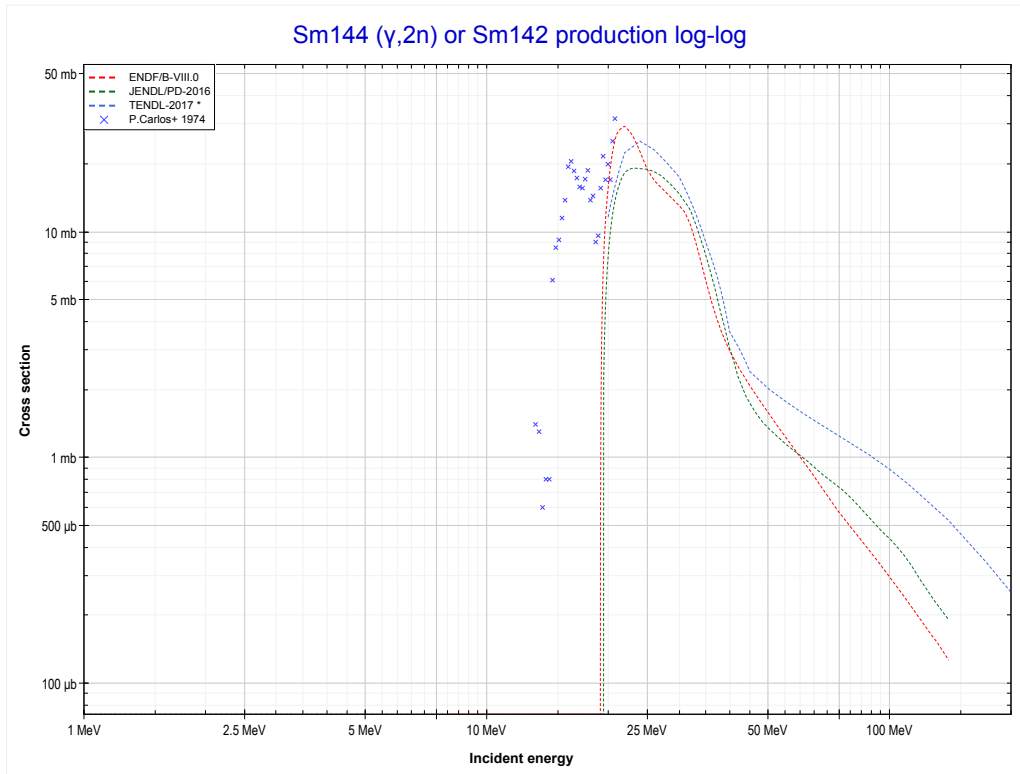
Reaction	Q-Value
Nd150($\gamma,2n$)Nd148	-12413.93 keV

<< 60-Nd-148	62-Sm-144	62-Sm-147 >>
<< 60-Nd-150 MT16 (γ,2n)	MT4 (γ,n) or MT5 (Sm143 production)	MT16 (γ,2n) >>



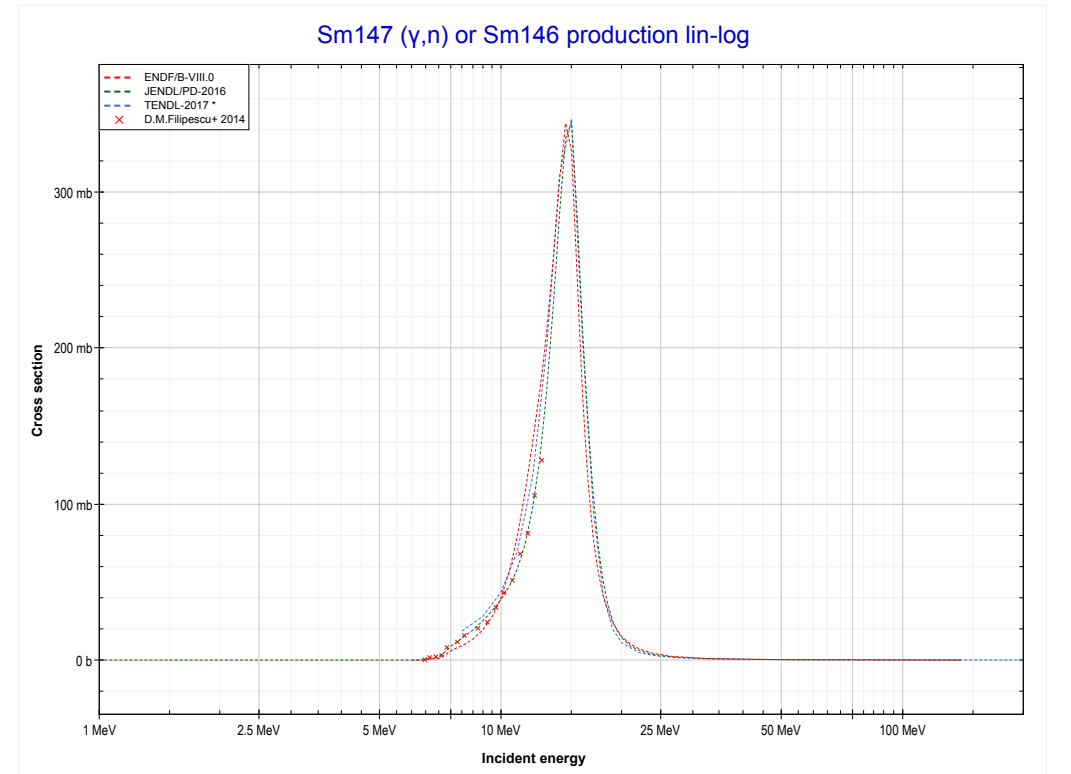
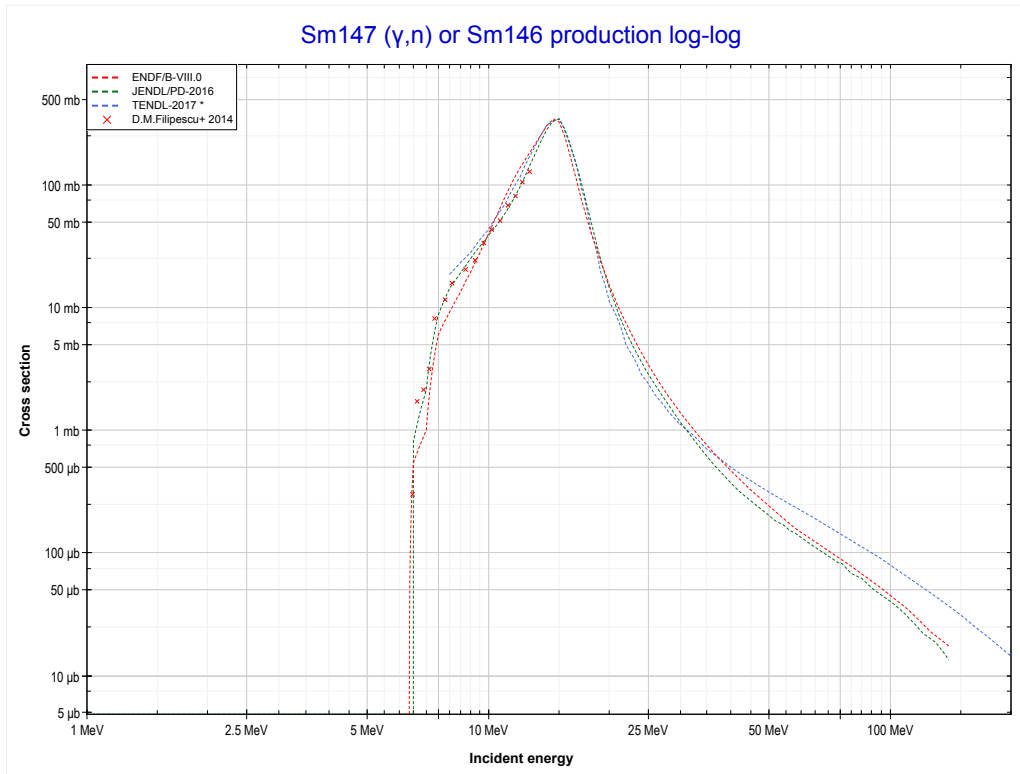
Reaction	Q-Value
Sm144(γ,n)Sm143	-10519.72 keV

<< 60-Nd-150	62-Sm-144	62-Sm-148 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sm142 production)	62-Sm-147 MT4 (γ, n) >>



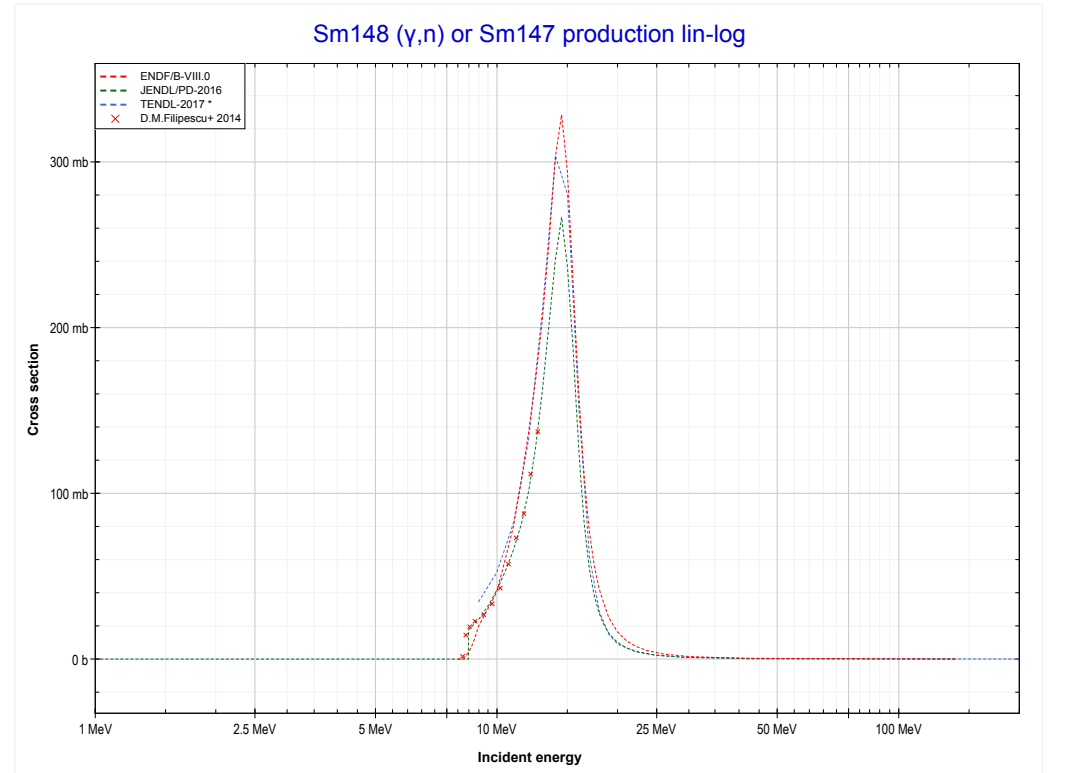
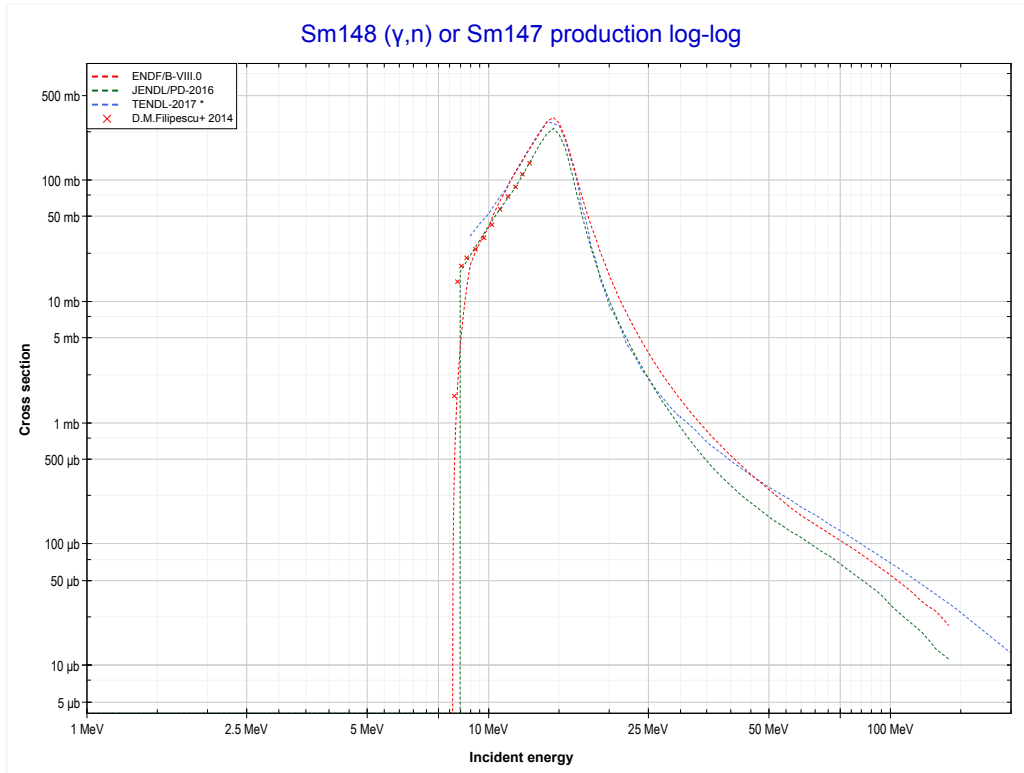
Reaction	Q-Value
Sm144($\gamma, 2n$)Sm142	-19121.03 keV

<< 62-Sm-144	62-Sm-147	62-Sm-148 >>
<< 62-Sm-144 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Sm146 production)	62-Sm-148 MT4 (γ,n) >>



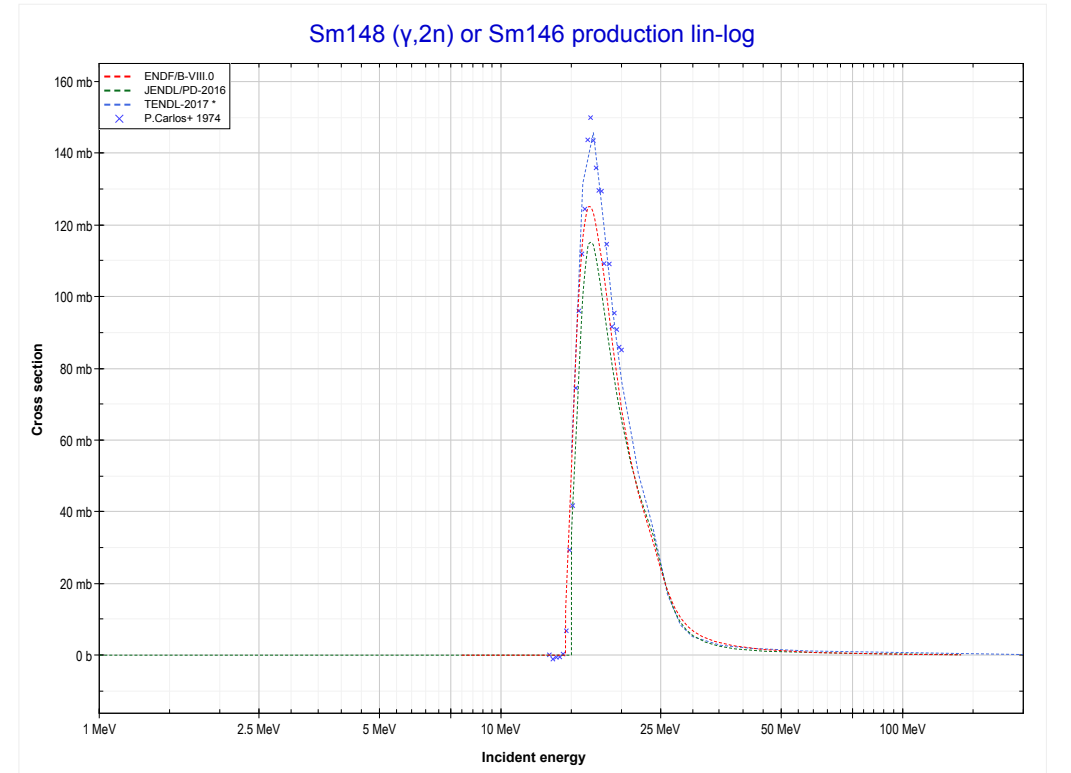
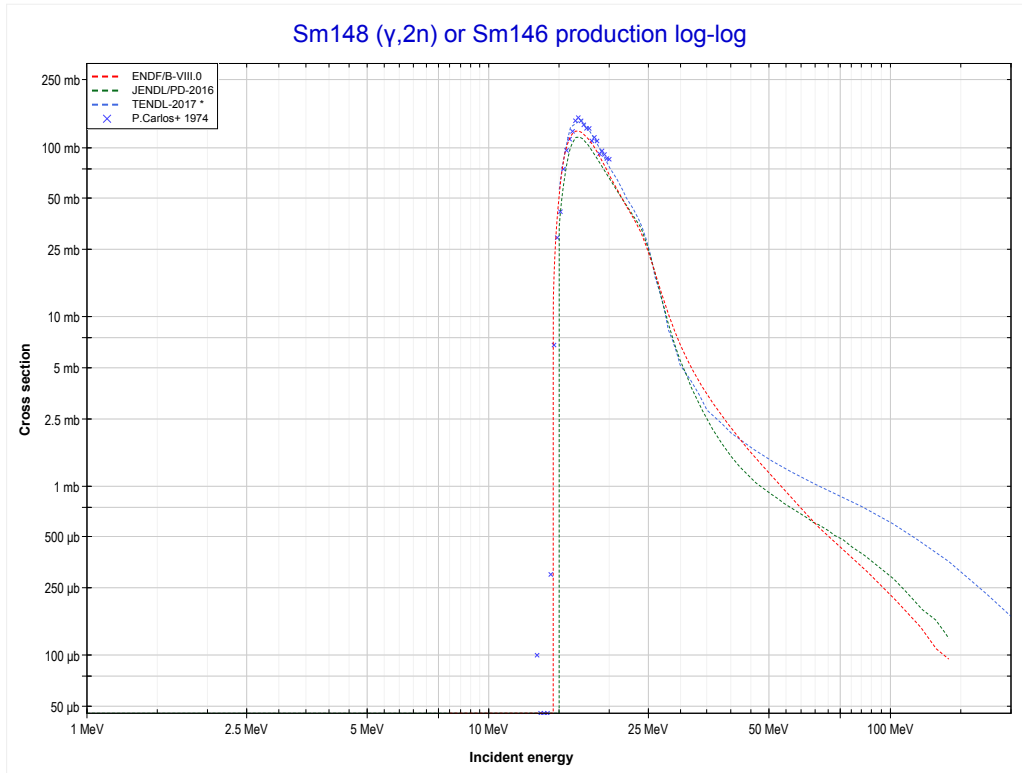
Reaction	Q-Value
Sm147(γ,n)Sm146	-6341.32 keV

<< 62-Sm-147	62-Sm-148	62-Sm-149 >>
<< 62-Sm-147 MT4 (γ,n)	MT4 (γ,n) or MT5 (Sm147 production)	MT16 ($\gamma,2n$) >>



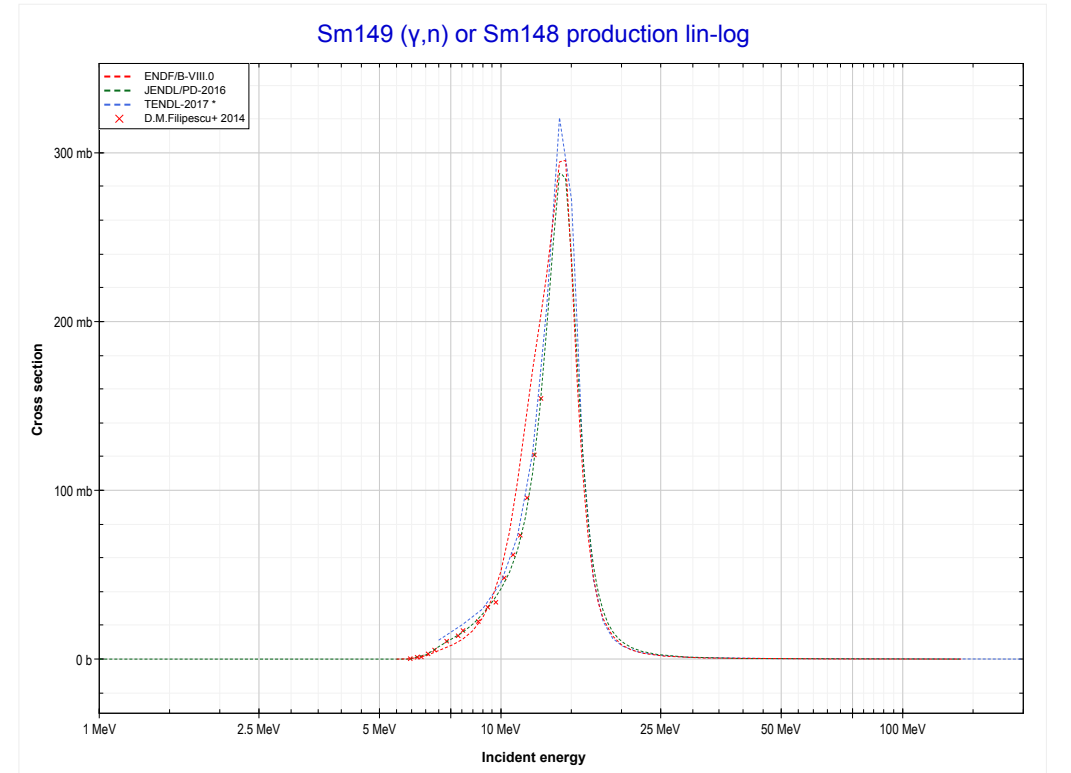
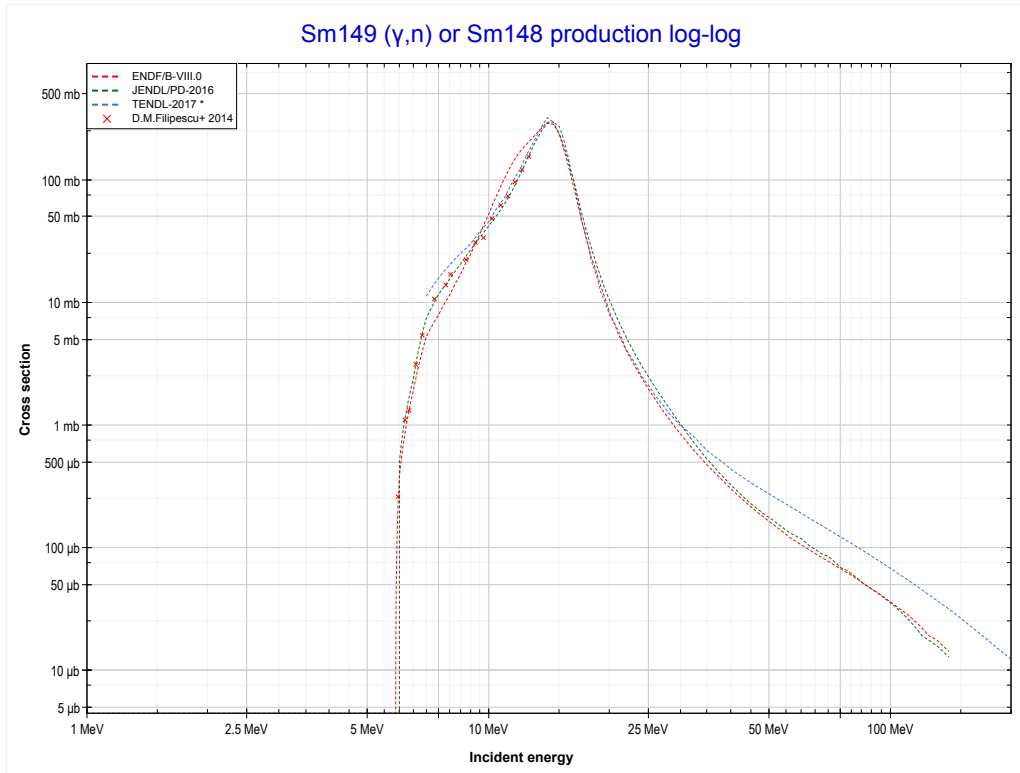
Reaction	Q-Value
Sm148(γ,n)Sm147	-8141.42 keV

<< 62-Sm-144	62-Sm-148	62-Sm-150 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sm146 production)	62-Sm-149 MT4 (γ, n) >>



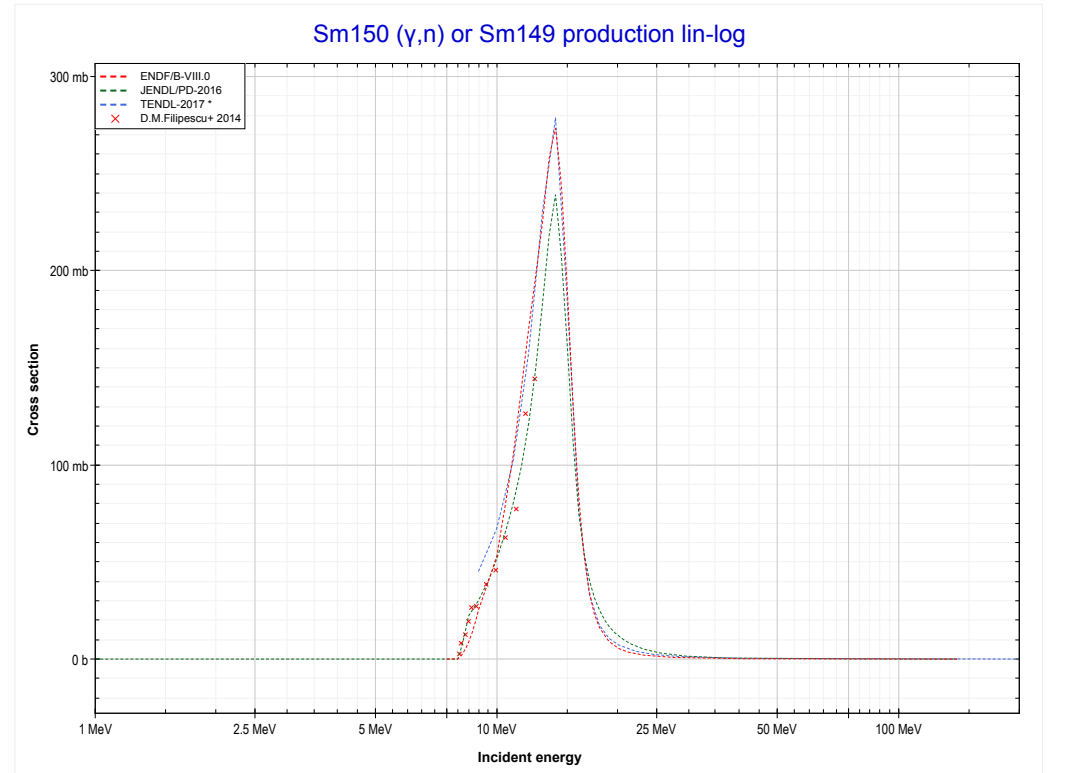
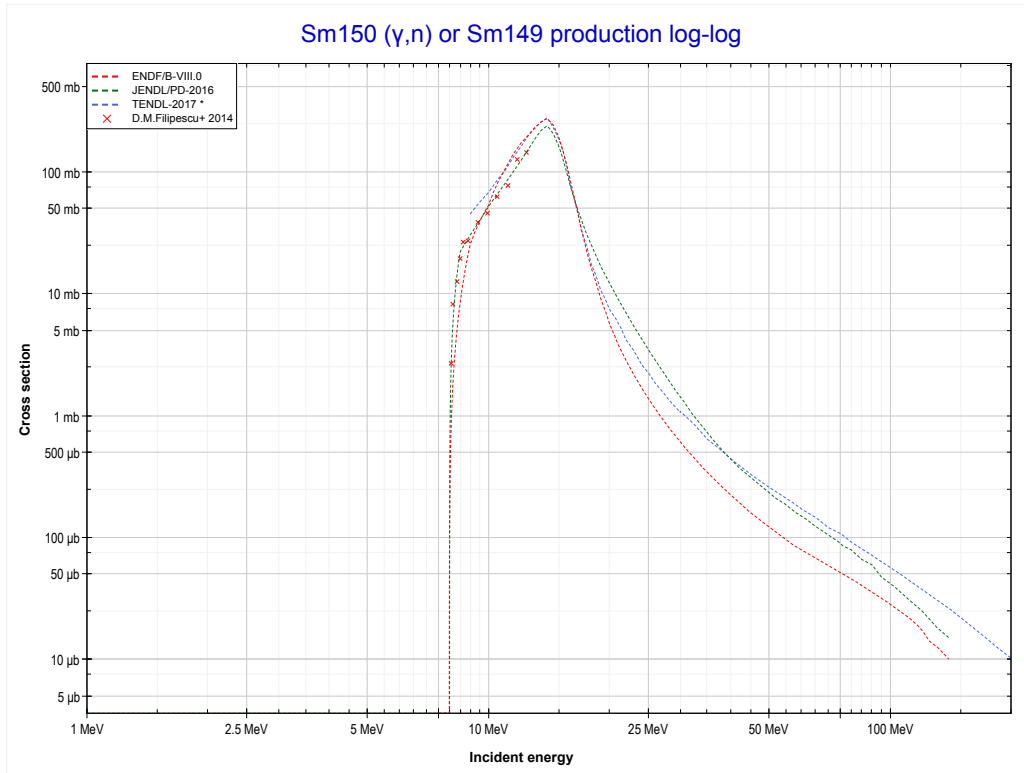
Reaction	Q-Value
Sm148($\gamma, 2n$)Sm146	-14482.73 keV

<< 62-Sm-148	62-Sm-149	62-Sm-150 >>
<< 62-Sm-148 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Sm148 production)	62-Sm-150 MT4 (γ,n) >>



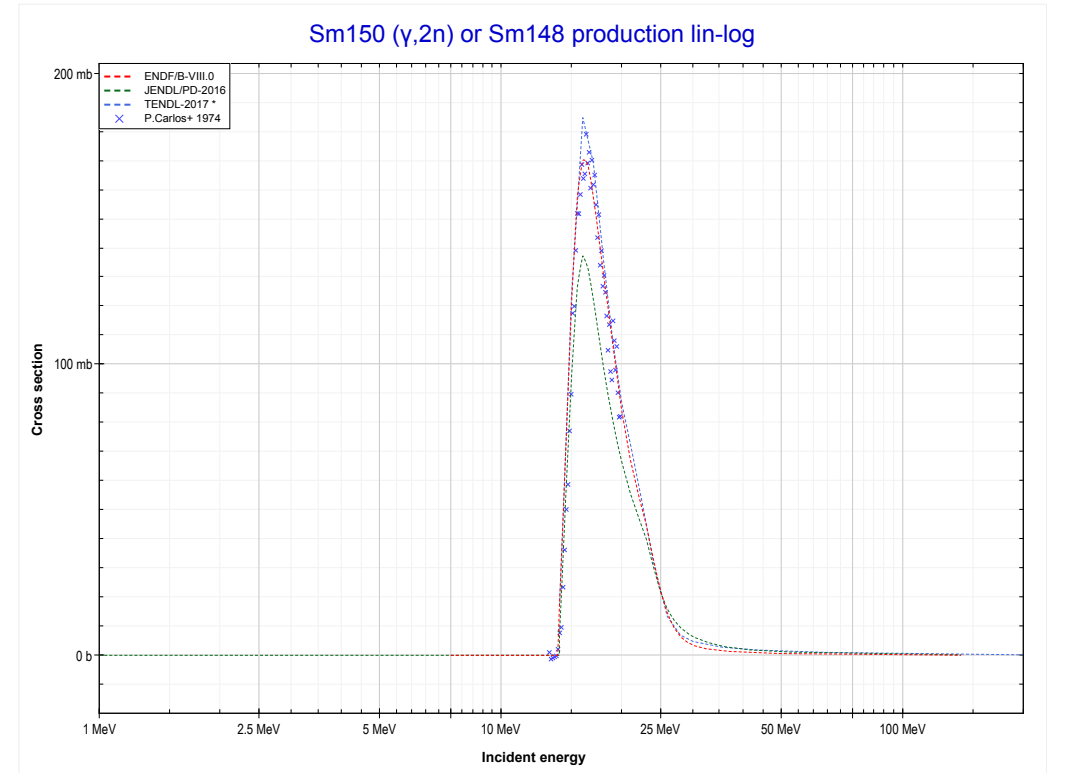
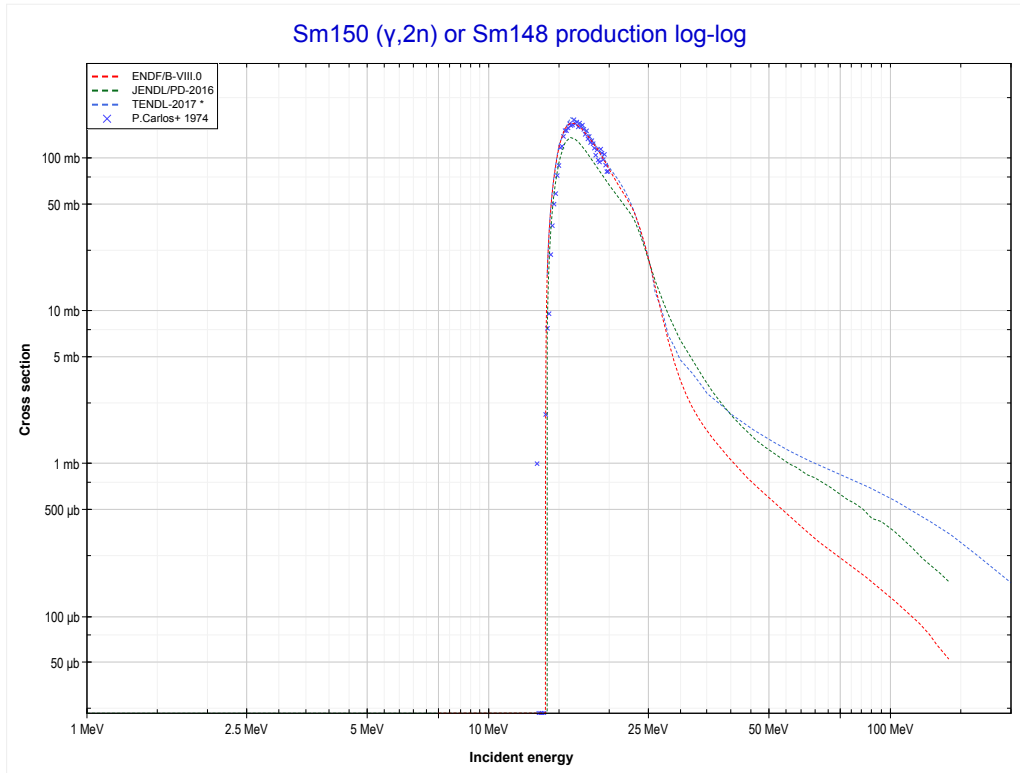
Reaction	Q-Value
Sm149(γ,n)Sm148	-5870.32 keV

<< 62-Sm-149	62-Sm-150	62-Sm-152 >>
<< 62-Sm-149 MT4 (γ,n)	MT4 (γ,n) or MT5 (Sm149 production)	MT16 (γ,2n) >>



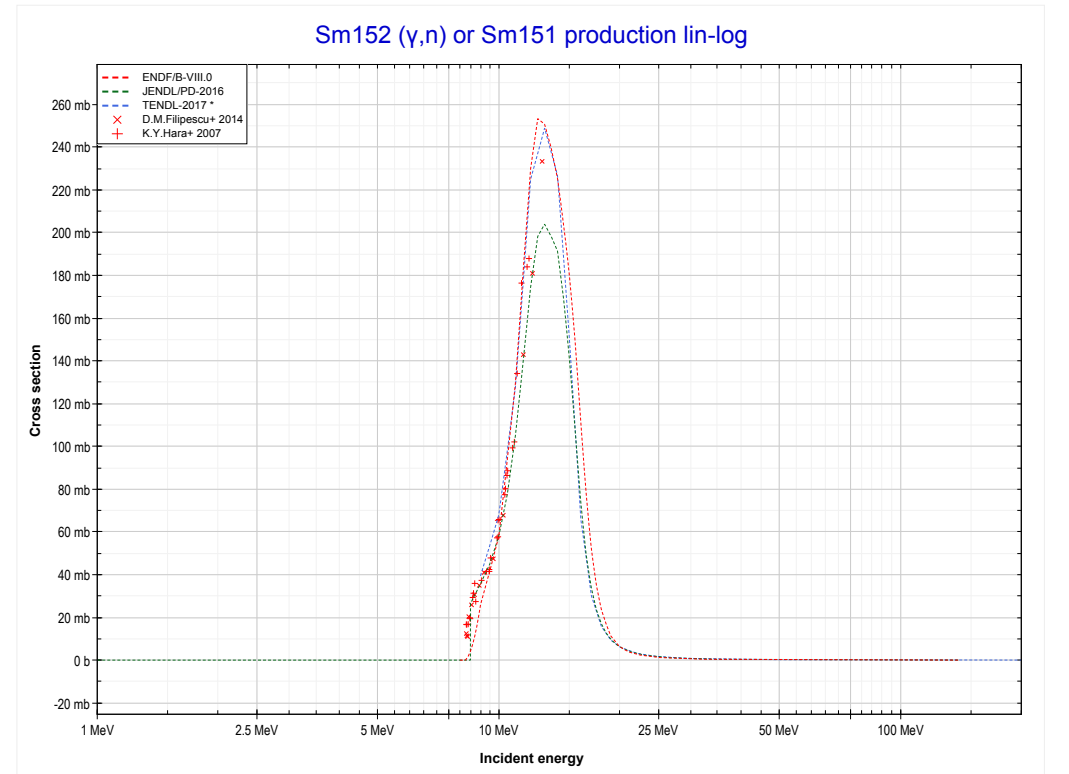
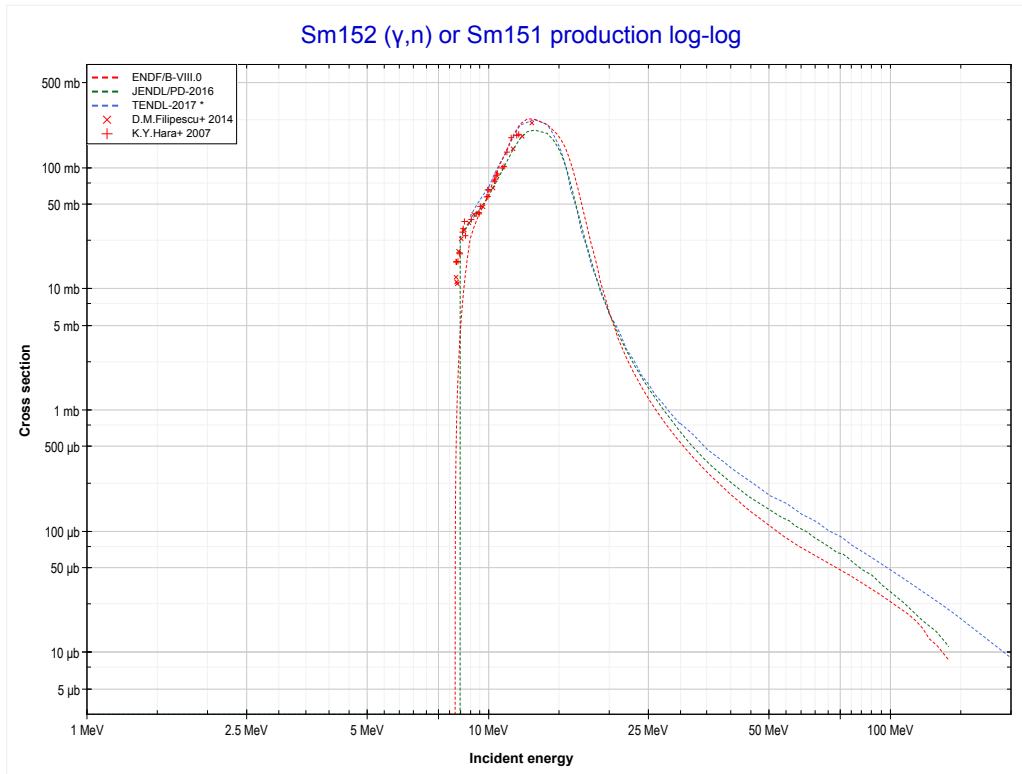
Reaction	Q-Value
Sm150(γ,n)Sm149	-7986.72 keV

<< 62-Sm-148	62-Sm-150	62-Sm-152 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sm148 production)	62-Sm-152 MT4 (γ, n) >>



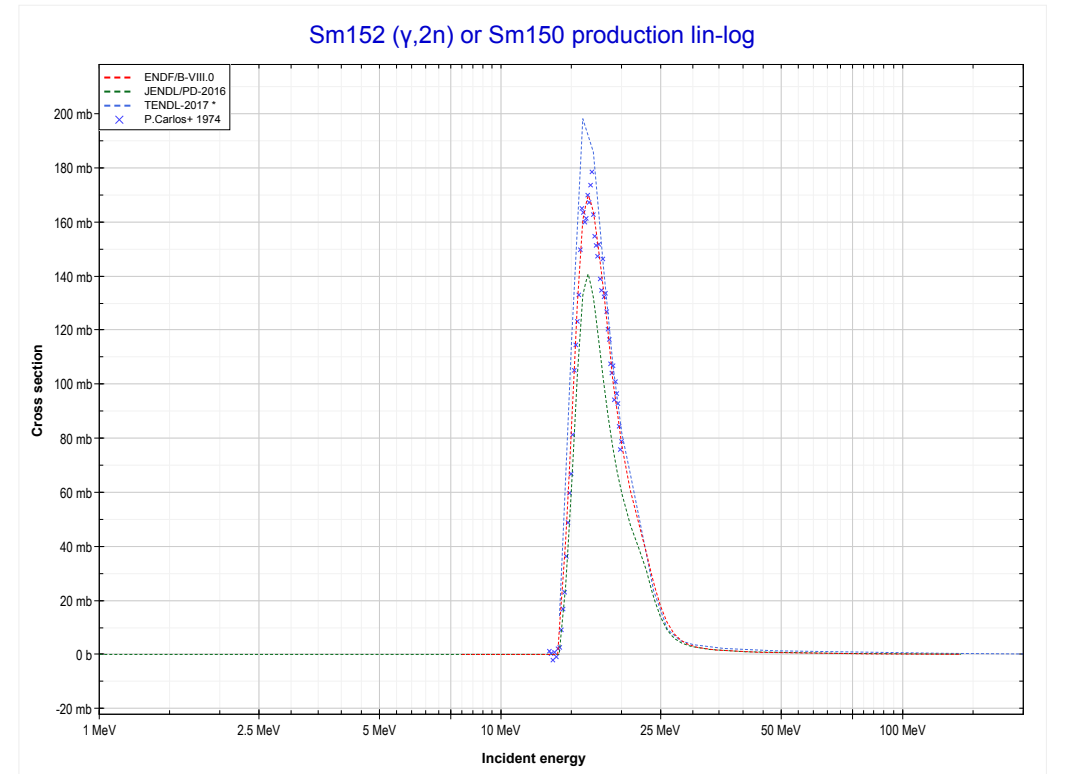
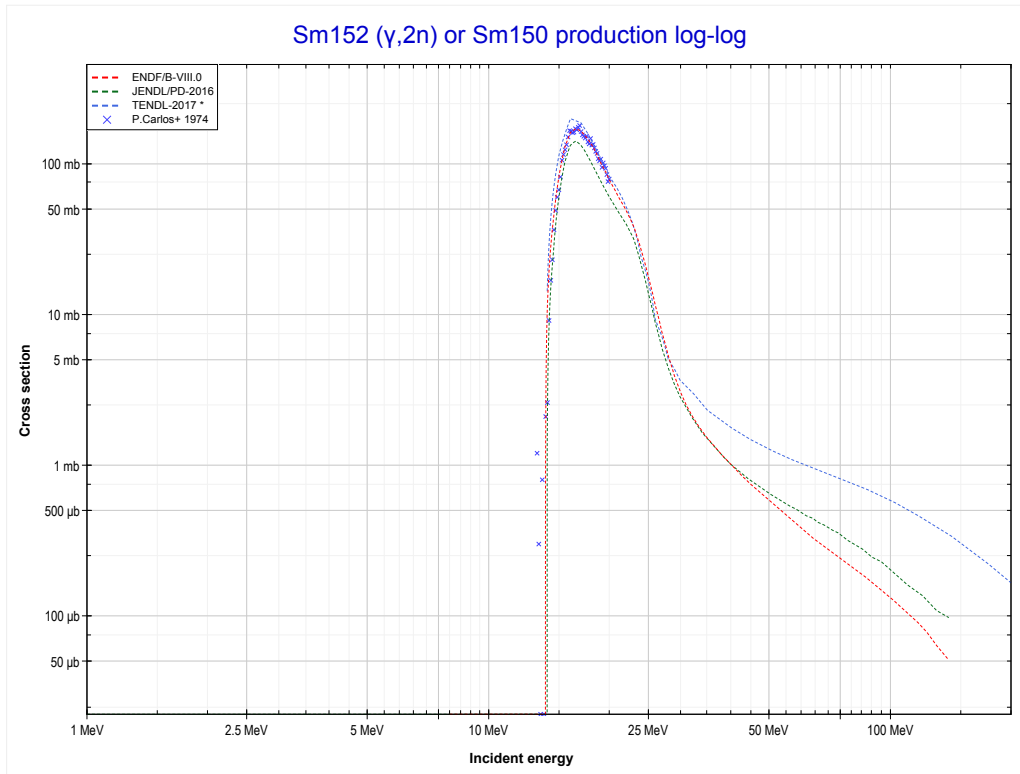
Reaction	Q-Value
Sm150($\gamma, 2n$)Sm148	-13857.03 keV

<< 62-Sm-150	62-Sm-152	62-Sm-154 >>
<< 62-Sm-150 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Sm151 production)	MT16 ($\gamma,2n$) >>



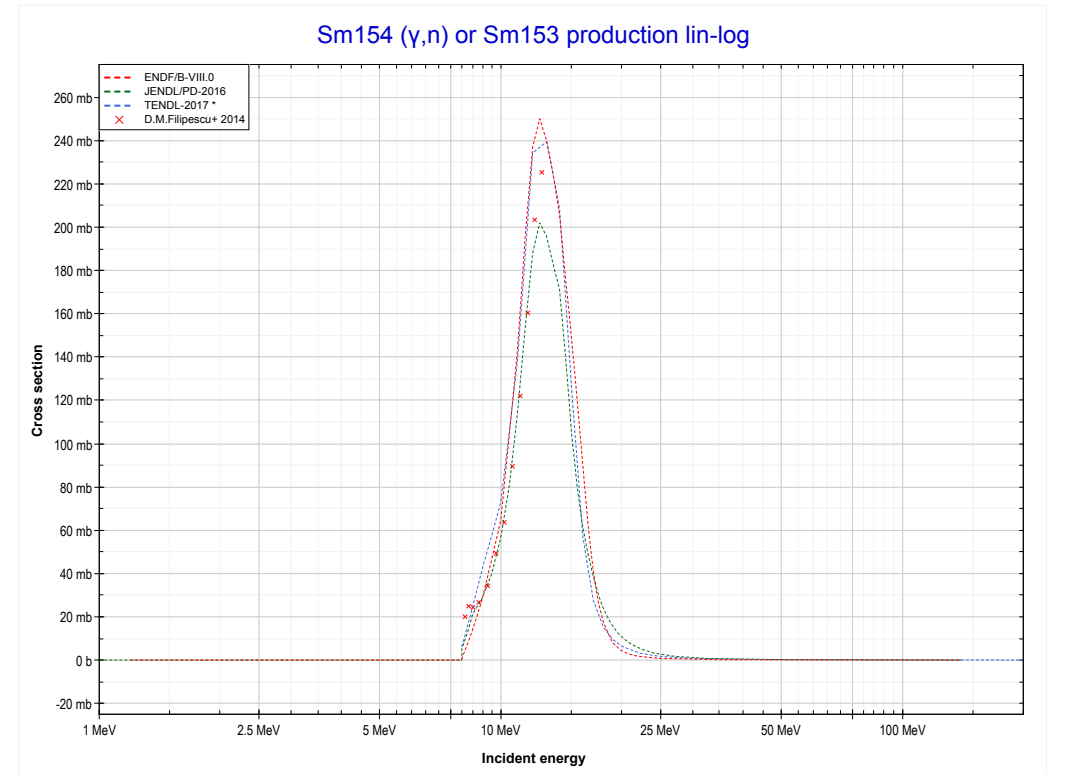
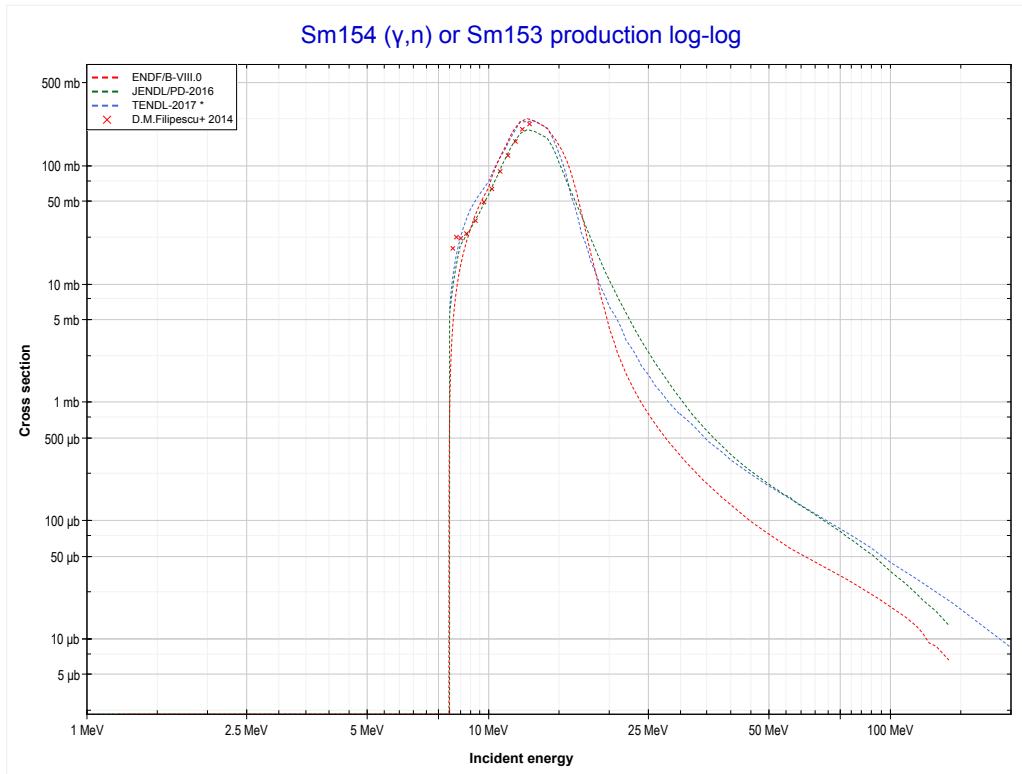
Reaction	Q-Value
Sm152(γ,n)Sm151	-8257.72 keV

<< 62-Sm-150	62-Sm-152	62-Sm-154 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Sm150 production)	62-Sm-154 MT4 (γ,n) >>



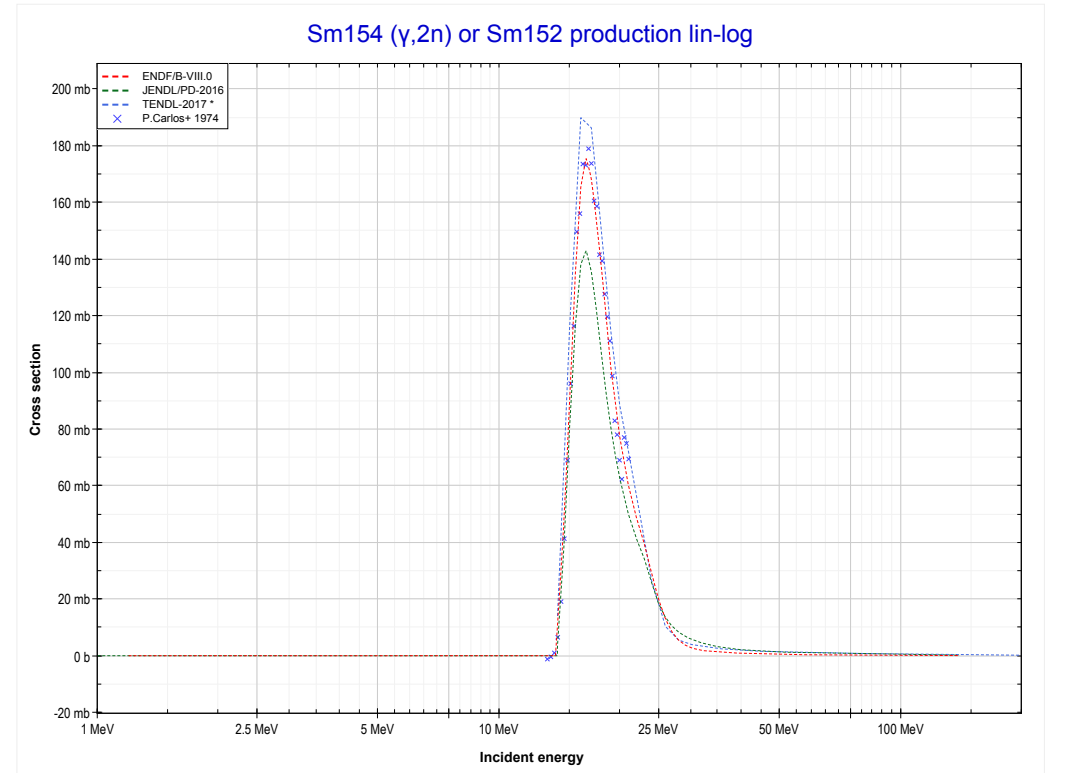
Reaction	Q-Value
Sm152($\gamma,2n$)Sm150	-13854.13 keV

<< 62-Sm-152	62-Sm-154	63-Eu-153 >>
<< 62-Sm-152 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Sm153 production)	MT16 ($\gamma,2n$) >>



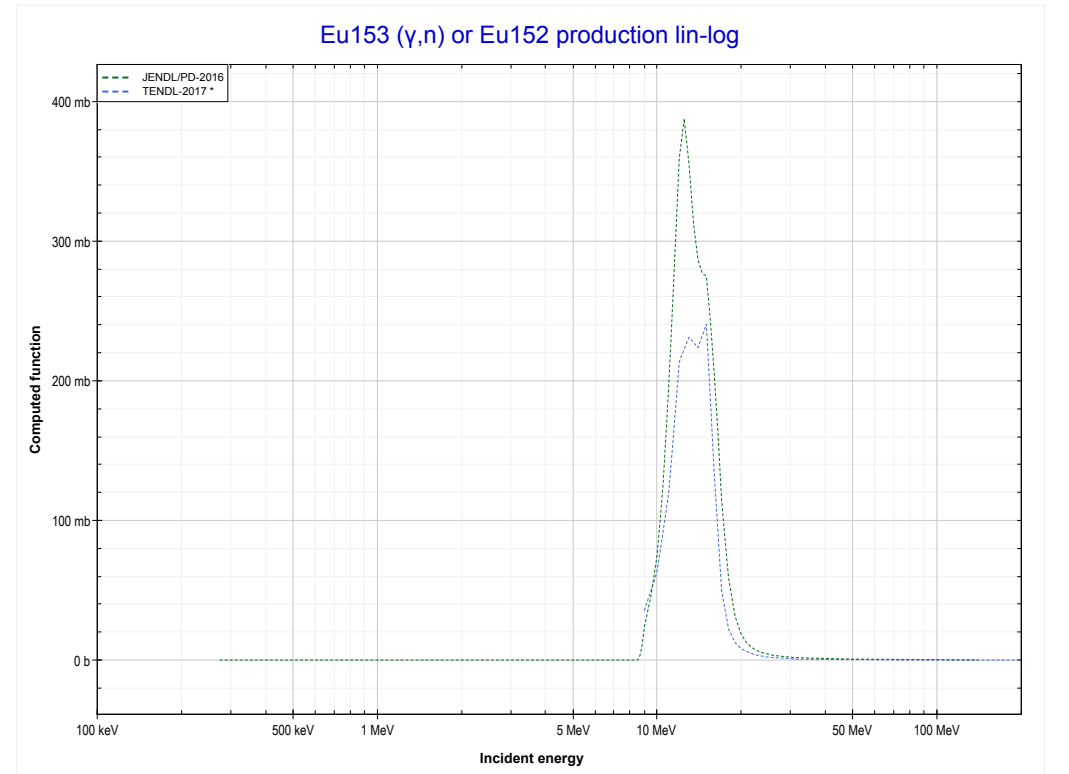
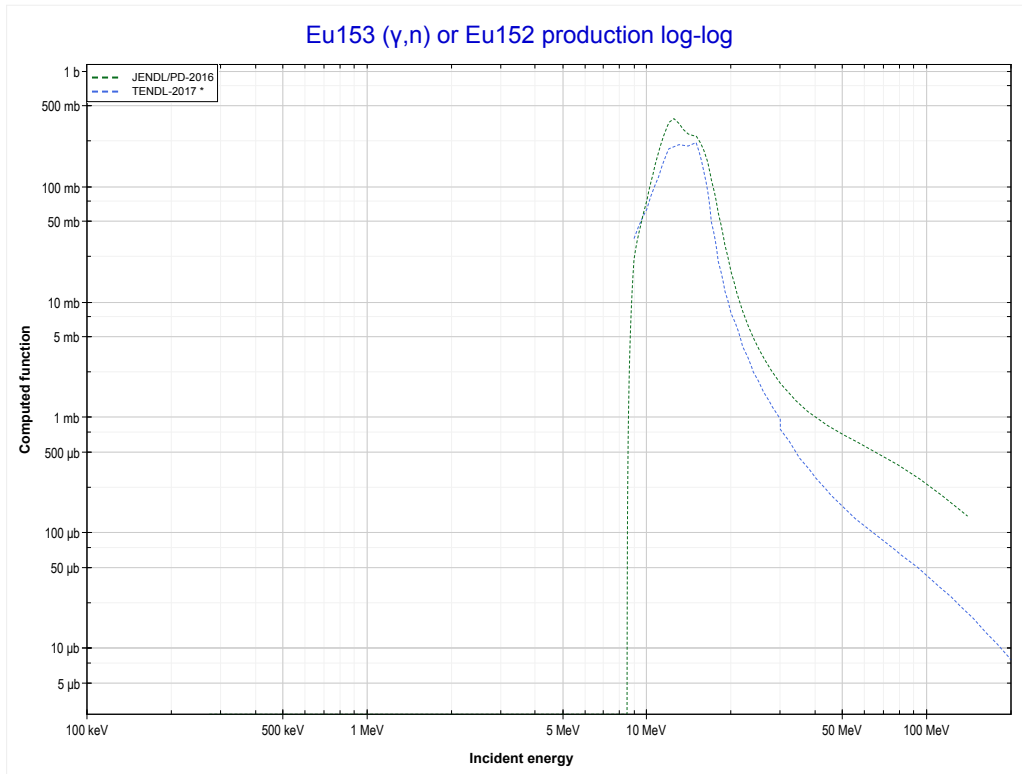
Reaction	Q-Value
Sm154(γ,n)Sm153	-7966.72 keV

<< 62-Sm-152	62-Sm-154	65-Tb-159 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Sm152 production)	63-Eu-153 MT4 (γ, n) >>



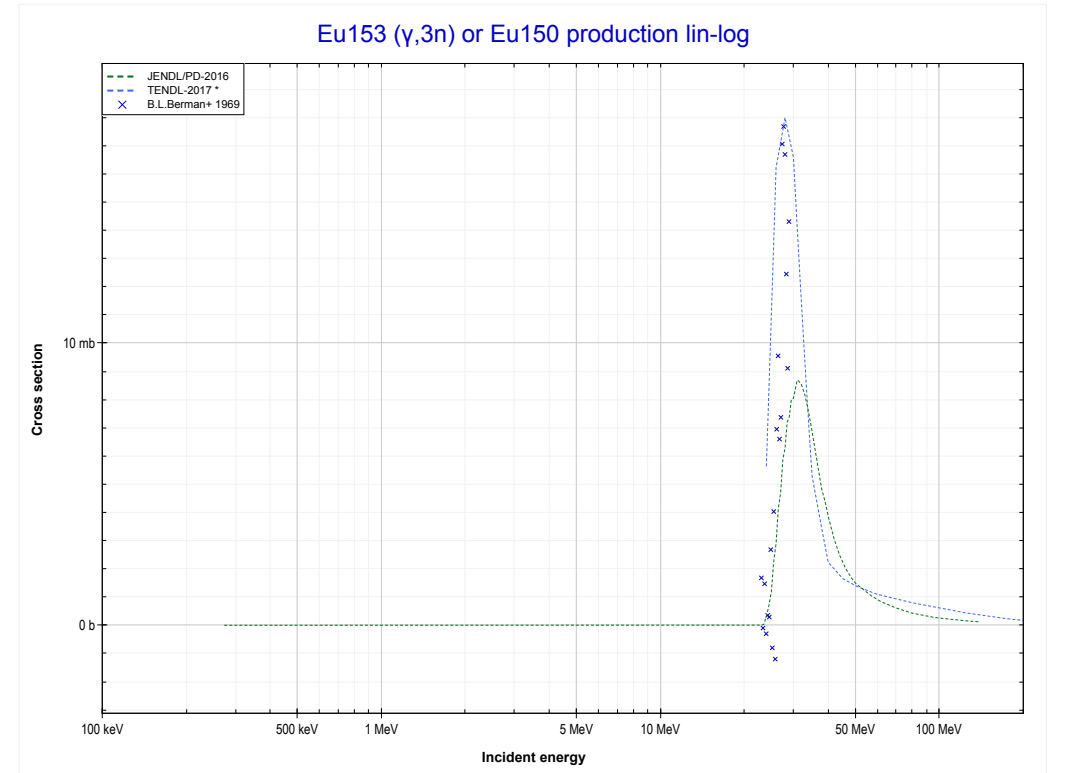
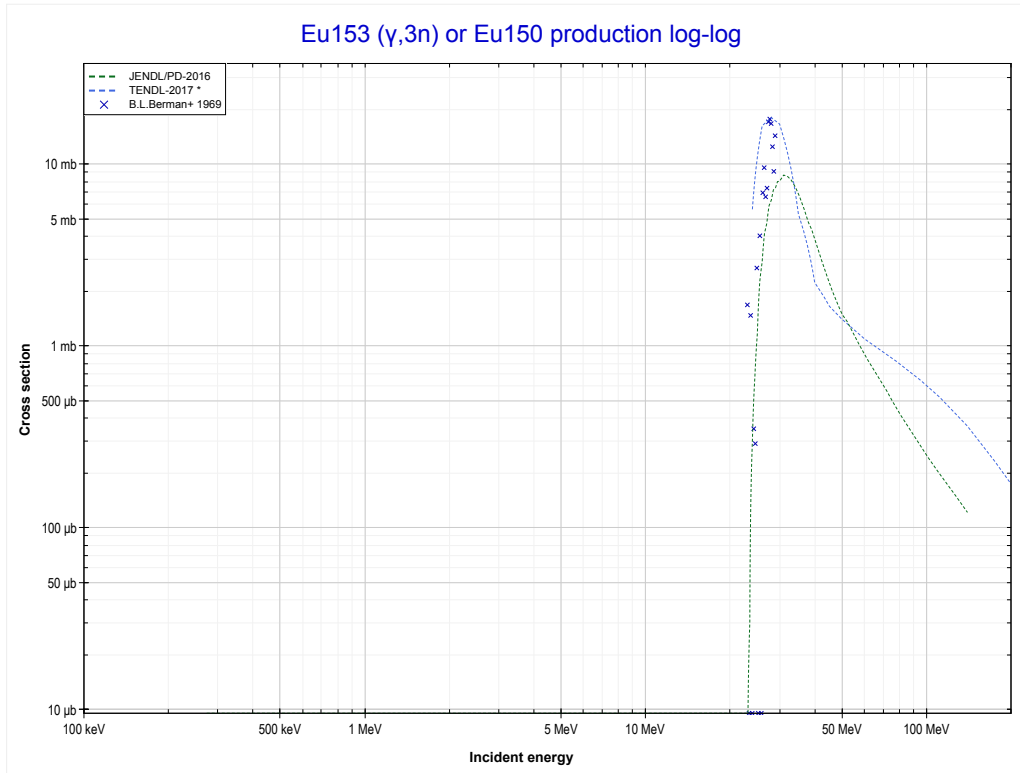
Reaction	Q-Value
Sm154($\gamma, 2n$)Sm152	-13835.13 keV

<< 62-Sm-154	63-Eu-153	64-Gd-160 >>
<< 62-Sm-154 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Eu152 production)	MT17 ($\gamma,3n$) >>



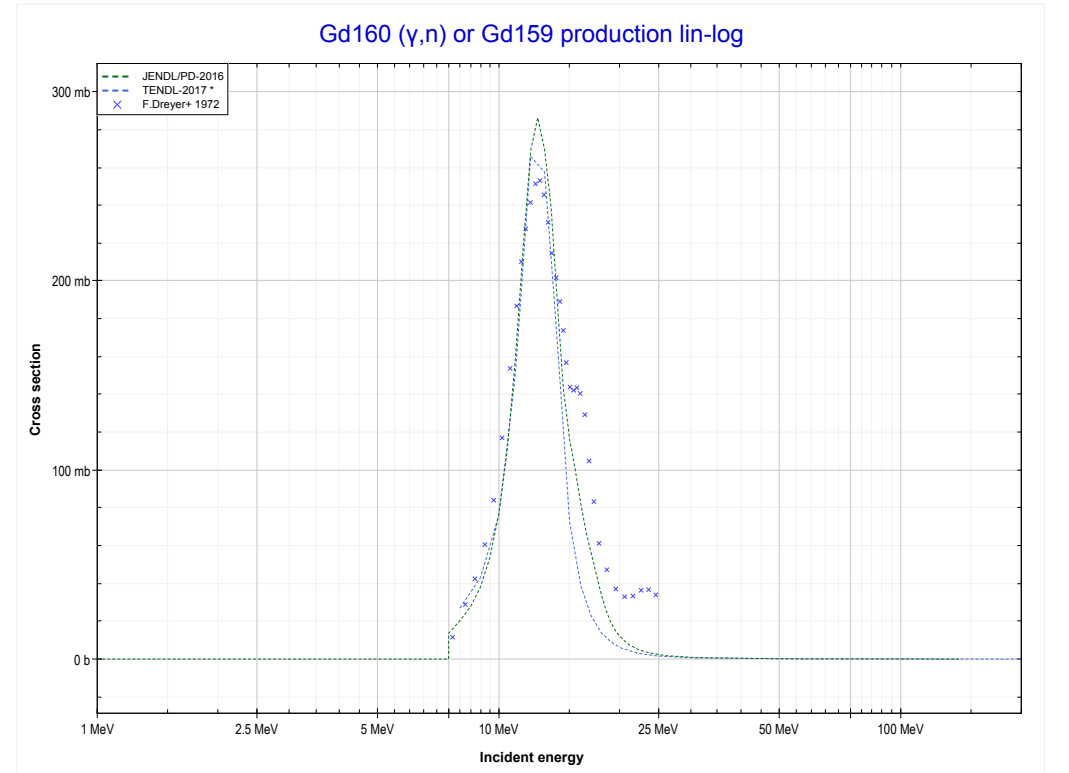
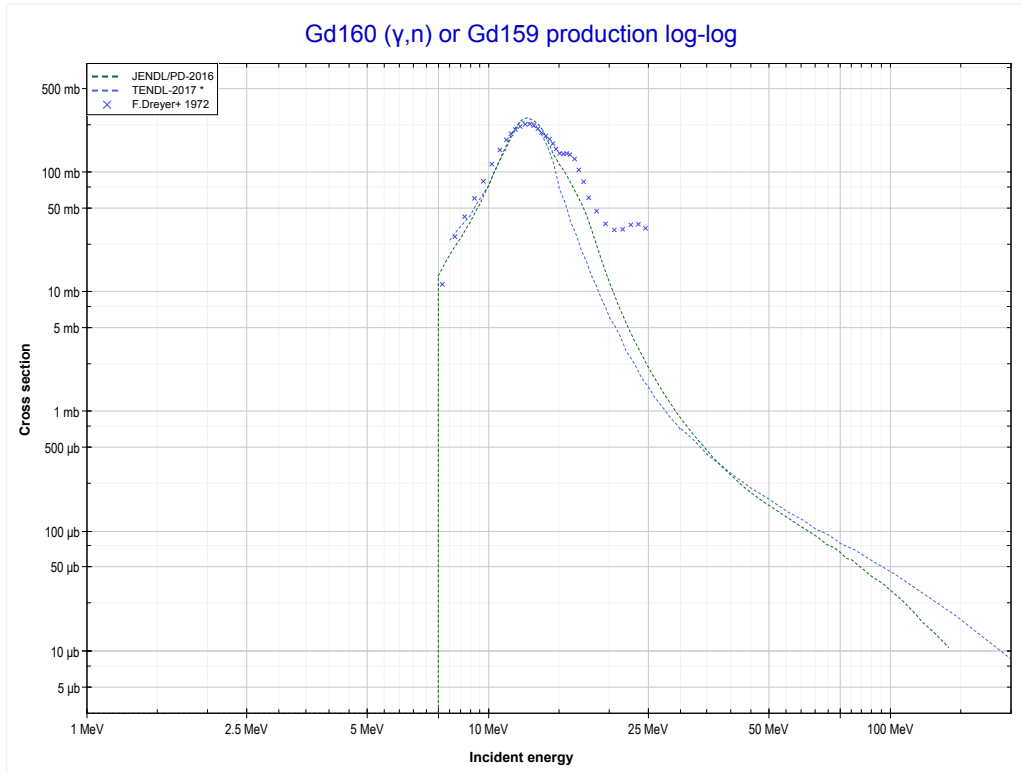
Reaction	Q-Value
Eu153(γ,n)Eu152	-8550.22 keV

<< 59-Pr-141	63-Eu-153	64-Gd-160 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Eu150 production)	64-Gd-160 MT4 (γ,n) >>



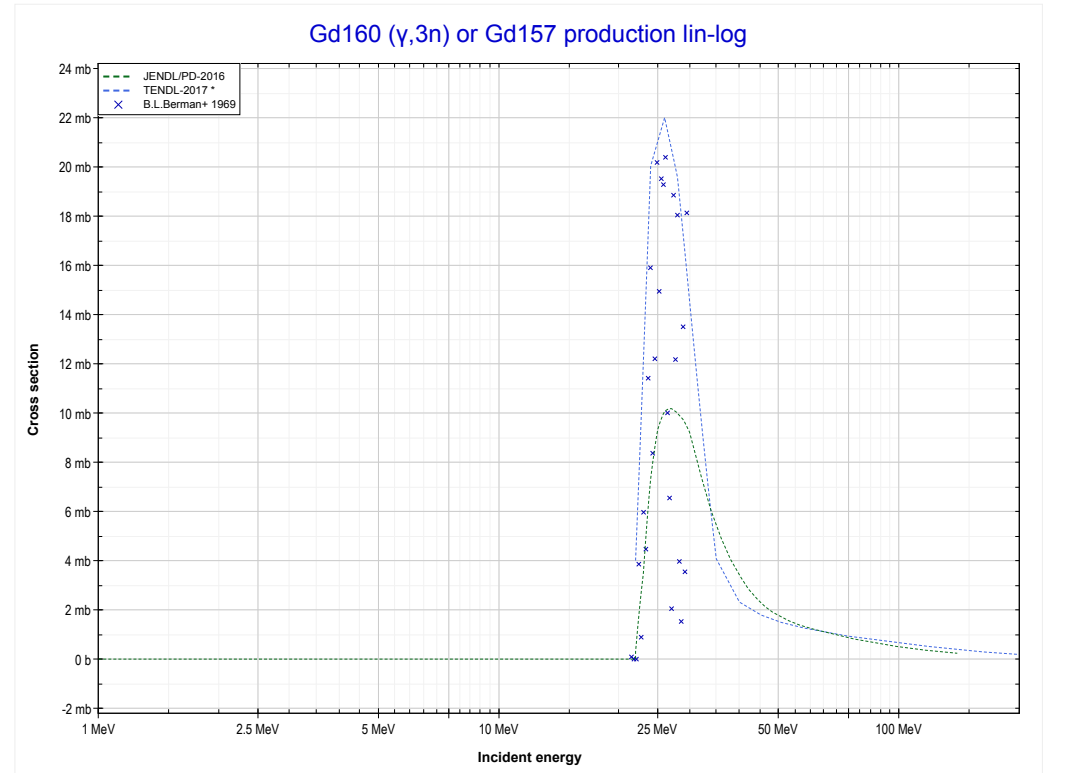
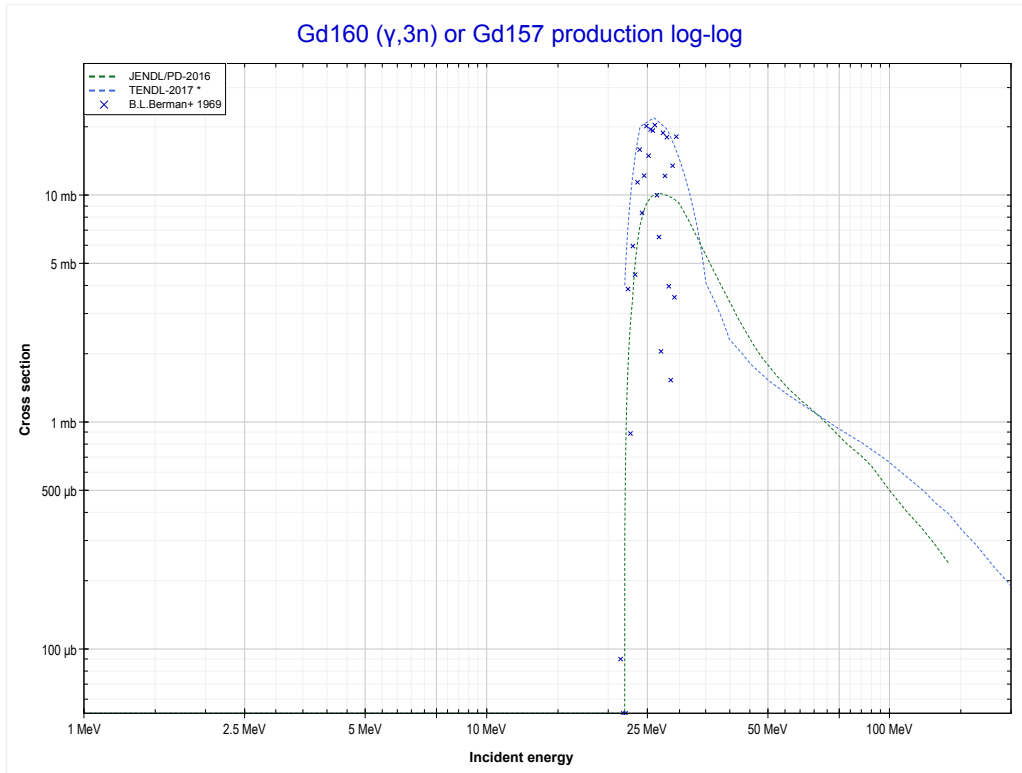
Reaction	Q-Value
Eu153($\gamma,3n$)Eu150	-22788.25 keV

<< 63-Eu-153	64-Gd-160	73-Ta-181 >>
<< 63-Eu-153 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Gd159 production)	MT17 (γ,3n) >>



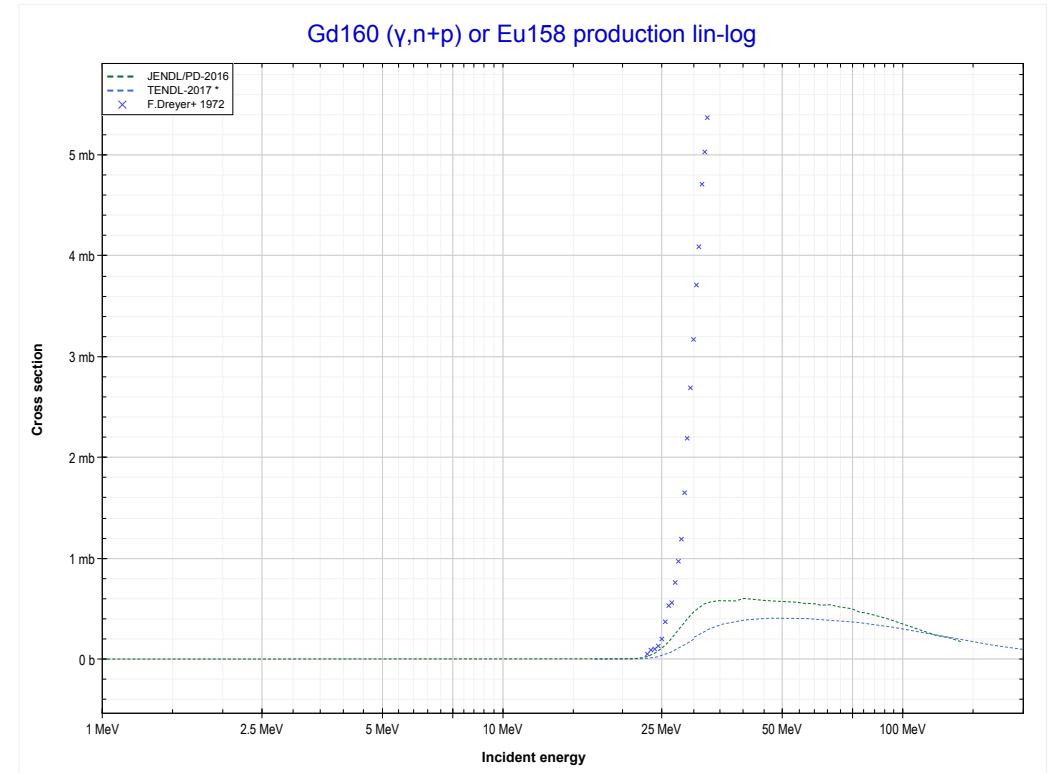
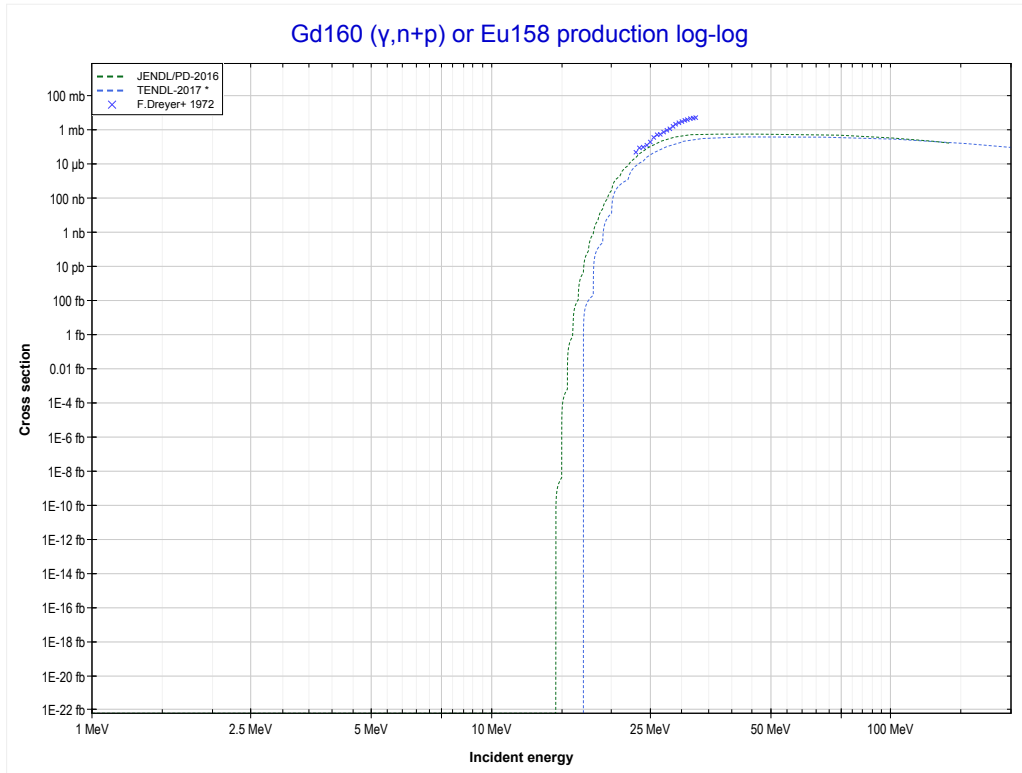
Reaction	Q-Value
Gd160(γ,n)Gd159	-7451.42 keV

<< 63-Eu-153	64-Gd-160	65-Tb-159 >>
<< MT4 (γ, n)	MT17 ($\gamma, 3n$) or MT5 (Gd157 production)	MT28 ($\gamma, n+p$) >>



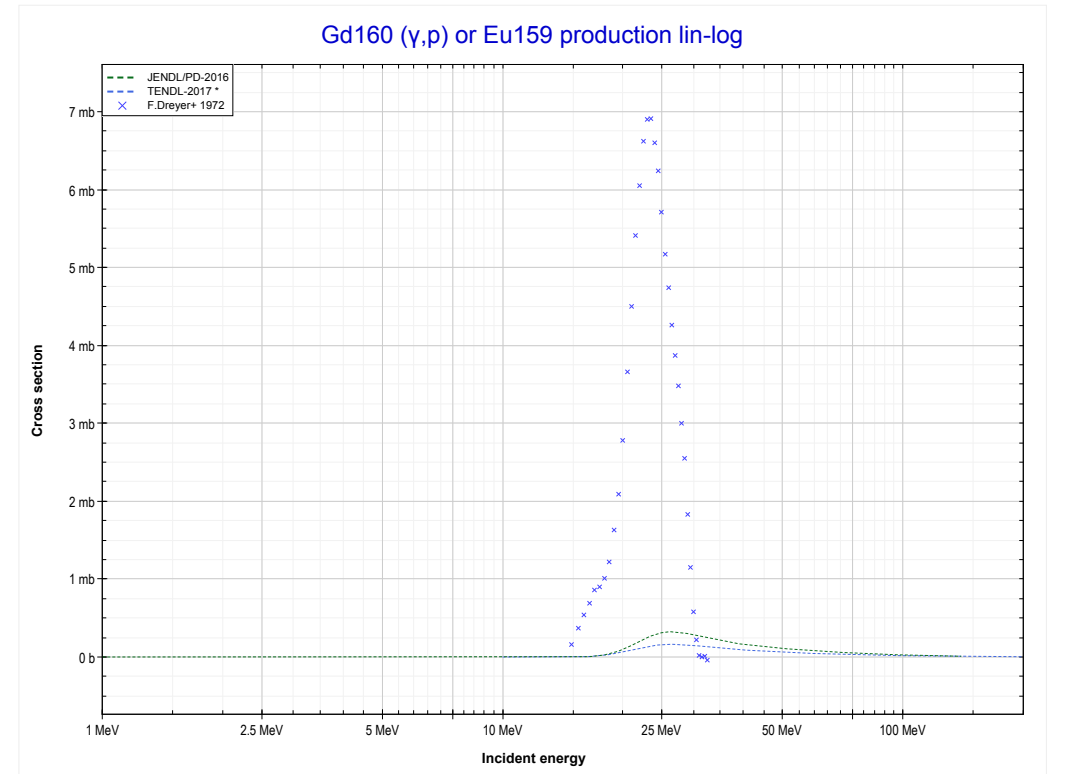
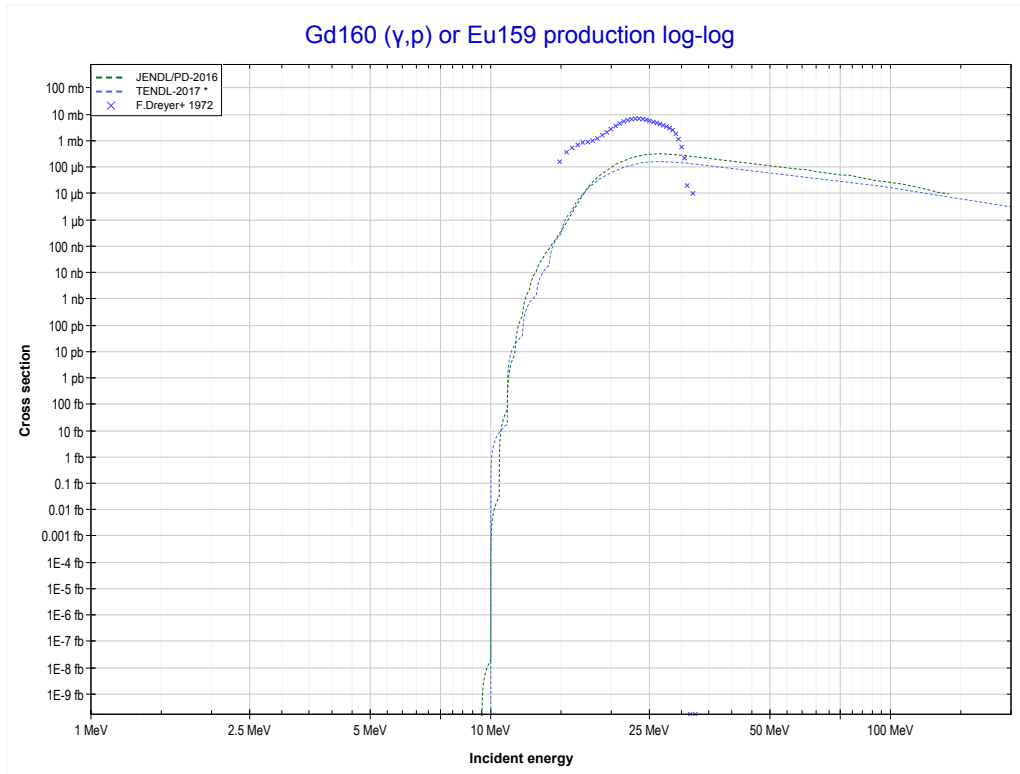
Reaction	Q-Value
Gd160($\gamma, 3n$)Gd157	-21332.05 keV

<< 30-Zn-64	64-Gd-160	
<< MT17 ($\gamma,3n$)	MT28 ($\gamma,n+p$) or MT5 (Eu158 production)	MT103 (γ,p) >>



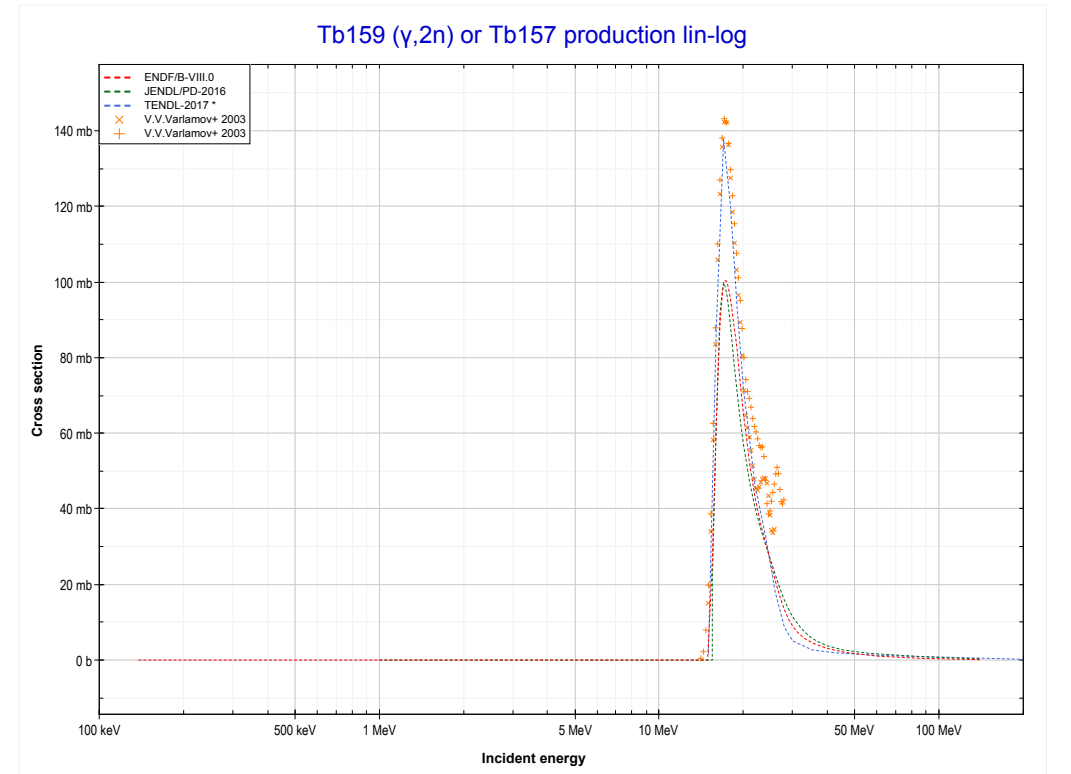
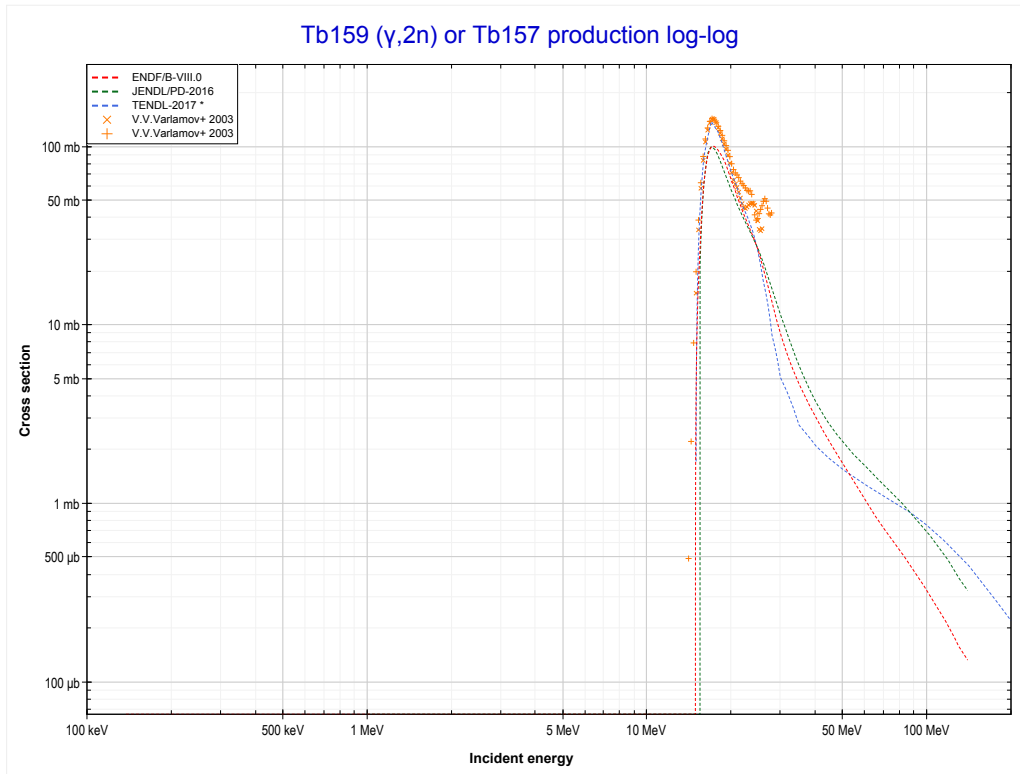
Reaction	Q-Value
Gd160(γ,d)Eu158	-13821.62 keV
Gd160($\gamma,n+p$)Eu158	-16046.19 keV

<< 46-Pd-108	64-Gd-160	
<< MT28 ($\gamma, n+p$)	MT103 (γ, p) or MT5 (Eu159 production)	65-Tb-159 MT16 ($\gamma, 2n$) >>



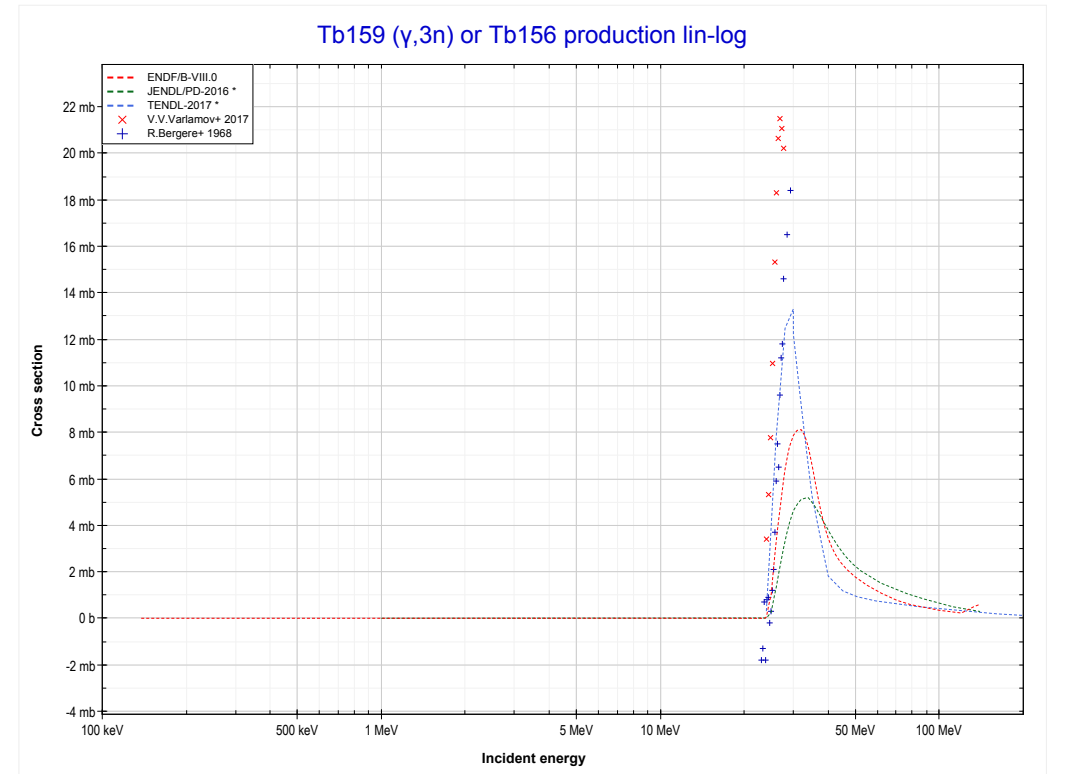
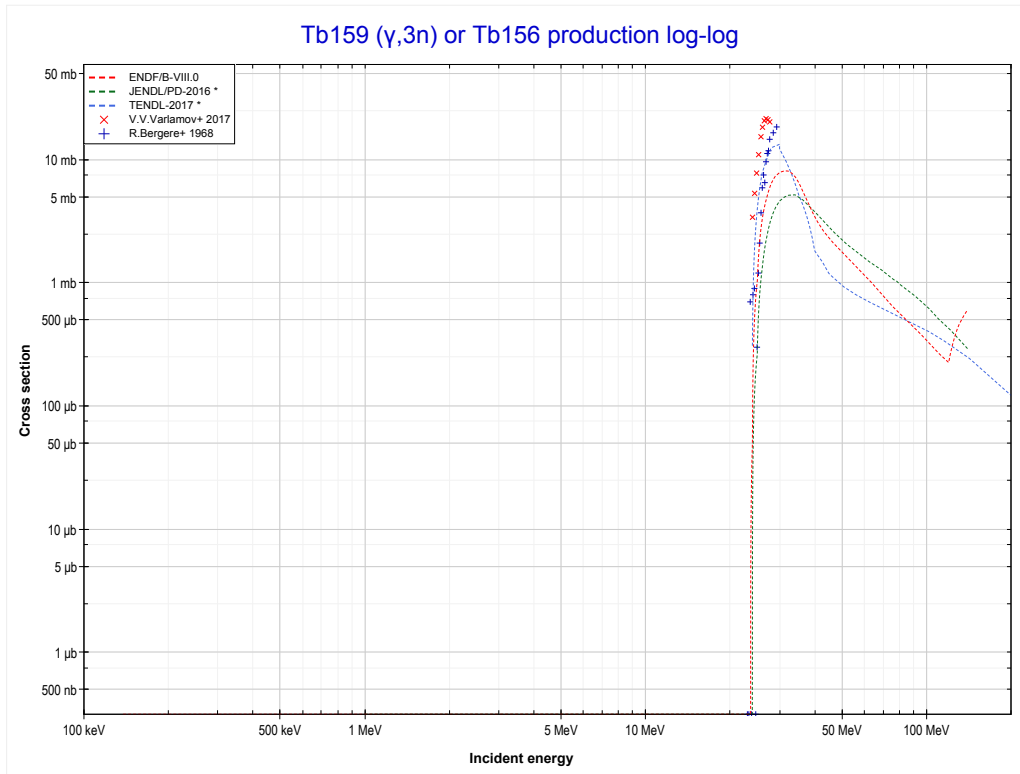
Reaction	Q-Value
Gd160(γ, p)Eu159	-9186.87 keV

<< 62-Sm-154	65-Tb-159	67-Ho-165 >>
<< 64-Gd-160 MT103 (γ,p)	MT16 (γ,2n) or MT5 (Tb157 production)	MT17 (γ,3n) >>



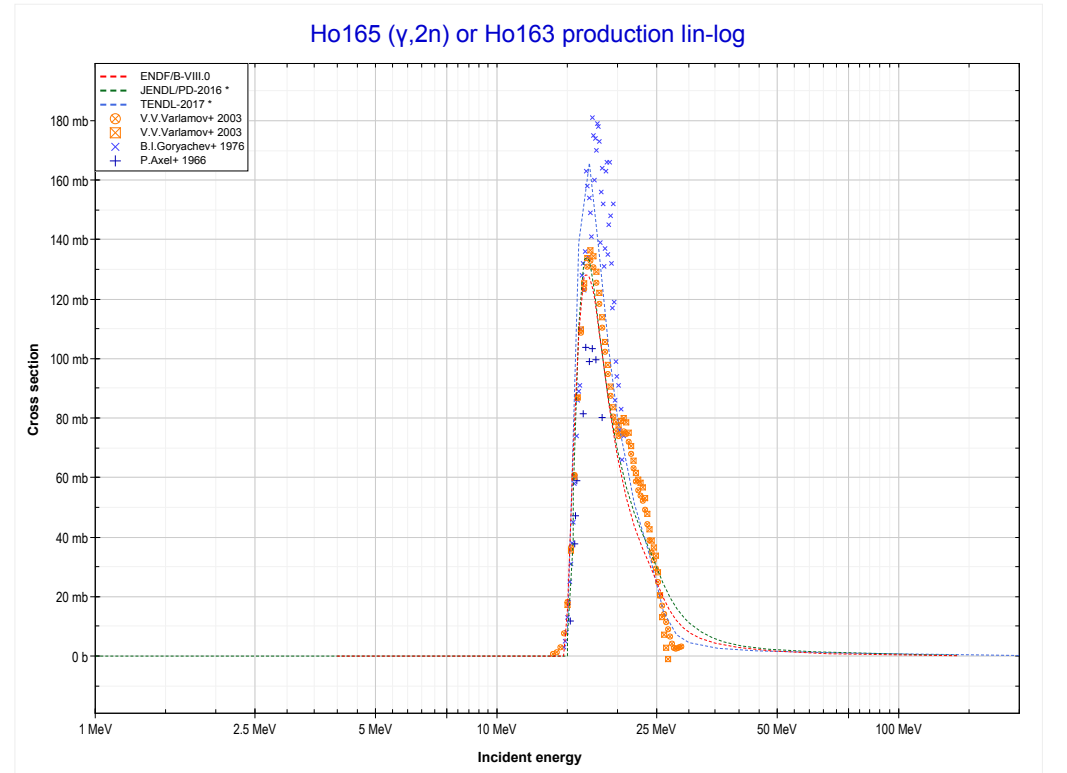
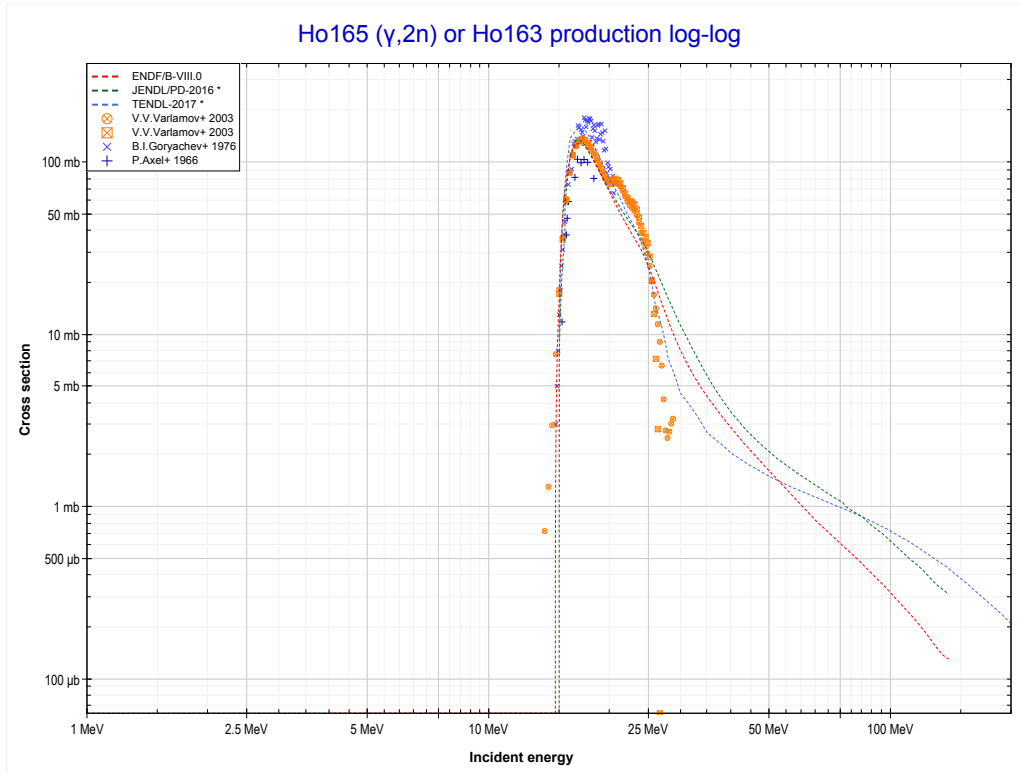
Reaction	Q-Value
Tb159(γ,2n)Tb157	-14911.43 keV

<< 64-Gd-160	65-Tb-159	67-Ho-165 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Tb156 production)	67-Ho-165 MT16 ($\gamma,2n$) >>



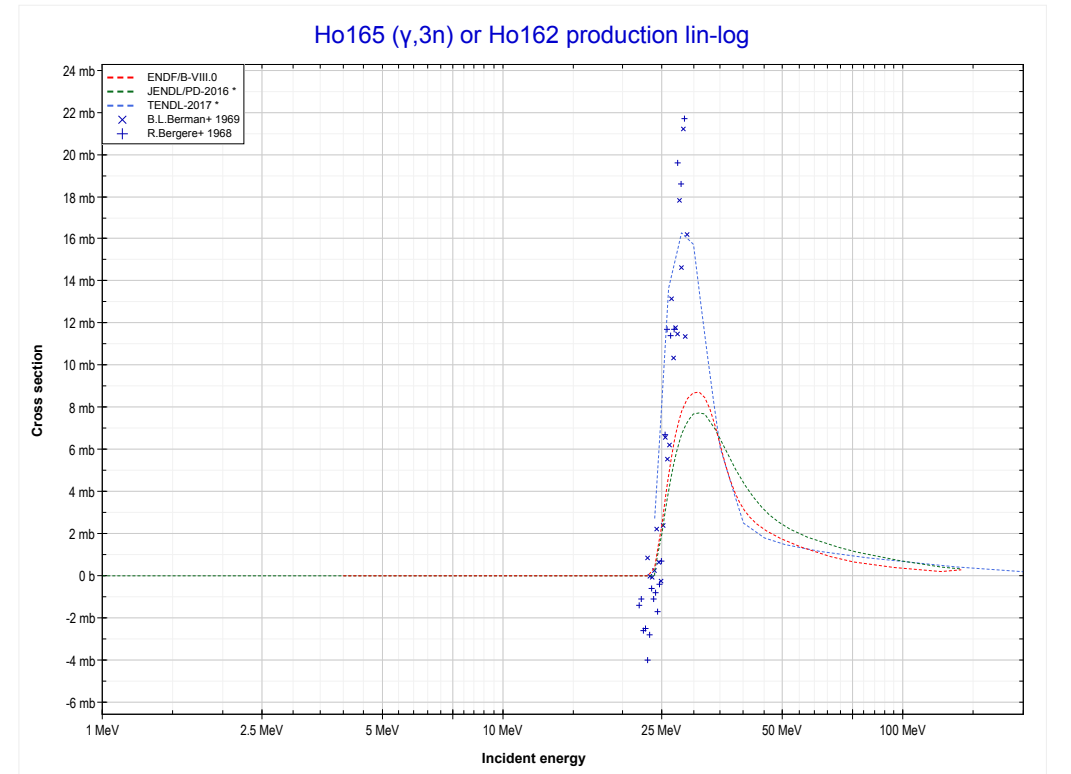
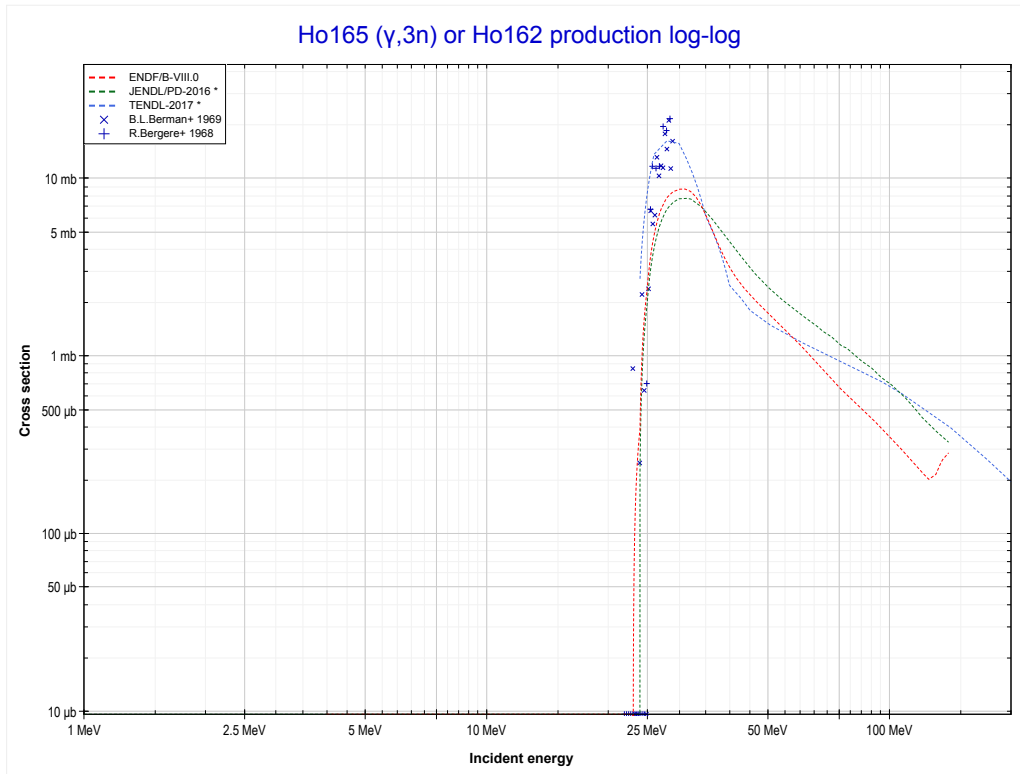
Reaction	Q-Value
Tb159($\gamma,3n$)Tb156	-23655.55 keV

<< 65-Tb-159	67-Ho-165	68-Er-166 >>
<< 65-Tb-159 MT17 ($\gamma,3n$)	MT16 ($\gamma,2n$) or MT5 (Ho163 production)	MT17 ($\gamma,3n$) >>



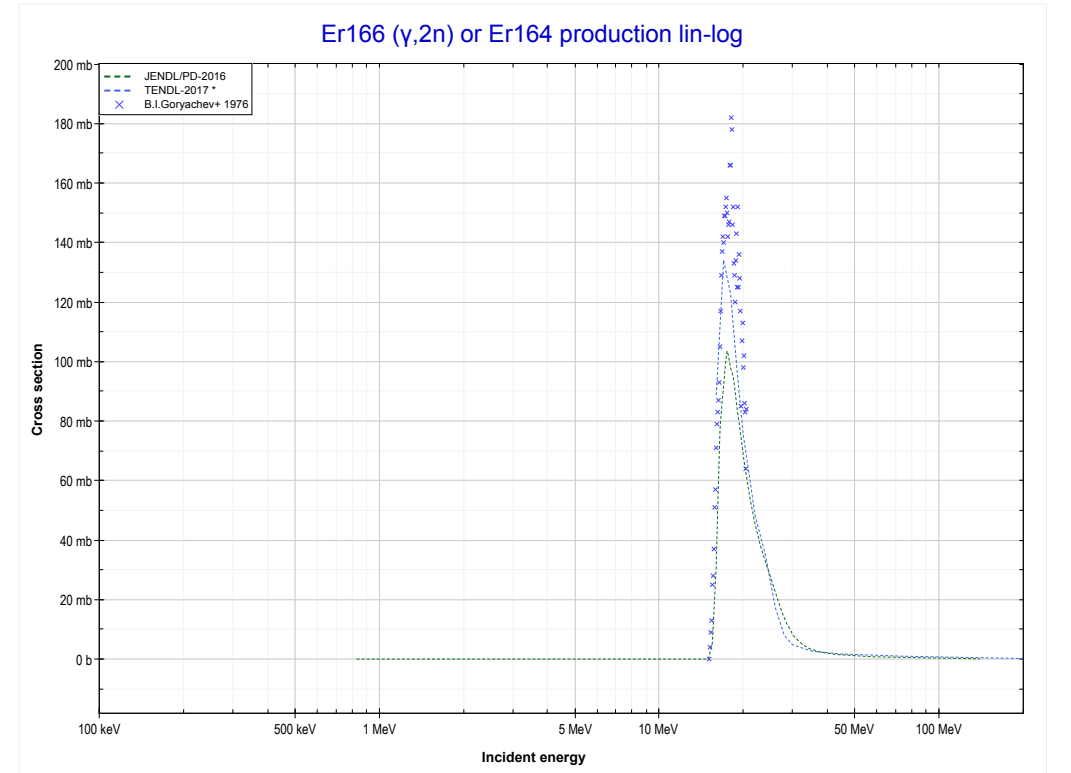
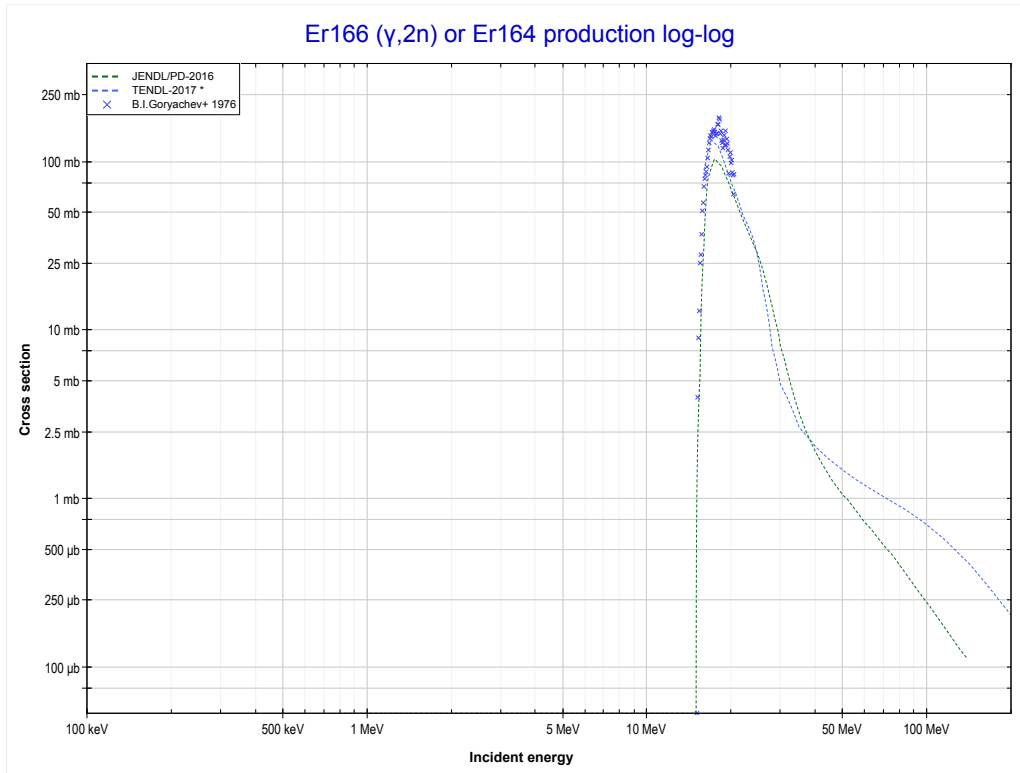
Reaction	Q-Value
Ho165($\gamma,2n$)Ho163	-14663.63 keV

<< 65-Tb-159	67-Ho-165	71-Lu-175 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Ho162 production)	68-Er-166 MT16 ($\gamma,2n$) >>



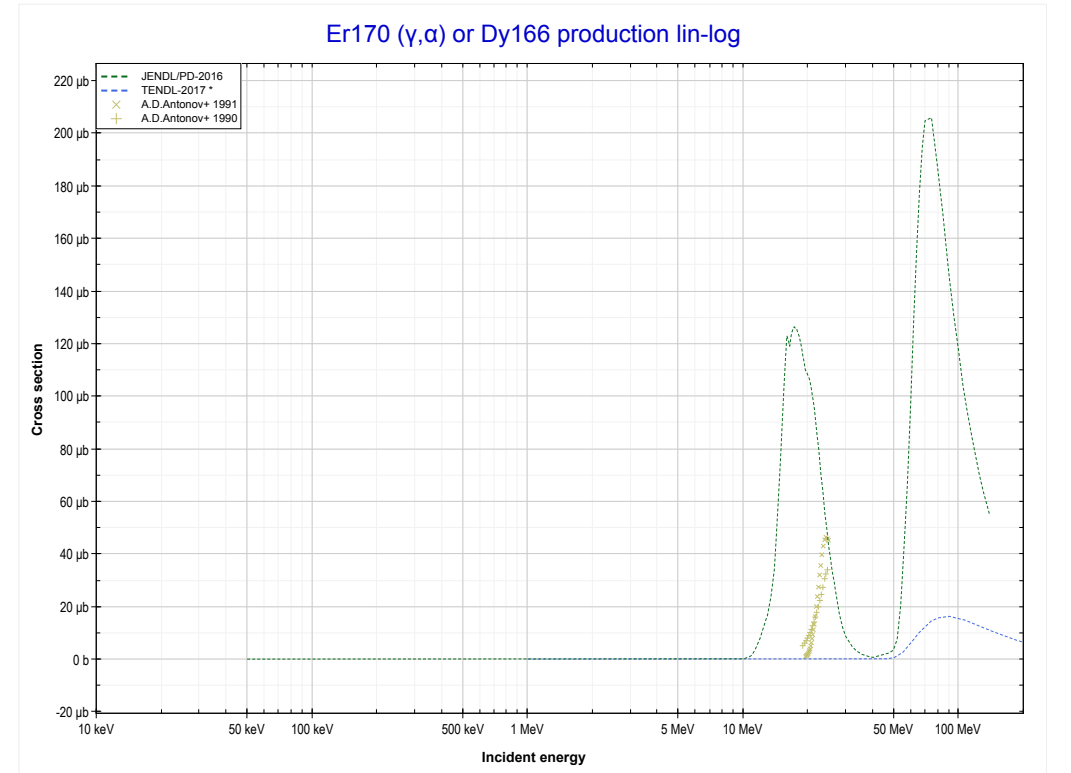
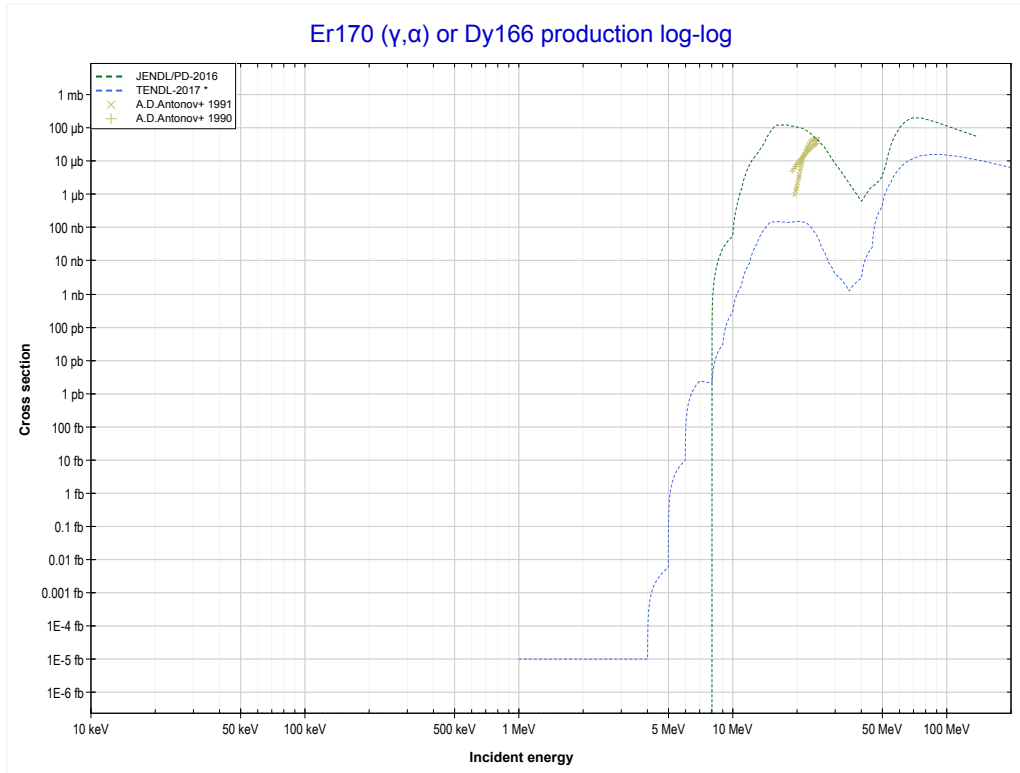
Reaction	Q-Value
Ho165($\gamma,3n$)Ho162	-23071.25 keV

<< 67-Ho-165	68-Er-166	72-Hf-178 >>
<< 67-Ho-165 MT17 ($\gamma,3n$)	MT16 ($\gamma,2n$) or MT5 (Er164 production)	68-Er-170 MT107 (γ,α) >>



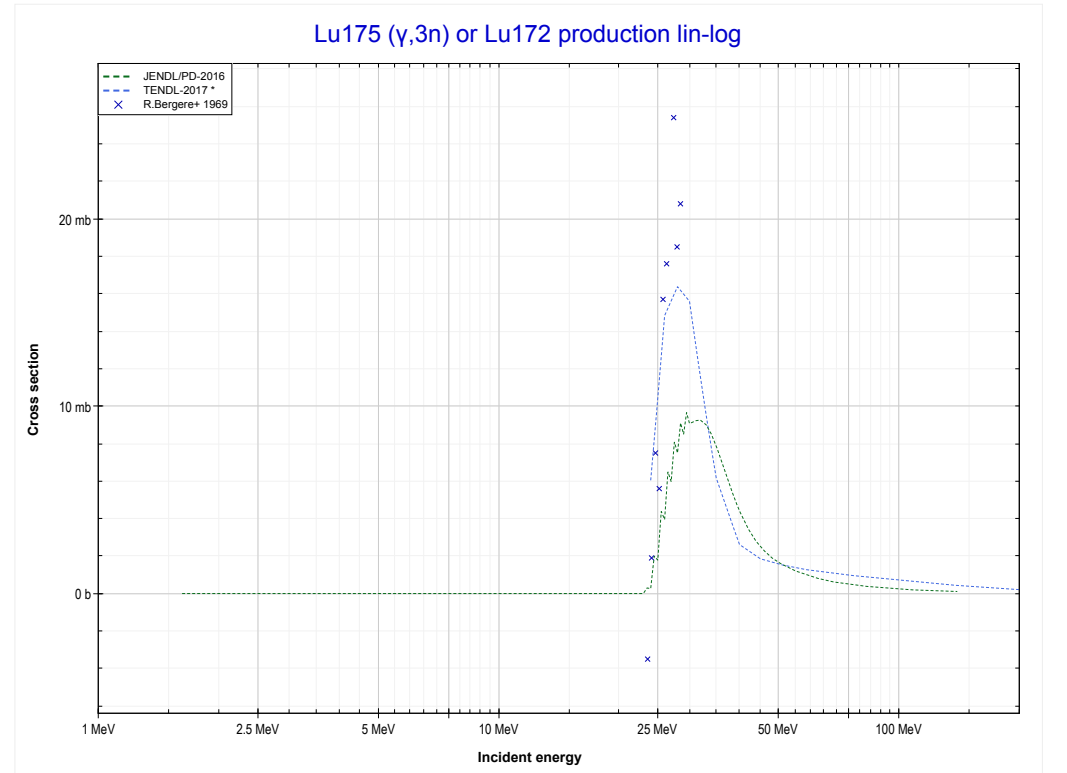
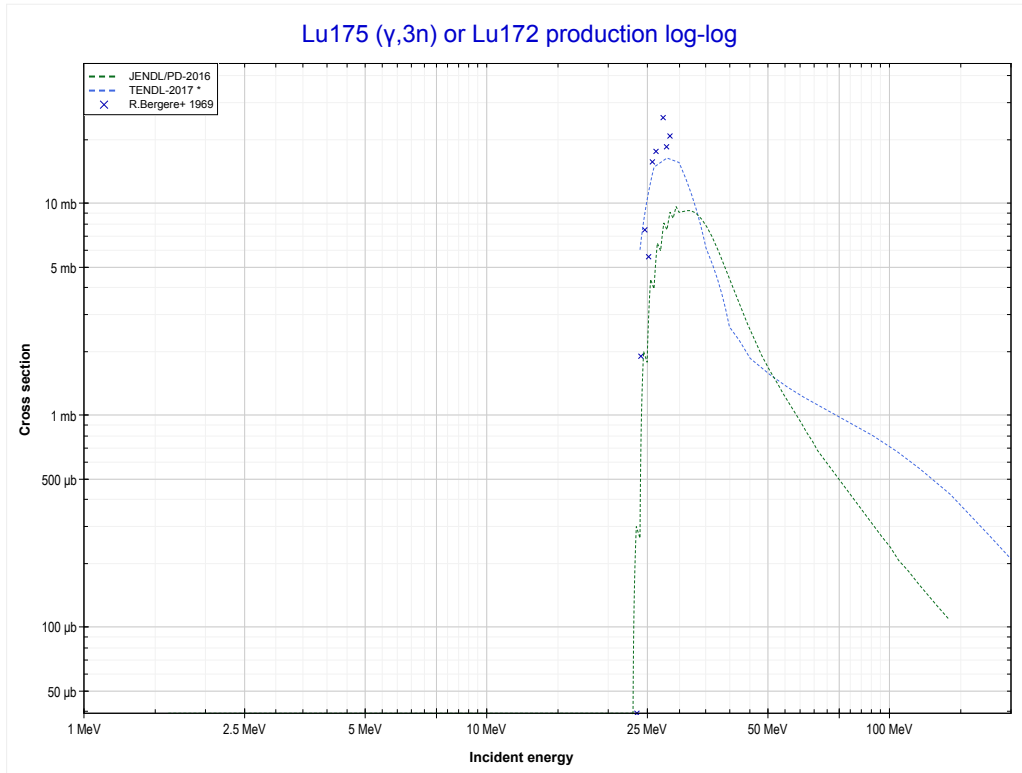
Reaction	Q-Value
Er166($\gamma,2n$)Er164	-15126.63 keV

<< 41-Nb-93	68-Er-170	
<< 68-Er-166 MT16 ($\gamma,2n$)	MT107 (γ,α) or MT5 (Dy166 production)	71-Lu-175 MT17 ($\gamma,3n$) >>



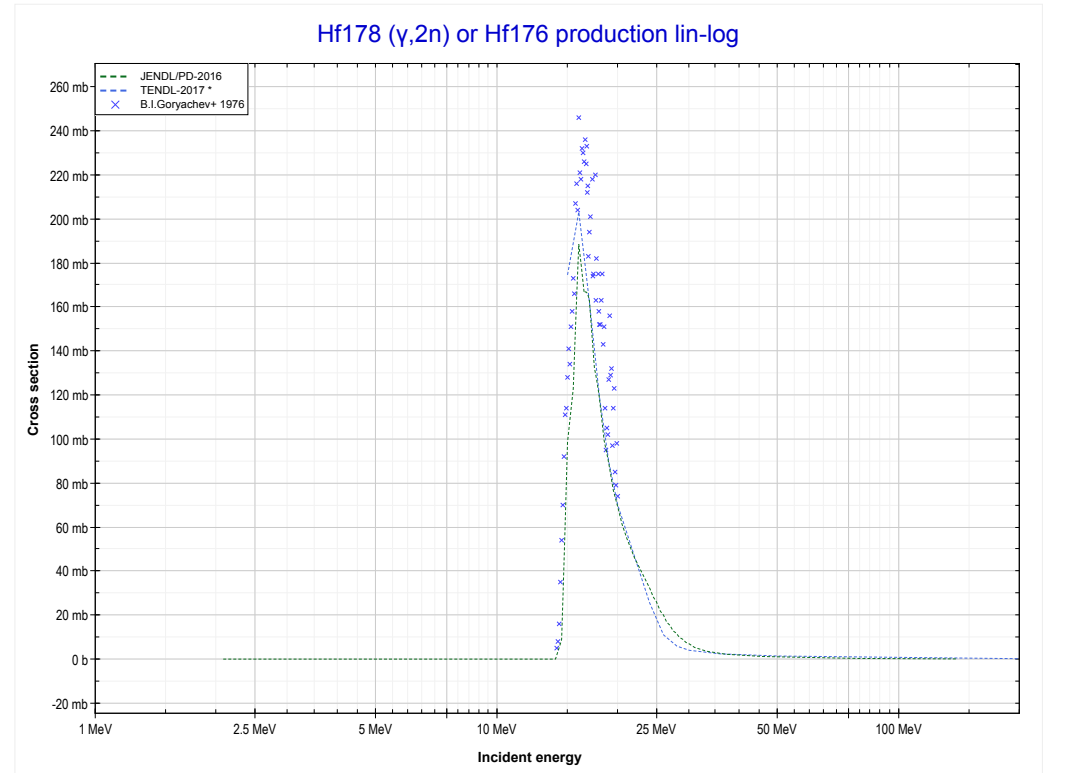
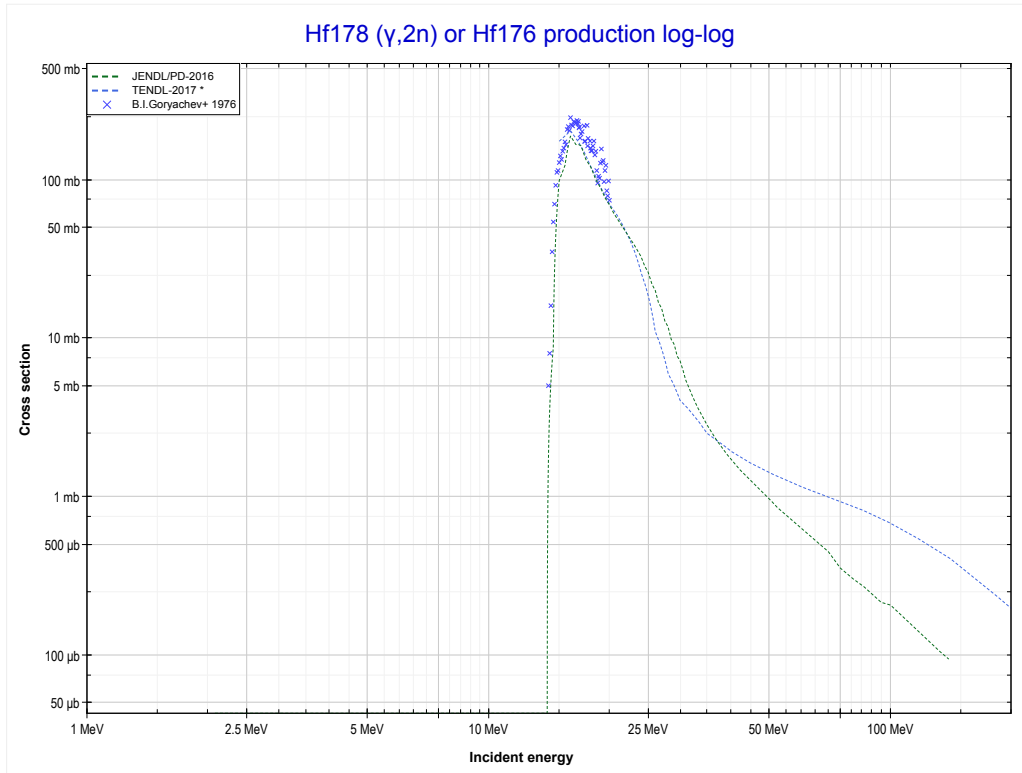
Reaction	Q-Value
Er170(γ,α)Dy166	49.48 keV
Er170($\gamma,p+t$)Dy166	-19764.38 keV
Er170($\gamma,n+He3$)Dy166	-20528.13 keV
Er170($\gamma,2d$)Dy166	-23797.04 keV
Er170($\gamma,n+p+d$)Dy166	-26021.61 keV
Er170($\gamma,2n+2p$)Dy166	-28246.18 keV

<< 67-Ho-165	71-Lu-175	73-Ta-181 >>
<< 68-Er-170 MT107 (γ, α)	MT17 ($\gamma, 3n$) or MT5 (Lu172 production)	72-Hf-178 MT16 ($\gamma, 2n$) >>



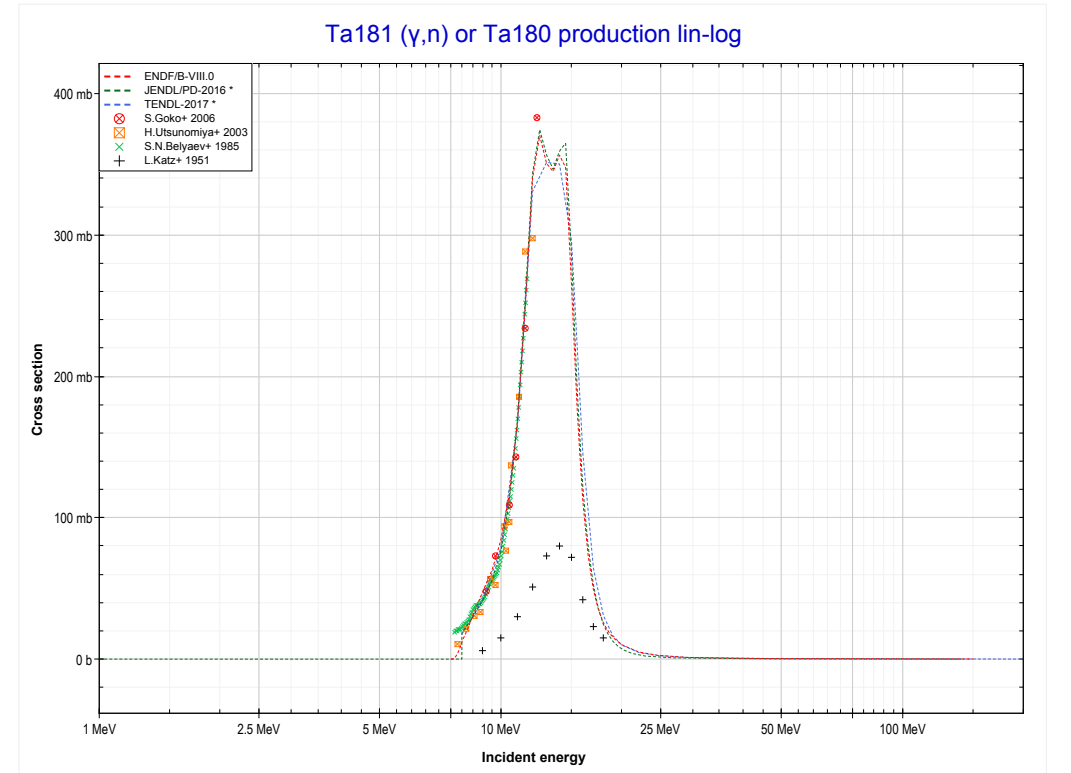
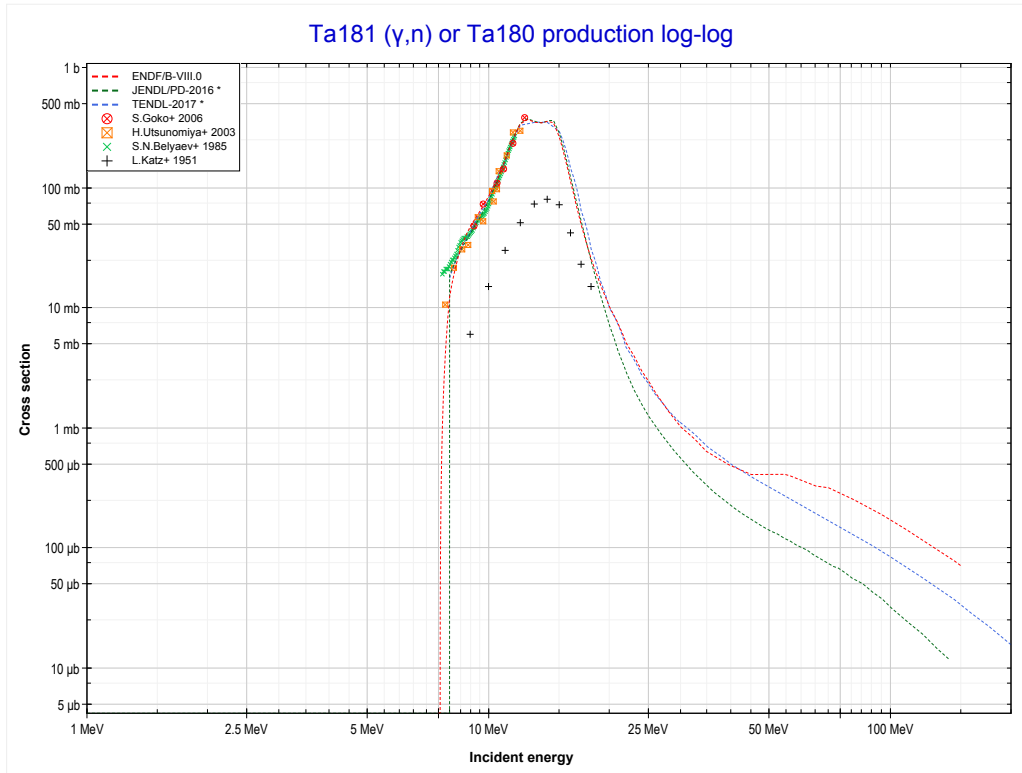
Reaction	Q-Value
Lu175($\gamma, 3n$)Lu172	-22643.45 keV

<< 68-Er-166	72-Hf-178	73-Ta-181 >>
<< 71-Lu-175 MT17 (γ,3n)	MT16 (γ,2n) or MT5 (Hf176 production)	73-Ta-181 MT4 (γ,n) >>



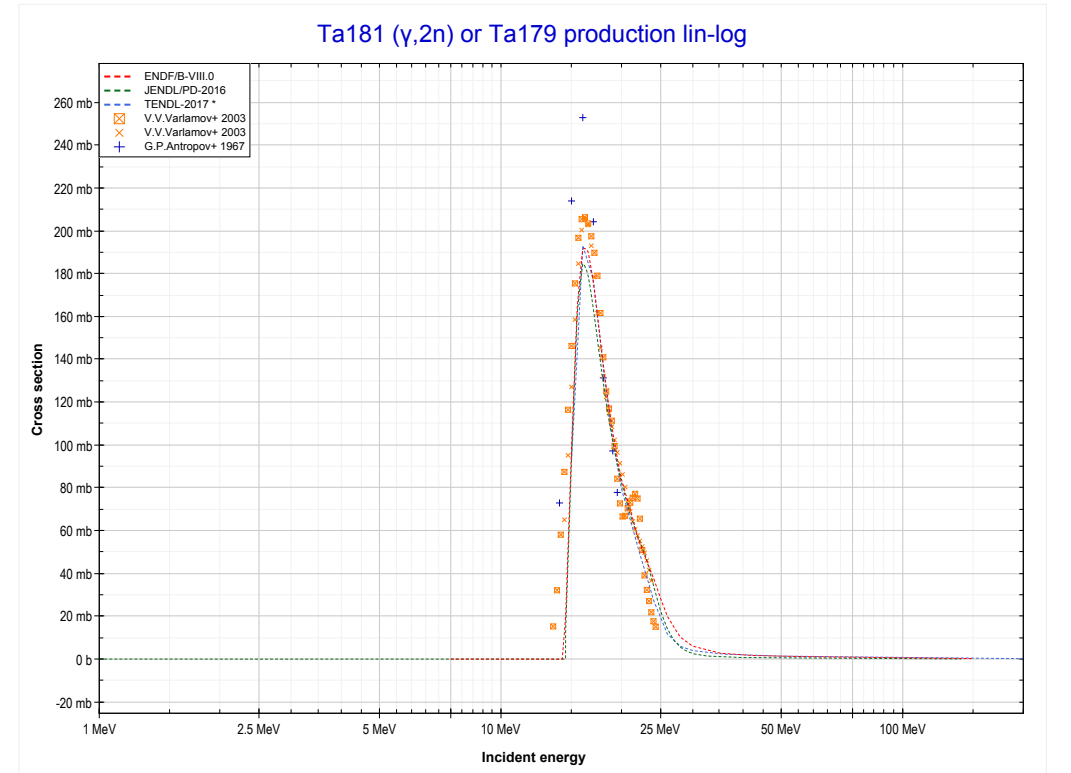
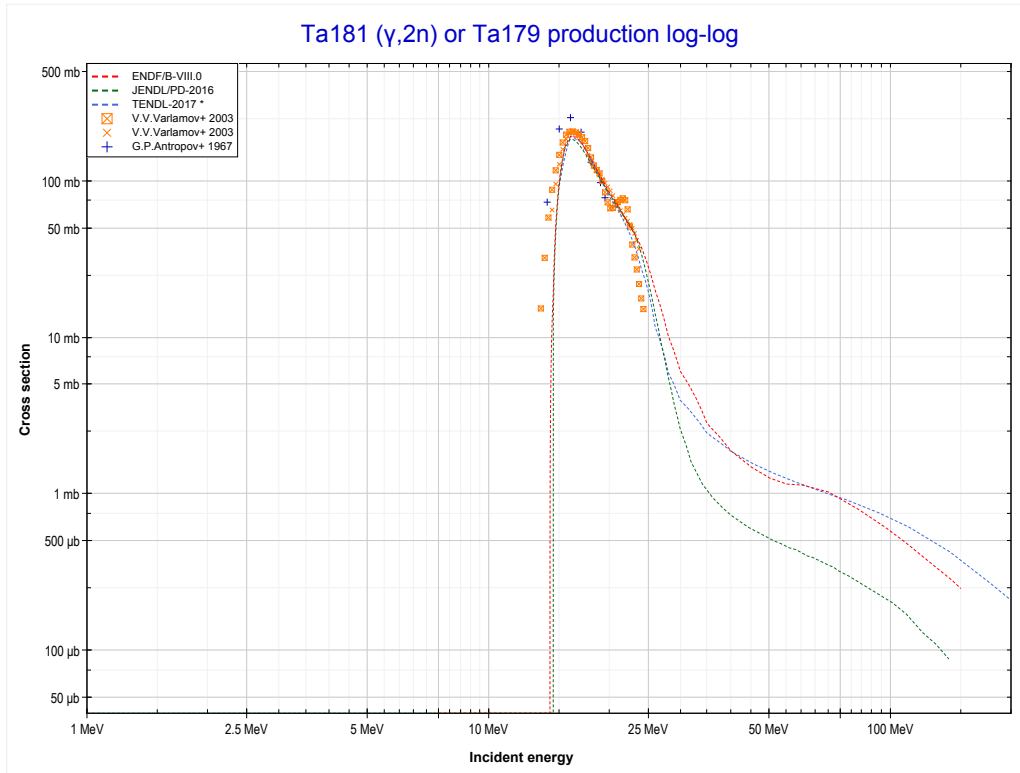
Reaction	Q-Value
Hf178(γ,2n)Hf176	-14001.93 keV

<< 64-Gd-160	73-Ta-181	74-W-186 >>
<< 72-Hf-178 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Ta180 production)	MT16 ($\gamma,2n$) >>



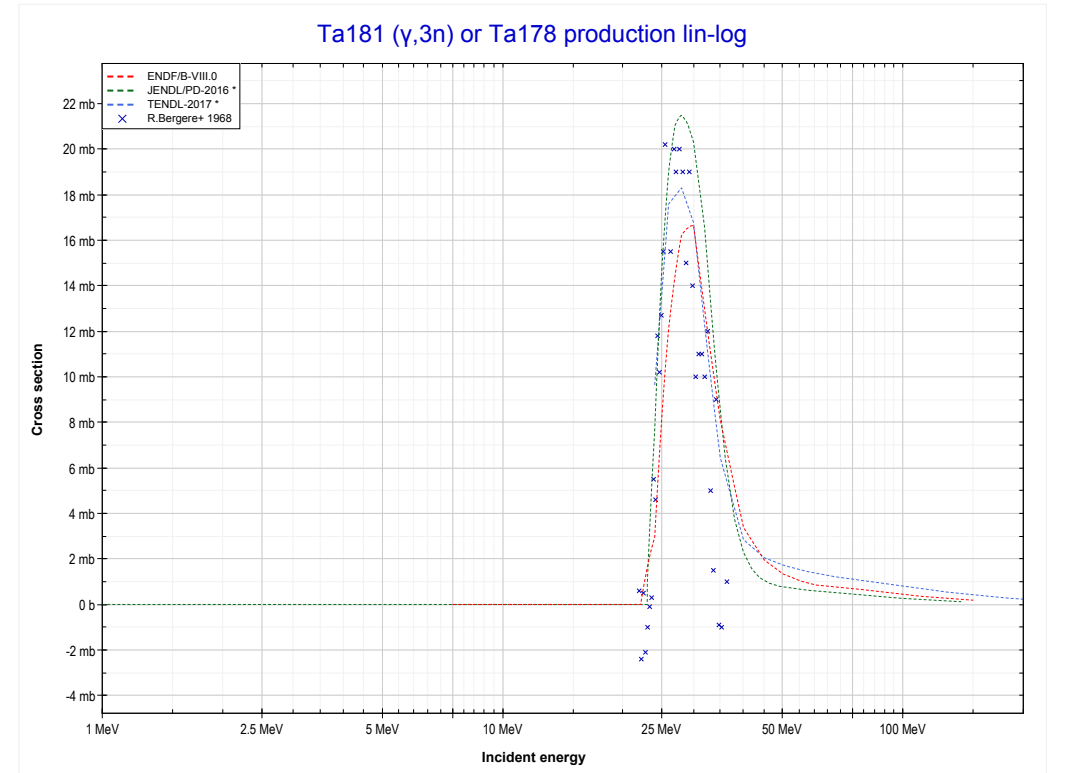
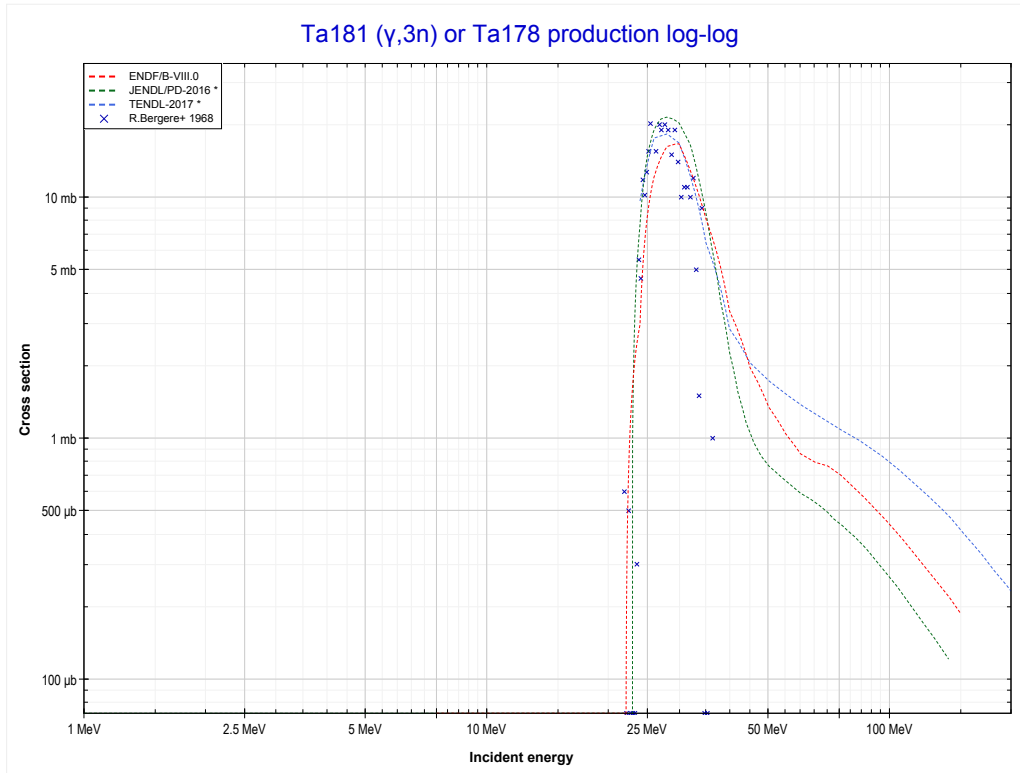
Reaction	Q-Value
Ta181(γ,n)Ta180	-7576.72 keV

<< 72-Hf-178	73-Ta-181	76-Os-186 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Ta179 production)	MT17 ($\gamma, 3n$) >>



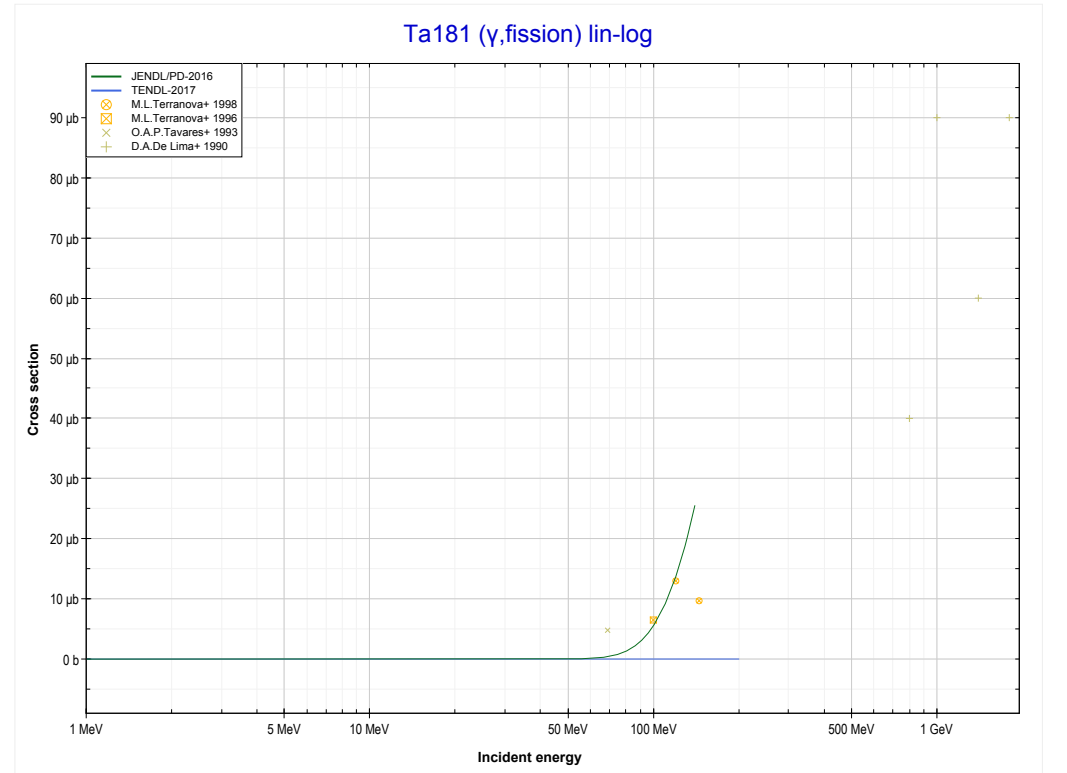
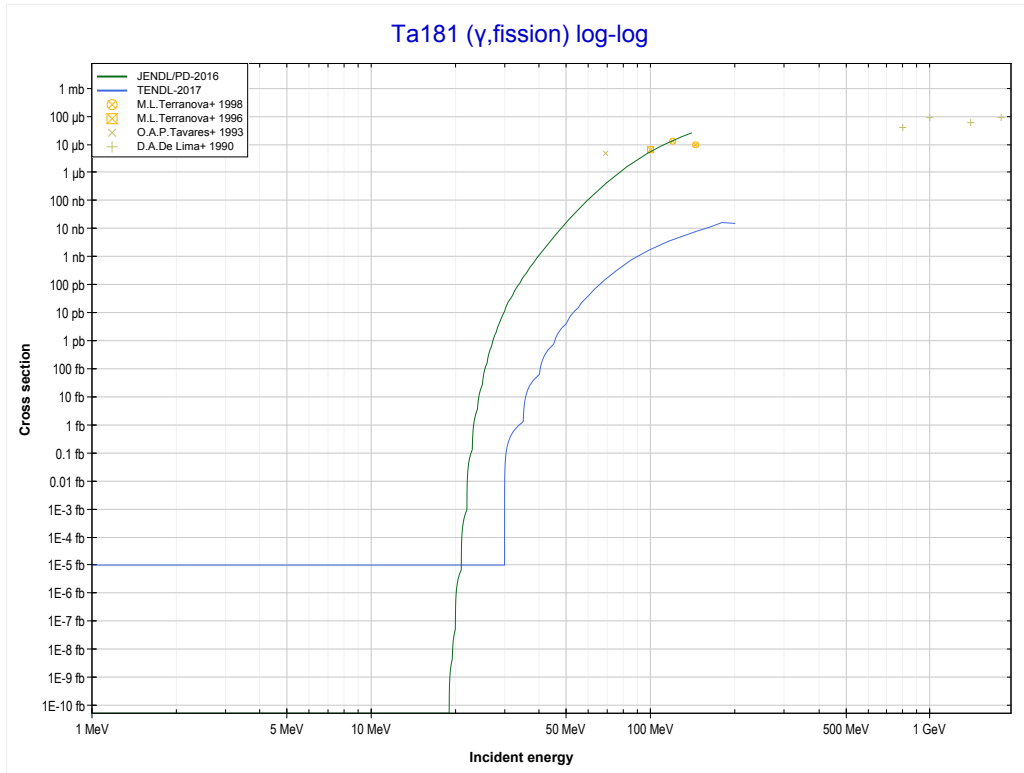
Reaction	Q-Value
Ta181($\gamma, 2n$)Ta179	-14224.43 keV

<< 71-Lu-175	73-Ta-181	74-W-186 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Ta178 production)	MT18 (γ ,fission) >>

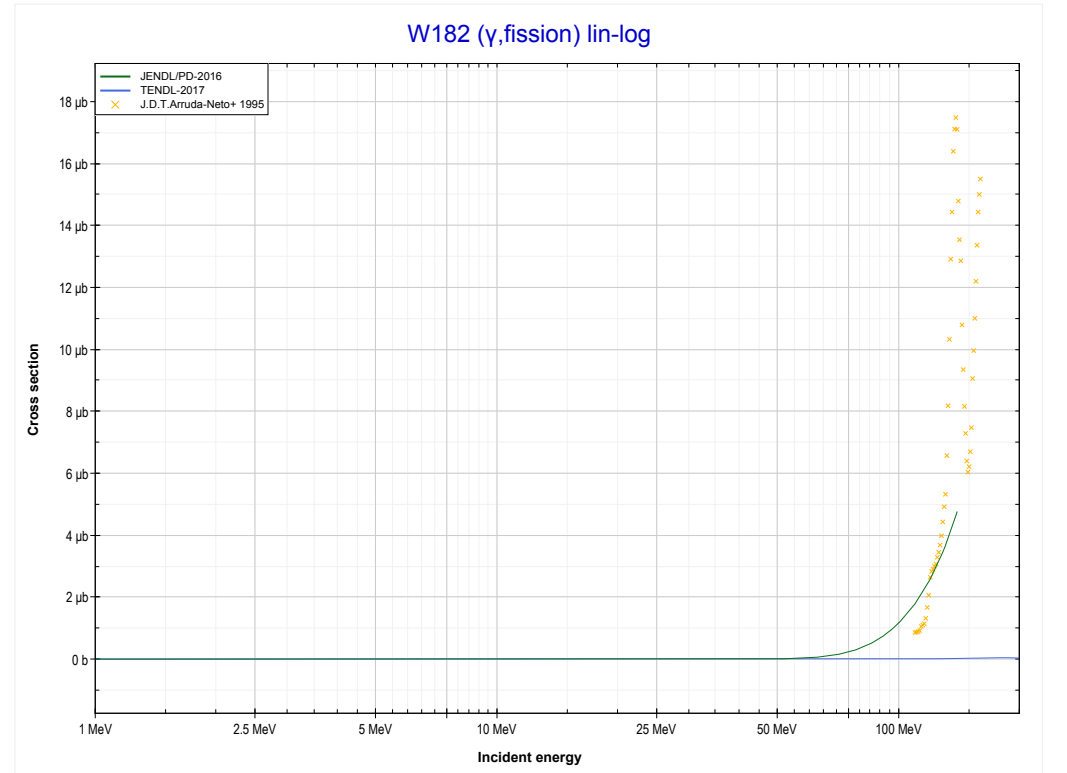
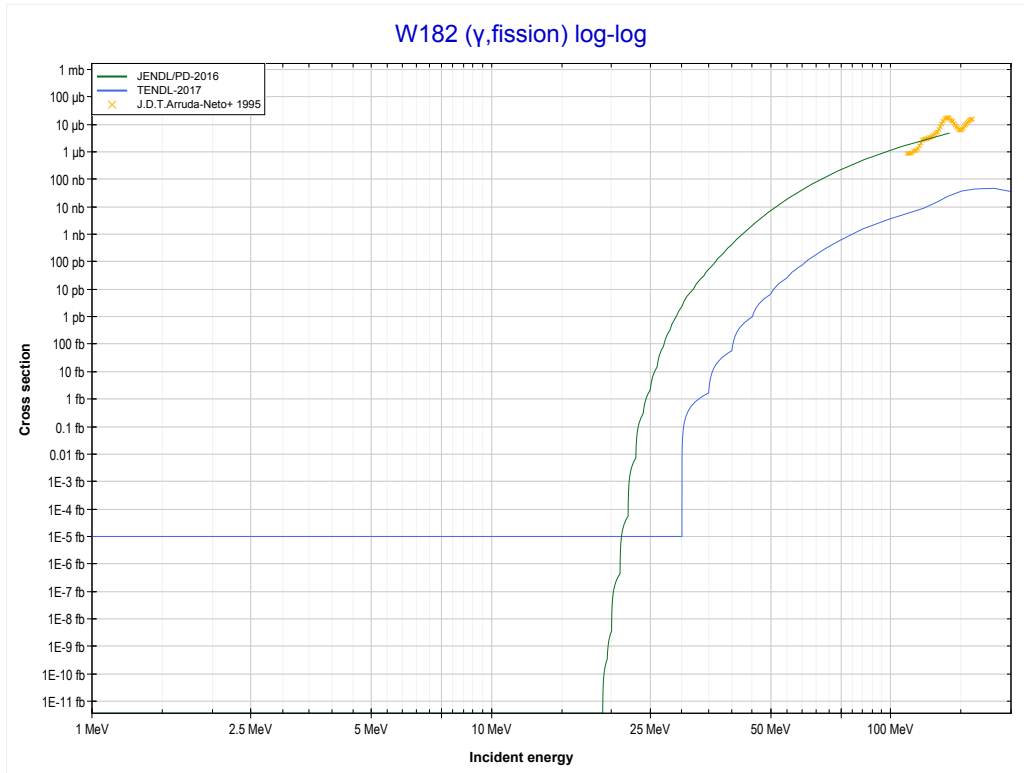


Reaction	Q-Value
Ta181($\gamma,3n$)Ta178	-22055.55 keV

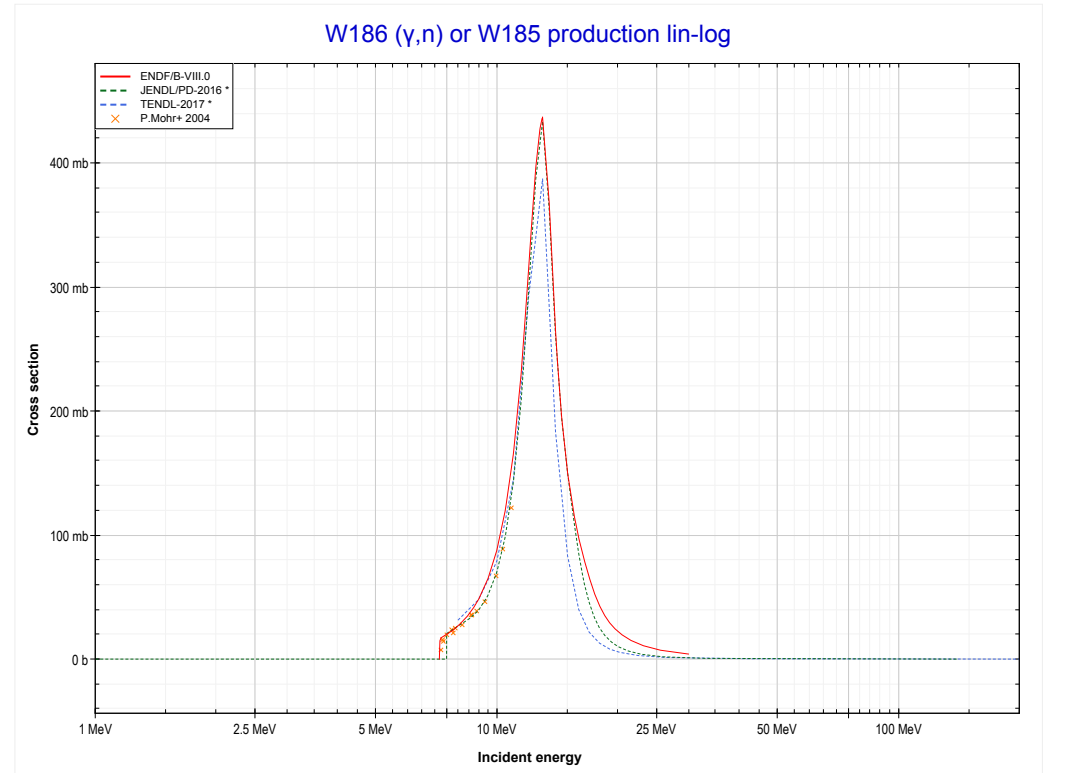
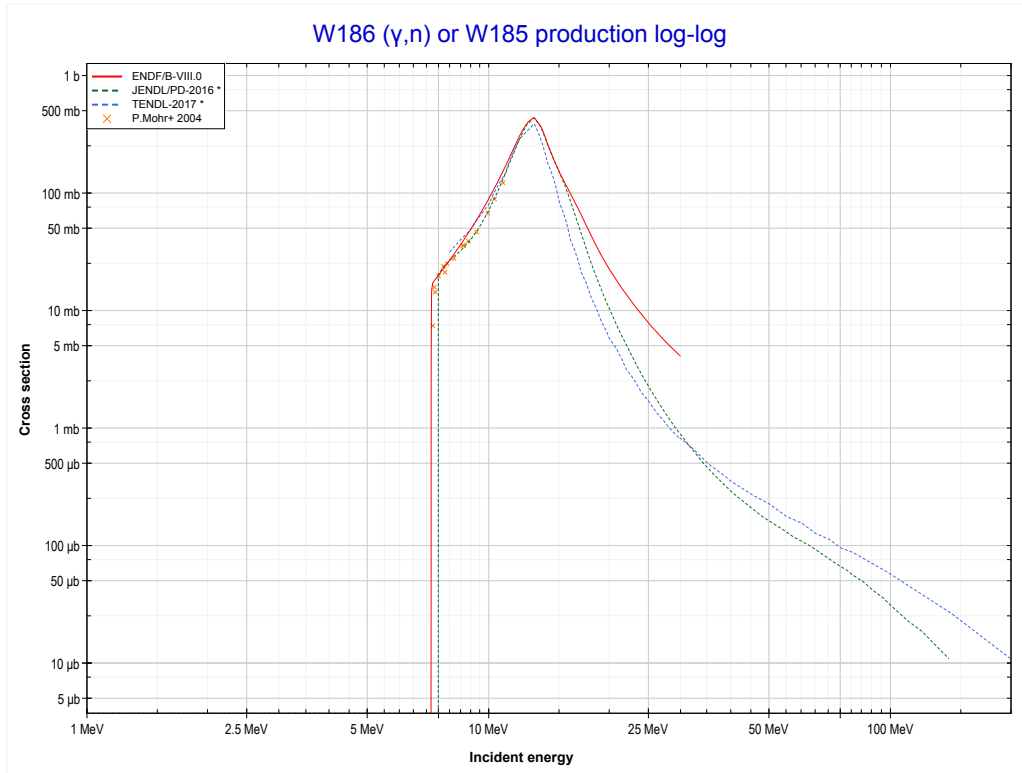
	73-Ta-181	74-W-182 >>
<< MT17 ($\gamma,3n$)	MT18 (γ,fission)	74-W-182 MT18 (γ,fission) >>



<< 73-Ta-181	74-W-182	79-Au-197 >>
<< 73-Ta-181 MT18 (γ ,fission)	MT18 (γ,fission)	74-W-186 MT4 (γ ,n) >>

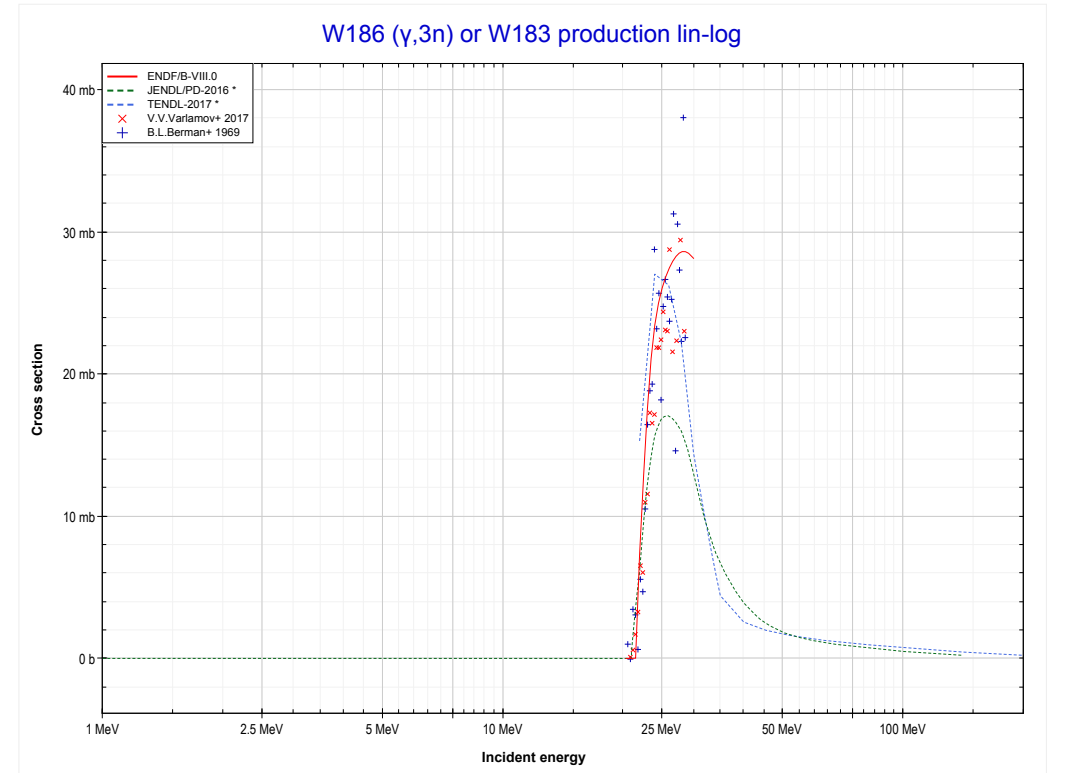
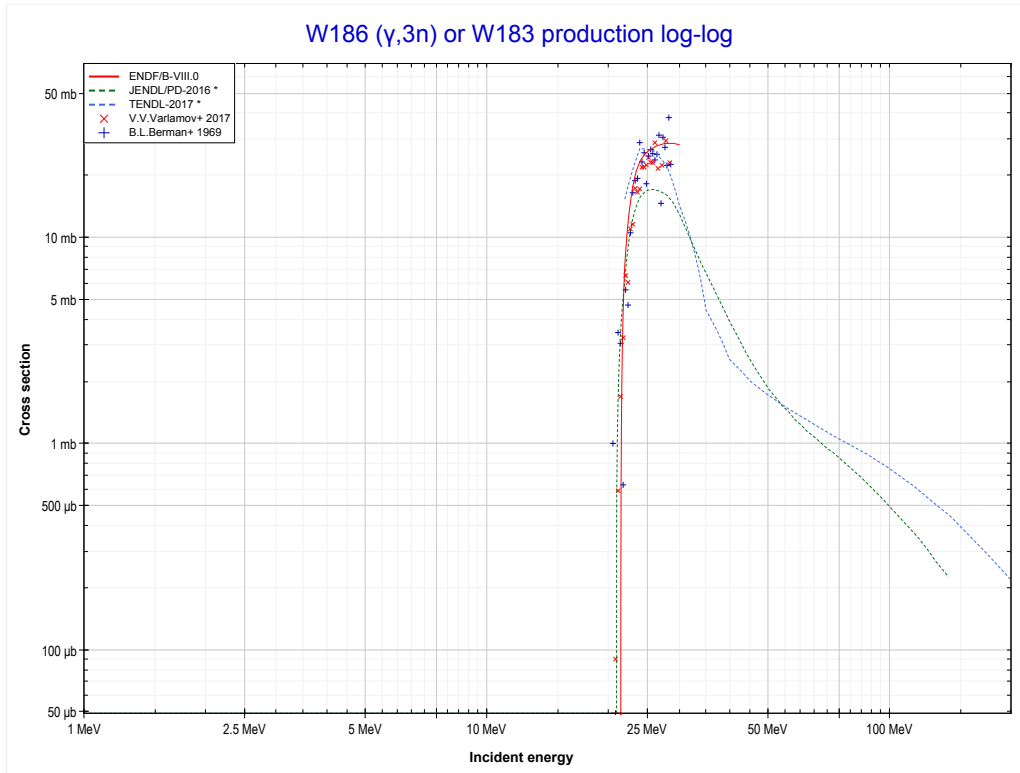


<< 73-Ta-181	74-W-186	75-Re-187 >>
<< 74-W-182 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (W185 production)	MT17 (γ ,3n) >>



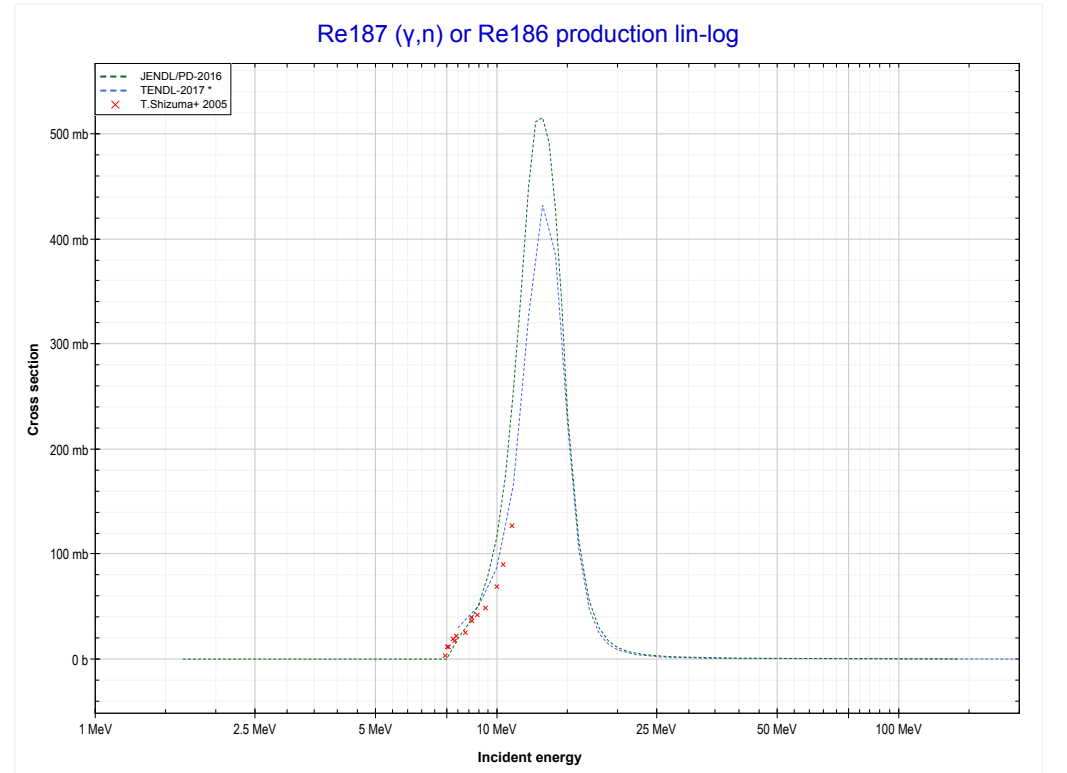
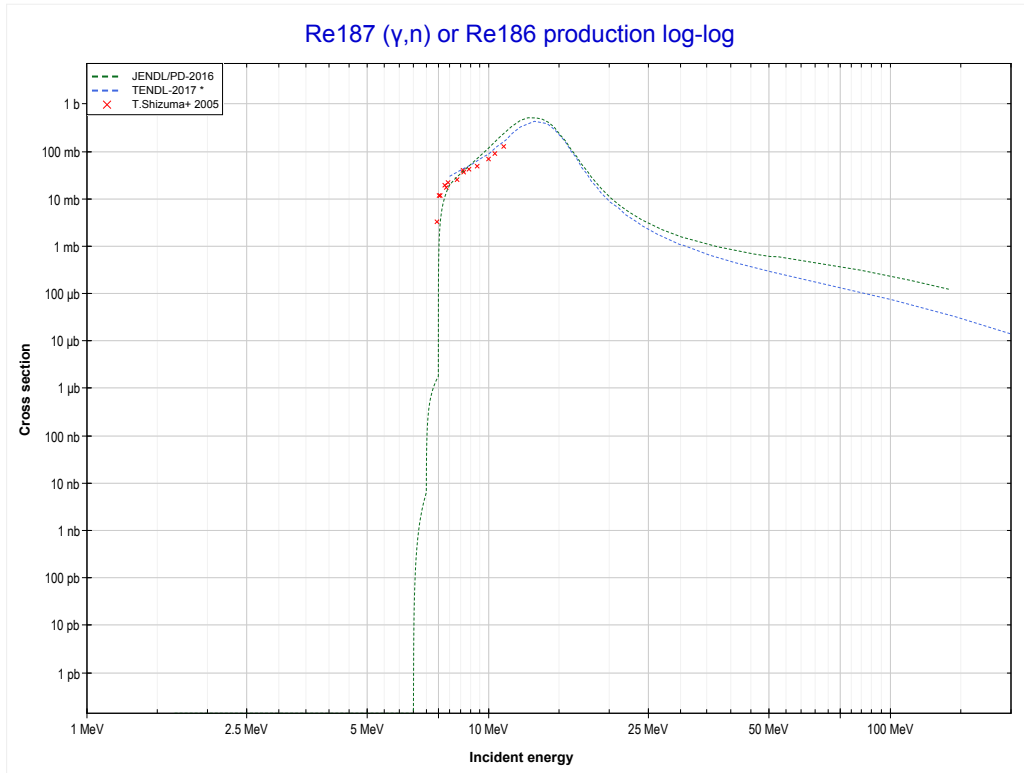
Reaction	Q-Value
W186(γ ,n)W185	-7192.22 keV

<< 73-Ta-181	74-W-186	76-Os-188 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (W183 production)	75-Re-187 MT4 (γ,n) >>



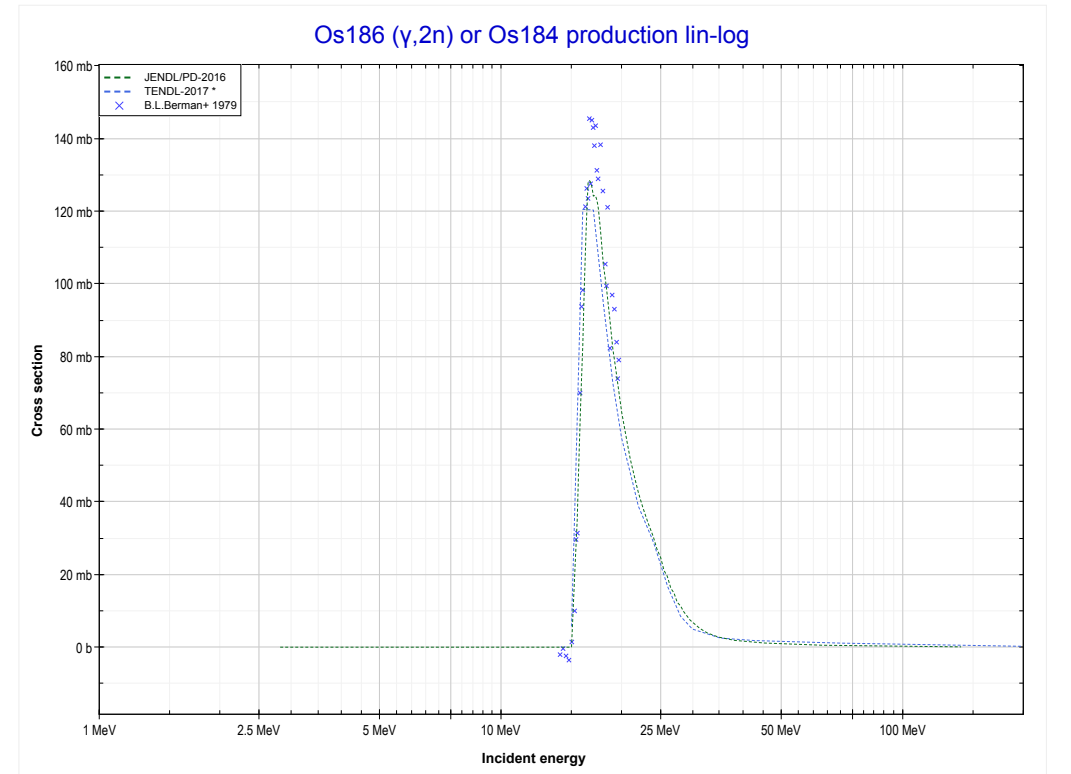
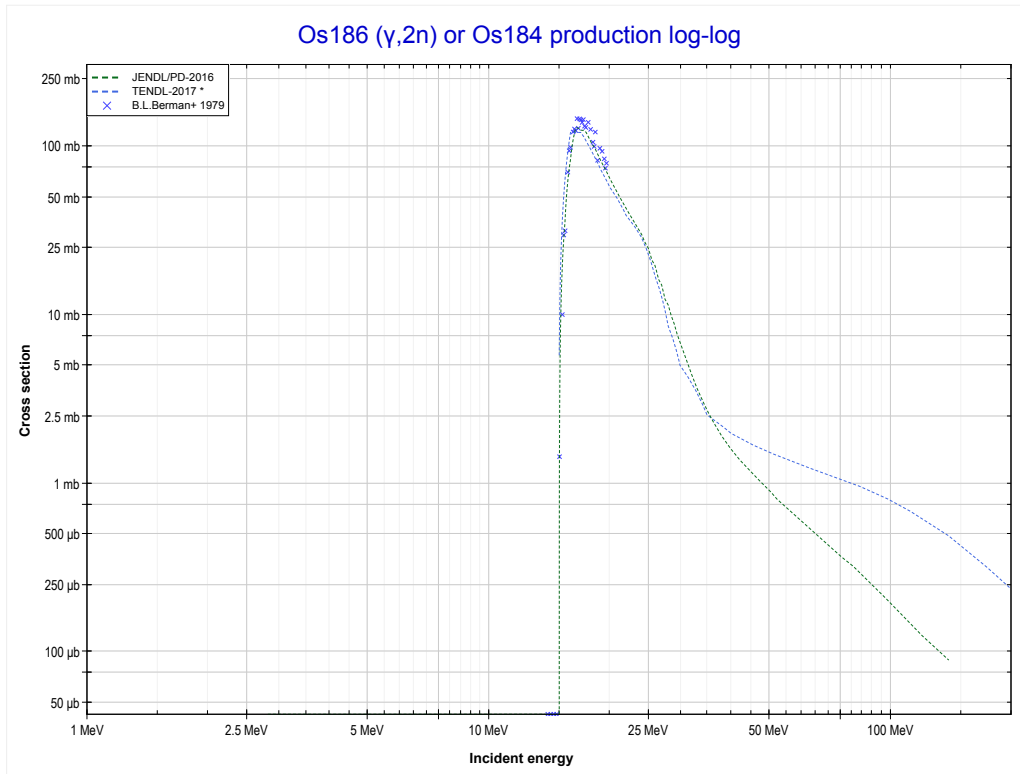
Reaction	Q-Value
W186($\gamma,3n$)W183	-20357.55 keV

<< 74-W-186	75-Re-187	76-Os-188 >>
<< 74-W-186 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Re186 production)	76-Os-186 MT16 (γ,2n) >>



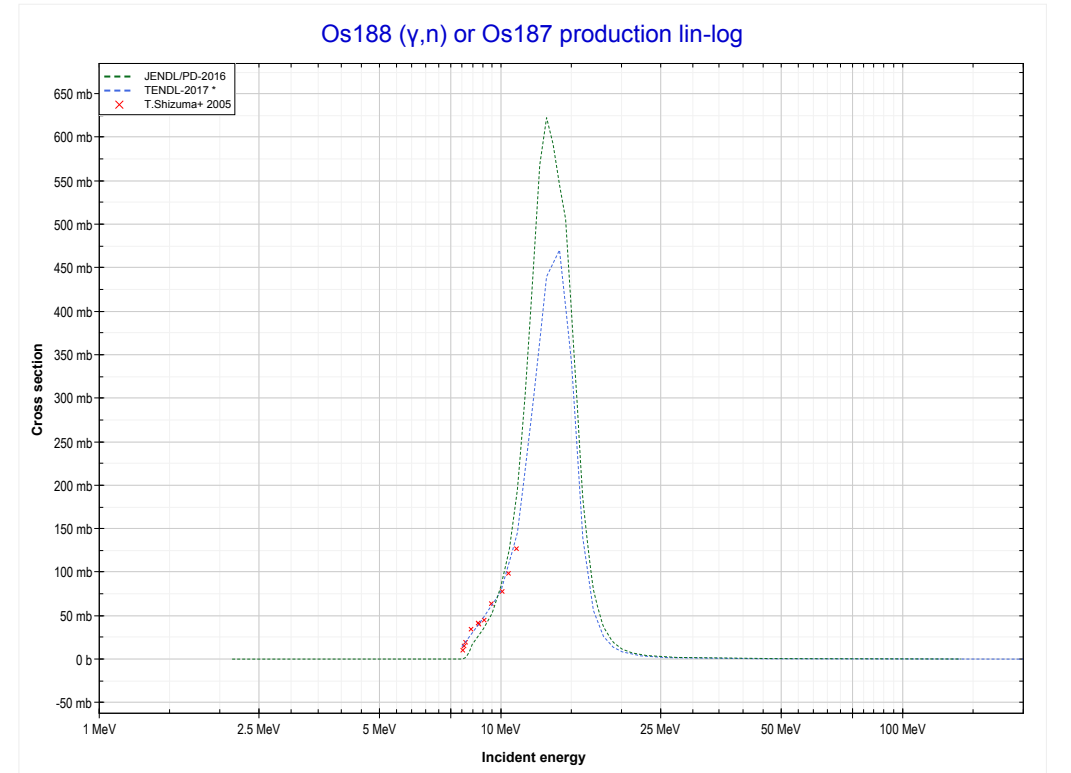
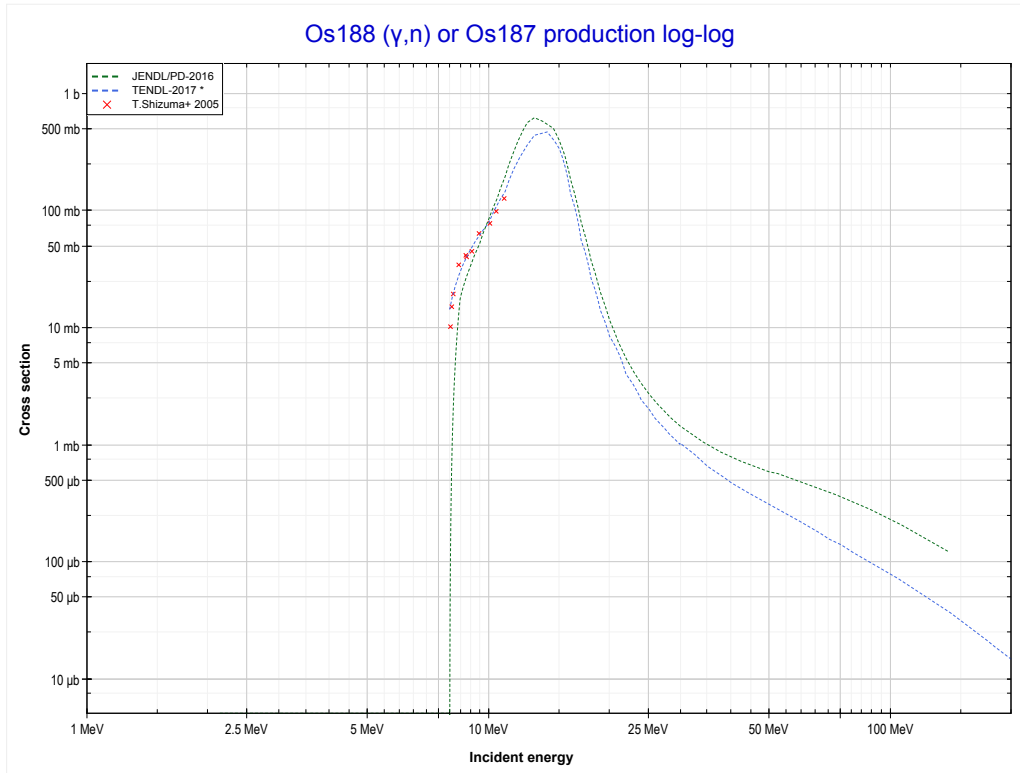
Reaction	Q-Value
Re187(γ,n)Re186	-7359.22 keV

<< 73-Ta-181	76-Os-186	79-Au-197 >>
<< 75-Re-187 MT4 (γ,n)	MT16 (γ,2n) or MT5 (Os184 production)	76-Os-188 MT4 (γ,n) >>



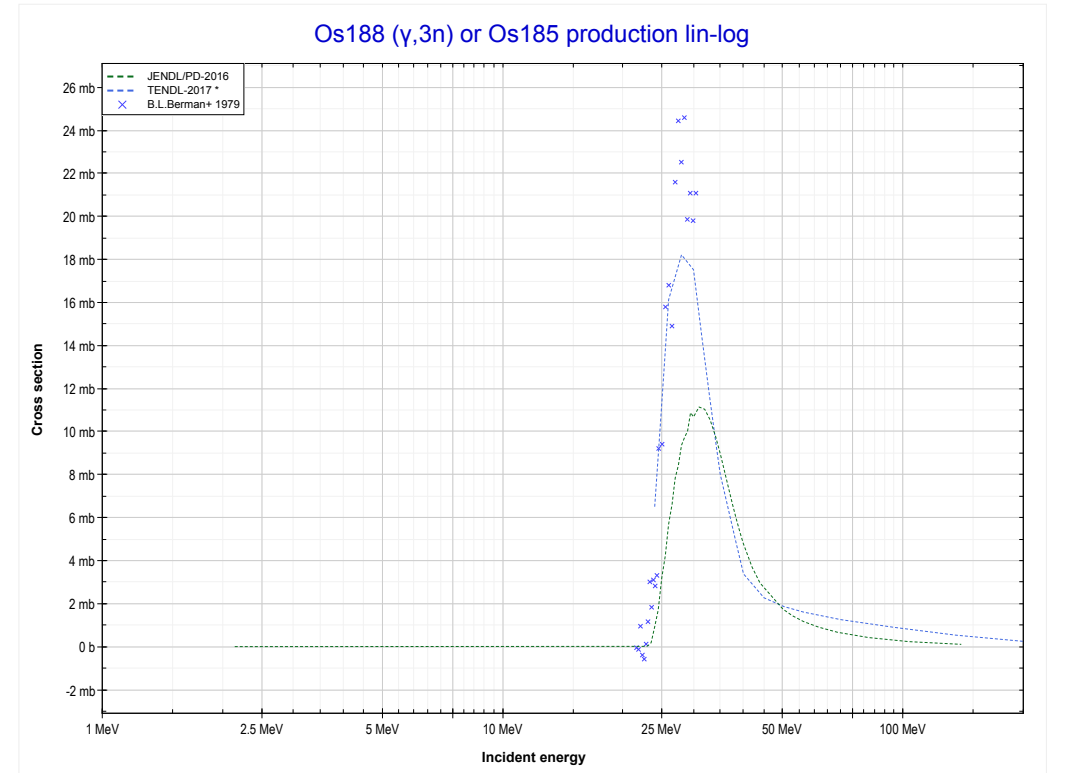
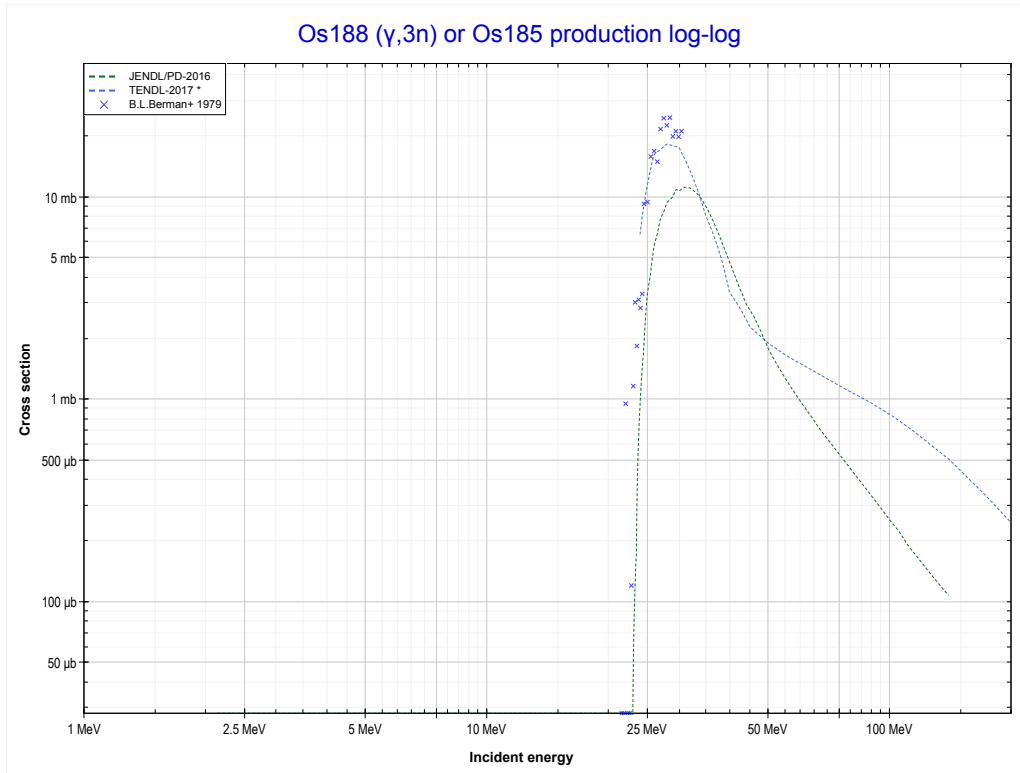
Reaction	Q-Value
Os186(γ,2n)Os184	-14888.43 keV

<< 75-Re-187	76-Os-188	78-Pt-198 >>
<< 76-Os-186 MT16 ($\gamma,2n$)	MT4 (γ,n) or MT5 (Os187 production)	MT17 ($\gamma,3n$) >>



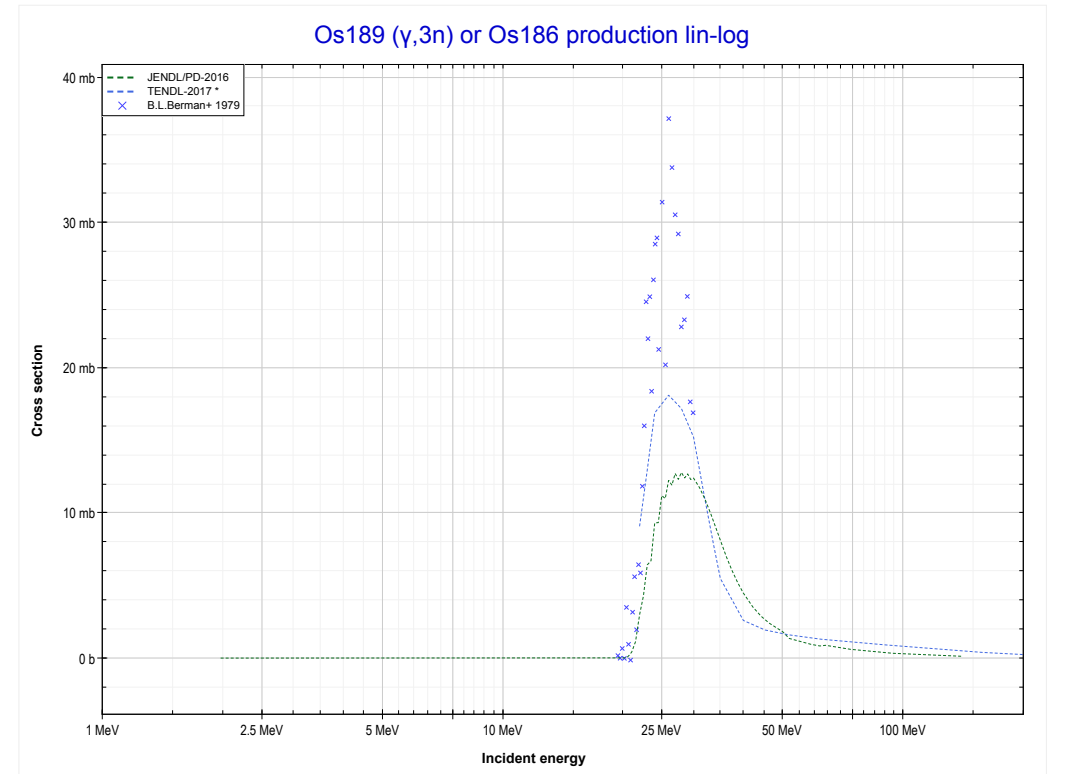
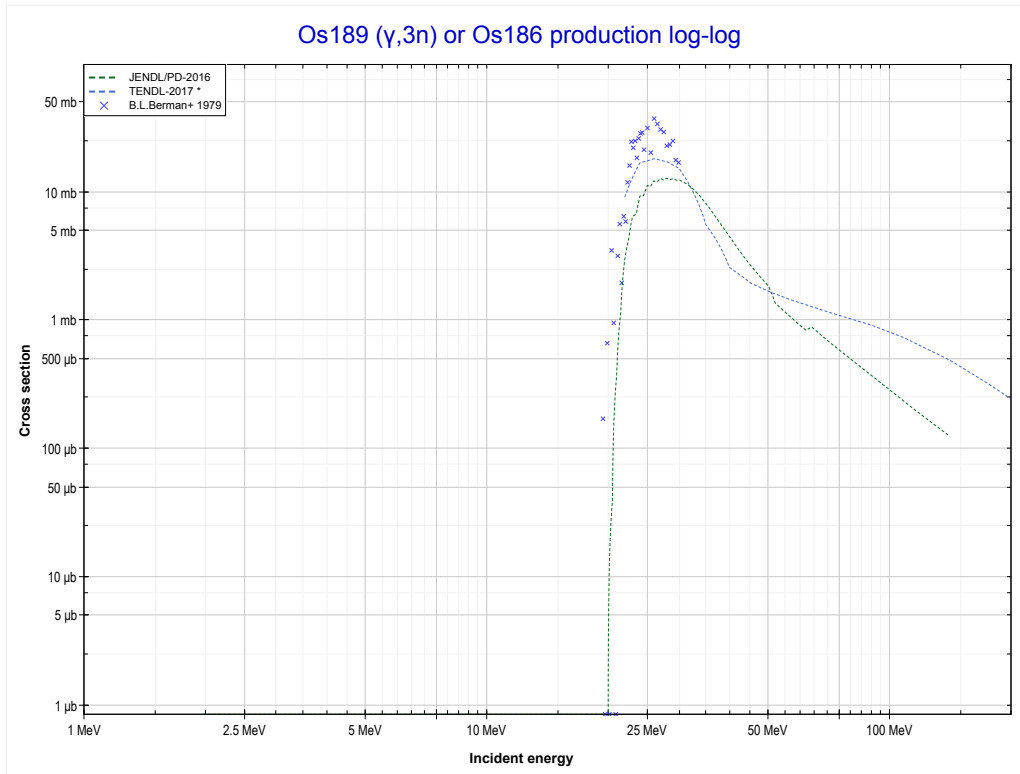
Reaction	Q-Value
Os188(γ,n)Os187	-7989.62 keV

<< 74-W-186	76-Os-188	76-Os-189 >>
<< MT4 (γ,n)	MT17 ($\gamma,3n$) or MT5 (Os185 production)	76-Os-189 MT17 ($\gamma,3n$) >>



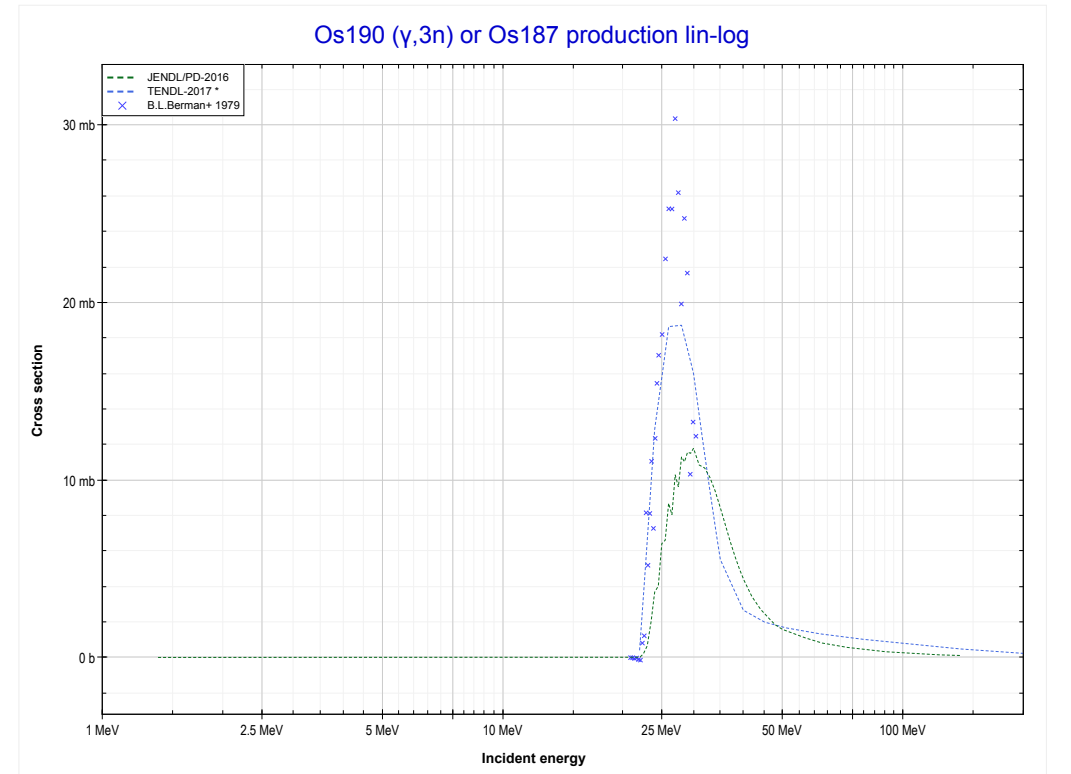
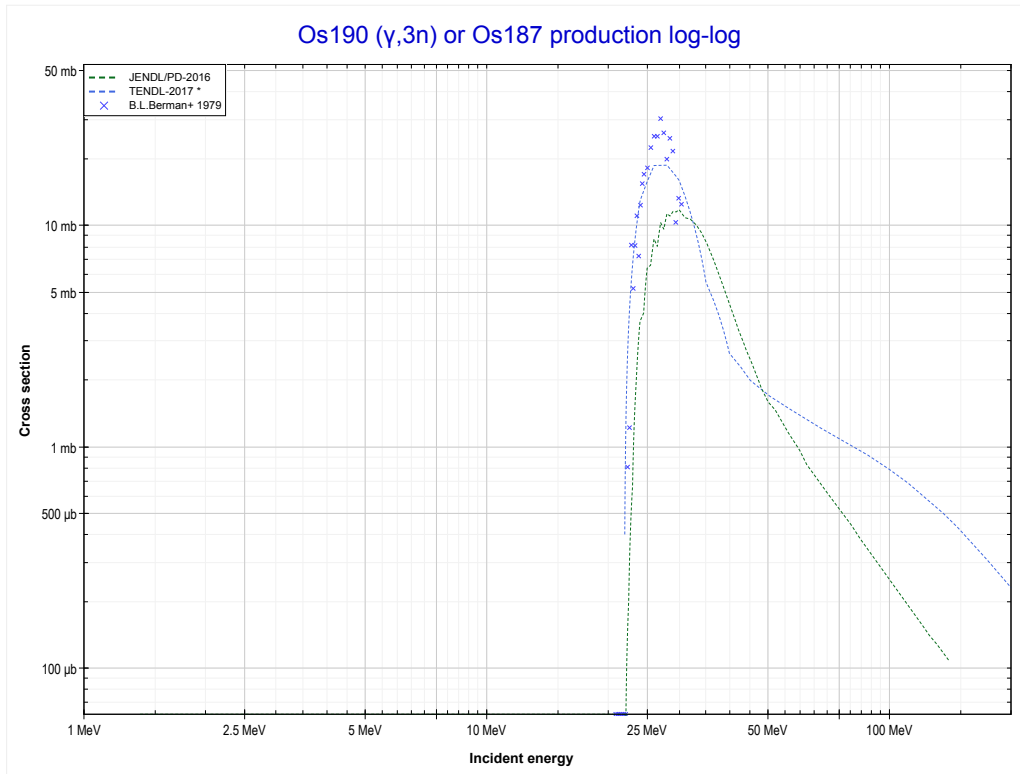
Reaction	Q-Value
Os188($\gamma,3n$)Os185	-22543.45 keV

<< 76-Os-188	76-Os-189	76-Os-190 >>
<< 76-Os-188 MT17 (γ,3n)	MT17 (γ,3n) or MT5 (Os186 production)	76-Os-190 MT17 (γ,3n) >>



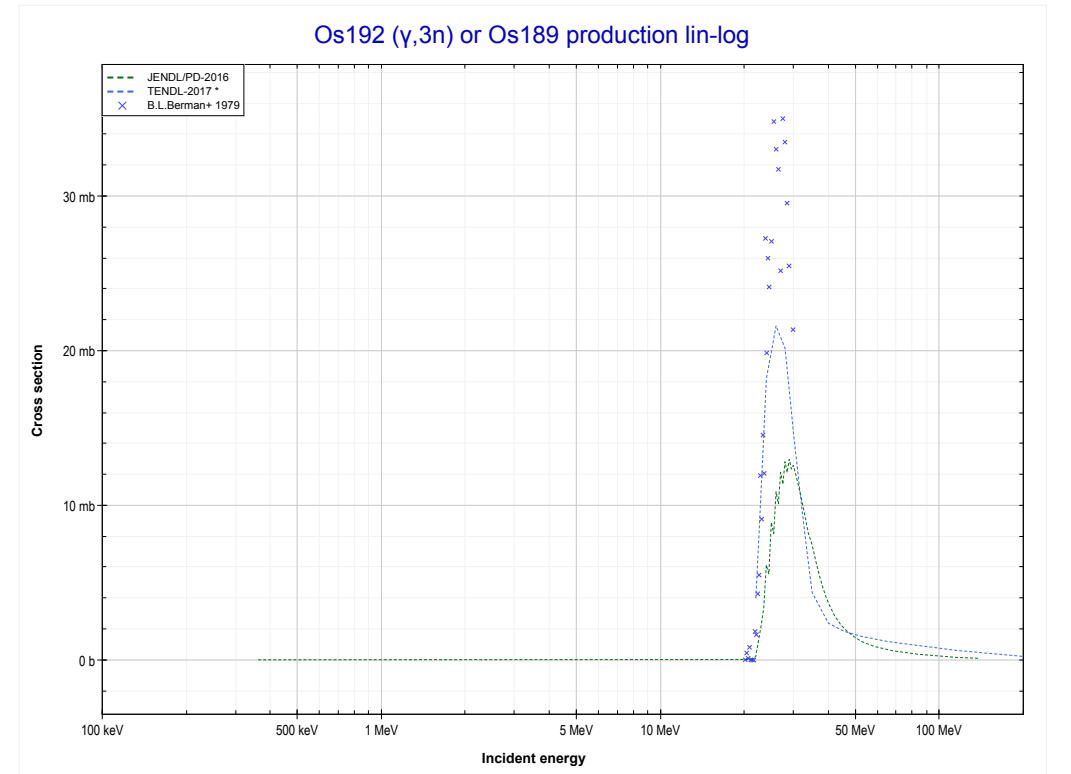
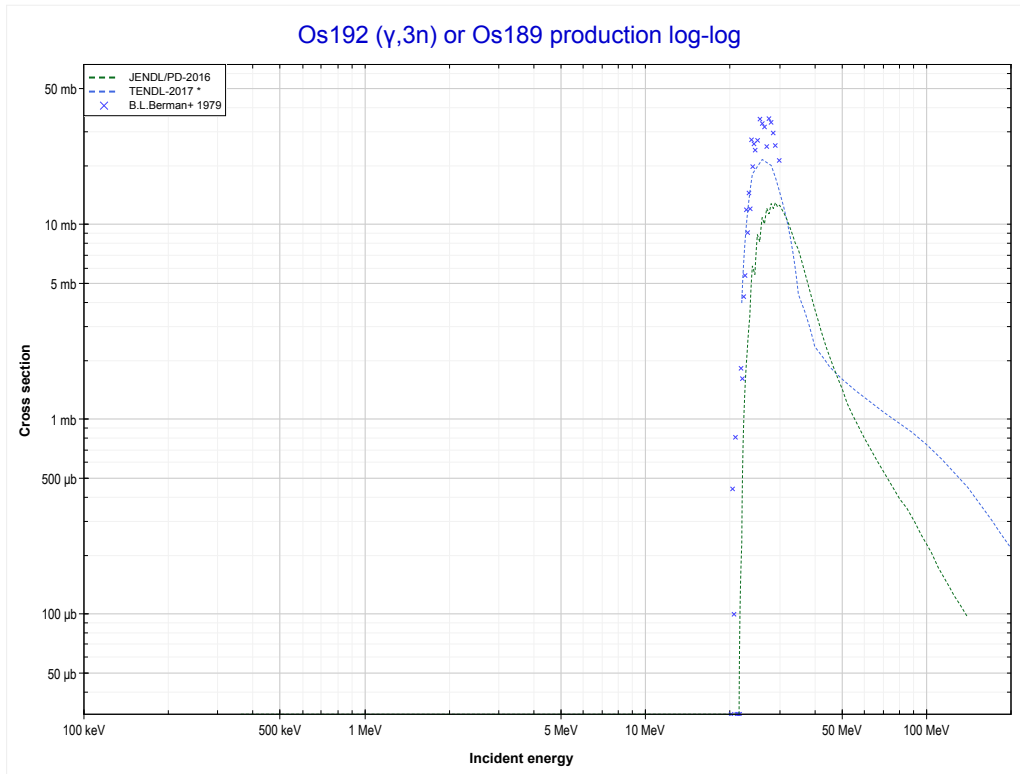
Reaction	Q-Value
Os189(γ,3n)Os186	-20200.05 keV

<< 76-Os-189	76-Os-190	76-Os-192 >>
<< 76-Os-189 MT17 (γ,3n)	MT17 (γ,3n) or MT5 (Os187 production)	76-Os-192 MT17 (γ,3n) >>



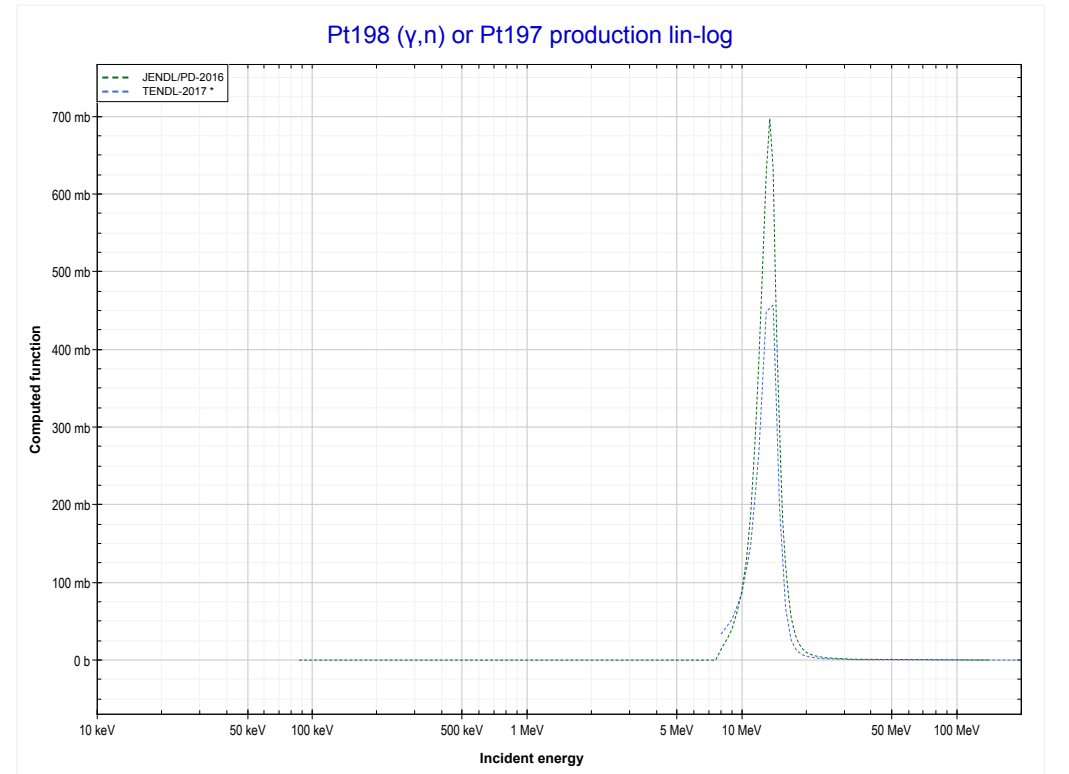
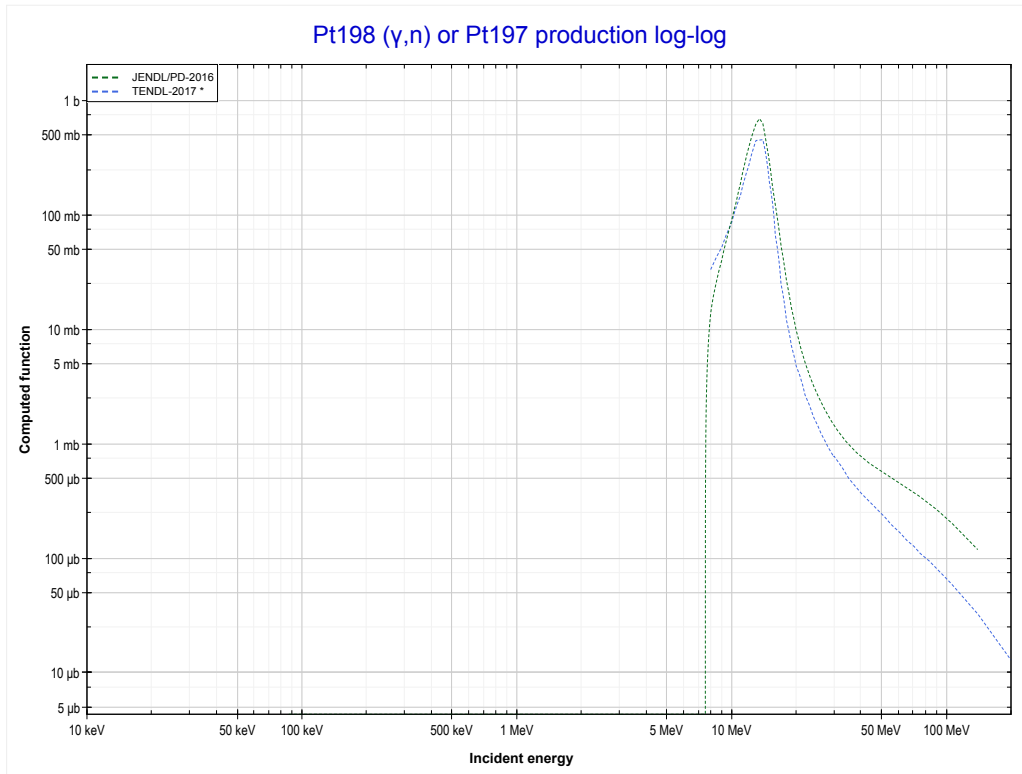
Reaction	Q-Value
Os190(γ,3n)Os187	-21702.35 keV

<< 76-Os-190	76-Os-192	79-Au-197 >>
<< 76-Os-190 MT17 ($\gamma,3n$)	MT17 ($\gamma,3n$) or MT5 (Os189 production)	78-Pt-198 MT4 (γ,n) >>



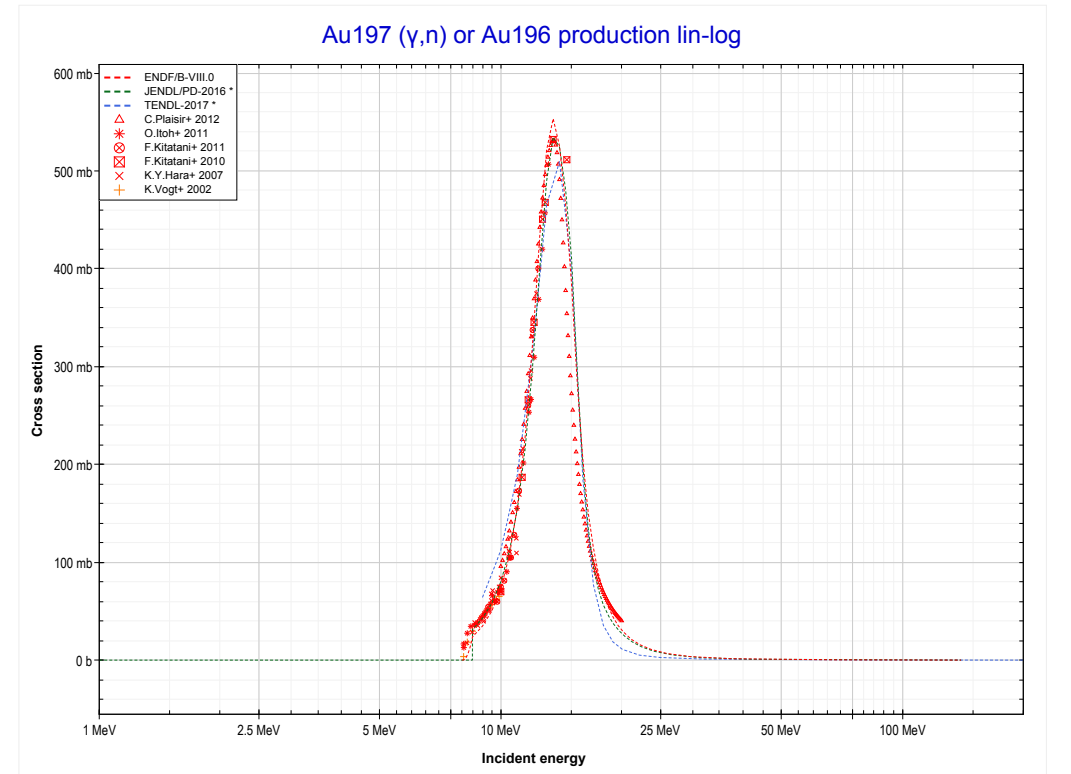
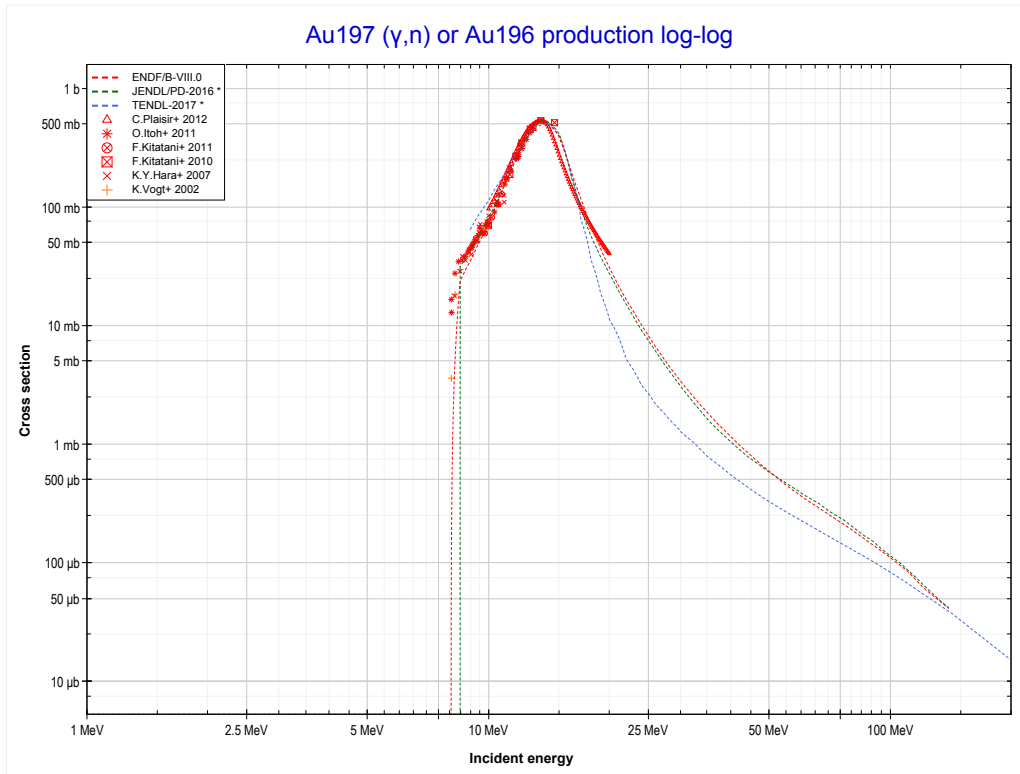
Reaction	Q-Value
Os192($\gamma,3n$)Os189	-21109.35 keV

<< 76-Os-188	78-Pt-198	79-Au-197 >>
<< 76-Os-192 MT17 ($\gamma,3n$)	MT4 (γ,n) or MT5 (Pt197 production)	79-Au-197 MT4 (γ,n) >>



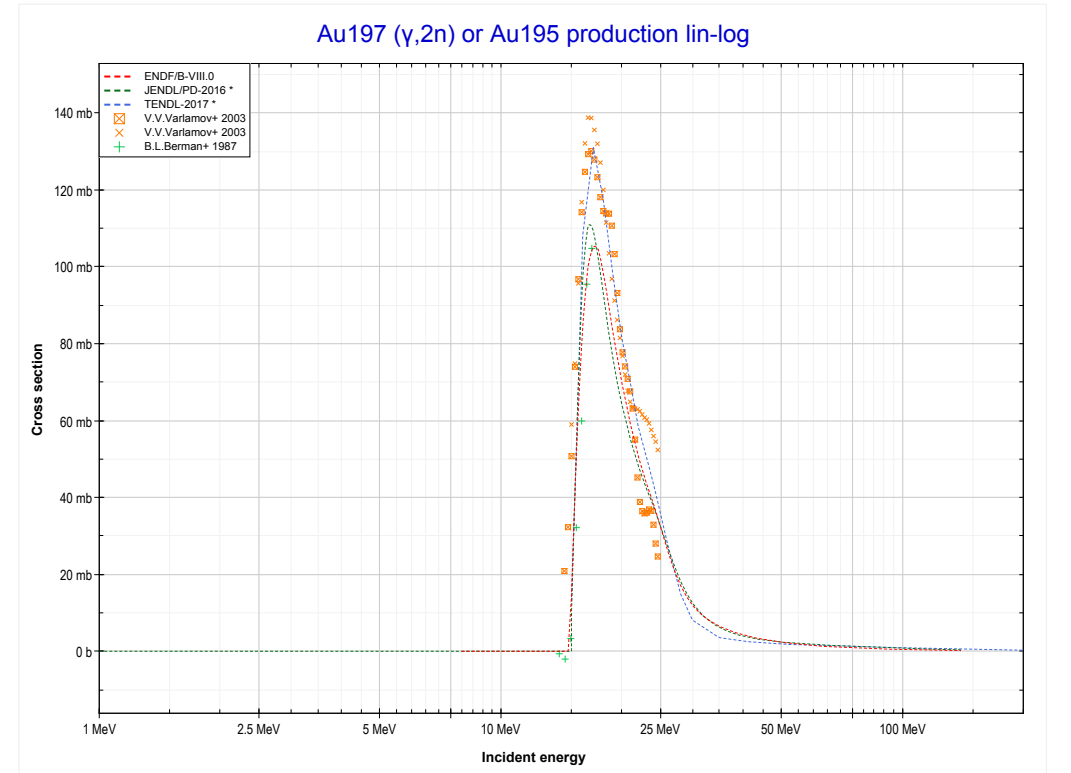
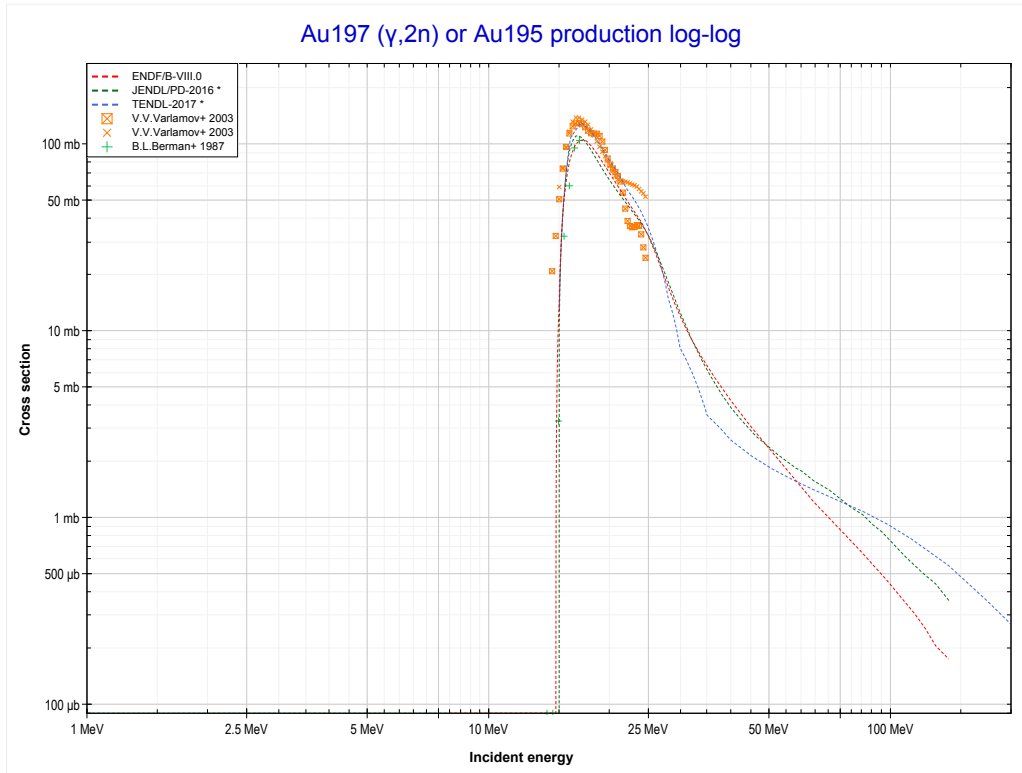
Reaction	Q-Value
Pt198(γ,n)Pt197	-7555.02 keV

<< 78-Pt-198	79-Au-197	80-Hg-198 >>
<< 78-Pt-198 MT4 (γ,n)	MT4 (γ,n) or MT5 (Au196 production)	MT16 (γ,2n) >>



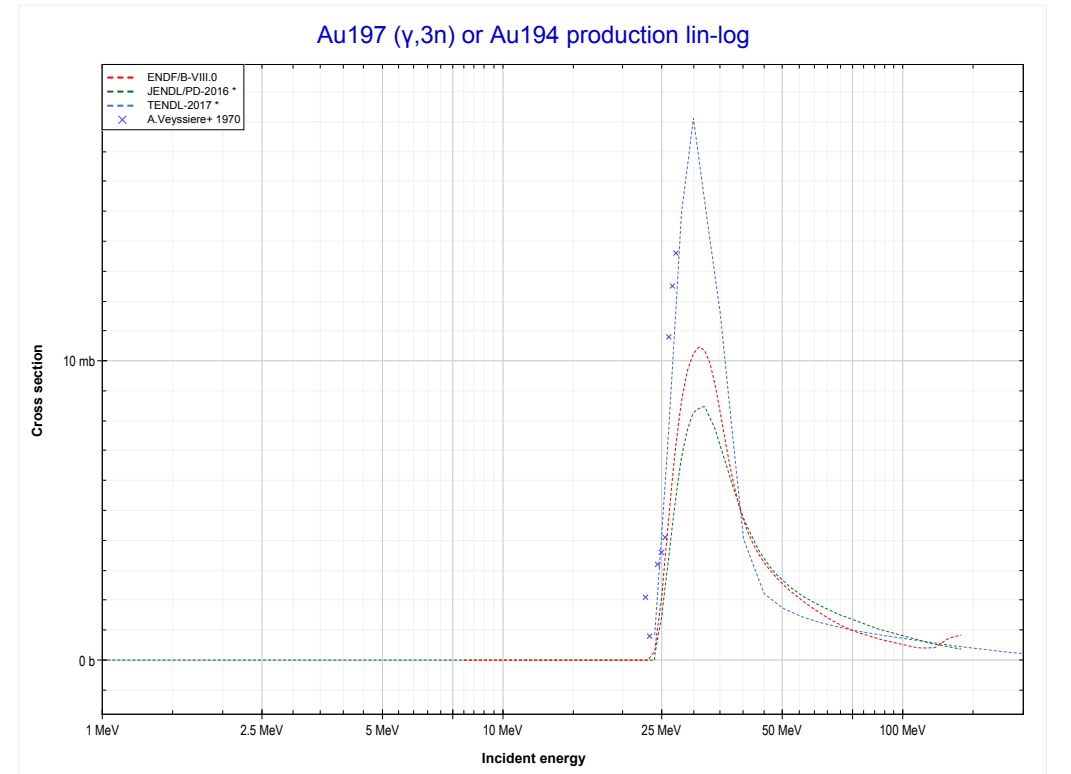
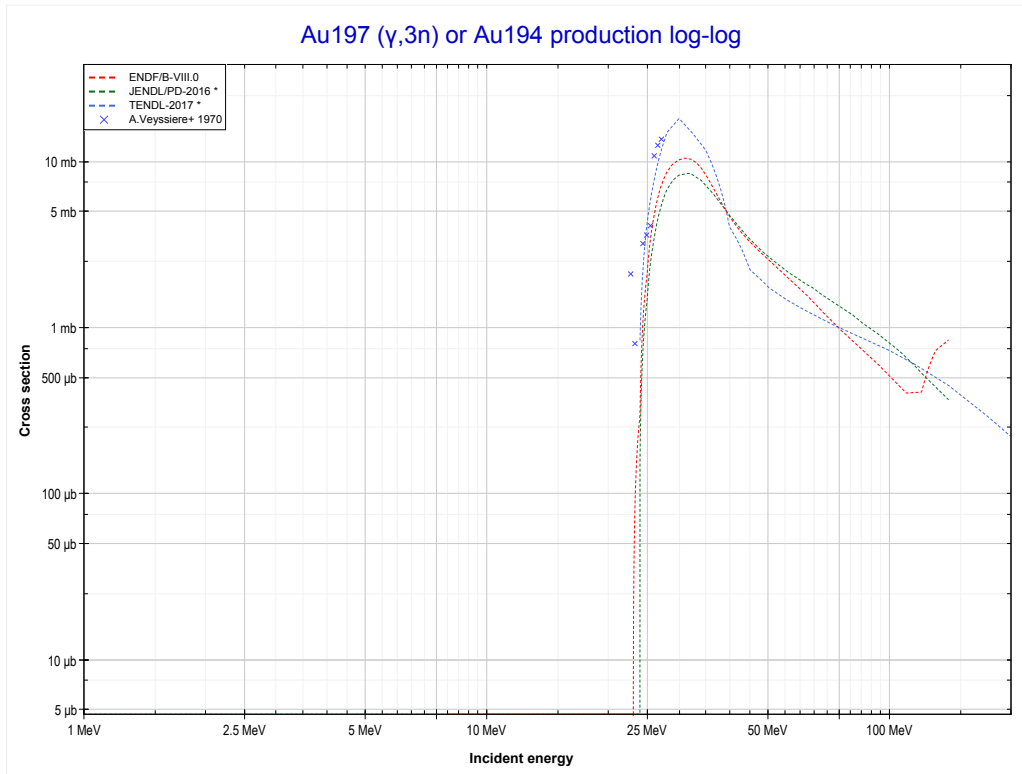
Reaction	Q-Value
Au197(γ,n)Au196	-8072.42 keV

<< 76-Os-186	79-Au-197	82-Pb-208 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Au195 production)	MT17 ($\gamma,3n$) >>



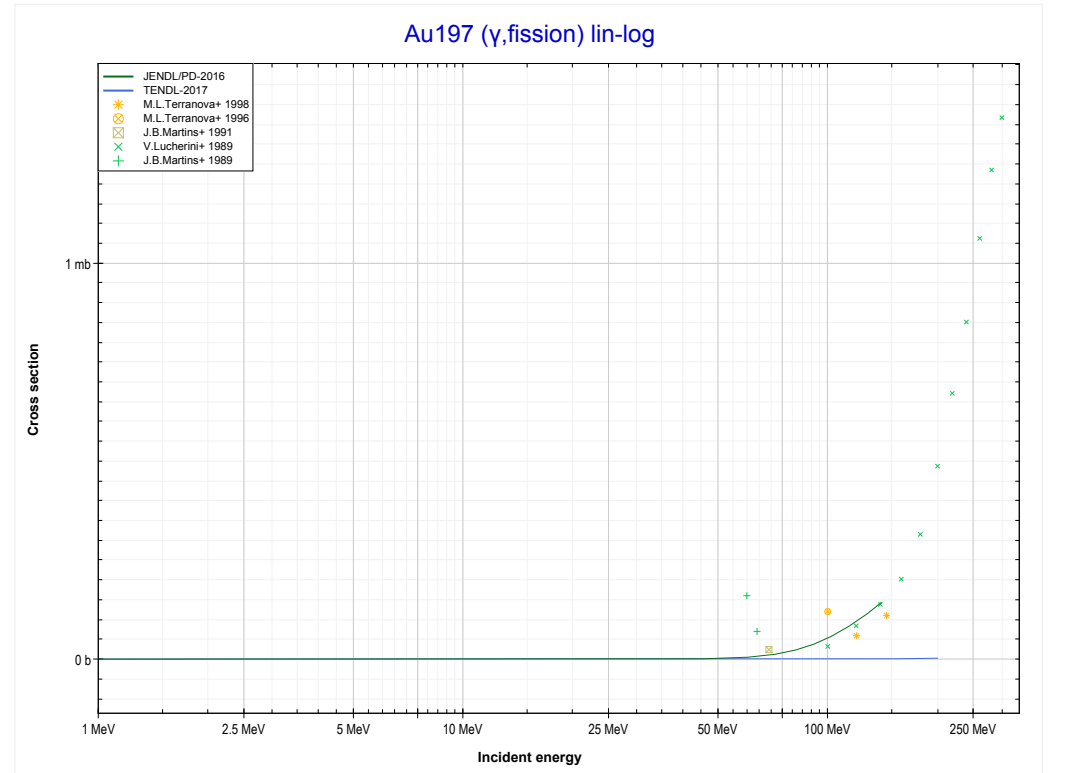
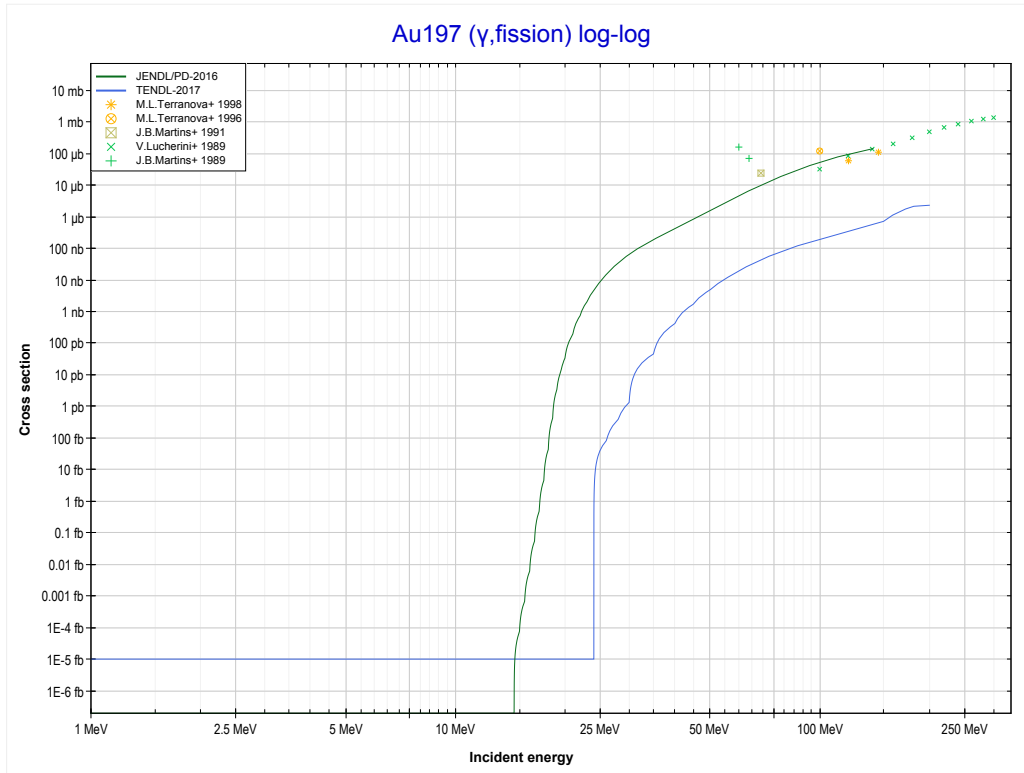
Reaction	Q-Value
Au197($\gamma,2n$)Au195	-14714.13 keV

<< 76-Os-192	79-Au-197	82-Pb-208 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Au194 production)	MT18 (γ ,fission) >>

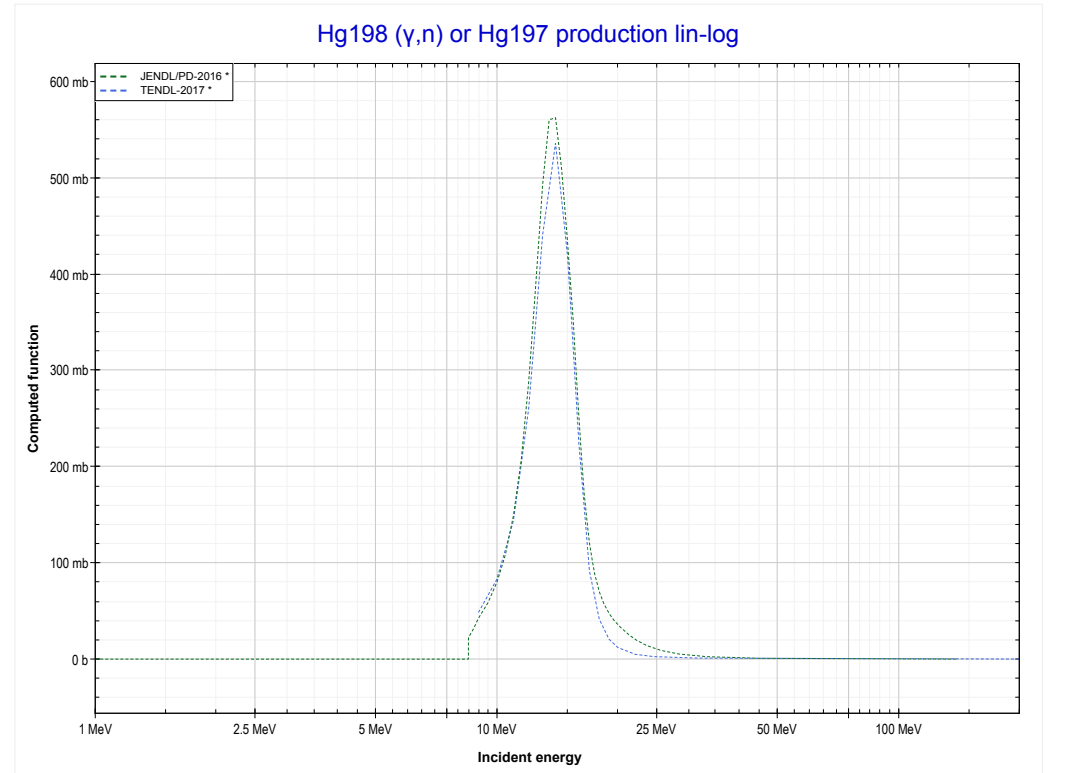
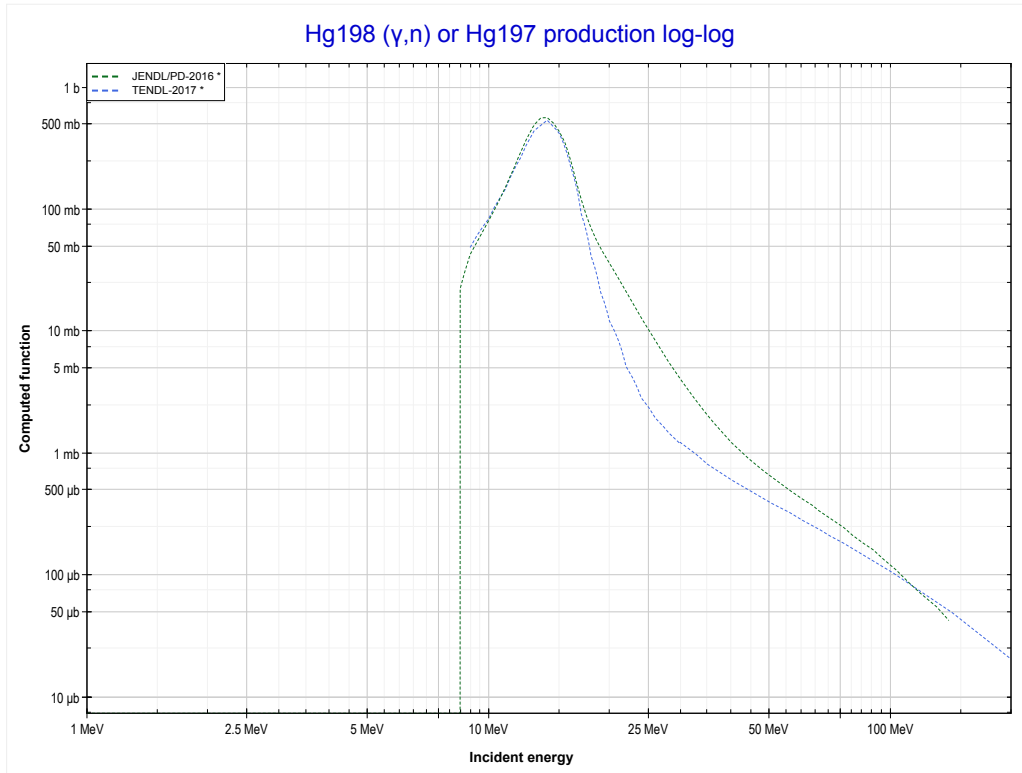


Reaction	Q-Value
Au197($\gamma,3n$)Au194	-23141.75 keV

<< 74-W-182	79-Au-197	83-Bi-209 >>
<< MT17 ($\gamma,3n$)	MT18 (γ,fission)	80-Hg-198 MT4 (γ,n) >>

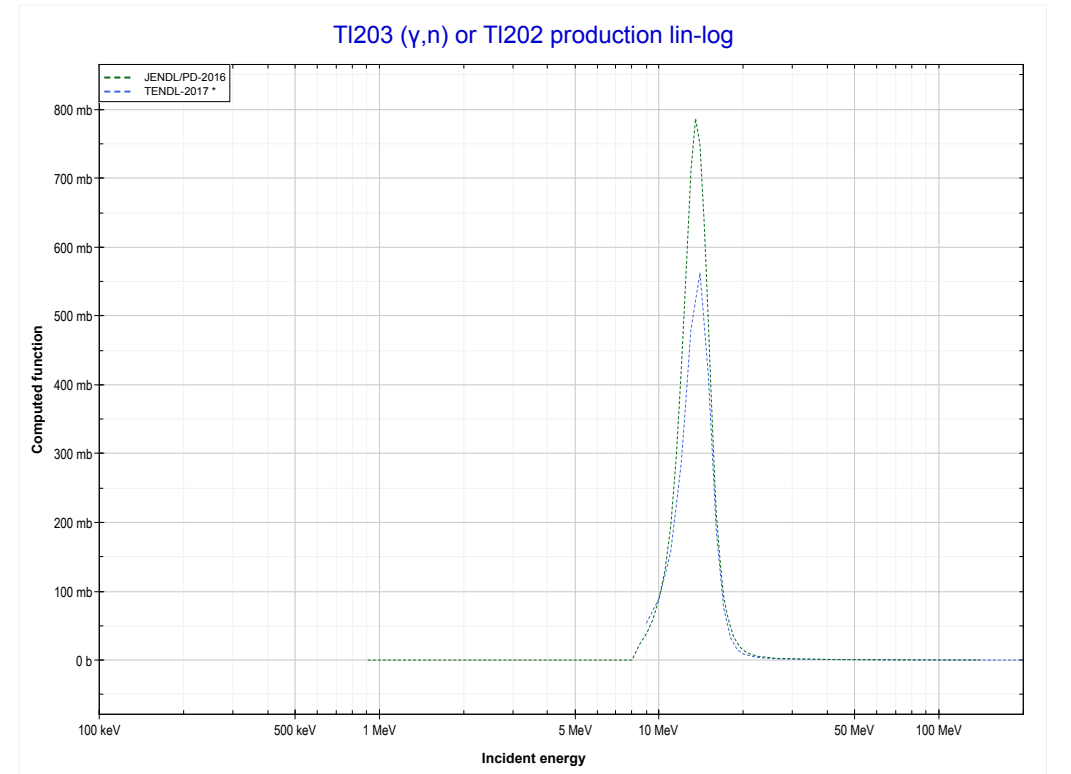
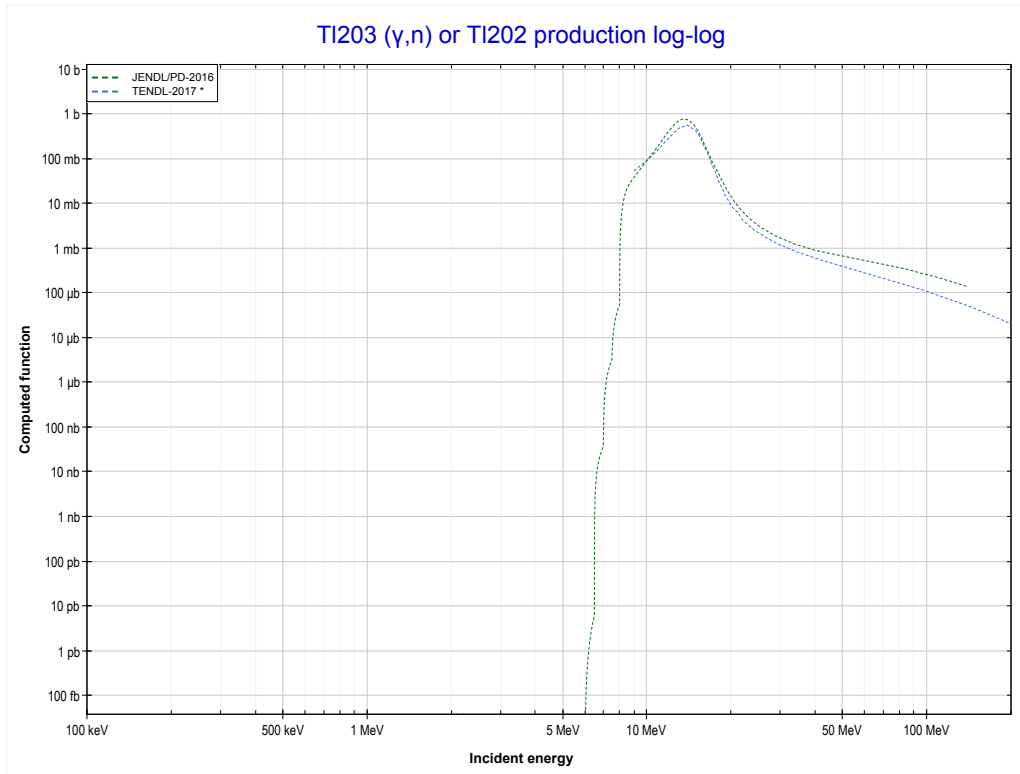


<< 79-Au-197	80-Hg-198	81-Tl-203 >>
<< 79-Au-197 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (Hg197 production)	81-Tl-203 MT4 (γ ,n) >>



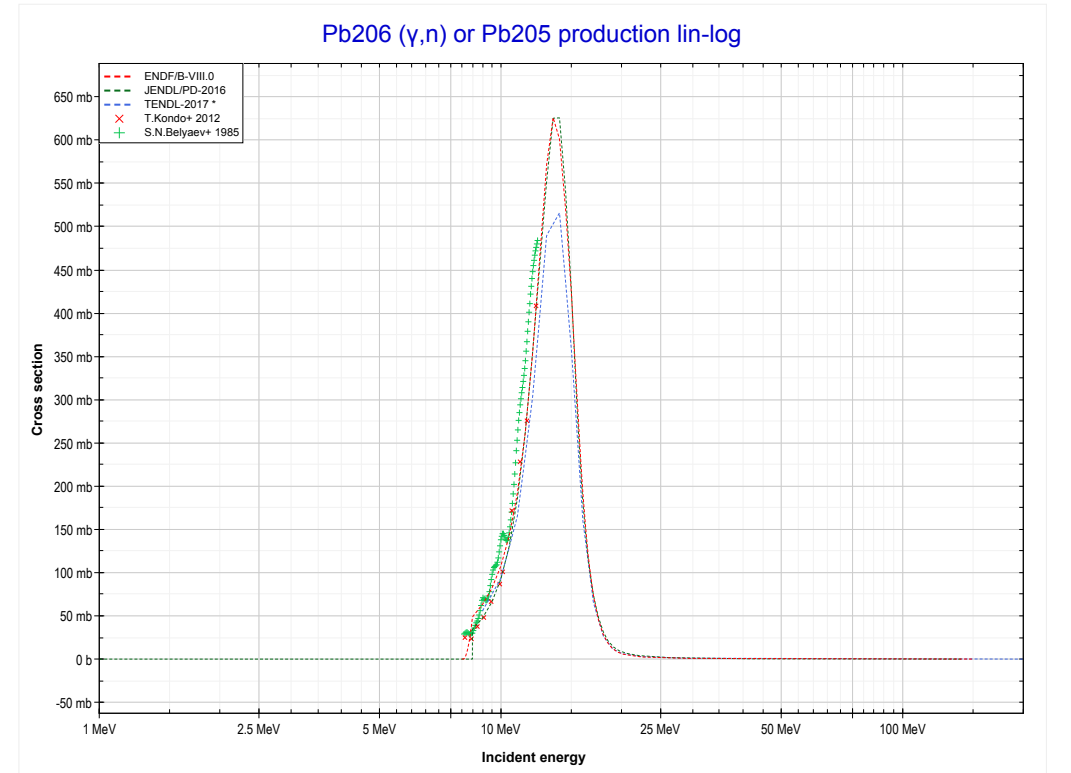
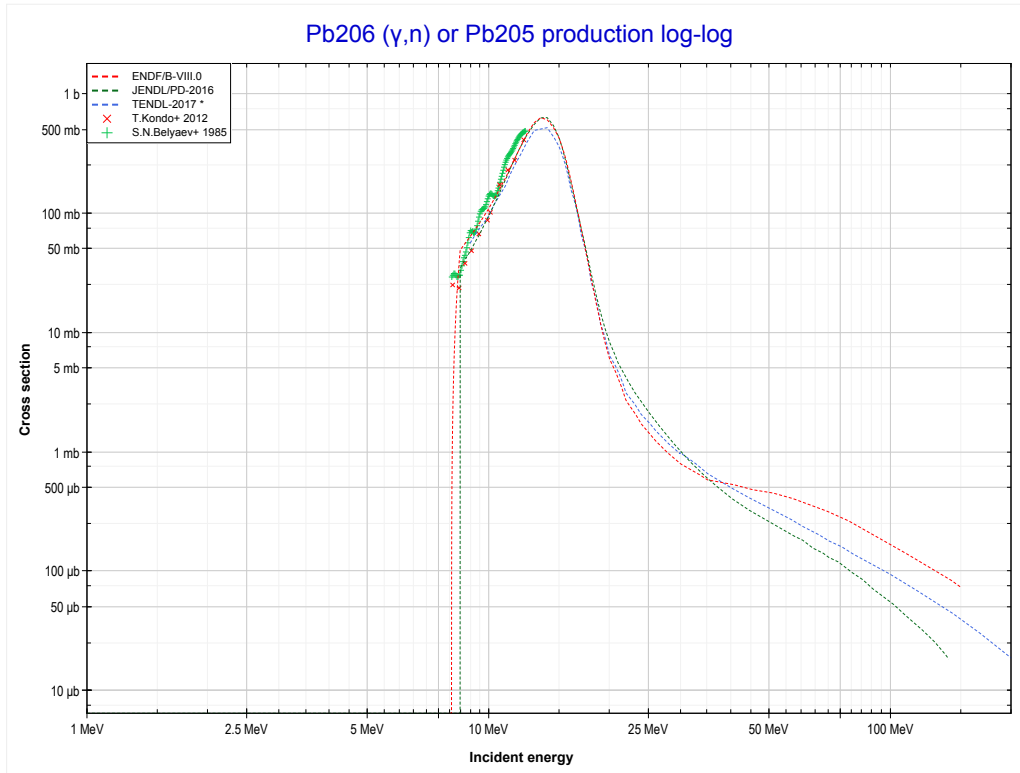
Reaction	Q-Value
Hg198(γ ,n)Hg197	-8485.12 keV

<< 80-Hg-198	81-Tl-203	82-Pb-206 >>
<< 80-Hg-198 MT4 (γ,n)	MT4 (γ,n) or MT5 (Tl202 production)	82-Pb-206 MT4 (γ,n) >>



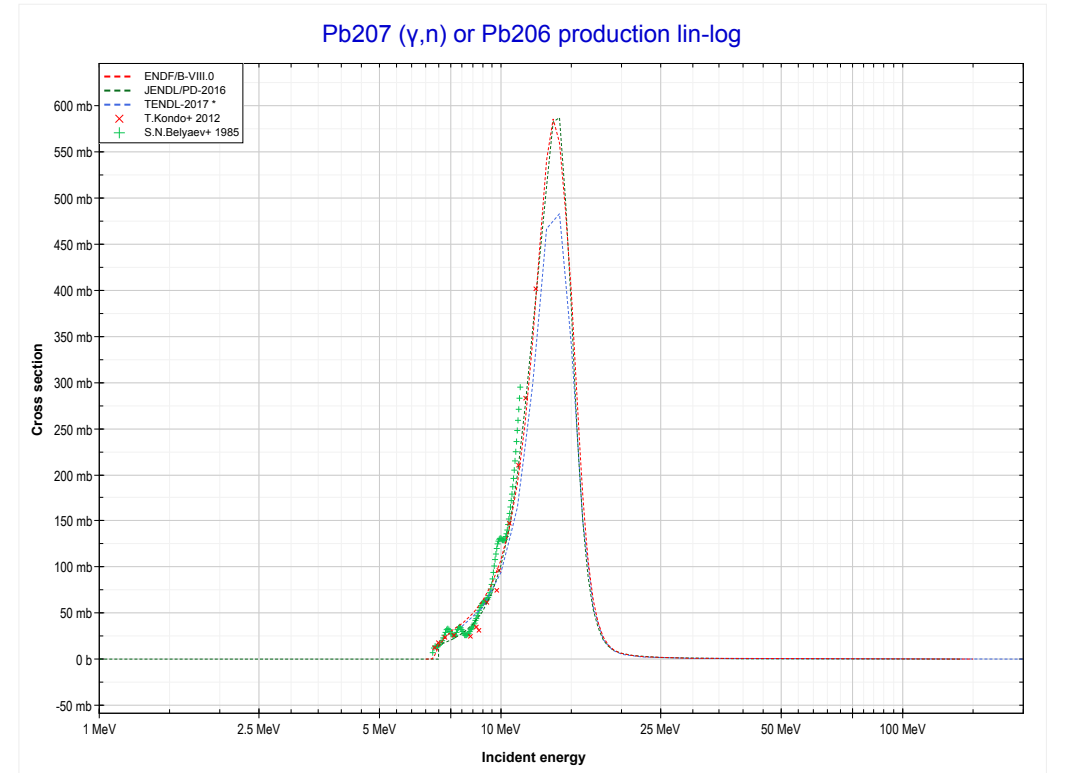
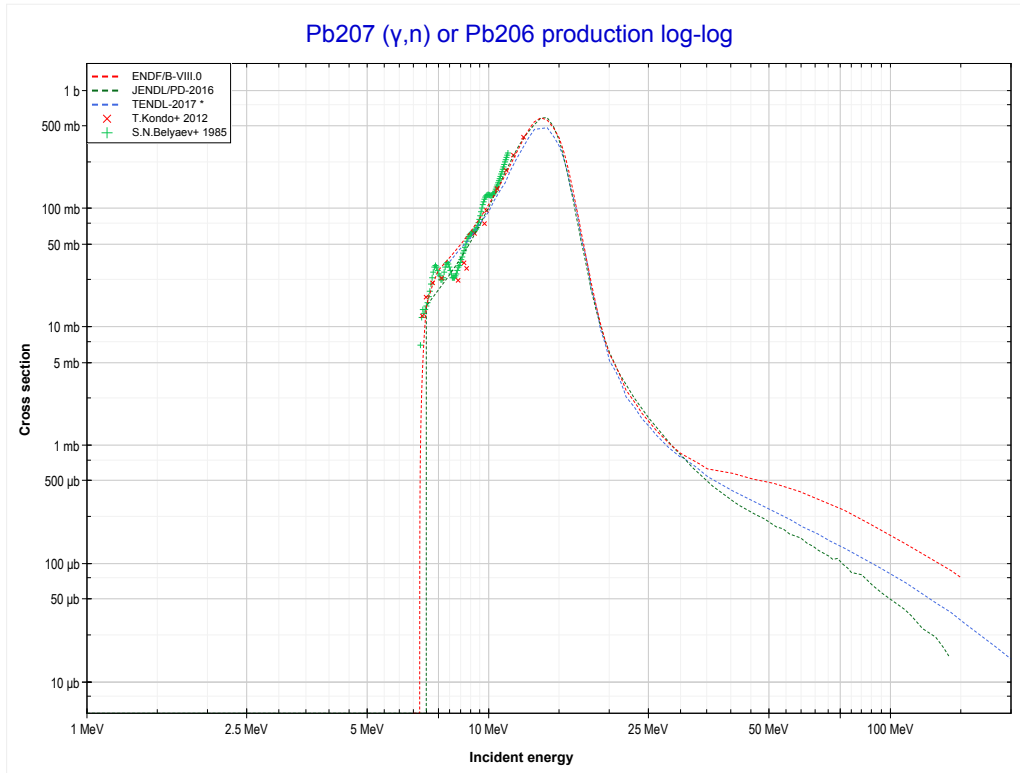
Reaction	Q-Value
Tl203(γ,n)Tl202	-7846.12 keV

<< 81-Tl-203	82-Pb-206	82-Pb-207 >>
<< 81-Tl-203 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pb205 production)	82-Pb-207 MT4 (γ,n) >>



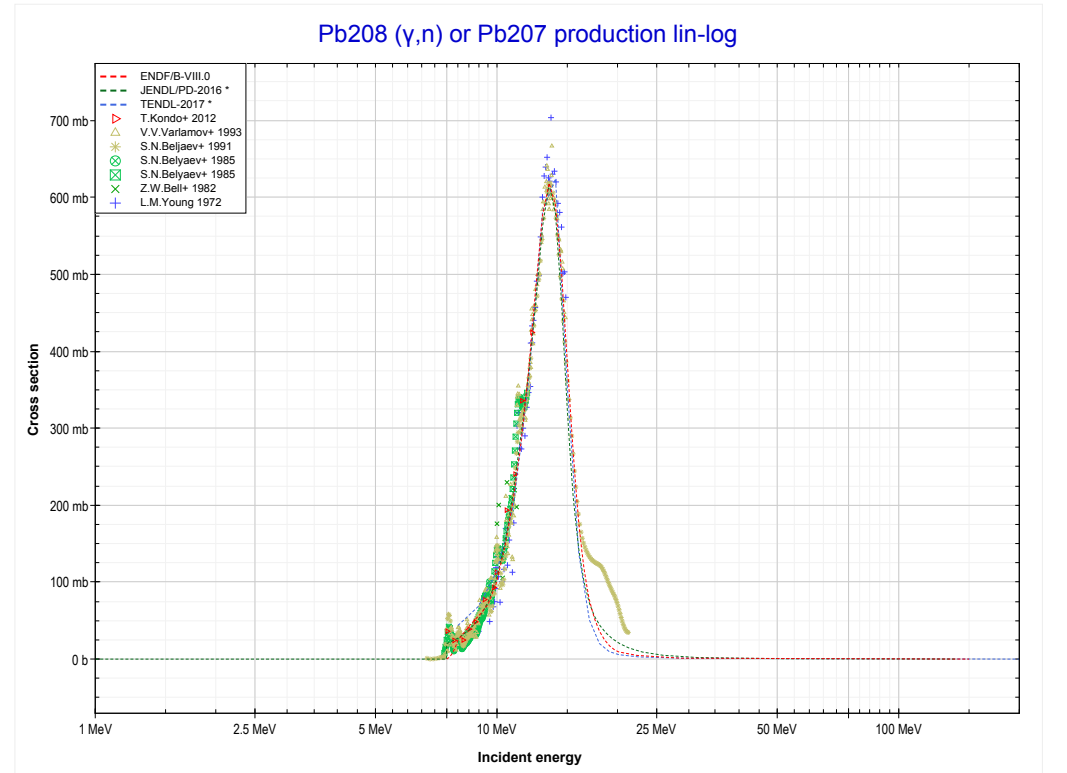
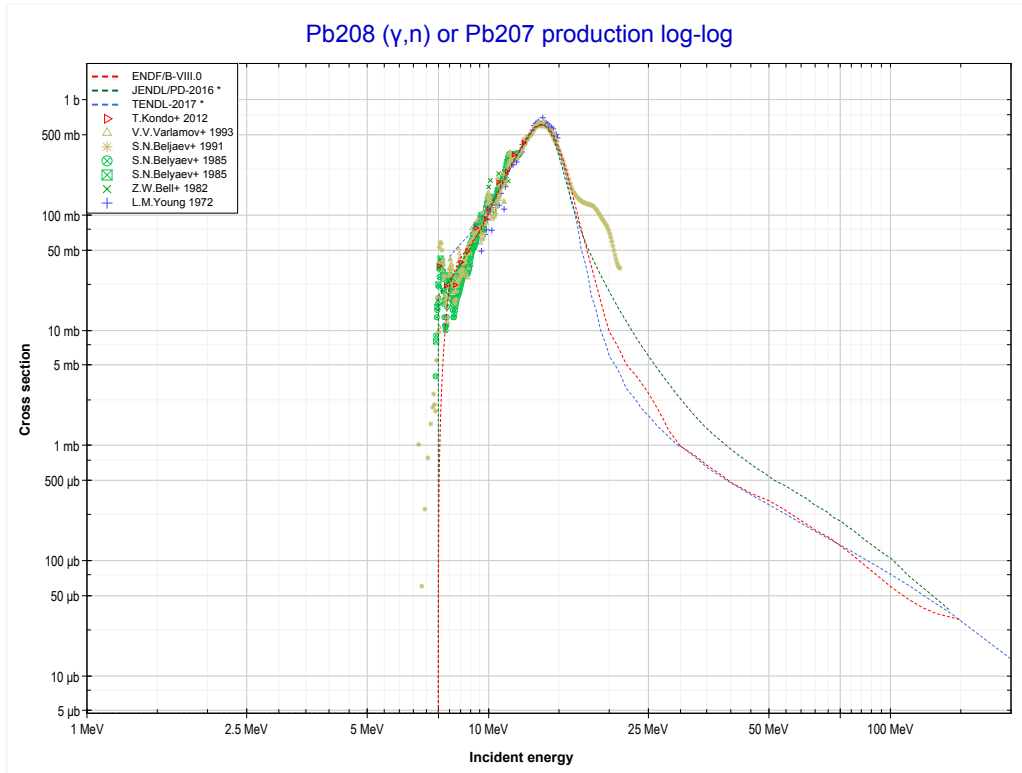
Reaction	Q-Value
Pb206(γ,n)Pb205	-8086.72 keV

<< 82-Pb-206	82-Pb-207	82-Pb-208 >>
<< 82-Pb-206 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pb206 production)	82-Pb-208 MT4 (γ,n) >>



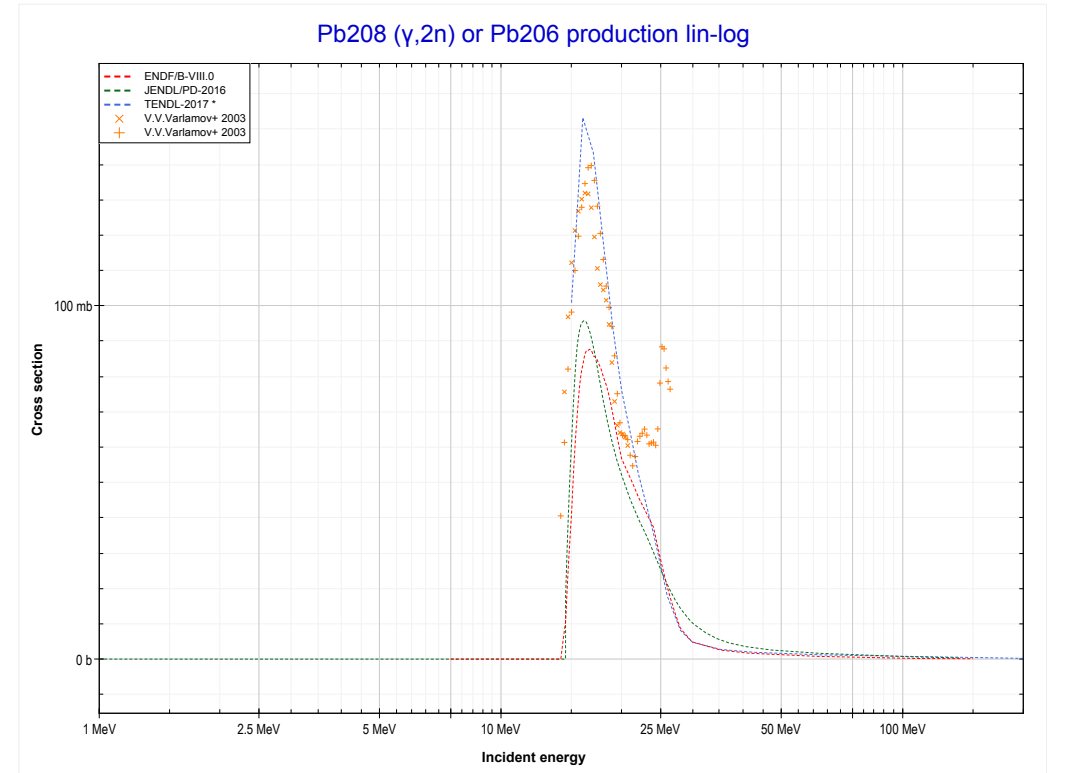
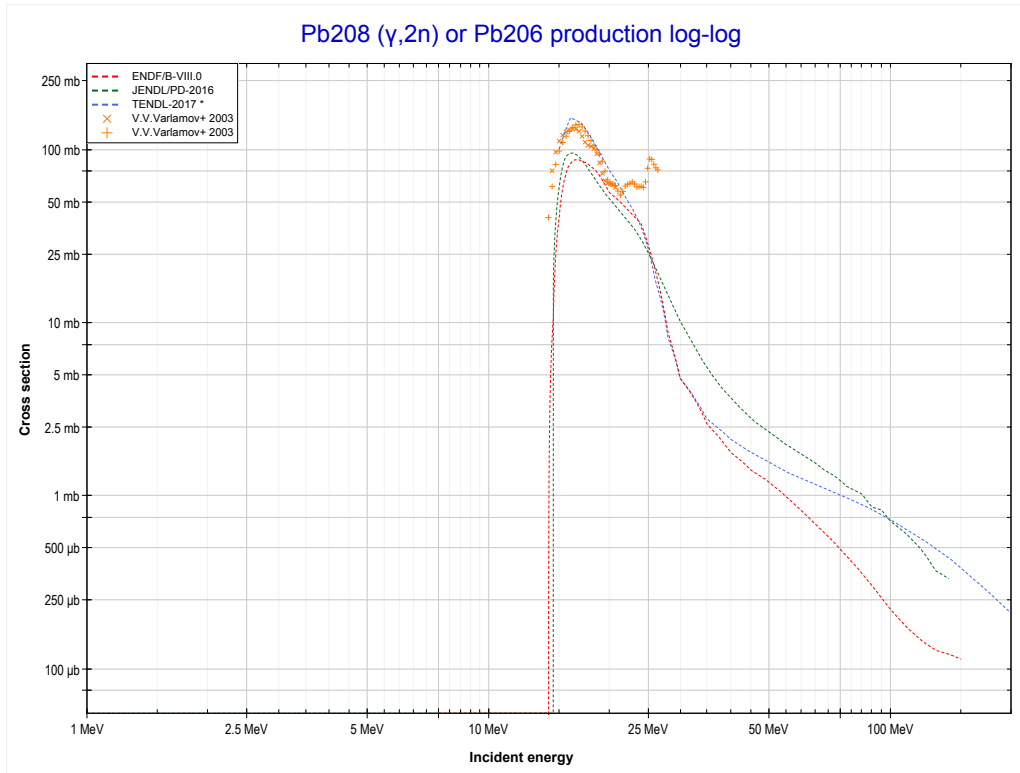
Reaction	Q-Value
Pb207(γ,n)Pb206	-6737.72 keV

<< 82-Pb-207	82-Pb-208	83-Bi-209 >>
<< 82-Pb-207 MT4 (γ,n)	MT4 (γ,n) or MT5 (Pb207 production)	MT16 (γ,2n) >>



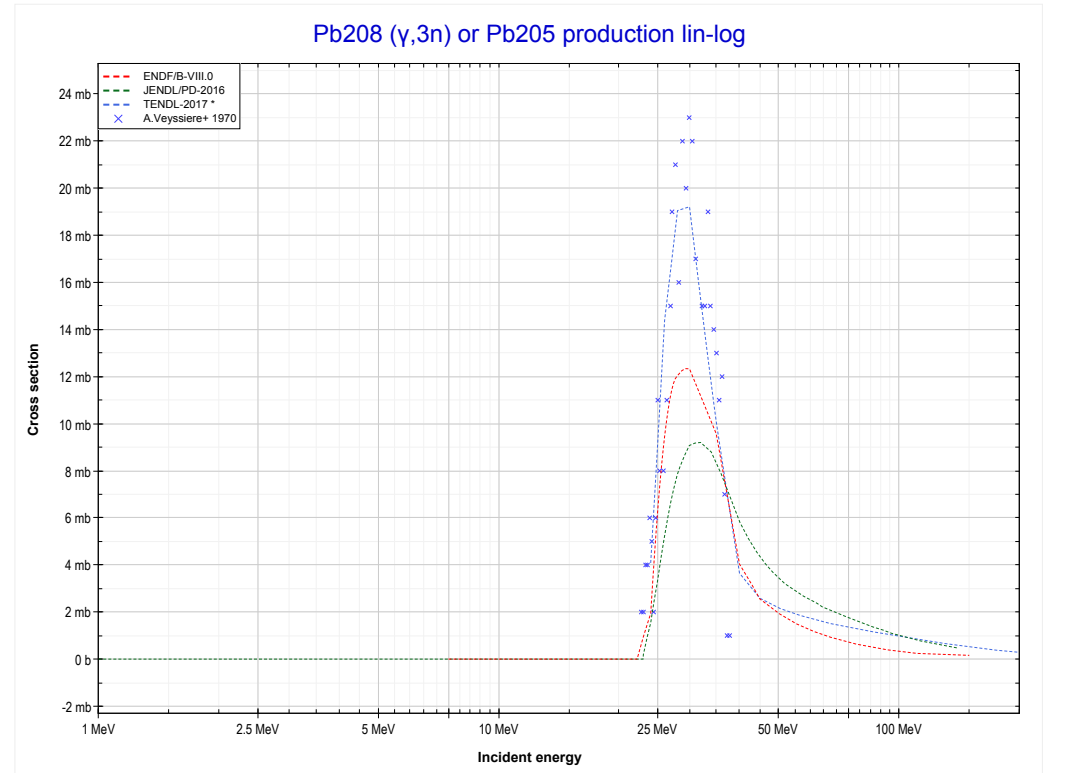
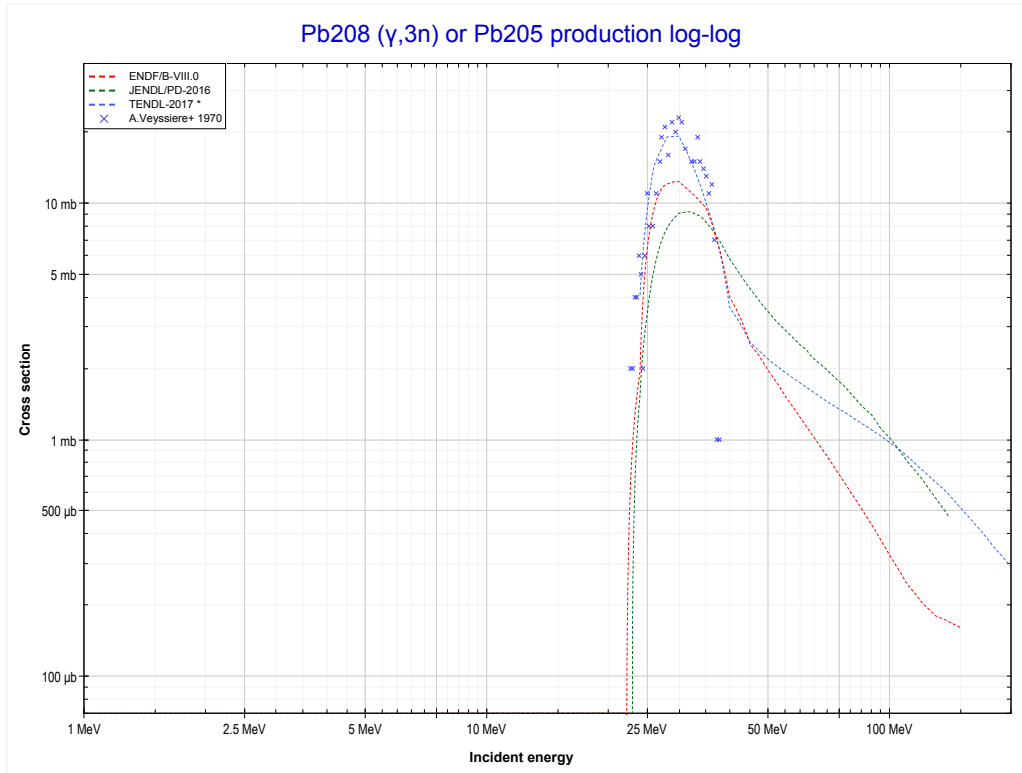
Reaction	Q-Value
Pb208(γ,n)Pb207	-7367.92 keV

<< 79-Au-197	82-Pb-208	90-Th-232 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Pb206 production)	MT17 ($\gamma,3n$) >>



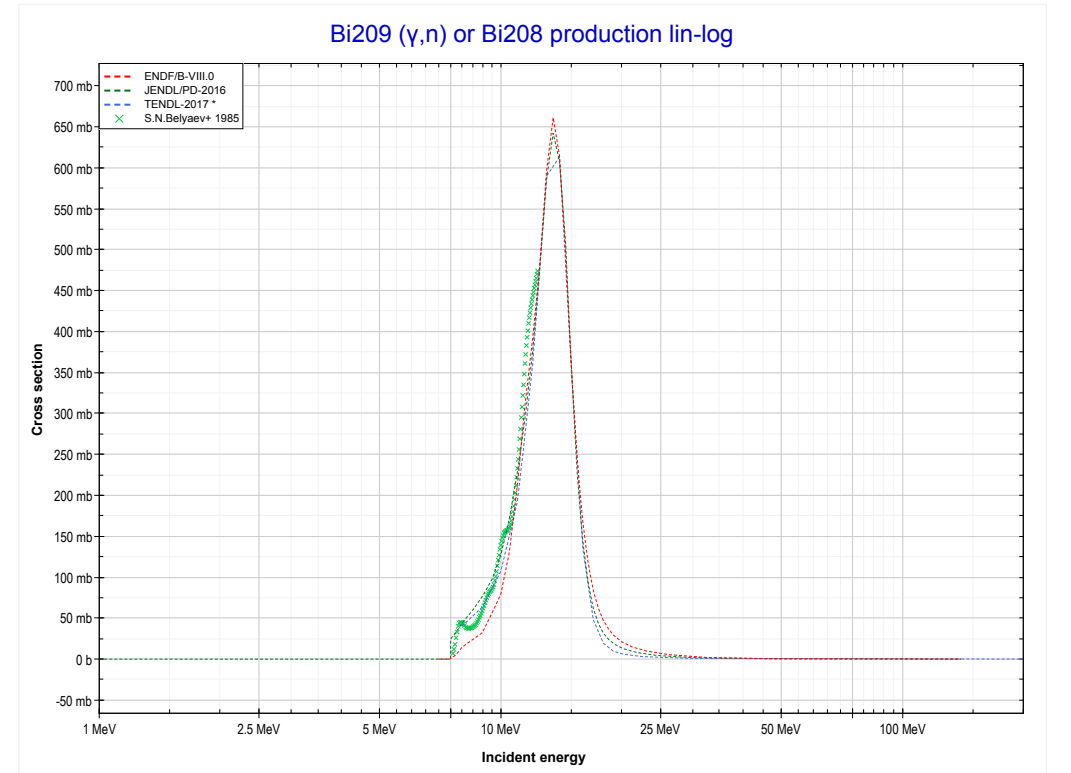
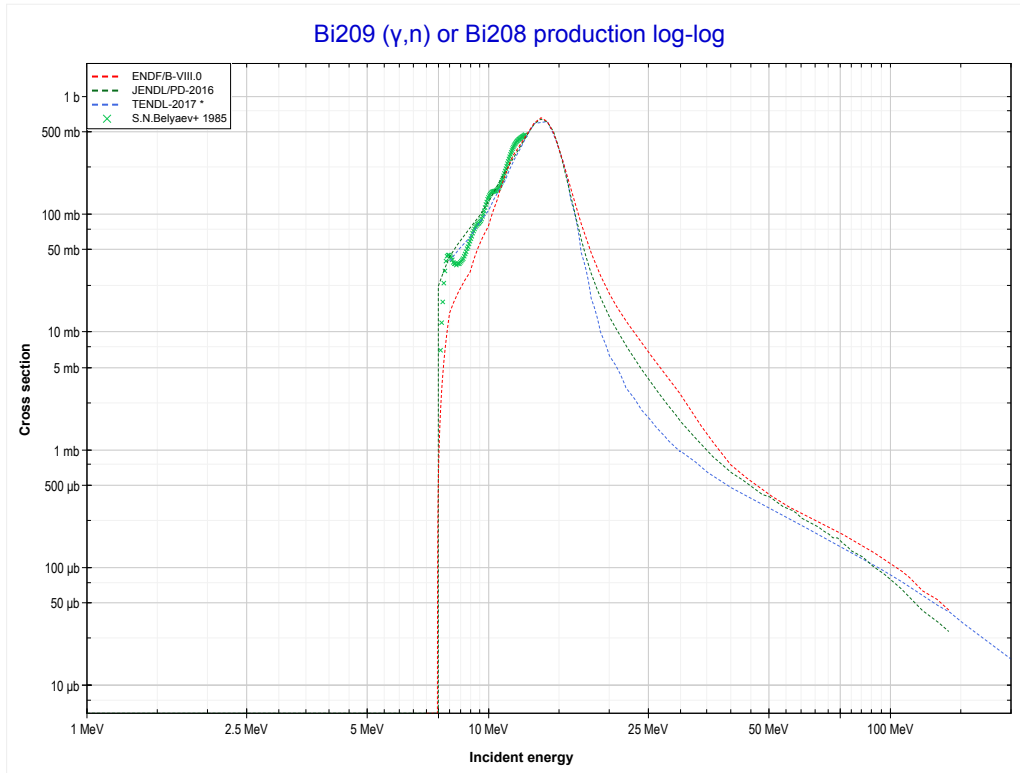
Reaction	Q-Value
Pb208($\gamma,2n$)Pb206	-14105.63 keV

<< 79-Au-197	82-Pb-208	83-Bi-209 >>
<< MT16 ($\gamma,2n$)	MT17 ($\gamma,3n$) or MT5 (Pb205 production)	83-Bi-209 MT4 (γ,n) >>



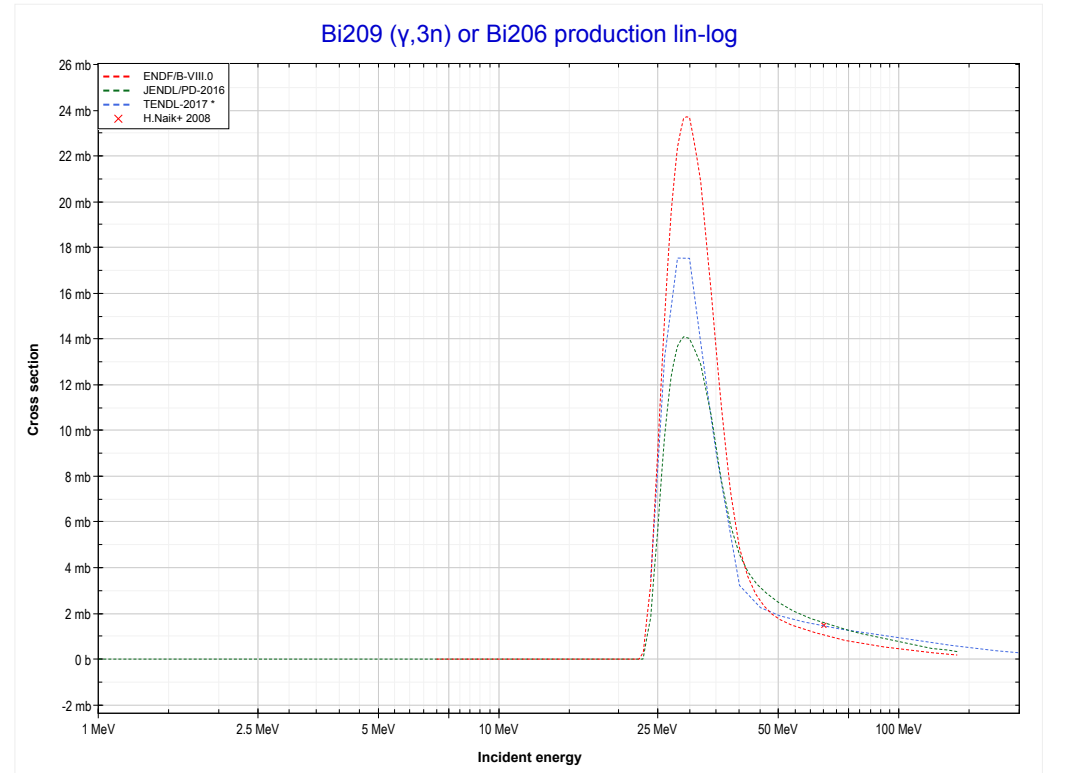
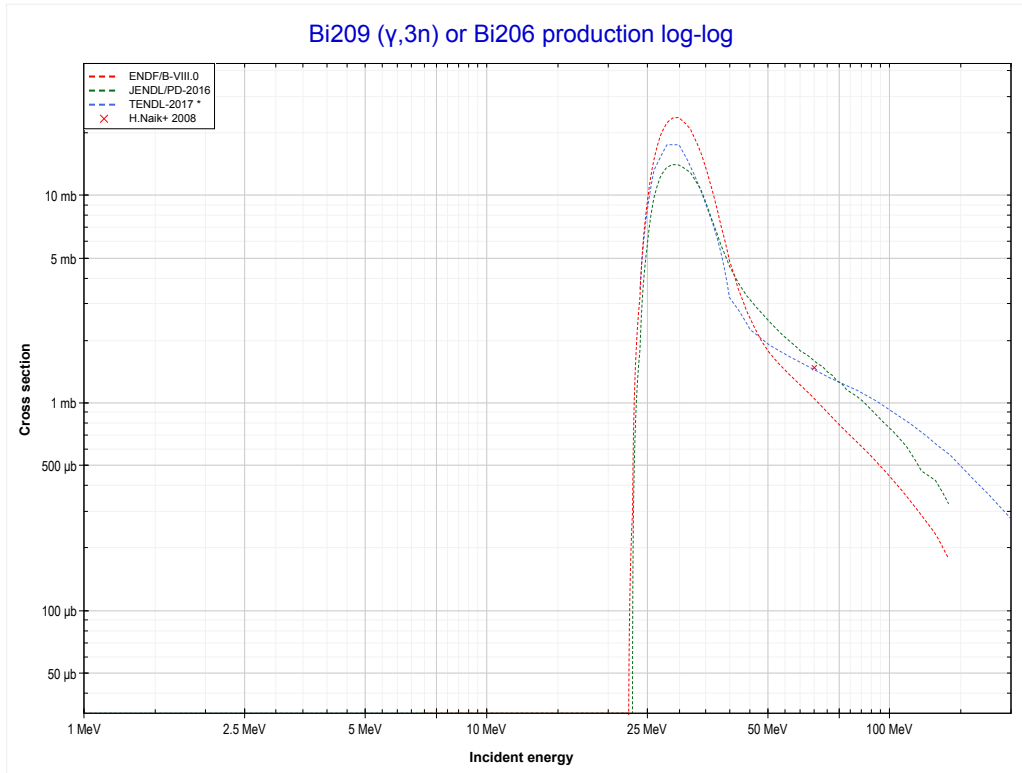
Reaction	Q-Value
Pb208($\gamma,3n$)Pb205	-22192.35 keV

<< 82-Pb-208	83-Bi-209	90-Th-232 >>
<< 82-Pb-208 MT17 (γ,3n)	MT4 (γ,n) or MT5 (Bi208 production)	MT17 (γ,3n) >>



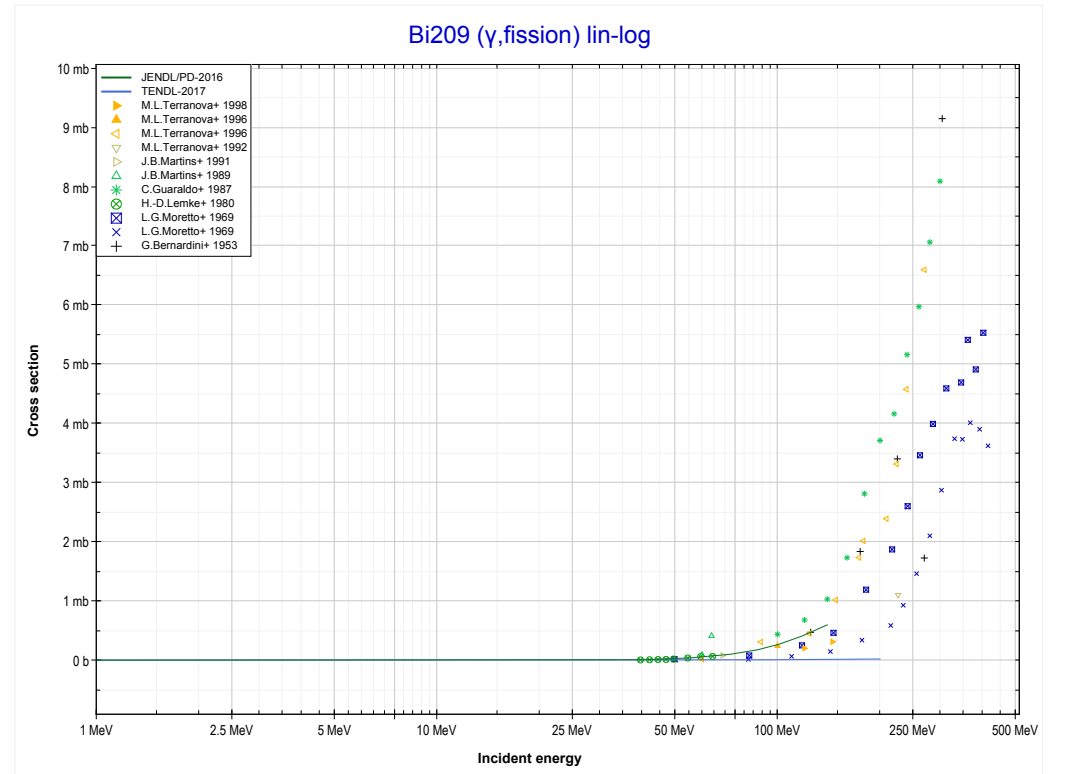
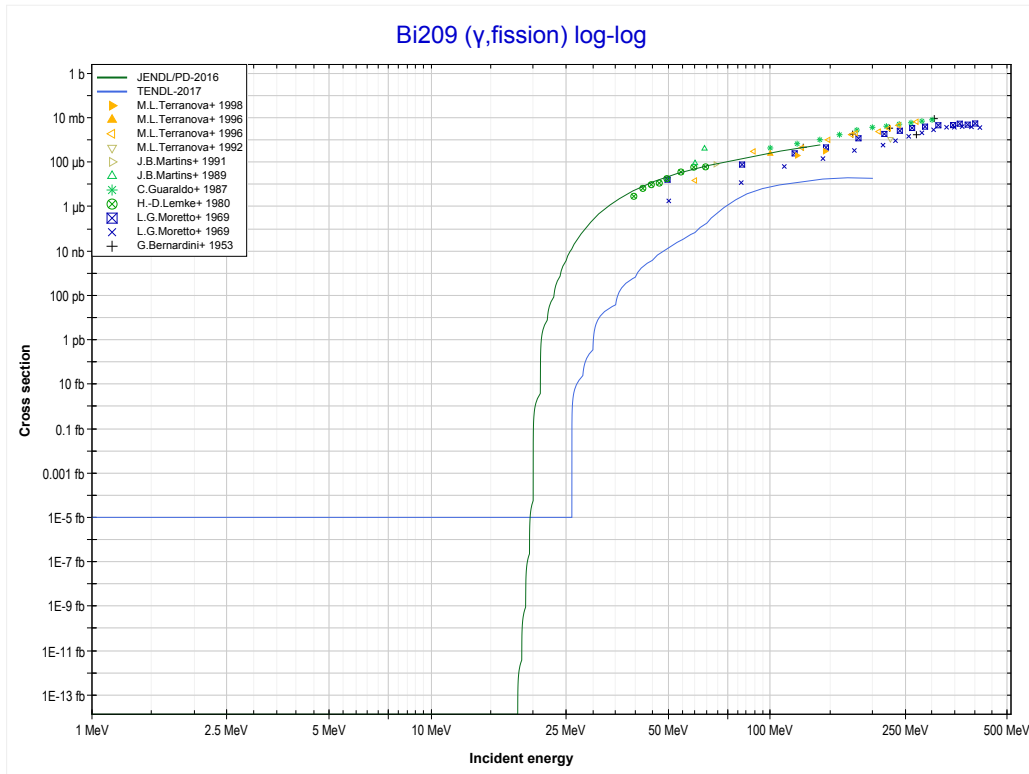
Reaction	Q-Value
Bi209(γ,n)Bi208	-7459.82 keV

<< 82-Pb-208	83-Bi-209	
<< MT4 (γ, n)	MT17 ($\gamma, 3n$) or MT5 (Bi206 production)	MT18 ($\gamma, fission$) >>

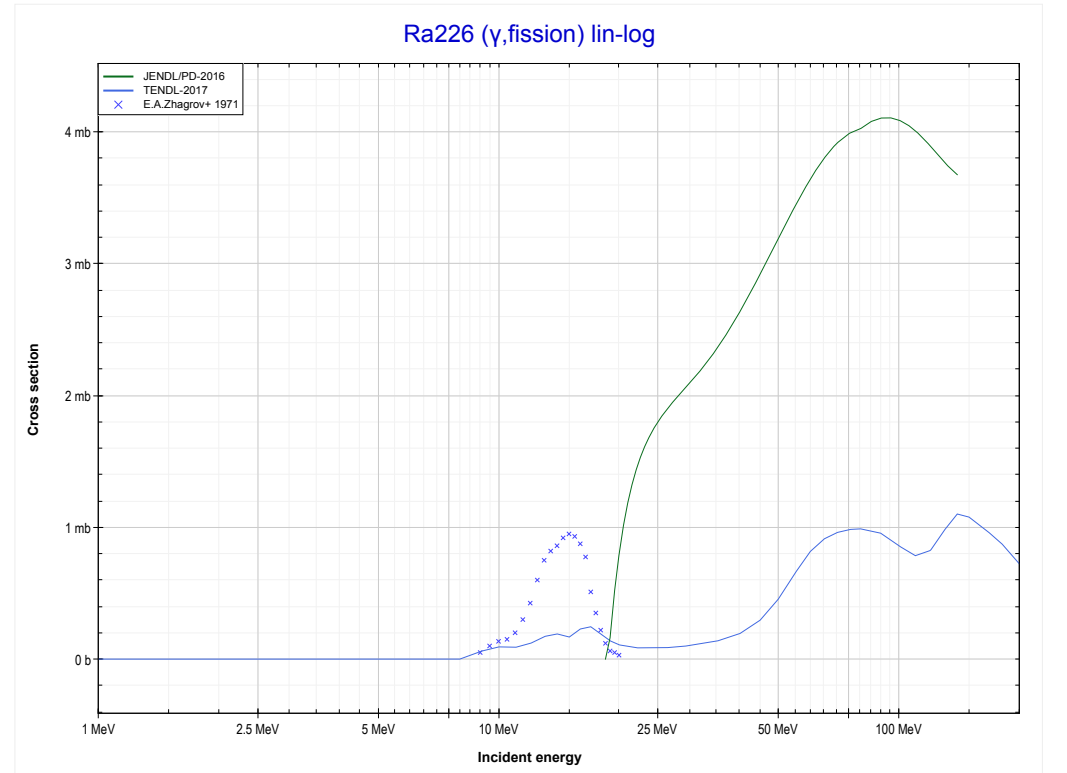
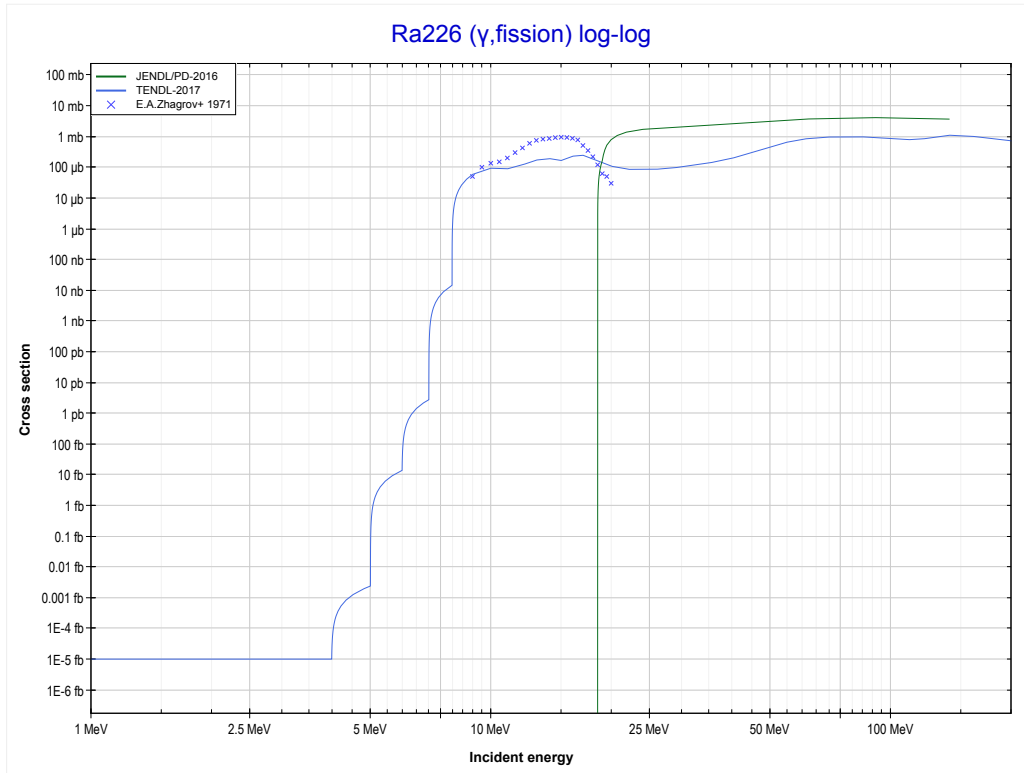


Reaction	Q-Value
Bi209($\gamma, 3n$)Bi206	-22444.15 keV

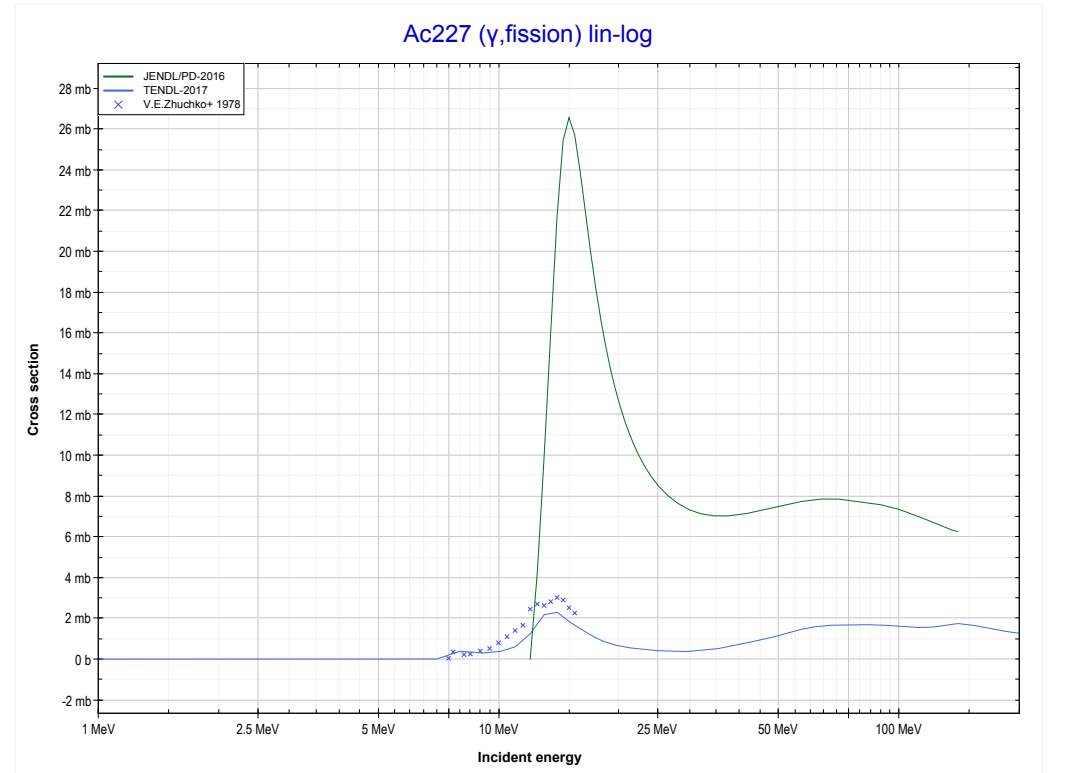
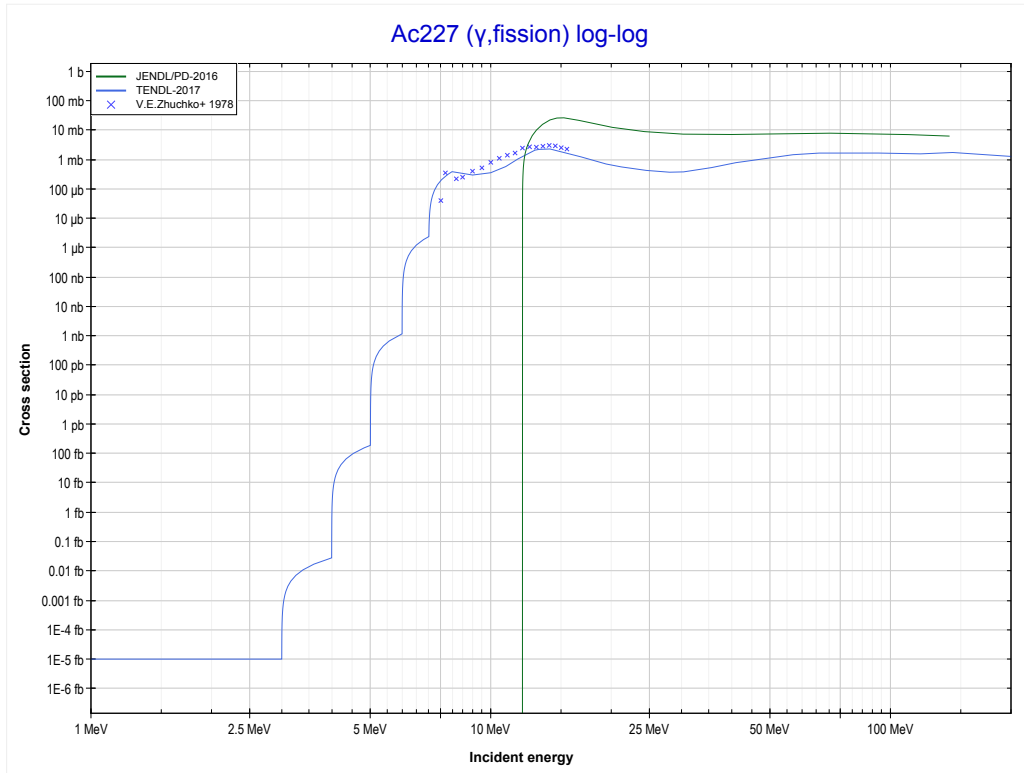
<< 79-Au-197	83-Bi-209	88-Ra-226 >>
<< MT17 ($\gamma,3n$)	MT18 (γ,fission)	88-Ra-226 MT18 (γ ,fission) >>



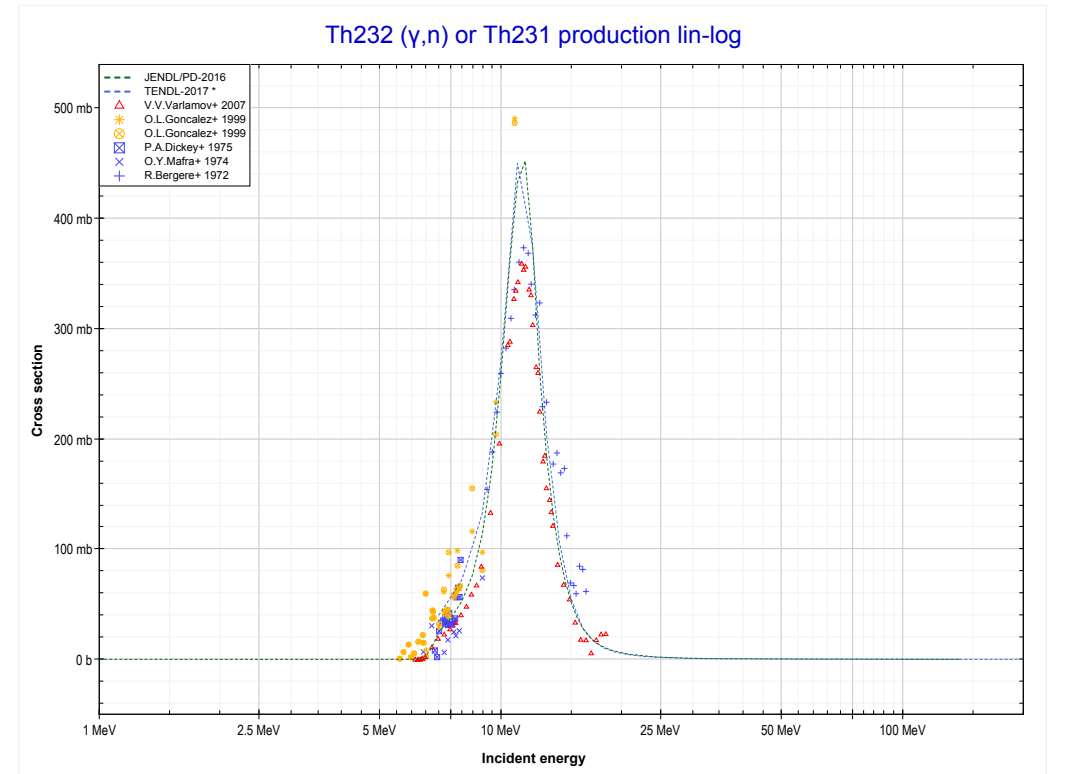
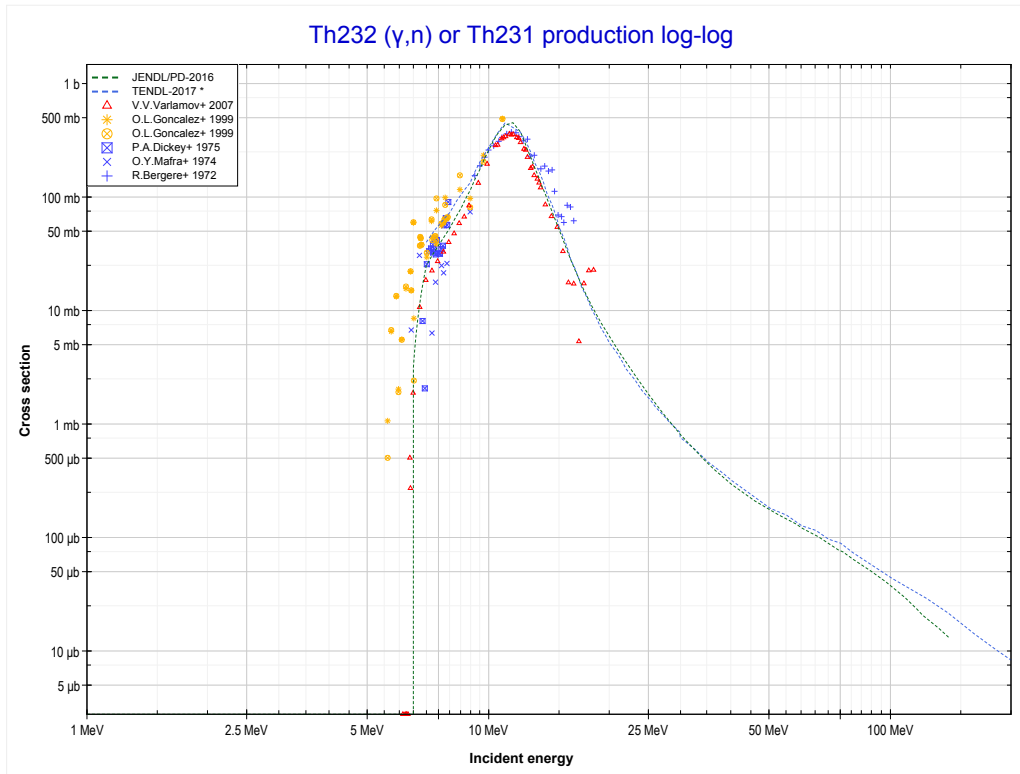
<< 83-Bi-209	88-Ra-226	89-Ac-227 >>
<< 83-Bi-209 MT18 (γ,fission)	MT18 (γ,fission)	89-Ac-227 MT18 (γ,fission) >>



<< 88-Ra-226	89-Ac-227	90-Th-232 >>
<< 88-Ra-226 MT18 (γ,fission)	MT18 (γ,fission)	90-Th-232 MT4 (γ,n) >>

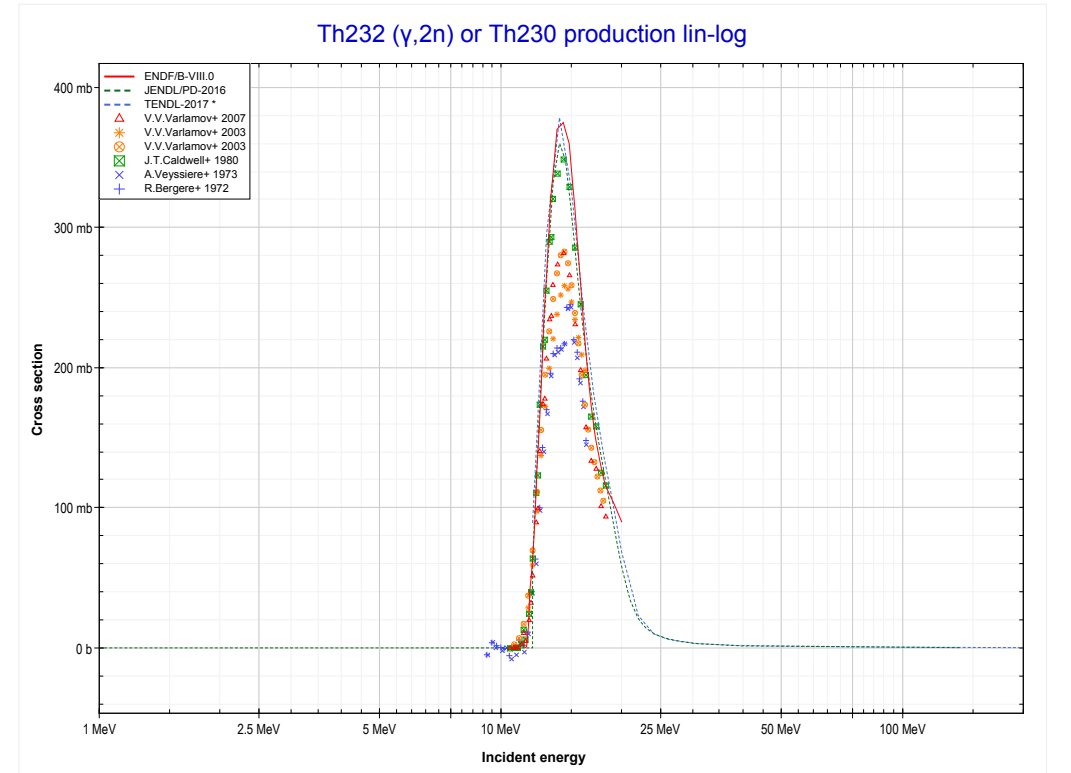
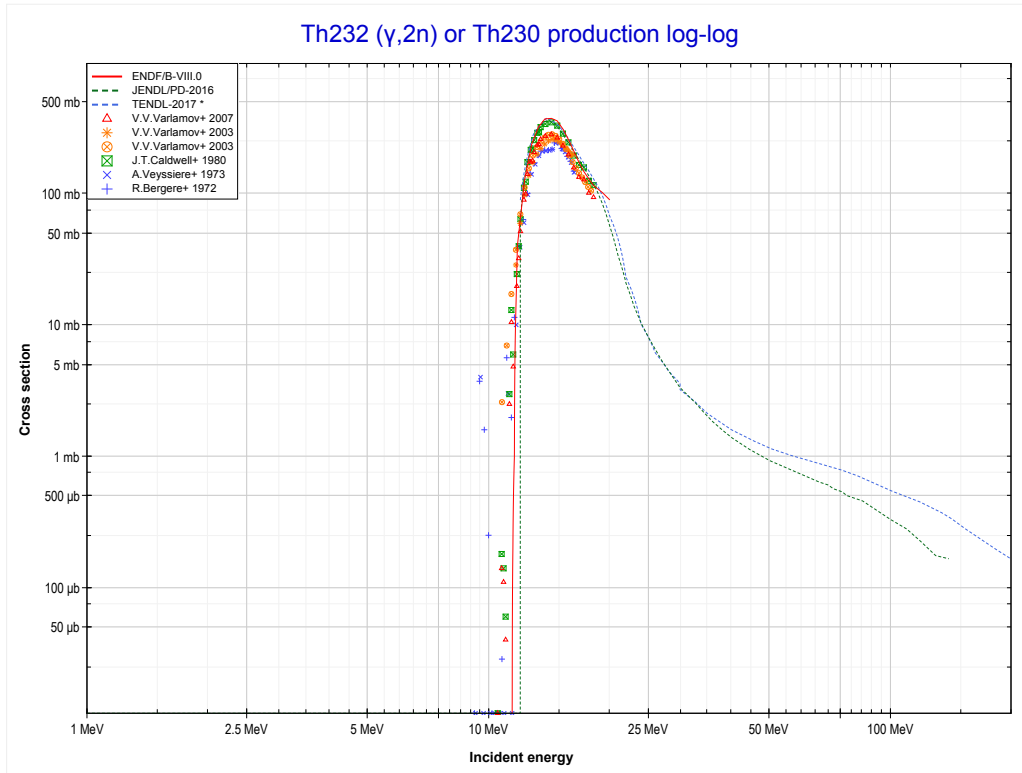


<< 83-Bi-209	90-Th-232	92-U-233 >>
<< 89-Ac-227 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (Th231 production)	MT16 (γ ,2n) >>



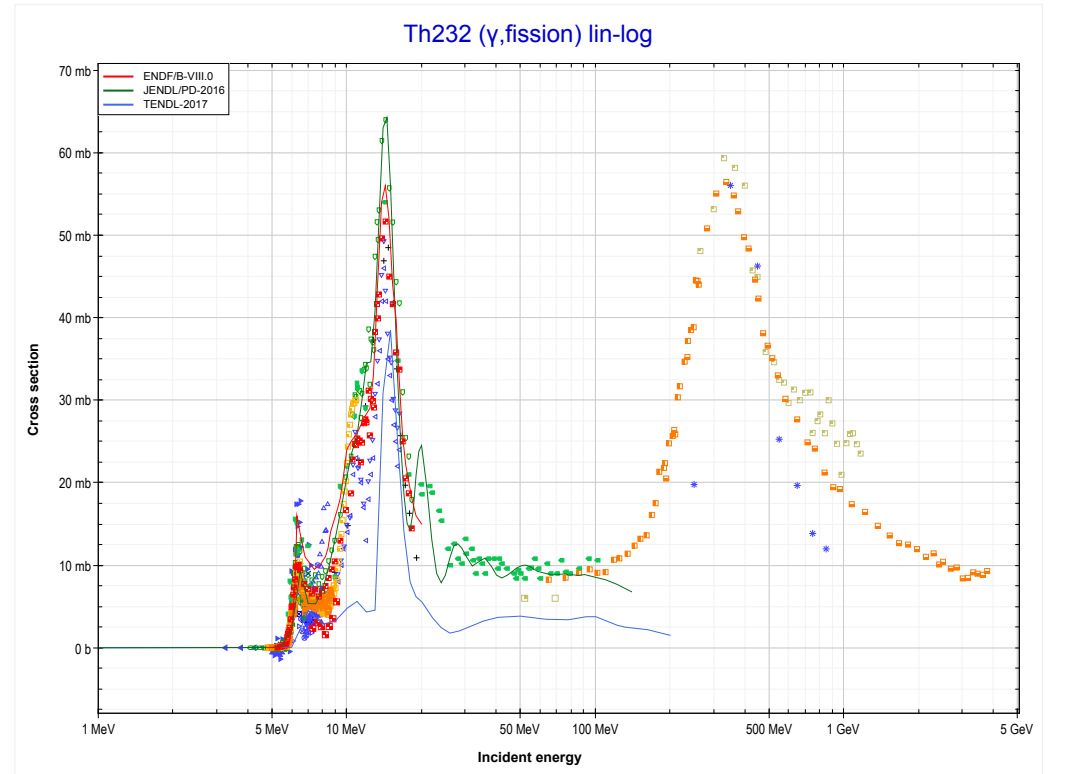
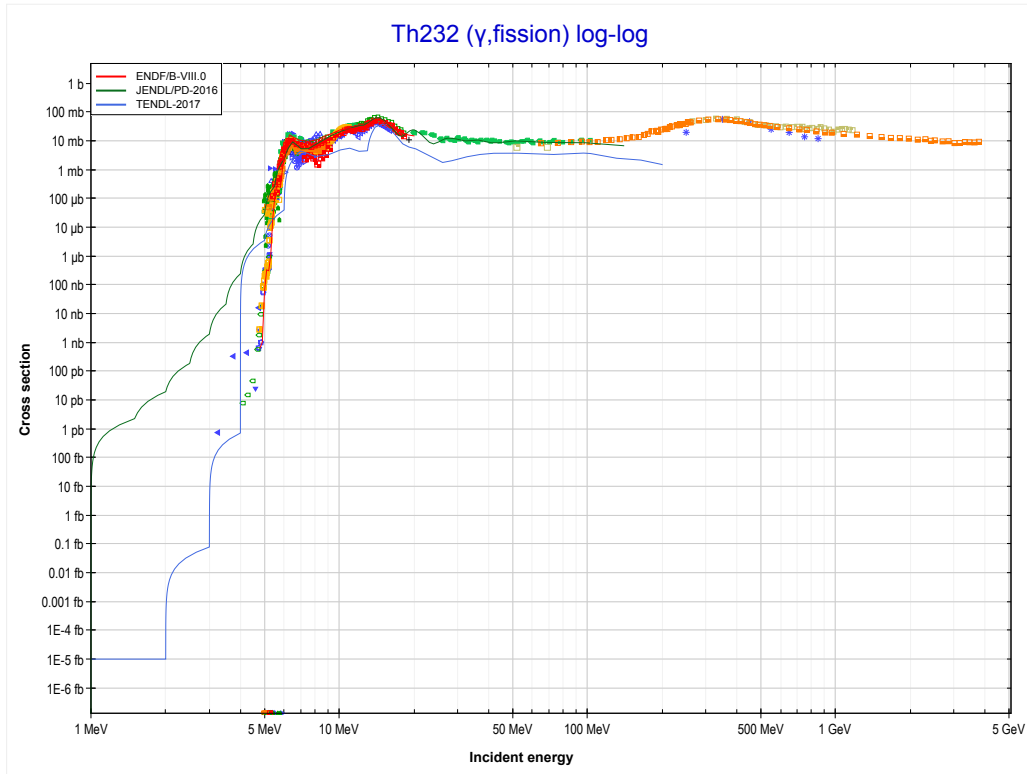
Reaction	Q-Value
Th232(γ ,n)Th231	-6440.12 keV

<< 82-Pb-208	90-Th-232	92-U-235 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (Th230 production)	MT18 (γ ,fission) >>

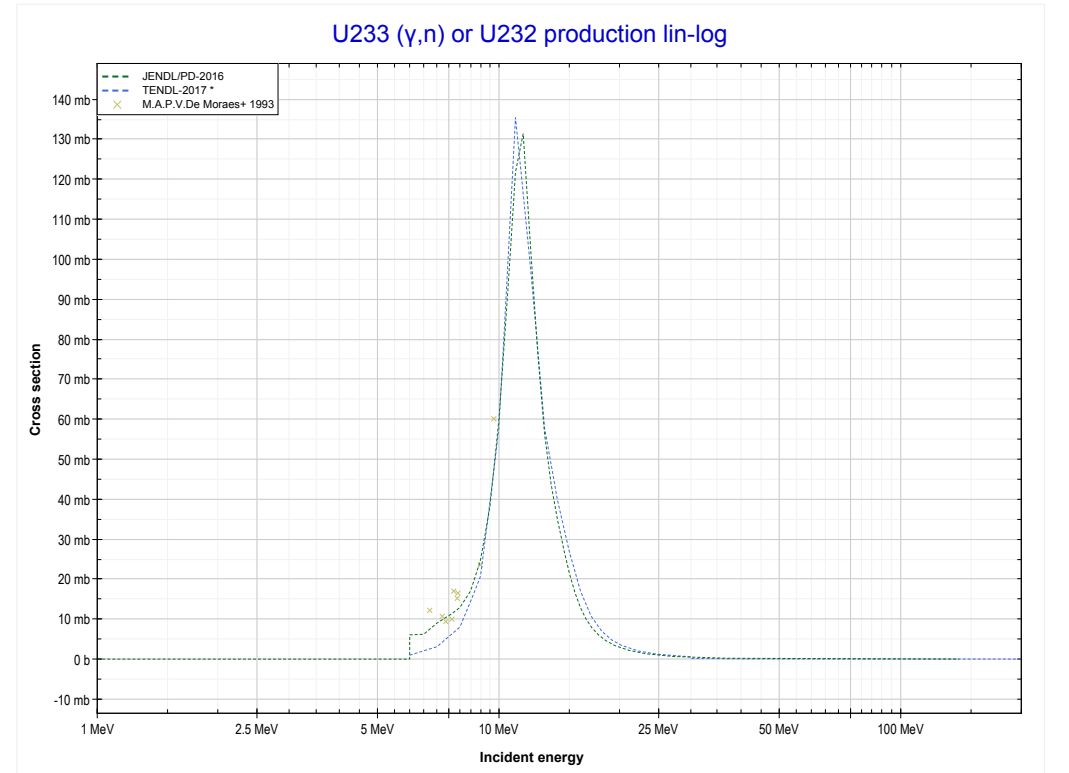
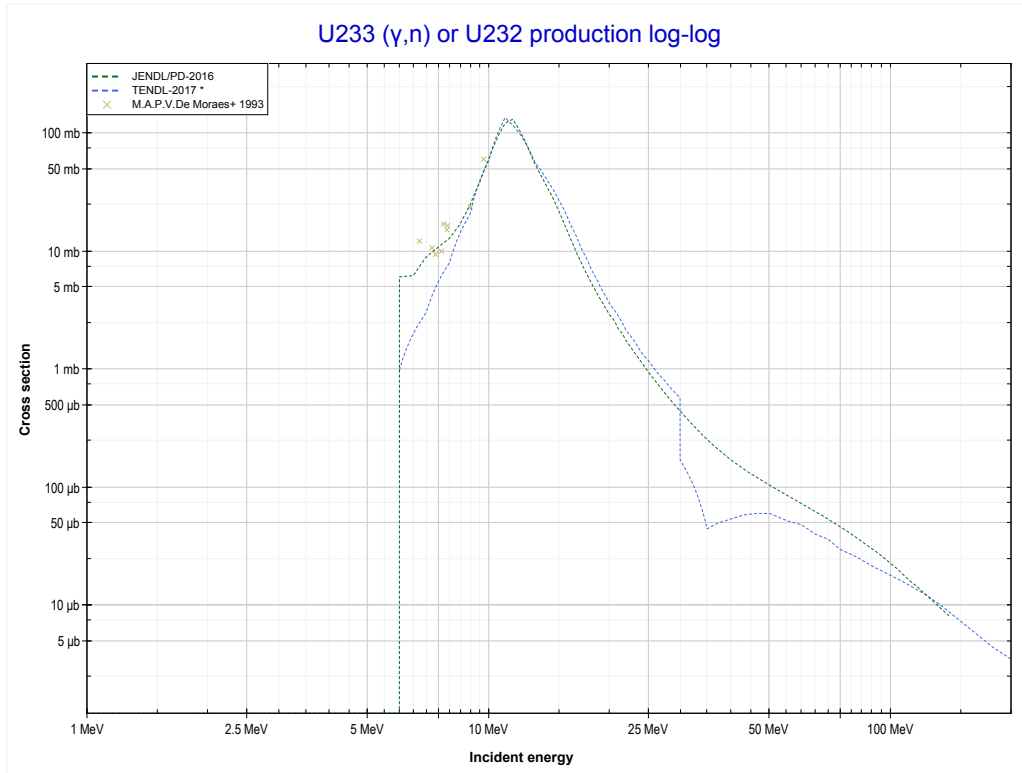


Reaction	Q-Value
Th232($\gamma,2n$)Th230	-11558.13 keV

<< 89-Ac-227	90-Th-232	92-U-233 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	92-U-233 MT4 (γ,n) >>

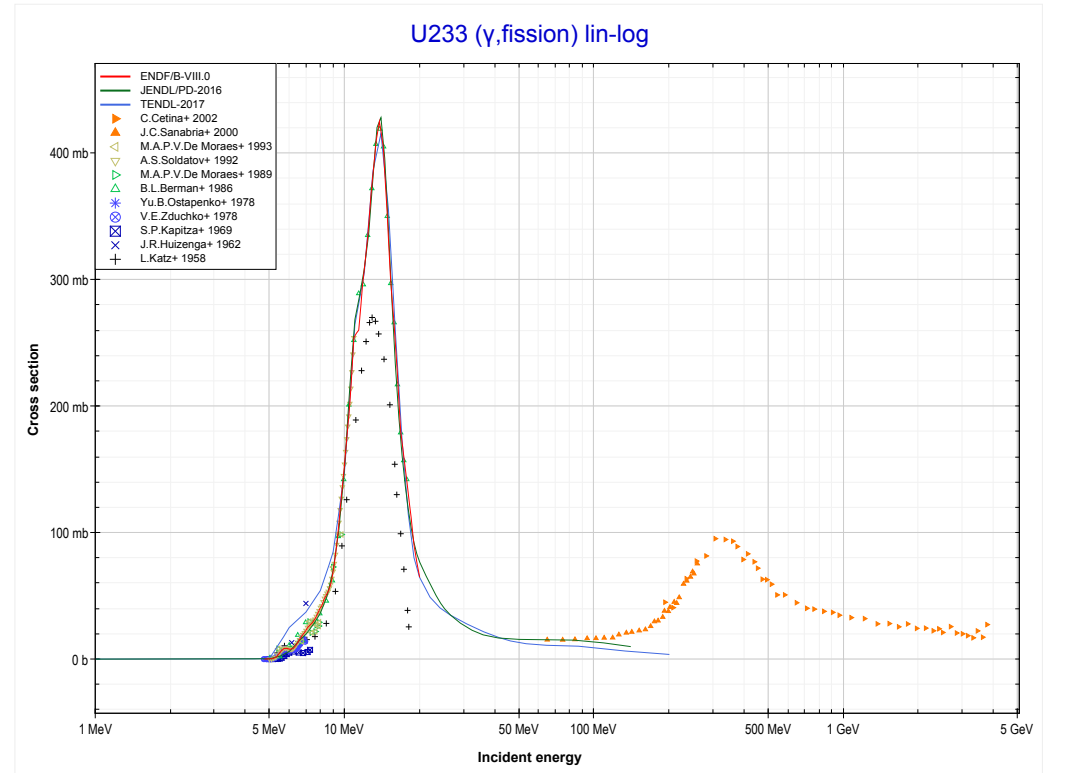
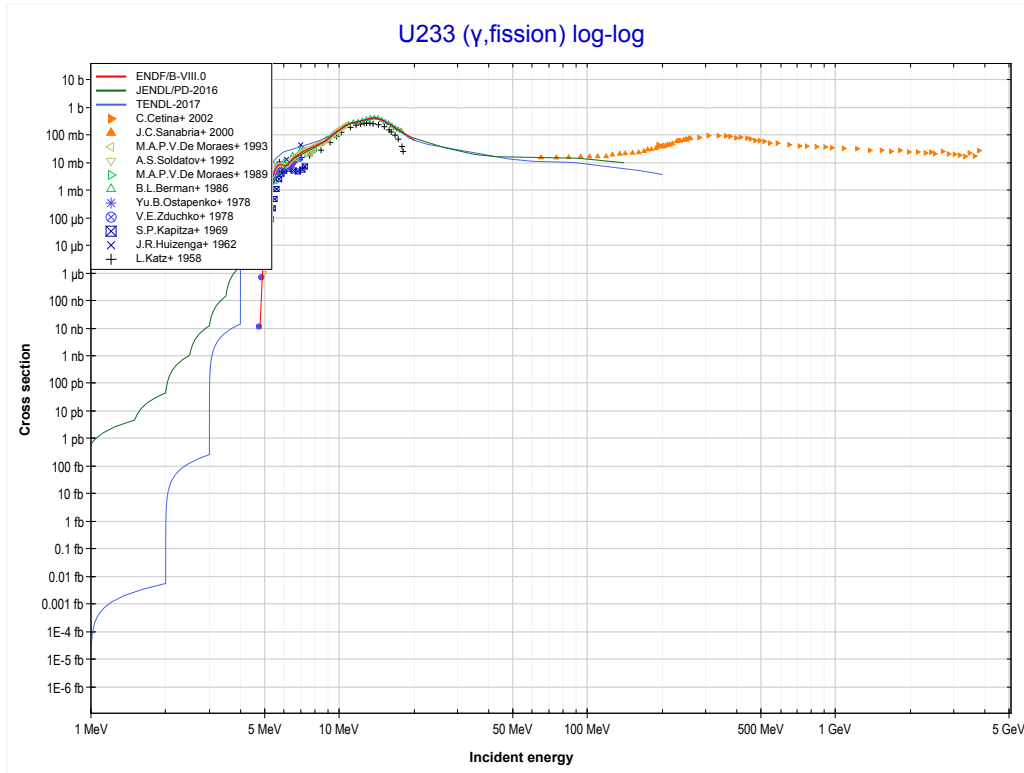


<< 90-Th-232	92-U-233	92-U-238 >>
<< 90-Th-232 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (U232 production)	MT18 (γ ,fission) >>

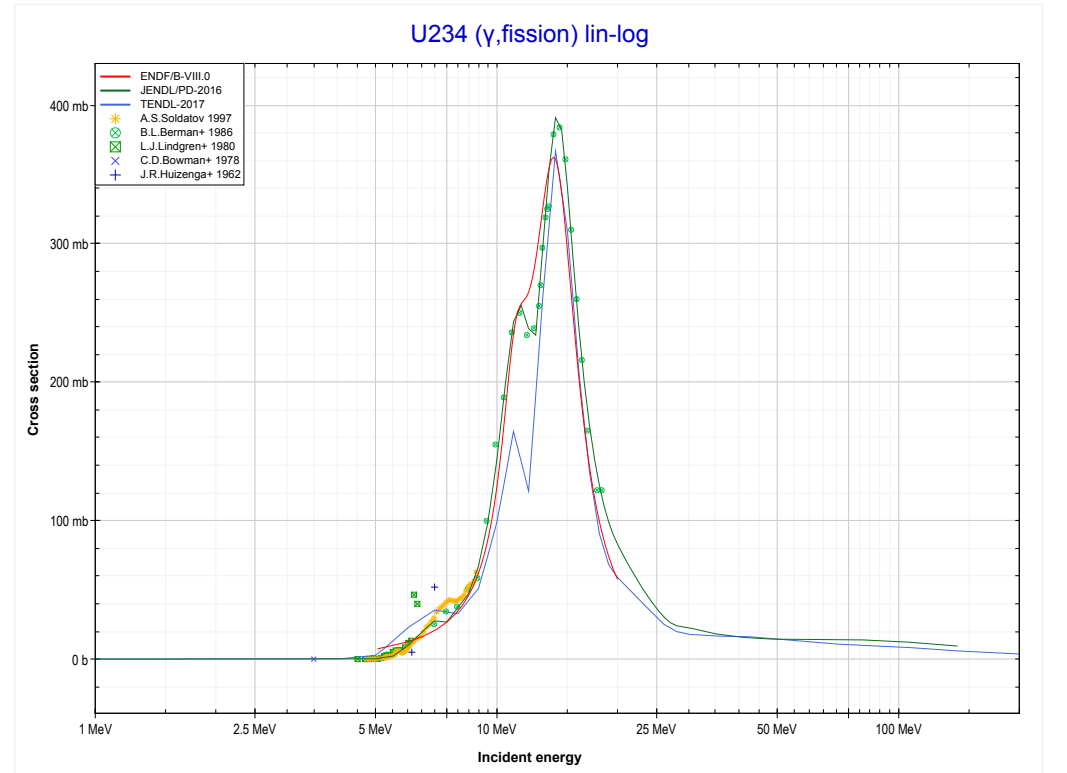
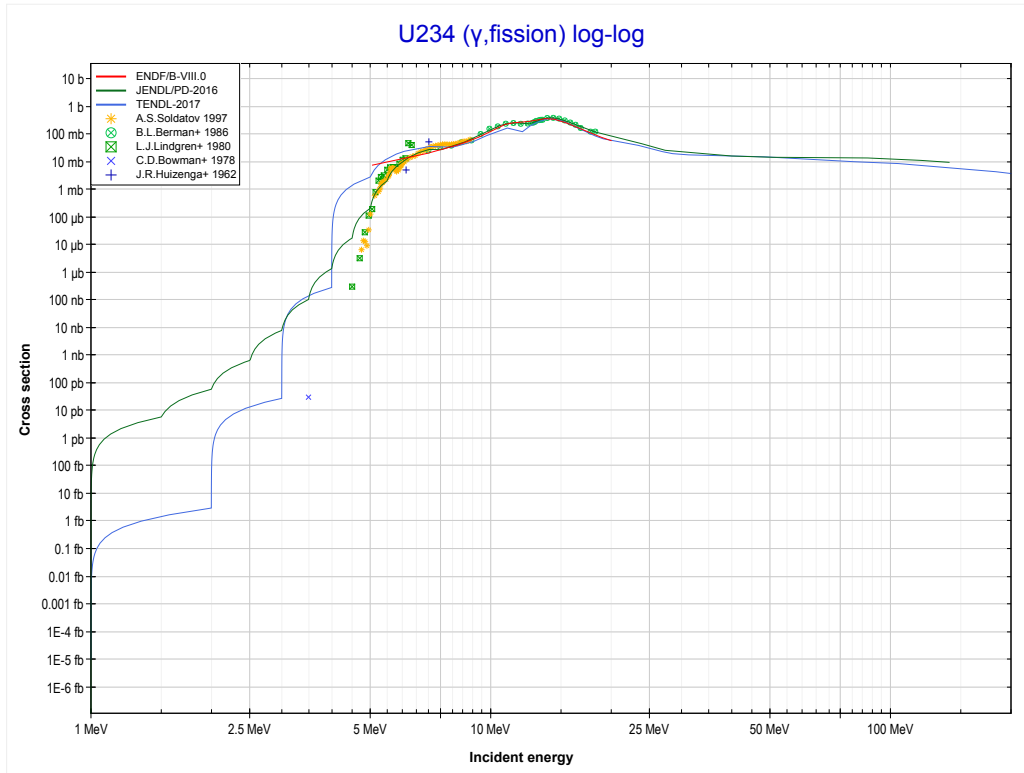


Reaction	Q-Value
U233(γ ,n)U232	-5761.92 keV

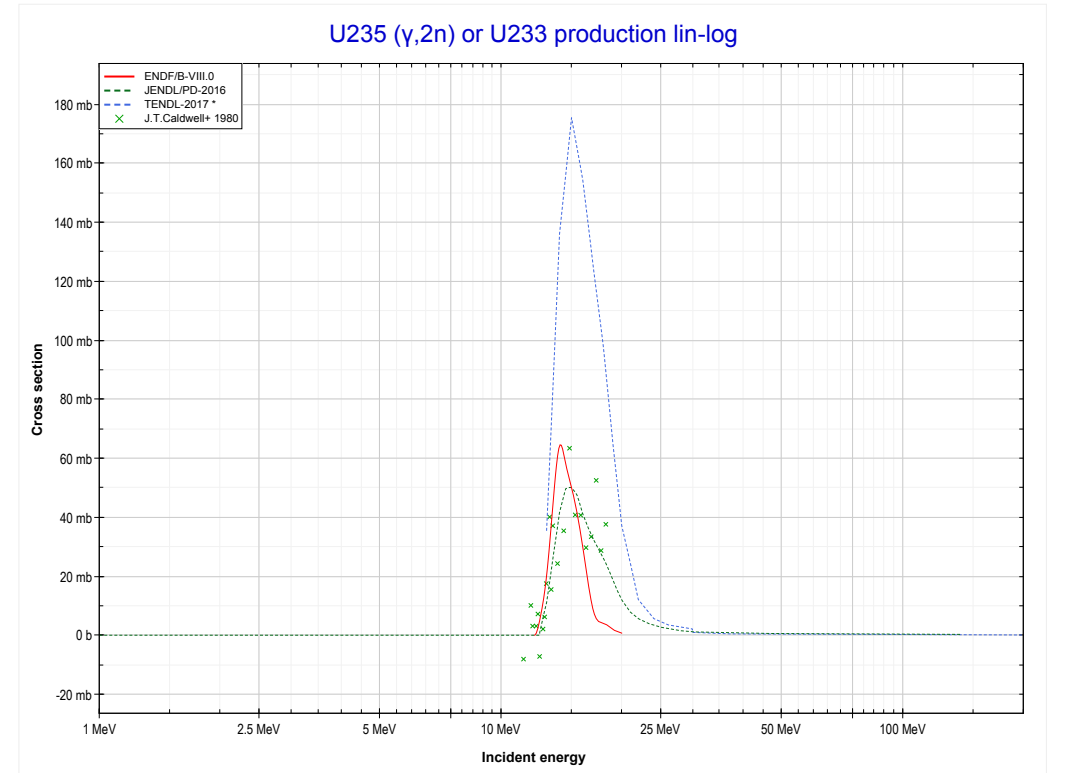
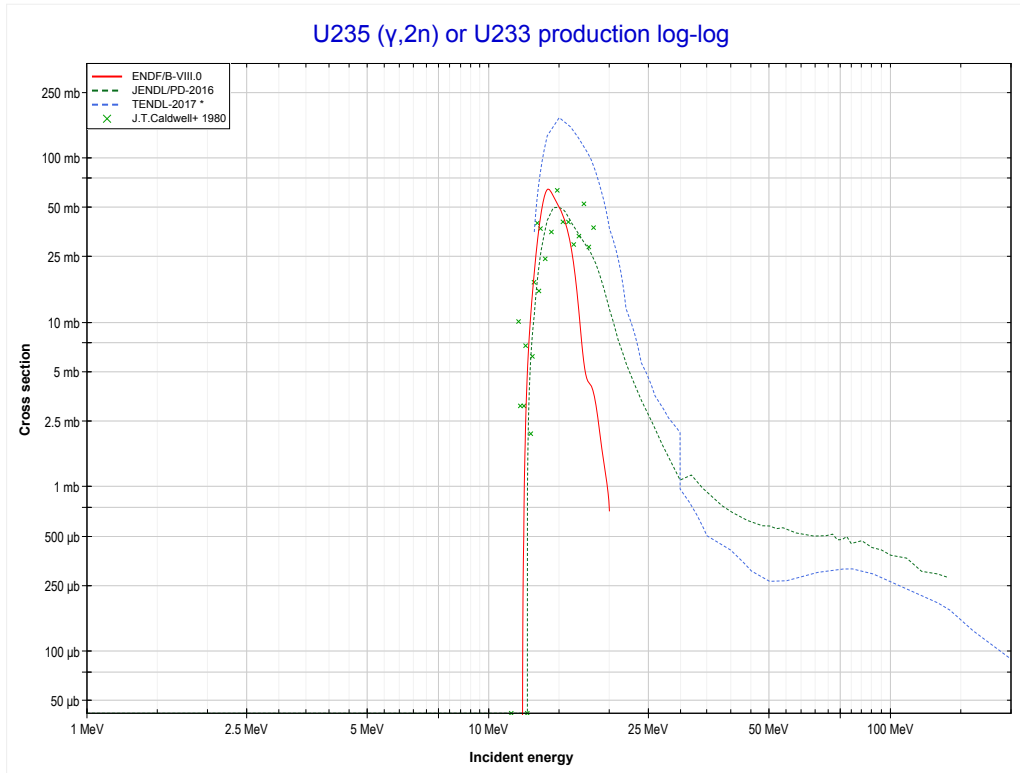
<< 90-Th-232	92-U-233	92-U-234 >>
<< MT4 (γ,n)	MT18 ($\gamma,fission$)	92-U-234 MT18 ($\gamma,fission$) >>



<< 92-U-233	92-U-234	92-U-235 >>
<< 92-U-233 MT18 (γ ,fission)	MT18 (γ,fission)	92-U-235 MT16 (γ ,2n) >>

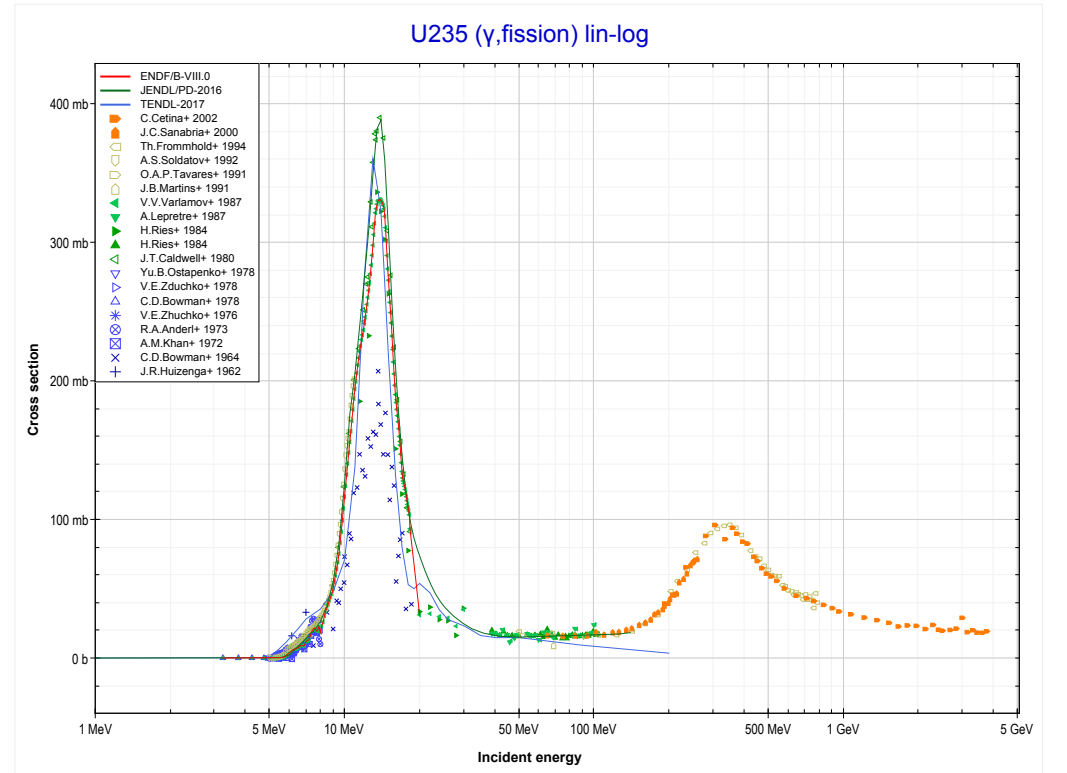
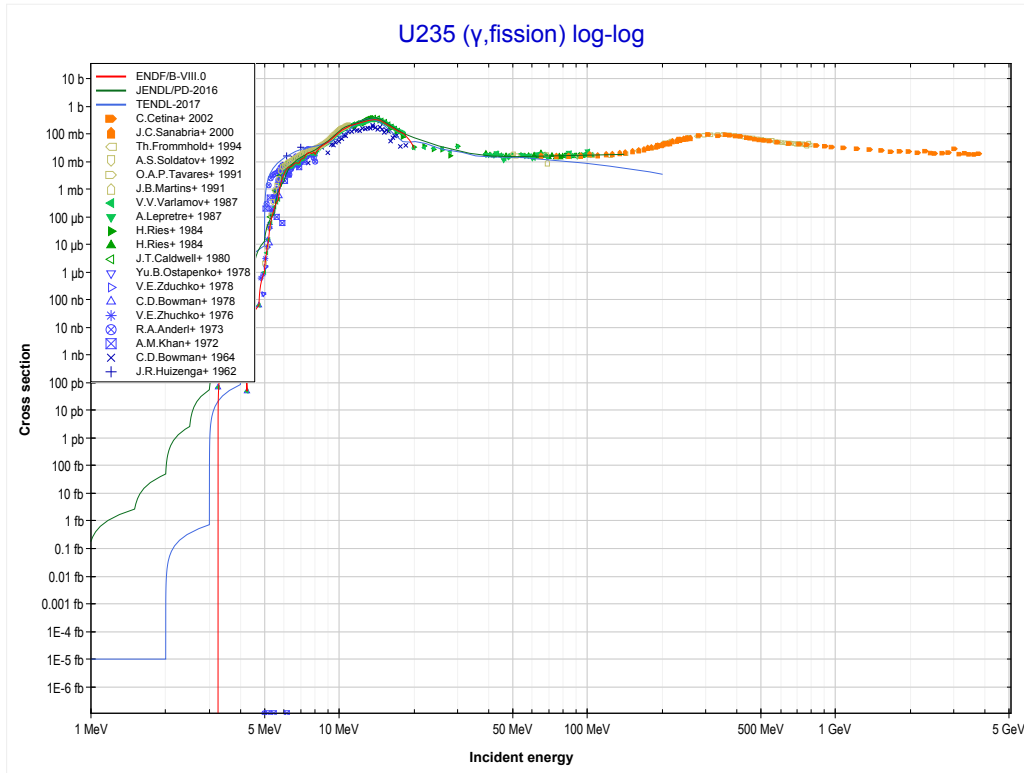


<< 90-Th-232	92-U-235	92-U-236 >>
<< 92-U-234 MT18 (γ ,fission)	MT16 (γ,2n) or MT5 (U233 production)	MT18 (γ ,fission) >>

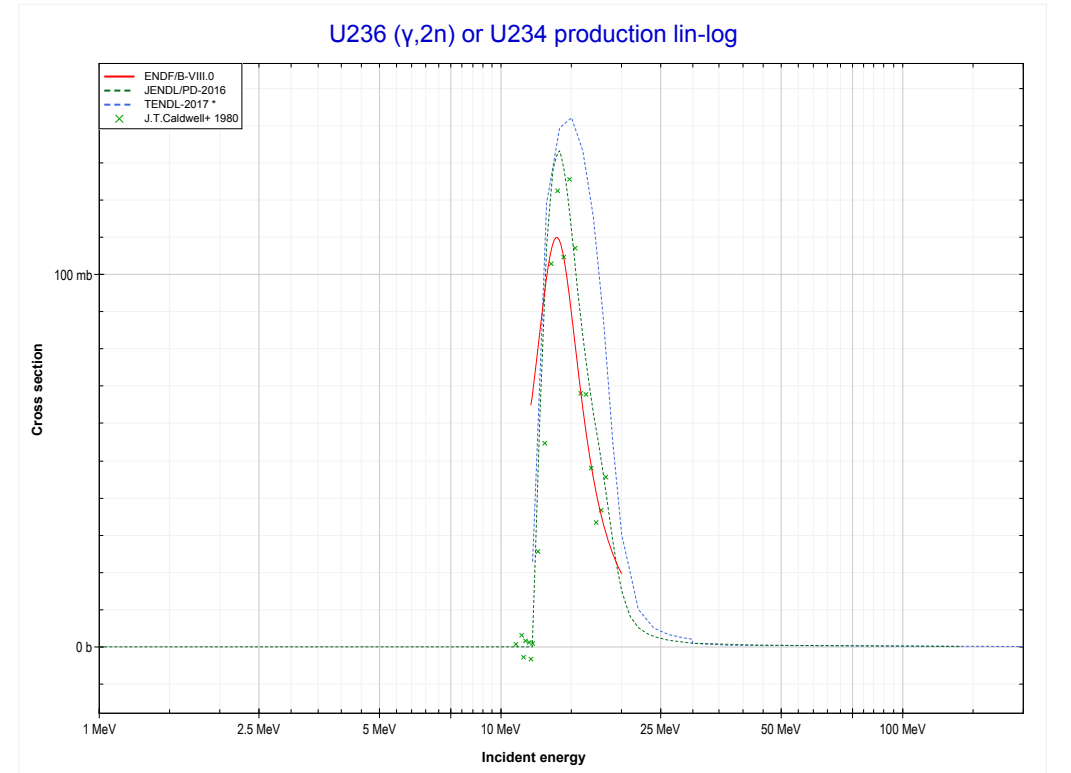
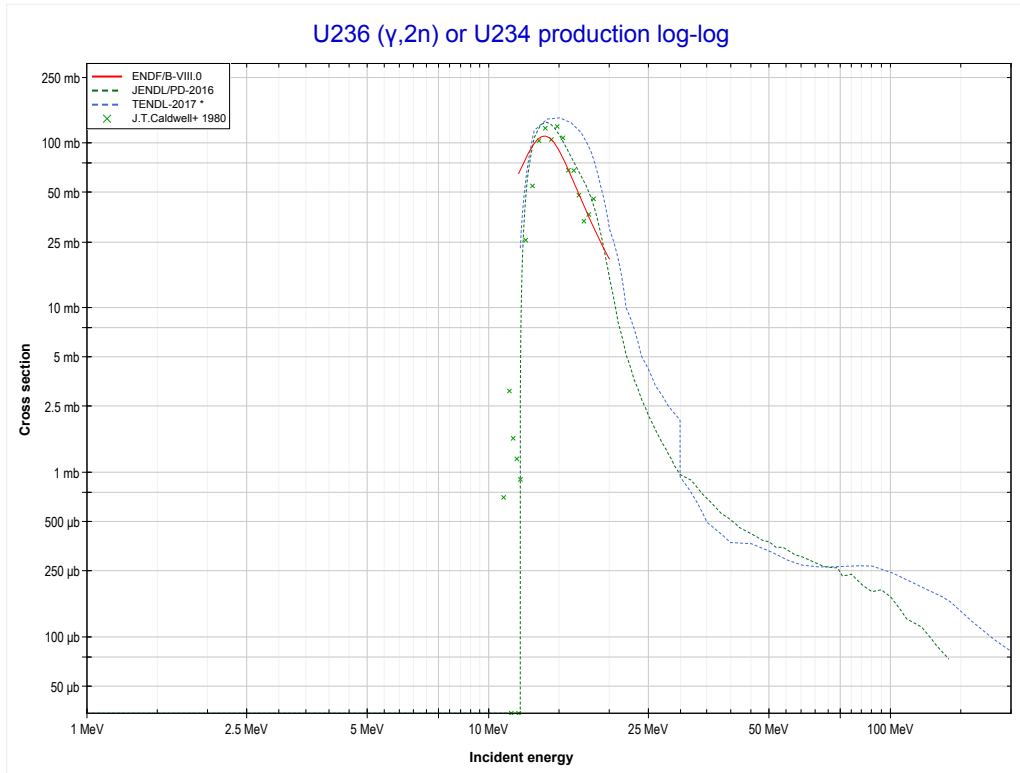


Reaction	Q-Value
U235(γ ,2n)U233	-12142.23 keV

<< 92-U-234	92-U-235	92-U-236 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	92-U-236 MT16 ($\gamma,2n$) >>

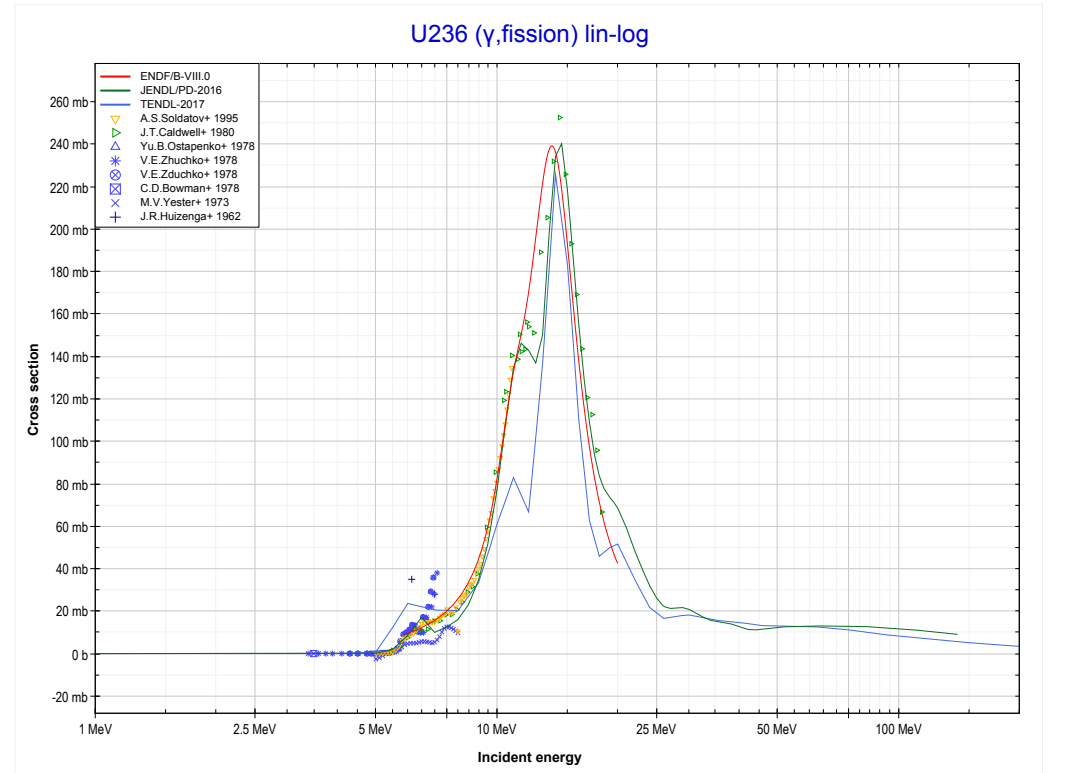
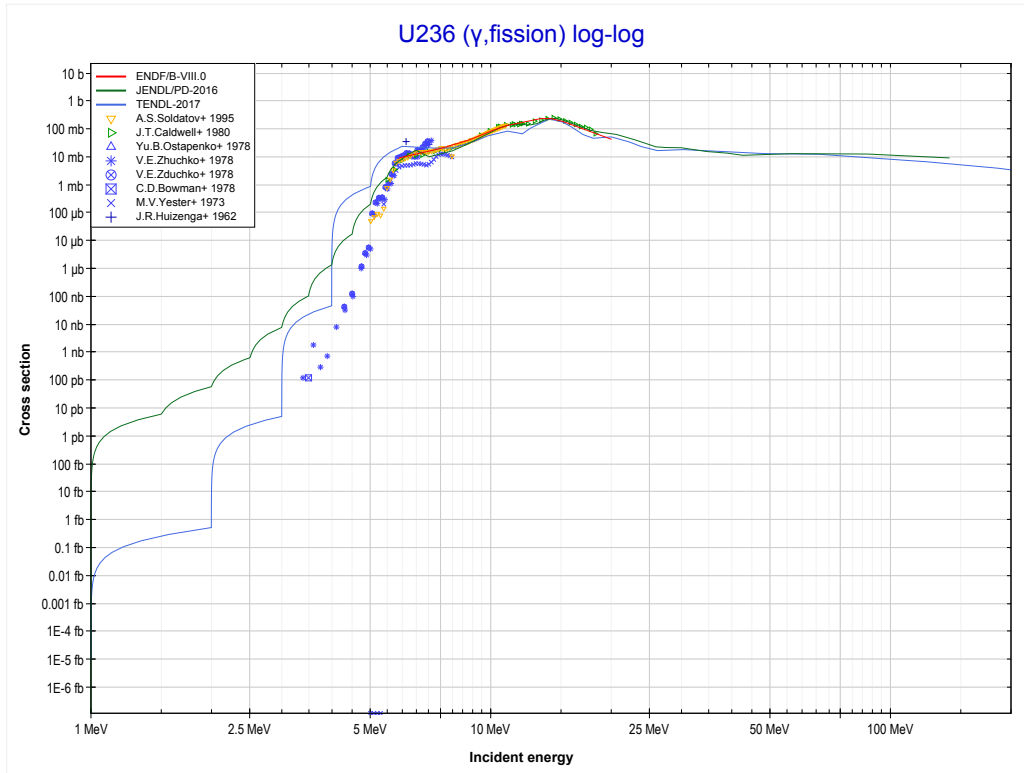


<< 92-U-235	92-U-236	92-U-238 >>
<< 92-U-235 MT18 (γ ,fission)	MT16 (γ,2n) or MT5 (U234 production)	MT18 (γ ,fission) >>

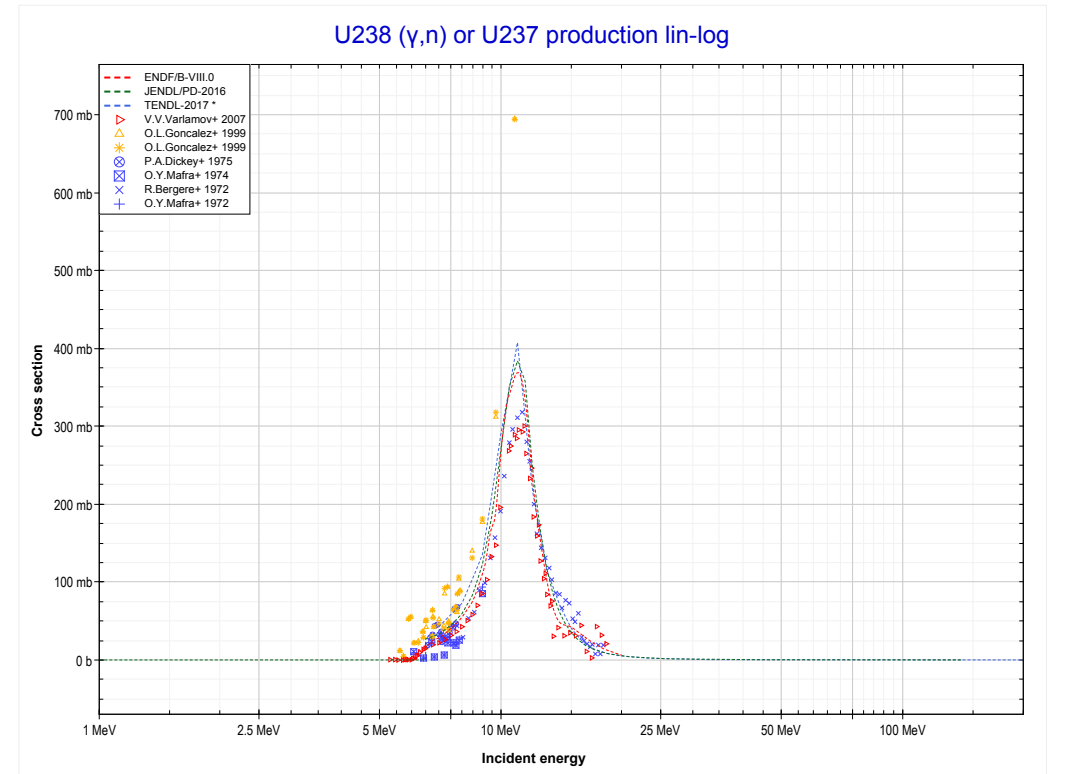
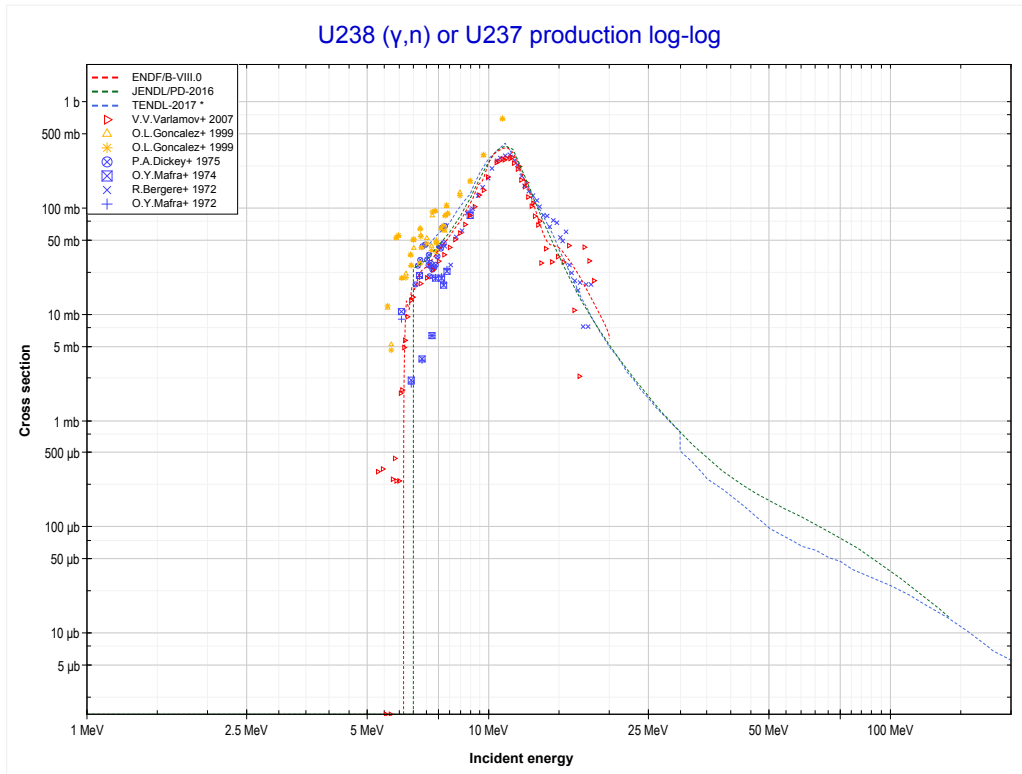


Reaction	Q-Value
U236(γ ,2n)U234	-11842.93 keV

<< 92-U-235	92-U-236	92-U-238 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	92-U-238 MT4 (γ,n) >>

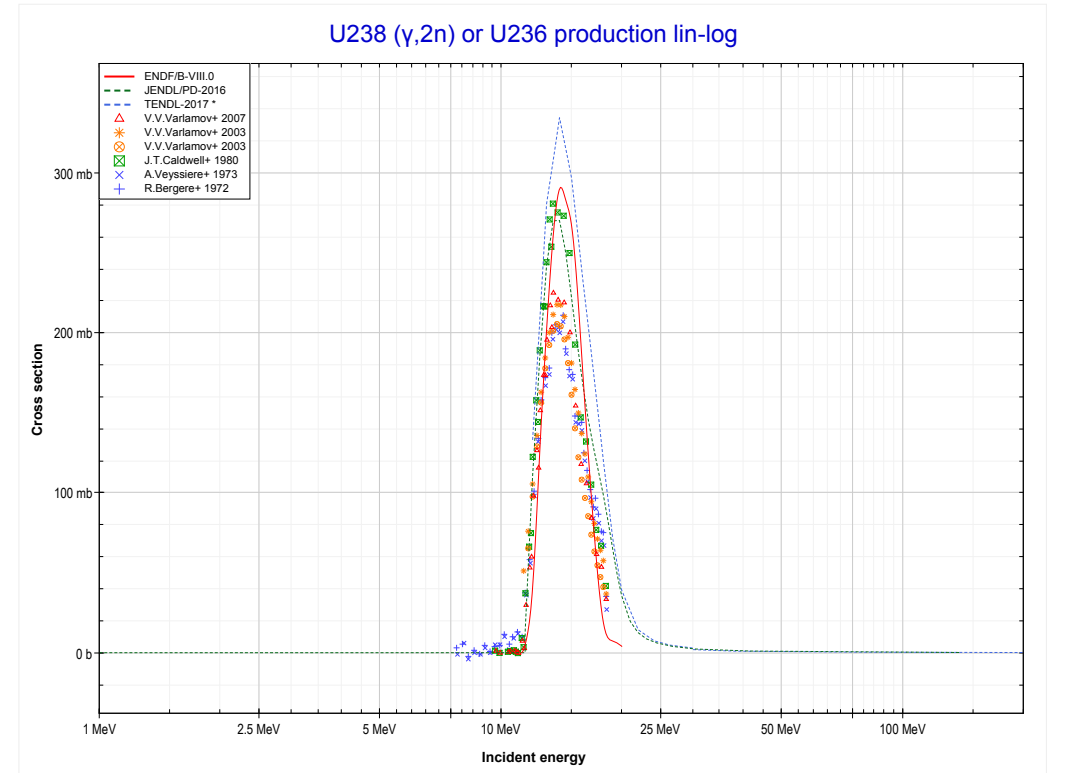
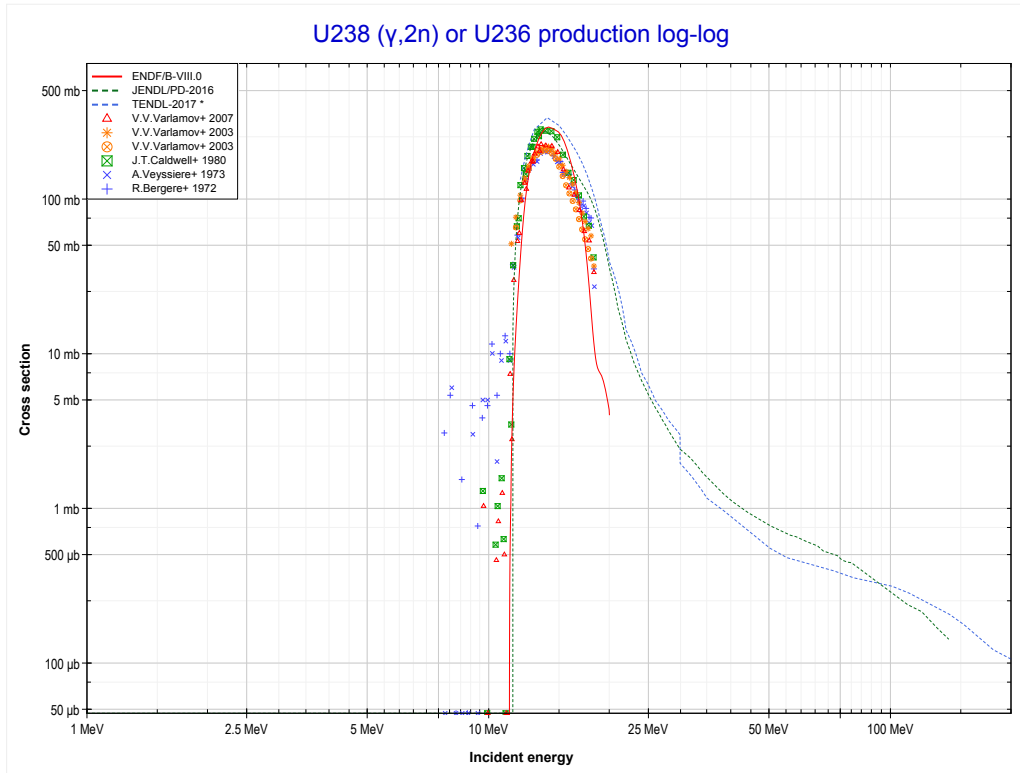


<< 92-U-233	92-U-238	93-Np-237 >>
<< 92-U-236 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (U237 production)	MT16 (γ ,2n) >>



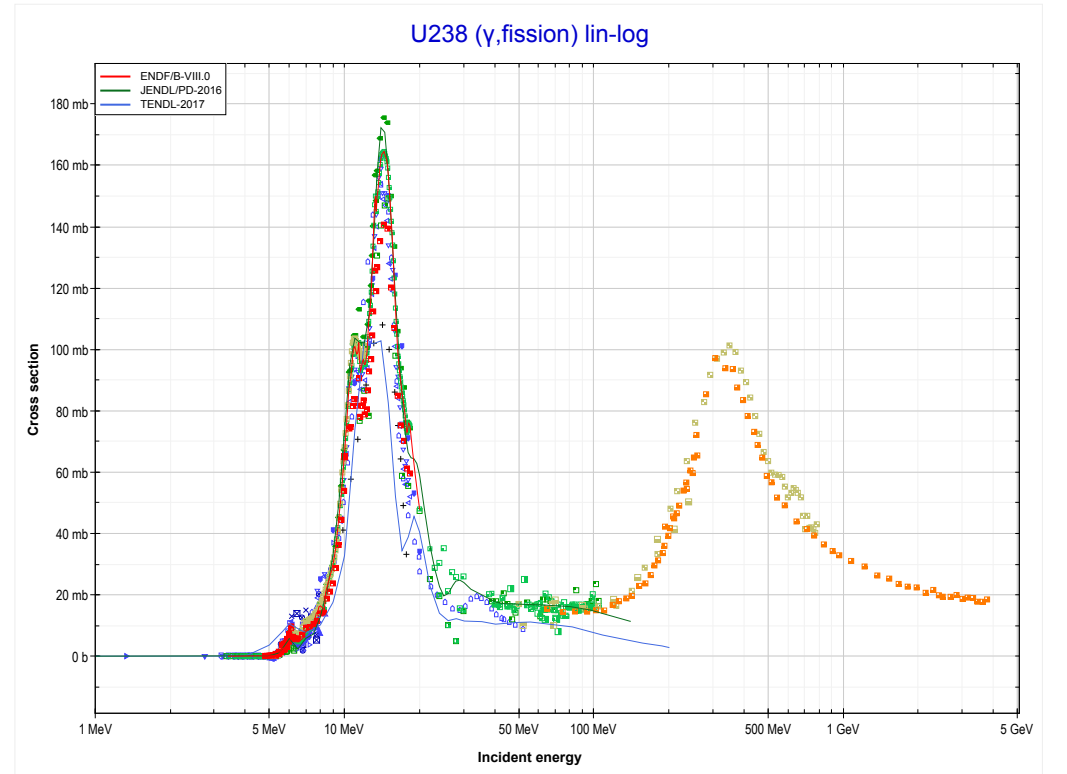
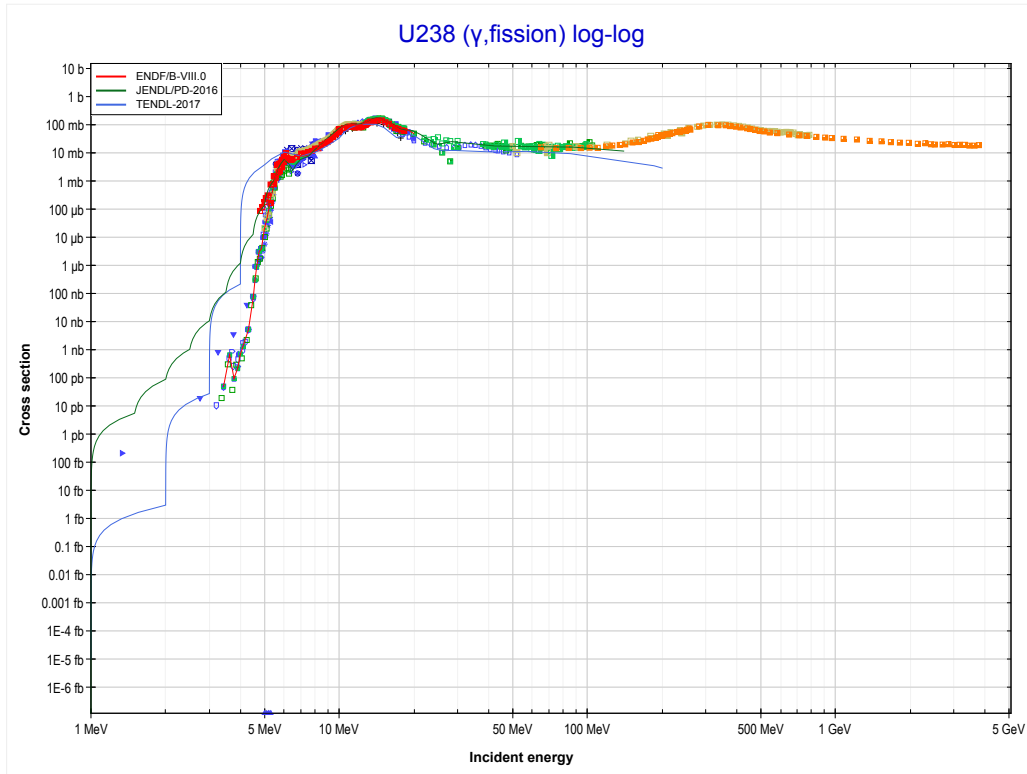
Reaction	Q-Value
U238(γ ,n)U237	-6154.32 keV

<< 92-U-236	92-U-238	93-Np-237 >>
<< MT4 (γ,n)	MT16 ($\gamma,2n$) or MT5 (U236 production)	MT18 (γ ,fission) >>

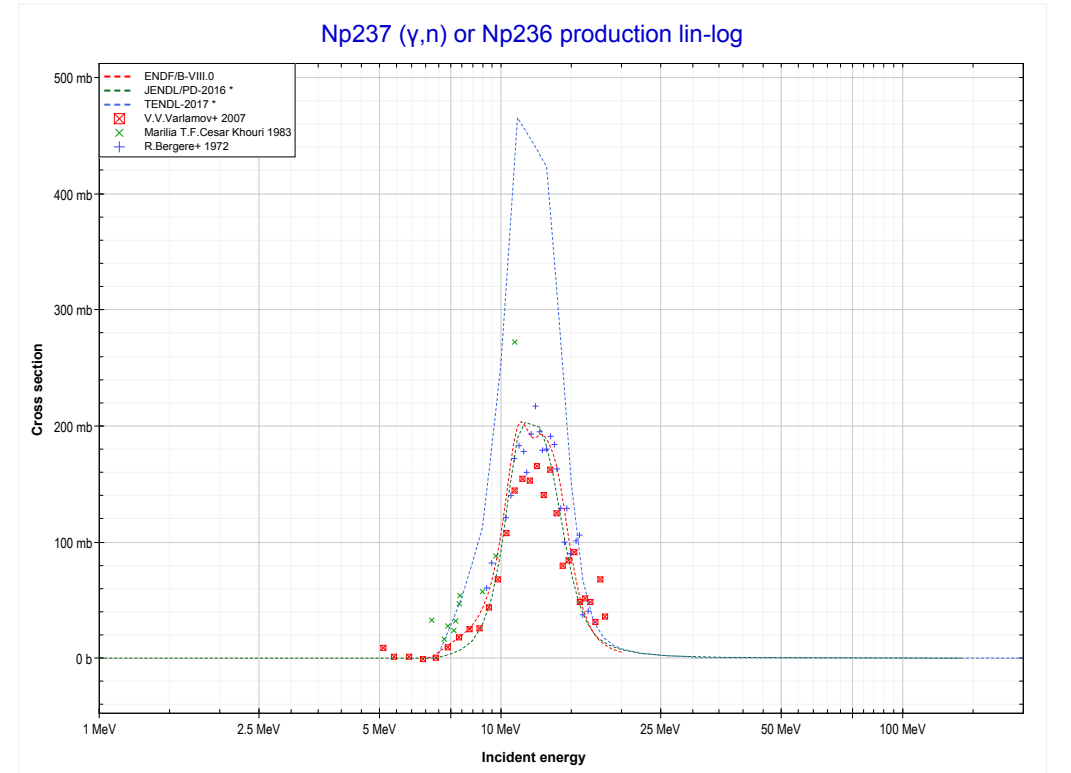
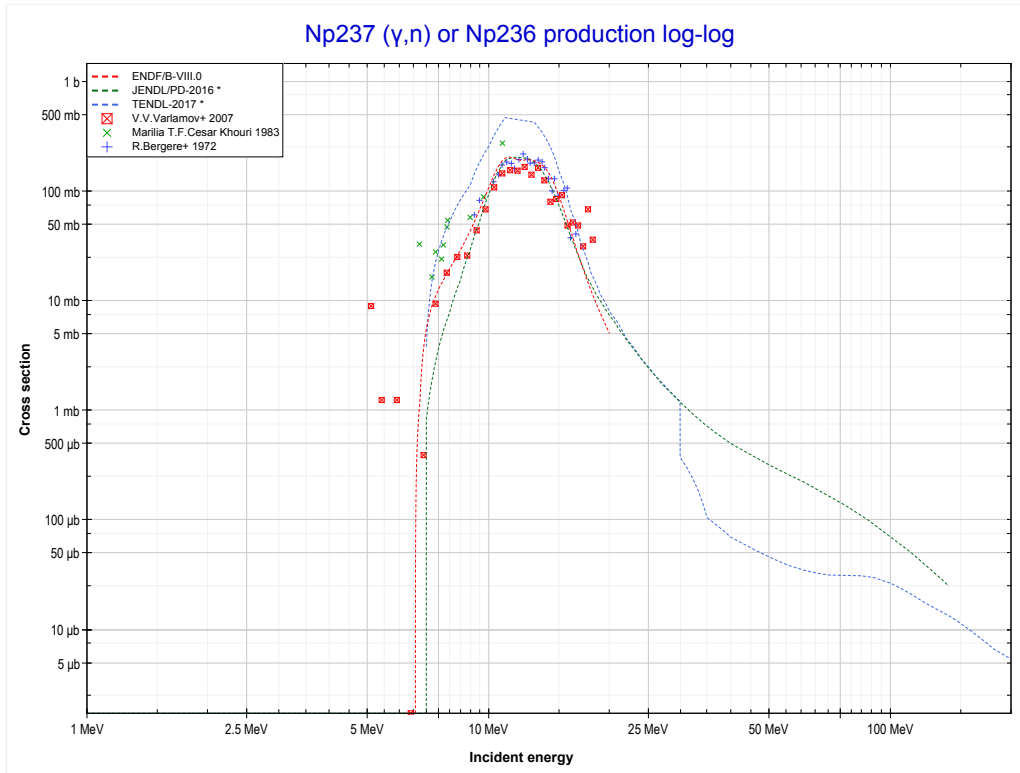


Reaction	Q-Value
U238($\gamma,2n$)U236	-11280.03 keV

<< 92-U-236	92-U-238	93-Np-237 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	93-Np-237 MT4 (γ,n) >>

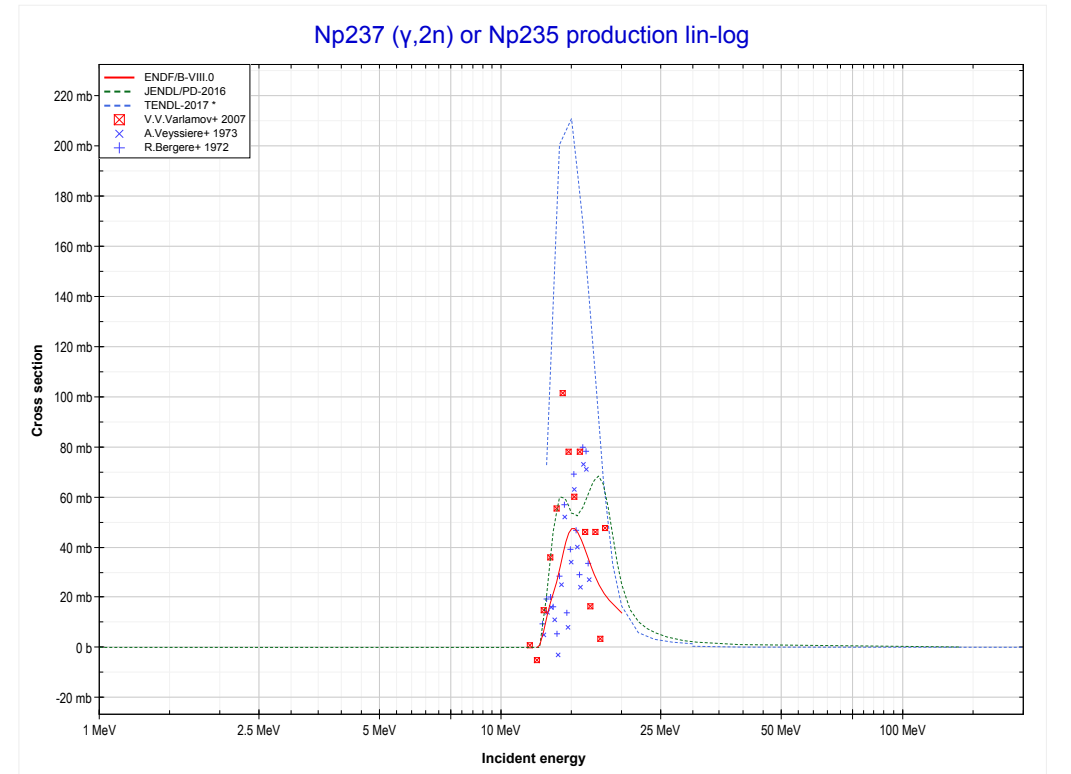
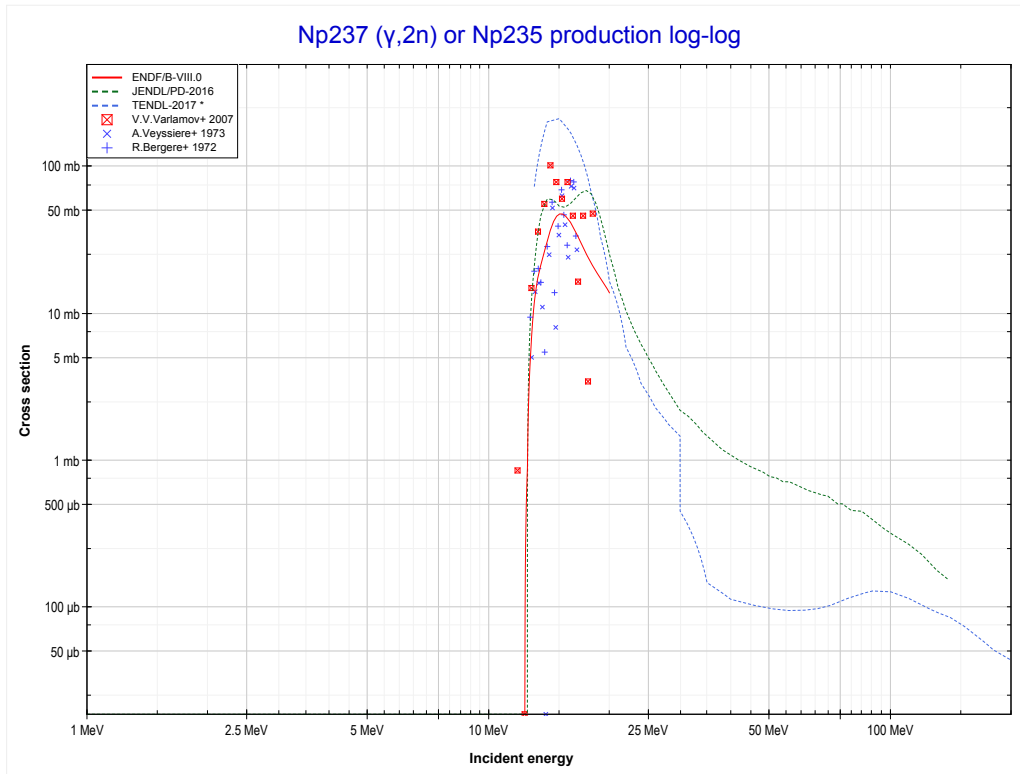


<< 92-U-238	93-Np-237	94-Pu-239 >>
<< 92-U-238 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (Np236 production)	MT16 (γ ,2n) >>



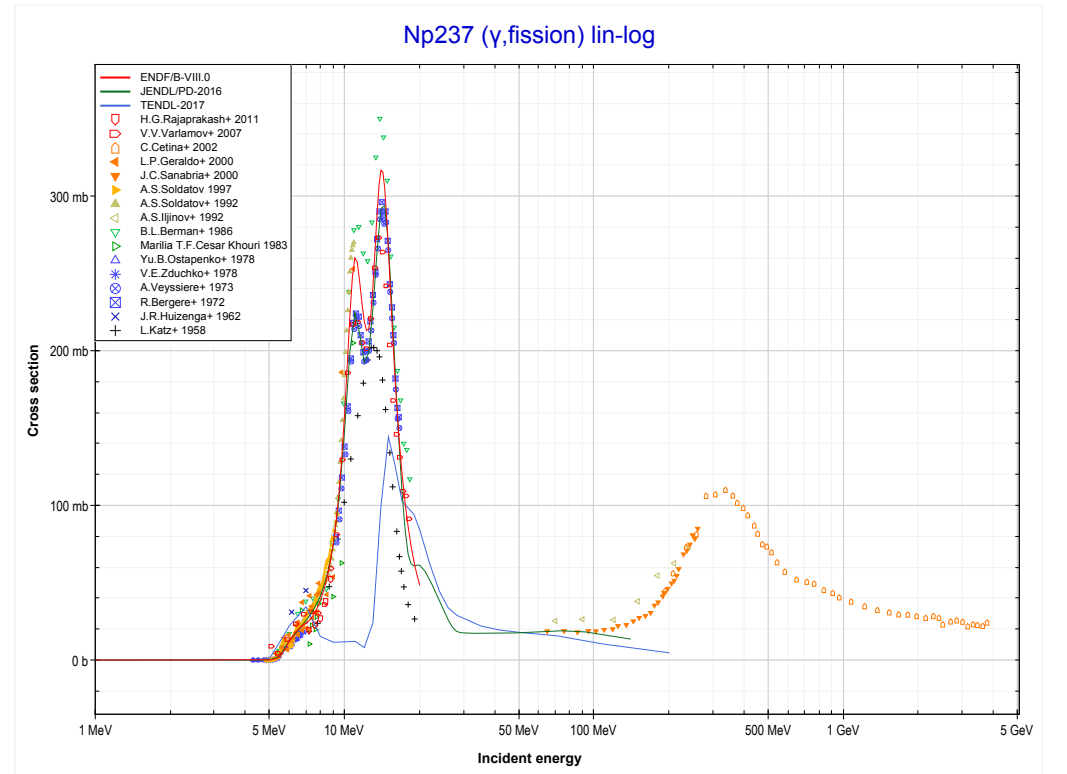
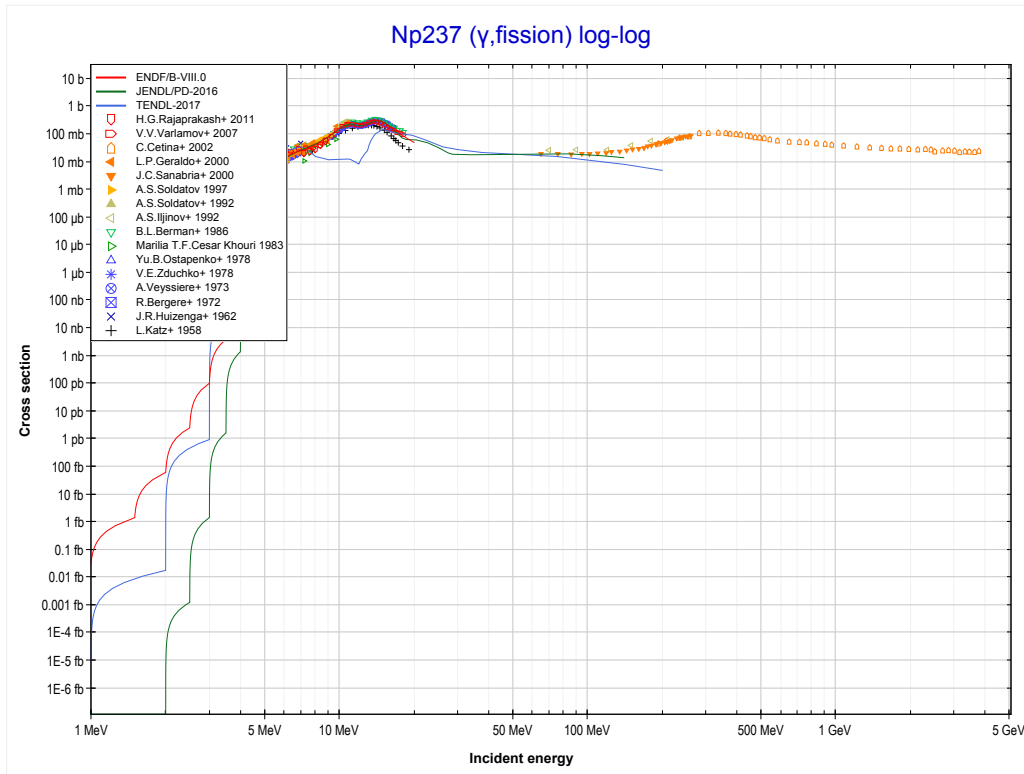
Reaction	Q-Value
Np237(γ ,n)Np236	-6577.82 keV

<< 92-U-238	93-Np-237	94-Pu-239 >>
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Np235 production)	MT18 ($\gamma, fission$) >>

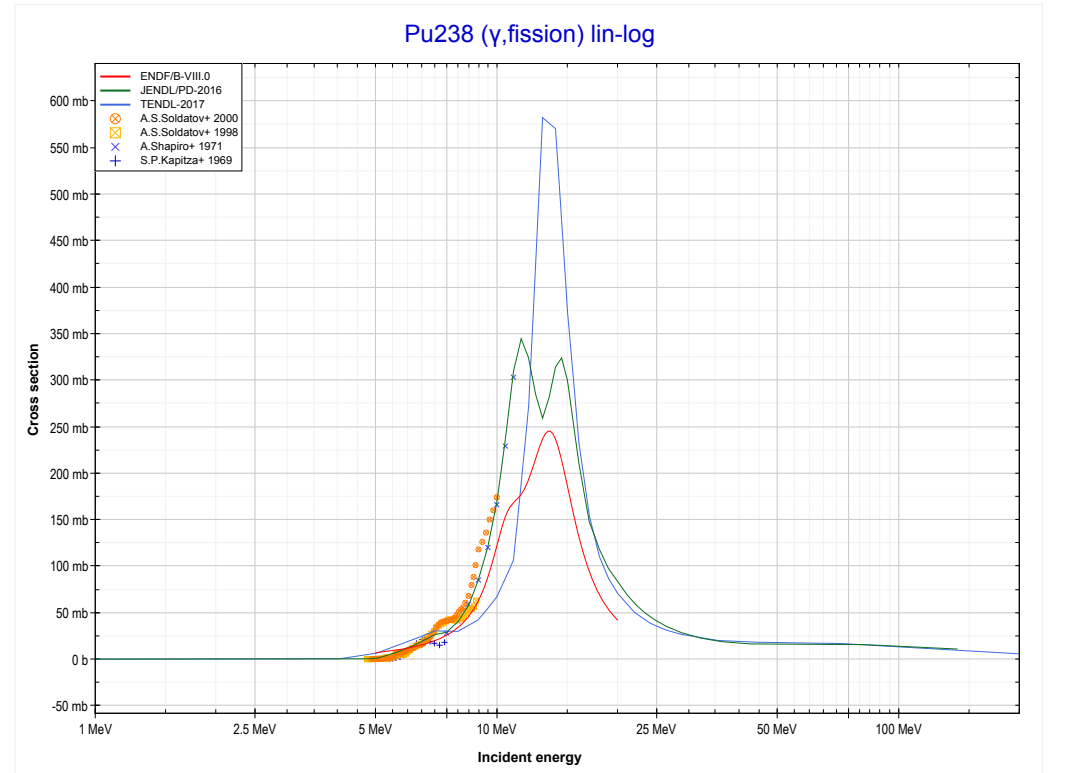
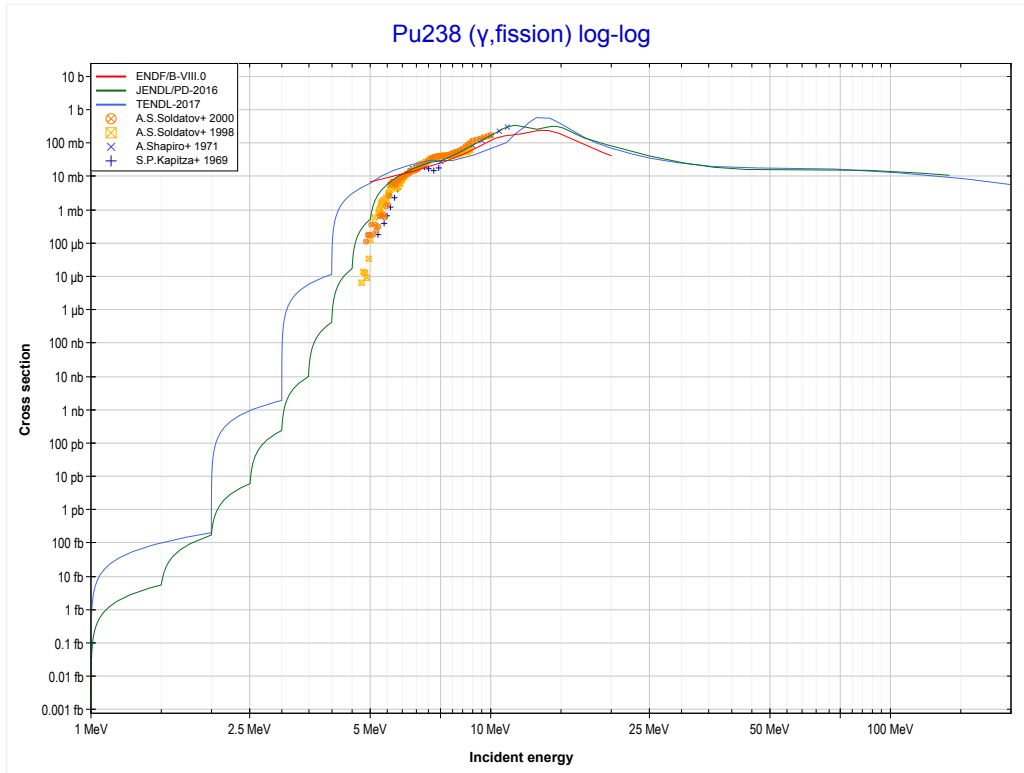


Reaction	Q-Value
Np237($\gamma, 2n$)Np235	-12314.03 keV

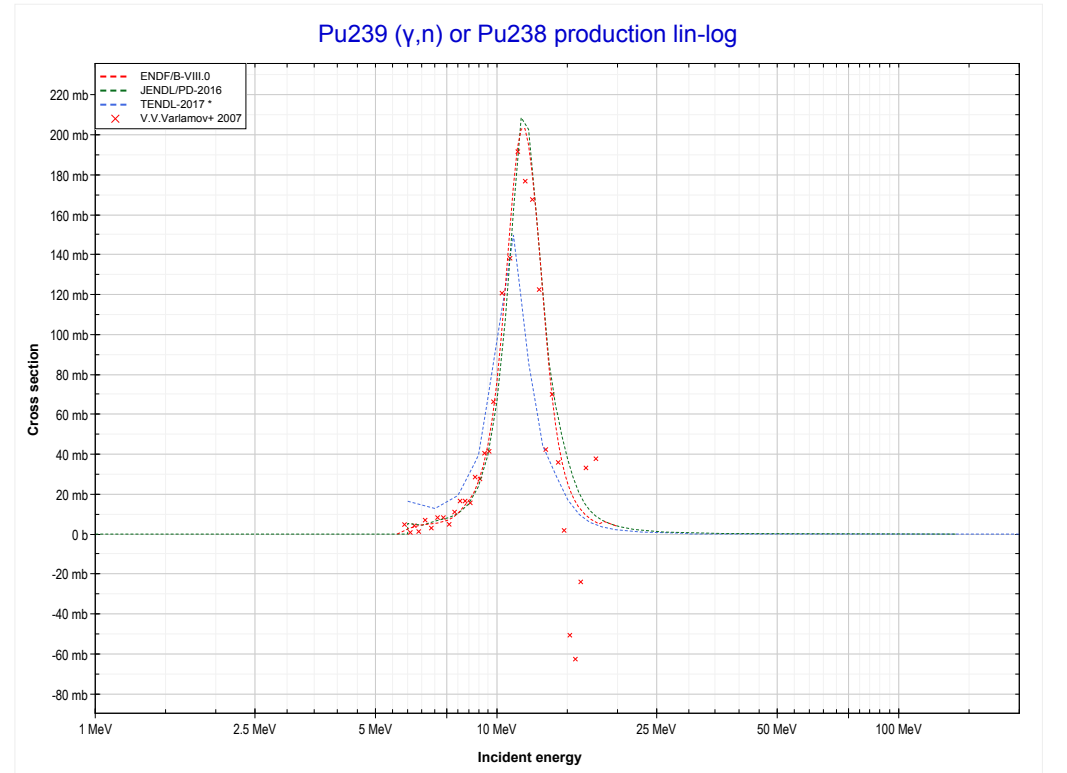
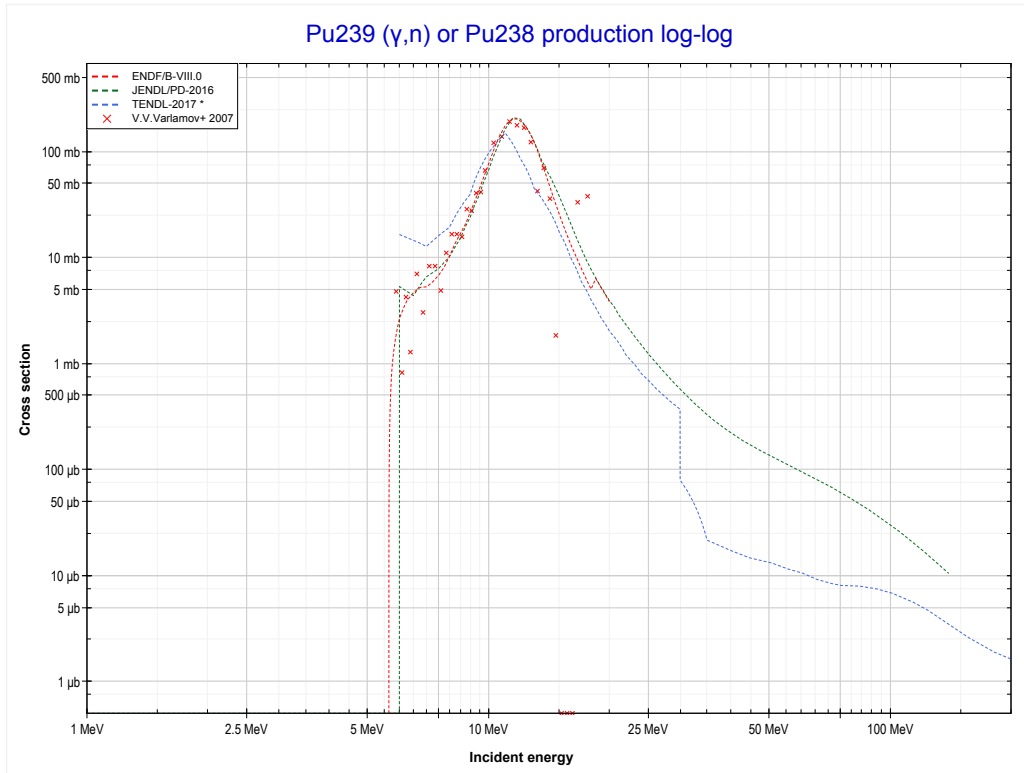
<< 92-U-238	93-Np-237	94-Pu-238 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	94-Pu-238 MT18 (γ ,fission) >>



<< 93-Np-237	94-Pu-238	94-Pu-239 >>
<< 93-Np-237 MT18 (γ ,fission)	MT18 (γ,fission)	94-Pu-239 MT4 (γ ,n) >>

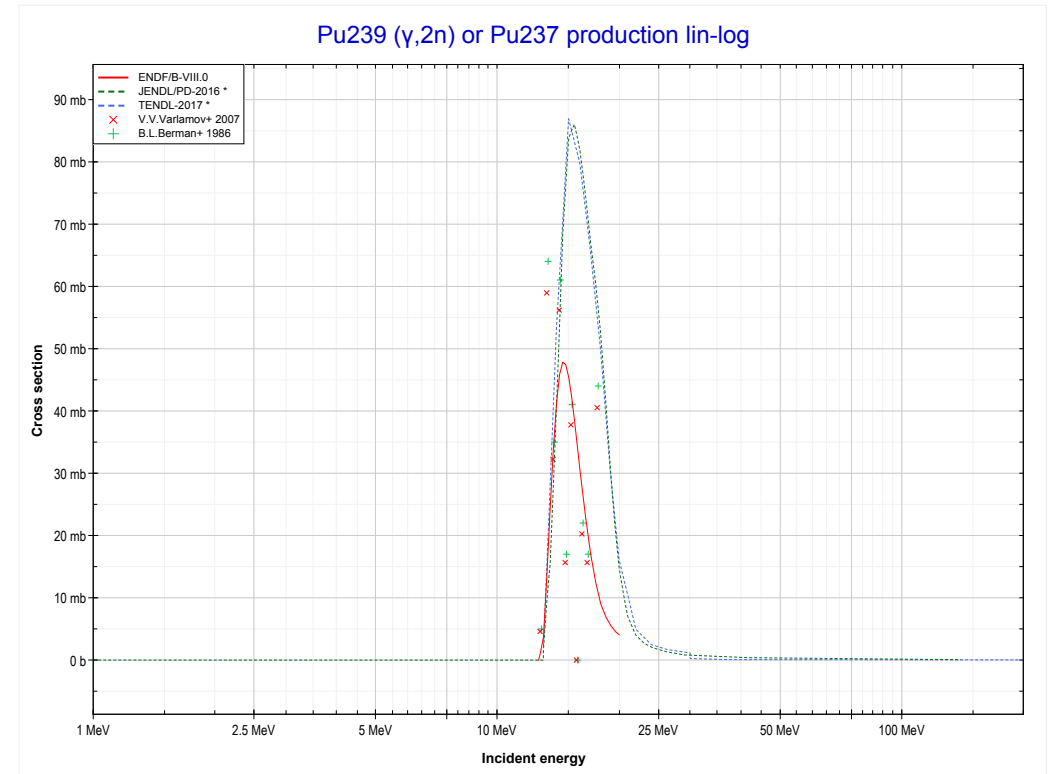
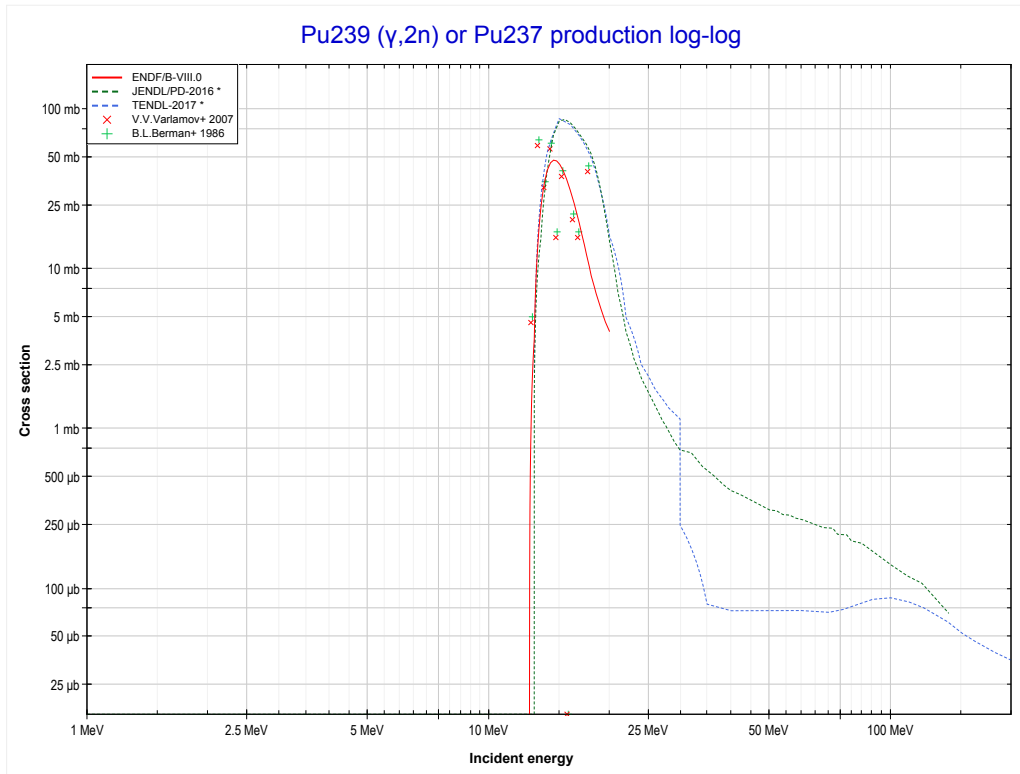


<< 93-Np-237	94-Pu-239	95-Am-241 >>
<< 94-Pu-238 MT18 (γ ,fission)	MT4 (γ,n) or MT5 (Pu238 production)	MT16 (γ ,2n) >>



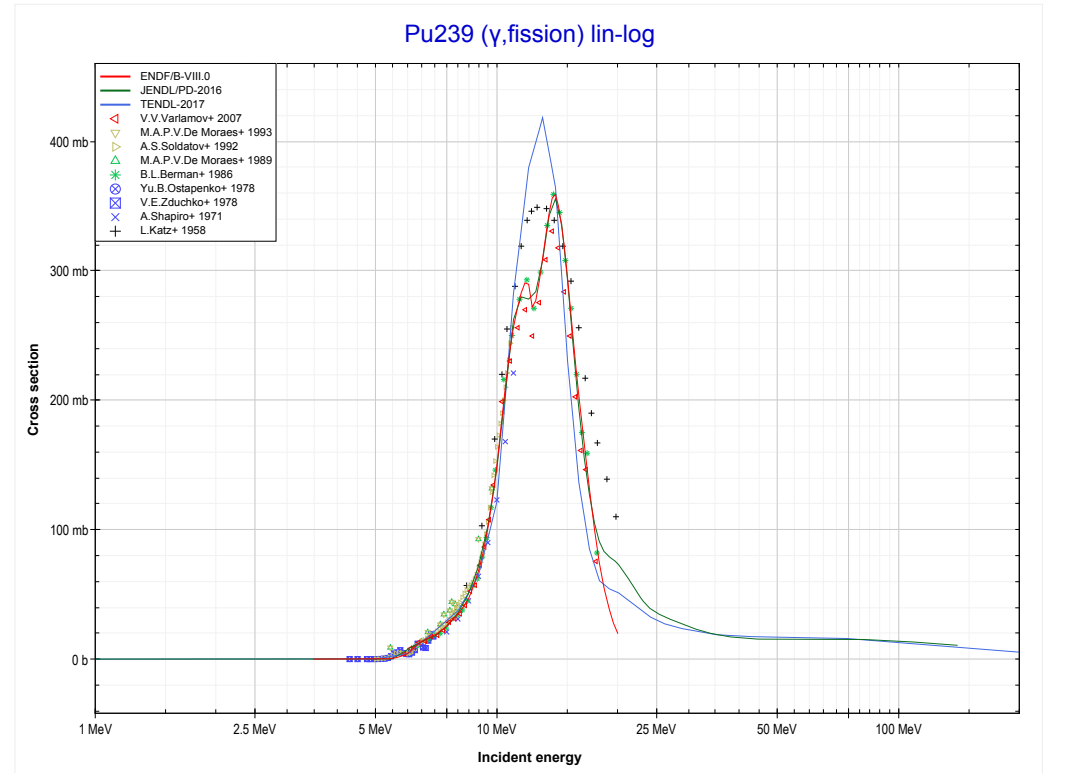
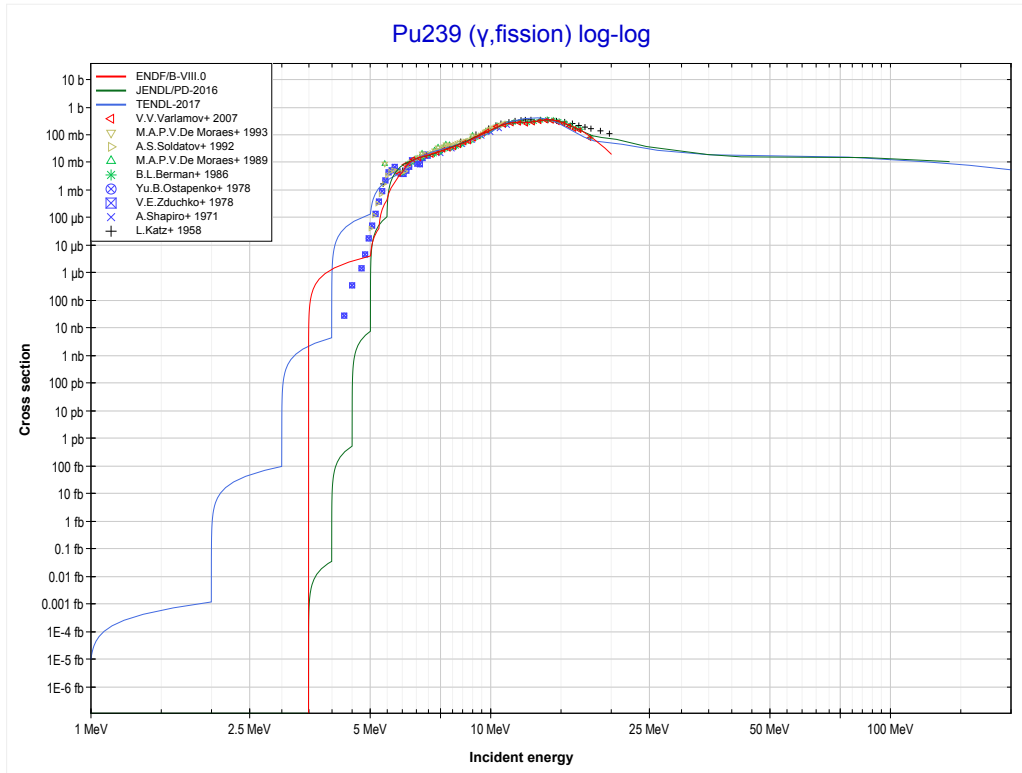
Reaction	Q-Value
Pu239(γ ,n)Pu238	-5646.12 keV

<< 93-Np-237	94-Pu-239	
<< MT4 (γ, n)	MT16 ($\gamma, 2n$) or MT5 (Pu237 production)	MT18 ($\gamma, fission$) >>

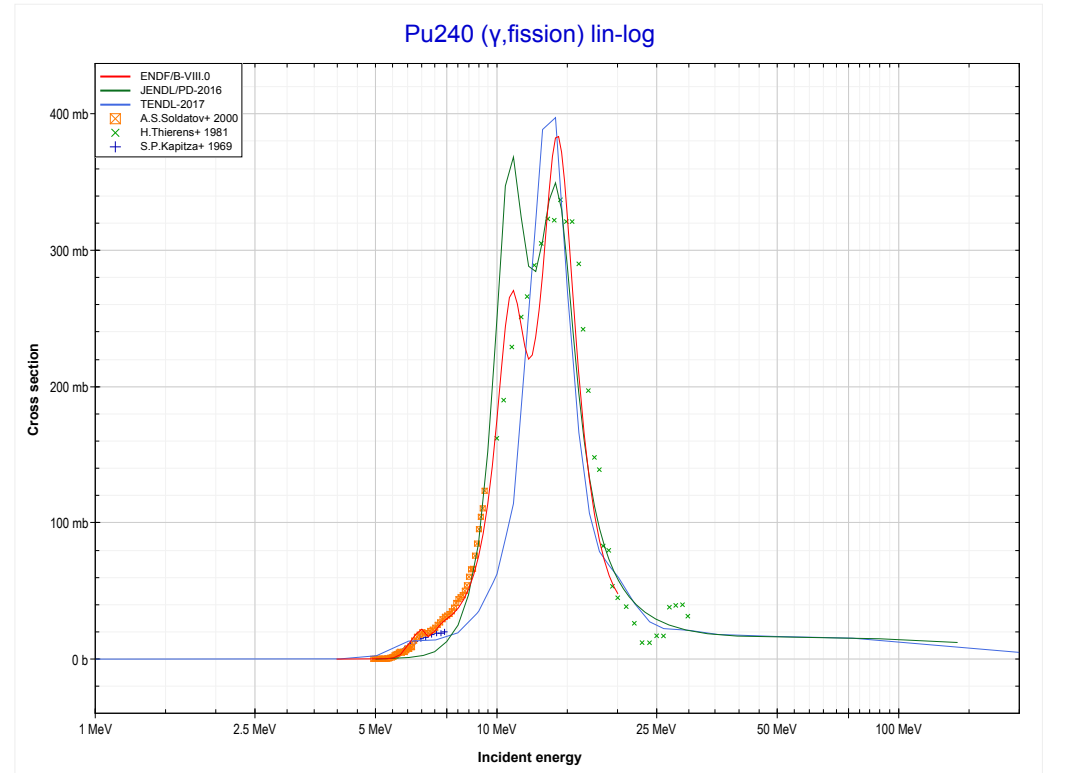
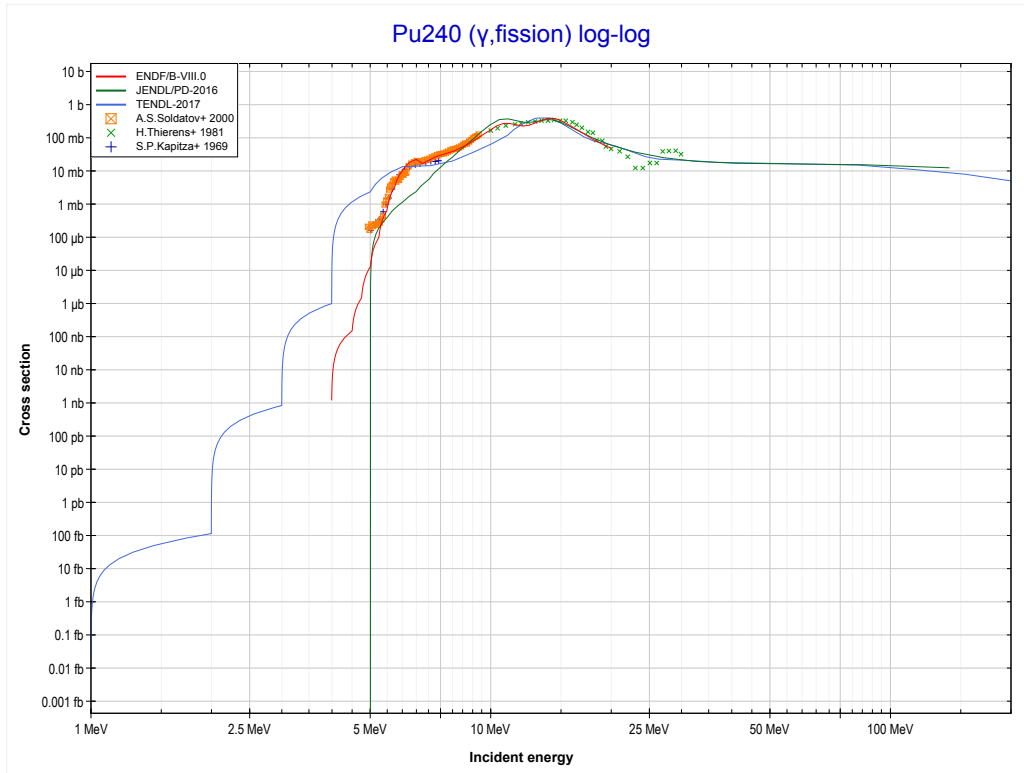


Reaction	Q-Value
Pu239($\gamma, 2n$)Pu237	-12646.03 keV

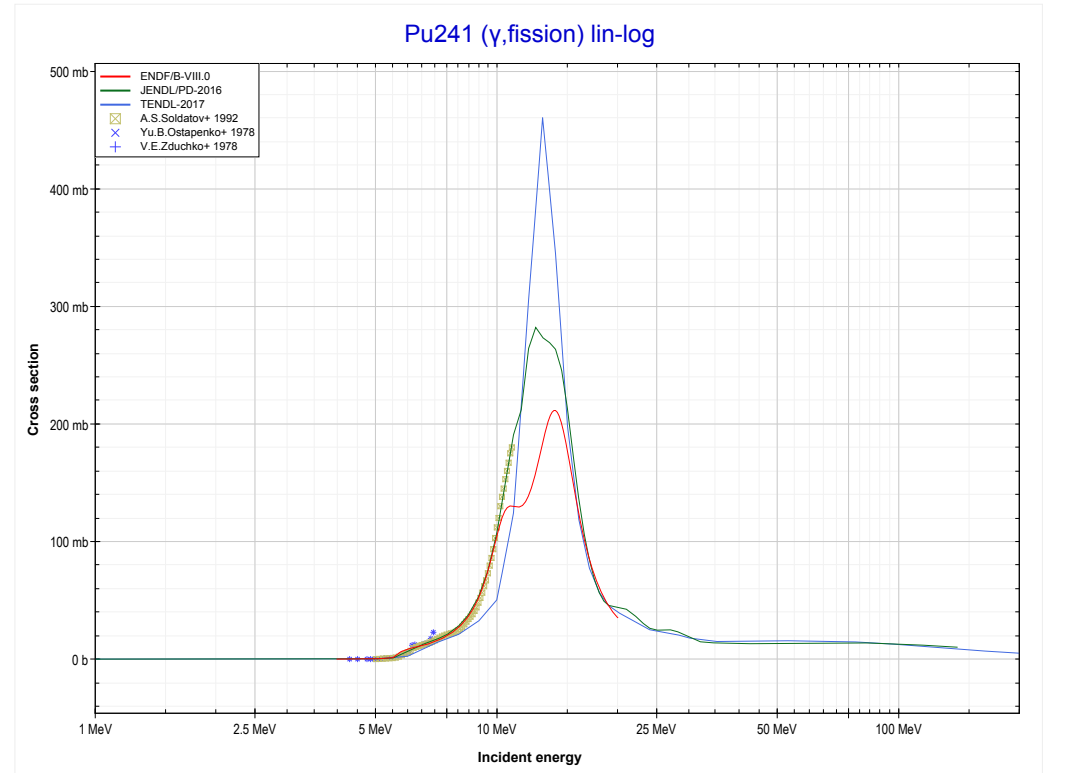
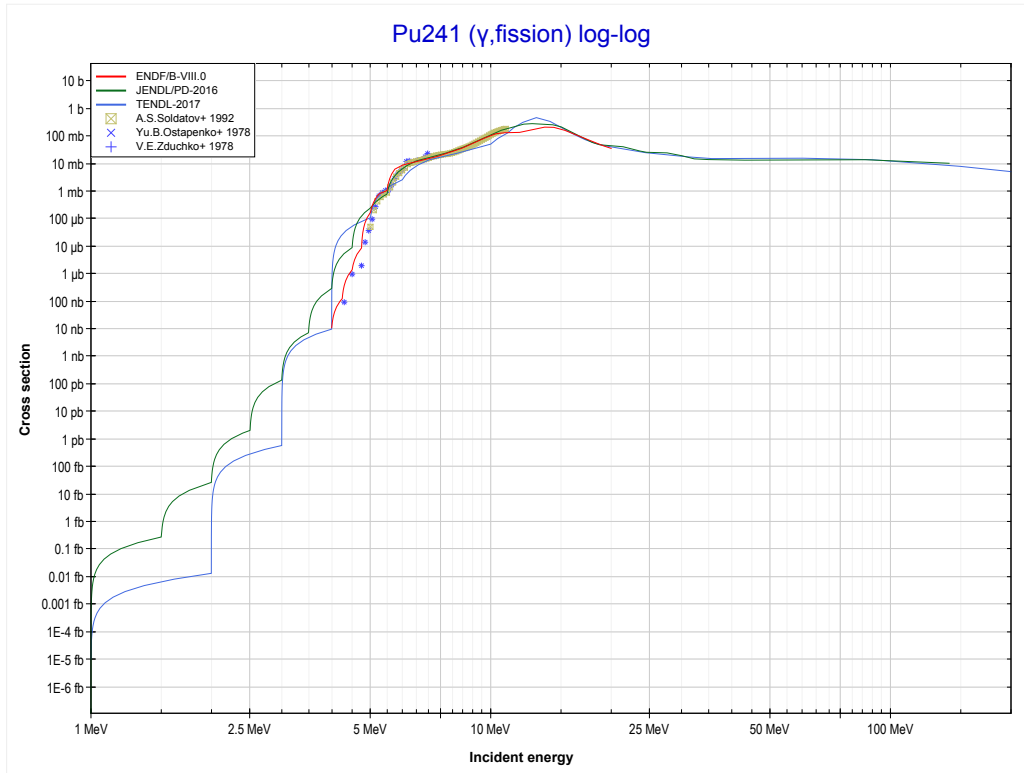
<< 94-Pu-238	94-Pu-239	94-Pu-240 >>
<< MT16 ($\gamma,2n$)	MT18 (γ,fission)	94-Pu-240 MT18 (γ ,fission) >>



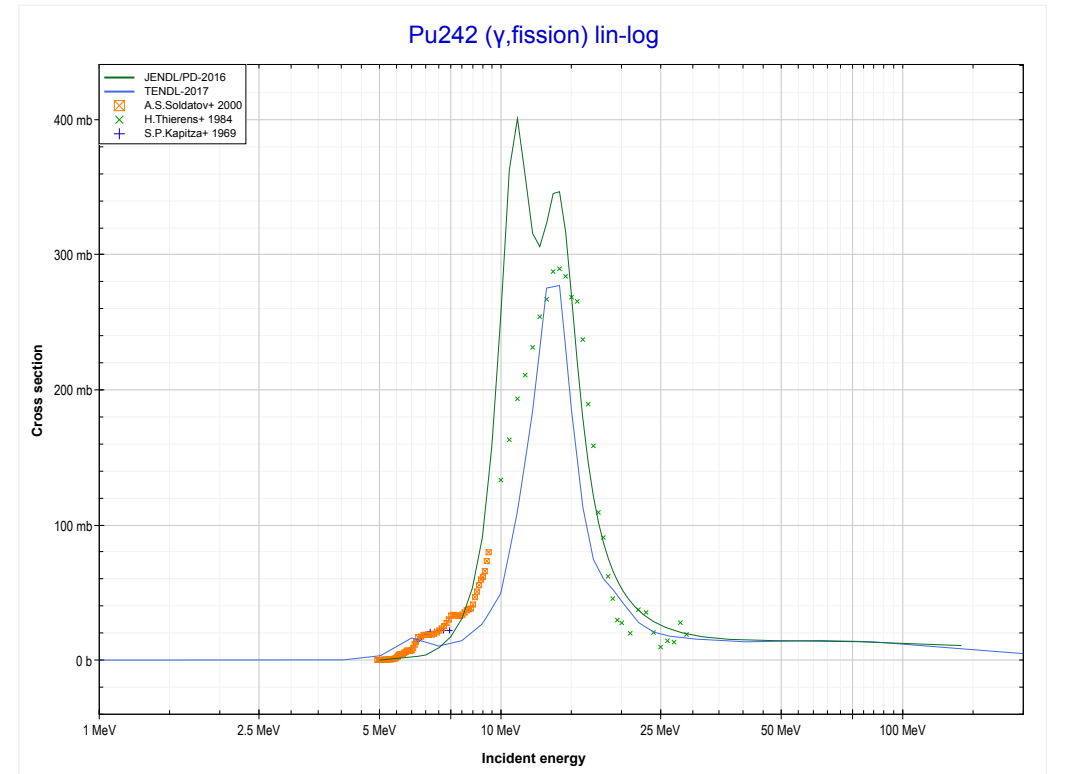
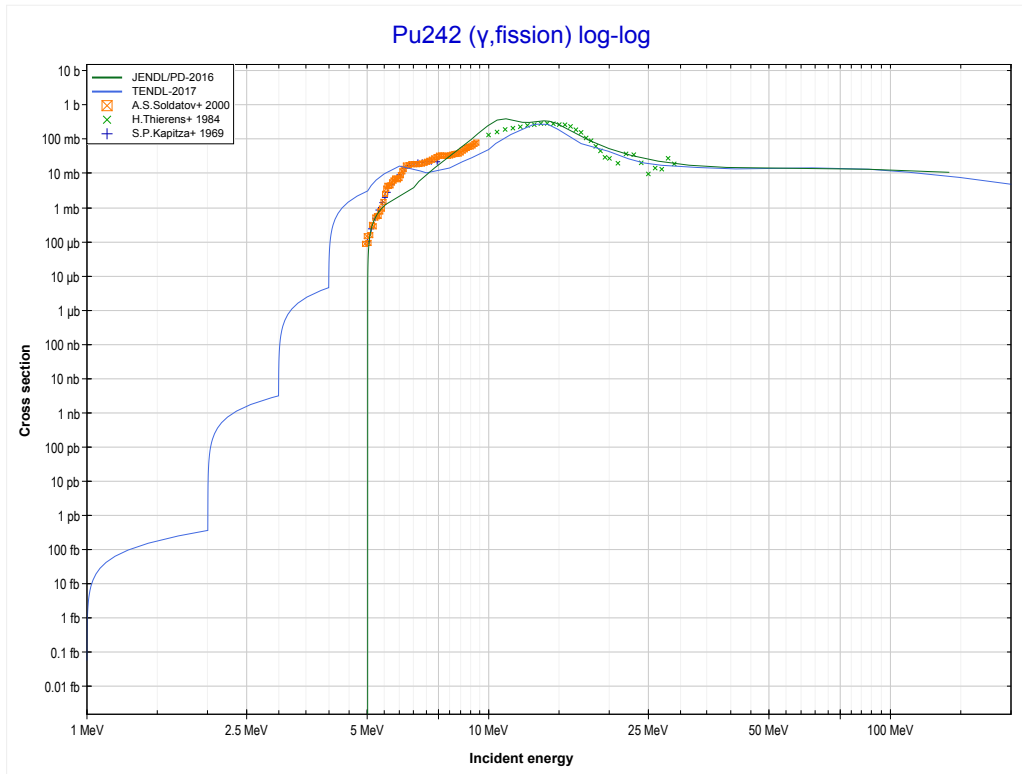
<< 94-Pu-239	94-Pu-240	94-Pu-241 >>
<< 94-Pu-239 MT18 (γ,fission)	MT18 (γ,fission)	94-Pu-241 MT18 (γ,fission) >>



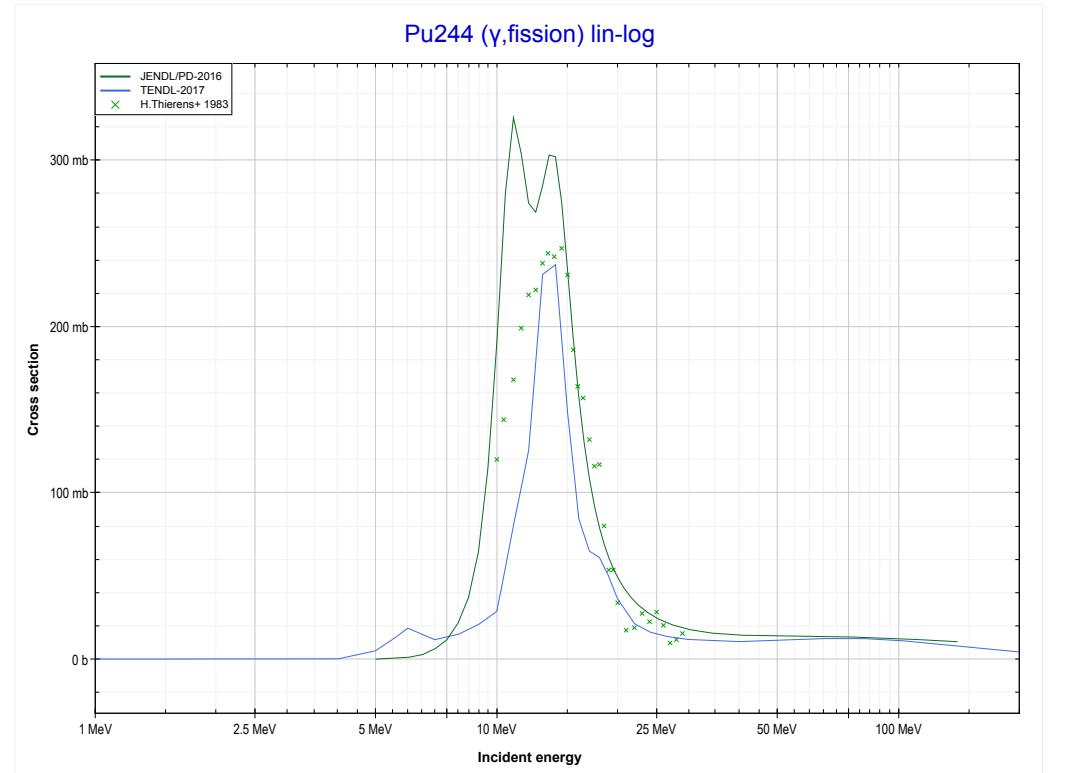
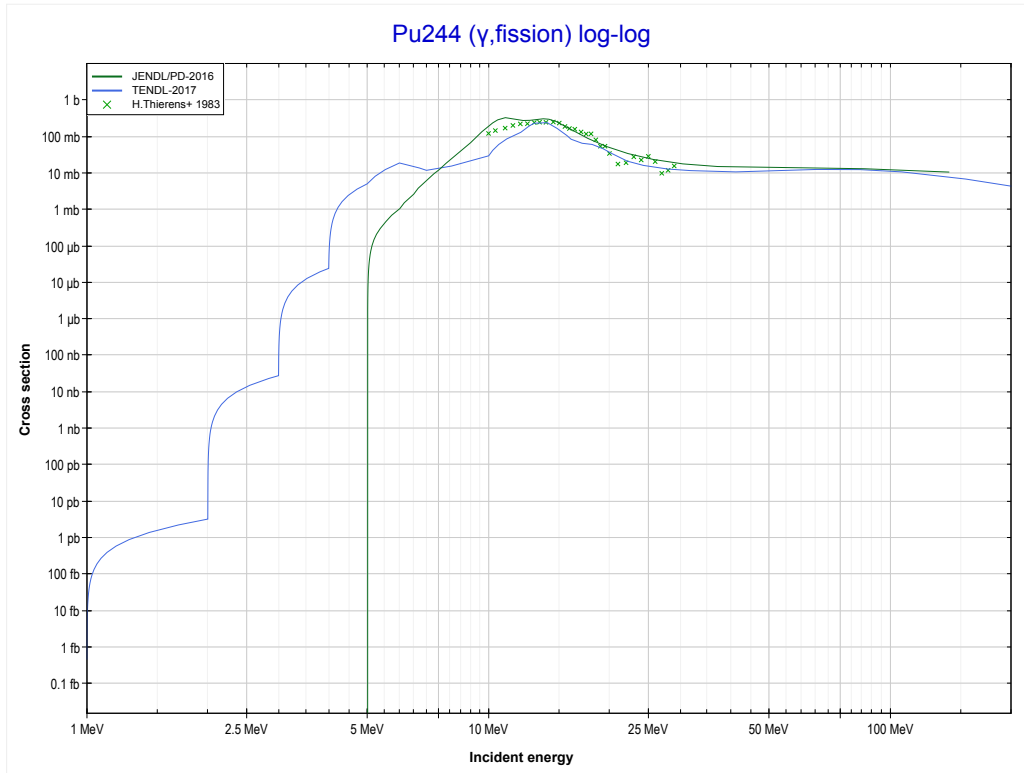
<< 94-Pu-240	94-Pu-241	94-Pu-242 >>
<< 94-Pu-240 MT18 (γ ,fission)	MT18 (γ,fission)	94-Pu-242 MT18 (γ ,fission) >>



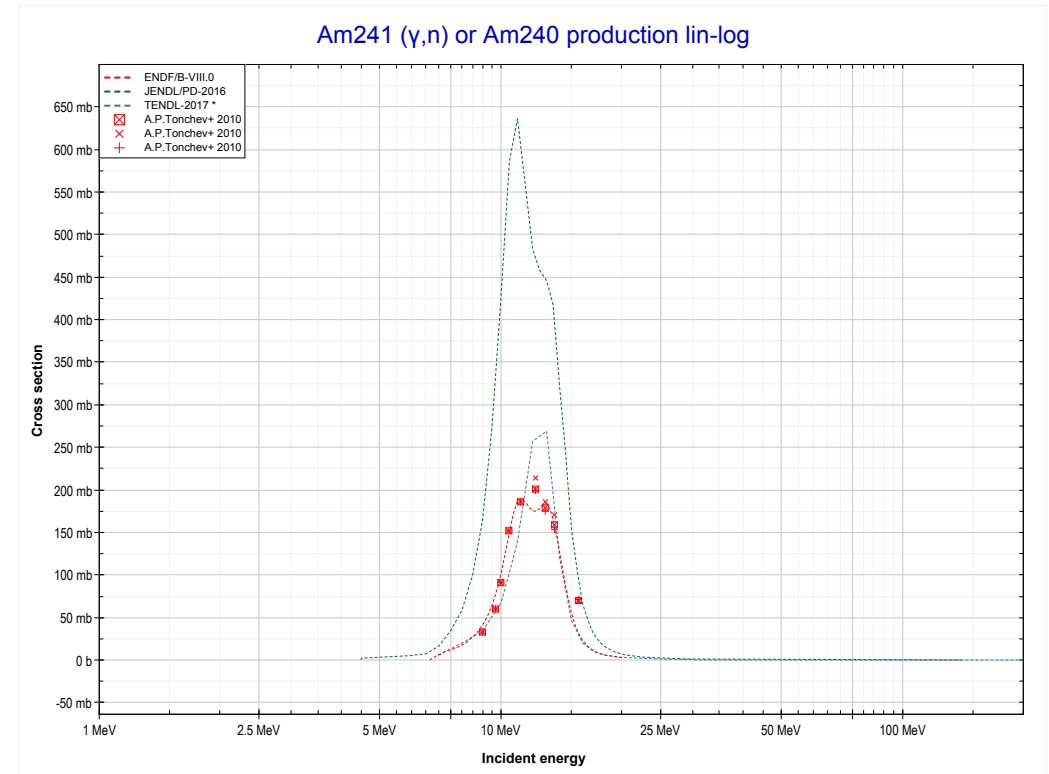
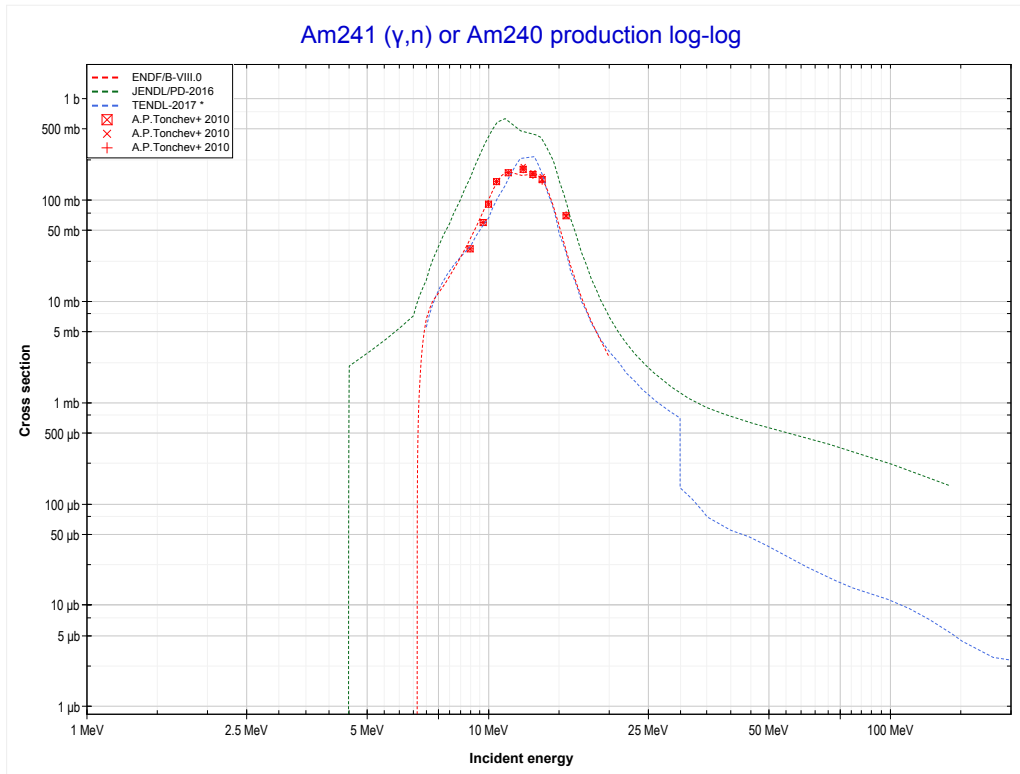
<< 94-Pu-241	94-Pu-242	94-Pu-244 >>
<< 94-Pu-241 MT18 (γ,fission)	MT18 (γ,fission)	94-Pu-244 MT18 (γ,fission) >>



<< 94-Pu-242	94-Pu-244	95-Am-241 >>
<< 94-Pu-242 MT18 (γ ,fission)	MT18 (γ,fission)	95-Am-241 MT4 (γ ,n) >>

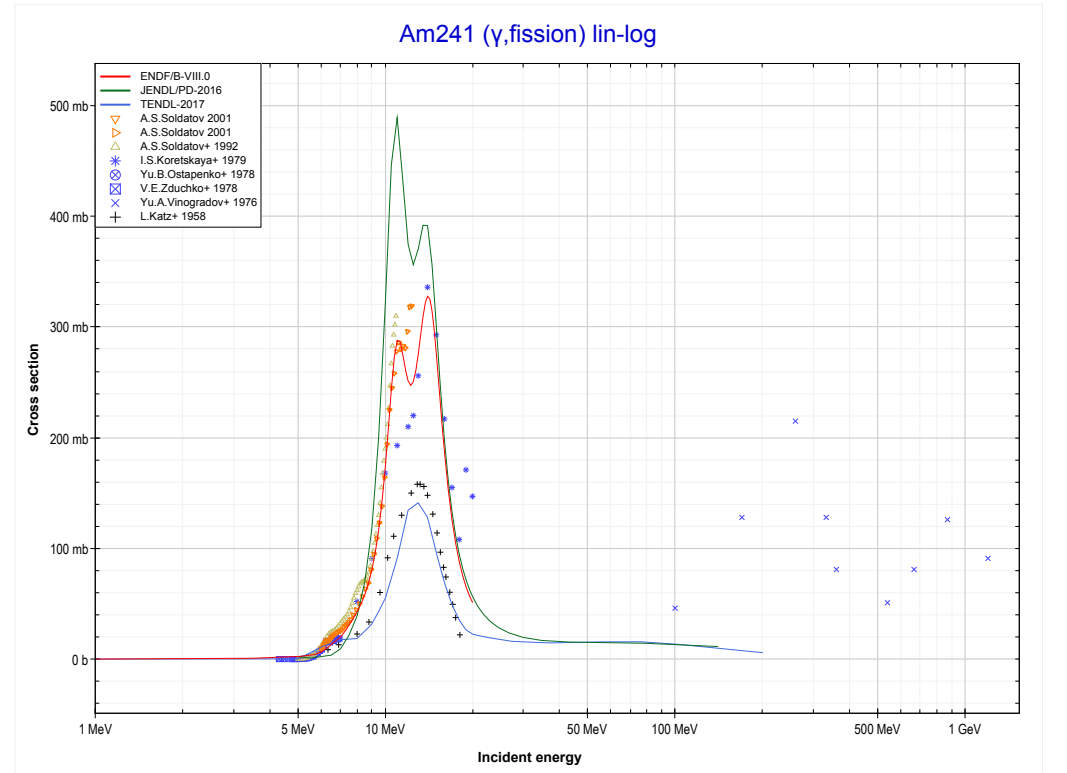
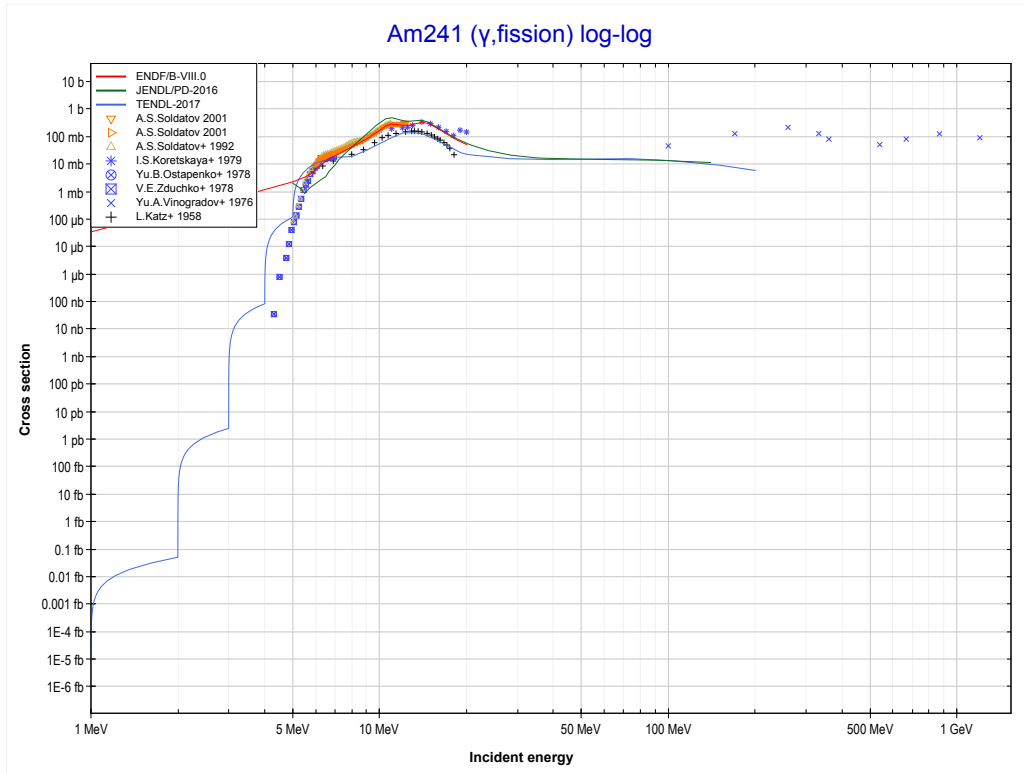


<< 94-Pu-239	95-Am-241	95-Am-243 >>
<< 94-Pu-244 MT18 (γ,fission)	MT4 (γ,n) or MT5 (Am240 production)	MT18 (γ,fission) >>

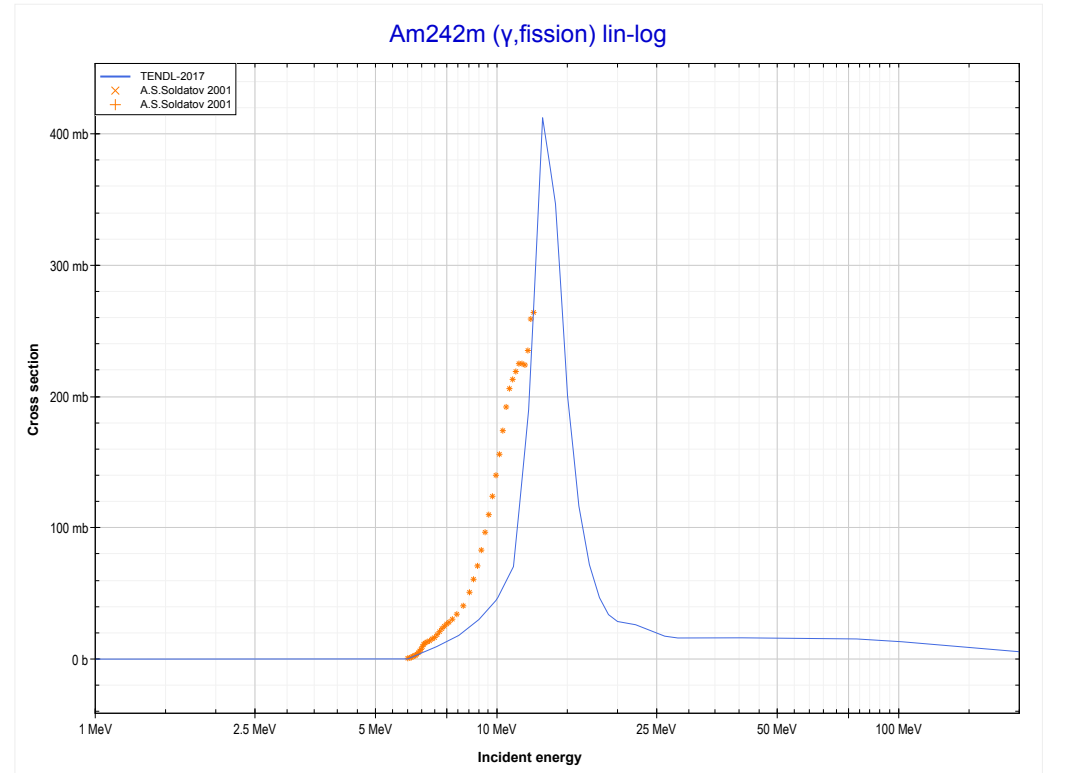
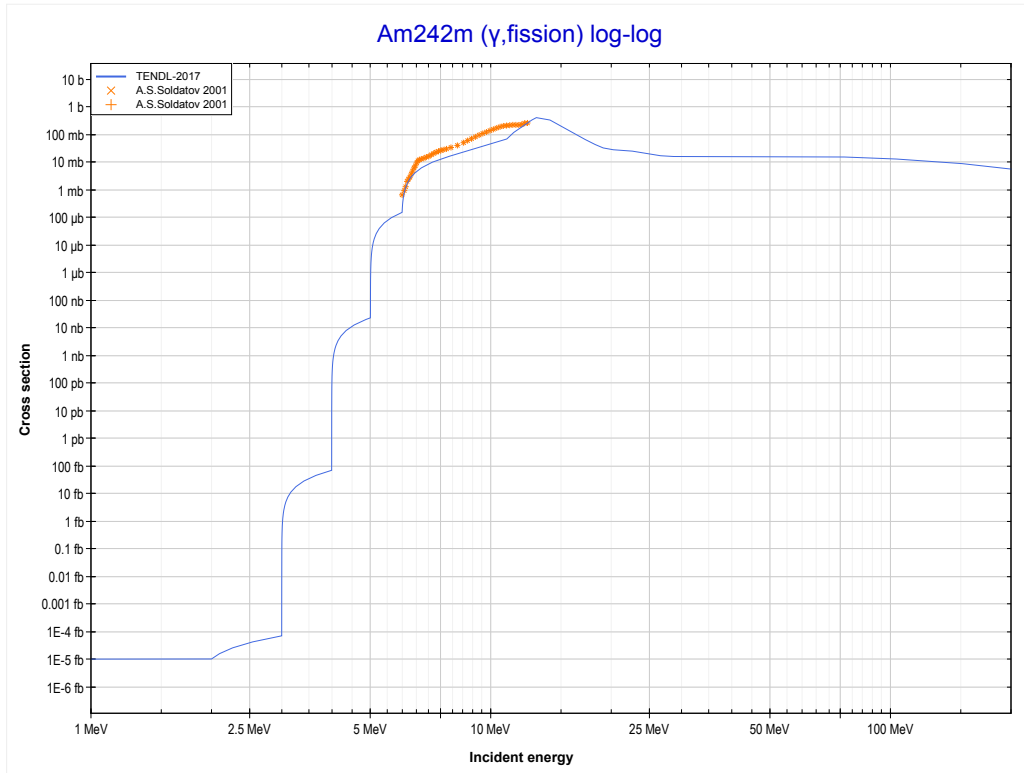


Reaction	Q-Value
Am241(γ,n)Am240	-6647.12 keV

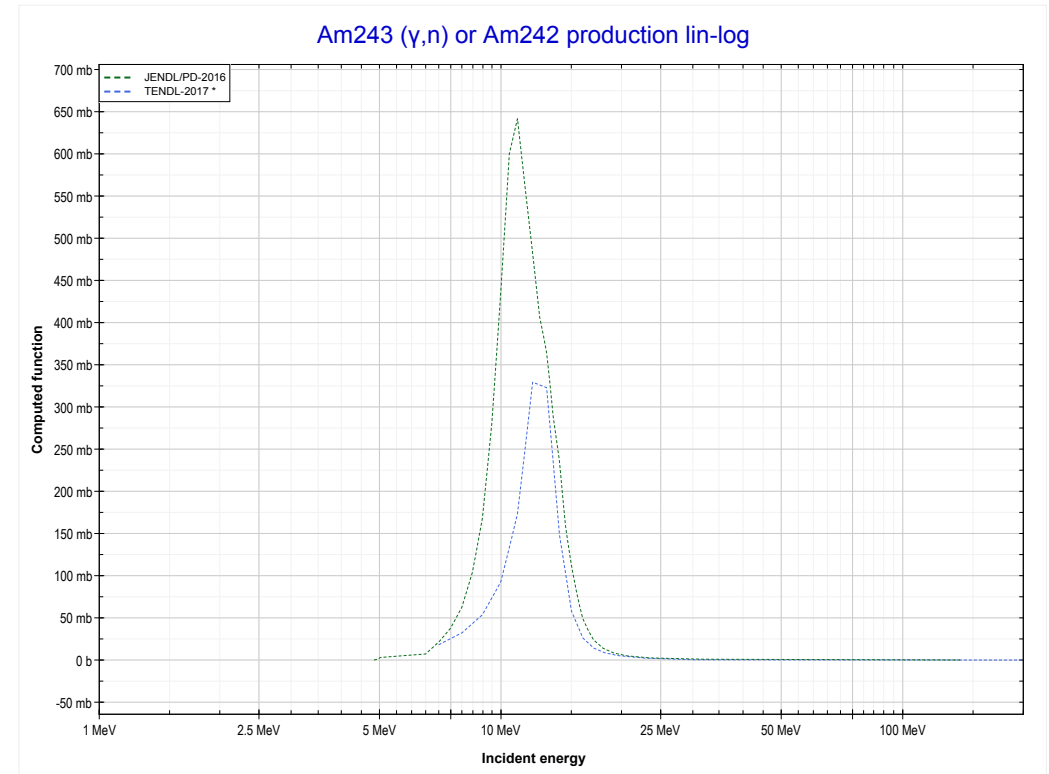
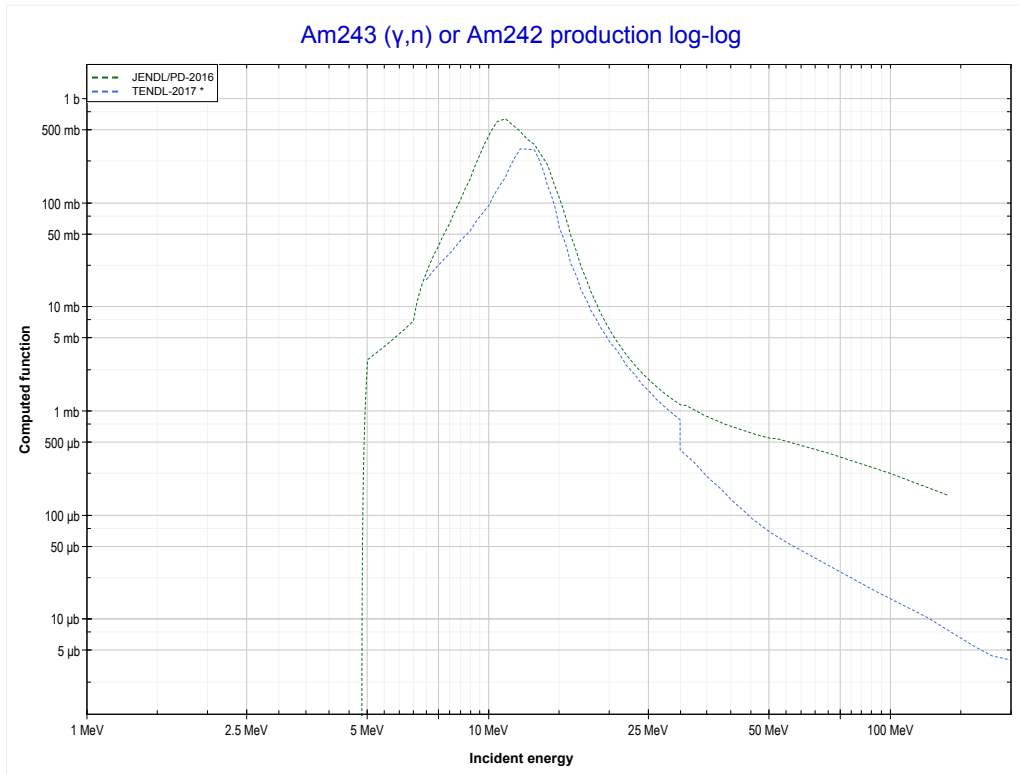
<< 94-Pu-244	95-Am-241	95-Am-242m >>
<< MT4 (γ,n)	MT18 (γ,fission)	95-Am-242m MT18 (γ ,fission) >>



<< 95-Am-241	95-Am-242m	95-Am-243 >>
<< 95-Am-241 MT18 (γ ,fission)	MT18 (γ,fission)	95-Am-243 MT4 (γ ,n) >>

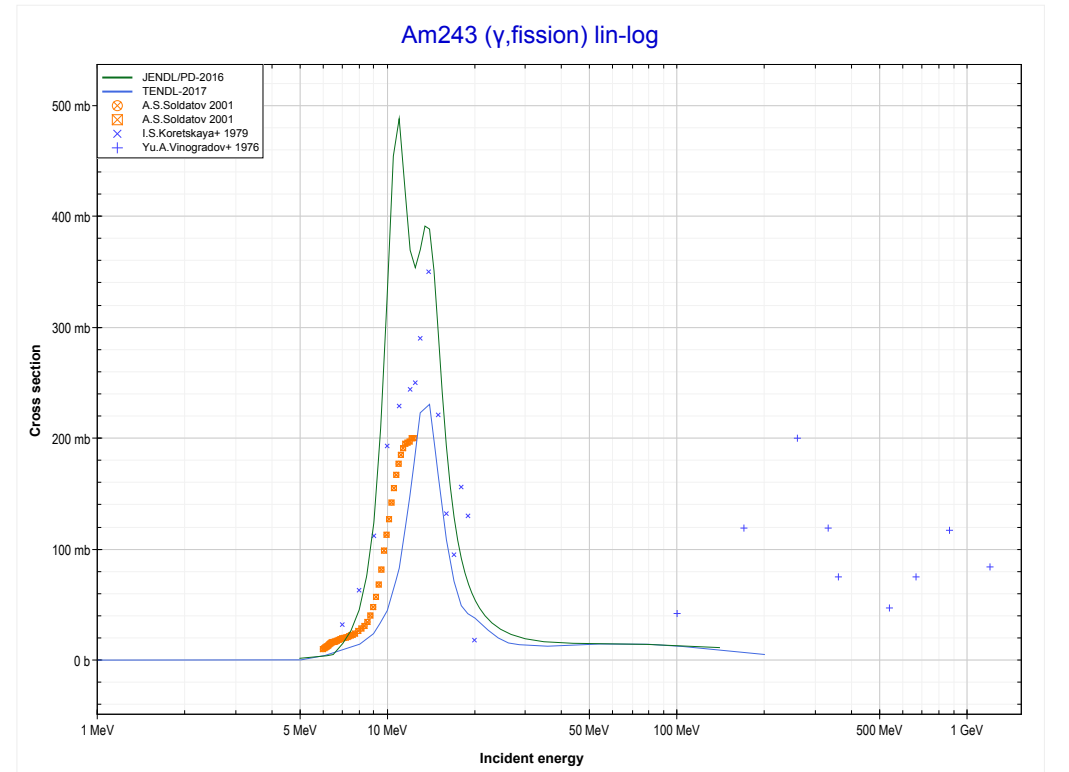
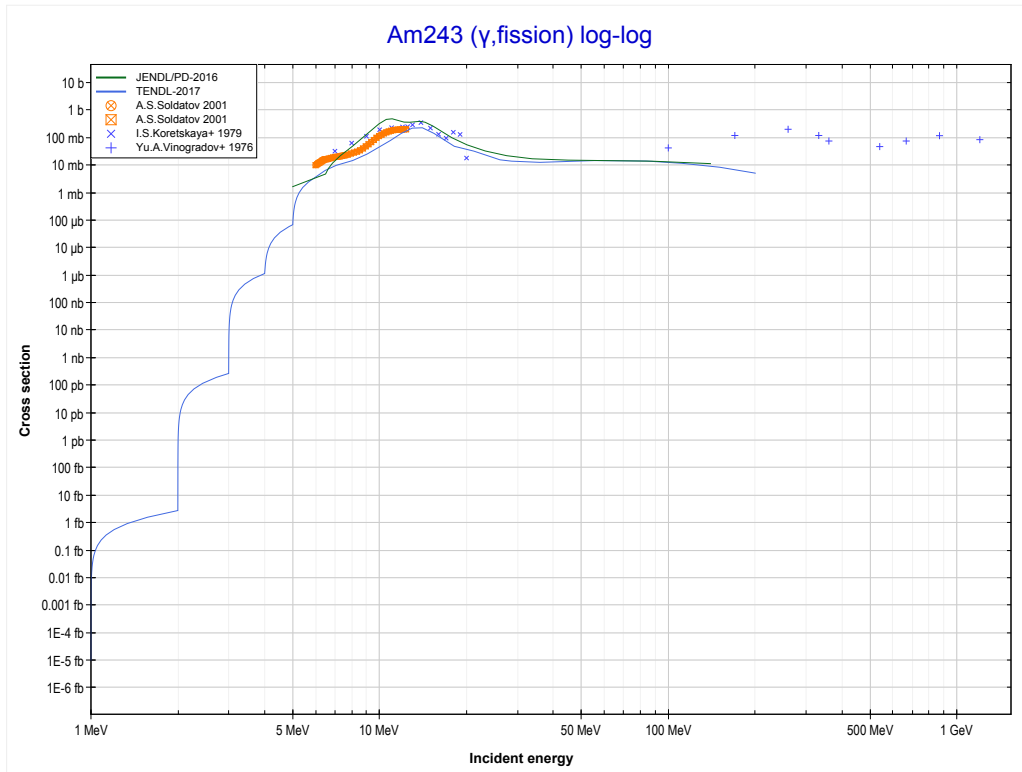


<< 95-Am-241	95-Am-243	
<< 95-Am-242m MT18 (γ ,fission)	MT4 (γ,n) or MT5 (Am242 production)	MT18 (γ ,fission) >>

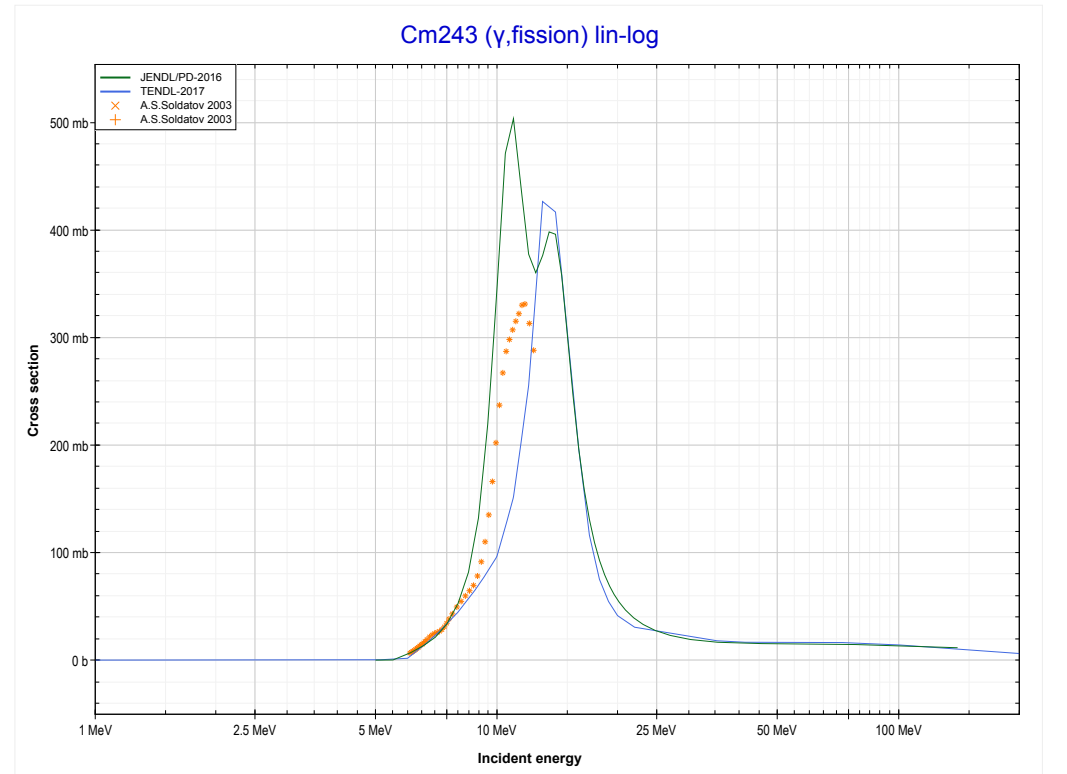
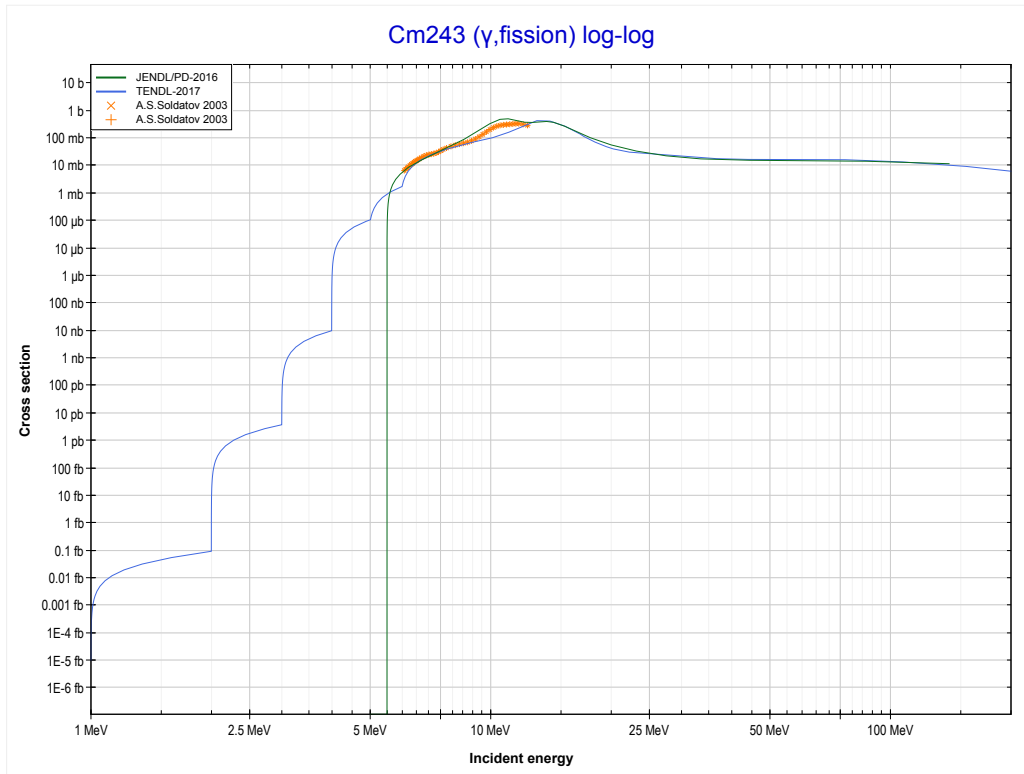


Reaction	Q-Value
Am243(γ ,n)Am242	-6364.92 keV

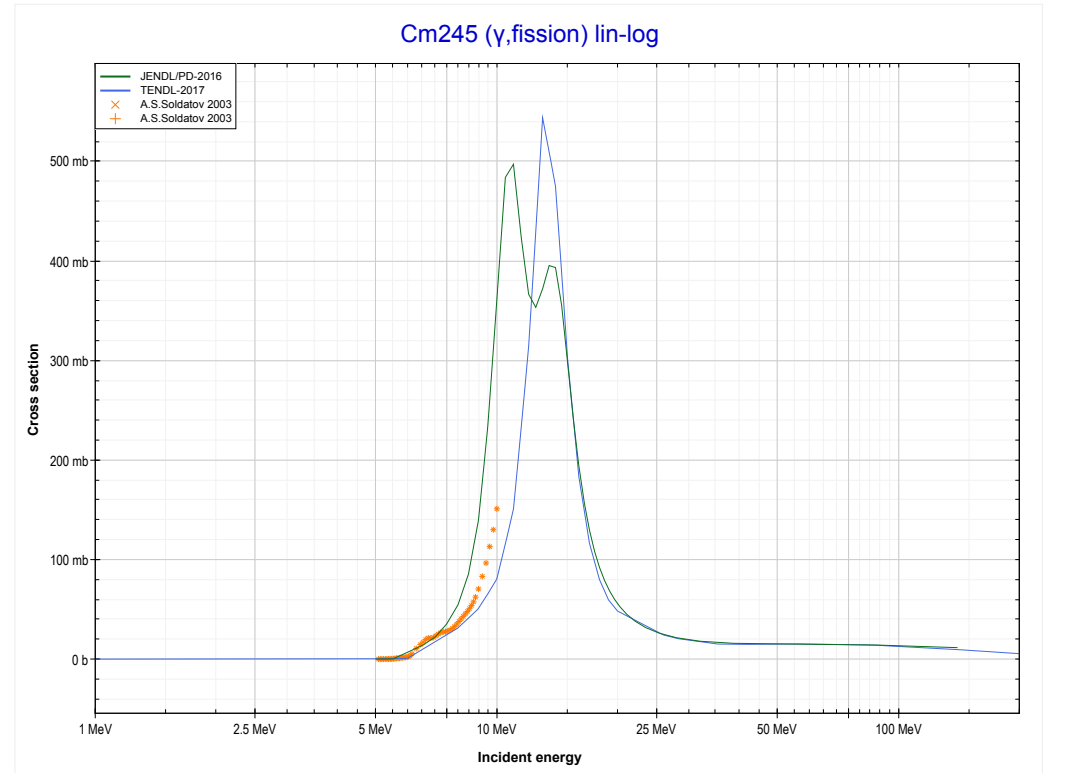
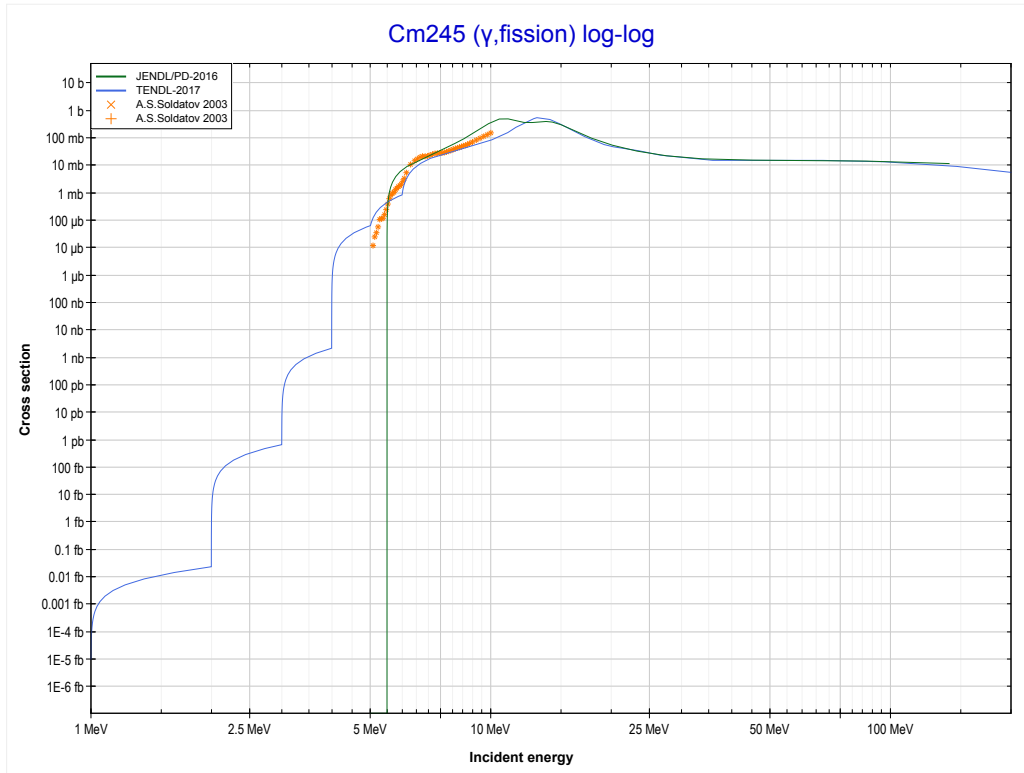
<< 95-Am-242m	95-Am-243	96-Cm-243 >>
<< MT4 (γ,n)	MT18 ($\gamma,fission$)	96-Cm-243 MT18 ($\gamma,fission$) >>



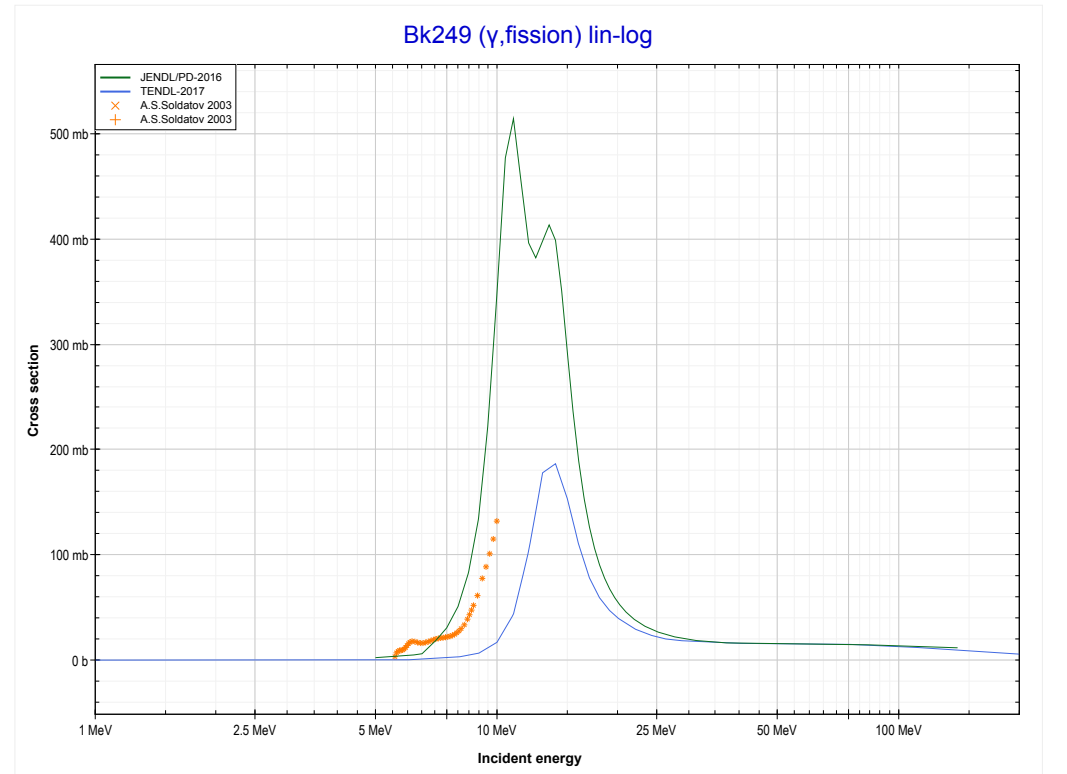
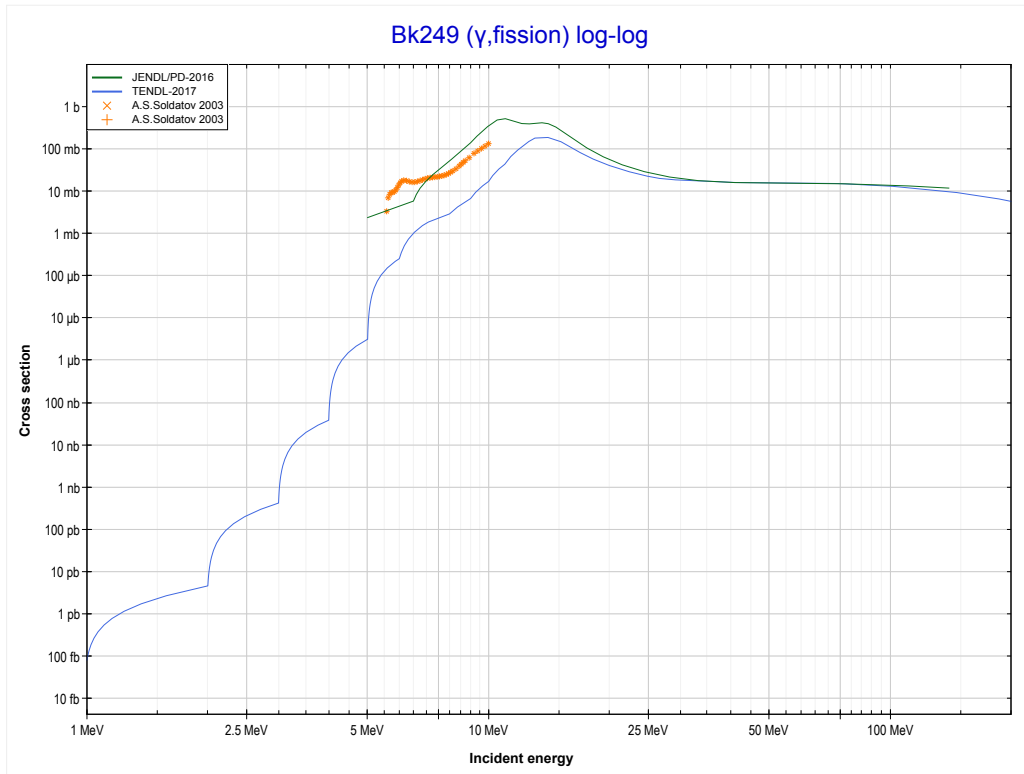
<< 95-Am-243	96-Cm-243	96-Cm-245 >>
<< 95-Am-243 MT18 (γ ,fission)	MT18 (γ,fission)	96-Cm-245 MT18 (γ ,fission) >>



<< 96-Cm-243	96-Cm-245	97-Bk-249 >>
<< 96-Cm-243 MT18 (γ,fission)	MT18 (γ,fission)	97-Bk-249 MT18 (γ,fission) >>



<< 96-Cm-245	97-Bk-249	98-Cf-249 >>
<< 96-Cm-245 MT18 (γ,fission)	MT18 (γ,fission)	98-Cf-249 MT18 (γ,fission) >>



<< 97-Bk-249	98-Cf-249	
<< 97-Bk-249 MT18 (γ ,fission)	MT18 (γ,fission)	

