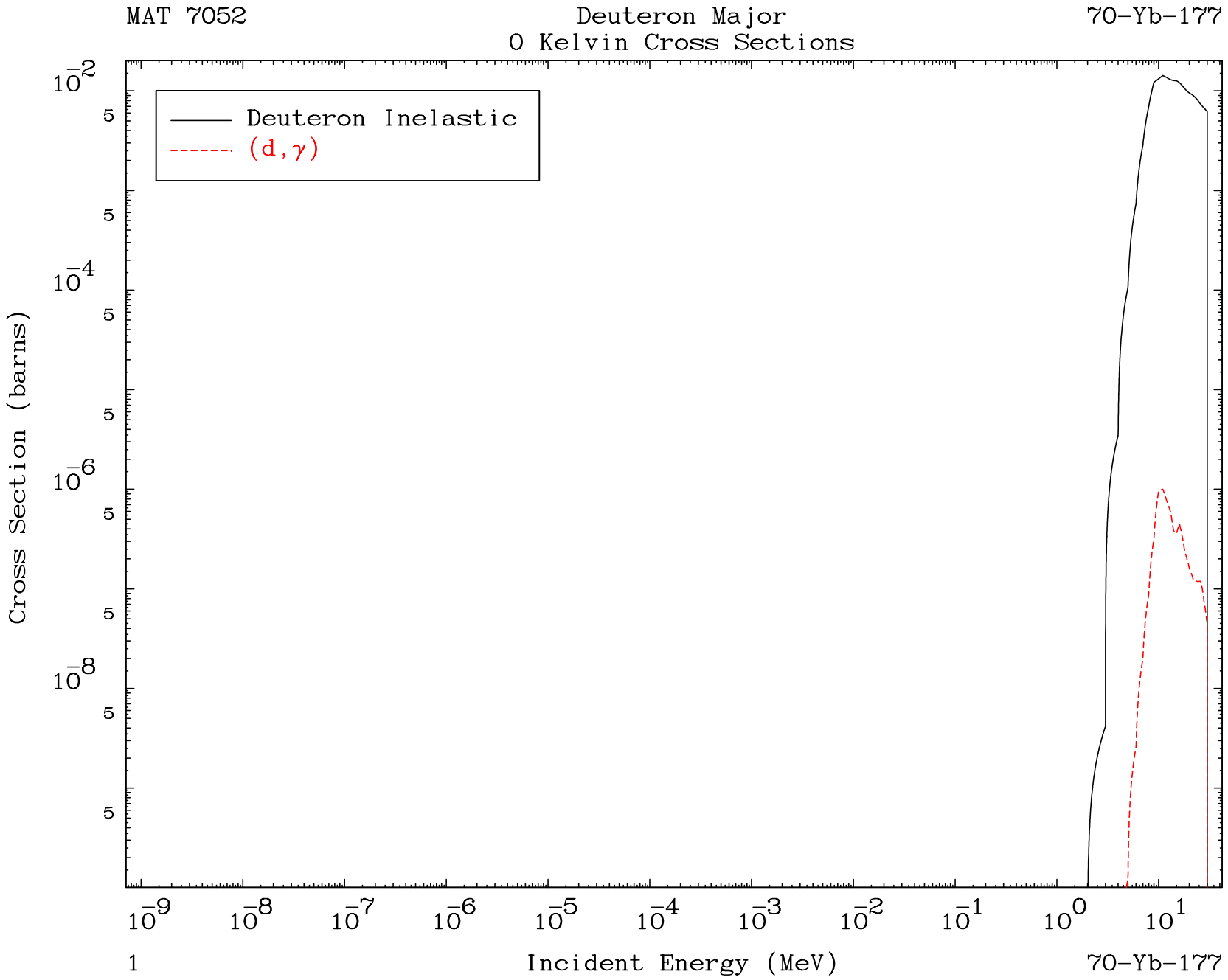
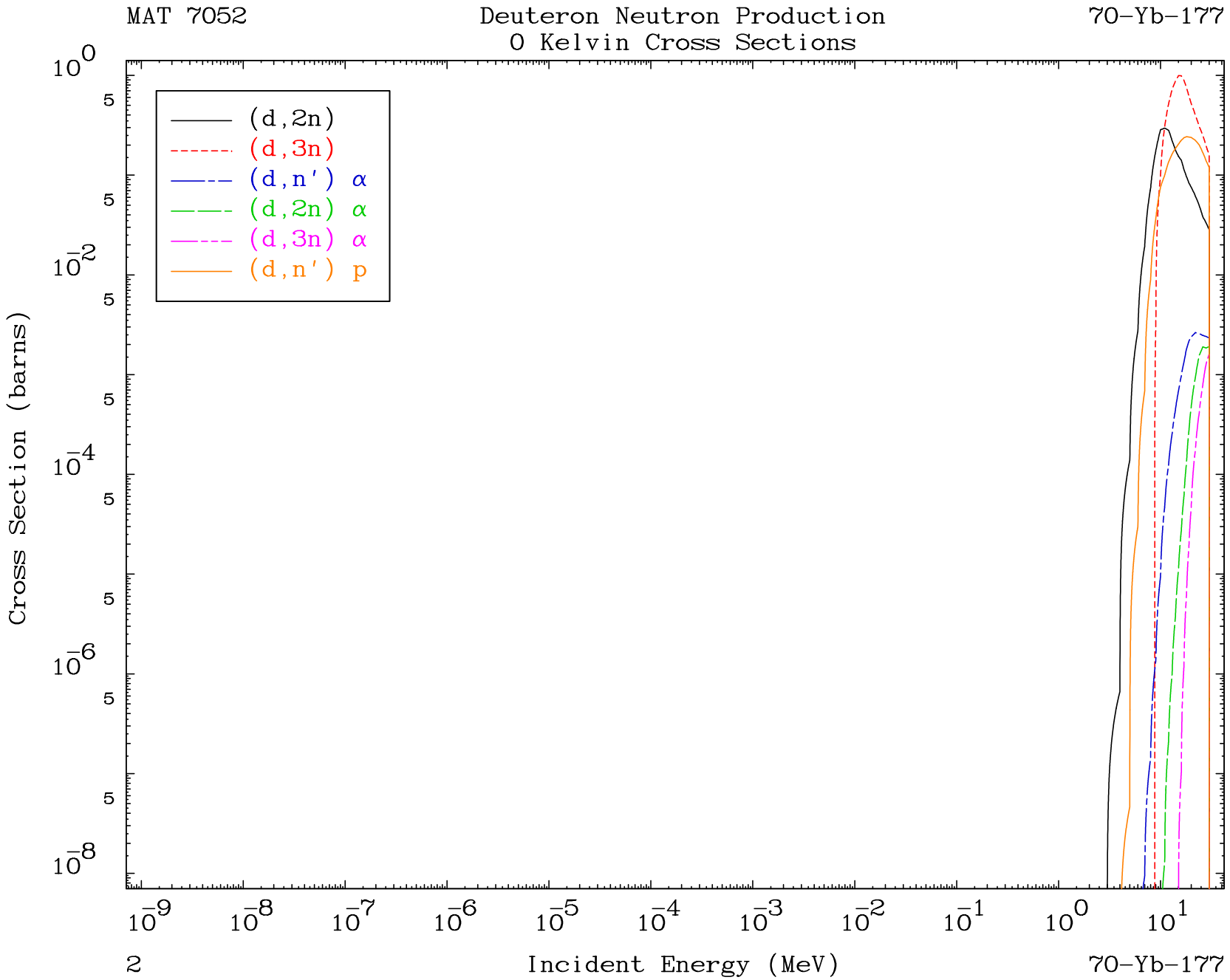
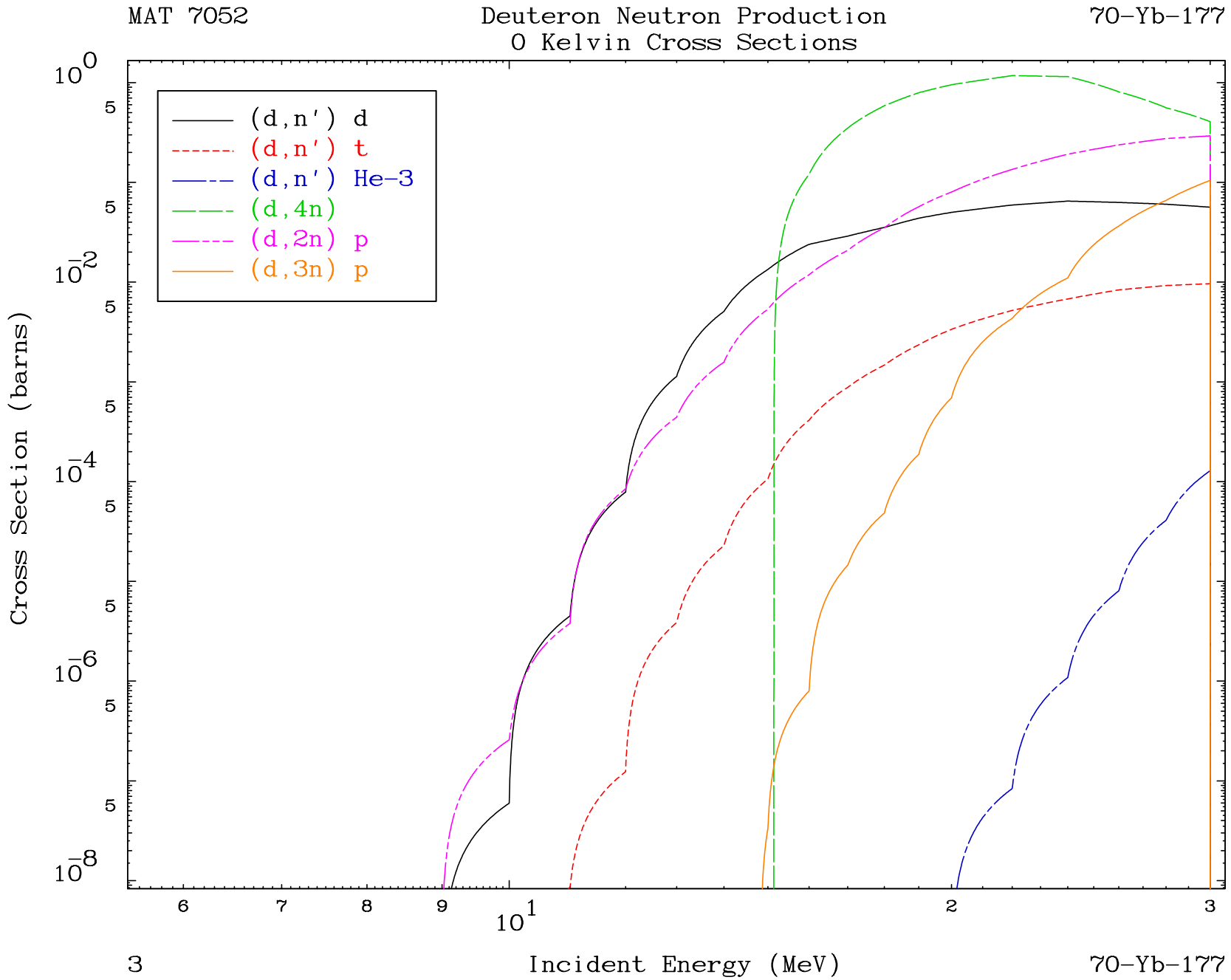
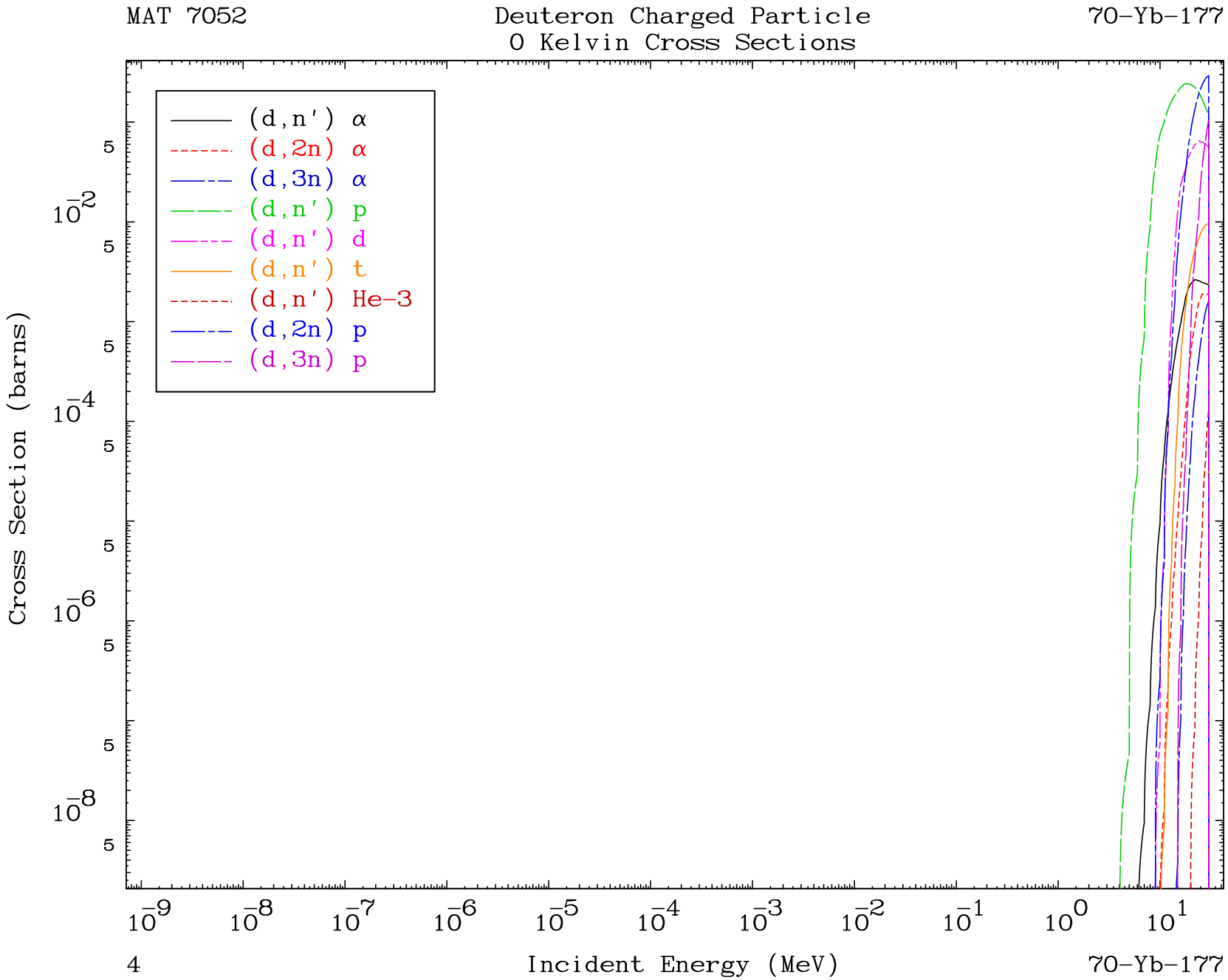
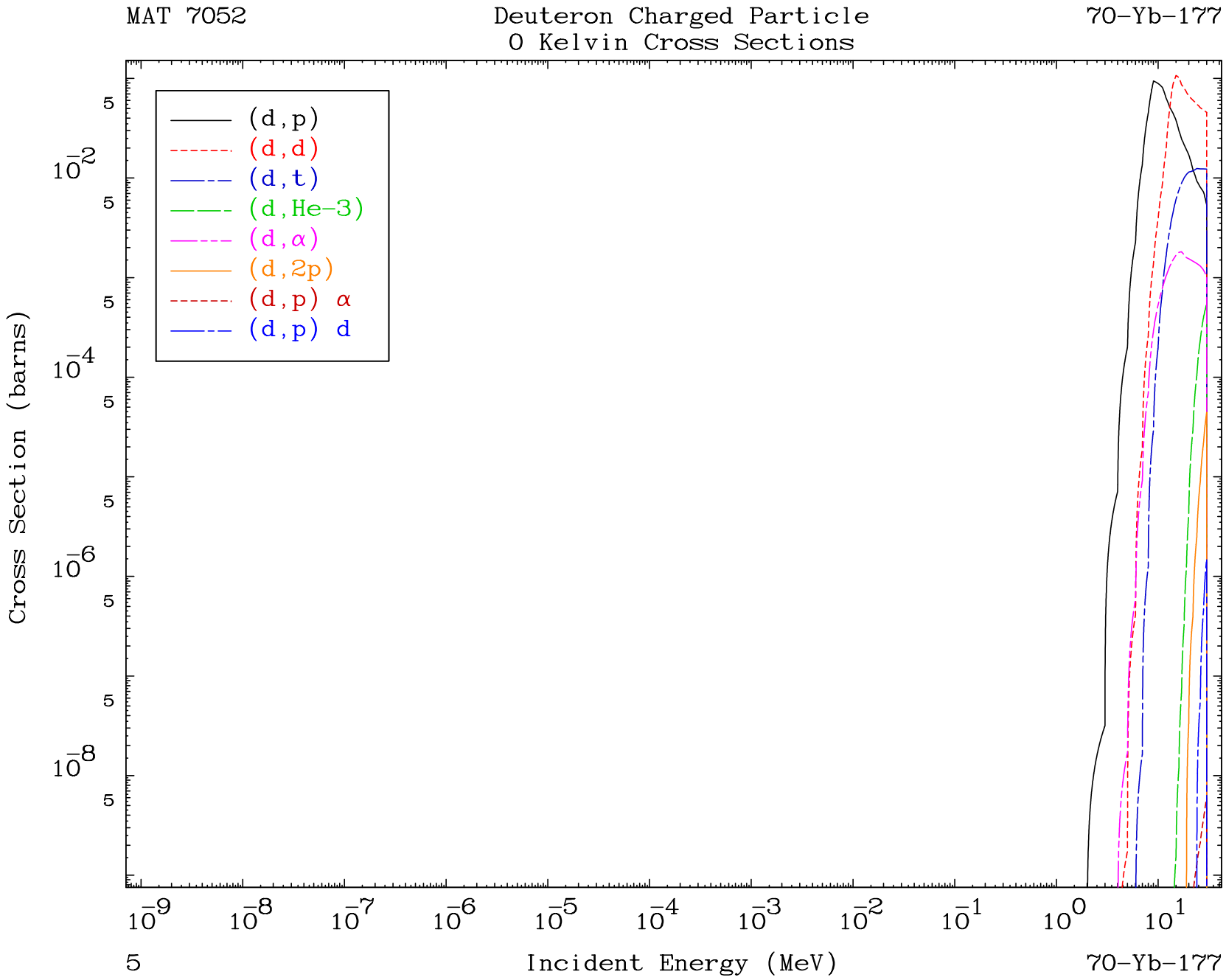
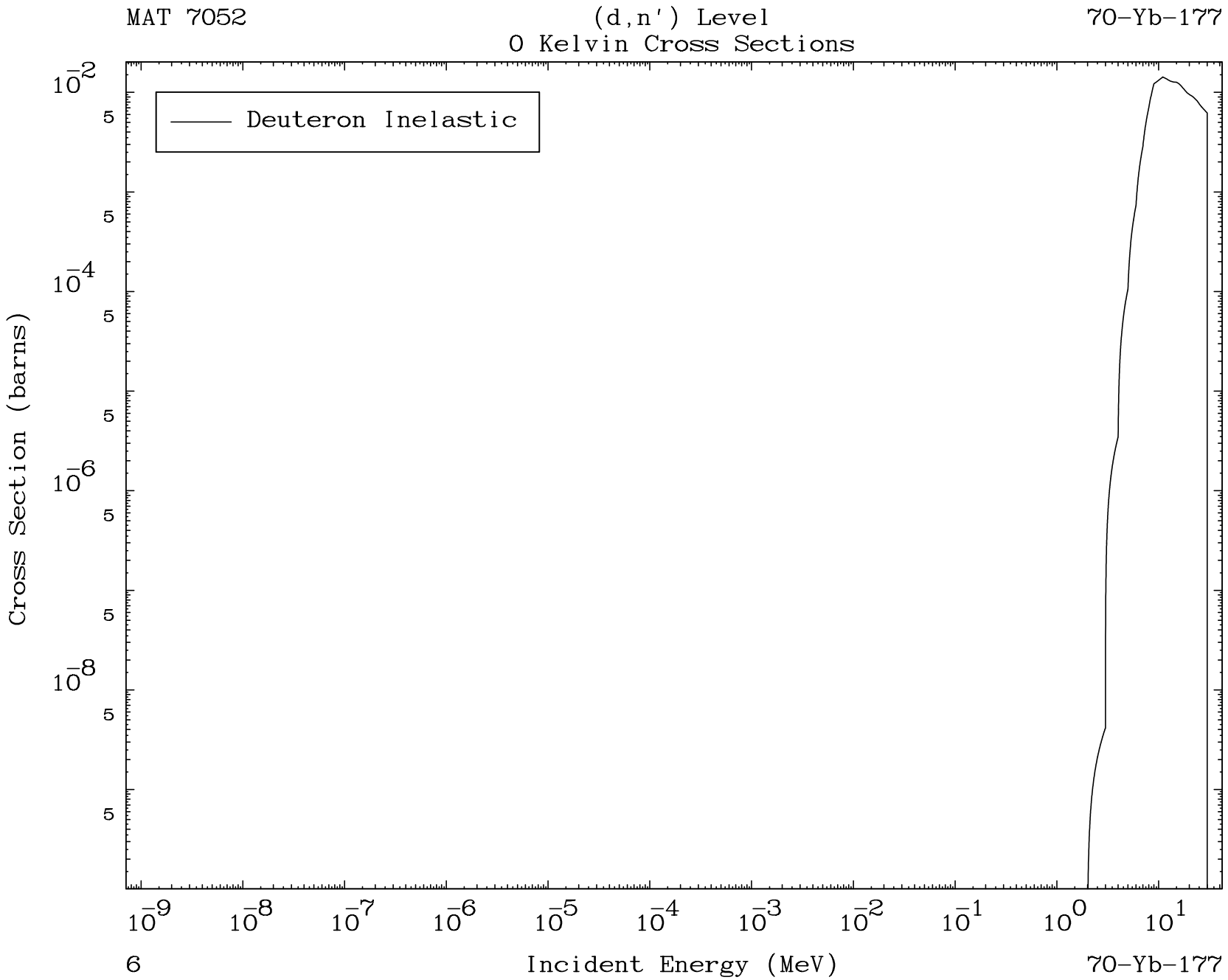

MAT 7052
Deuteron Major
70-Yb-177
0 Kelvin Cross Sections
Deuteron Inelastic
(d,γ)
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177

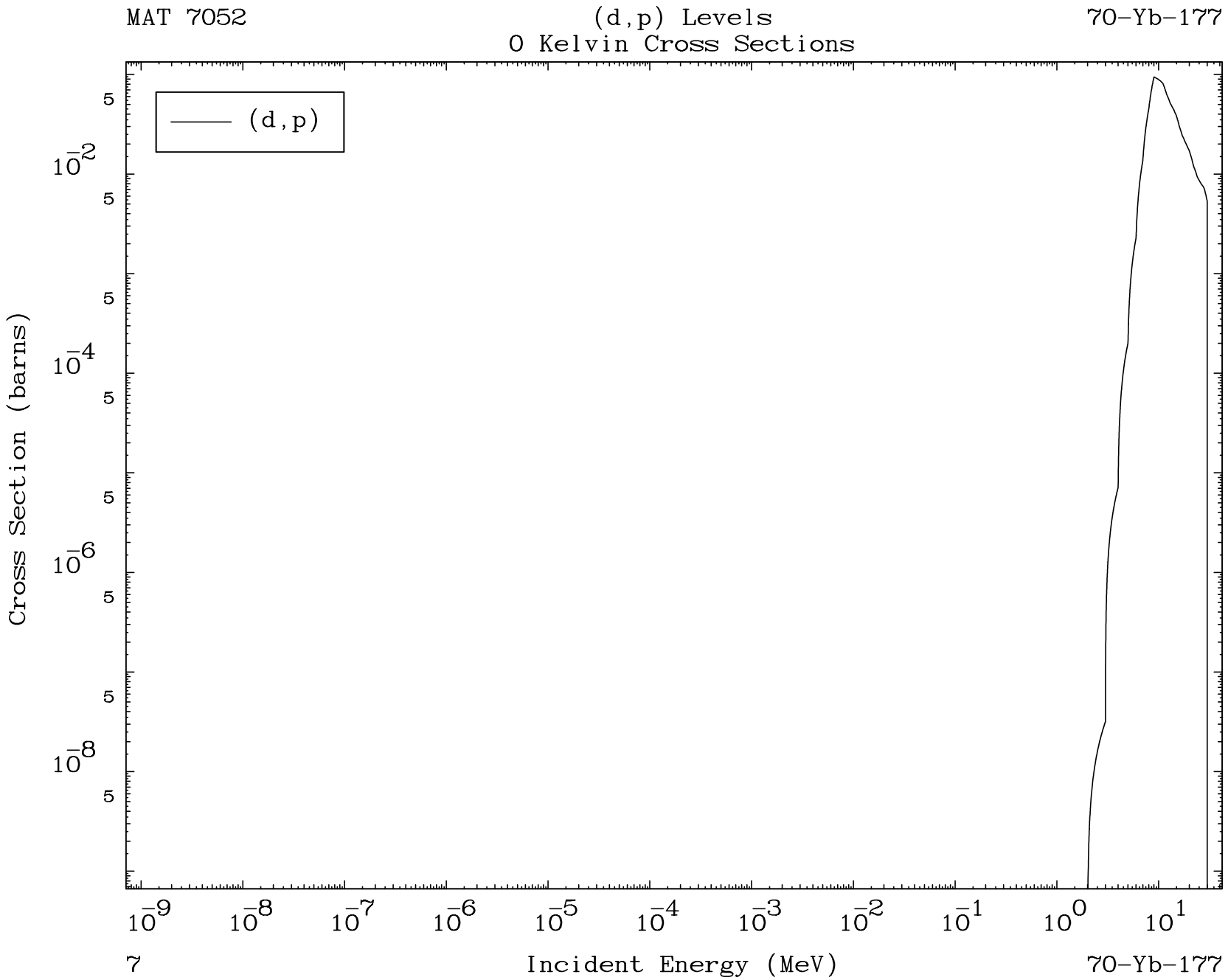

MAT 7052
Deuteron Neutron Production
0 Kelvin Cross Sections
70-Yb-177
(d,2n)
(d,3n)
(d,n') α
(d,2n) α
(d,3n) α
(d,n') p
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177
2

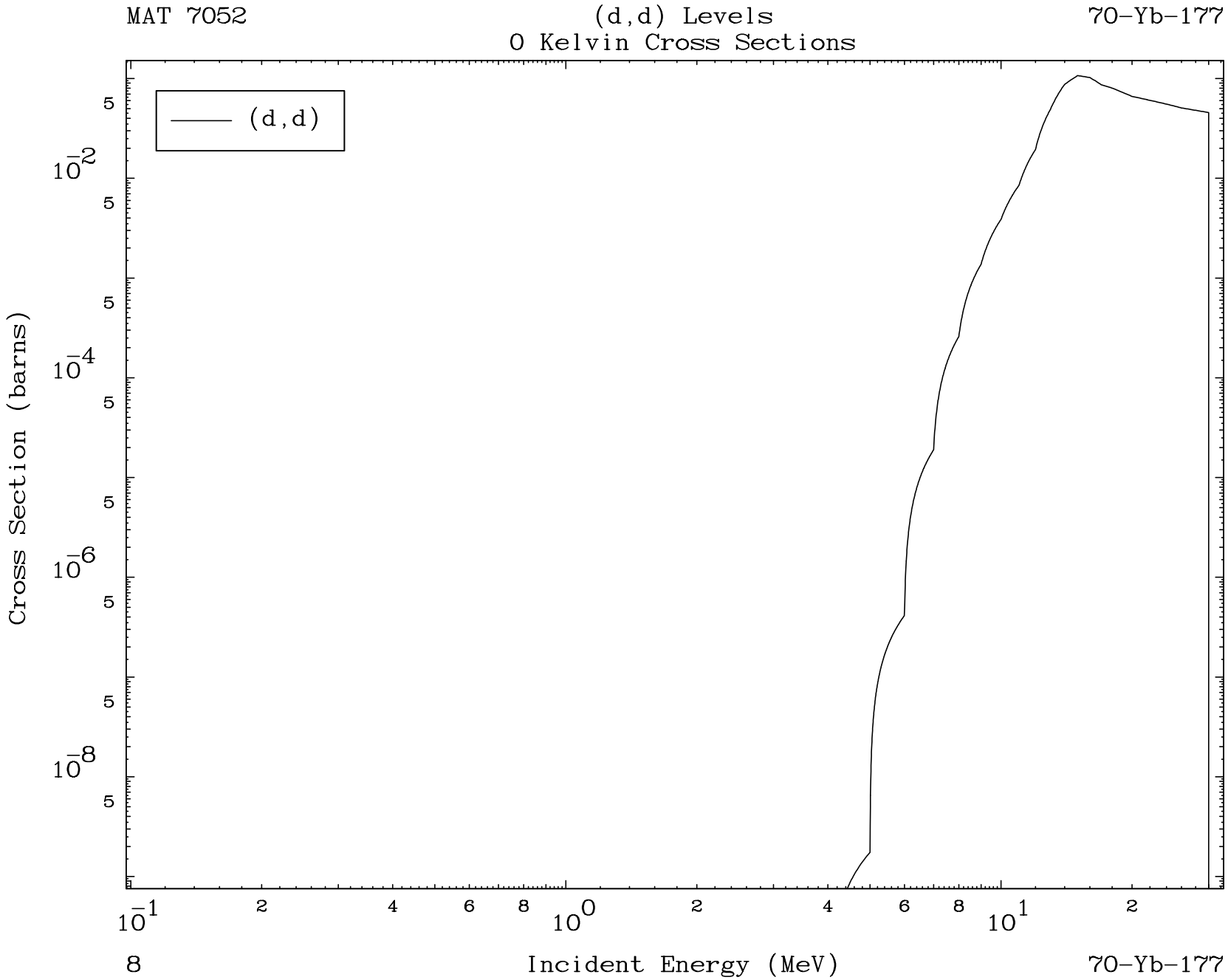

MAT 7052
Deuteron Neutron Production
0 Kelvin Cross Sections
70-Yb-177
(d,n') d
(d,n') t
(d,n') He-3
(d,4n)
(d,2n) p
(d,3n) p
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177

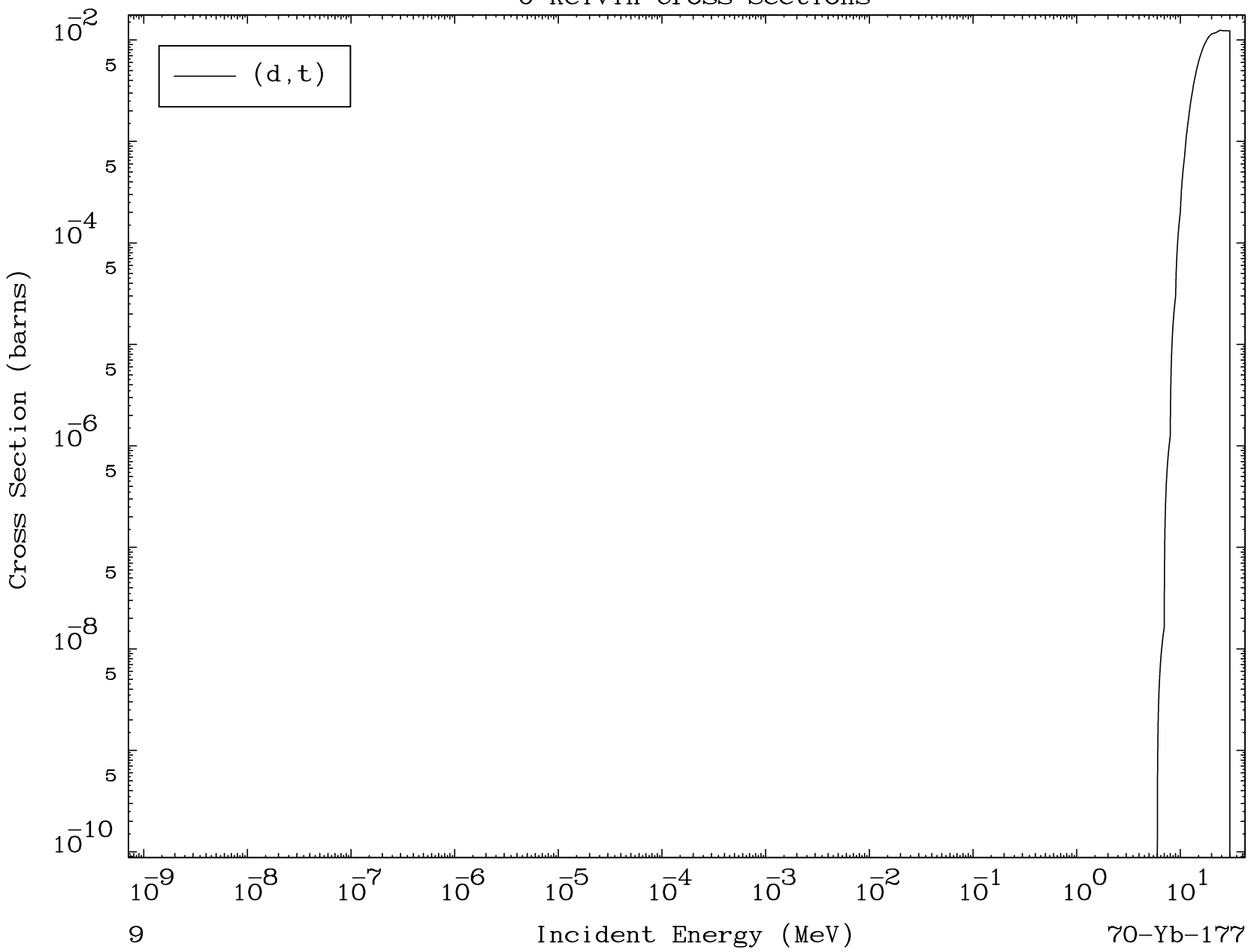

MAT 7052
Deuteron Charged Particle
0 Kelvin Cross Sections
70-Yb-177
(d,n') α
(d,2n) α
(d,3n) α
(d,n') p
(d,n') d
(d,n') t
(d,n') He-3
(d,2n) p
(d,3n) p
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177
4

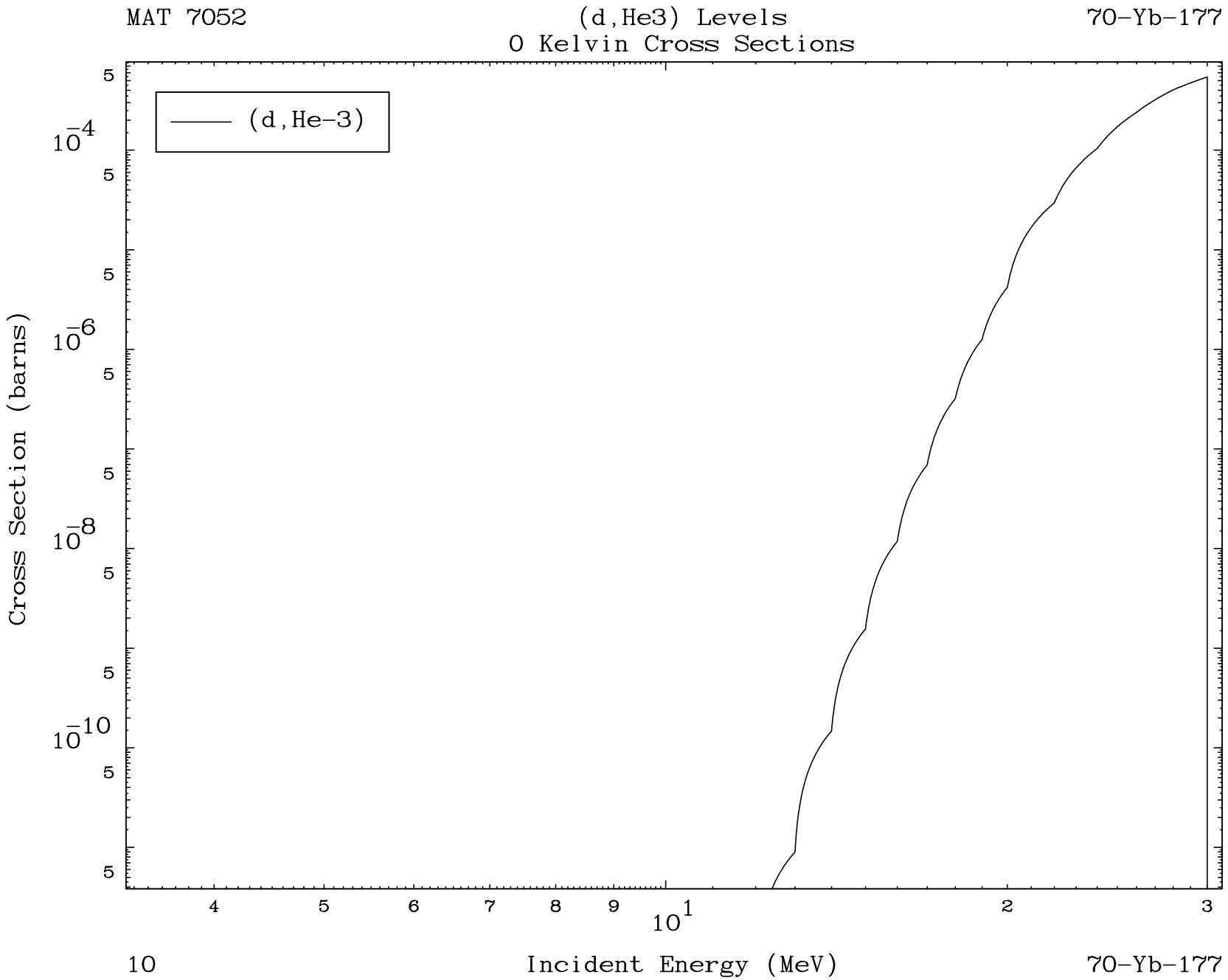

MAT 7052
Deuteron Charged Particle
0 Kelvin Cross Sections
70-Yb-177
(d,p)
(d,d)
(d,t)
(d,He-3)
(d,α)
(d,2p)
(d,p) α
(d,p) d
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177


MAT 7052
(d,n') Level
70-Yb-177
0 Kelvin Cross Sections
Deuteron Inelastic
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177
6

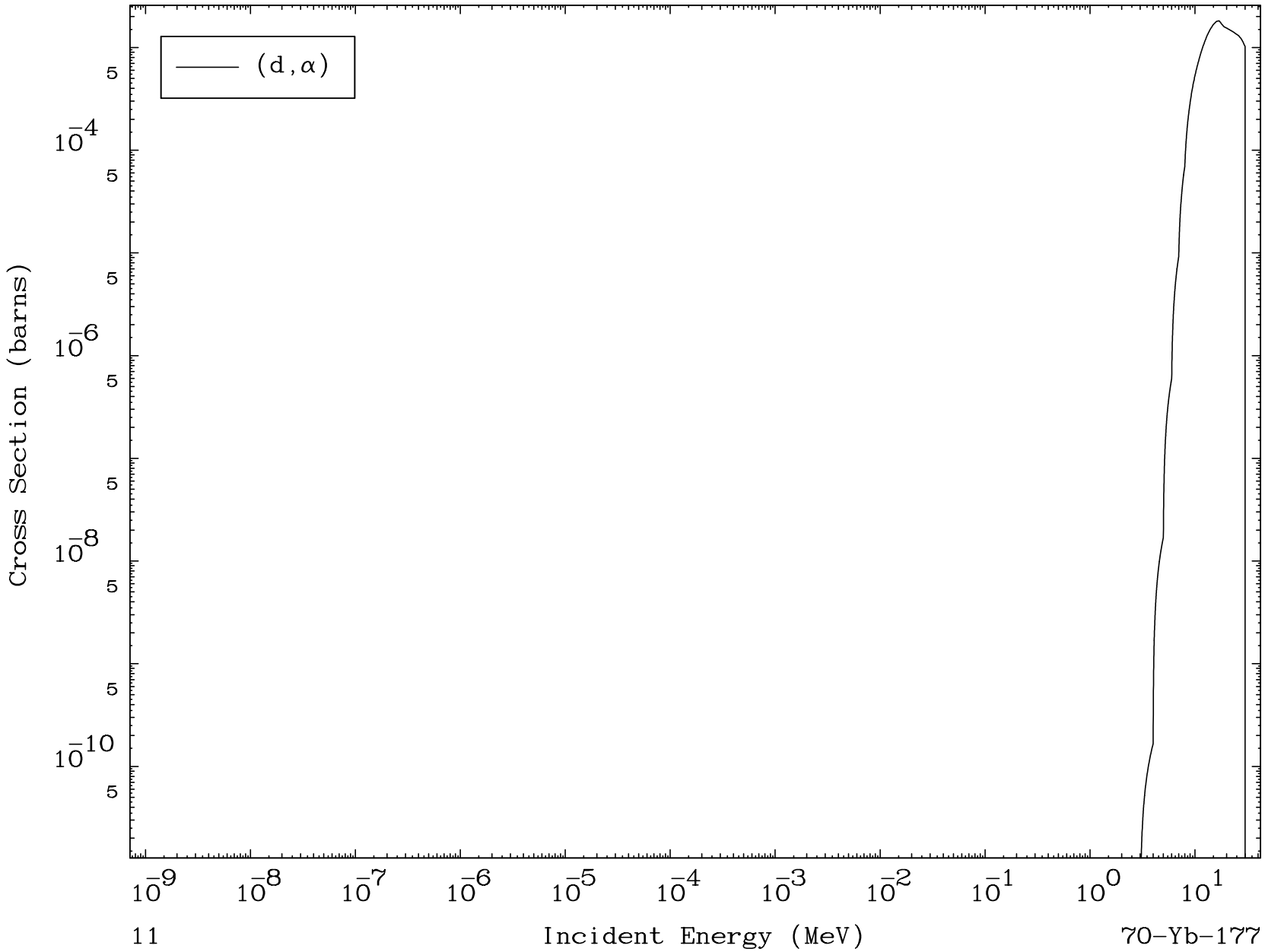

MAT 7052
(d,p) Levels
70-Yb-177
0 Kelvin Cross Sections
(d,p)
Cross Section (barns)
10-2
10-4
10-6
10-8
10-9
10-8
10-7
10-6
10-5
10-4
10-3
10-2
10-1
100
101
Incident Energy (MeV)
7
70-Yb-177

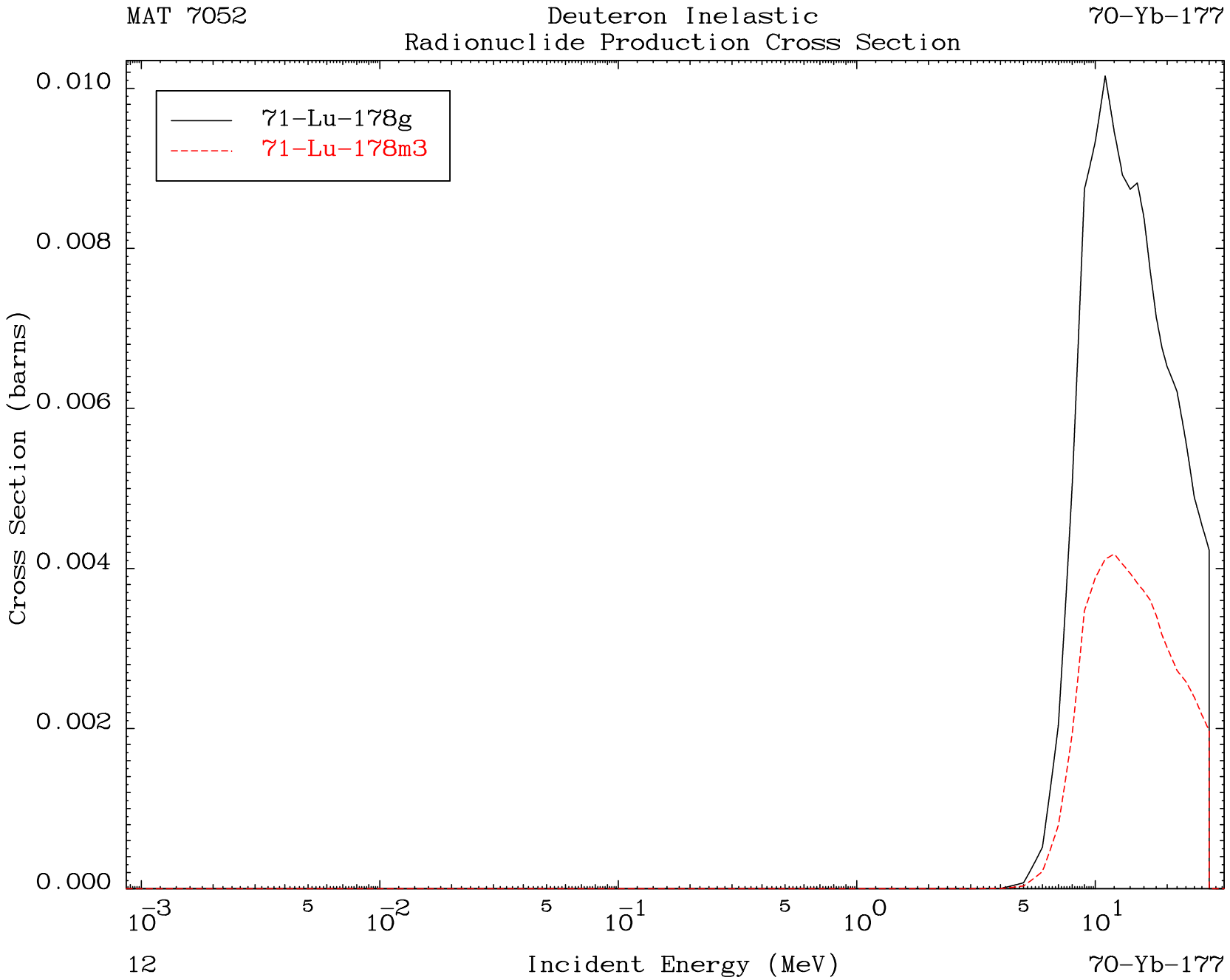

MAT 7052
(d,d) Levels
70-Yb-177
0 Kelvin Cross Sections
(d,d)
Cross Section (barns)
Incident Energy (MeV)
70-Yb-177

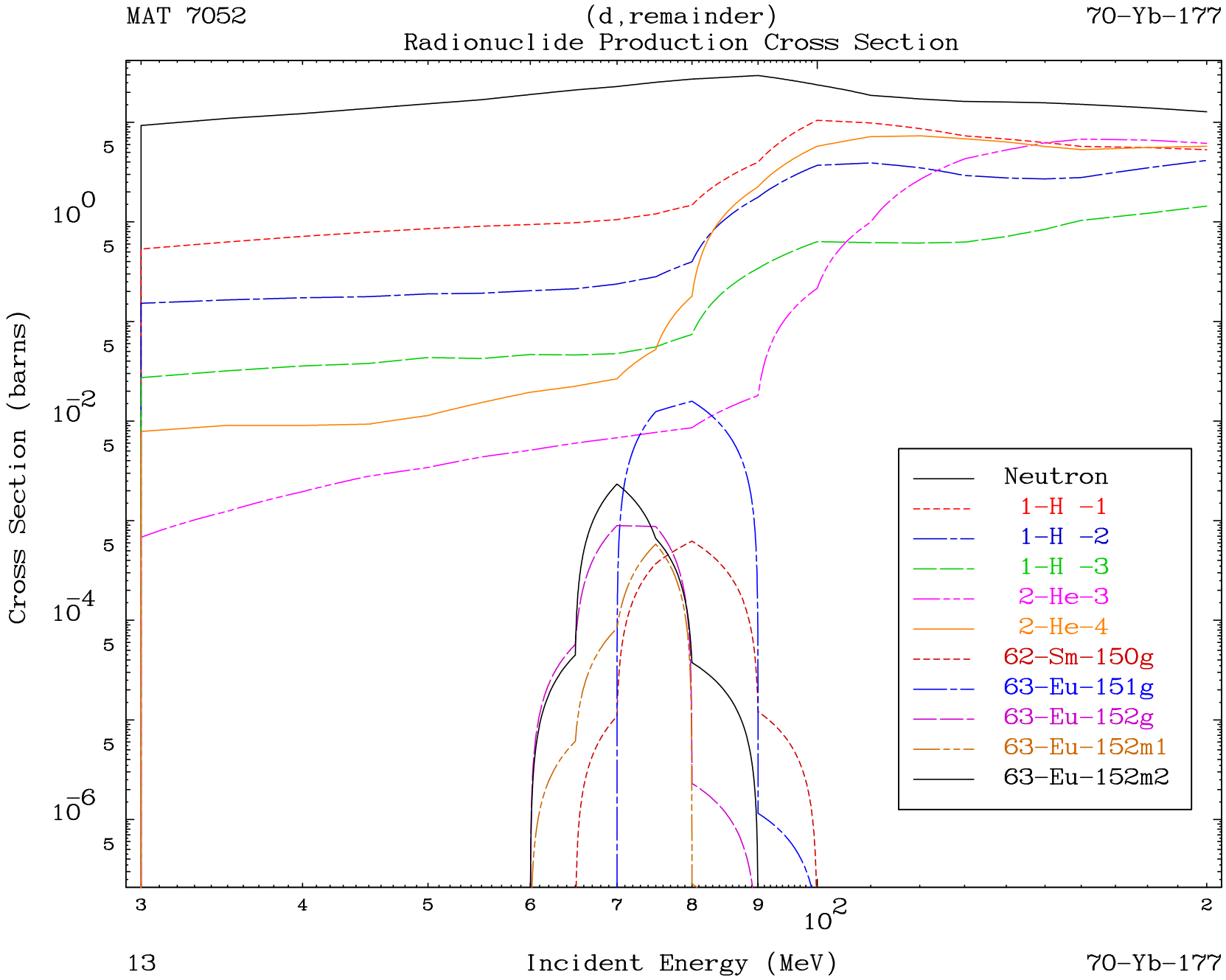

0 Kelvin Cross Sections
(d,t)
Cross Section (barns)
Incident Energy (MeV)
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-9}
10^{-8}
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}

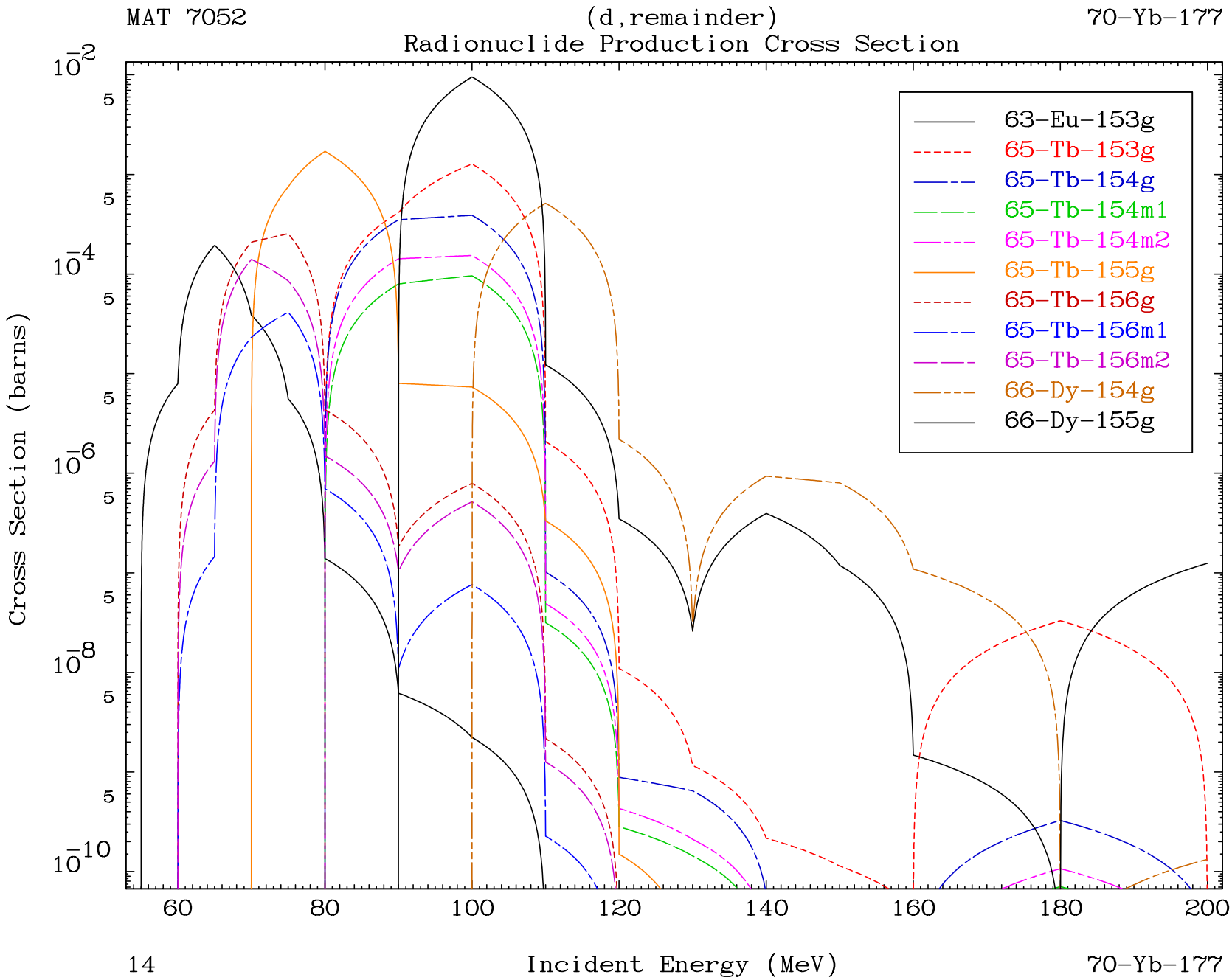

MAT 7052
(d,He3) Levels
70-Yb-177
0 Kelvin Cross Sections
(d,He-3)
Cross Section (barns)
10^-4
10^-6
10^-8
10^-10
5
4
6
7
8
9
10^1
2
3
10
Incident Energy (MeV)
70-Yb-177

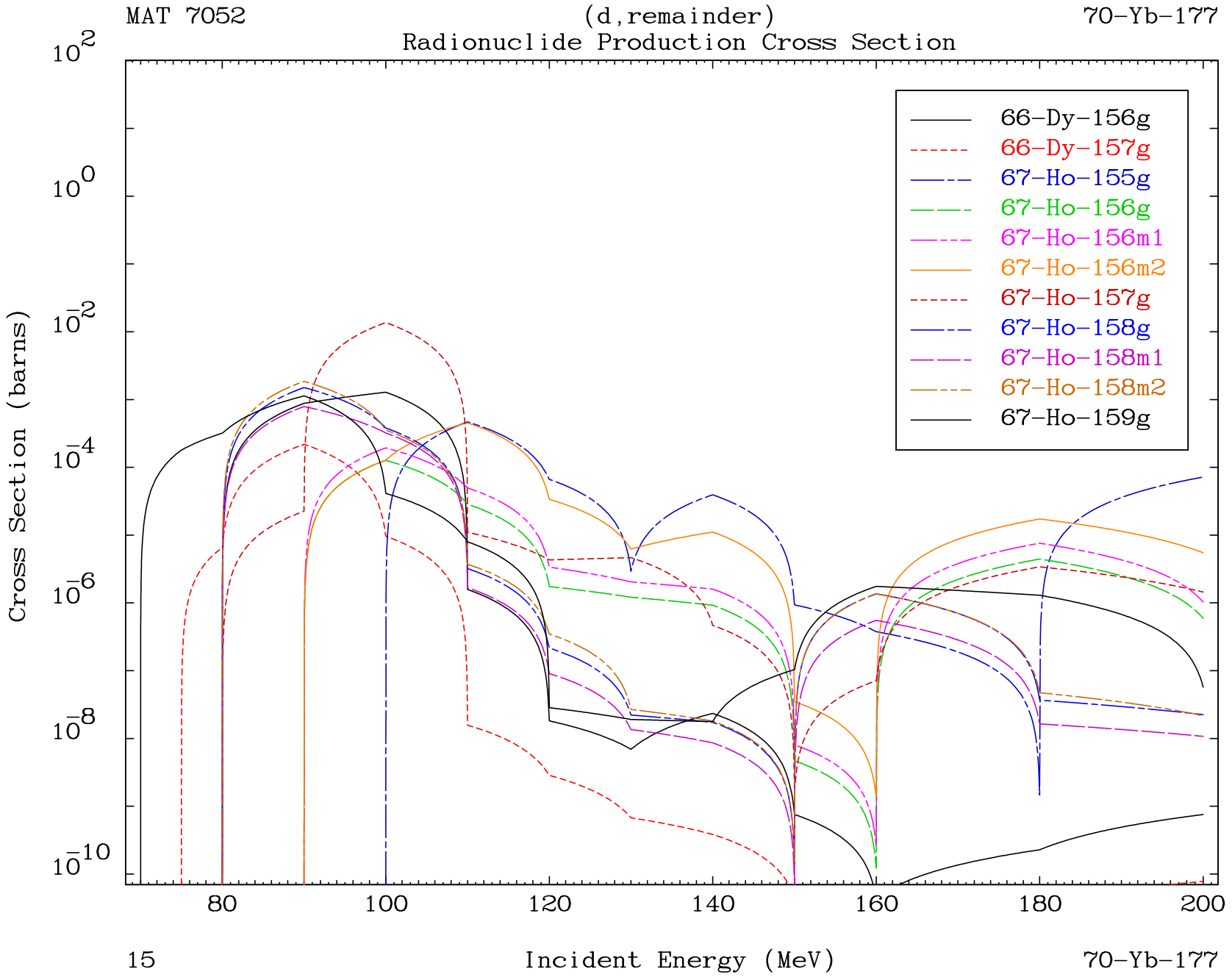
0 Kelvin Cross Sections

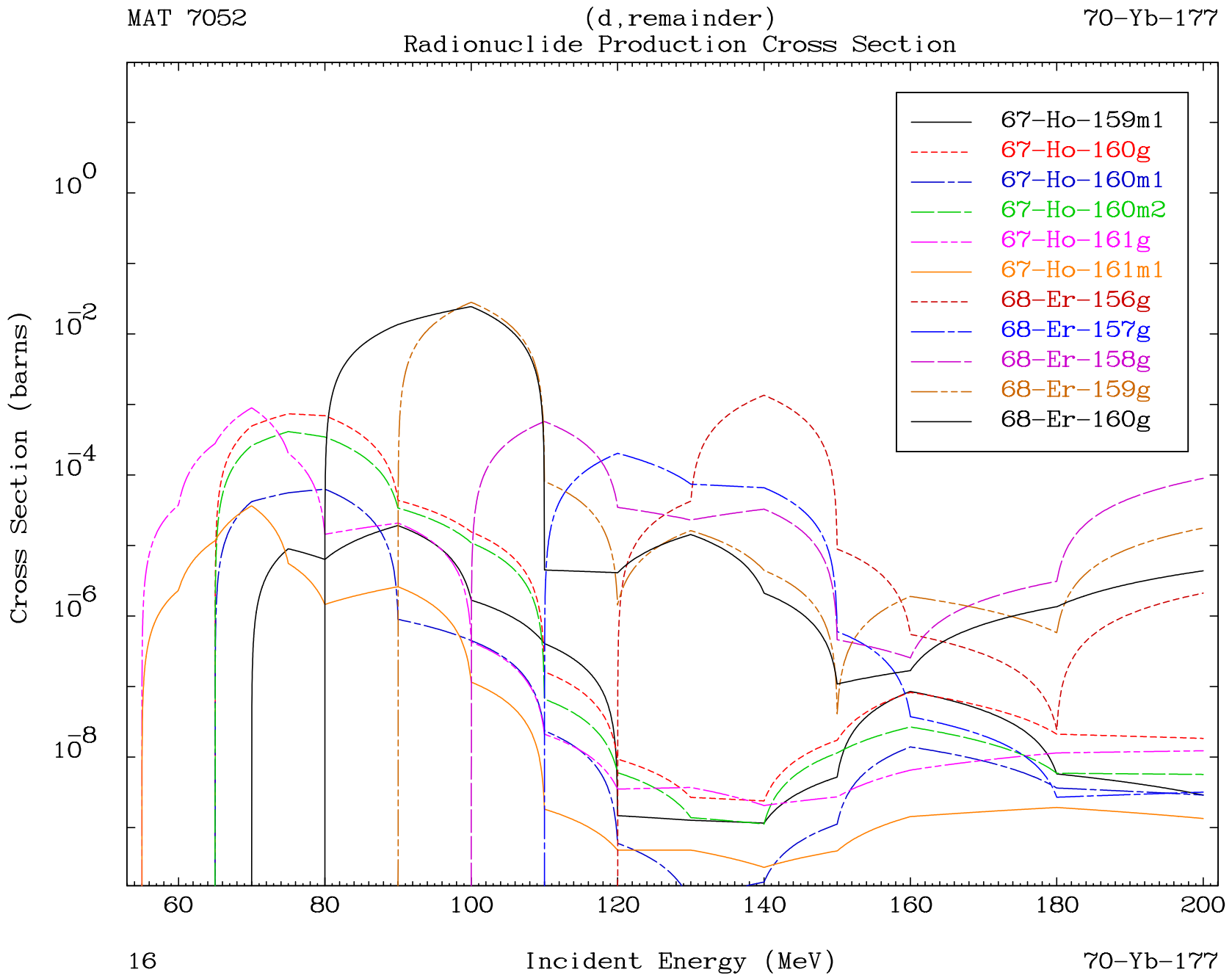


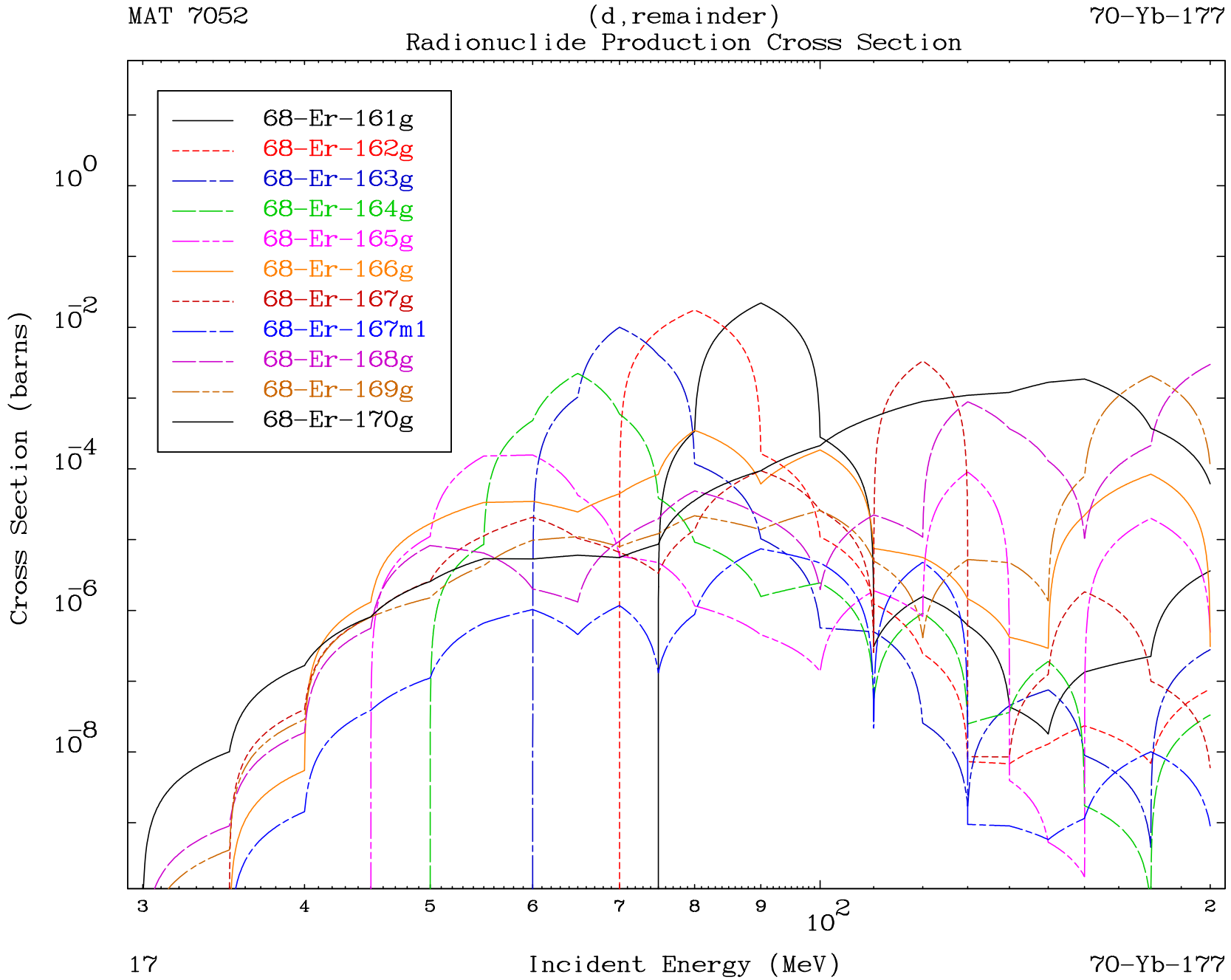

MAT 7052
Deuteron Inelastic
70-Yb-177
Radionuclide Production Cross Section
71-Lu-178g
71-Lu-178m3
0.010
0.008
0.006
0.004
0.002
0.000
Cross Section (barns)
10^-3
5
10^-2
5
10^-1
5
10^0
5
10^1
Incident Energy (MeV)
12
70-Yb-177

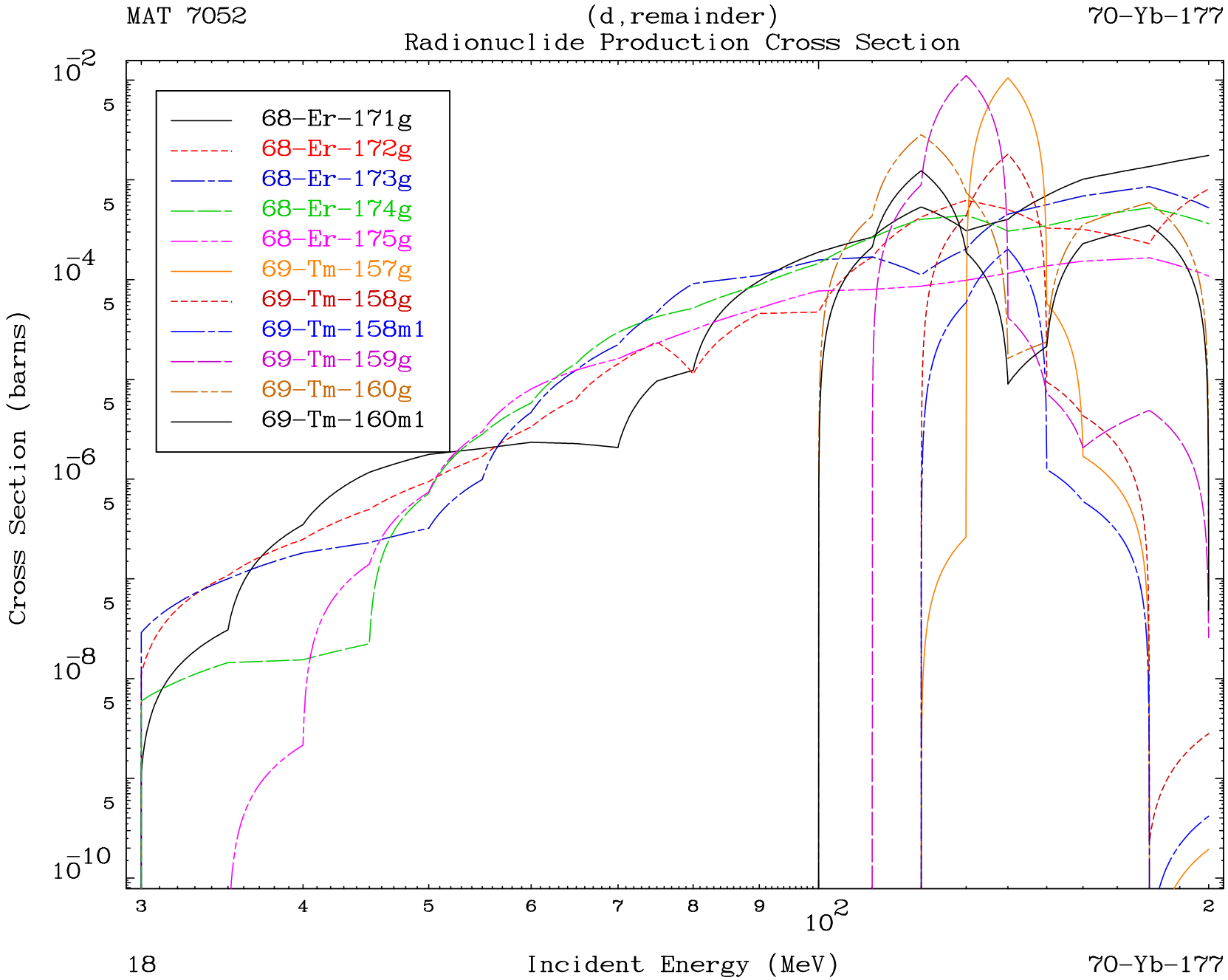

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
5
3
4
5
6
7
8
9
10^2
2
Neutron
1-H -1
1-H -2
1-H -3
2-He-3
2-He-4
62-Sm-150g
63-Eu-151g
63-Eu-152g
63-Eu-152m1
63-Eu-152m2
13
Incident Energy (MeV)
70-Yb-177

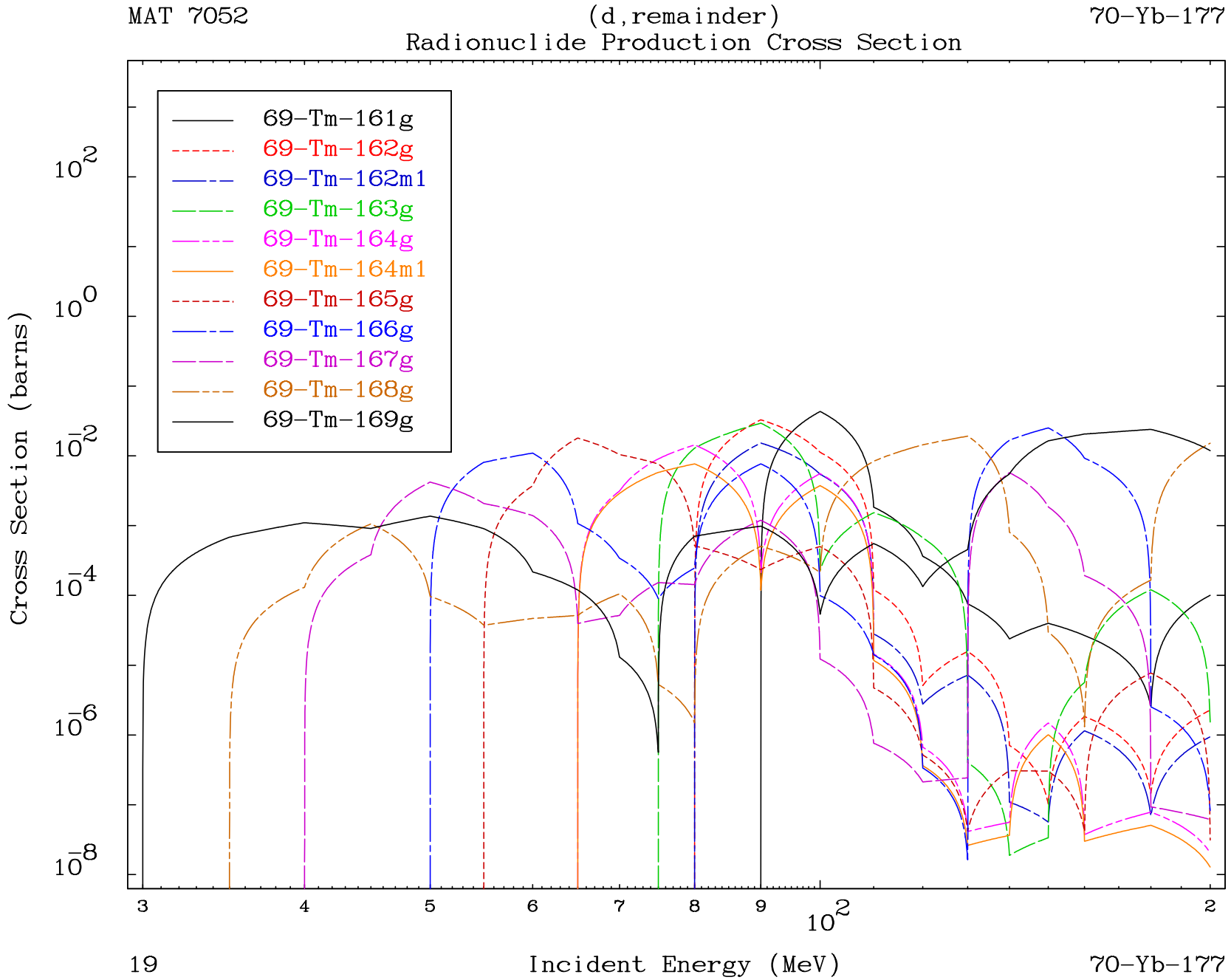

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10-2
10-4
10-6
10-8
10-10
5
60
80
100
120
140
160
180
200
63-Eu-153g
65-Tb-153g
65-Tb-154g
65-Tb-154m1
65-Tb-154m2
65-Tb-155g
65-Tb-156g
65-Tb-156m1
65-Tb-156m2
66-Dy-154g
66-Dy-155g
14
Incident Energy (MeV)
70-Yb-177

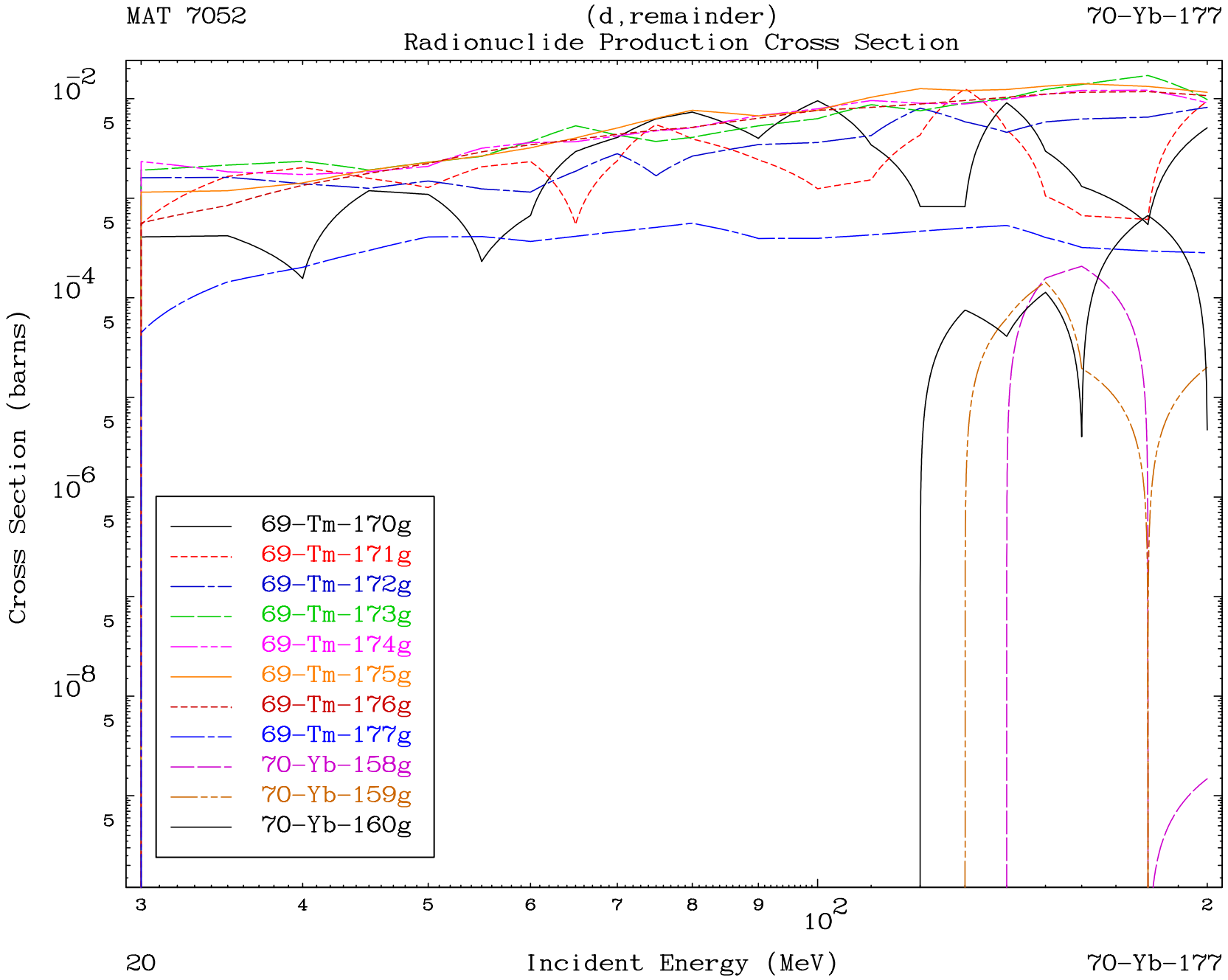

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
15
70-Yb-177
66-Dy-156g
66-Dy-157g
67-Ho-155g
67-Ho-156g
67-Ho-156m1
67-Ho-156m2
67-Ho-157g
67-Ho-158g
67-Ho-158m1
67-Ho-158m2
67-Ho-159g

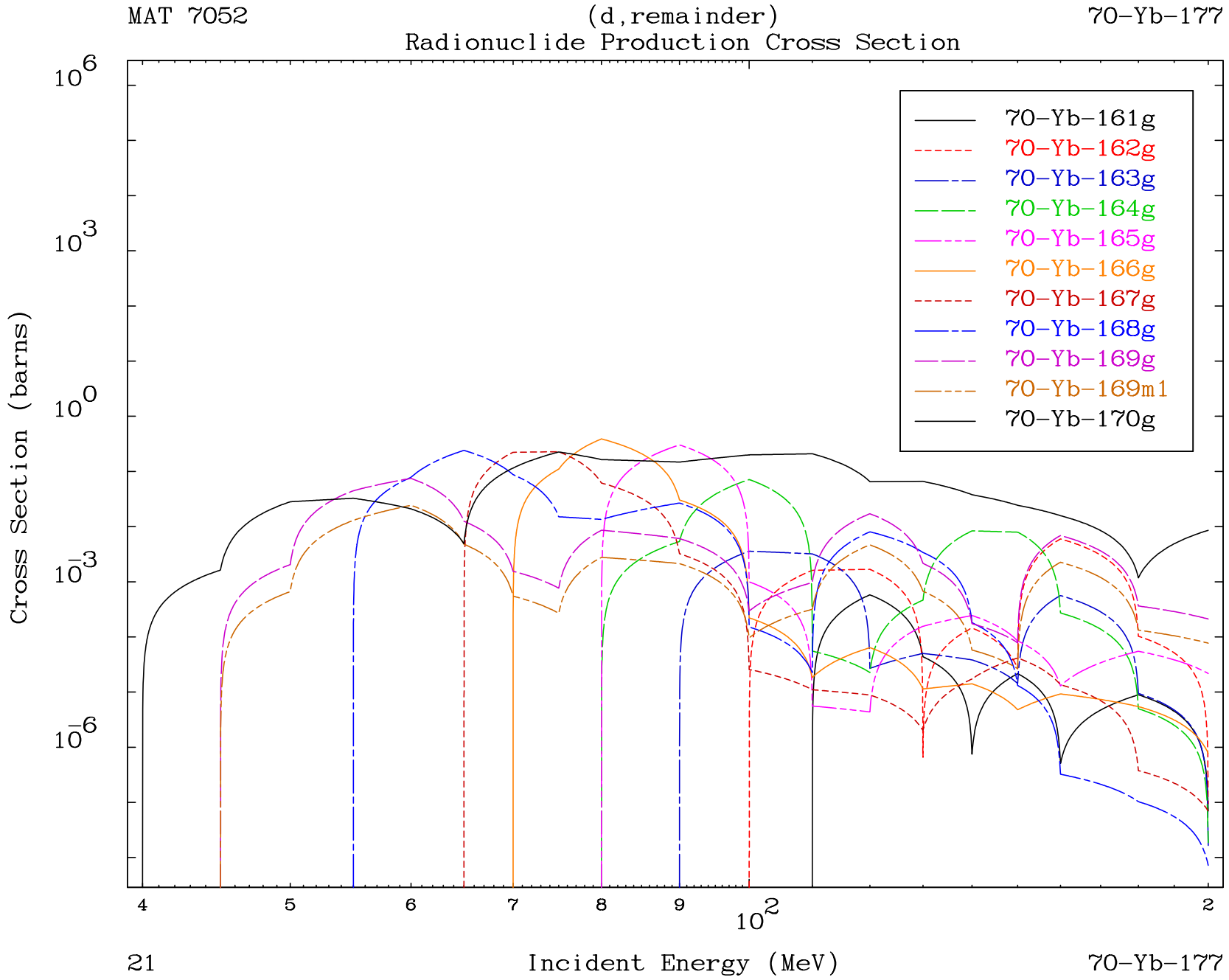

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
67-Ho-159m1
67-Ho-160g
67-Ho-160m1
67-Ho-160m2
67-Ho-161g
67-Ho-161m1
68-Er-156g
68-Er-157g
68-Er-158g
68-Er-159g
68-Er-160g
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
10^-8
60
80
100
120
140
160
180
200
16
Incident Energy (MeV)
70-Yb-177

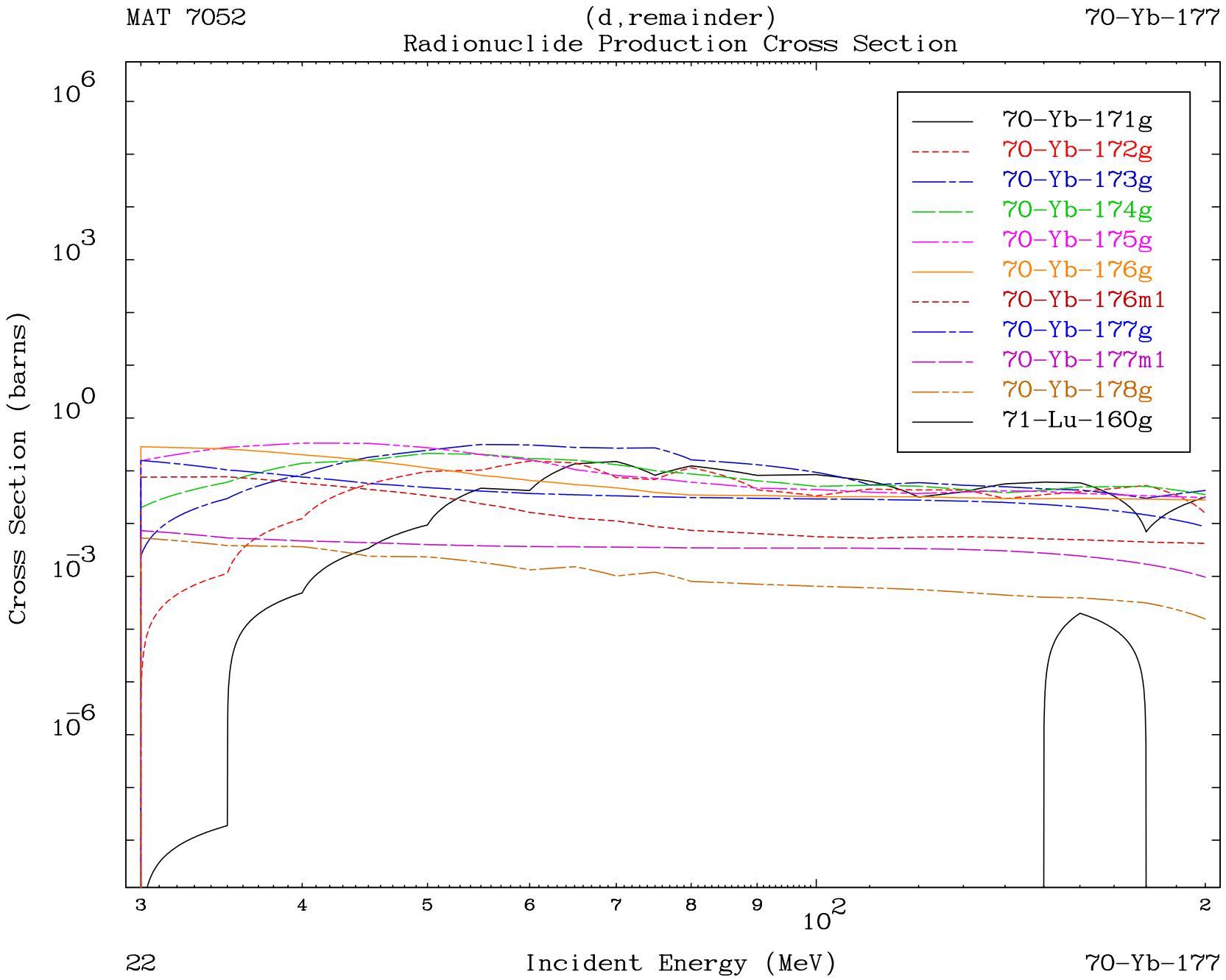

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
68-Er-161g
68-Er-162g
68-Er-163g
68-Er-164g
68-Er-165g
68-Er-166g
68-Er-167g
68-Er-167m1
68-Er-168g
68-Er-169g
68-Er-170g
Cross Section (barns)
10^0
10^-2
10^-4
10^-6
10^-8
3
4
5
6
7
8
9
10^2
2
17
Incident Energy (MeV)
70-Yb-177

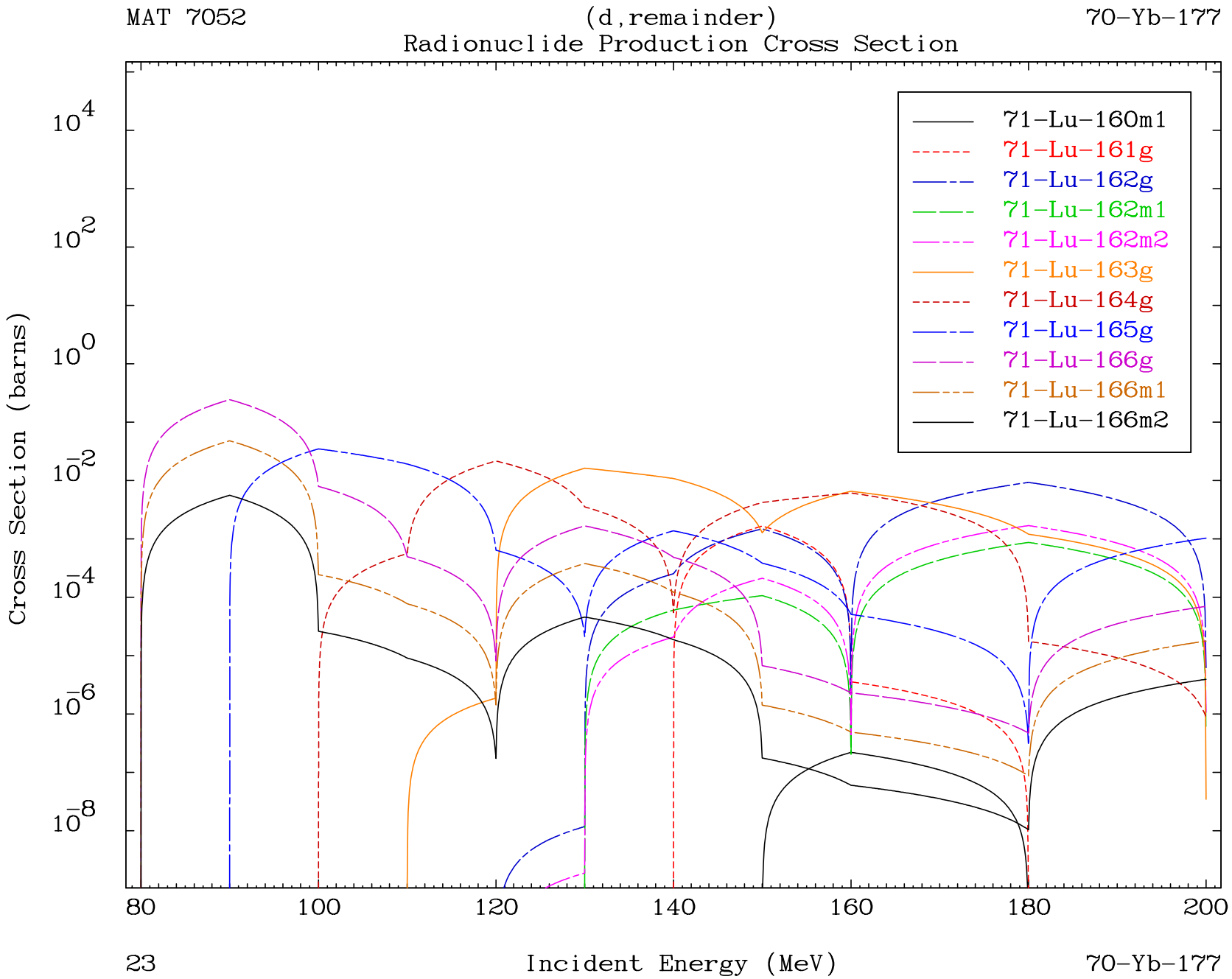

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
68-Er-171g
68-Er-172g
68-Er-173g
68-Er-174g
68-Er-175g
69-Tm-157g
69-Tm-158g
69-Tm-158m1
69-Tm-159g
69-Tm-160g
69-Tm-160m1
Cross Section (barns)
Incident Energy (MeV)
18
70-Yb-177

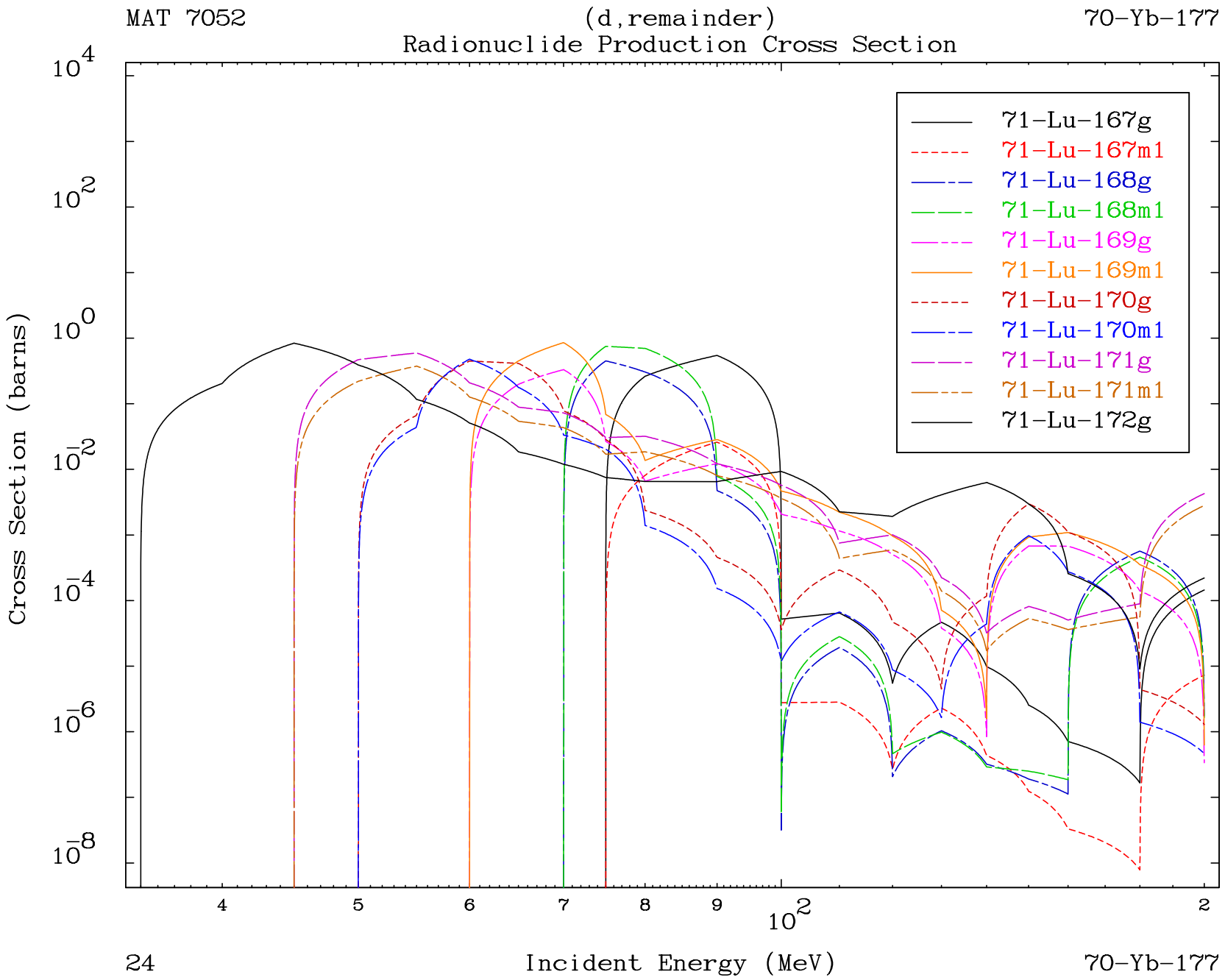

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
69-Tm-161g
69-Tm-162g
69-Tm-162m1
69-Tm-163g
69-Tm-164g
69-Tm-164m1
69-Tm-165g
69-Tm-166g
69-Tm-167g
69-Tm-168g
69-Tm-169g
Cross Section (barns)
10^2
10^0
10^-2
10^-4
10^-6
10^-8
3
4
5
6
7
8
9
10^2
2
19
Incident Energy (MeV)
70-Yb-177

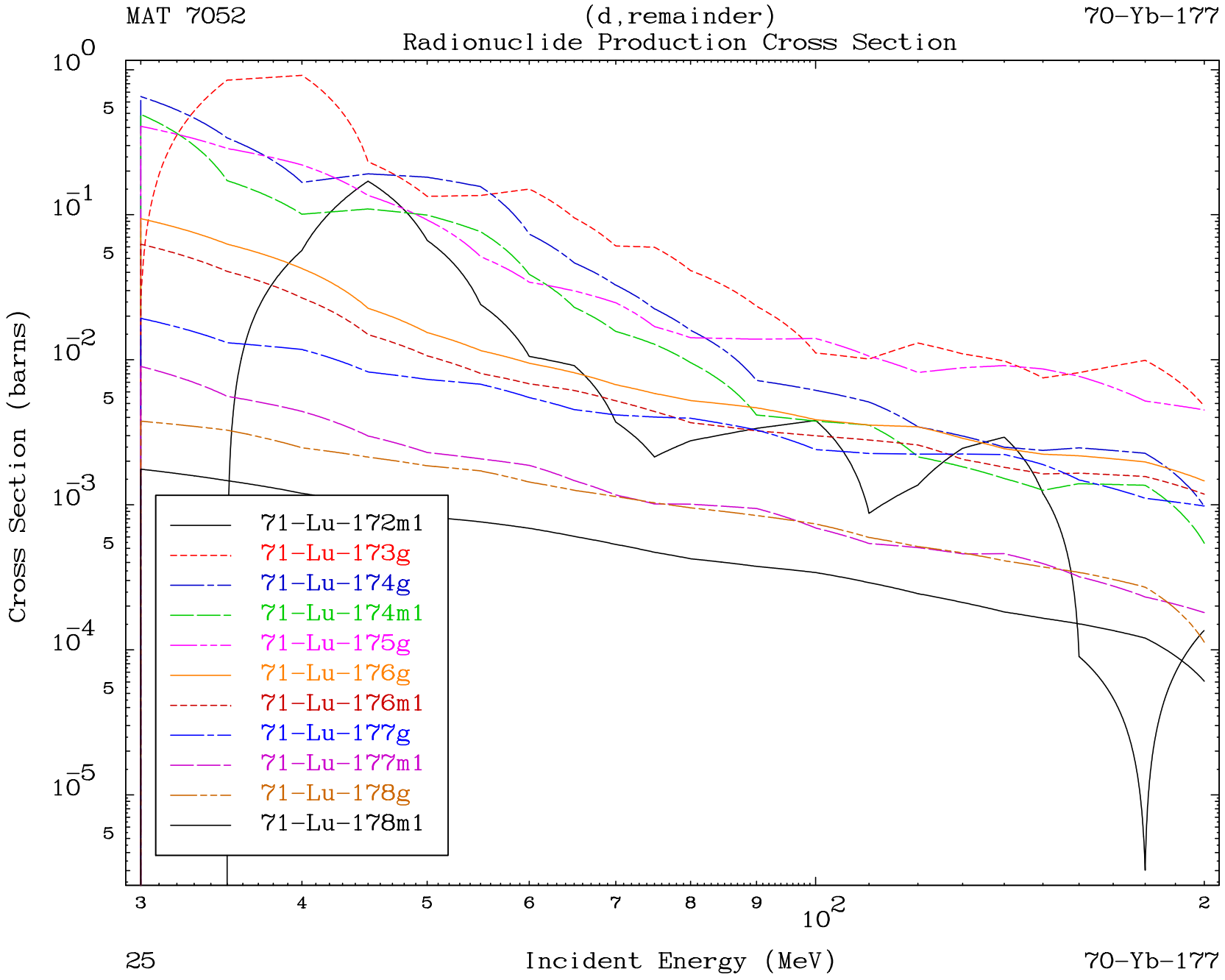

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10-2
10-4
10-6
10-8
5
3
4
5
6
7
8
9
10 2
2
69-Tm-170g
69-Tm-171g
69-Tm-172g
69-Tm-173g
69-Tm-174g
69-Tm-175g
69-Tm-176g
69-Tm-177g
70-Yb-158g
70-Yb-159g
70-Yb-160g
20
Incident Energy (MeV)
70-Yb-177

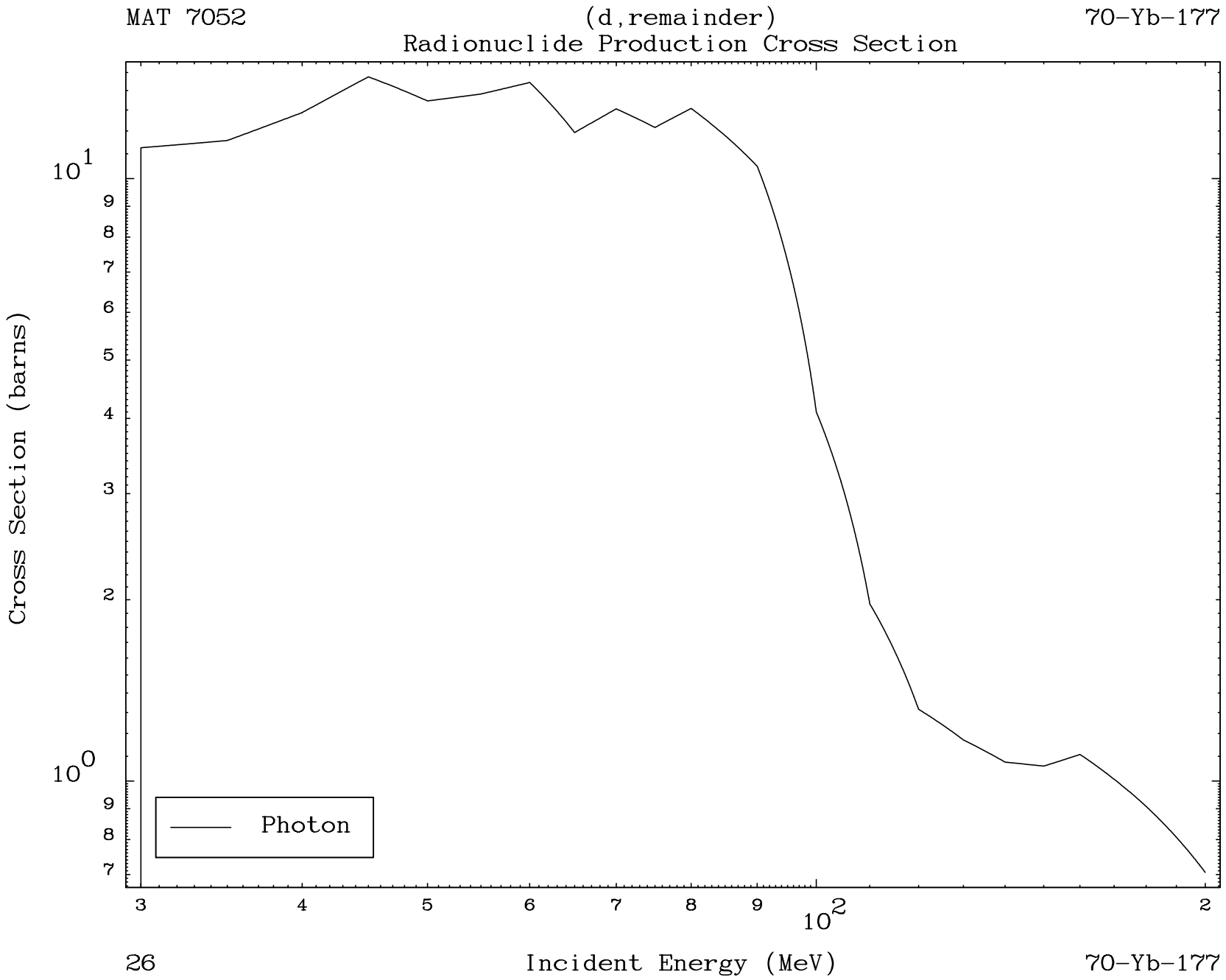

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
70-Yb-161g
70-Yb-162g
70-Yb-163g
70-Yb-164g
70-Yb-165g
70-Yb-166g
70-Yb-167g
70-Yb-168g
70-Yb-169g
70-Yb-169m1
70-Yb-170g
4
5
6
7
8
9
10^2
2
21
Incident Energy (MeV)
70-Yb-177

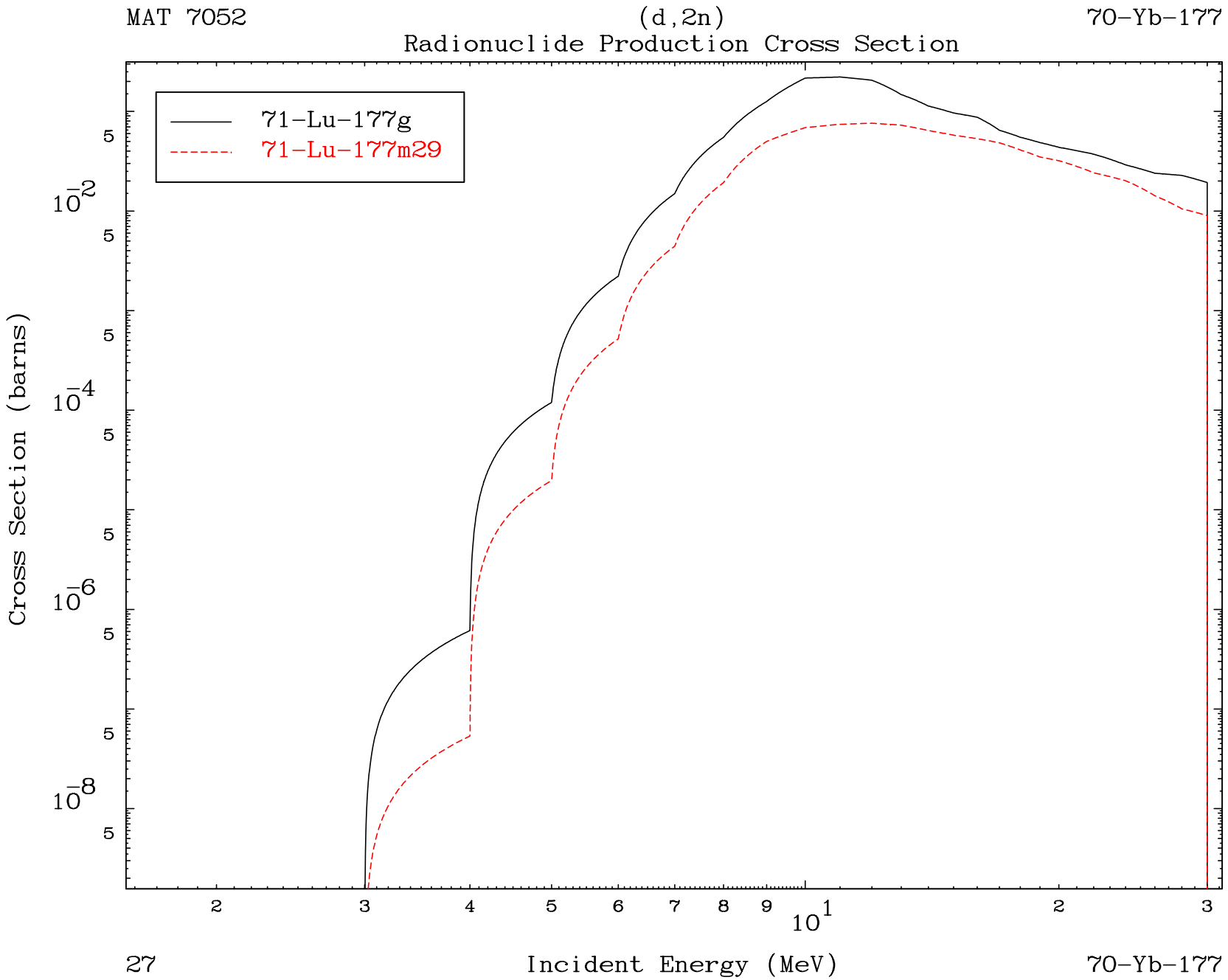

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
70-Yb-171g
70-Yb-172g
70-Yb-173g
70-Yb-174g
70-Yb-175g
70-Yb-176g
70-Yb-176m1
70-Yb-177g
70-Yb-177m1
70-Yb-178g
71-Lu-160g
3
4
5
6
7
8
9
10^2
2
22
Incident Energy (MeV)
70-Yb-177

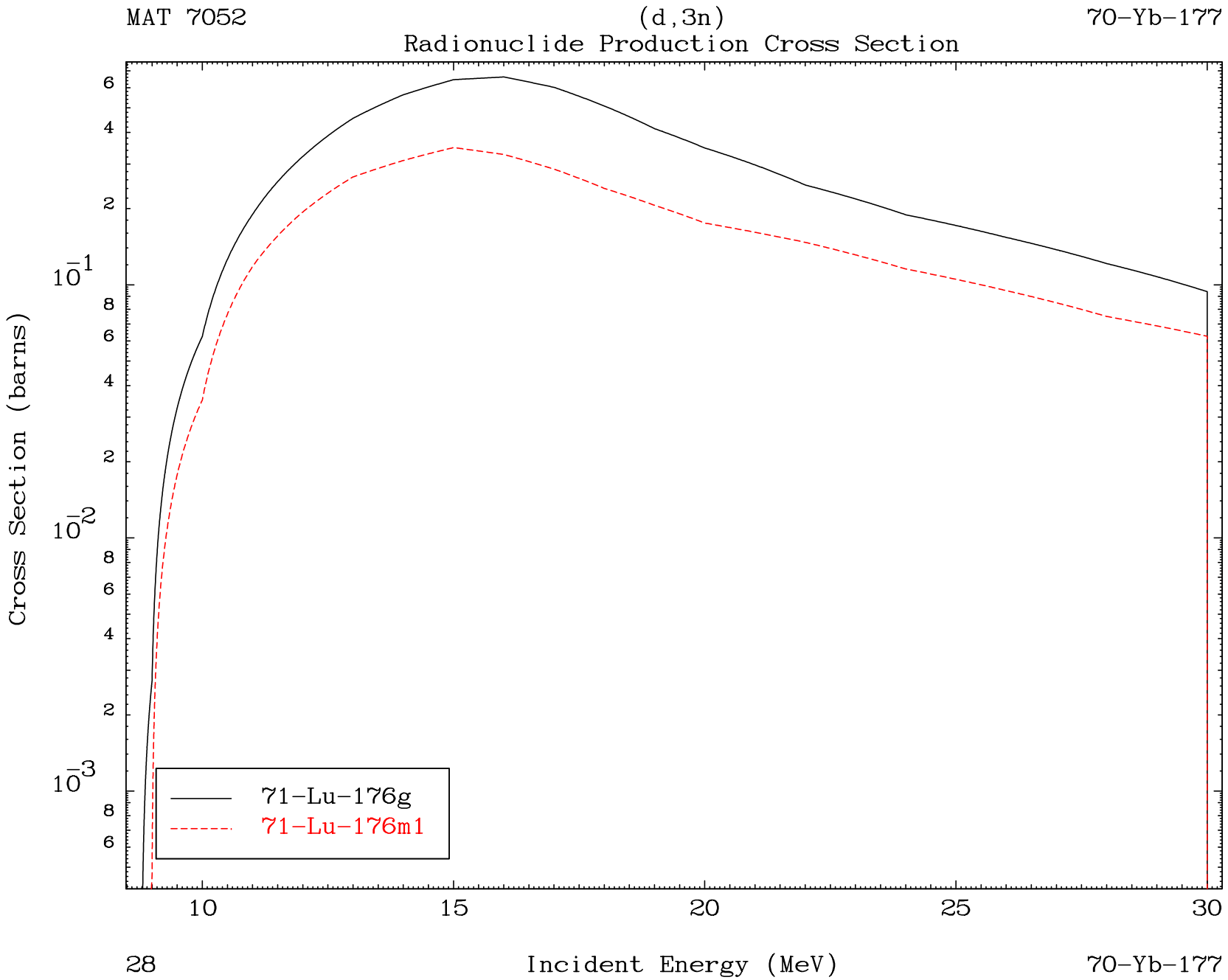

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
71-Lu-160m1
71-Lu-161g
71-Lu-162g
71-Lu-162m1
71-Lu-162m2
71-Lu-163g
71-Lu-164g
71-Lu-165g
71-Lu-166g
71-Lu-166m1
71-Lu-166m2
Cross Section (barns)
10^4
10^2
10^0
10^-2
10^-4
10^-6
10^-8
80
100
120
140
160
180
200
23
Incident Energy (MeV)
70-Yb-177

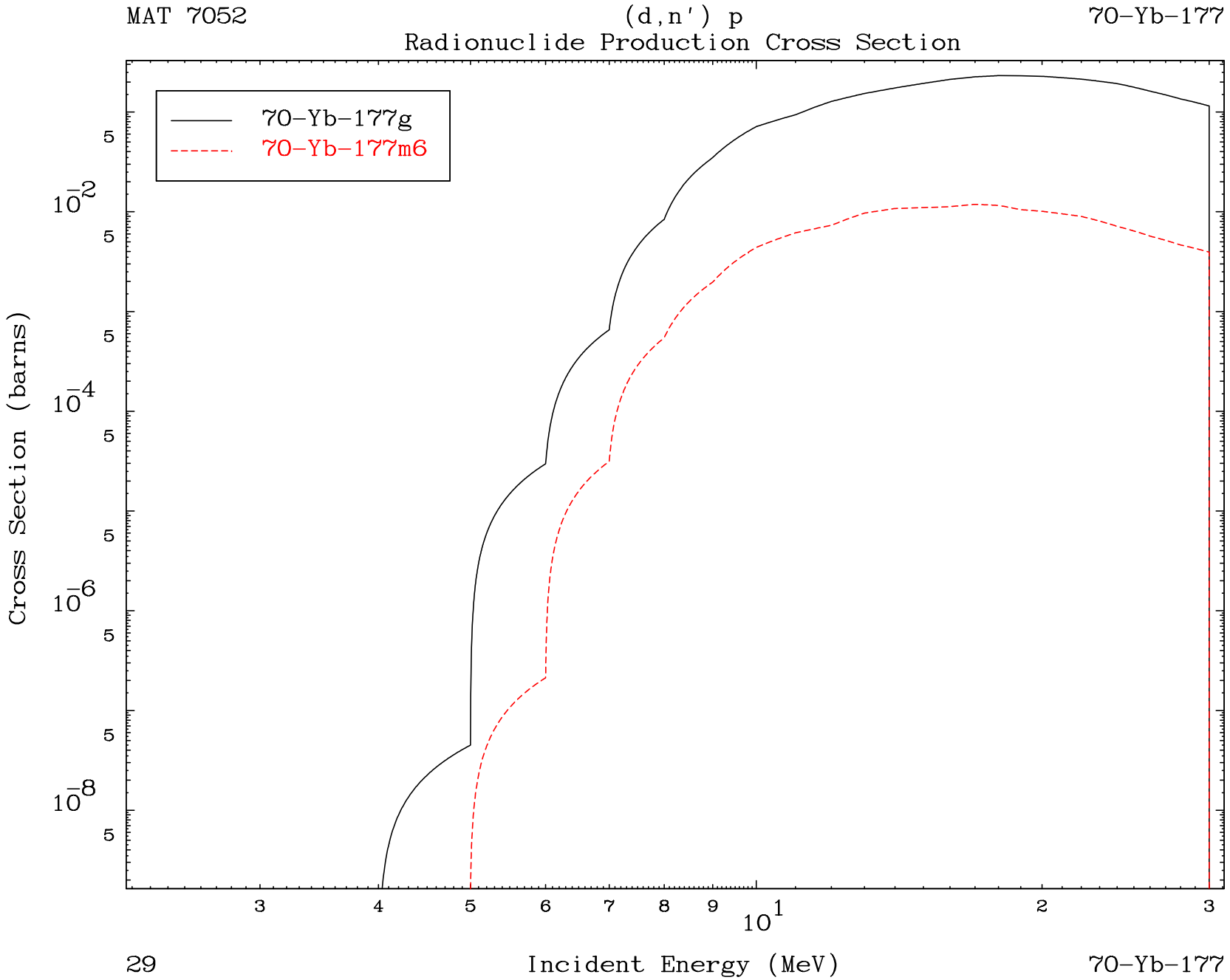

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10^4
10^2
10^0
10^-2
10^-4
10^-6
10^-8
71-Lu-167g
71-Lu-167m1
71-Lu-168g
71-Lu-168m1
71-Lu-169g
71-Lu-169m1
71-Lu-170g
71-Lu-170m1
71-Lu-171g
71-Lu-171m1
71-Lu-172g
4
5
6
7
8
9
10^2
2
24
Incident Energy (MeV)
70-Yb-177

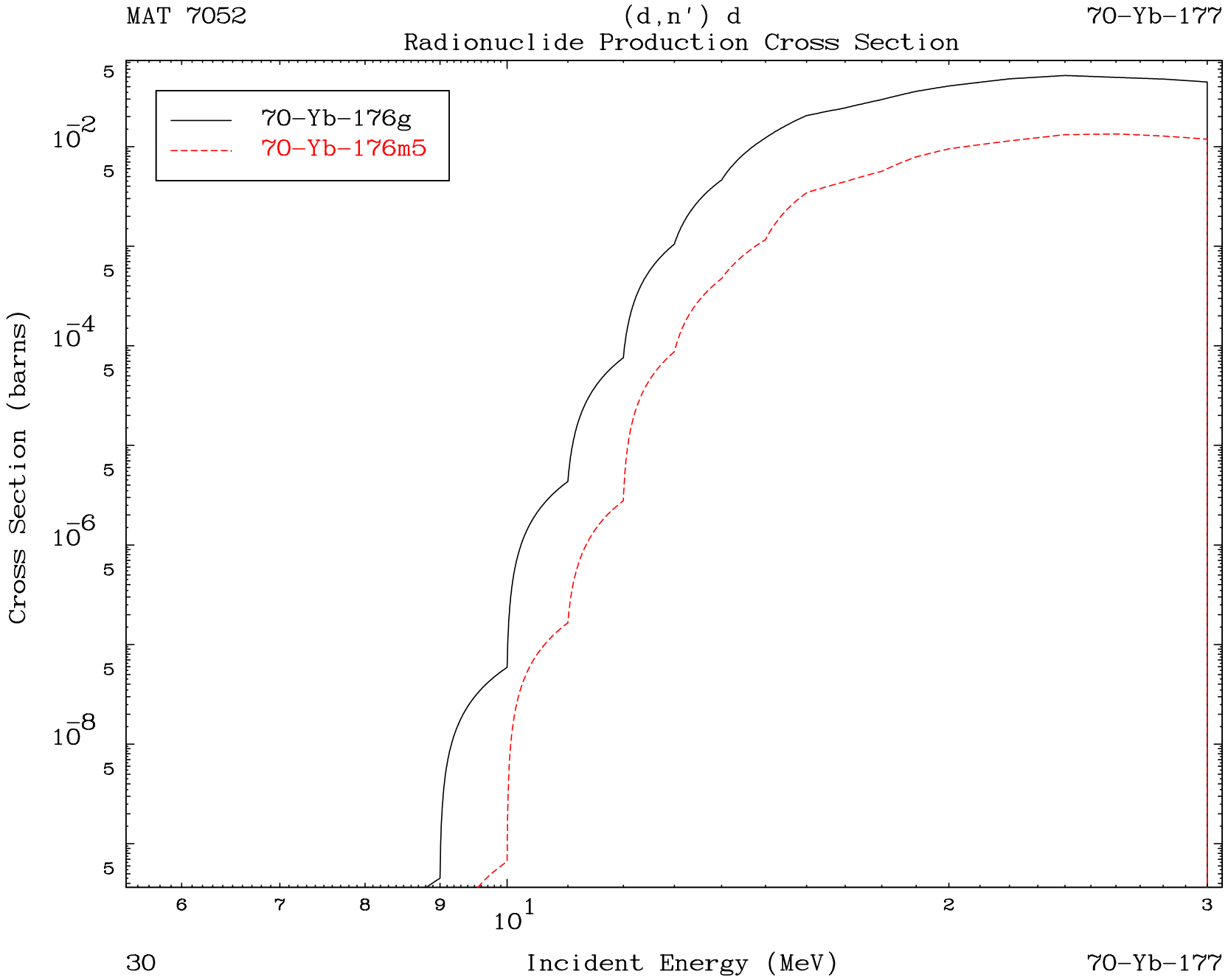

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
Incident Energy (MeV)
71-Lu-172m1
71-Lu-173g
71-Lu-174g
71-Lu-174m1
71-Lu-175g
71-Lu-176g
71-Lu-176m1
71-Lu-177g
71-Lu-177m1
71-Lu-178g
71-Lu-178m1
25
70-Yb-177

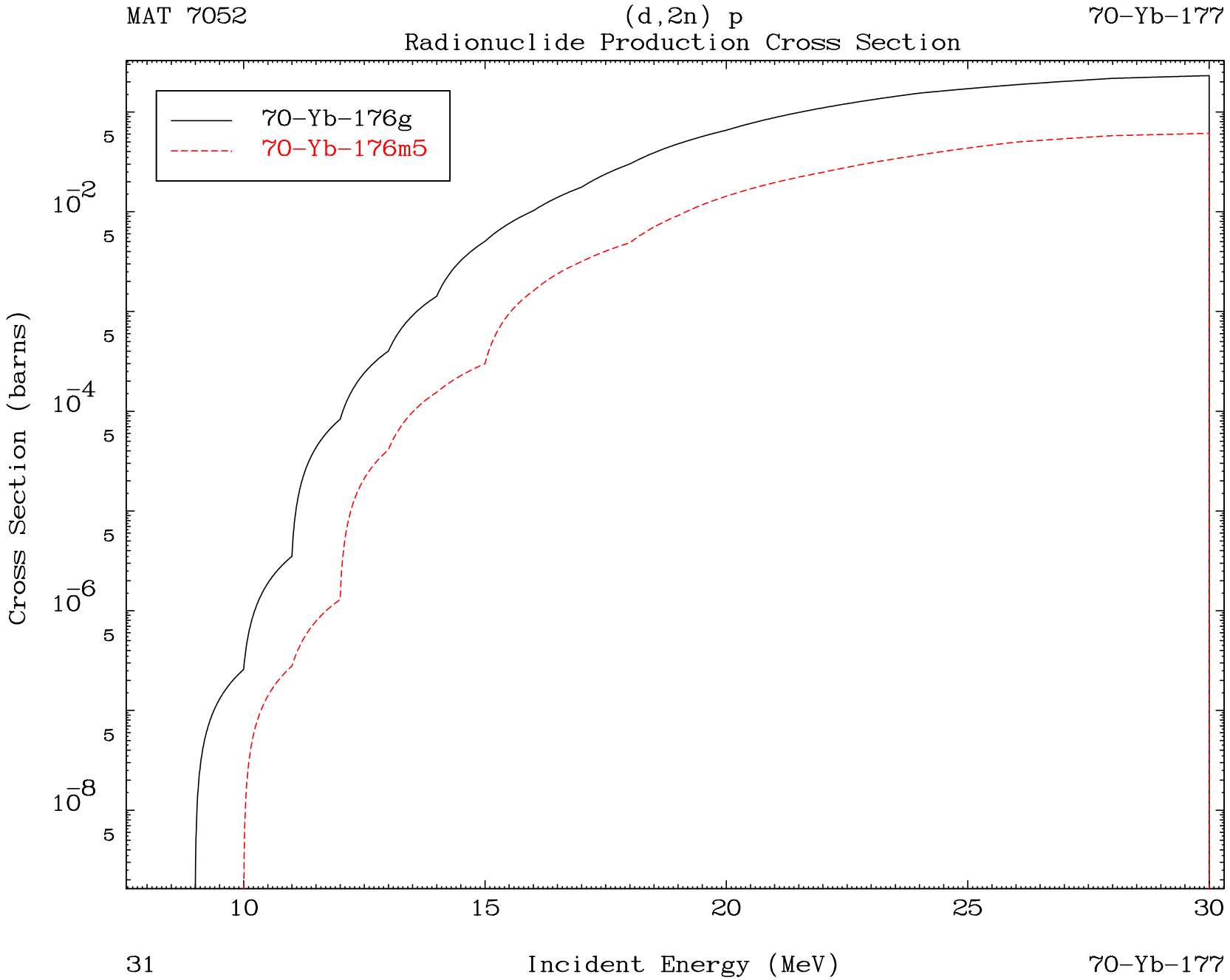

MAT 7052
(d,remainder)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
10^1
9
8
7
6
5
4
3
2
10^0
9
8
7
Photon
3
4
5
6
7
8
9
10^2
2
26
Incident Energy (MeV)
70-Yb-177

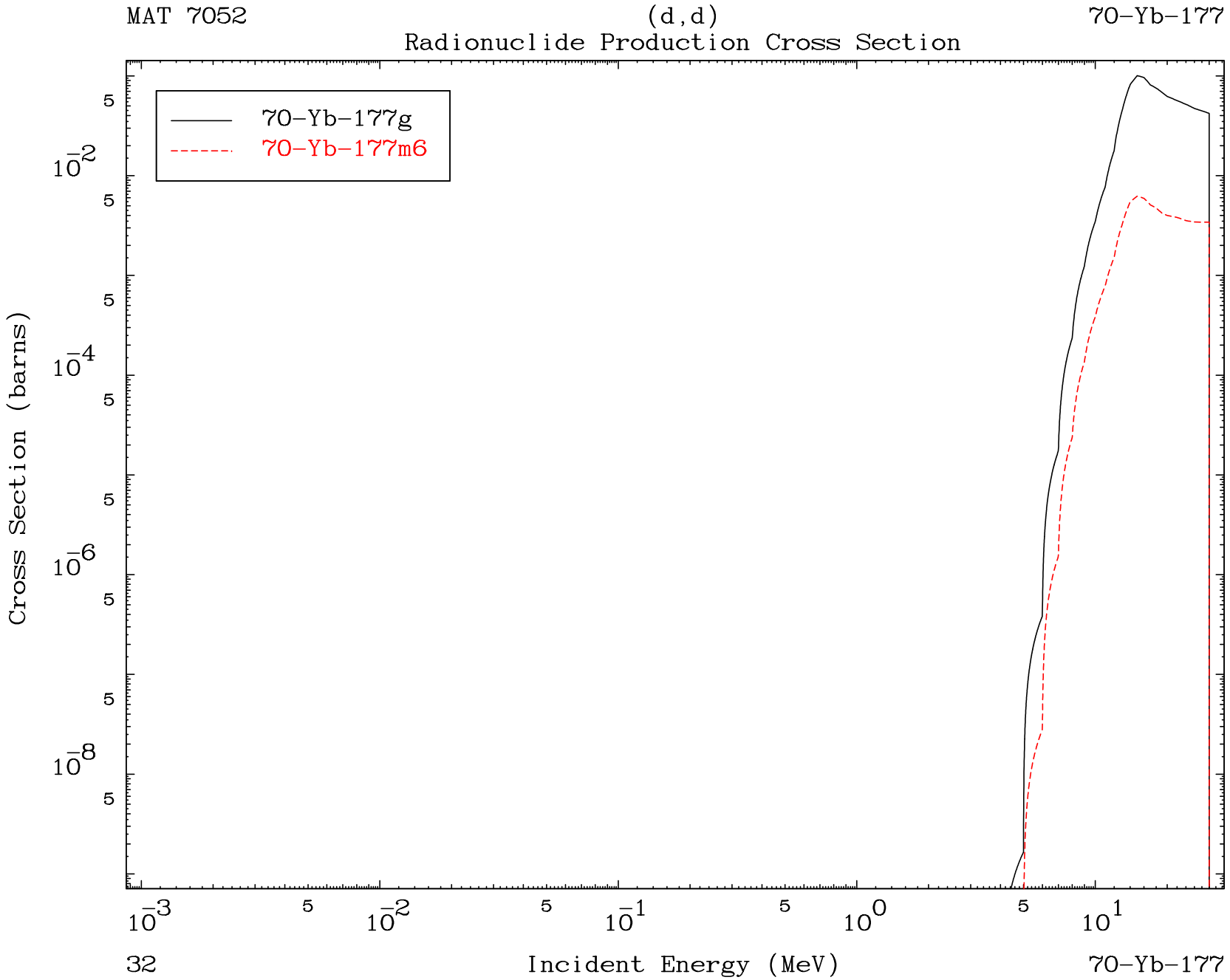

MAT 7052
(d,2n)
70-Yb-177
Radionuclide Production Cross Section
71-Lu-177g
71-Lu-177m29
Cross Section (barns)
10-2
10-4
10-6
10-8
5
2
3
4
5
6
7
8
9
101
2
3
27
Incident Energy (MeV)
70-Yb-177

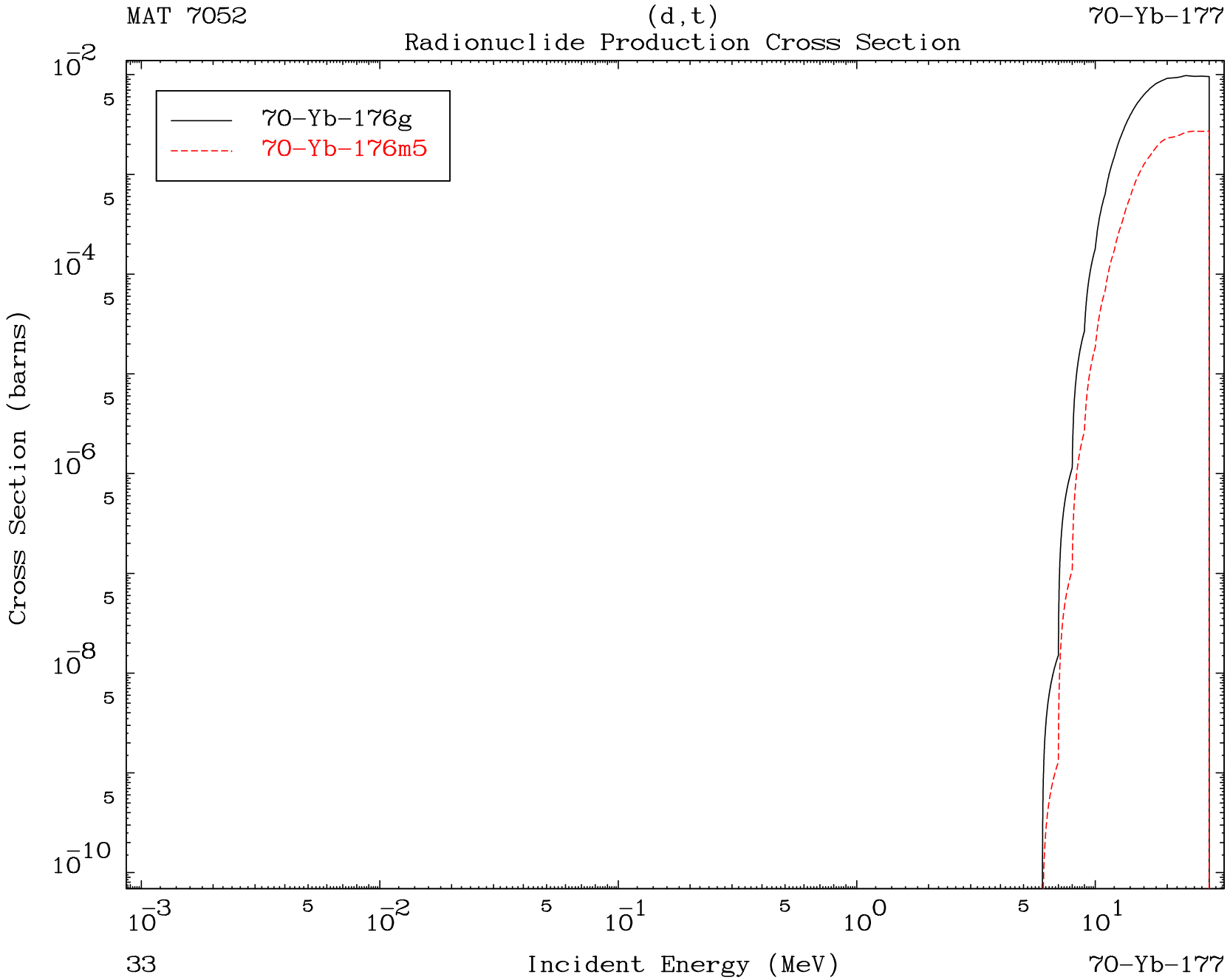

MAT 7052
(d,3n)
70-Yb-177
Radionuclide Production Cross Section
Cross Section (barns)
6
4
2
10^-1
8
6
4
2
10^-2
8
6
4
2
10^-3
8
6
71-Lu-176g
71-Lu-176m1
10
15
20
25
30
28
Incident Energy (MeV)
70-Yb-177


MAT 7052
(d,n') p
70-Yb-177
Radionuclide Production Cross Section
70-Yb-177g
70-Yb-177m6
Cross Section (barns)
10-2
10-4
10-6
10-8
3
4
5
6
7
8
9
101
2
3
29
Incident Energy (MeV)
70-Yb-177


MAT 7052
(d,n') d
70-Yb-177
Radionuclide Production Cross Section
70-Yb-176g
70-Yb-176m5
Cross Section (barns)
10-2
10-4
10-6
10-8
6
7
8
9
101
2
3
30
Incident Energy (MeV)
70-Yb-177


MAT 7052
(d,2n) p
70-Yb-177
Radionuclide Production Cross Section
70-Yb-176g
70-Yb-176m5
Cross Section (barns)
10^-2
10^-4
10^-6
10^-8
5
10
15
20
25
30
31
Incident Energy (MeV)
70-Yb-177


MAT 7052
(d,d)
70-Yb-177
Radionuclide Production Cross Section
70-Yb-177g
70-Yb-177m6
Cross Section (barns)
Incident Energy (MeV)
32
70-Yb-177


MAT 7052
(d,t)
70-Yb-177
Radionuclide Production Cross Section
70-Yb-176g
70-Yb-176m5
Cross Section (barns)
Incident Energy (MeV)
33
70-Yb-177