

Program EVALPLOT  
(Version 2021-1)

by

Dermott E. Cullen  
(Present Contact Information)

Dermott E. Cullen  
1466 Hudson Way  
Livermore, CA 94550  
U.S.A.

Tele: 925-443-1911

E.Mail: [redcullen1@comcast.net](mailto:redcullen1@comcast.net)  
Web: [redcullen1.net/HOMEPAGE.NEW](http://redcullen1.net/HOMEPAGE.NEW)

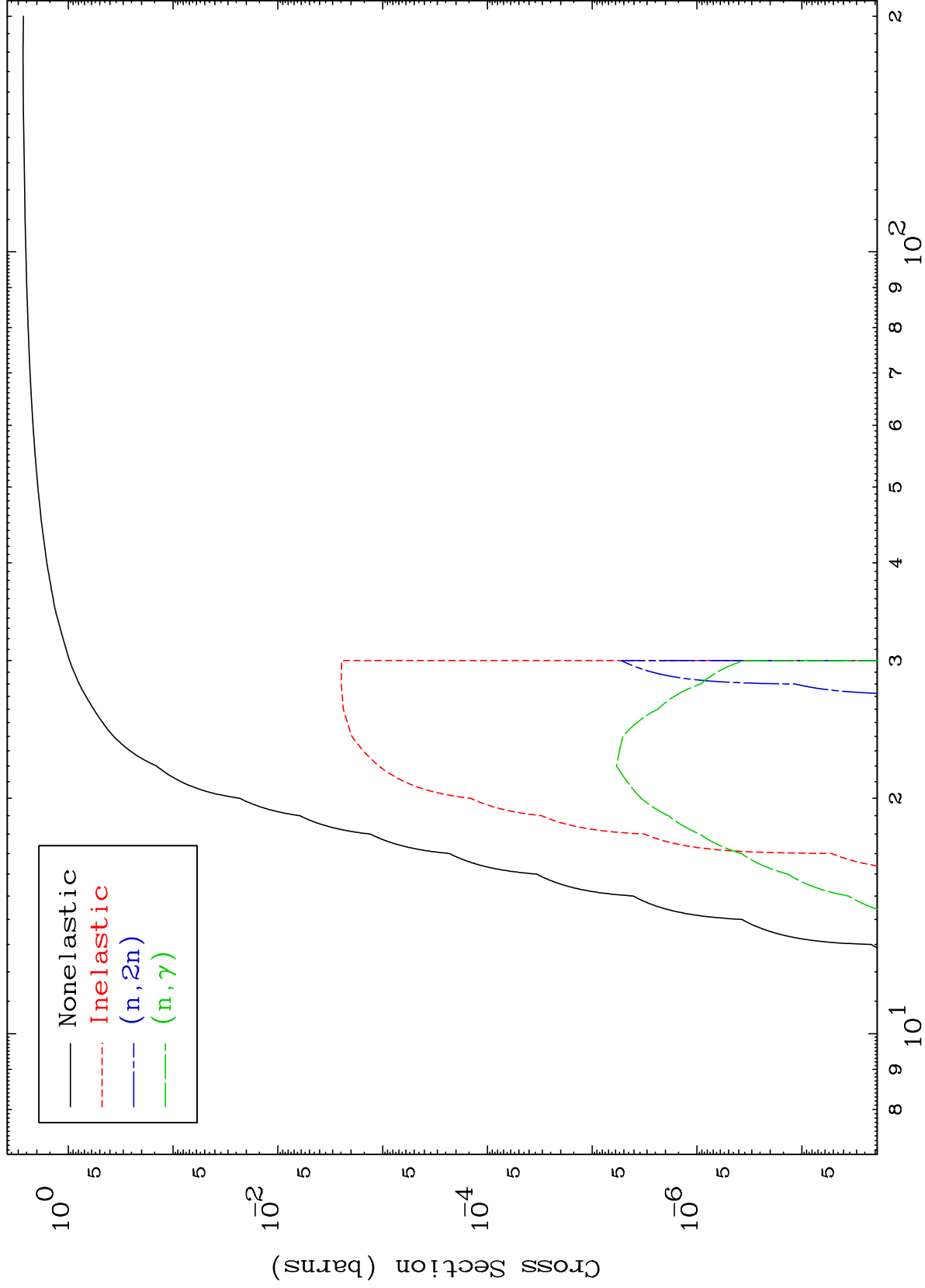
Press Mouse Button to Start

MAT 8274

$\alpha$  Major

83-Bi-192

0 Kelvin Cross Sections



1

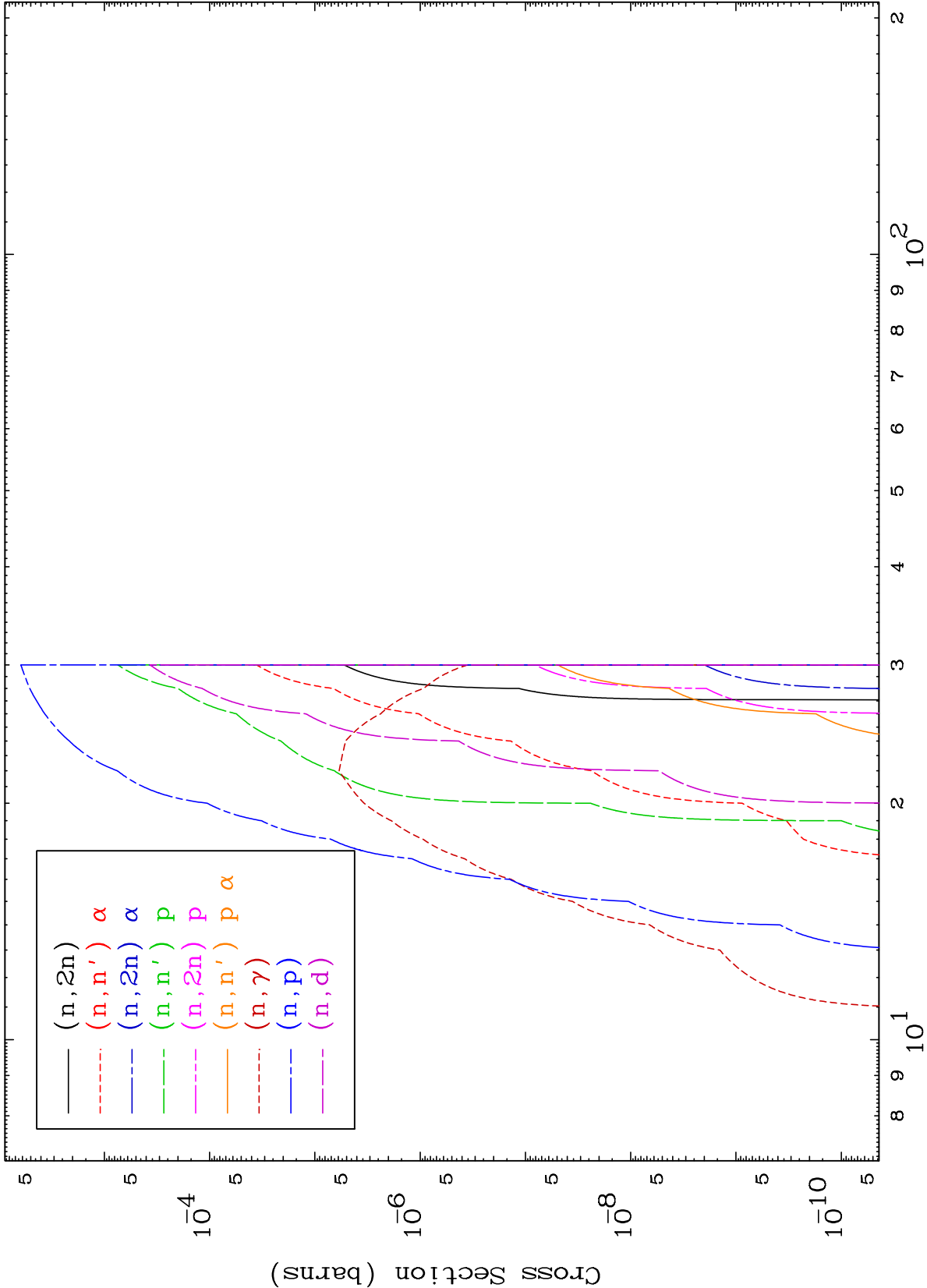
Incident Energy (MeV)

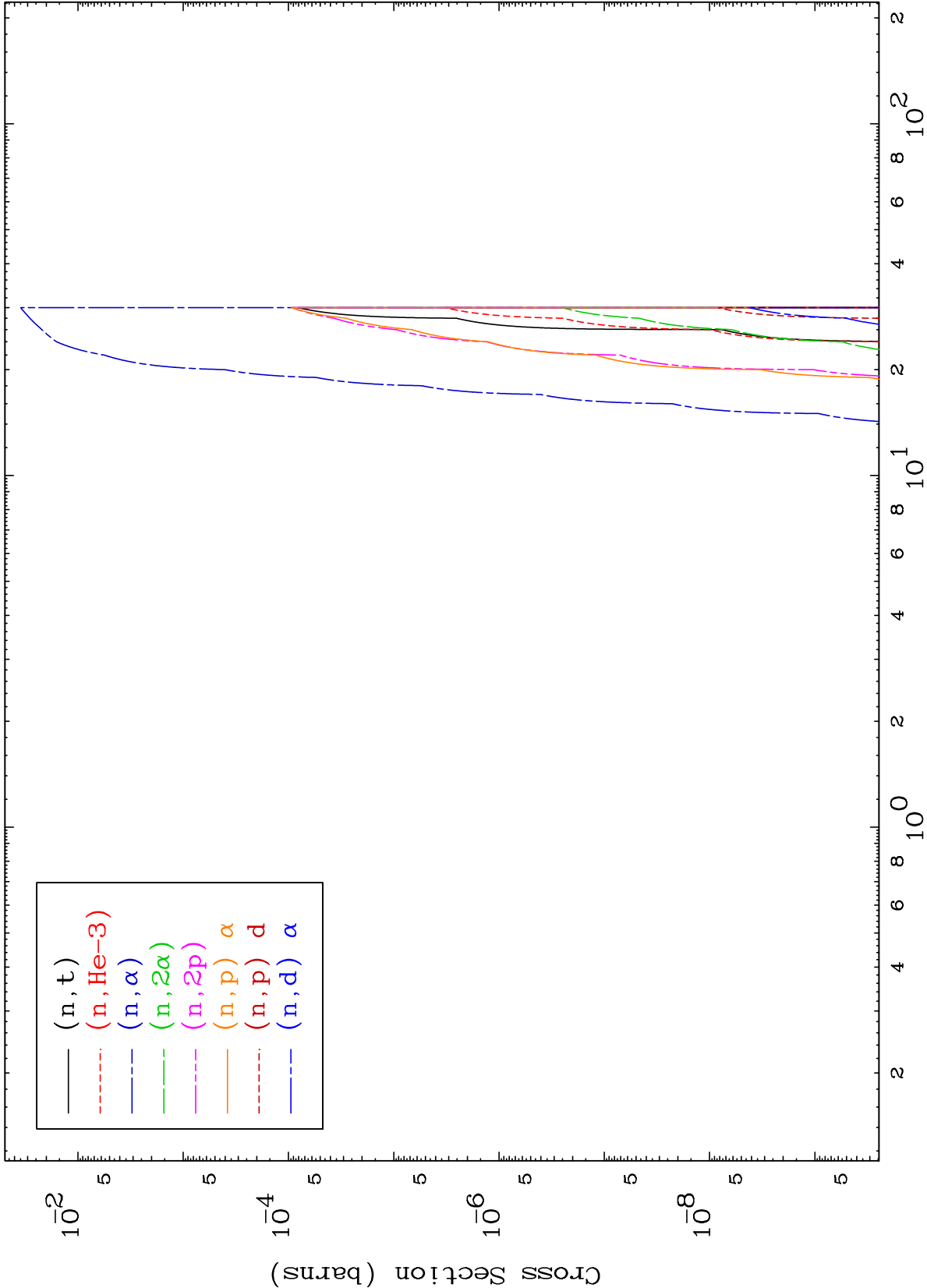
83-Bi-192

MAT 8274

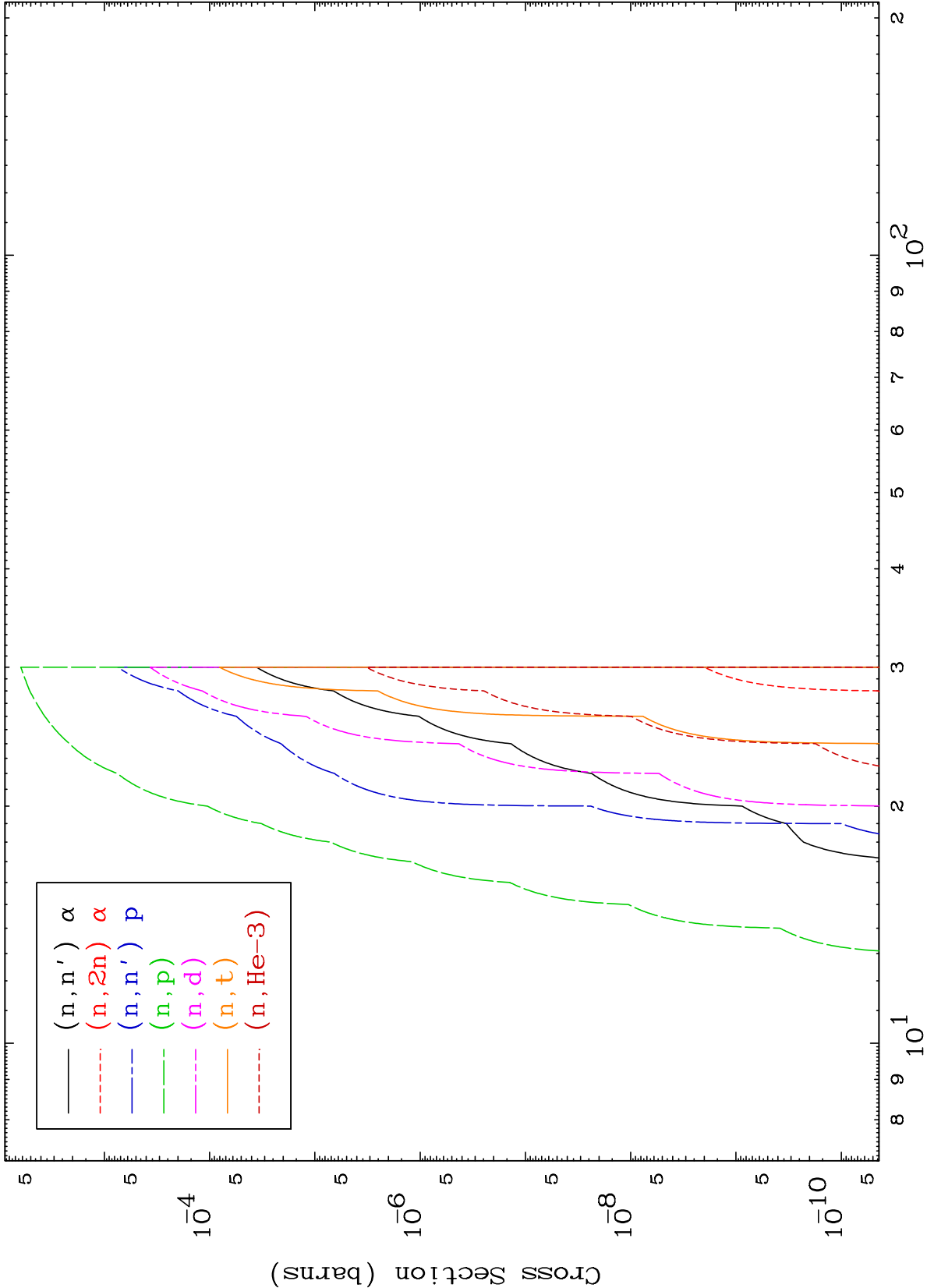
$\alpha$  Neutron Absorption  
0 Kelvin Cross Sections

83-Bi-192

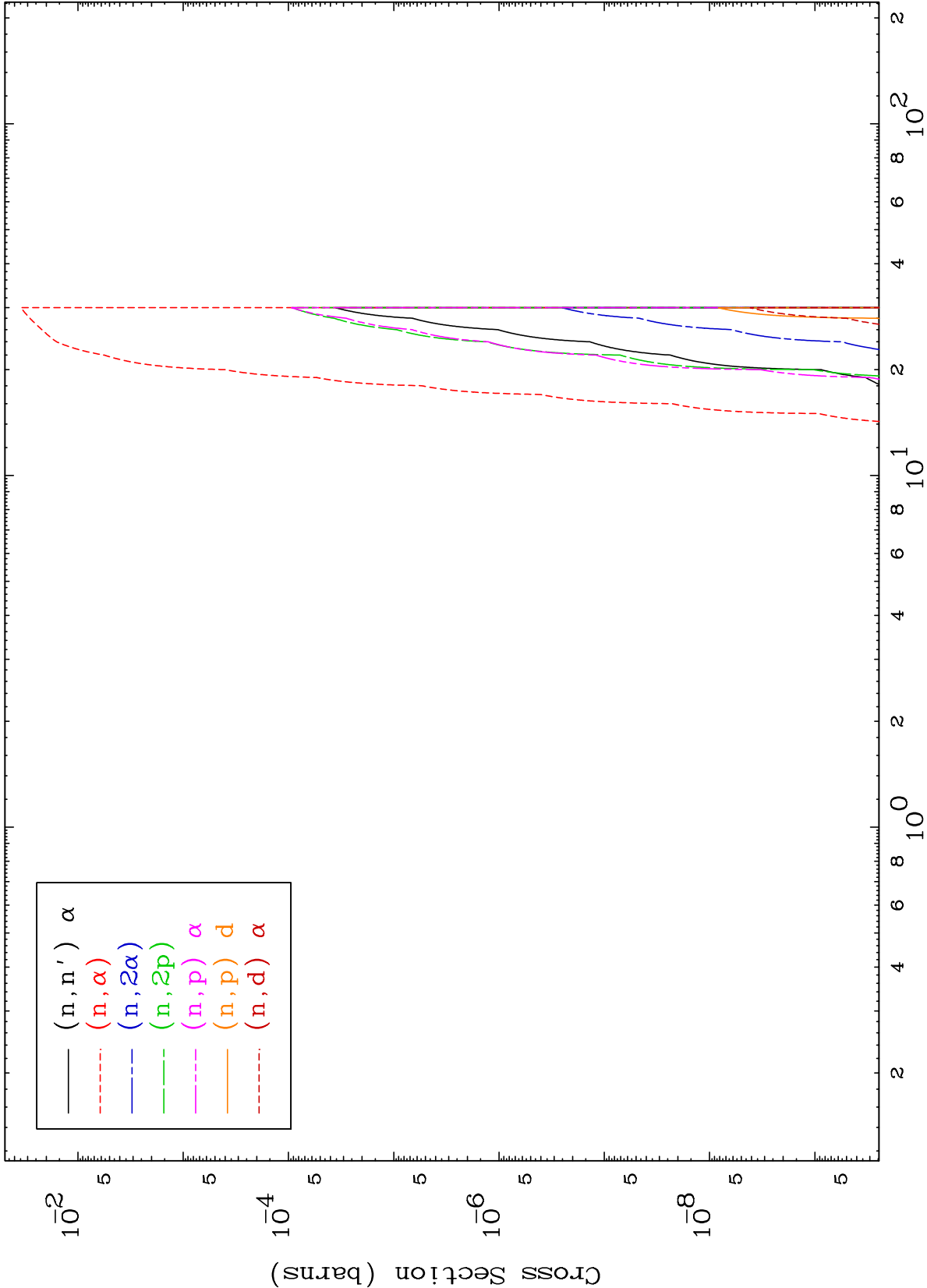




0 Kelvin Cross Sections



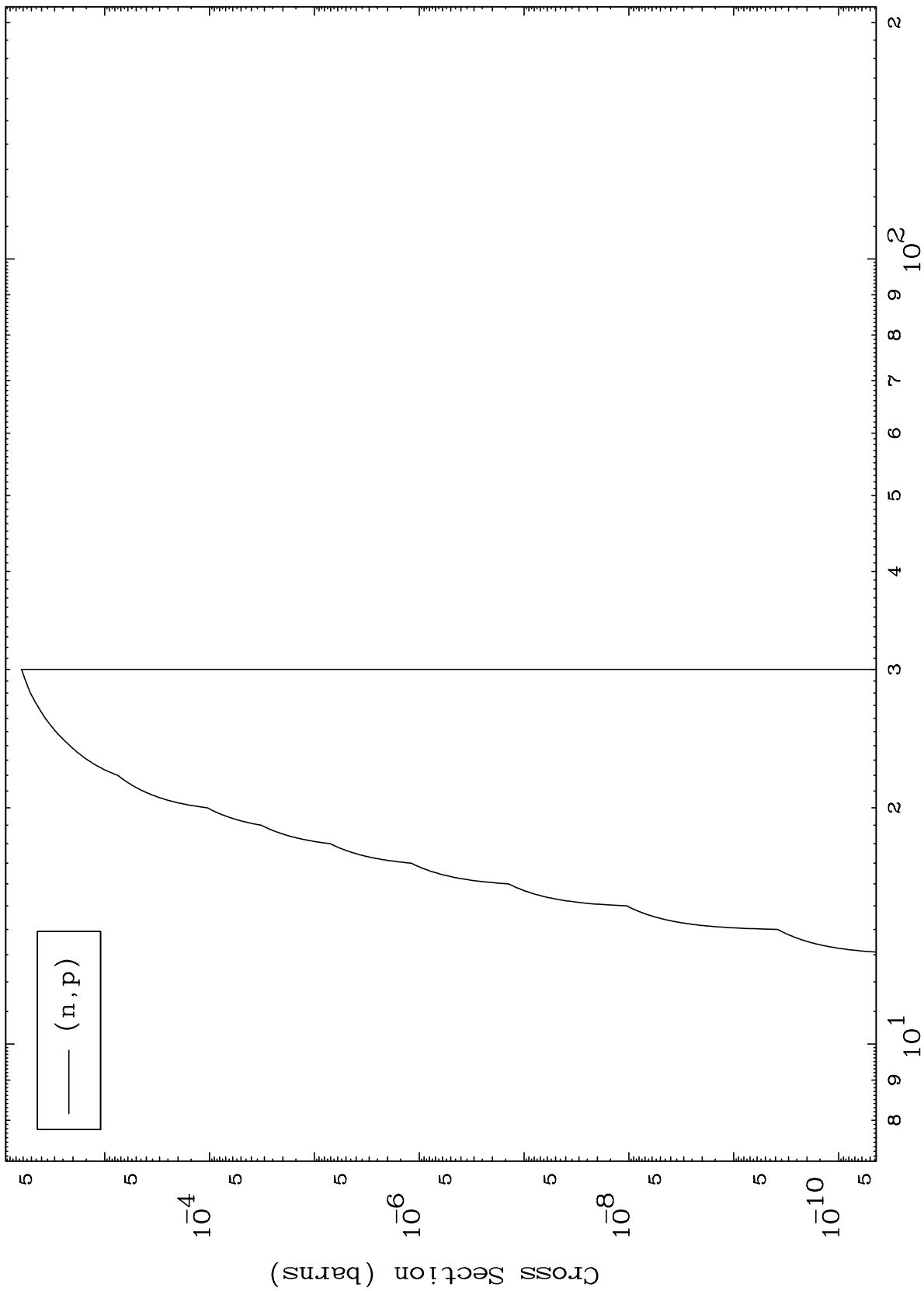
0 Kelvin Cross Sections



MAT 8274

83-Bi-192

( $\alpha, p$ ) Levels  
0 Kelvin Cross Sections



83-Bi-192

Incident Energy (MeV)

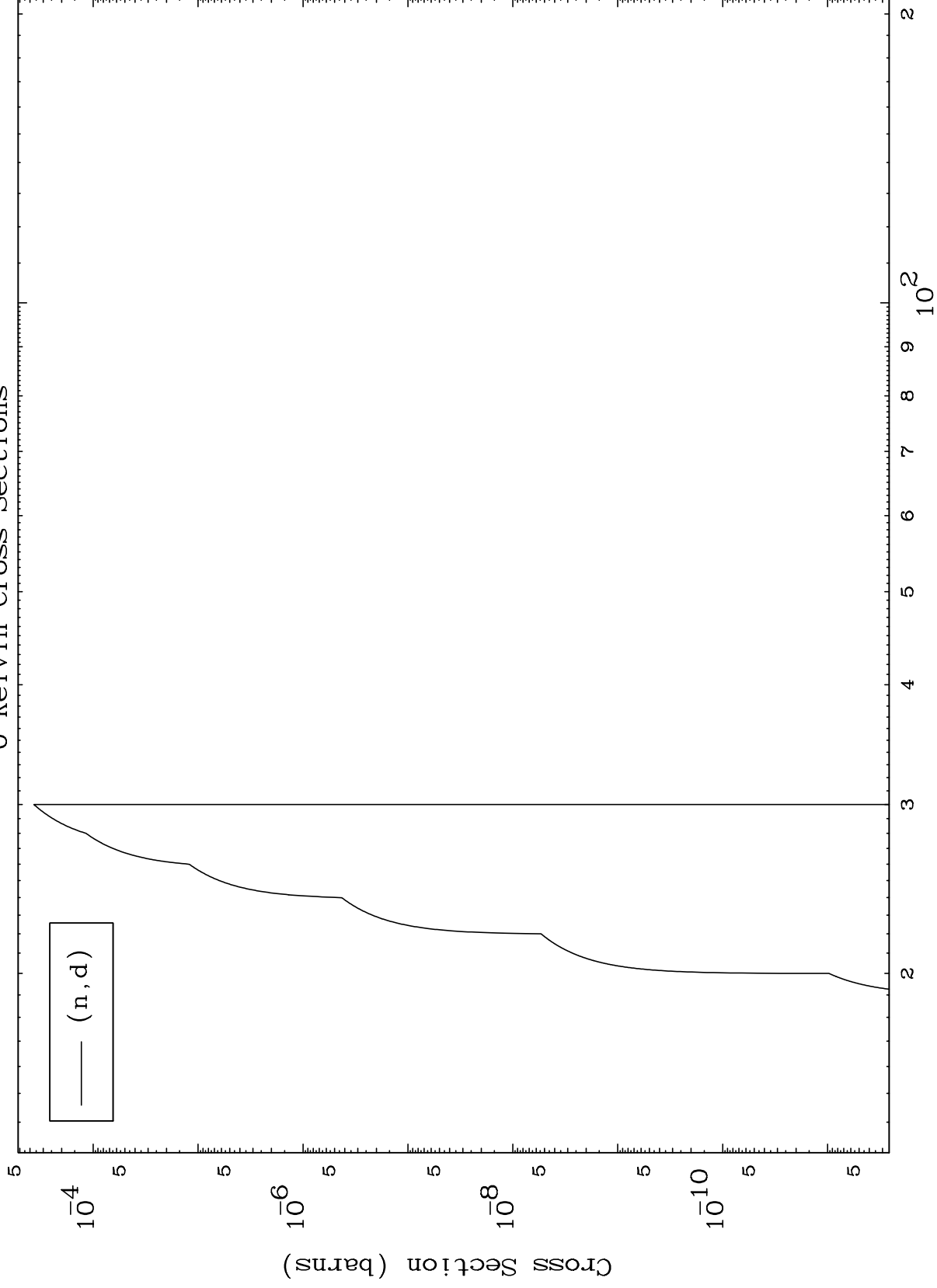
6

MAT 8274

( $\alpha$ ,d) Levels

83-Bi-192

0 Kelvin Cross Sections

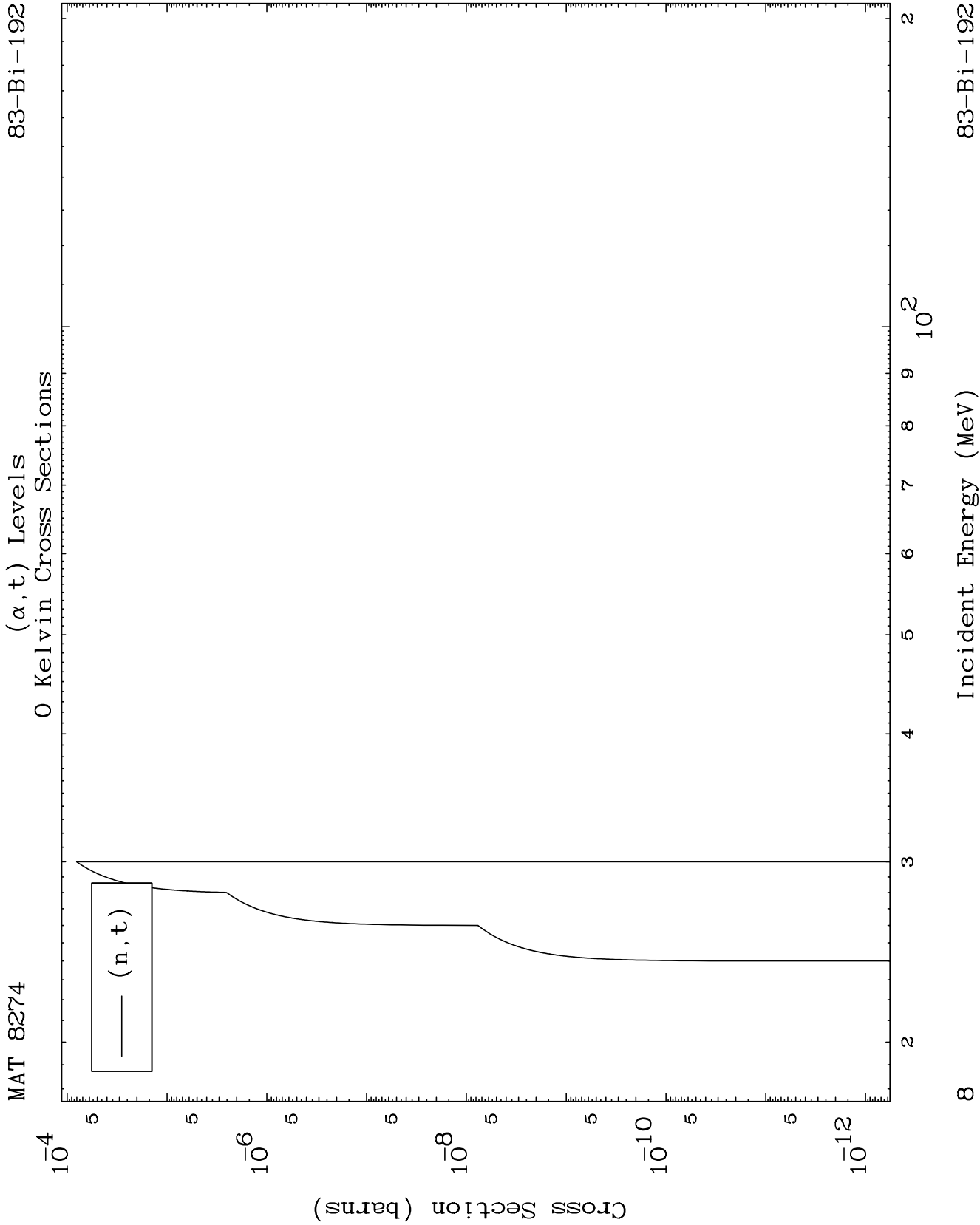


7

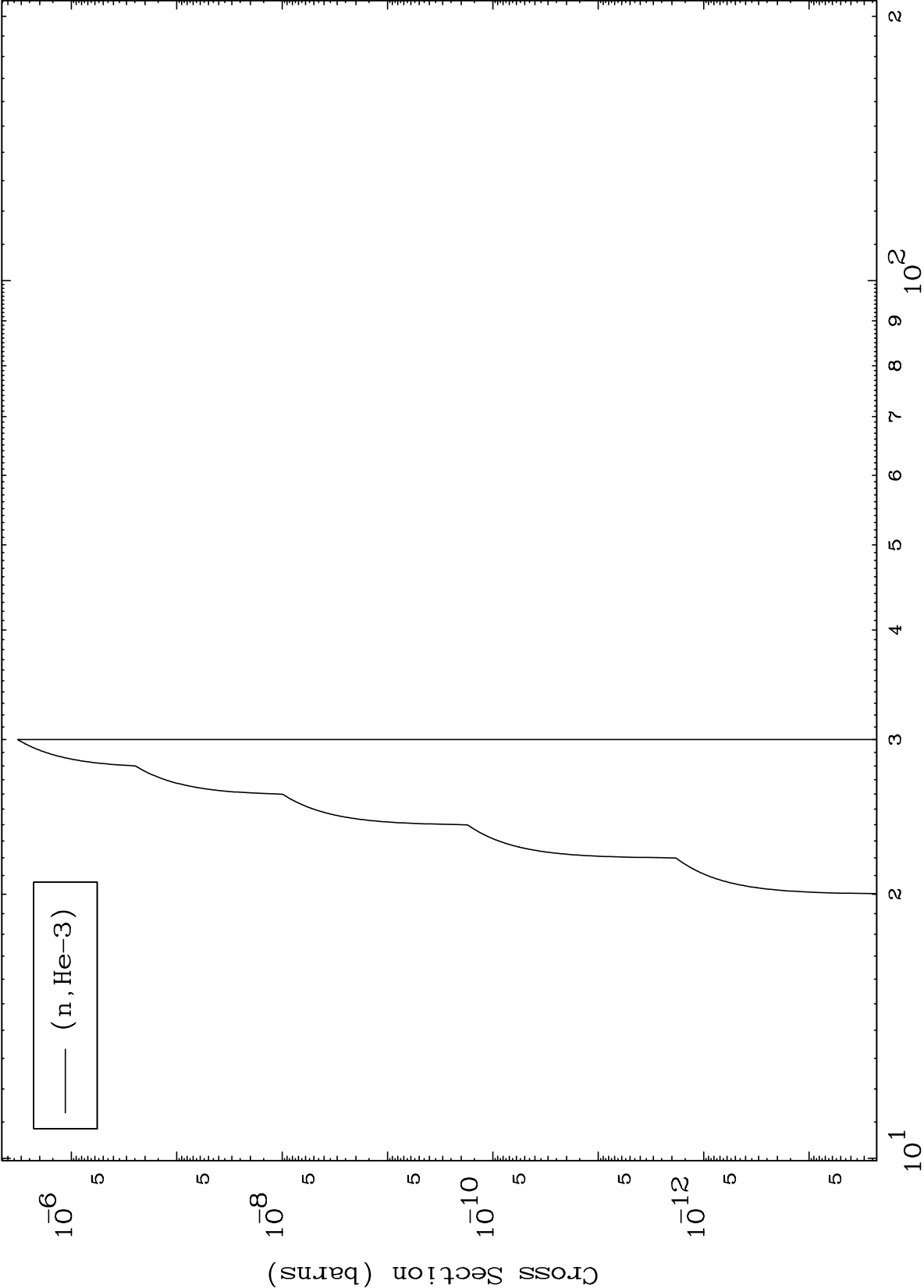
Incident Energy (MeV)

83-Bi-192





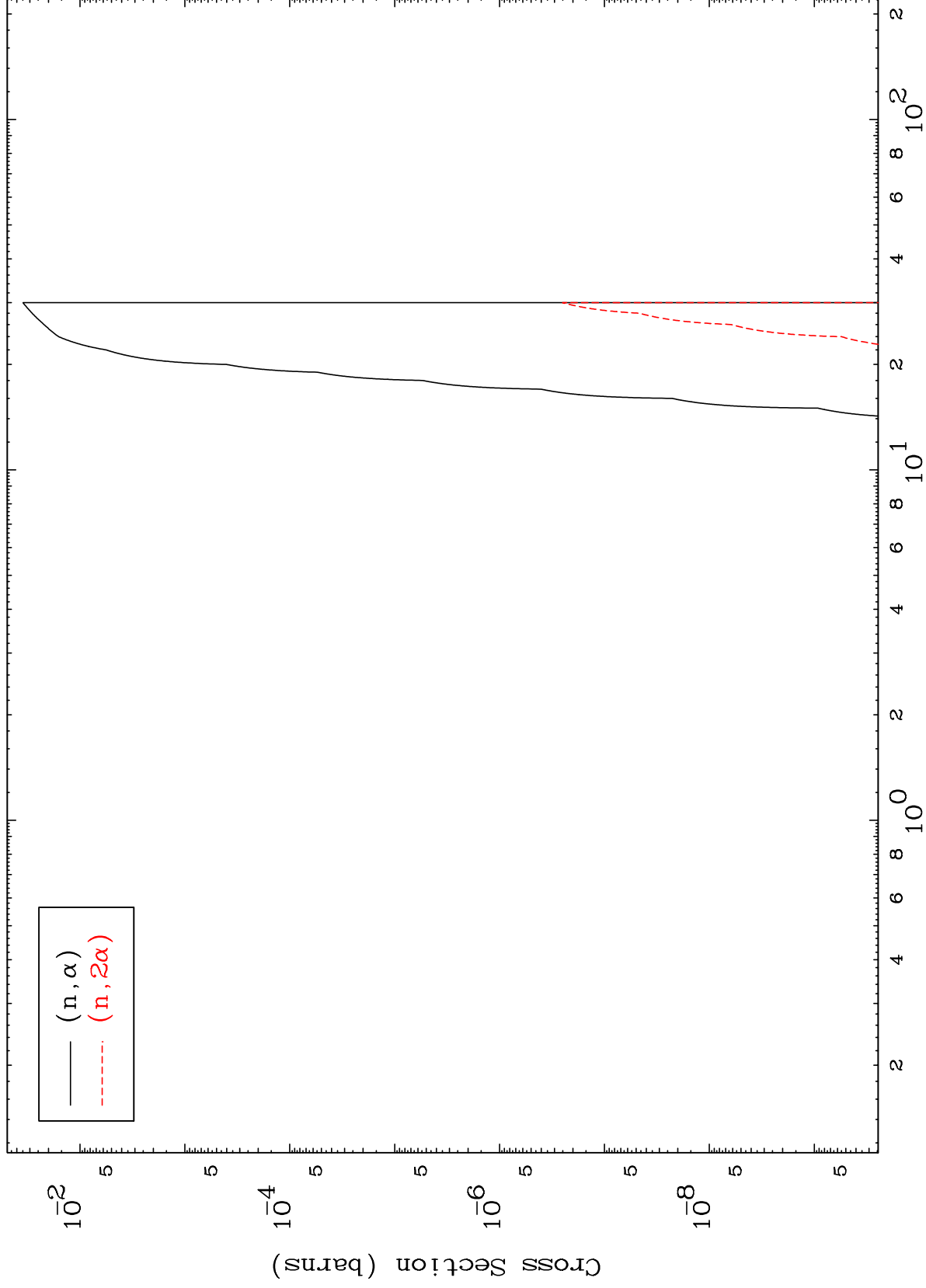
0 Kelvin Cross Sections



MAT 8274

83-Bi-192

( $\alpha, \alpha$ ) Levels  
0 Kelvin Cross Sections

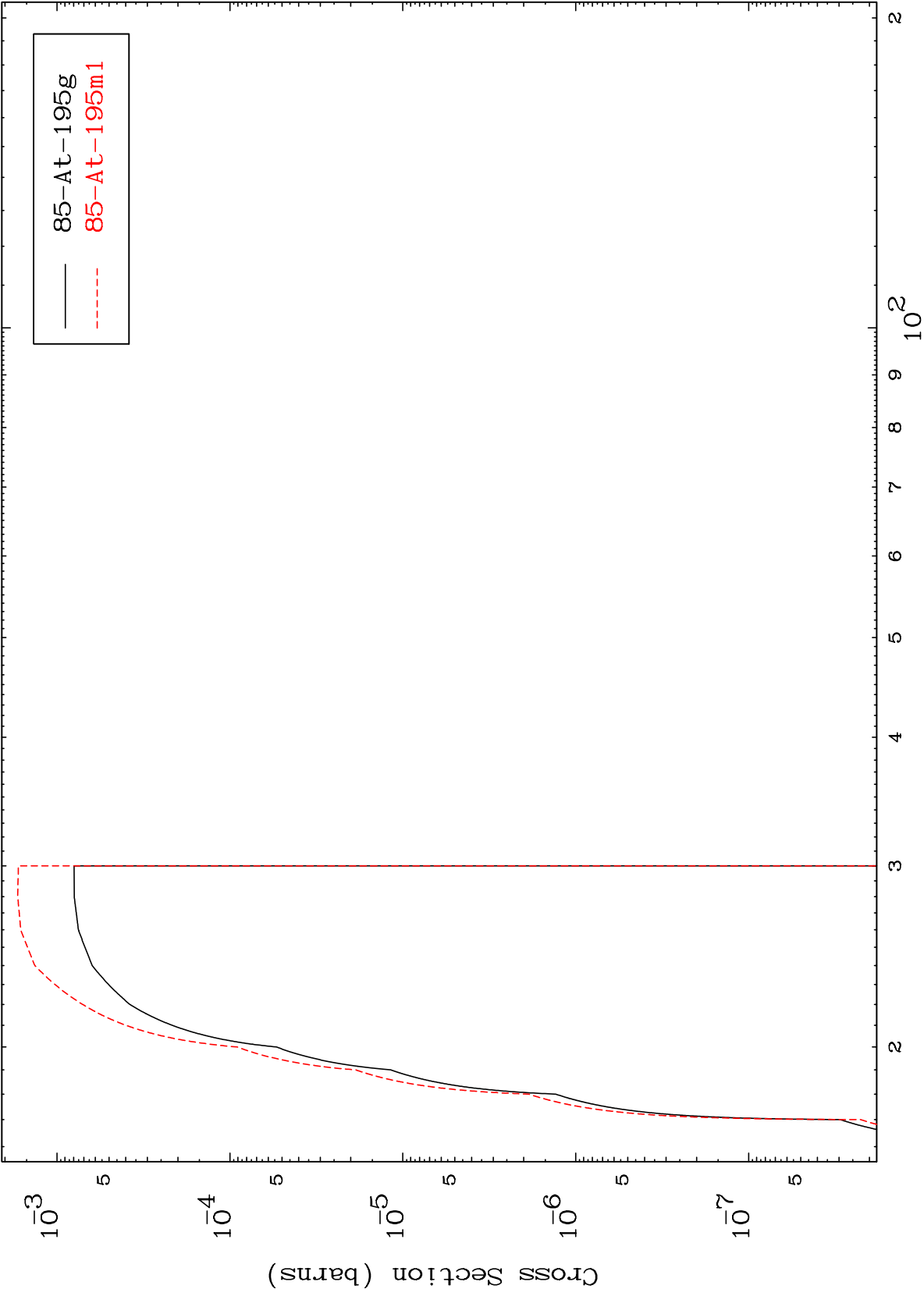


10

Incident Energy (MeV)

83-Bi-192

Inelastic  
Radionuclide Production Cross Section

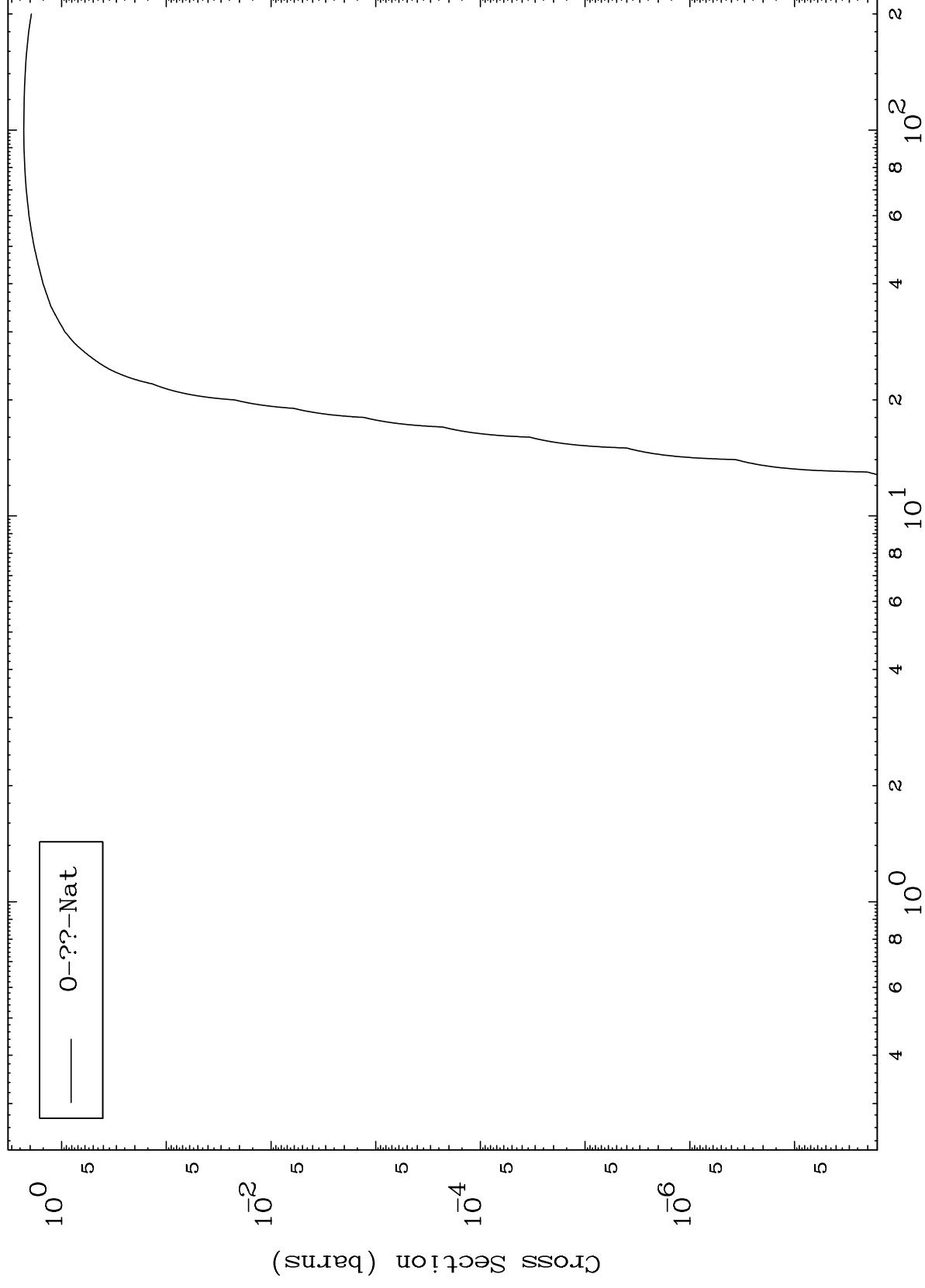


MAT 8274

# Fission

83-Bi-192

Radionuclide Production Cross Section



12

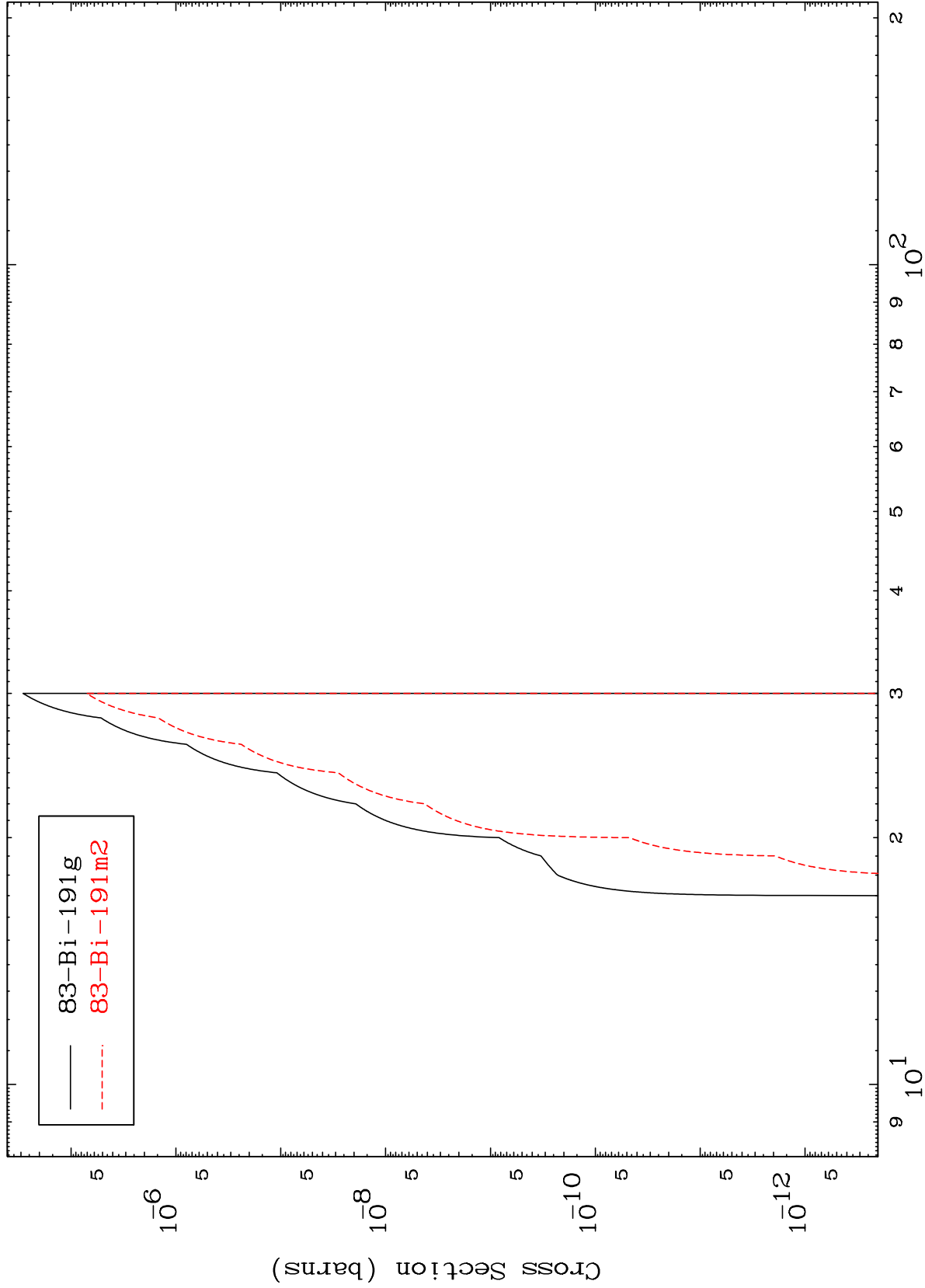
Incident Energy (MeV)

83-Bi-192

MAT 8274

83-Bi-192

$(n,n') \alpha$   
Radionuclide Production Cross Section



83-Bi-192

Incident Energy (MeV)

13

83-Bi-192

$$(n, 2n) \propto$$

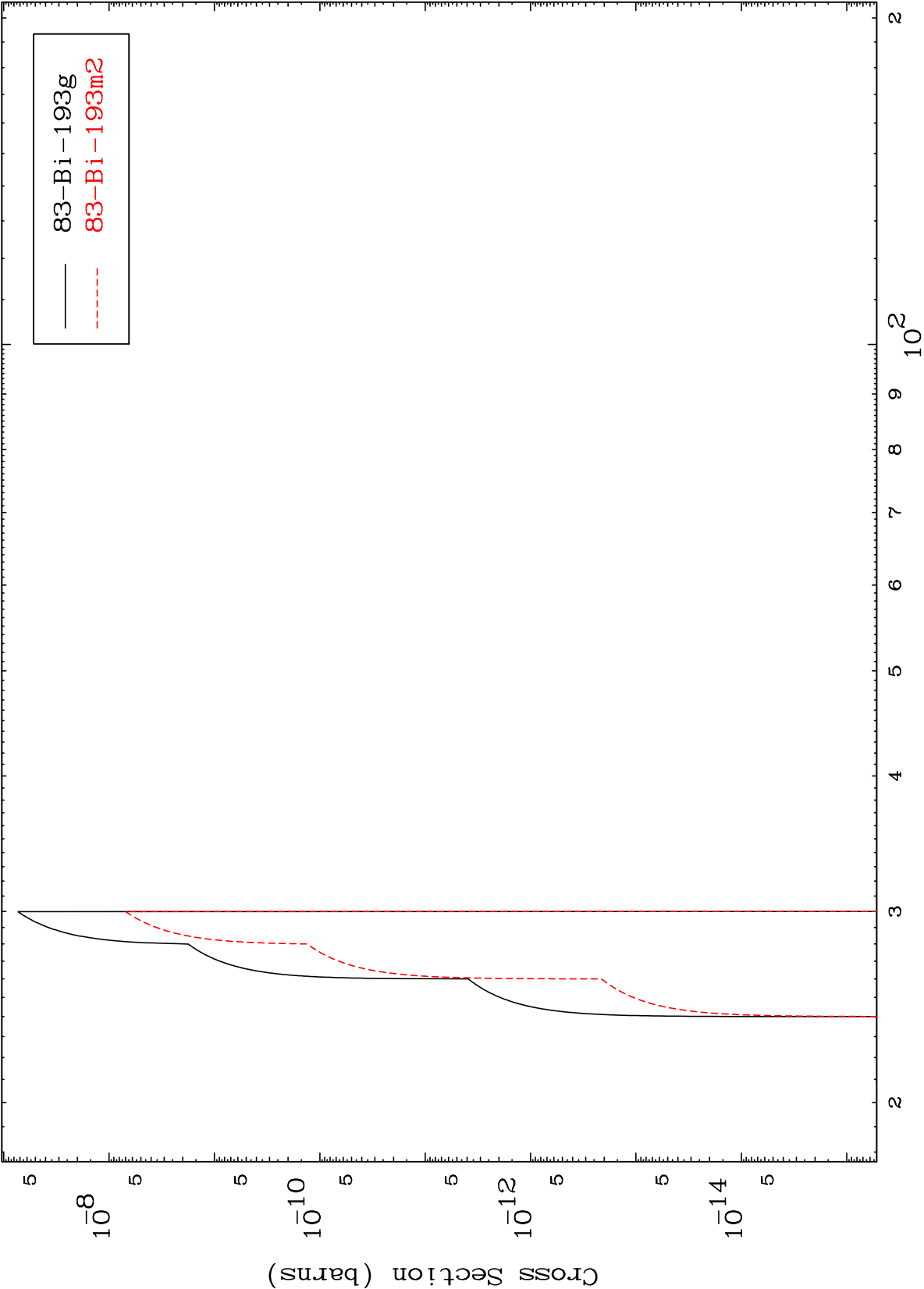
Figure 1 is a plot showing the cross section (in barns) versus the mass number  $A$  for the  $^{83}\text{Bi}-190\text{g}$  and  $^{83}\text{Bi}-190\text{m4}$  isomers. The y-axis is logarithmic, ranging from  $10^{-11}$  to  $10^{-9}$  barns. The x-axis is linear, ranging from 2 to 102. The  $^{83}\text{Bi}-190\text{g}$  isomer (solid black line) shows a sharp peak at  $A=2$ , followed by a rapid decrease and then a plateau around  $10^{-10.5}$  barns for  $A > 10$ . The  $^{83}\text{Bi}-190\text{m4}$  isomer (dashed red line) shows a sharp peak at  $A=2$ , followed by a rapid decrease and then a plateau around  $10^{-10.5}$  barns for  $A > 10$ .

83-Bi-192

Incident Energy (MeV)

14

(n,2n) p  
Radionuclide Production Cross Section

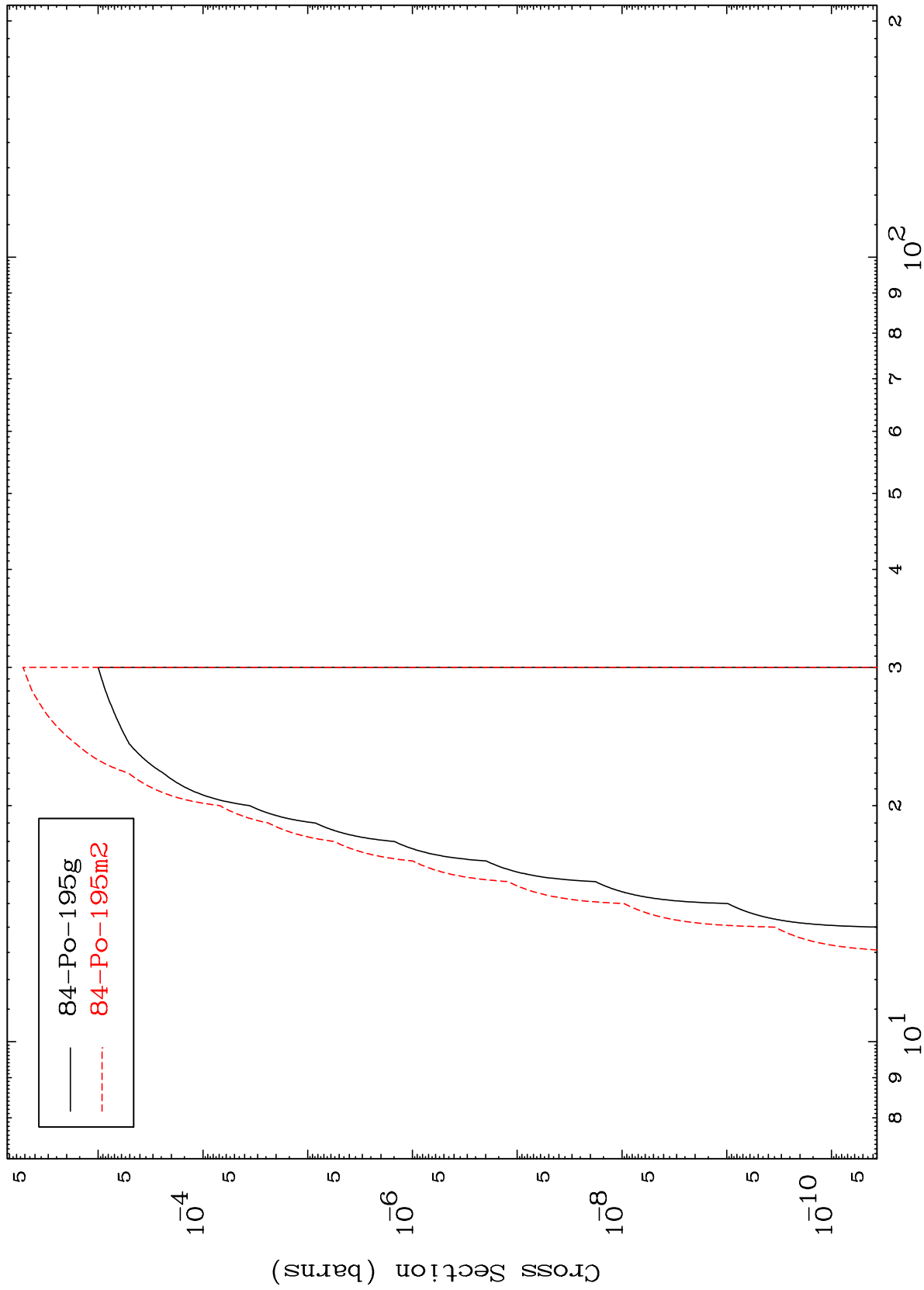




MAT 8274

83-Bi-192

Radionuclide Production Cross Section  
(n,p)



16

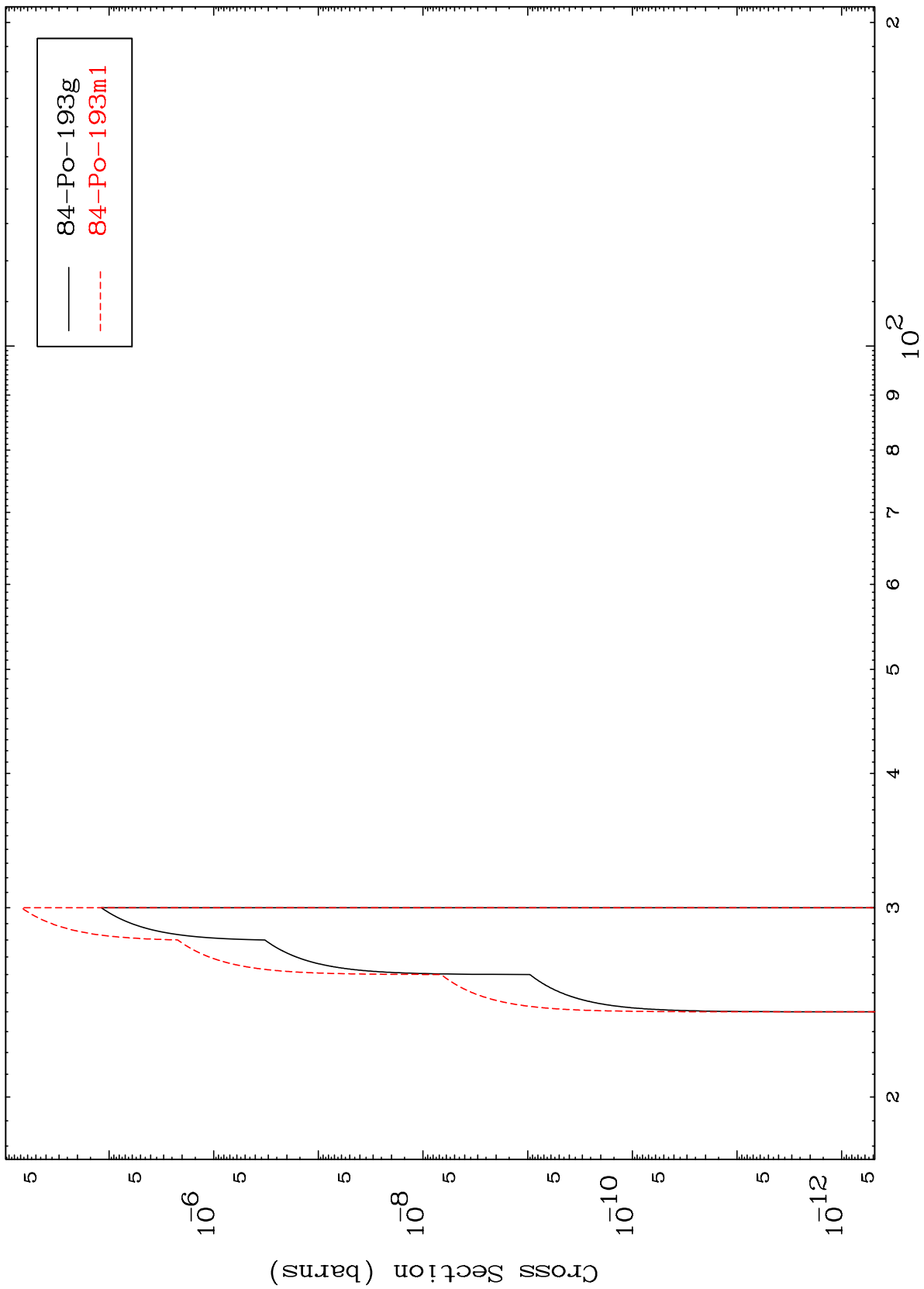
Incident Energy (MeV)

83-Bi-192

MAT 8274

83-Bi-192

(n,t)  
Radionuclide Production Cross Section

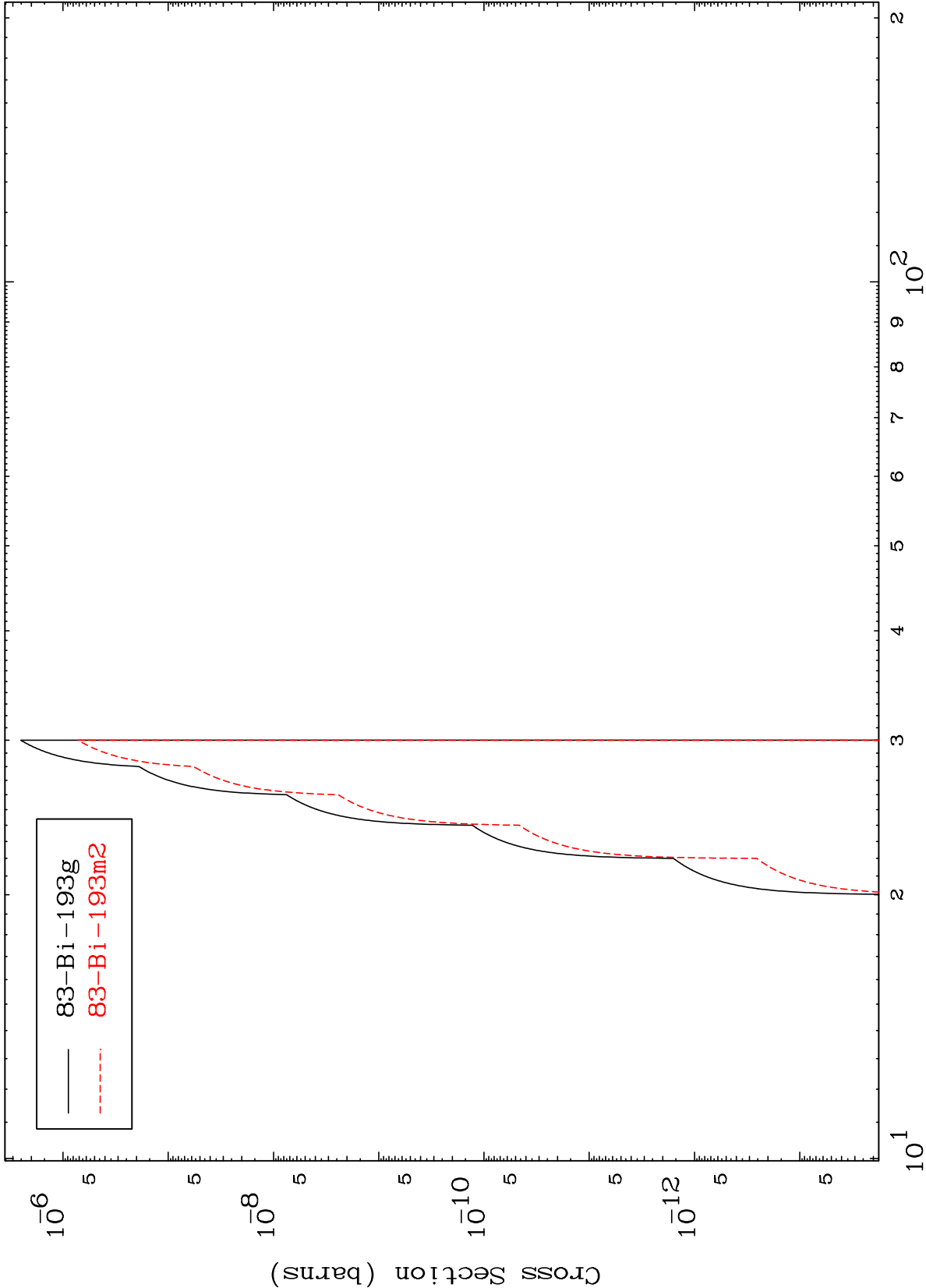


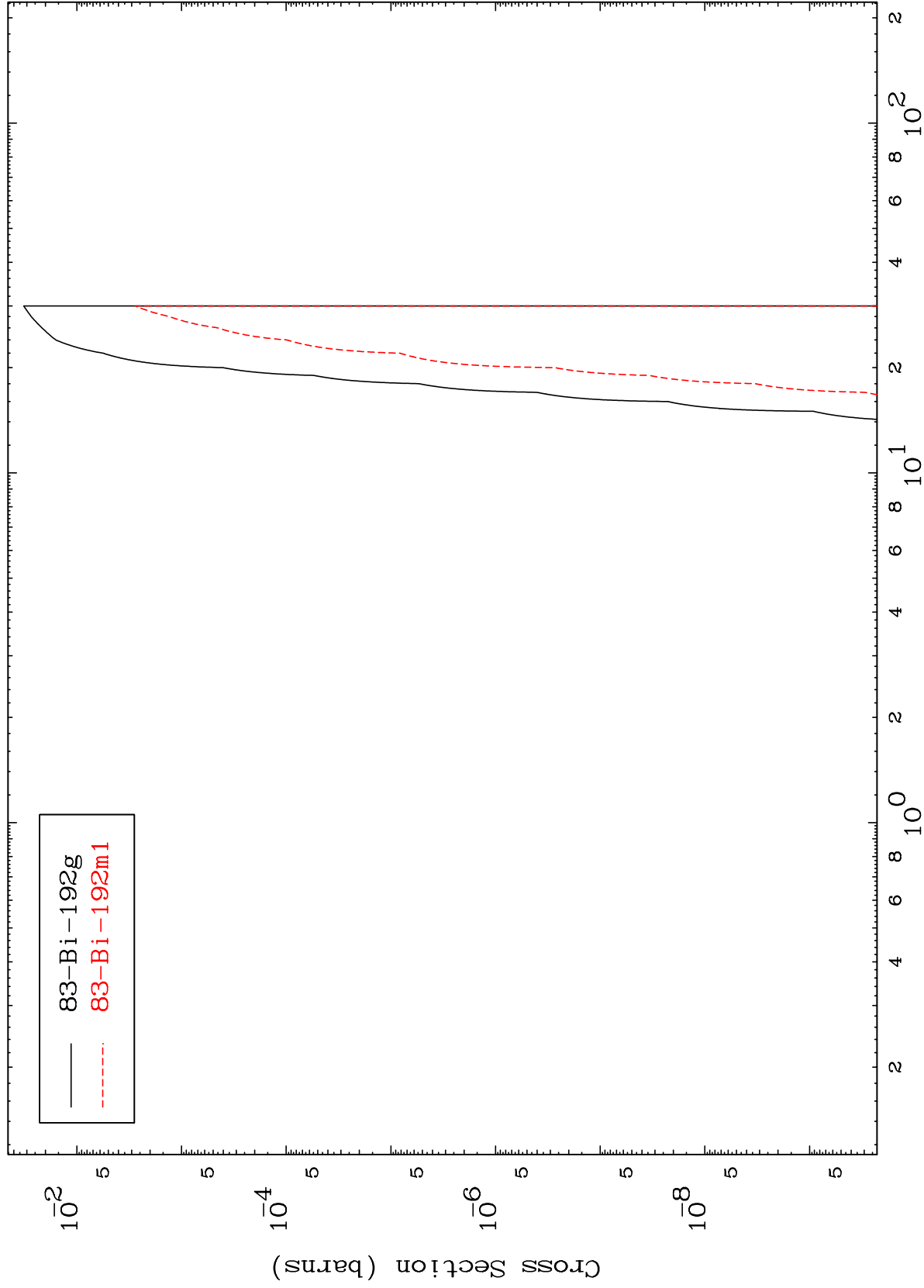
17

Incident Energy (MeV)

83-Bi-192

Radionuclide Production Cross Section

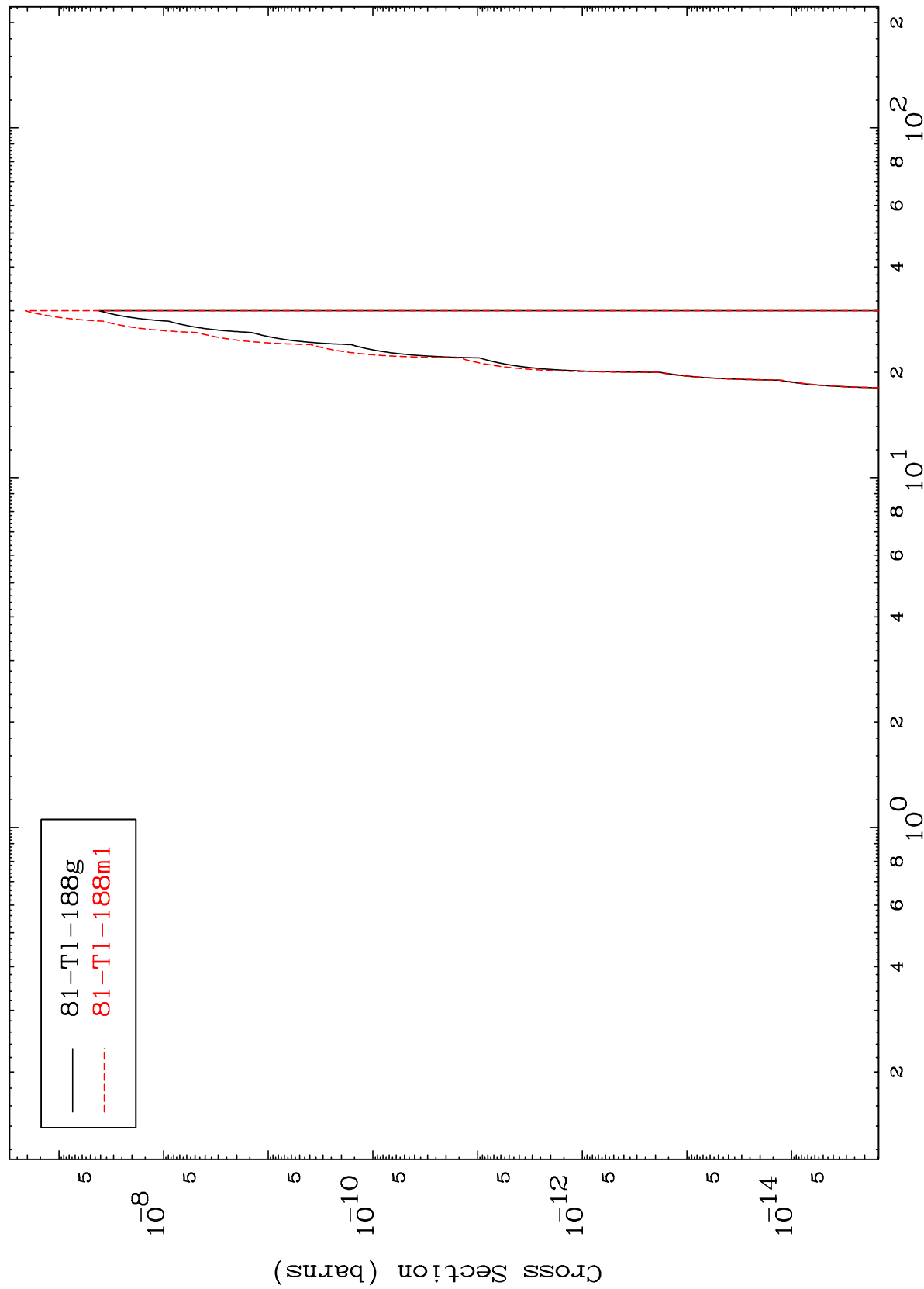


Radionuclide Production Cross Section  
( $n, \alpha$ )

MAT 8274

83-Bi-192

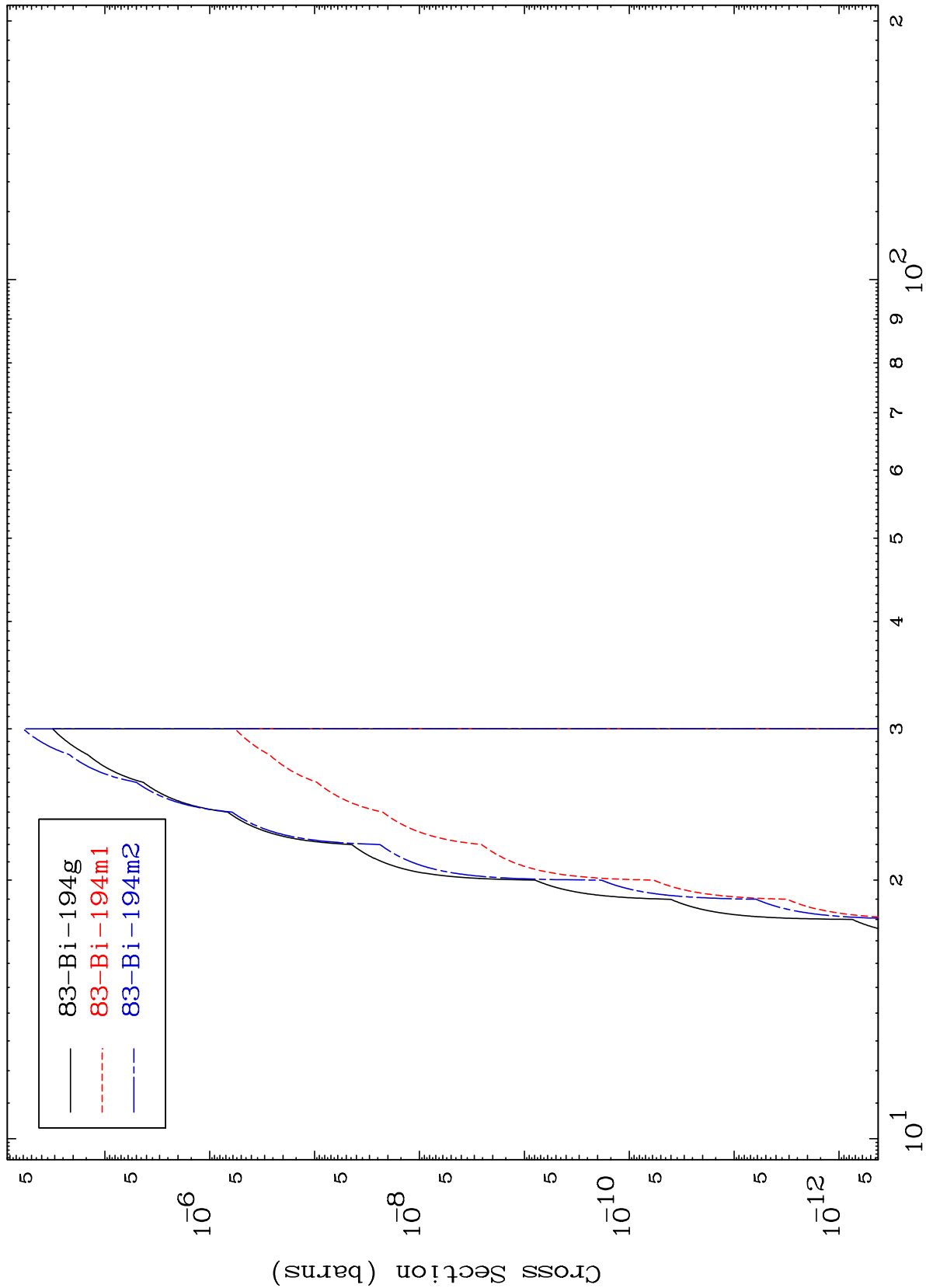
Radionuclide Production Cross Section  
(n,2 $\alpha$ )



MAT 8274

83-Bi-192

(n,2p)  
Radionuclide Production Cross Section



83-Bi-192

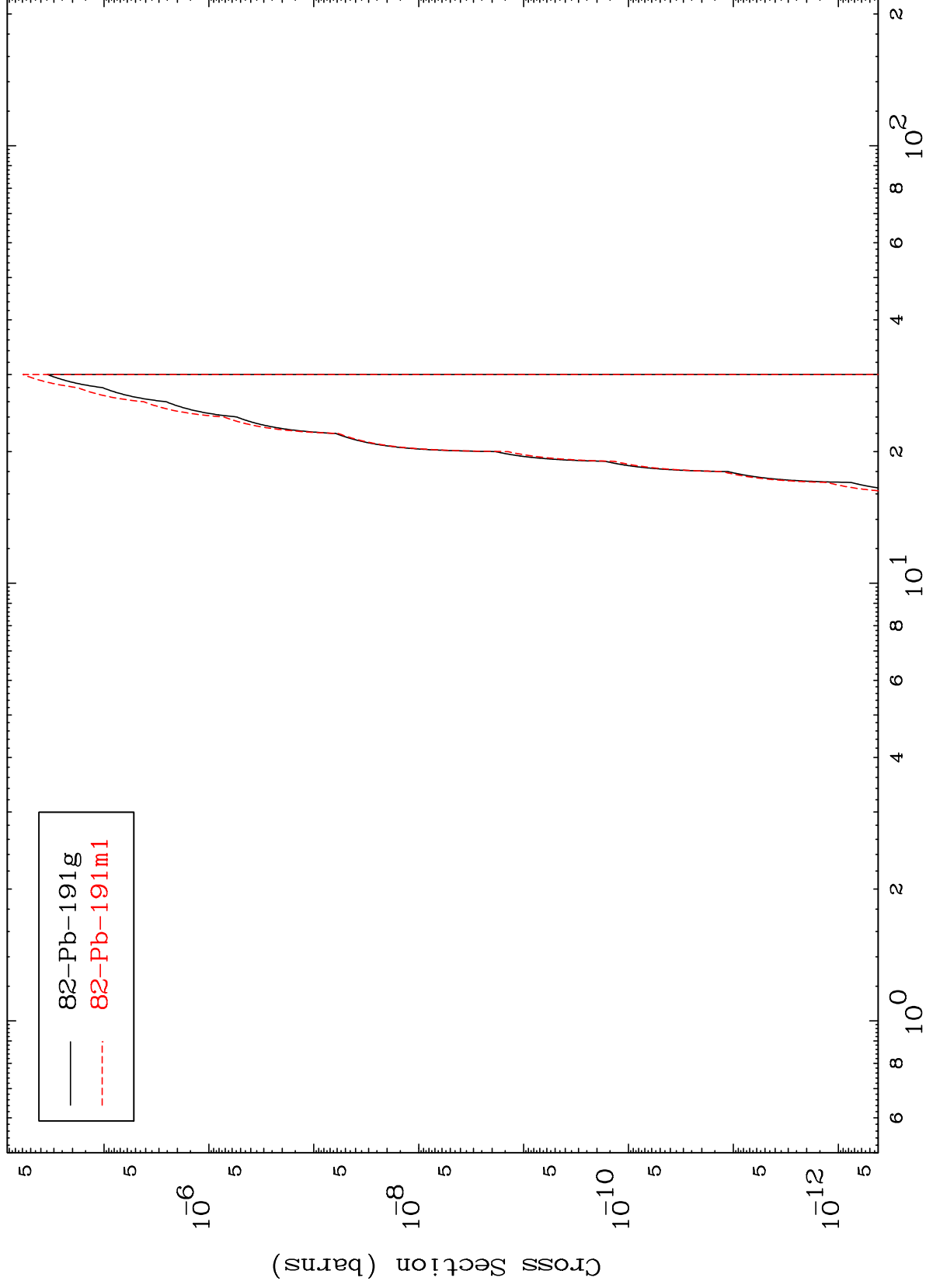
Incident Energy (MeV)

21

MAT 8274

83-Bi-192

(n,p)  $\alpha$   
Radionuclide Production Cross Section



22

Incident Energy (MeV)

83-Bi-192

