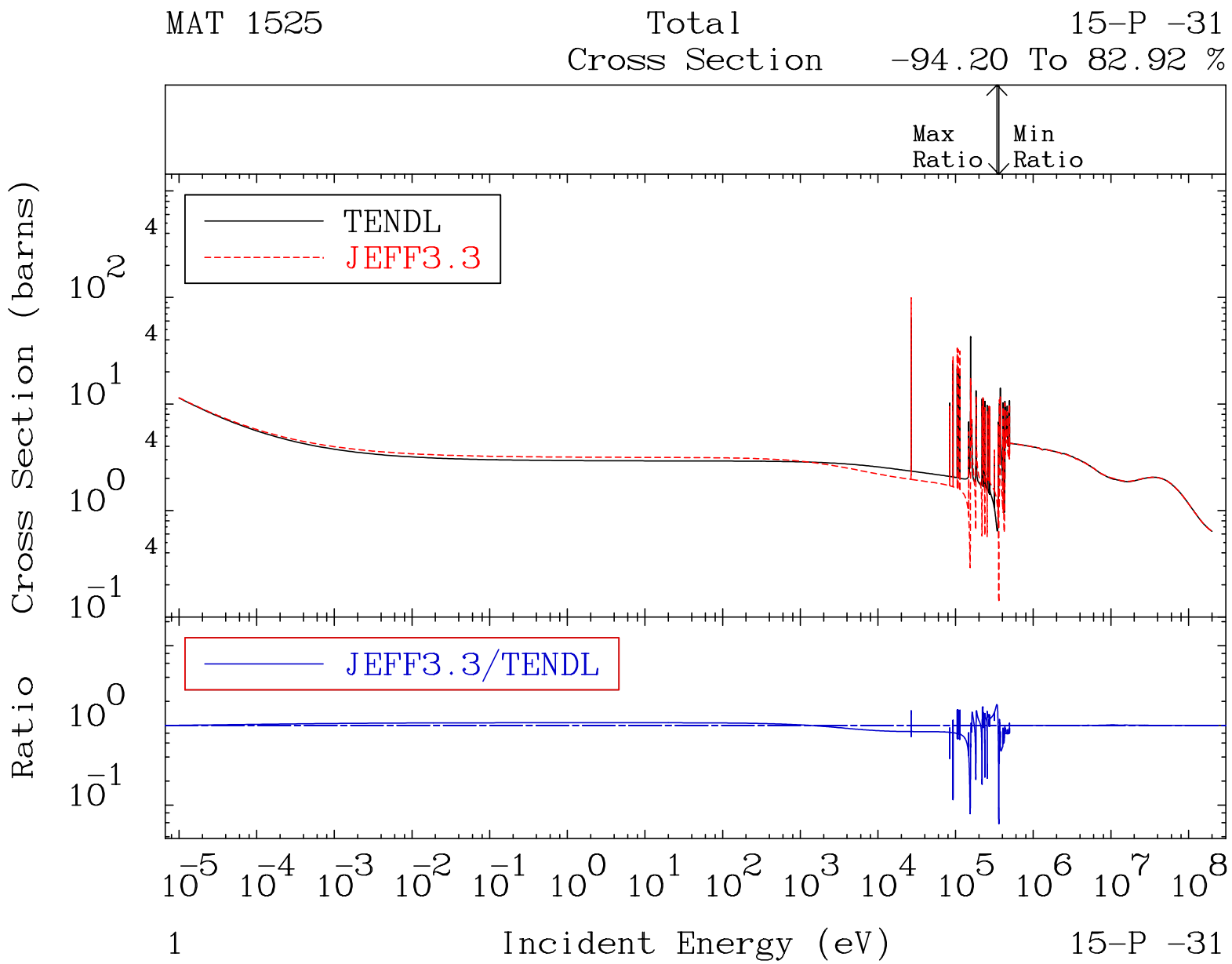
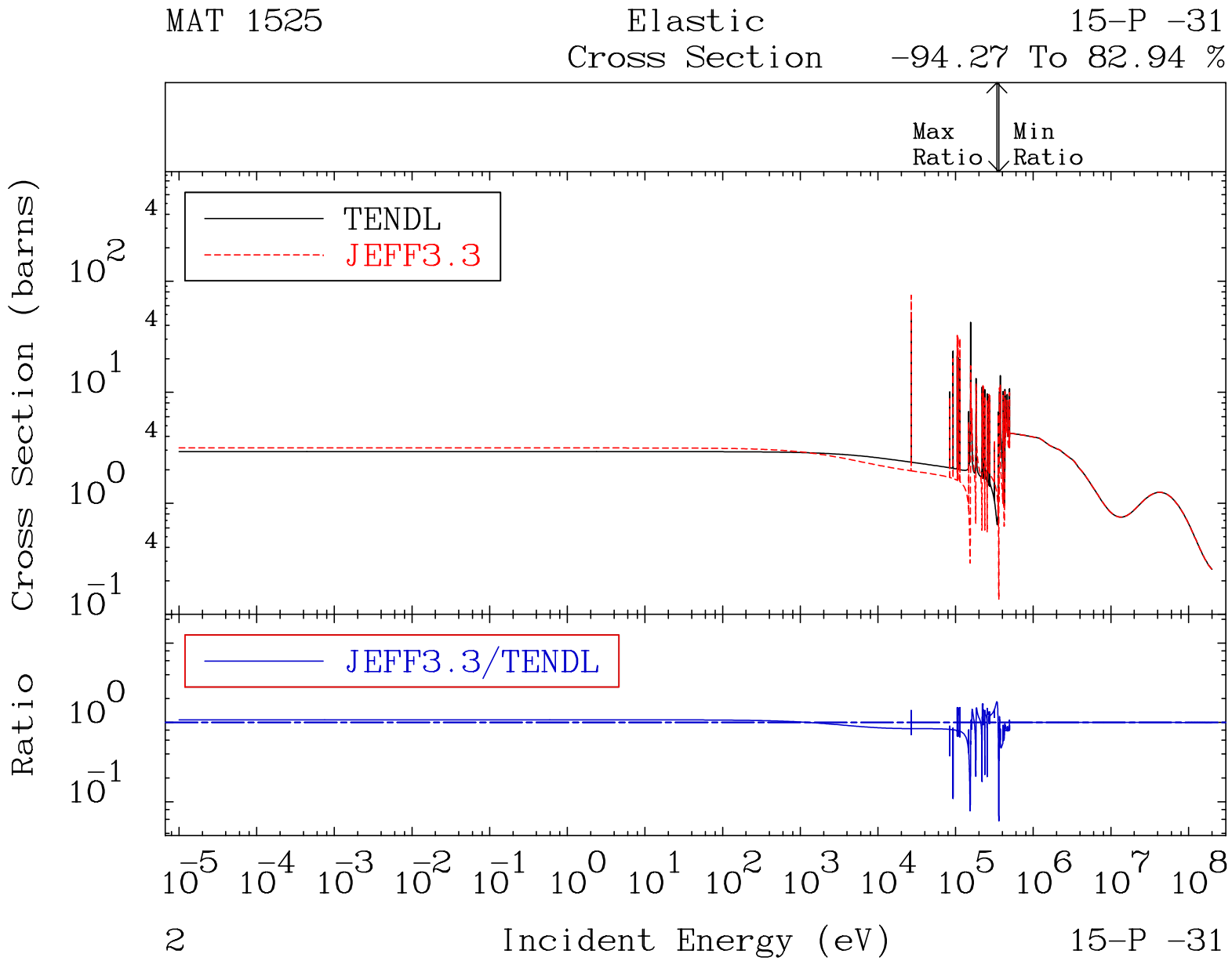
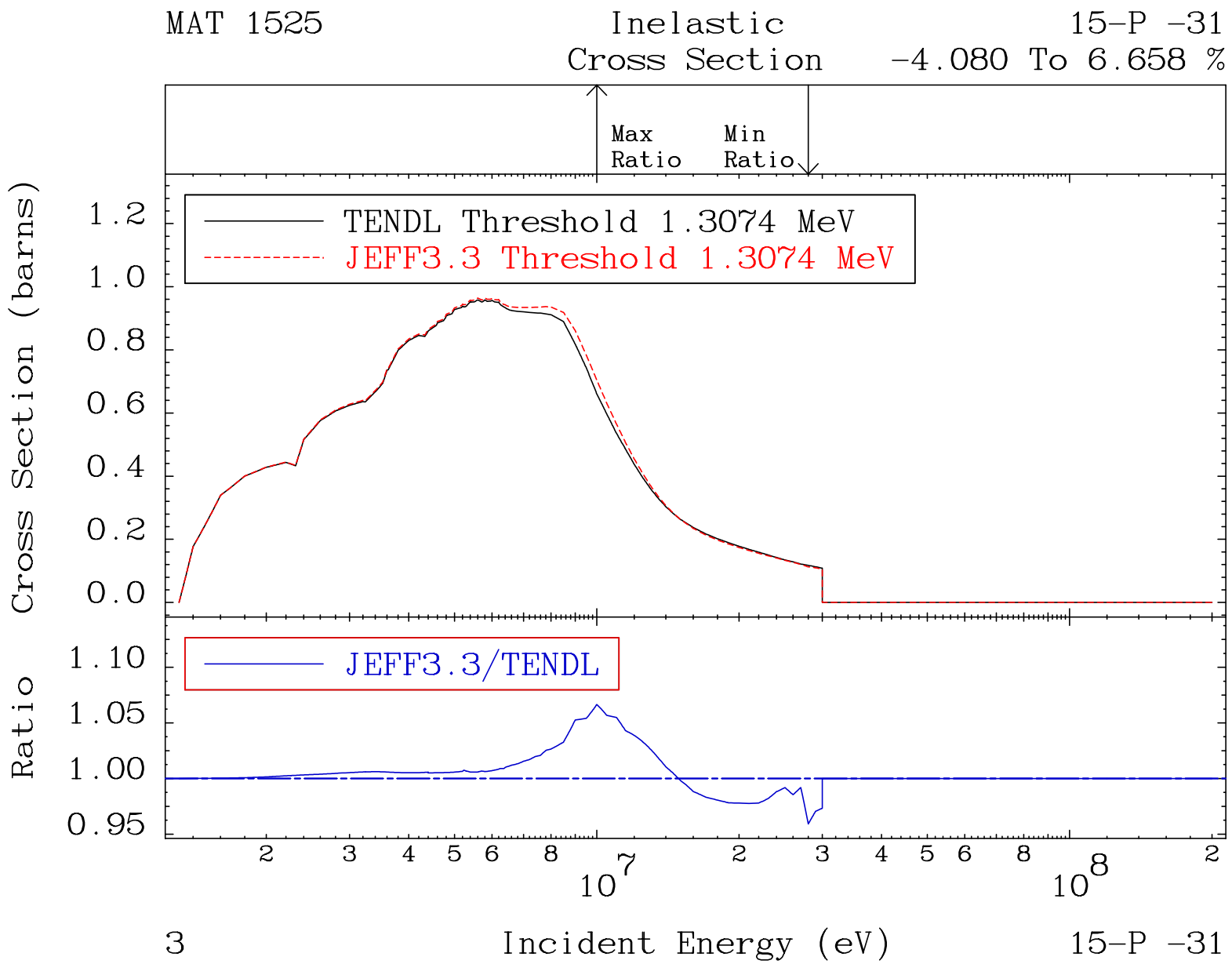
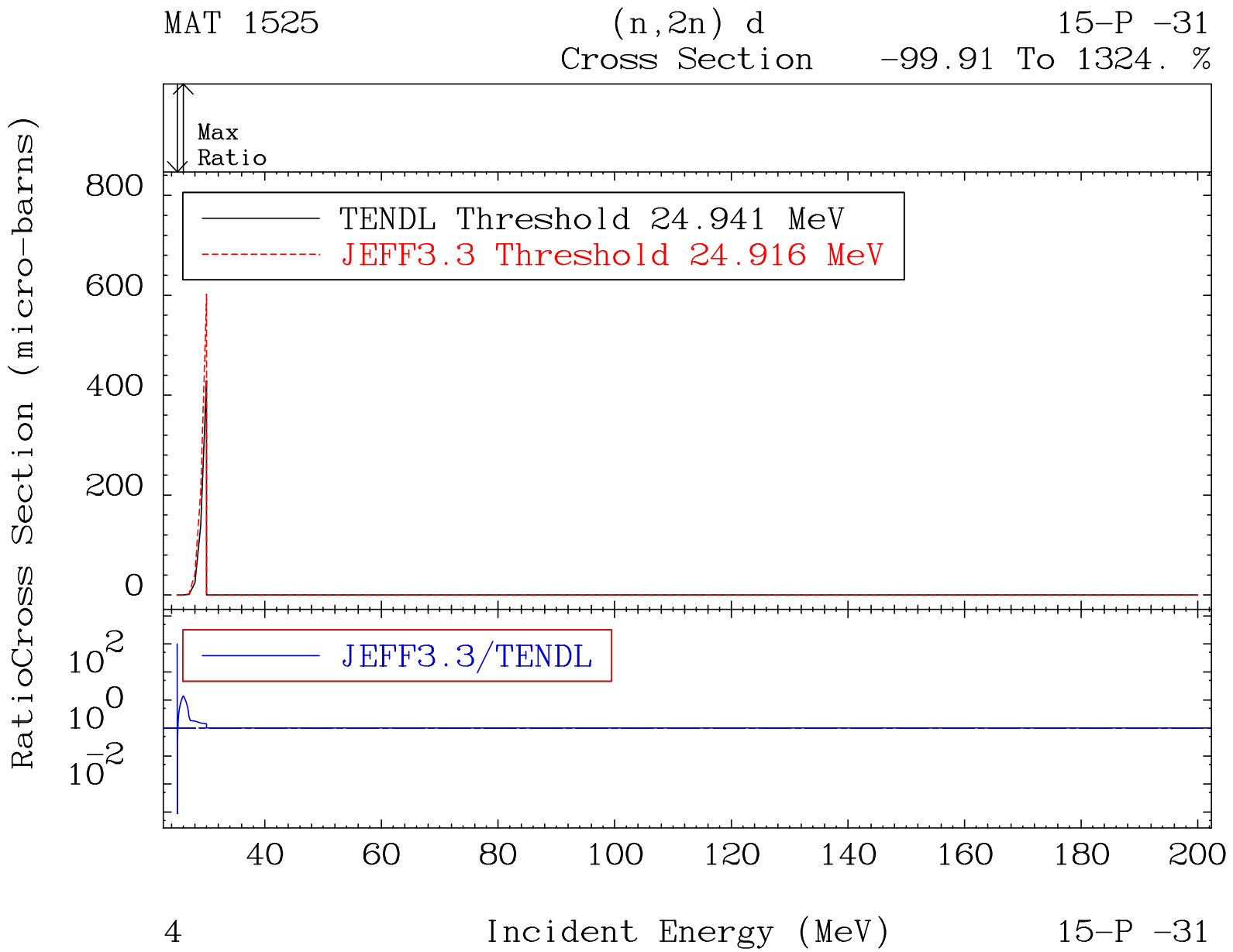
Program Complot
(Version 2021-1)
by
Dermott E. Cullen
(Present Contact Information)
Dermott E. Cullen
1466 Hudson Way
Livermore, CA 94550
U.S.A.
Tele: 925-443-1911
E.Mail:redcullen1@comcast.net
Web:redcullen1.net/HOMEPAGE.NEW

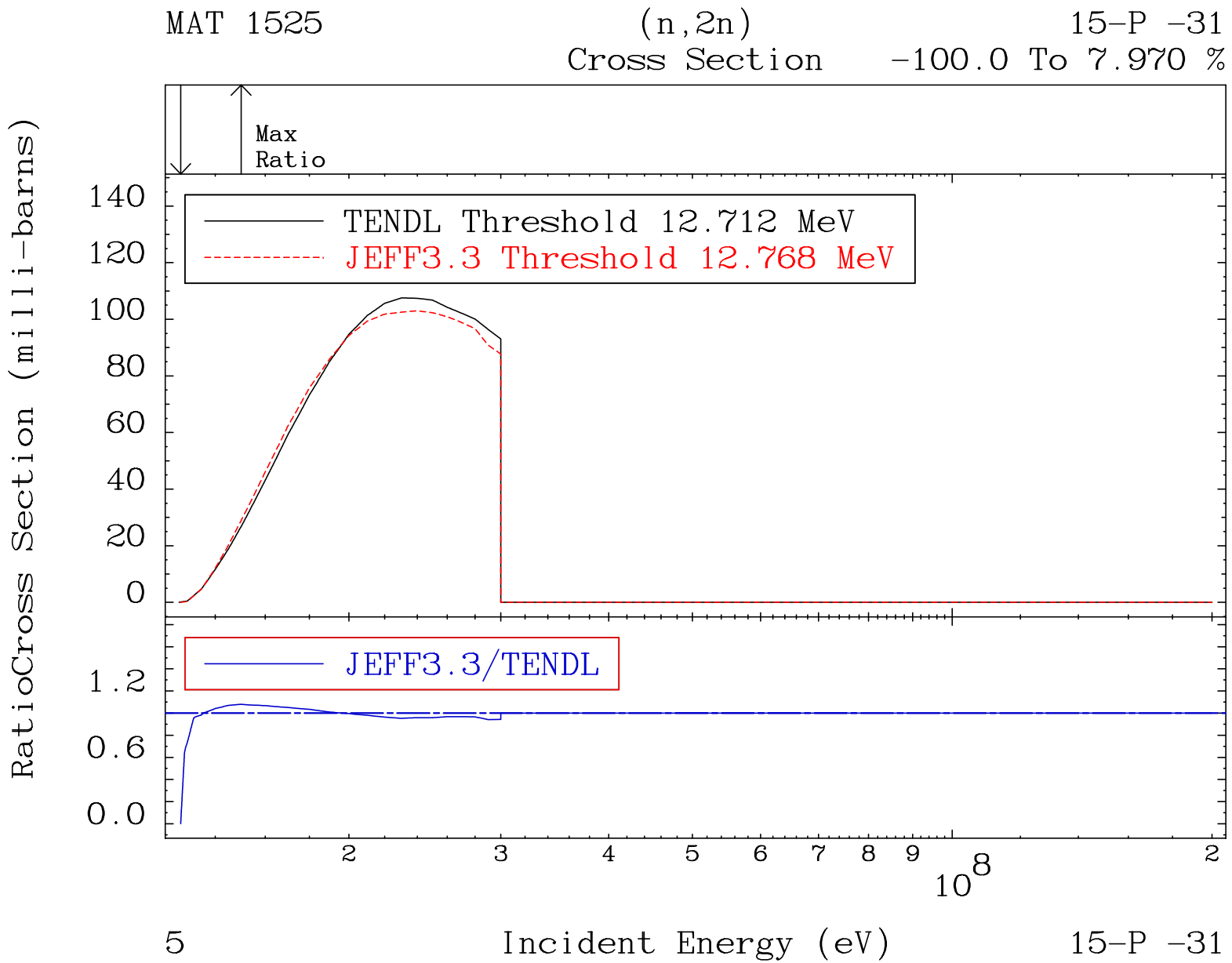
Press Mouse Button to Start

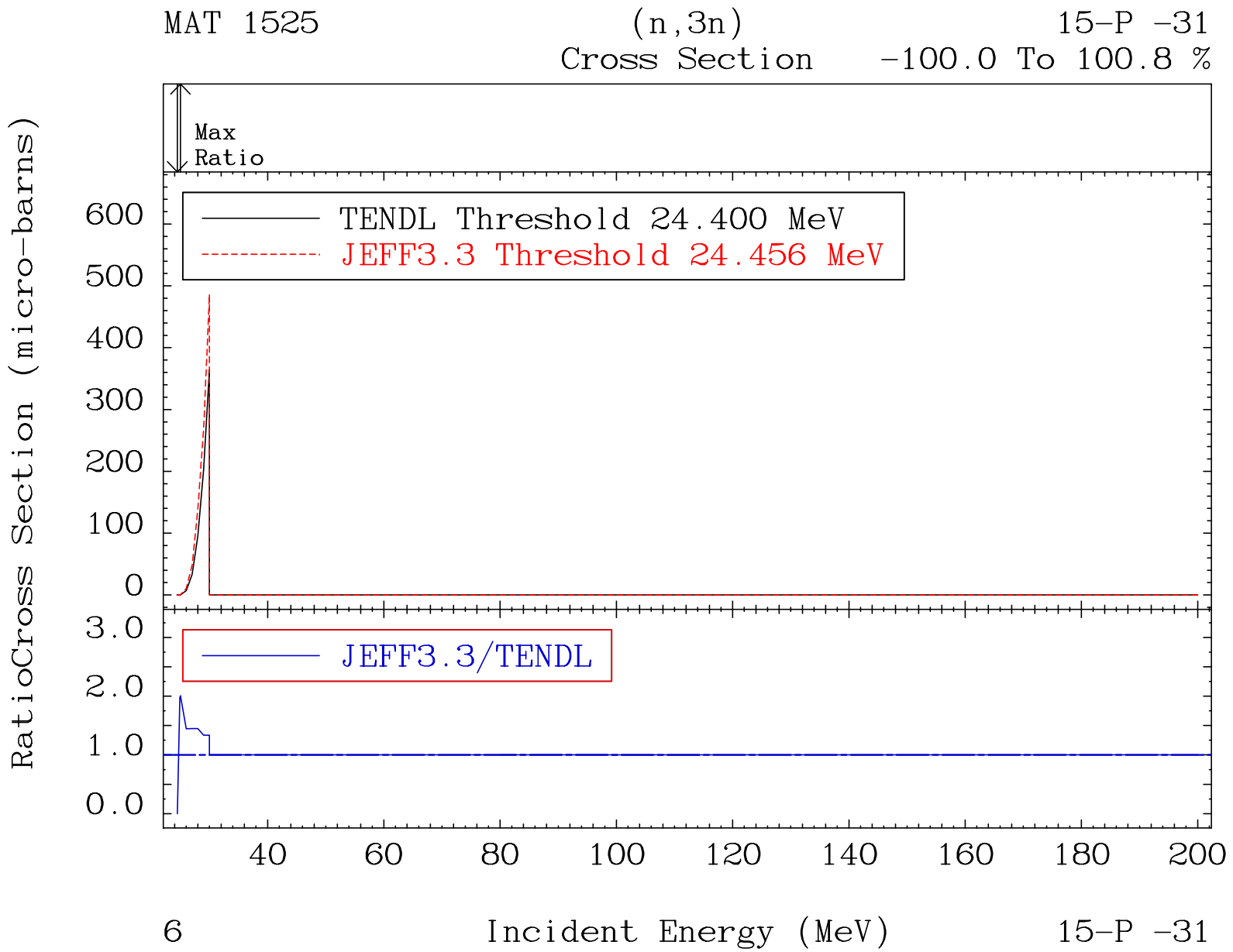

MAT 1525
Total
Cross Section
15-P -31
-94.20 To 82.92 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
1
15-P -31

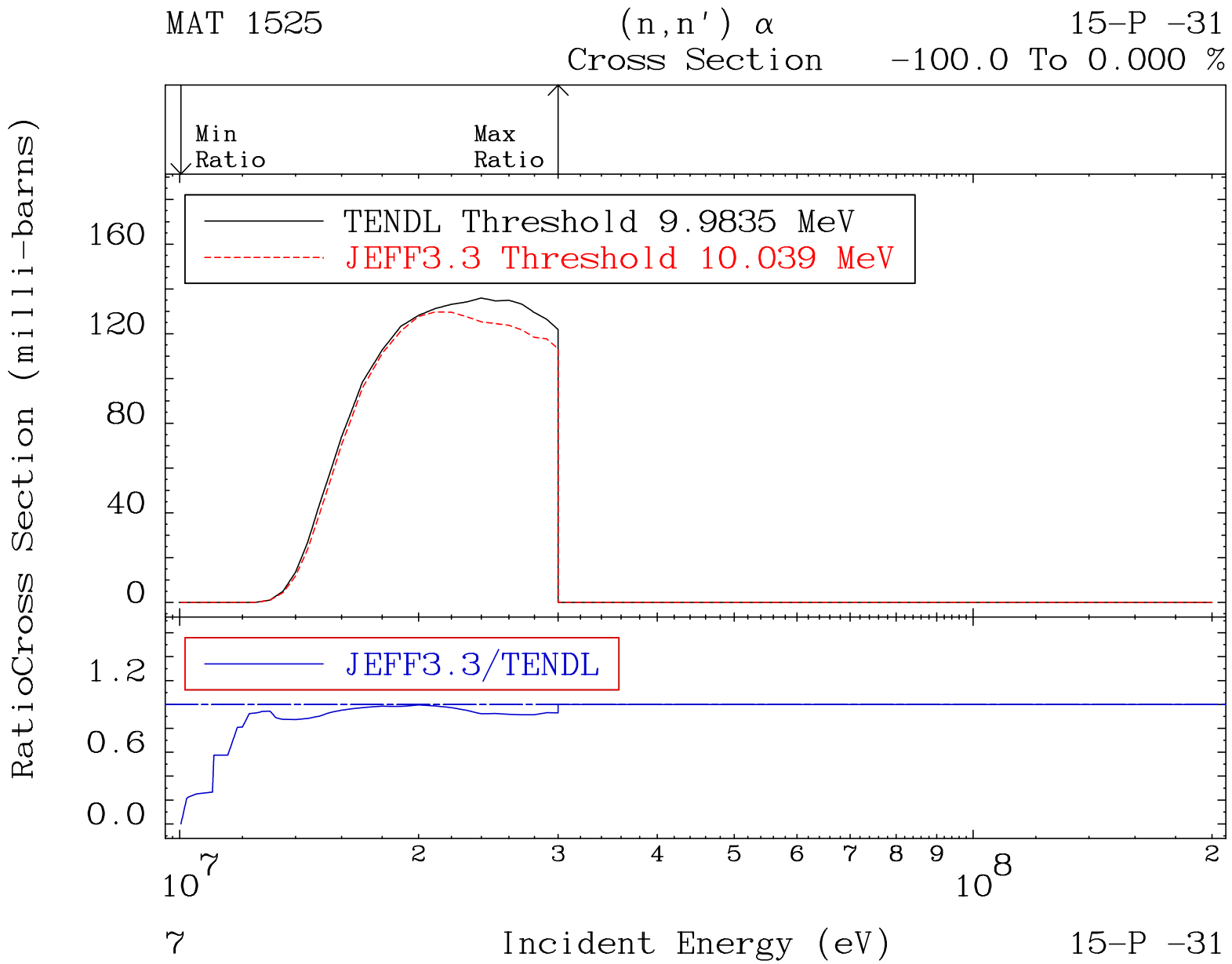

MAT 1525
Elastic
Cross Section
15-P -31
-94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
2
15-P -31

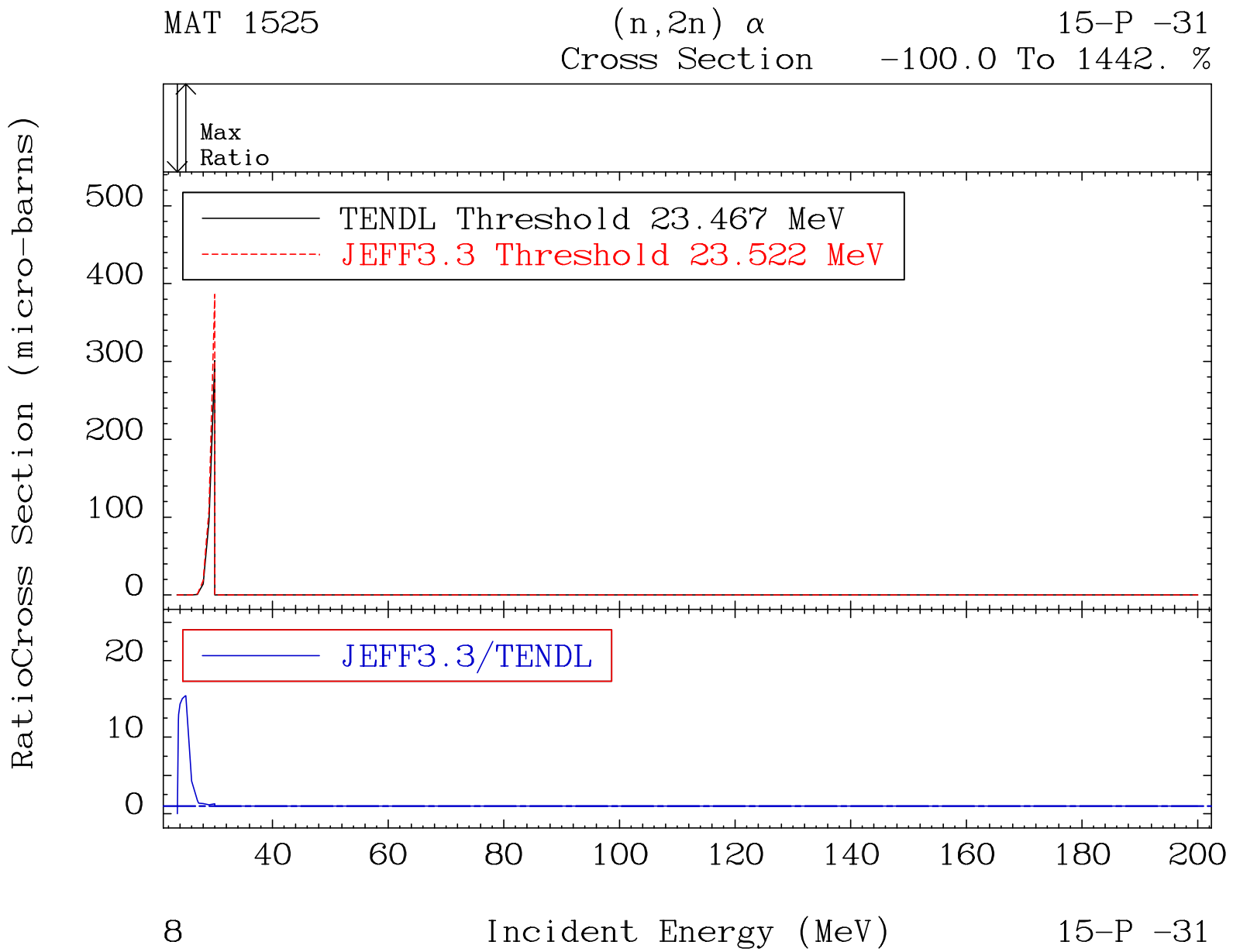

MAT 1525
Inelastic
Cross Section
15-P -31
-4.080 To 6.658 %
Max Ratio
Min Ratio
TENDL Threshold 1.3074 MeV
JEFF3.3 Threshold 1.3074 MeV
Cross Section (barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
JEFF3.3/TENDL
Ratio
1.10
1.05
1.00
0.95
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
3
Incident Energy (eV)
15-P -31

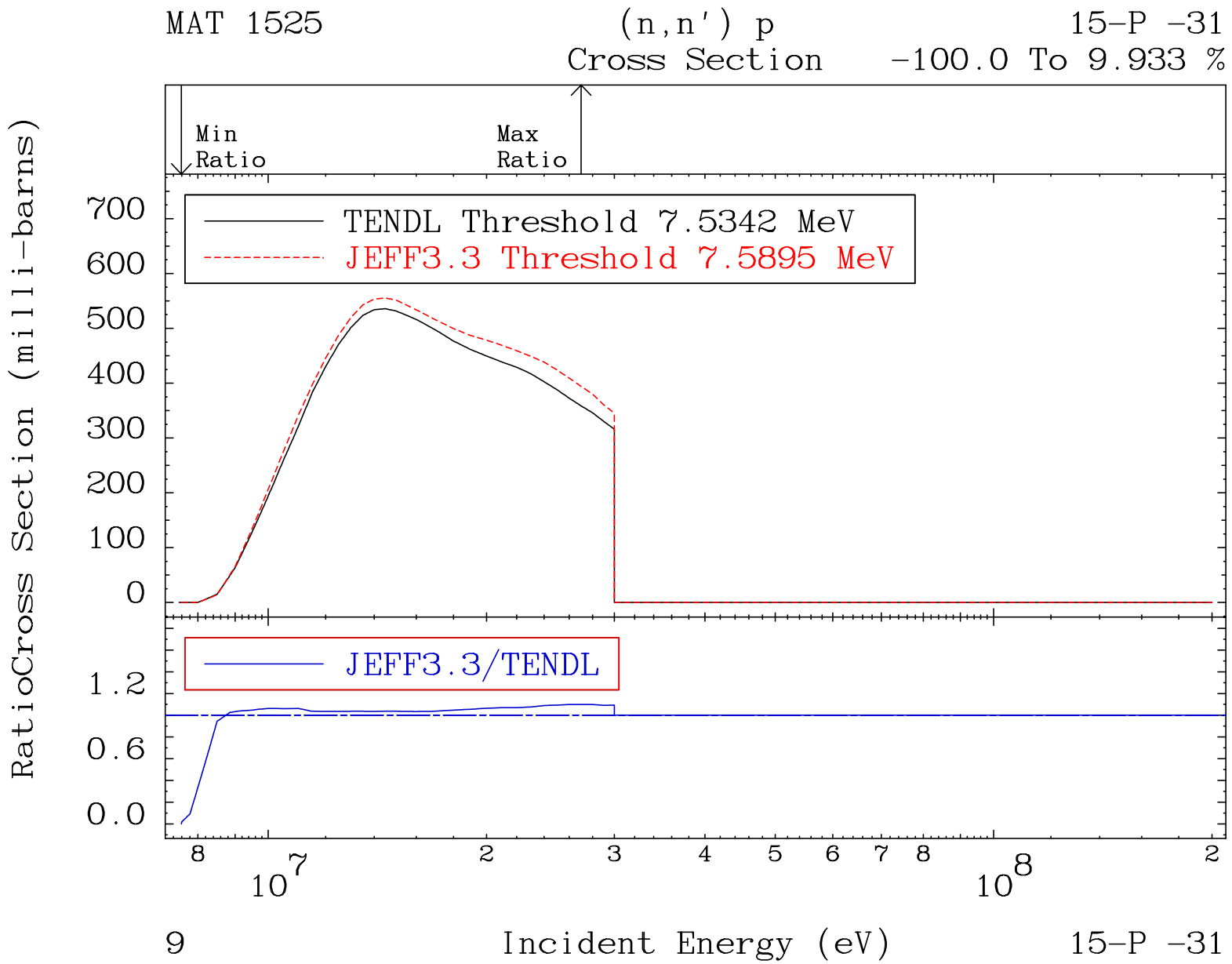

MAT 1525
(n,2n) d
15-P -31
Cross Section
-99.91 To 1324. %
Max
Ratio
800
600
400
200
0
TENDL Threshold 24.941 MeV
JEFF3.3 Threshold 24.916 MeV
RatioCross Section (micro-barns)
10^2
10^0
10^-2
JEFF3.3/TENDL
40
60
80
100
120
140
160
180
200
4
Incident Energy (MeV)
15-P -31

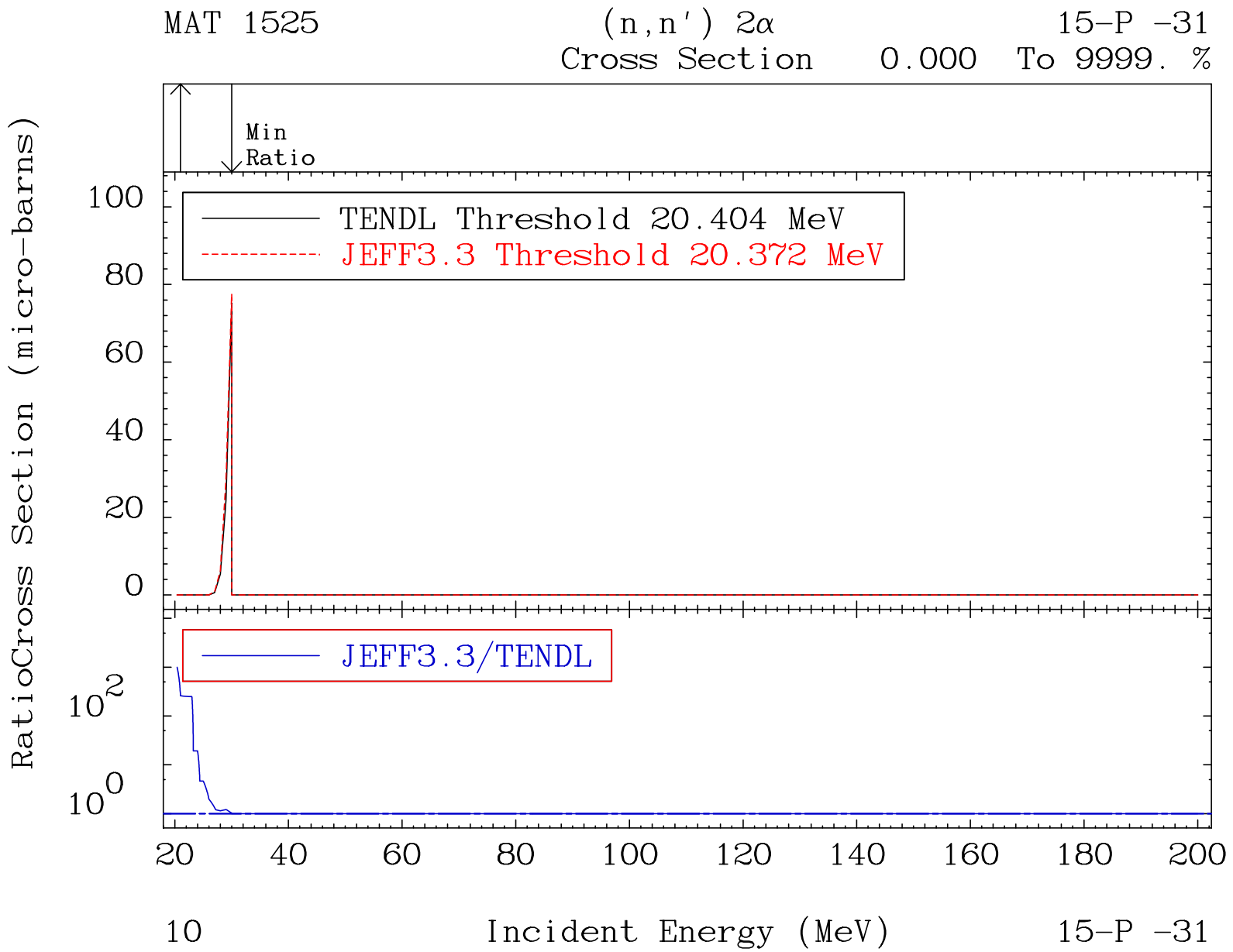

MAT 1525
(n,2n)
Cross Section
15-P -31
-100.0 To 7.970 %
Max
Ratio
TENDL Threshold 12.712 MeV
JEFF3.3 Threshold 12.768 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
140
120
100
80
60
40
20
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
2
10^8
5
Incident Energy (eV)
15-P -31

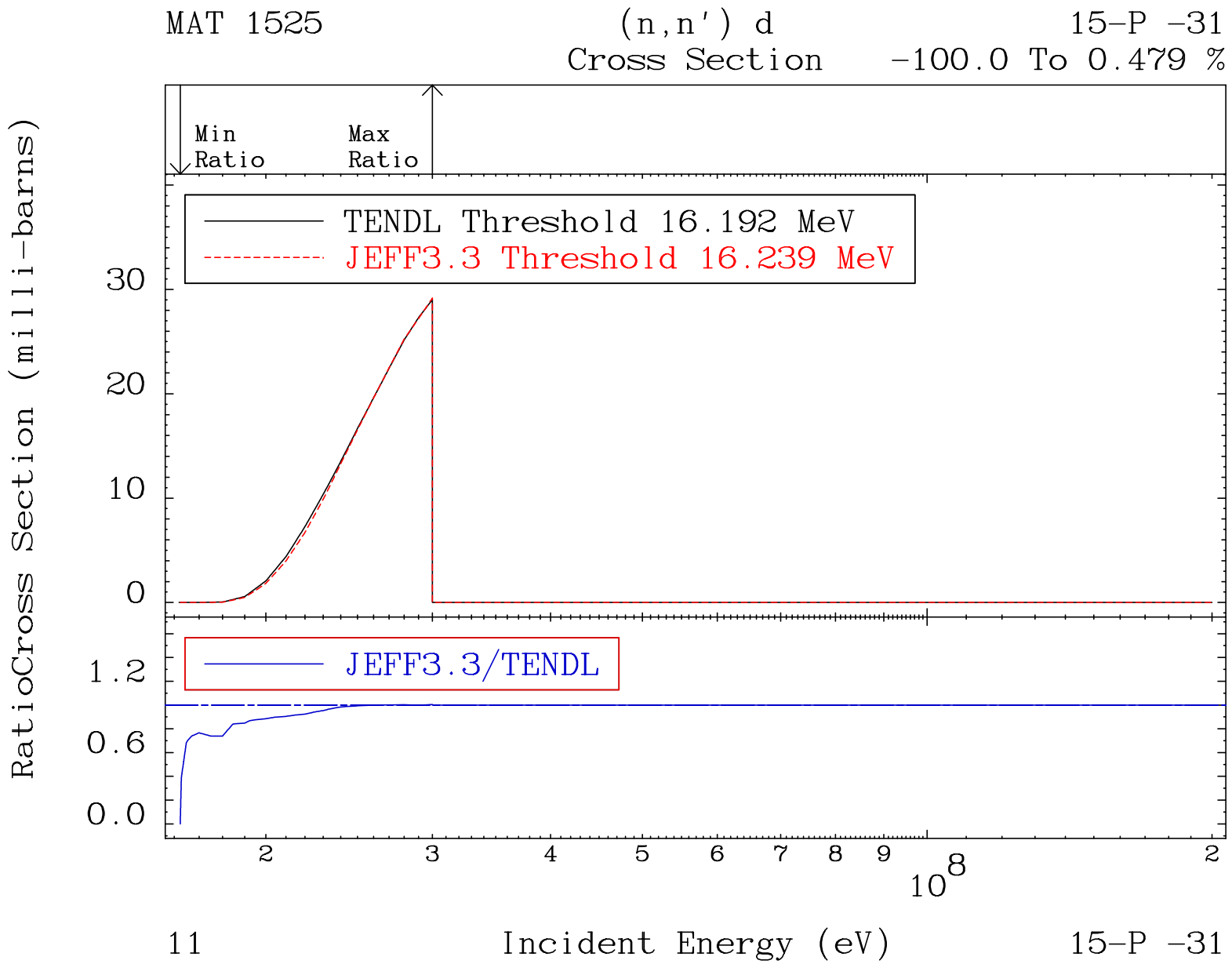

MAT 1525
(n,3n)
Cross Section
15-P -31
-100.0 To 100.8 %
Max
Ratio
TENDL Threshold 24.400 MeV
JEFF3.3 Threshold 24.456 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
600
500
400
300
200
100
0
3.0
2.0
1.0
0.0
40
60
80
100
120
140
160
180
200
Incident Energy (MeV)
6
15-P -31

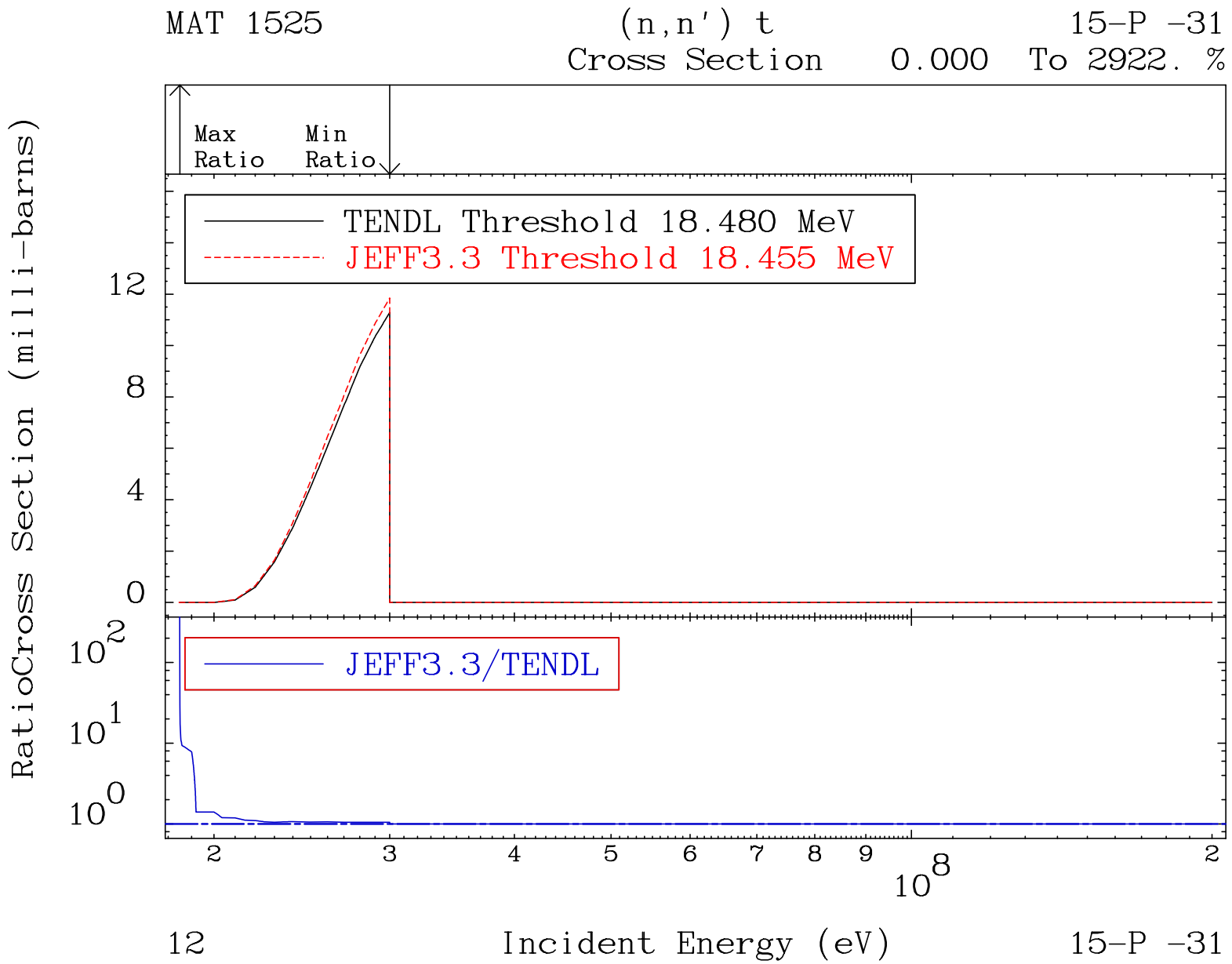

MAT 1525
(n,n') α
Cross Section
15-P -31
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 9.9835 MeV
JEFF3.3 Threshold 10.039 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
160
120
80
40
0
1.2
0.6
0.0
10^7
2
3
4
5
6
7
8
9
10^8
2
7
Incident Energy (eV)
15-P -31

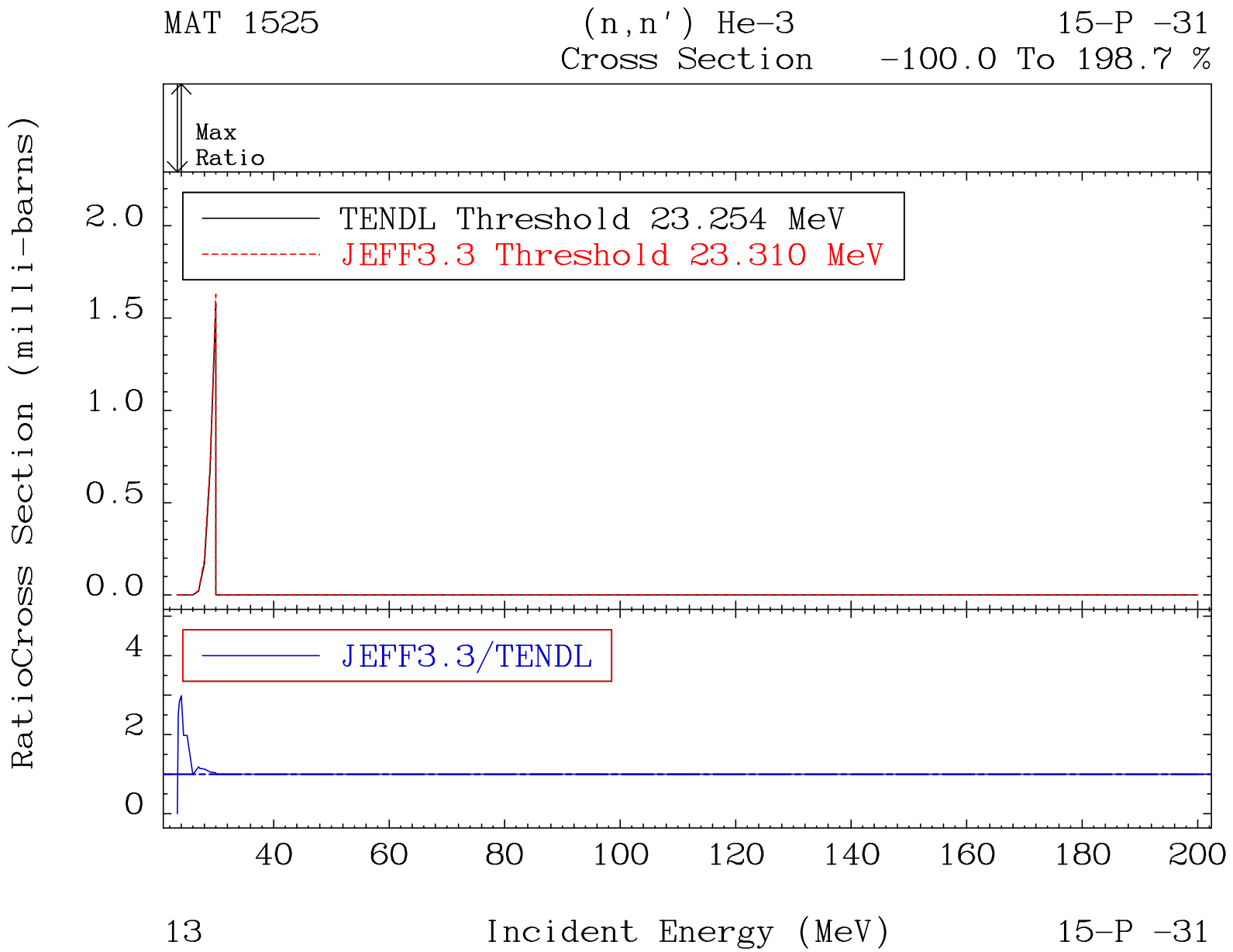

MAT 1525
(n,2n) α
15-P -31
Cross Section
-100.0 To 1442. %
Max
Ratio
TENDL Threshold 23.467 MeV
JEFF3.3 Threshold 23.522 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
500
400
300
200
100
0
20
10
0
40
60
80
100
120
140
160
180
200
8
Incident Energy (MeV)
15-P -31

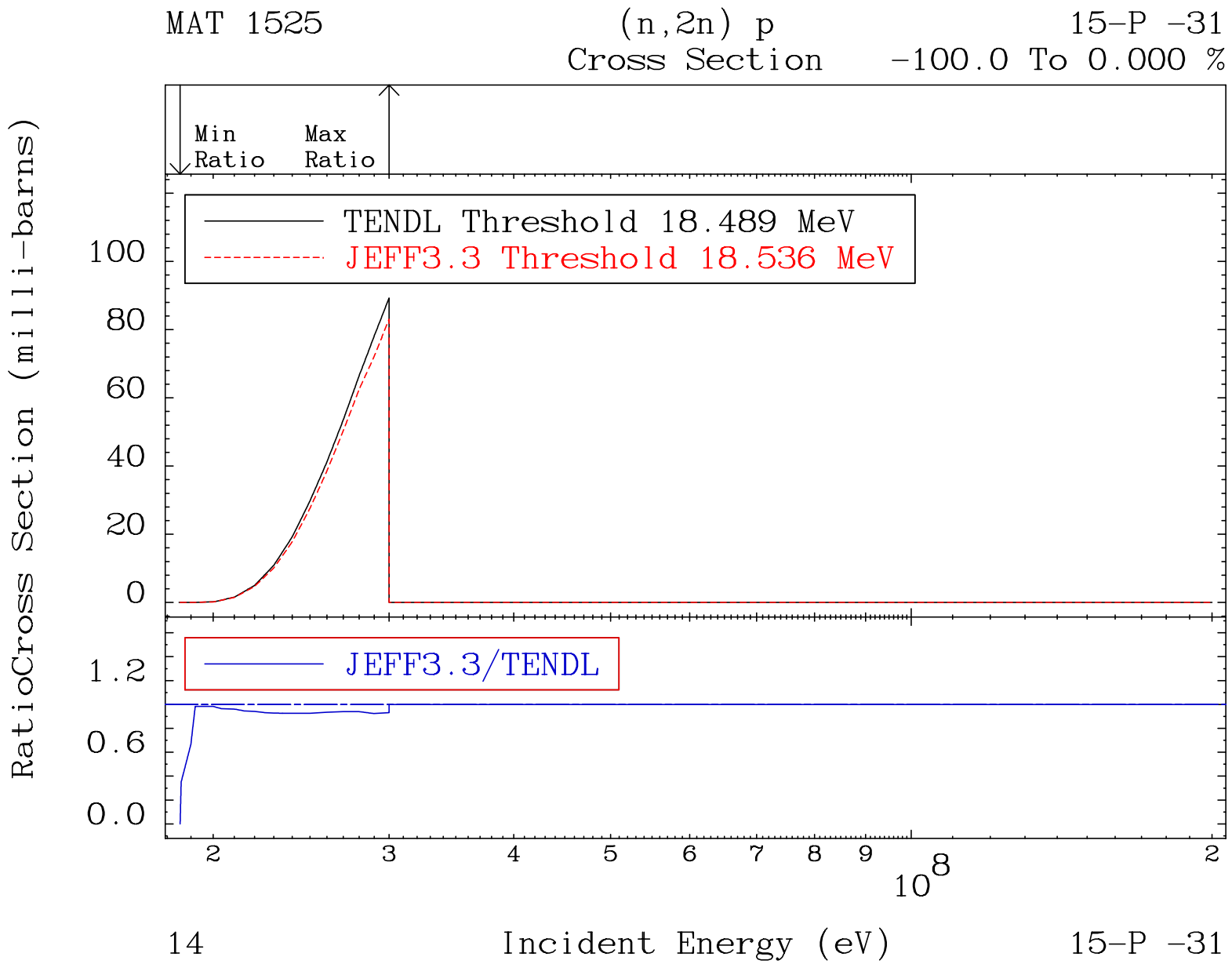

MAT 1525
(n,n') p
Cross Section
15-P -31
-100.0 To 9.933 %
Min Ratio
Max Ratio
TENDL Threshold 7.5342 MeV
JEFF3.3 Threshold 7.5895 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
700
600
500
400
300
200
100
0
1.2
0.6
0.0
8
10^7
2
3
4
5
6
7
8
10^8
2
9
Incident Energy (eV)
15-P -31

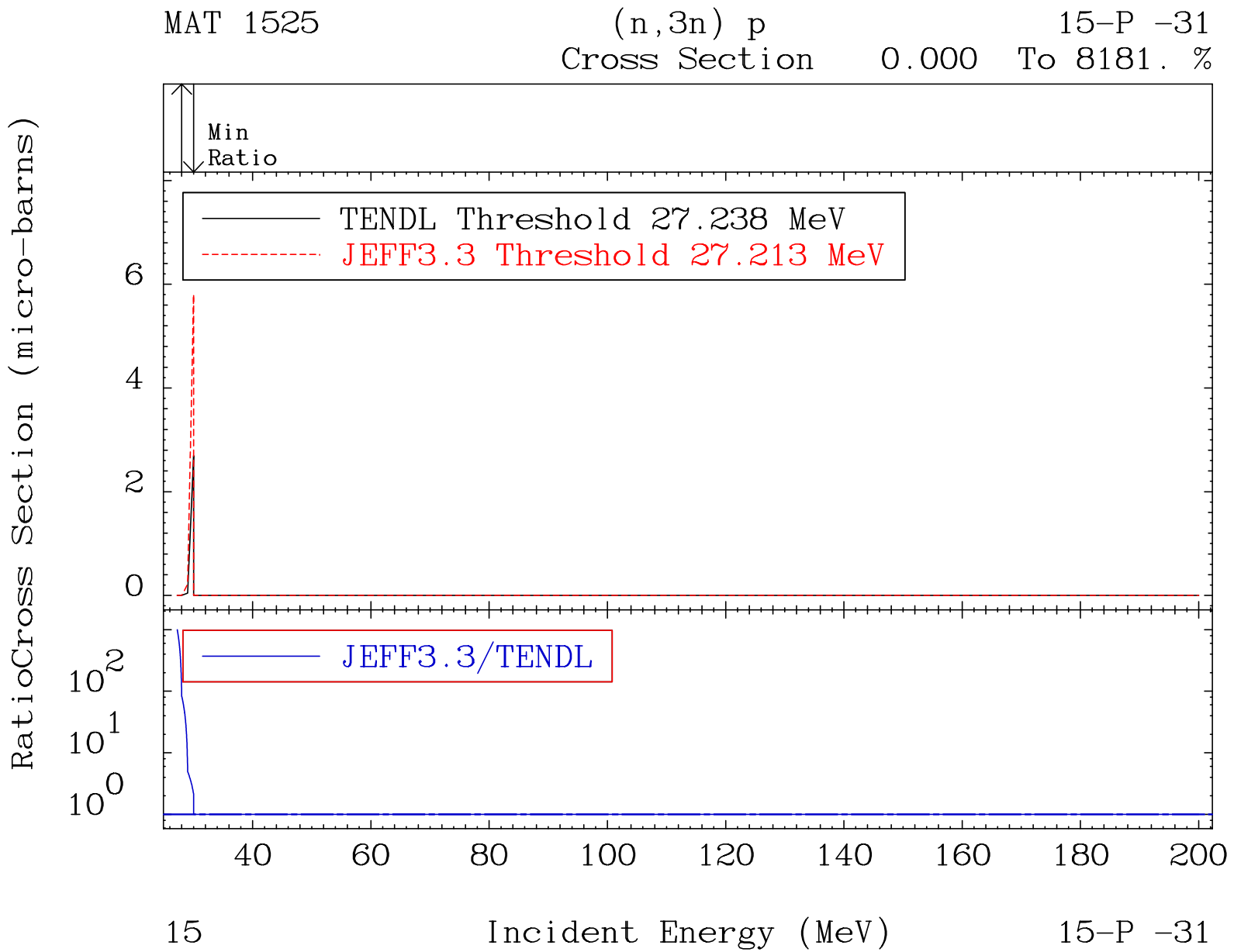

MAT 1525
(n,n') 2α
15-P -31
Cross Section 0.000 To 9999. %
Min
Ratio
TENDL Threshold 20.404 MeV
JEFF3.3 Threshold 20.372 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
100
80
60
40
20
0
10^2
10^0
20
40
60
80
100
120
140
160
180
200
10
Incident Energy (MeV)
15-P -31

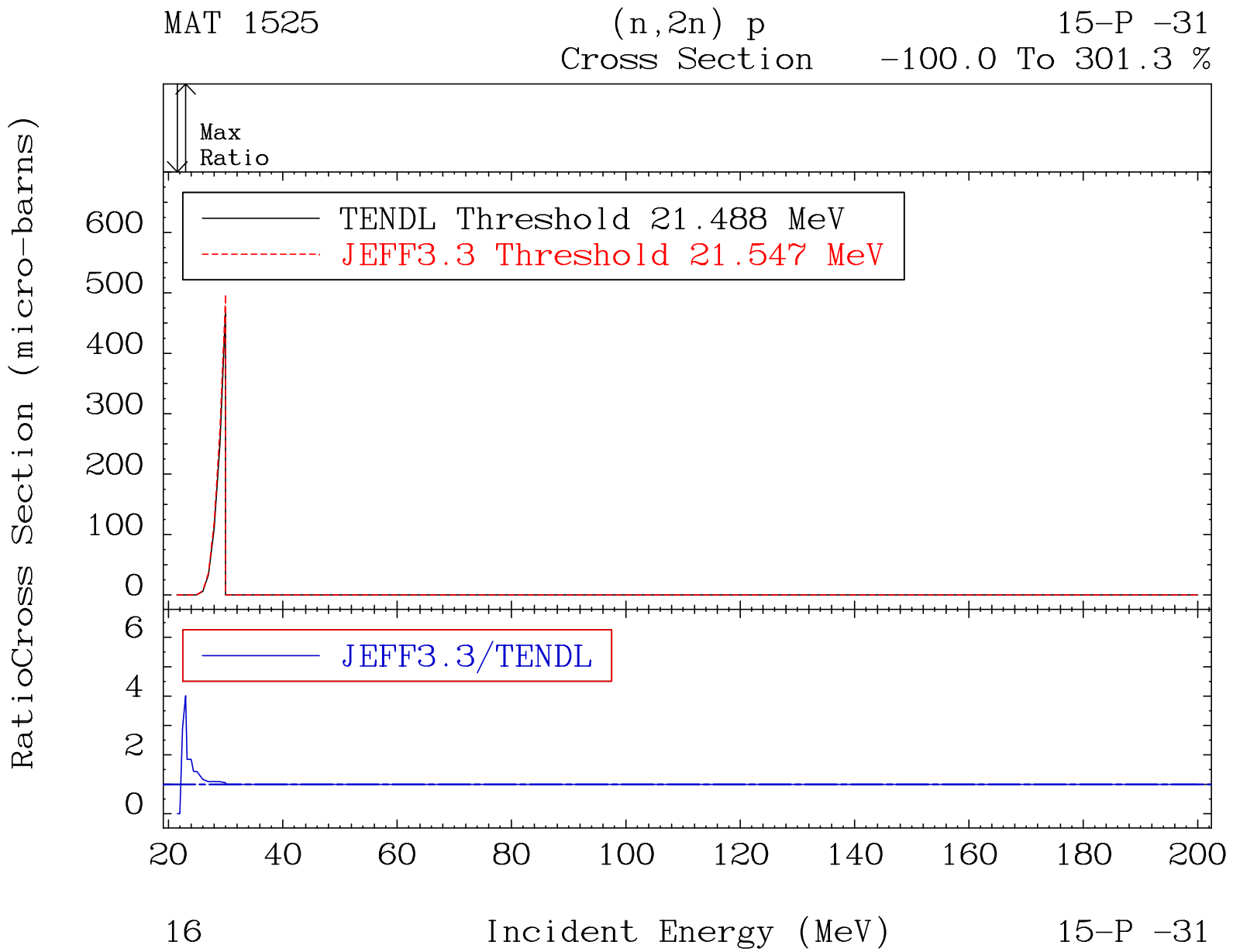

MAT 1525
(n,n') d
Cross Section
15-P -31
-100.0 To 0.479 %
Min Ratio
Max Ratio
TENDL Threshold 16.192 MeV
JEFF3.3 Threshold 16.239 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
30
20
10
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
11
Incident Energy (eV)
15-P -31

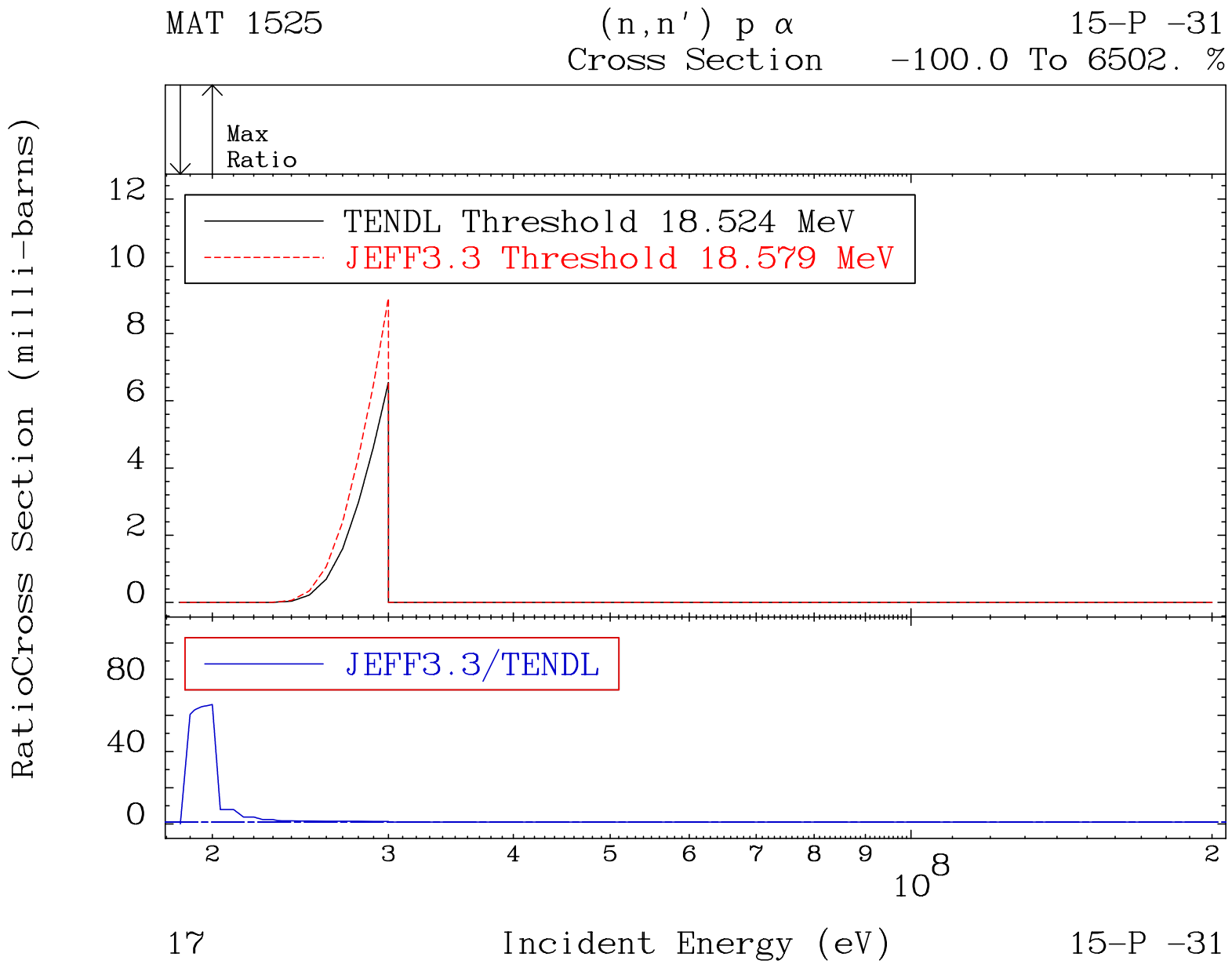

MAT 1525
(n,n') t
15-P -31
Cross Section 0.000 To 2922. %
Max Ratio
Min Ratio
TENDL Threshold 18.480 MeV
JEFF3.3 Threshold 18.455 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
12
8
4
0
10^2
10^1
10^0
2
3
4
5
6
7
8
9
10^8
2
12
Incident Energy (eV)
15-P -31

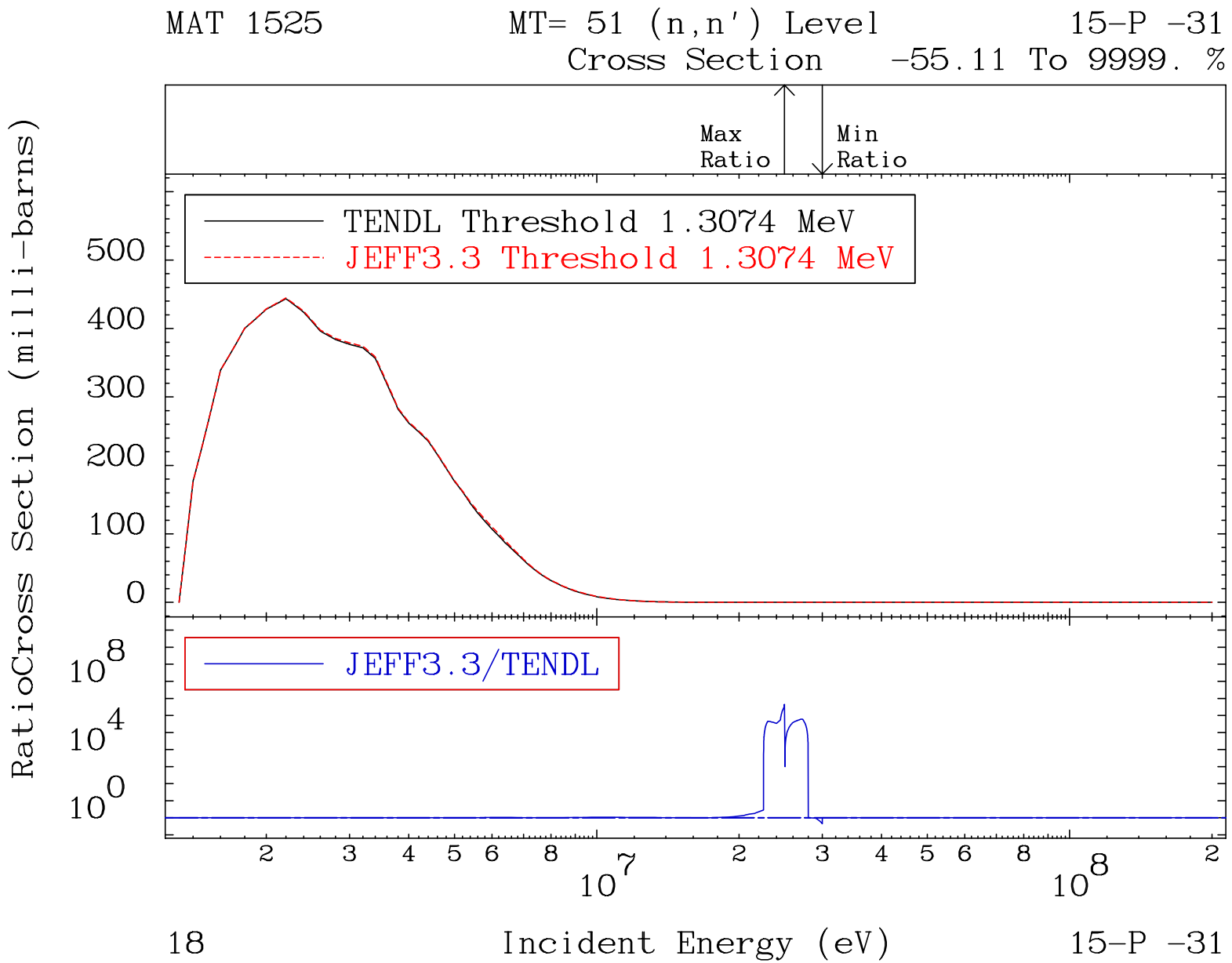

MAT 1525
(n,n') He-3
Cross Section
15-P -31
-100.0 To 198.7 %
Max
Ratio
TENDL Threshold 23.254 MeV
JEFF3.3 Threshold 23.310 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
4
2
0
40
60
80
100
120
140
160
180
200
13
Incident Energy (MeV)
15-P -31

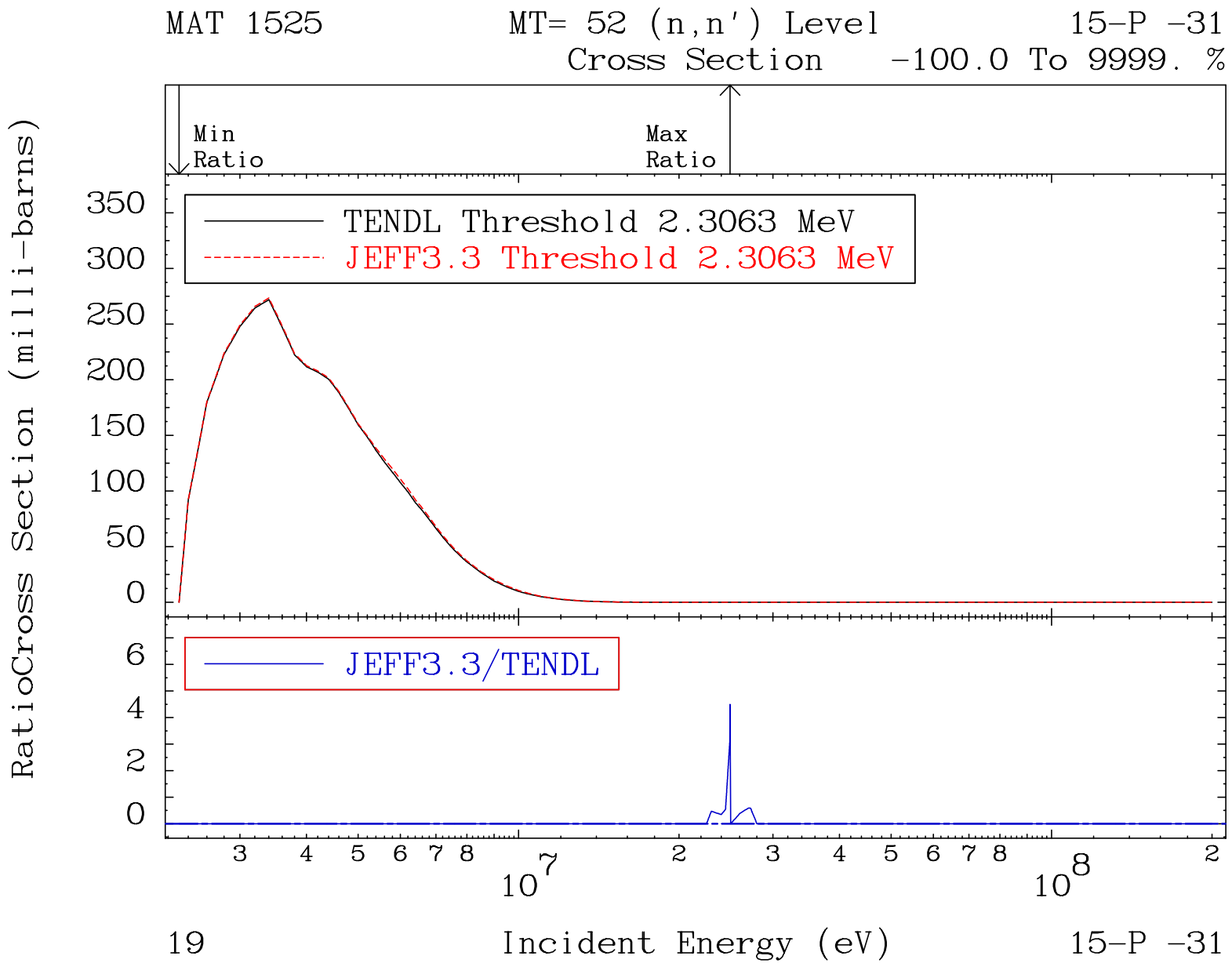

MAT 1525
(n,2n) p
15-P -31
Cross Section
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 18.489 MeV
JEFF3.3 Threshold 18.536 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
100
80
60
40
20
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
14
Incident Energy (eV)
15-P -31

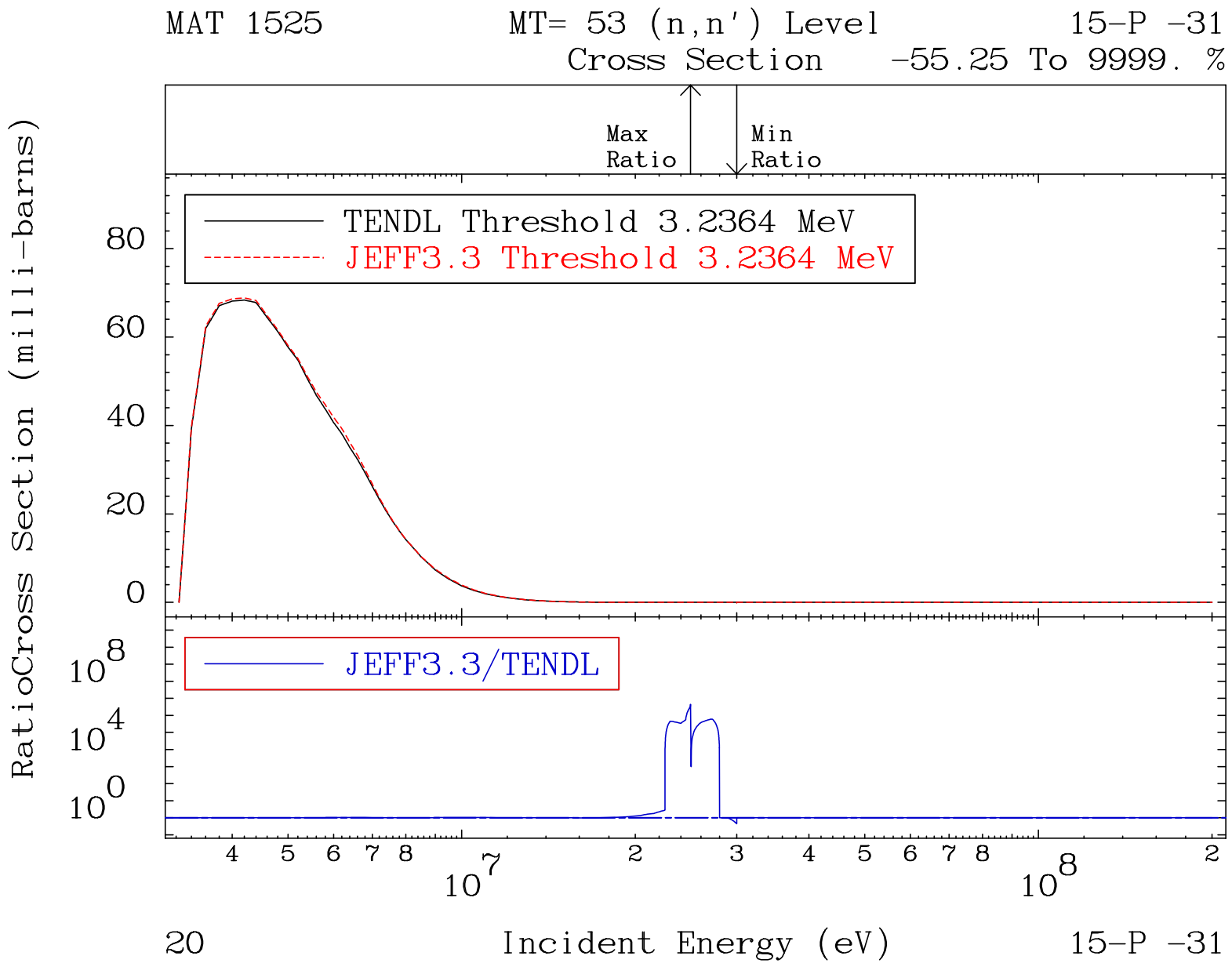

MAT 1525
(n,3n) p
15-P -31
Cross Section 0.000 To 8181. %
Min
Ratio
TENDL Threshold 27.238 MeV
JEFF3.3 Threshold 27.213 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
0
2
4
6
10^0
10^1
10^2
40
60
80
100
120
140
160
180
200
15
Incident Energy (MeV)
15-P -31

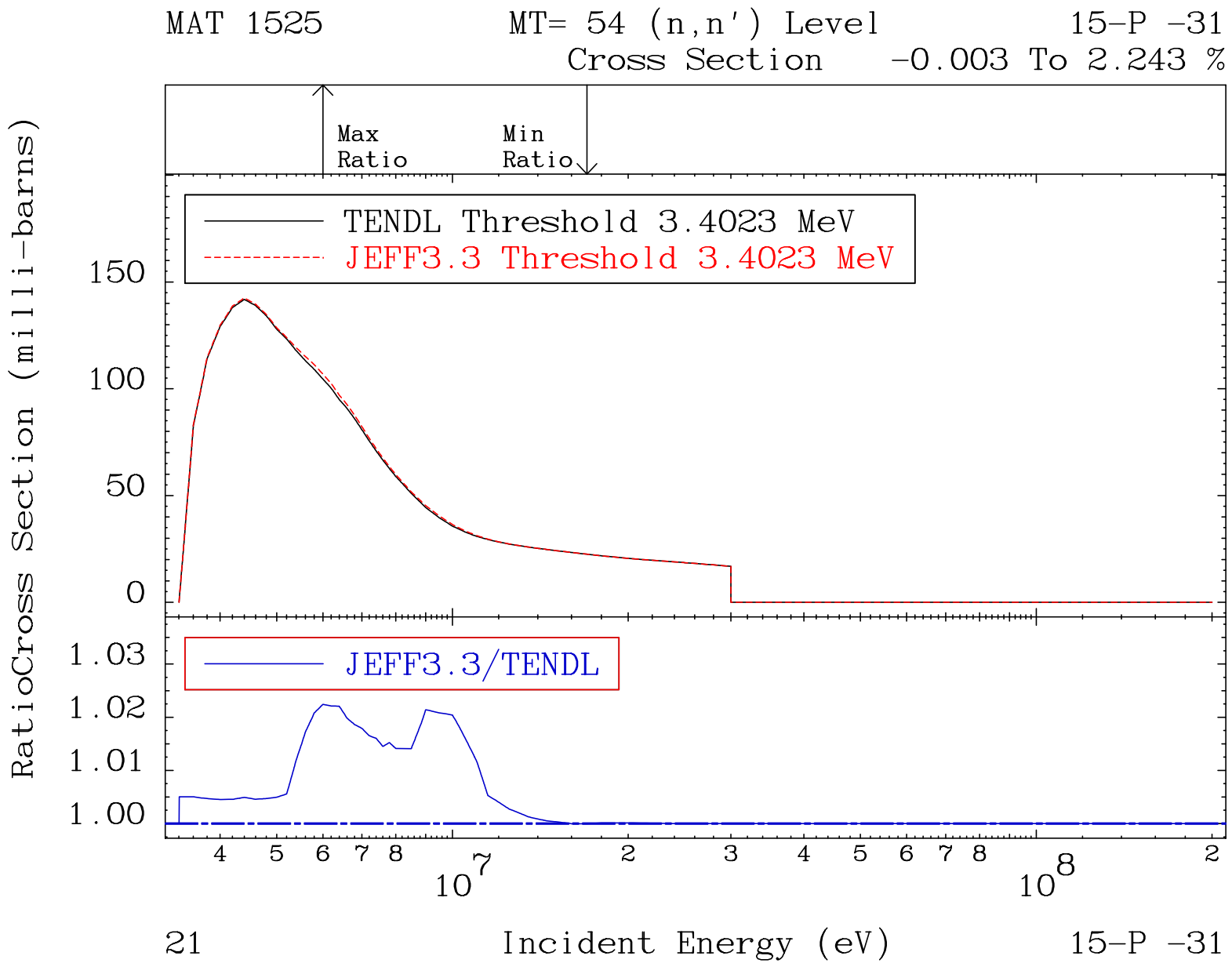

MAT 1525
(n,2n) p
15-P -31
Cross Section
-100.0 To 301.3 %
Max
Ratio
TENDL Threshold 21.488 MeV
JEFF3.3 Threshold 21.547 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
600
500
400
300
200
100
0
6
4
2
0
20
40
60
80
100
120
140
160
180
200
16
Incident Energy (MeV)
15-P -31

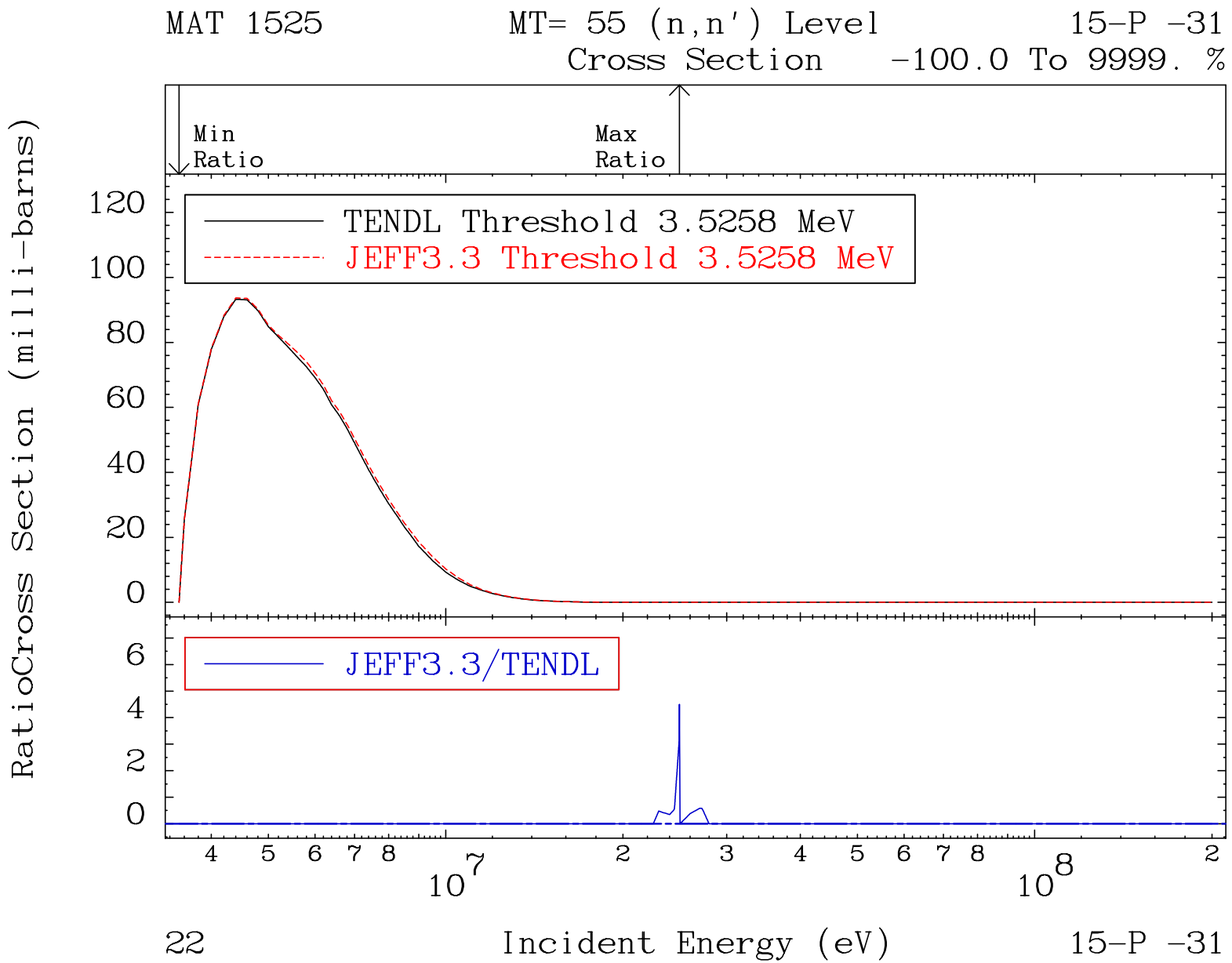

MAT 1525
(n,n') p α
15-P -31
Cross Section
-100.0 To 6502. %
Max
Ratio
12
10
8
6
4
2
0
TENDL Threshold 18.524 MeV
JEFF3.3 Threshold 18.579 MeV
80
40
0
JEFF3.3/TENDL
2
3
4
5
6
7
8
9
10^8
2
RatioCross Section (milli-barns)
17
Incident Energy (eV)
15-P -31

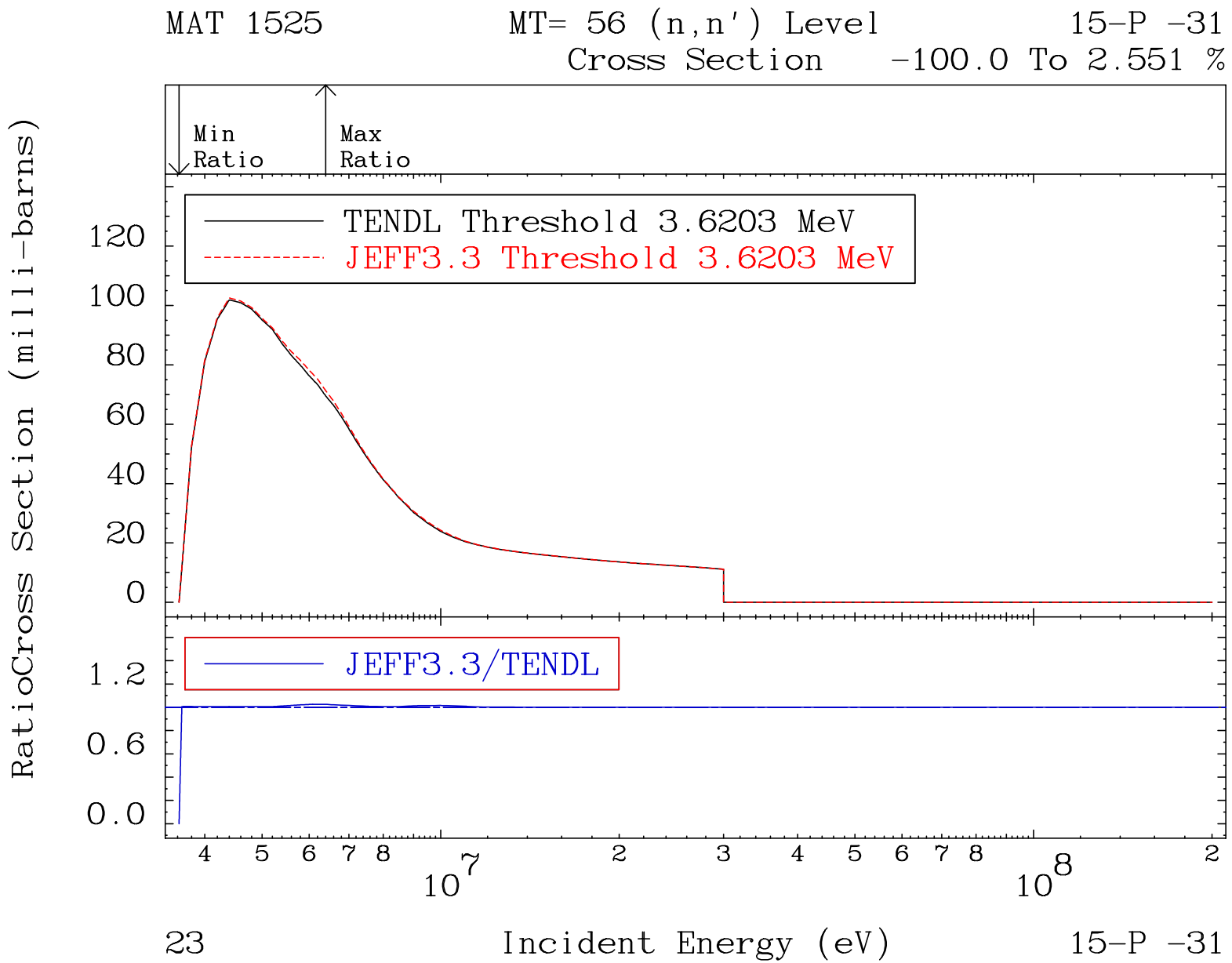

MAT 1525
MT= 51 (n,n') Level
15-P -31
Cross Section -55.11 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 1.3074 MeV
JEFF3.3 Threshold 1.3074 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
500
400
300
200
100
0
10^8
10^4
10^0
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
18
Incident Energy (eV)
15-P -31

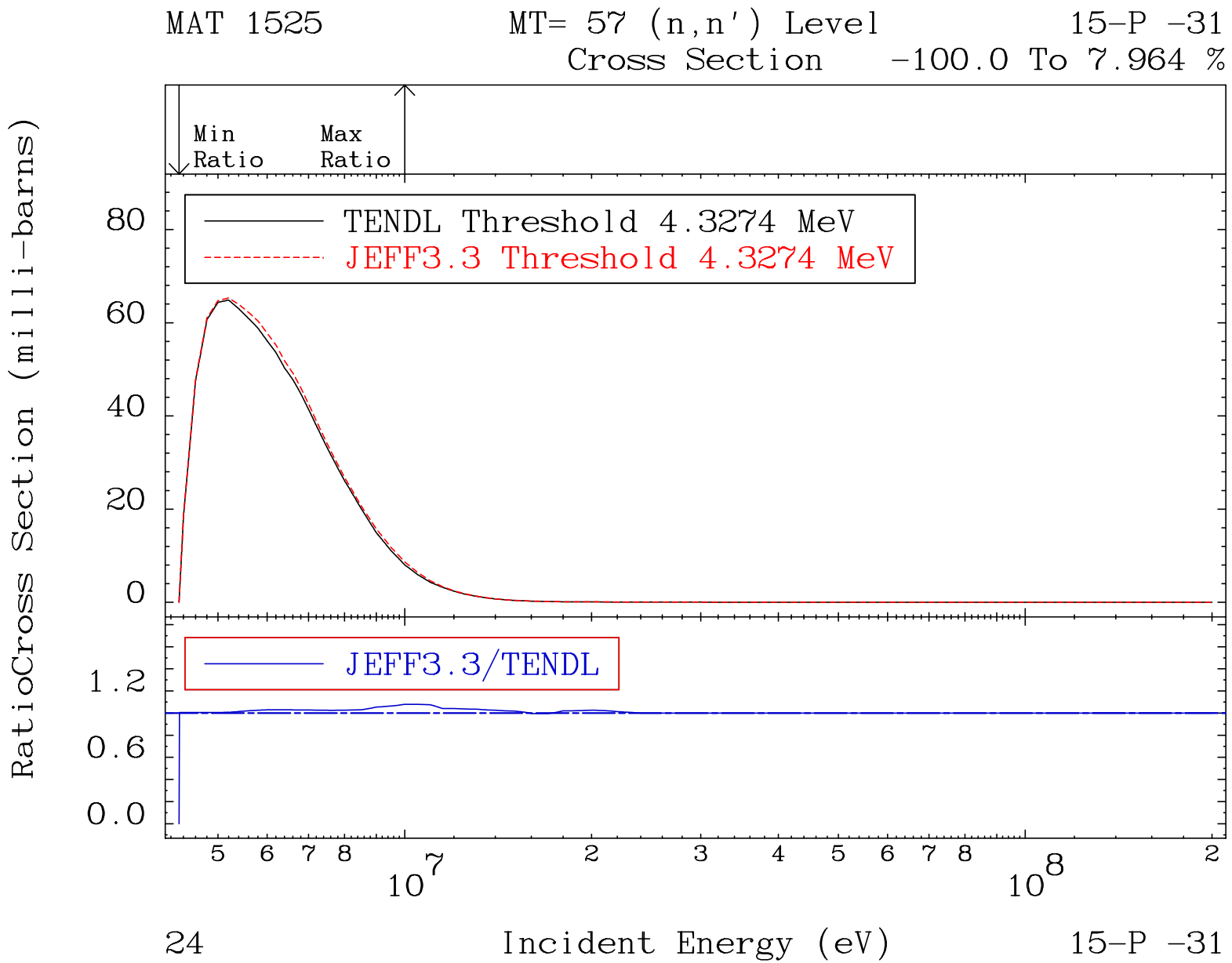

MAT 1525
MT= 52 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 2.3063 MeV
JEFF3.3 Threshold 2.3063 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
350
300
250
200
150
100
50
0
6
4
2
0
3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
19
Incident Energy (eV)
15-P -31

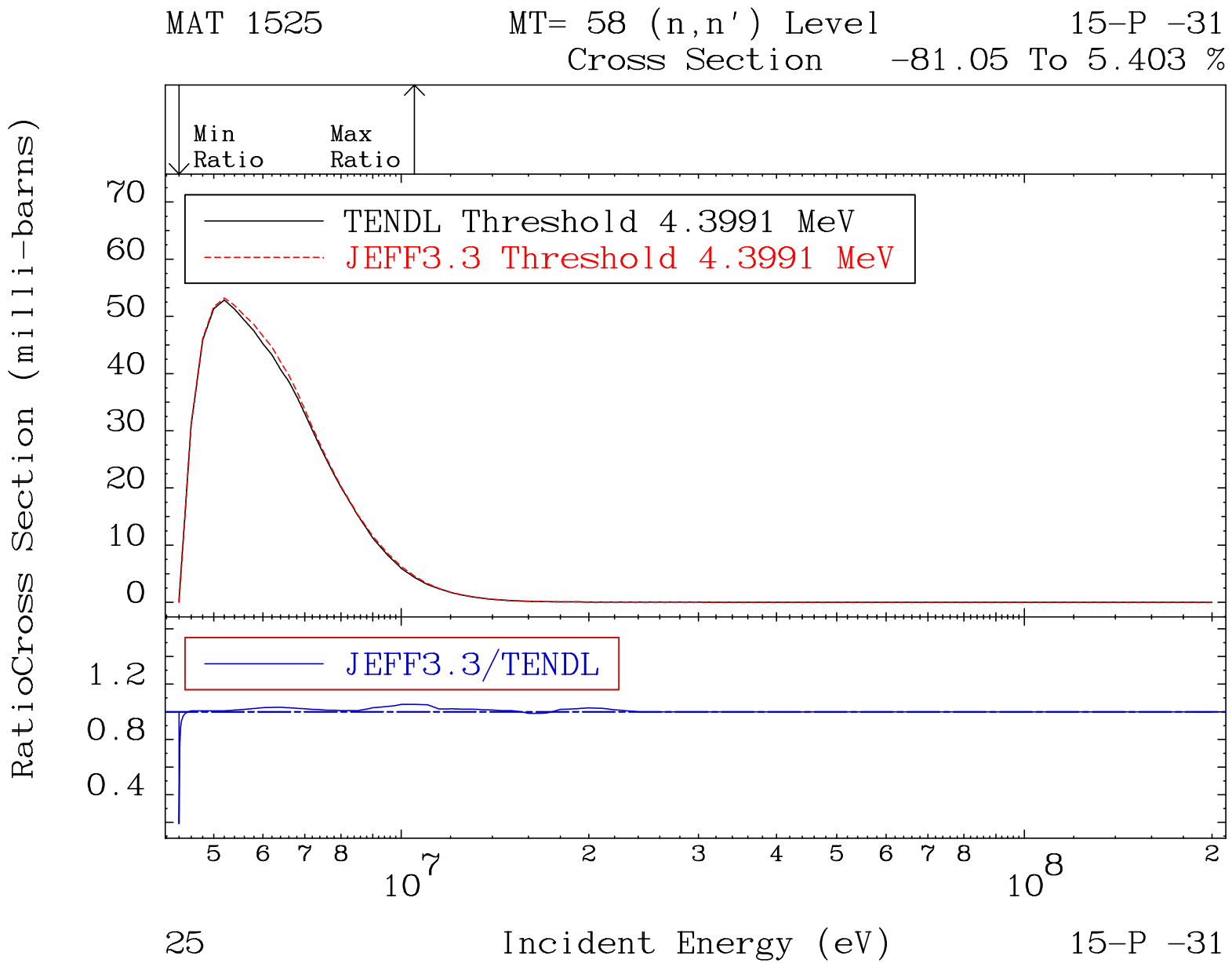

MAT 1525
MT= 53 (n,n') Level
15-P -31
Cross Section -55.25 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 3.2364 MeV
JEFF3.3 Threshold 3.2364 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
10^8
10^4
10^0
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
20
Incident Energy (eV)
15-P -31

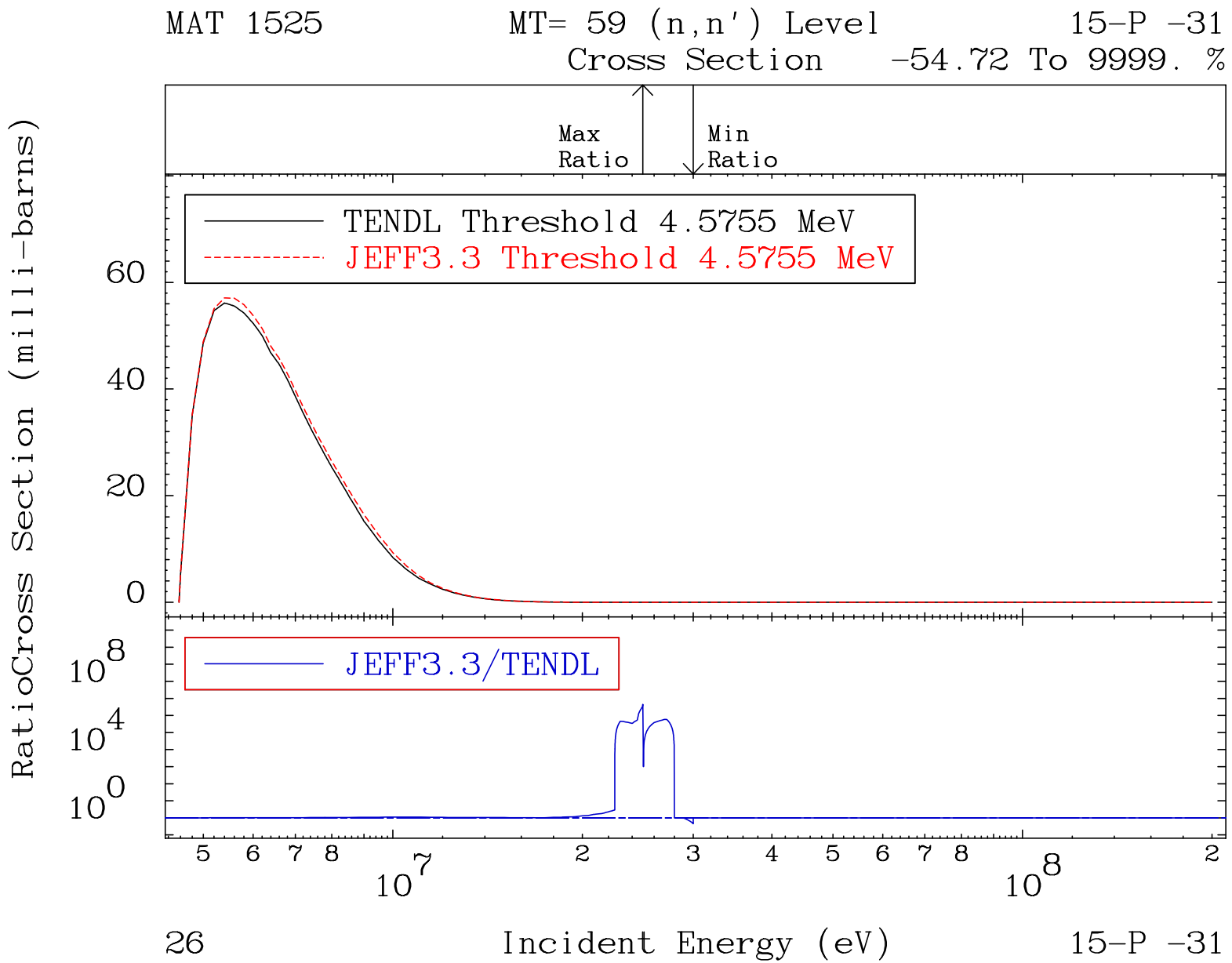

MAT 1525
MT= 54 (n,n') Level
15-P -31
Cross Section -0.003 To 2.243 %
Max Ratio
Min Ratio
TENDL Threshold 3.4023 MeV
JEFF3.3 Threshold 3.4023 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
150
100
50
0
1.03
1.02
1.01
1.00
4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
21
Incident Energy (eV)
15-P -31

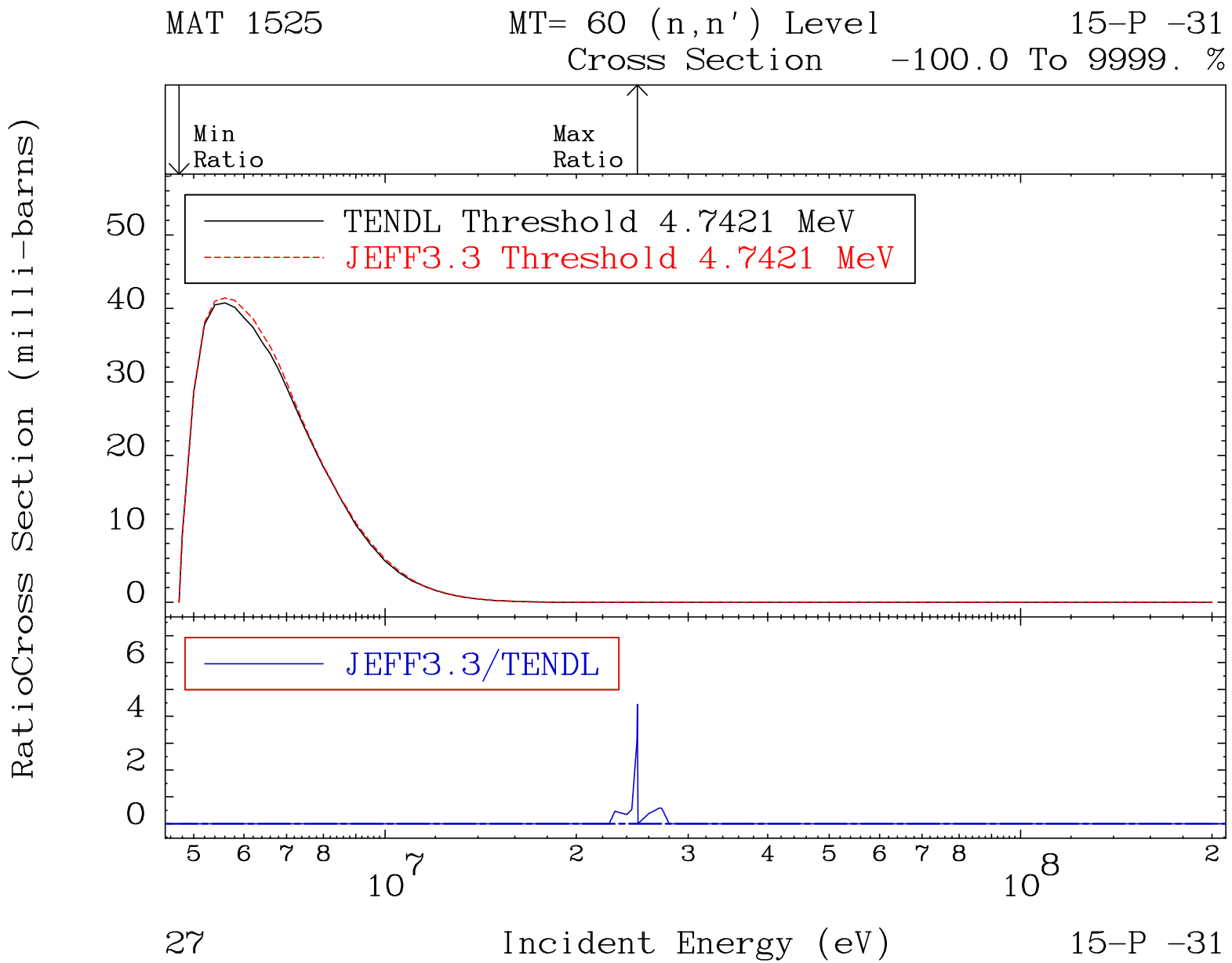

MAT 1525
MT= 55 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 3.5258 MeV
JEFF3.3 Threshold 3.5258 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
6
4
2
0
4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
22
Incident Energy (eV)
15-P -31

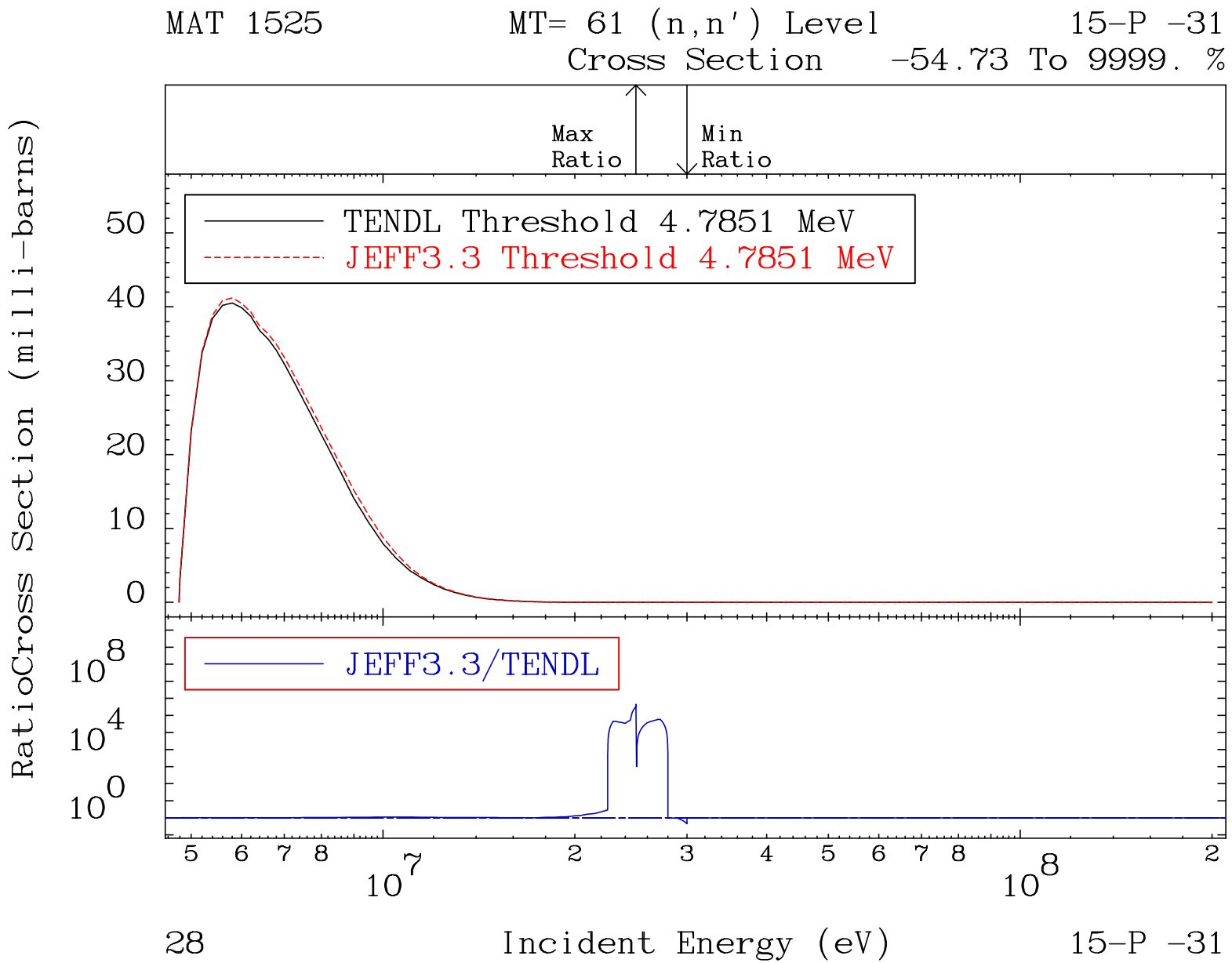

MAT 1525
MT= 56 (n,n') Level
15-P -31
Cross Section -100.0 To 2.551 %
Min Ratio
Max Ratio
TENDL Threshold 3.6203 MeV
JEFF3.3 Threshold 3.6203 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
1.2
0.6
0.0
4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
23
Incident Energy (eV)
15-P -31

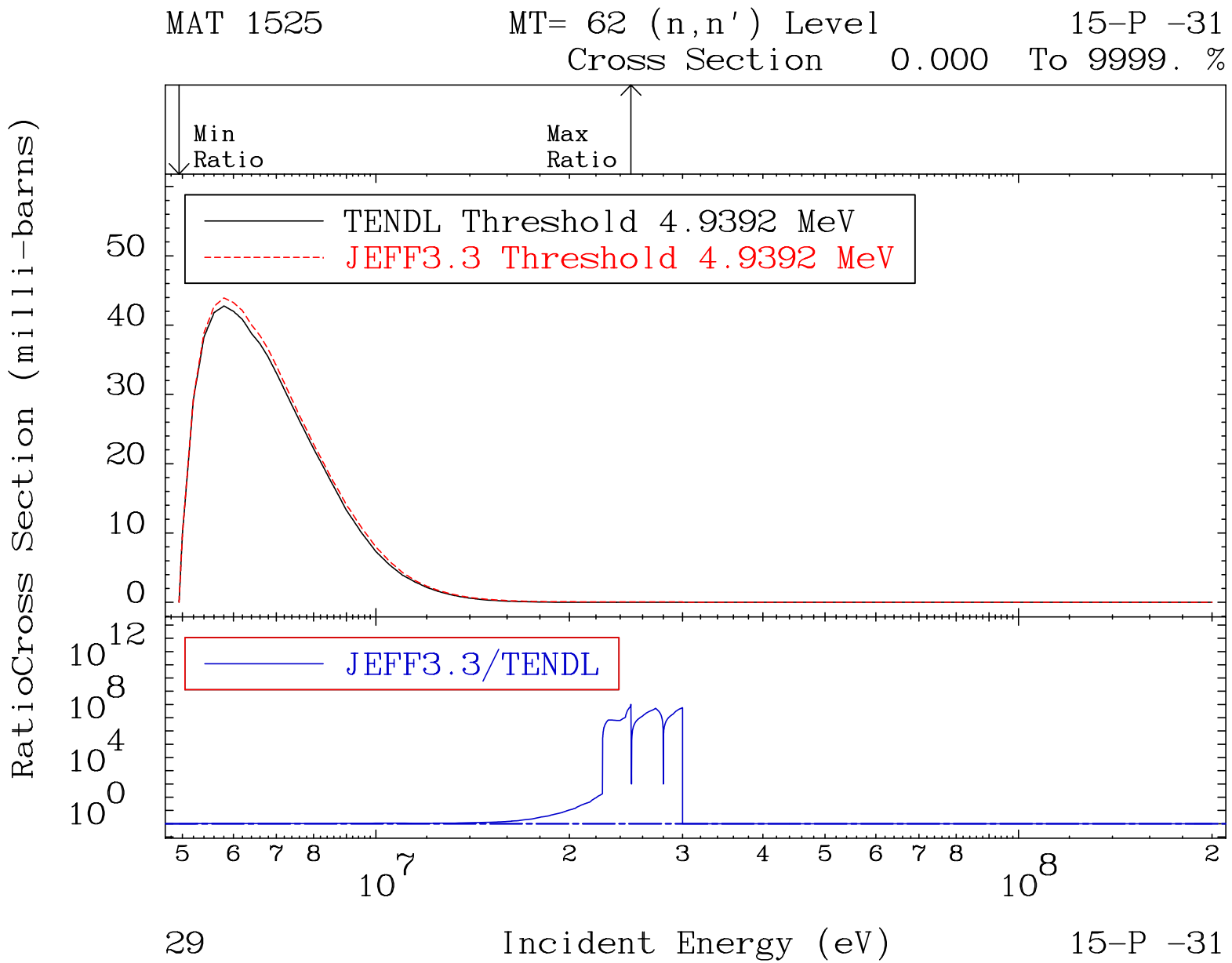

MAT 1525
MT= 57 (n,n') Level
15-P -31
Cross Section -100.0 To 7.964 %
Min Ratio
Max Ratio
TENDL Threshold 4.3274 MeV
JEFF3.3 Threshold 4.3274 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
1.2
0.6
0.0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
24
Incident Energy (eV)
15-P -31

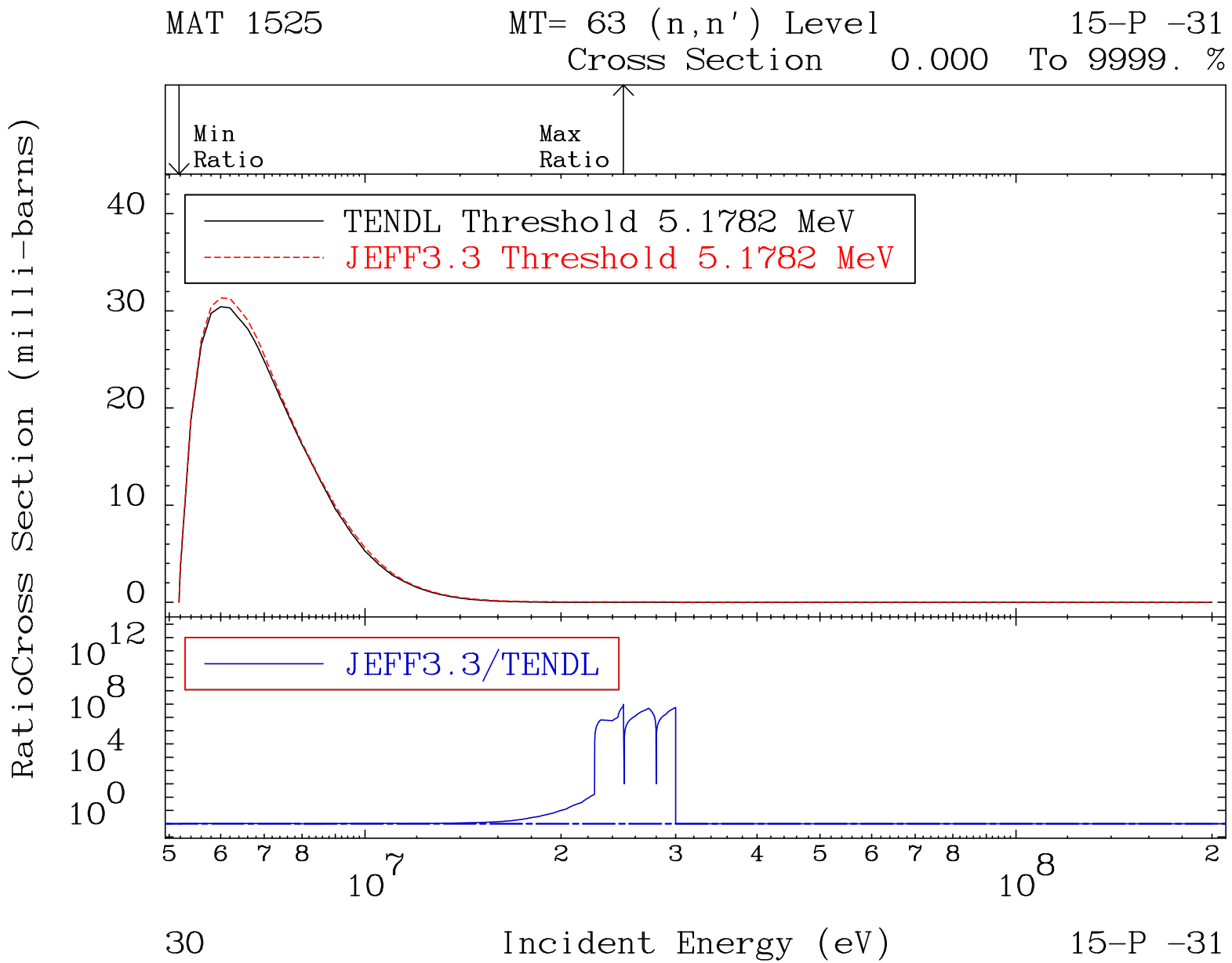

MAT 1525
MT= 58 (n,n') Level
15-P -31
Cross Section -81.05 To 5.403 %
Min Ratio
Max Ratio
TENDL Threshold 4.3991 MeV
JEFF3.3 Threshold 4.3991 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
70
60
50
40
30
20
10
0
1.2
0.8
0.4
5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
25
Incident Energy (eV)
15-P -31

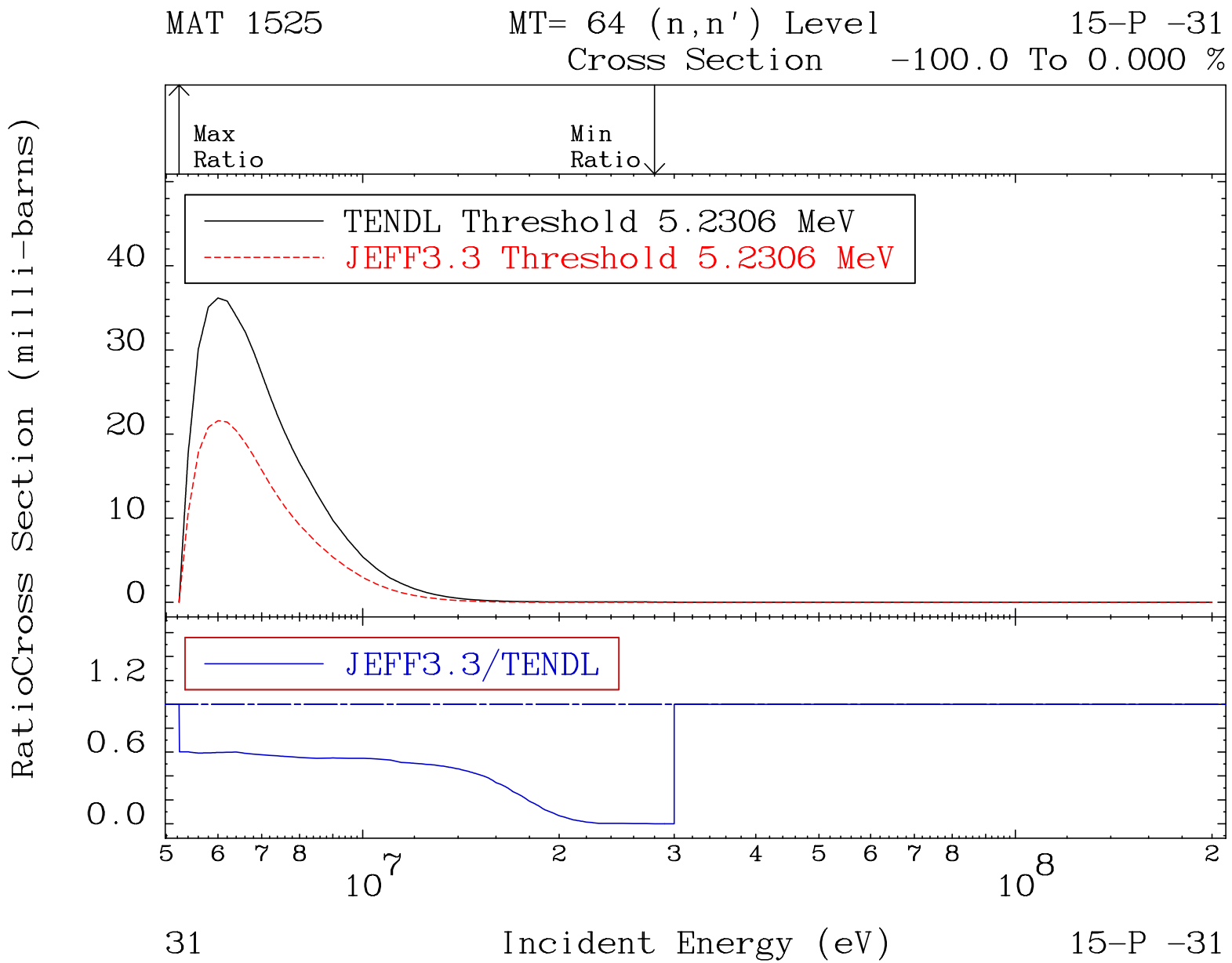

MAT 1525
MT= 59 (n,n') Level
15-P -31
Cross Section -54.72 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 4.5755 MeV
JEFF3.3 Threshold 4.5755 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
60
40
20
0
10^8
10^4
10^0
5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
26
Incident Energy (eV)
15-P -31

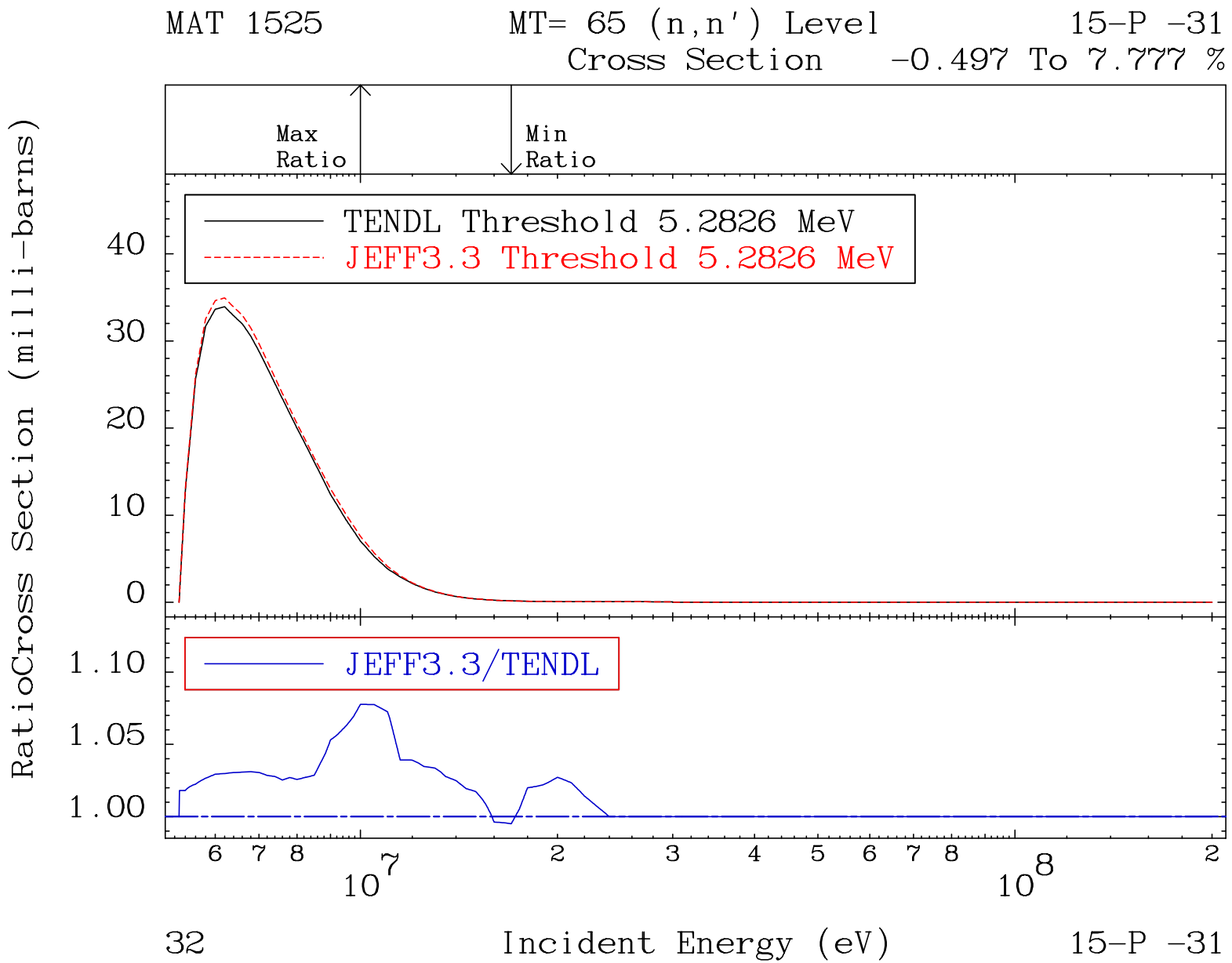

MAT 1525
MT= 60 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 4.7421 MeV
JEFF3.3 Threshold 4.7421 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
6
4
2
0
5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
27
Incident Energy (eV)
15-P -31

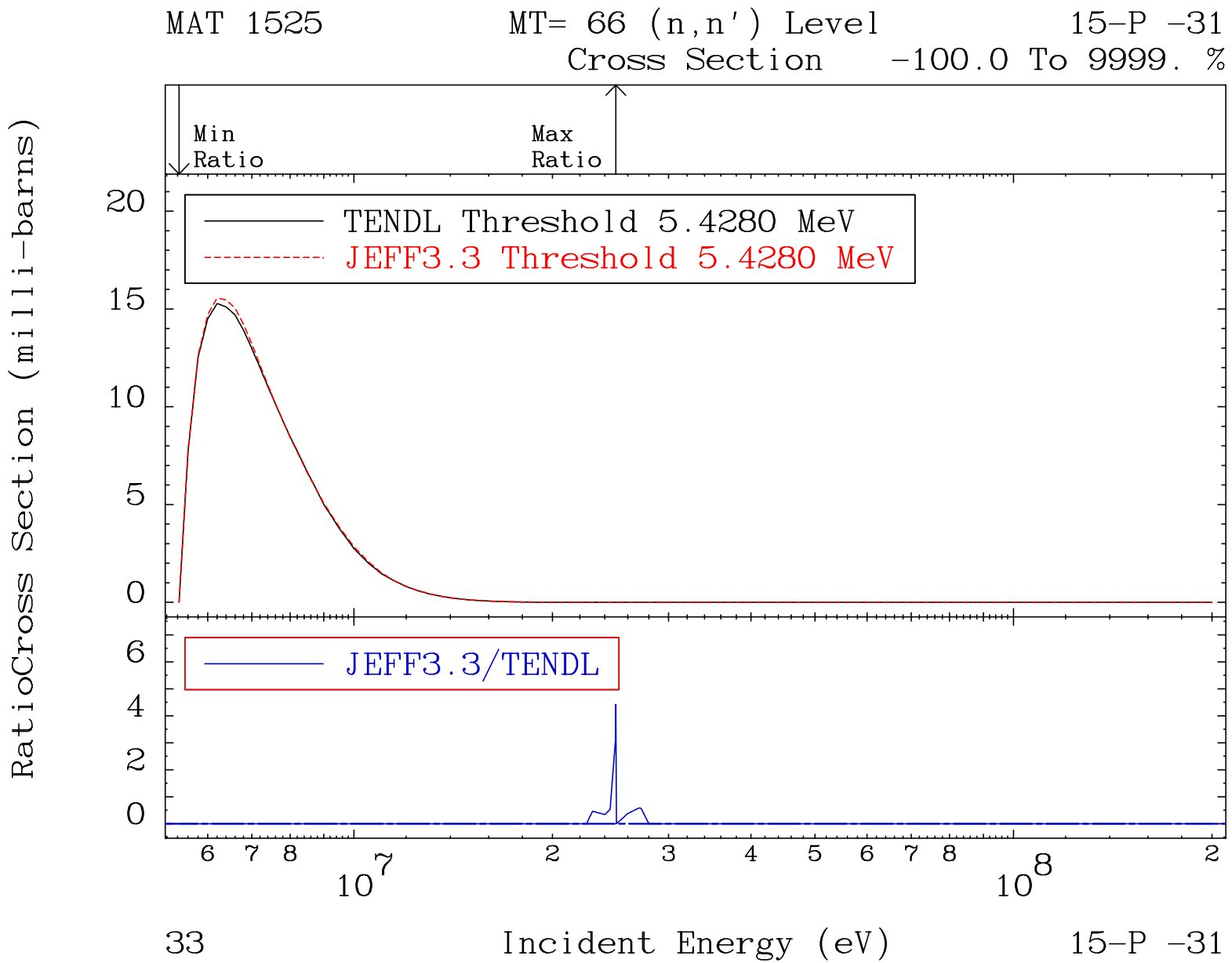

MAT 1525
MT= 61 (n,n') Level
15-P -31
Cross Section -54.73 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 4.7851 MeV
JEFF3.3 Threshold 4.7851 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
10^8
10^4
10^0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
28
Incident Energy (eV)
15-P -31

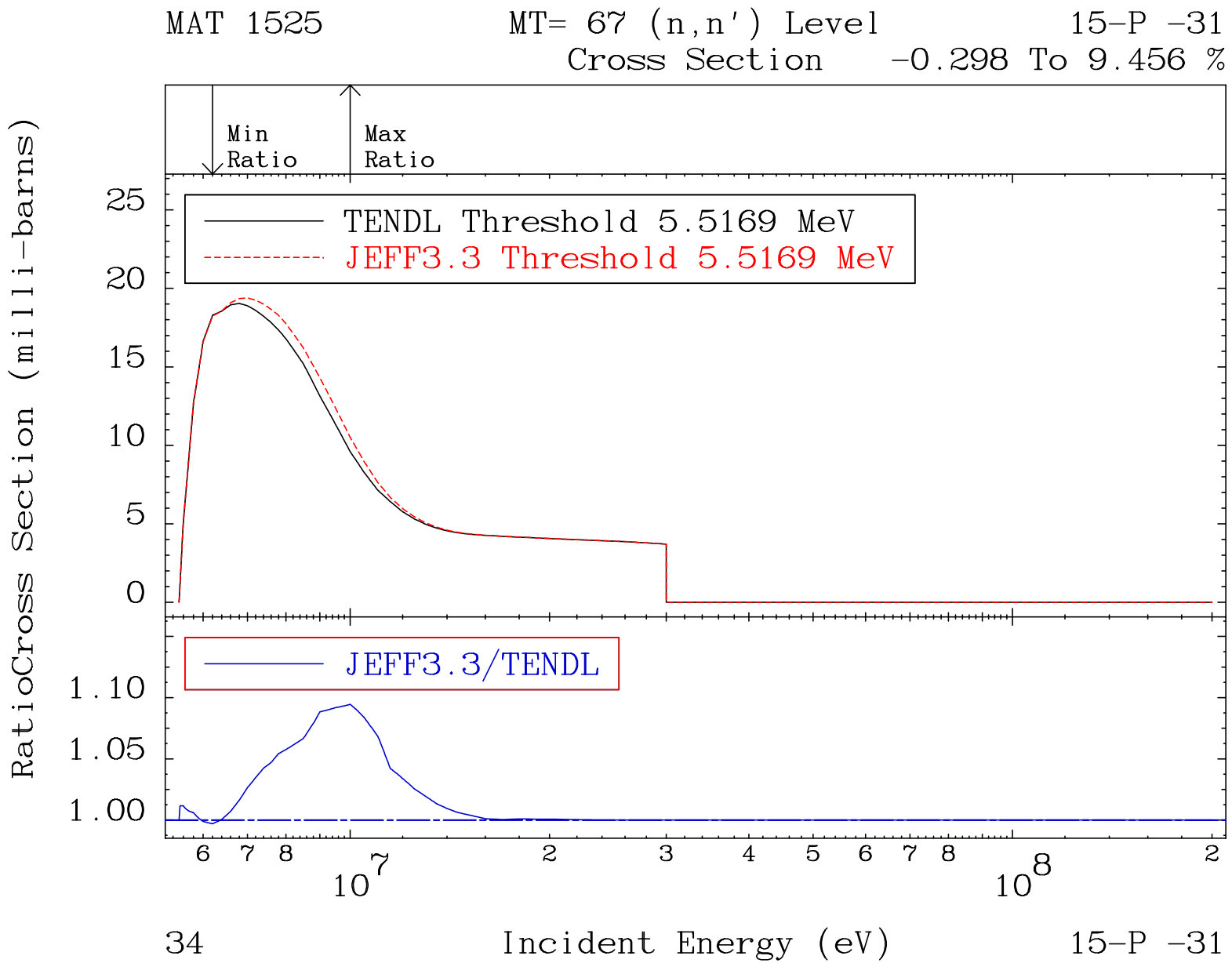

MAT 1525
MT= 62 (n,n') Level
15-P -31
Cross Section 0.000 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 4.9392 MeV
JEFF3.3 Threshold 4.9392 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
50
40
30
20
10
0
10^{12}
10^{8}
10^{4}
10^{0}
5 6 7 8 10^{7} 2 3 4 5 6 7 8 10^{8} 2
29
Incident Energy (eV)
15-P -31

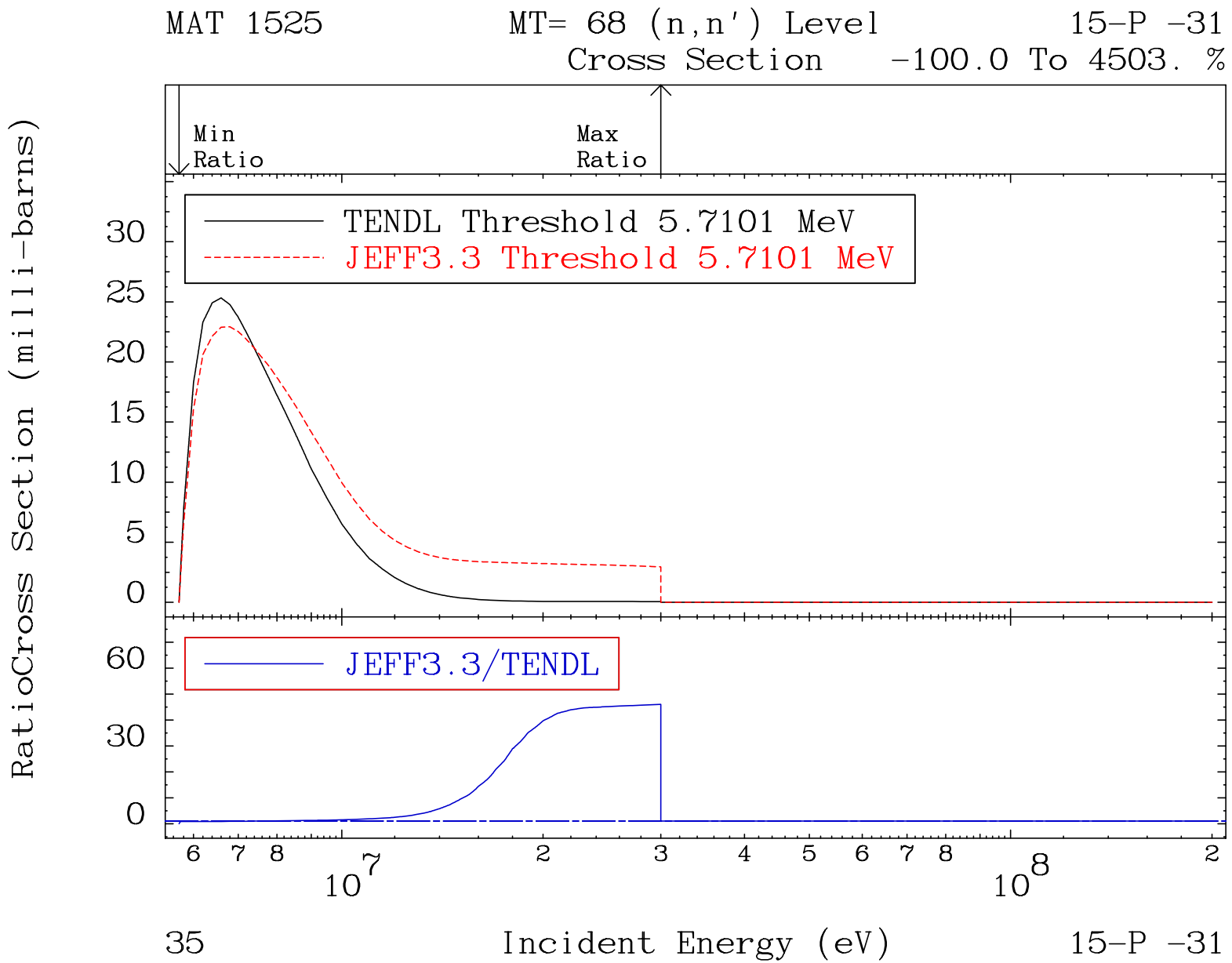

MAT 1525
MT= 63 (n,n') Level
15-P -31
Cross Section 0.000 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.1782 MeV
JEFF3.3 Threshold 5.1782 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
30
15-P -31

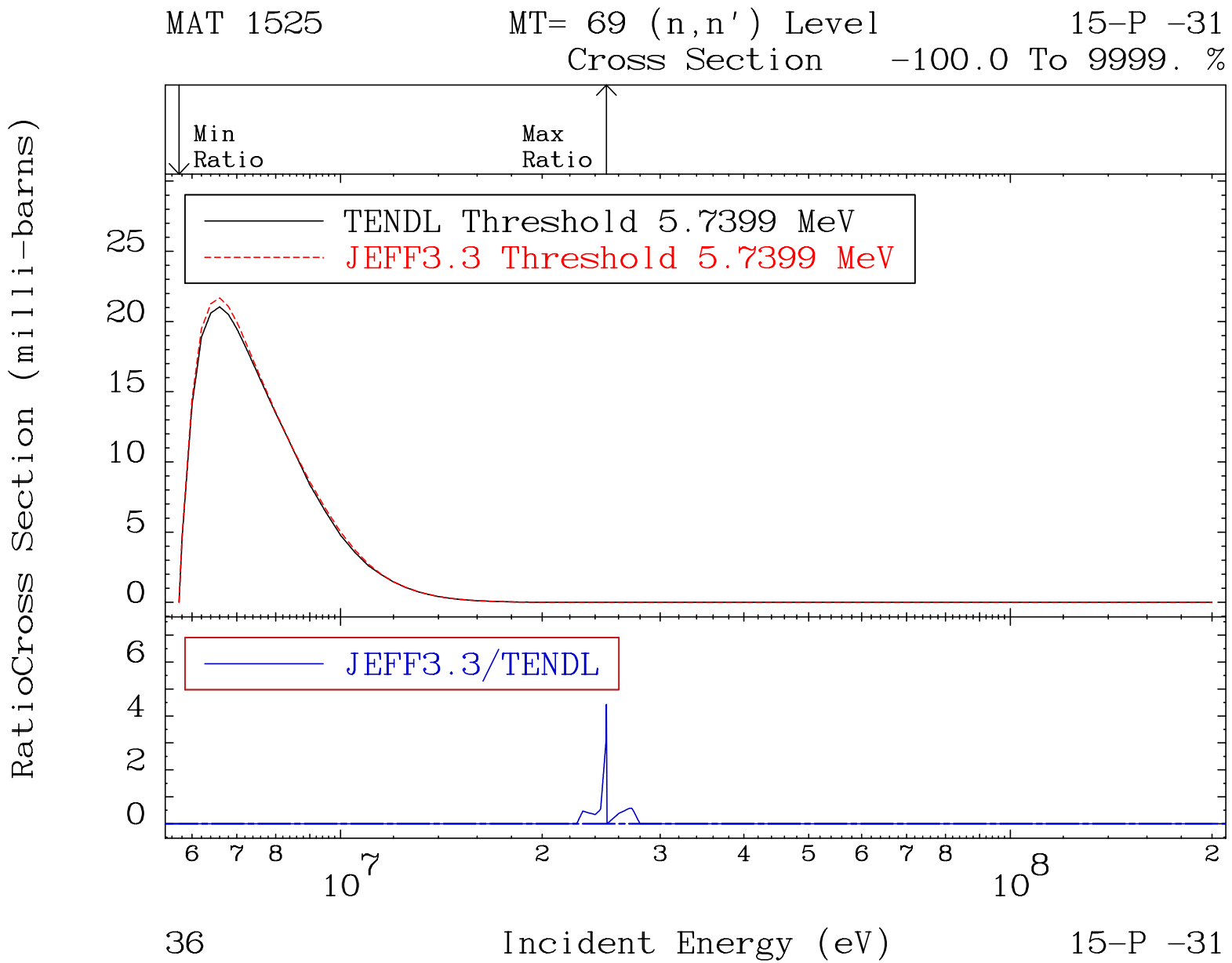

MAT 1525
MT= 64 (n,n') Level
15-P -31
Cross Section -100.0 To 0.000 %
Max Ratio
Min Ratio
TENDL Threshold 5.2306 MeV
JEFF3.3 Threshold 5.2306 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
1.2
0.6
0.0
5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
31
Incident Energy (eV)
15-P -31

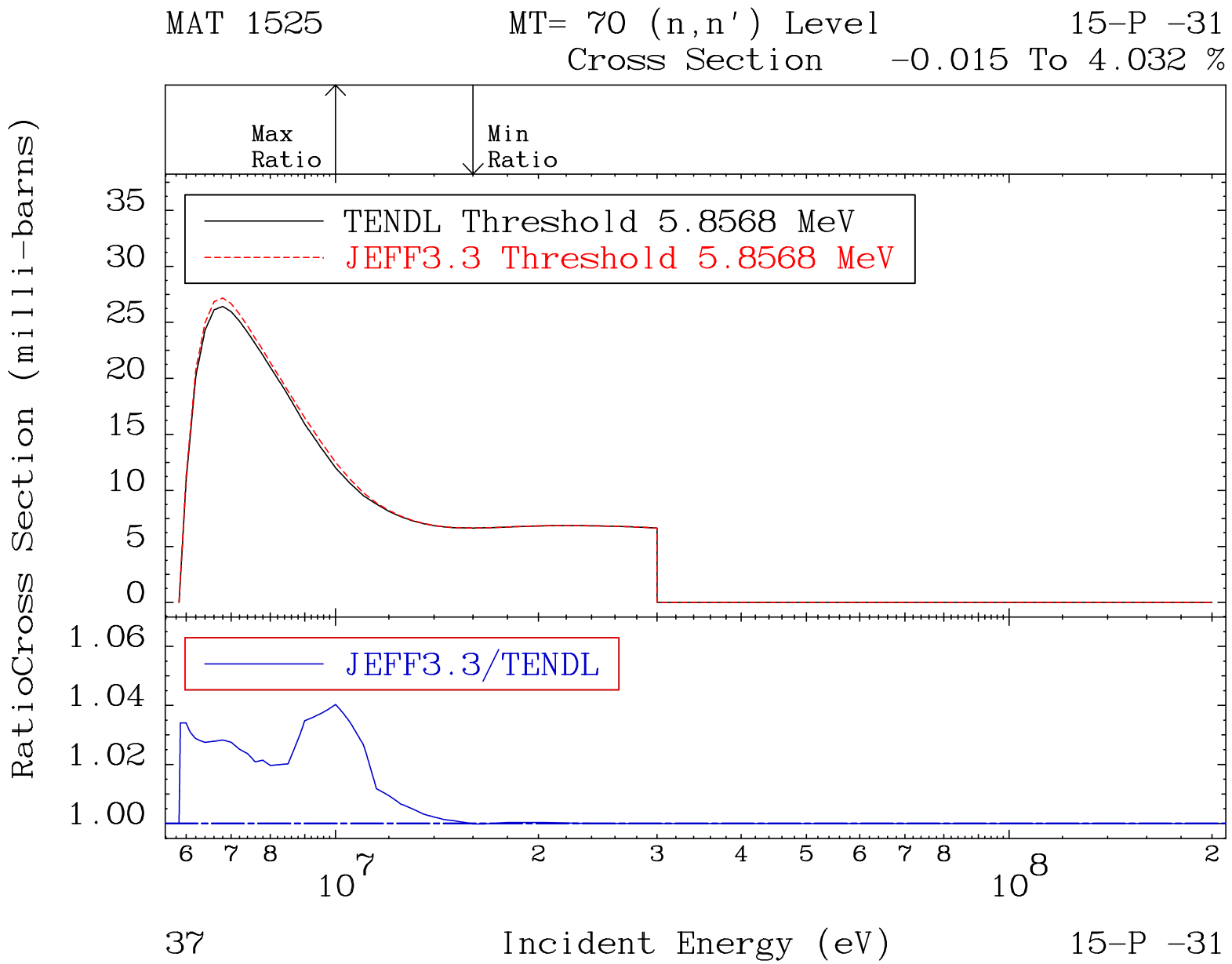

MAT 1525
MT= 65 (n,n') Level
15-P -31
Cross Section -0.497 To 7.777 %
Max Ratio
Min Ratio
TENDL Threshold 5.2826 MeV
JEFF3.3 Threshold 5.2826 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
40
30
20
10
0
1.10
1.05
1.00
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
32
Incident Energy (eV)
15-P -31

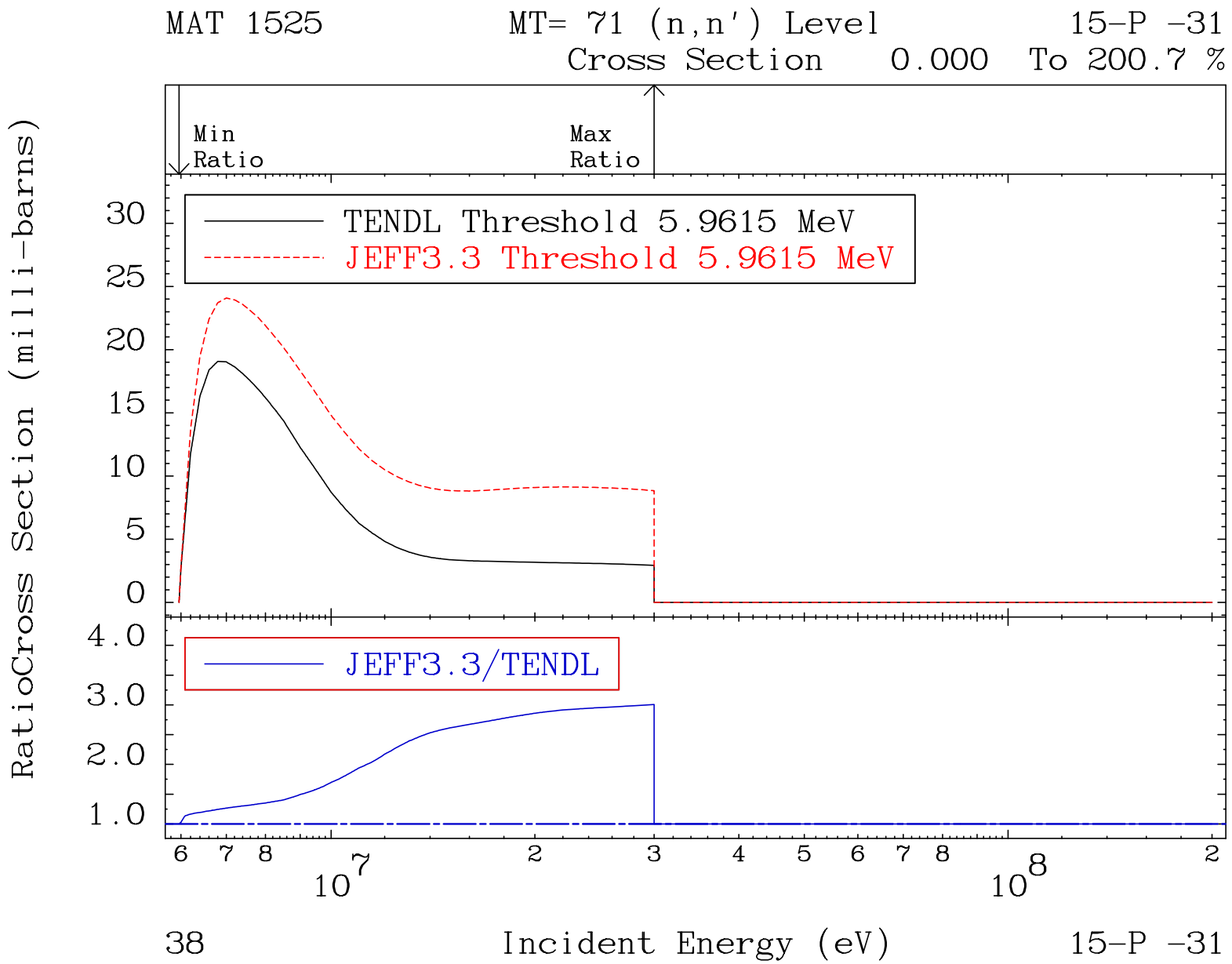

MAT 1525
MT= 66 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.4280 MeV
JEFF3.3 Threshold 5.4280 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
33
15-P -31

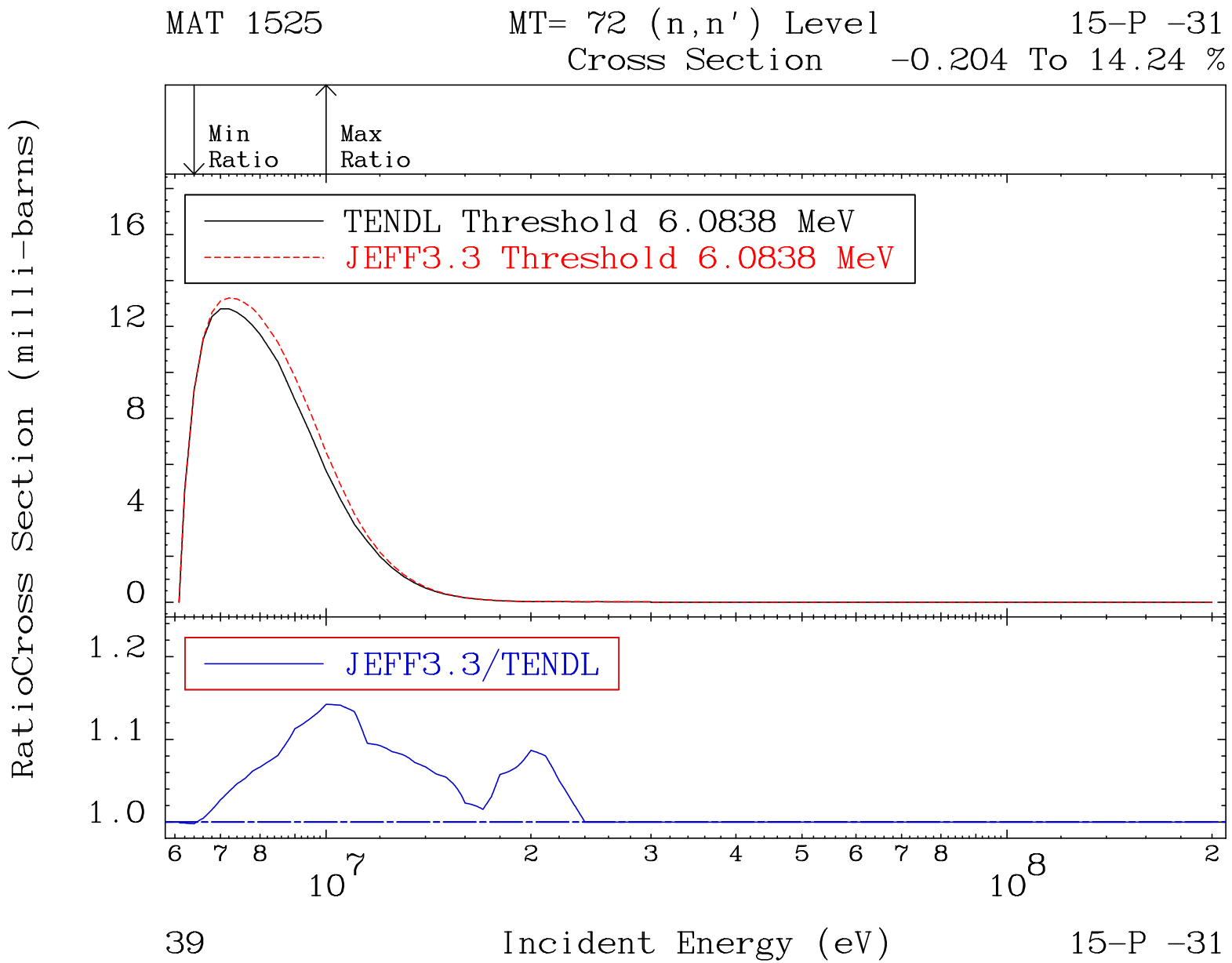

MAT 1525
MT= 67 (n,n') Level
15-P -31
Cross Section
-0.298 To 9.456 %
Min Ratio
Max Ratio
TENDL Threshold 5.5169 MeV
JEFF3.3 Threshold 5.5169 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
1.10
1.05
1.00
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
34
Incident Energy (eV)
15-P -31

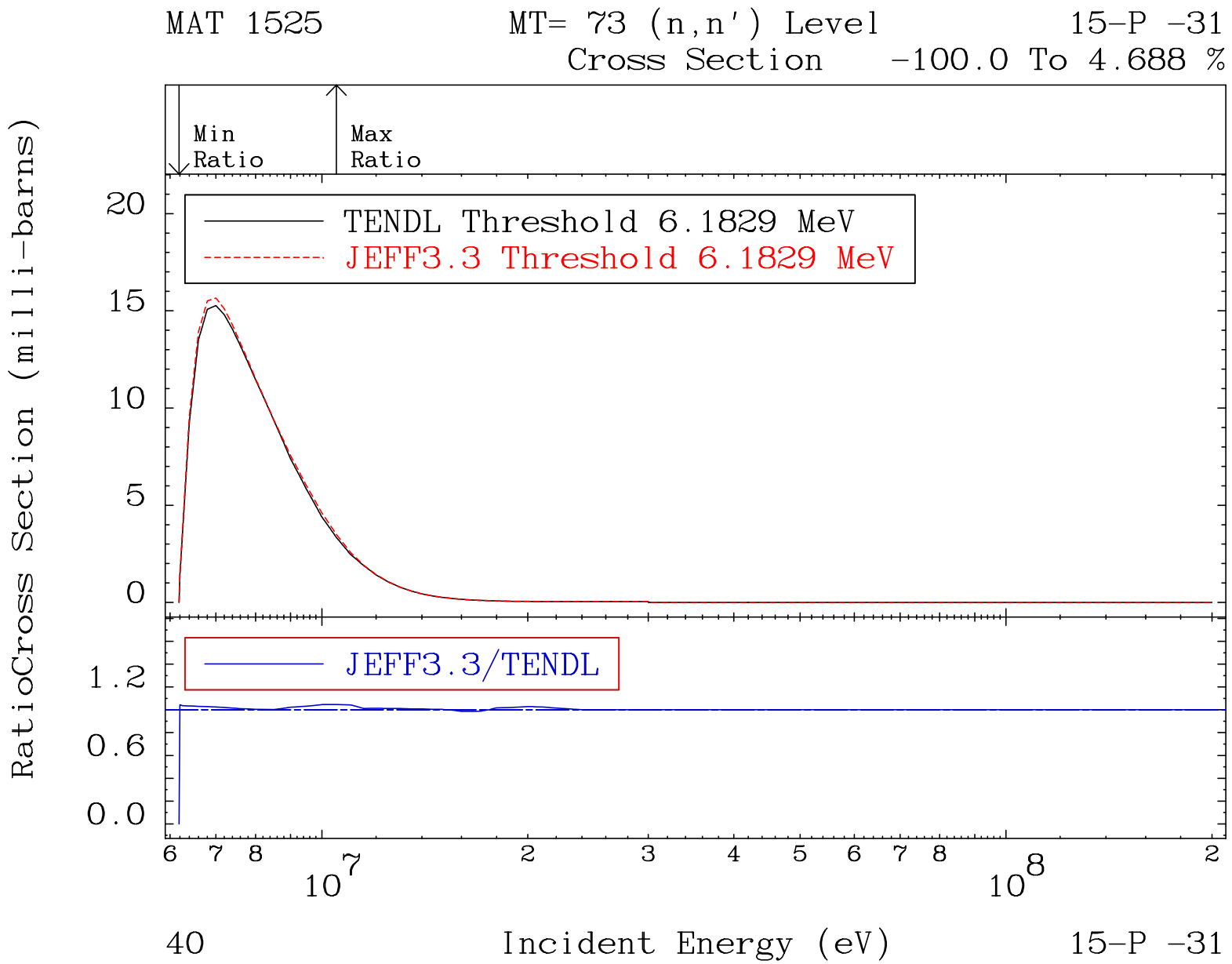

MAT 1525
MT= 68 (n,n') Level
15-P -31
Cross Section -100.0 To 4503. %
Min Ratio
Max Ratio
TENDL Threshold 5.7101 MeV
JEFF3.3 Threshold 5.7101 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
35
15-P -31

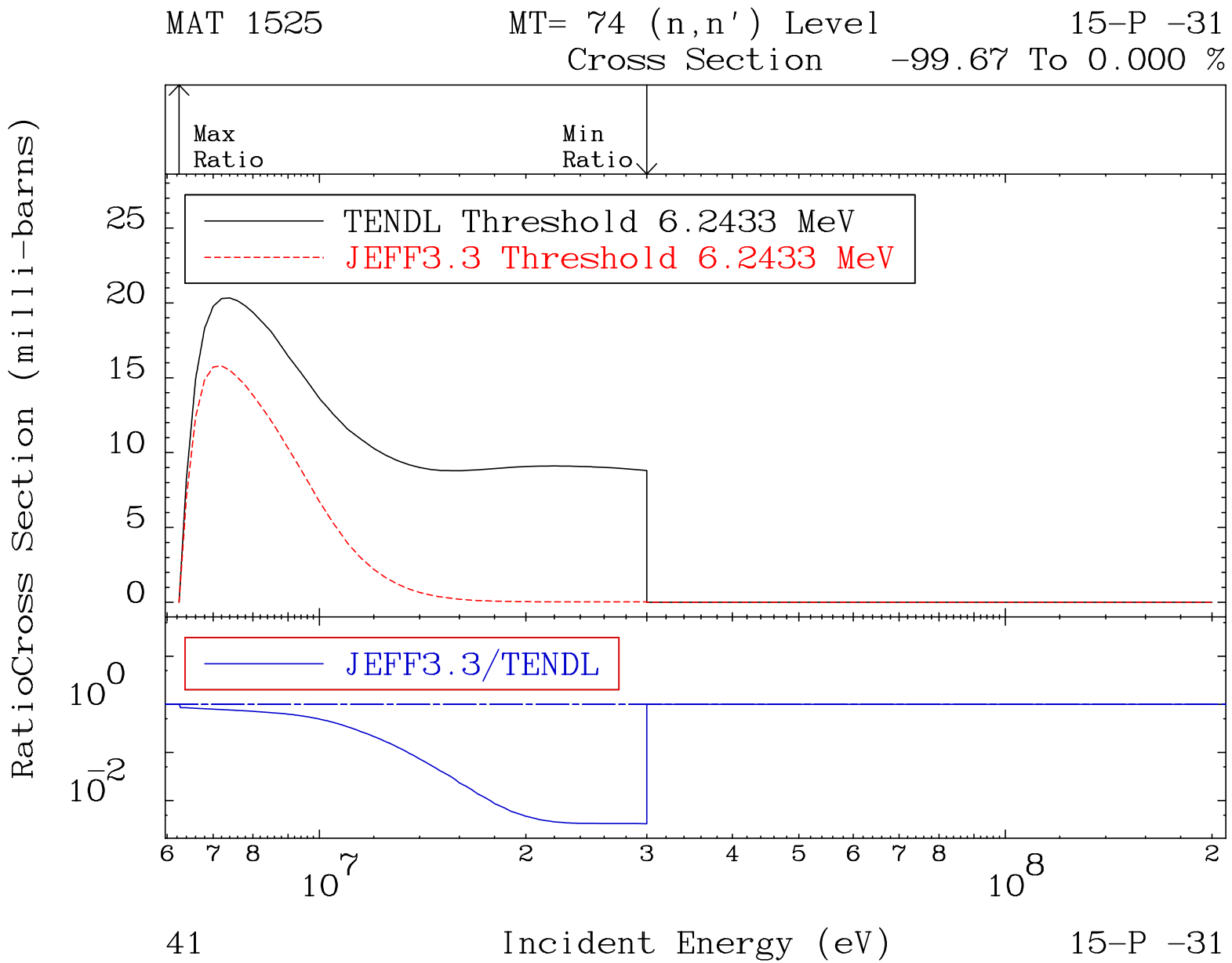

MAT 1525
MT= 69 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 5.7399 MeV
JEFF3.3 Threshold 5.7399 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
36
15-P -31

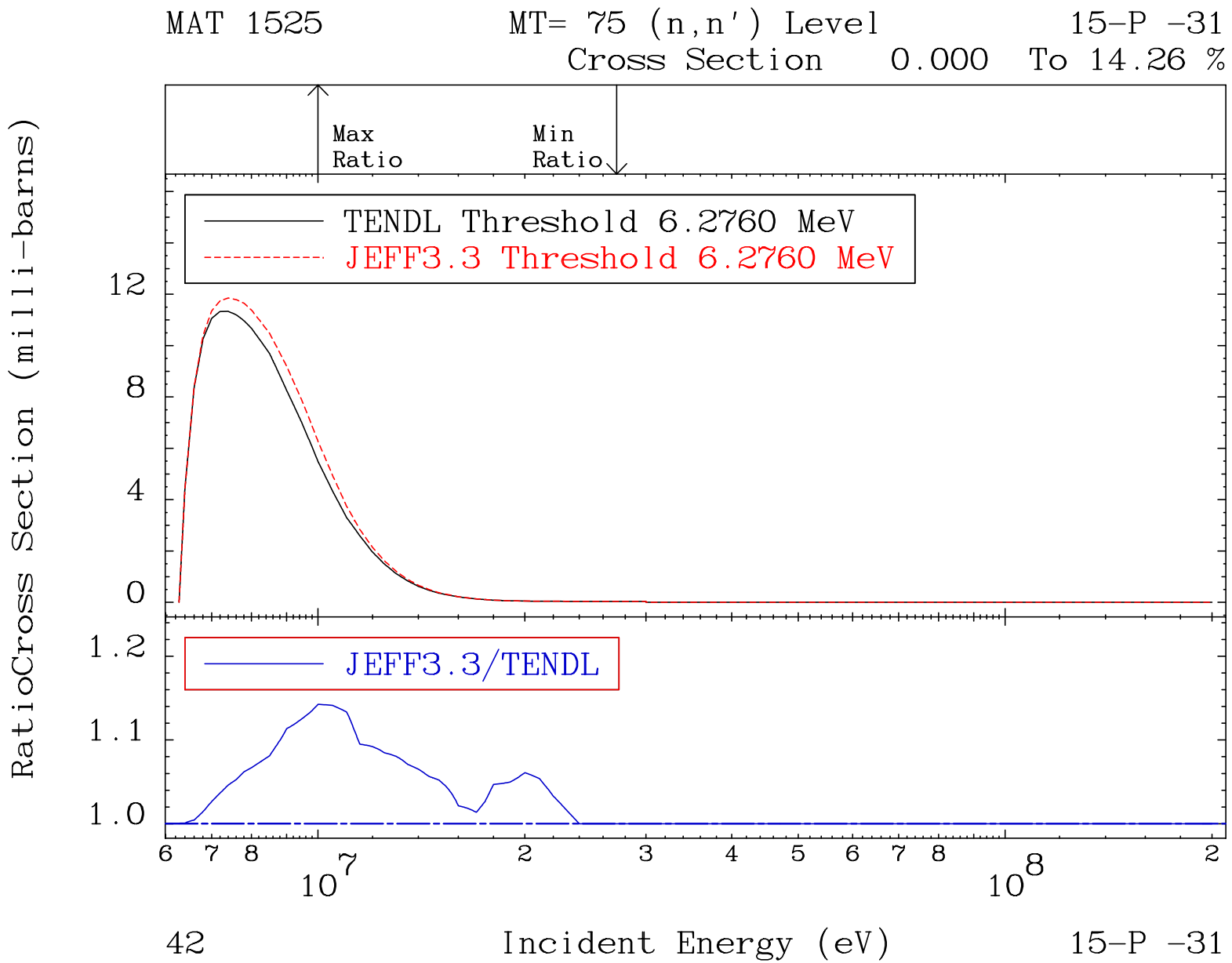

MAT 1525
MT= 70 (n,n') Level
15-P -31
Cross Section
-0.015 To 4.032 %
Max Ratio
Min Ratio
TENDL Threshold 5.8568 MeV
JEFF3.3 Threshold 5.8568 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
35
30
25
20
15
10
5
0
1.06
1.04
1.02
1.00
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
37
Incident Energy (eV)
15-P -31

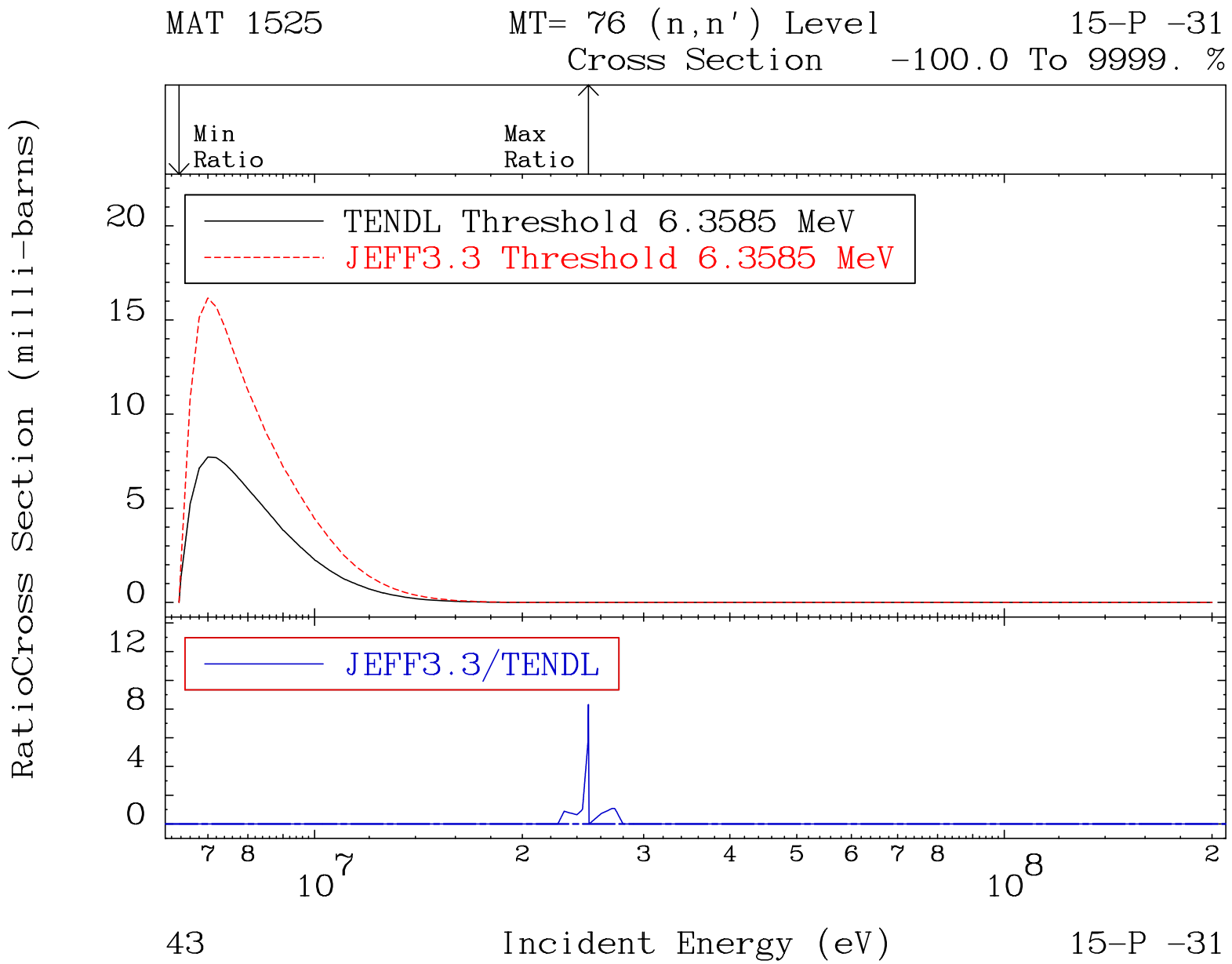

MAT 1525
MT= 71 (n,n') Level
15-P -31
Cross Section 0.000 To 200.7 %
Min Ratio
Max Ratio
TENDL Threshold 5.9615 MeV
JEFF3.3 Threshold 5.9615 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
30
25
20
15
10
5
0
4.0
3.0
2.0
1.0
6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
38
Incident Energy (eV)
15-P -31

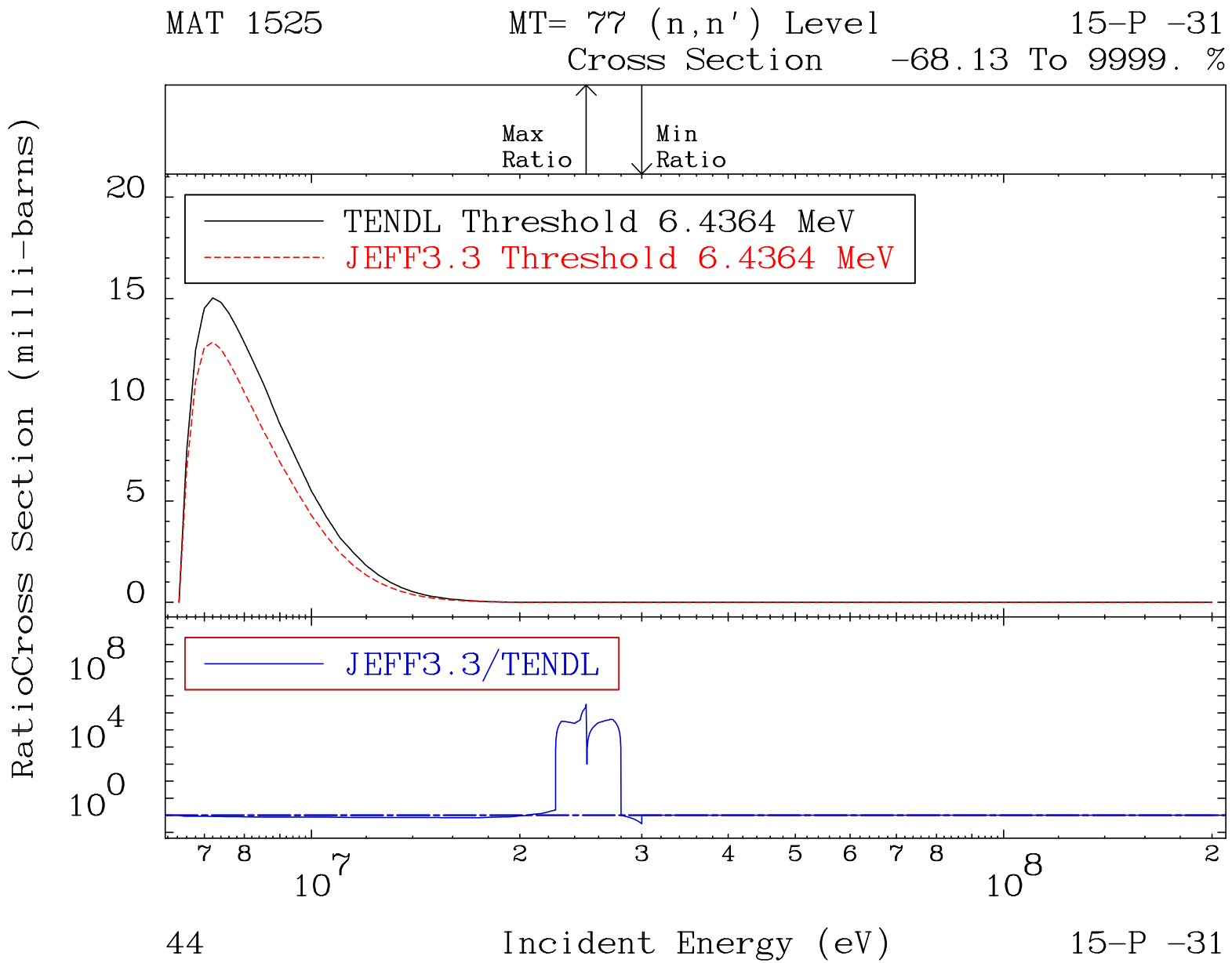

MAT 1525
MT= 72 (n,n') Level
15-P -31
Cross Section -0.204 To 14.24 %
Min Ratio
Max Ratio
TENDL Threshold 6.0838 MeV
JEFF3.3 Threshold 6.0838 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
16
12
8
4
0
1.2
1.1
1.0
6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
39
Incident Energy (eV)
15-P -31

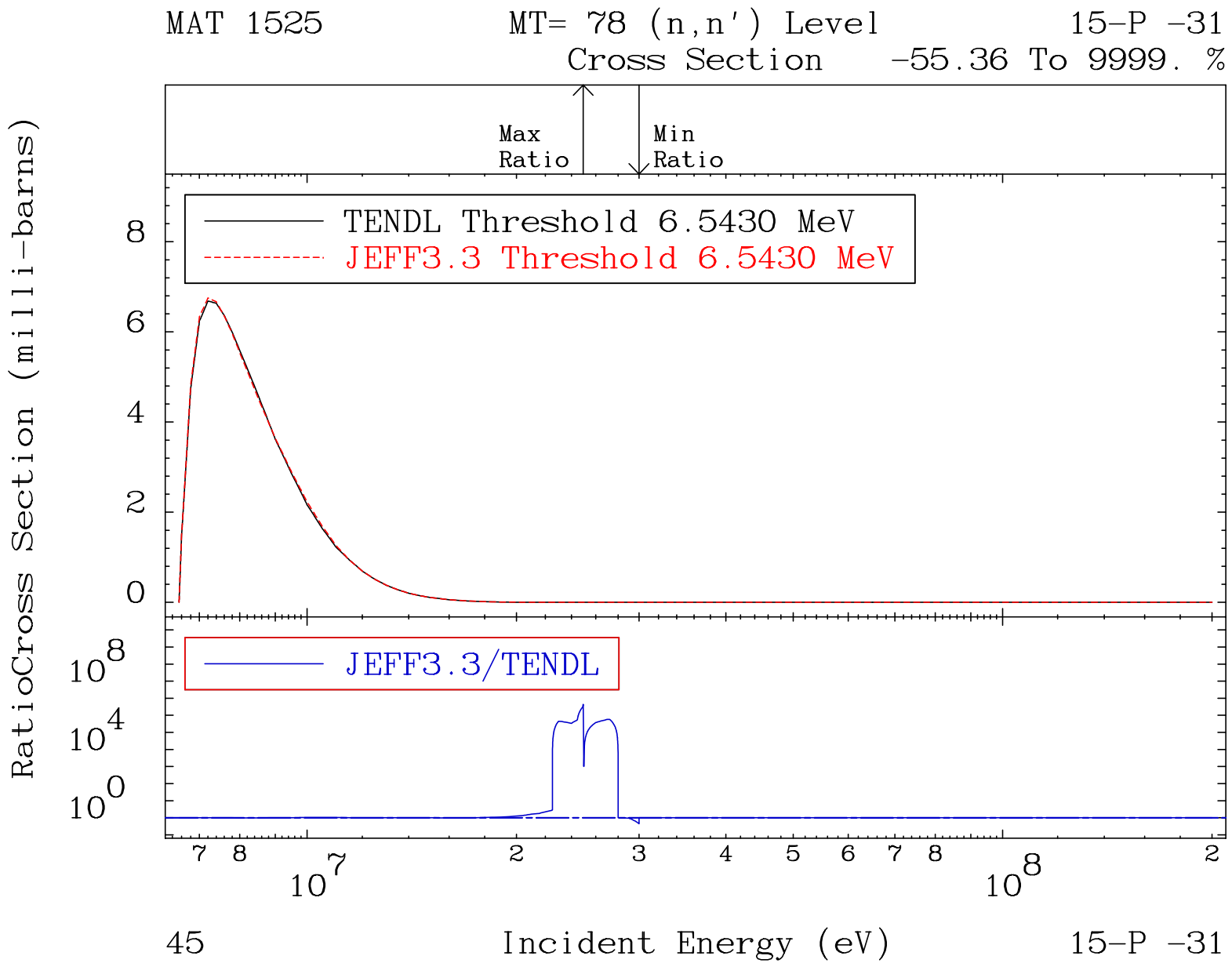

MAT 1525
MT= 73 (n,n') Level
15-P -31
Cross Section -100.0 To 4.688 %
Min Ratio
Max Ratio
TENDL Threshold 6.1829 MeV
JEFF3.3 Threshold 6.1829 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
20
15
10
5
0
1.2
0.6
0.0
6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
40
Incident Energy (eV)
15-P -31

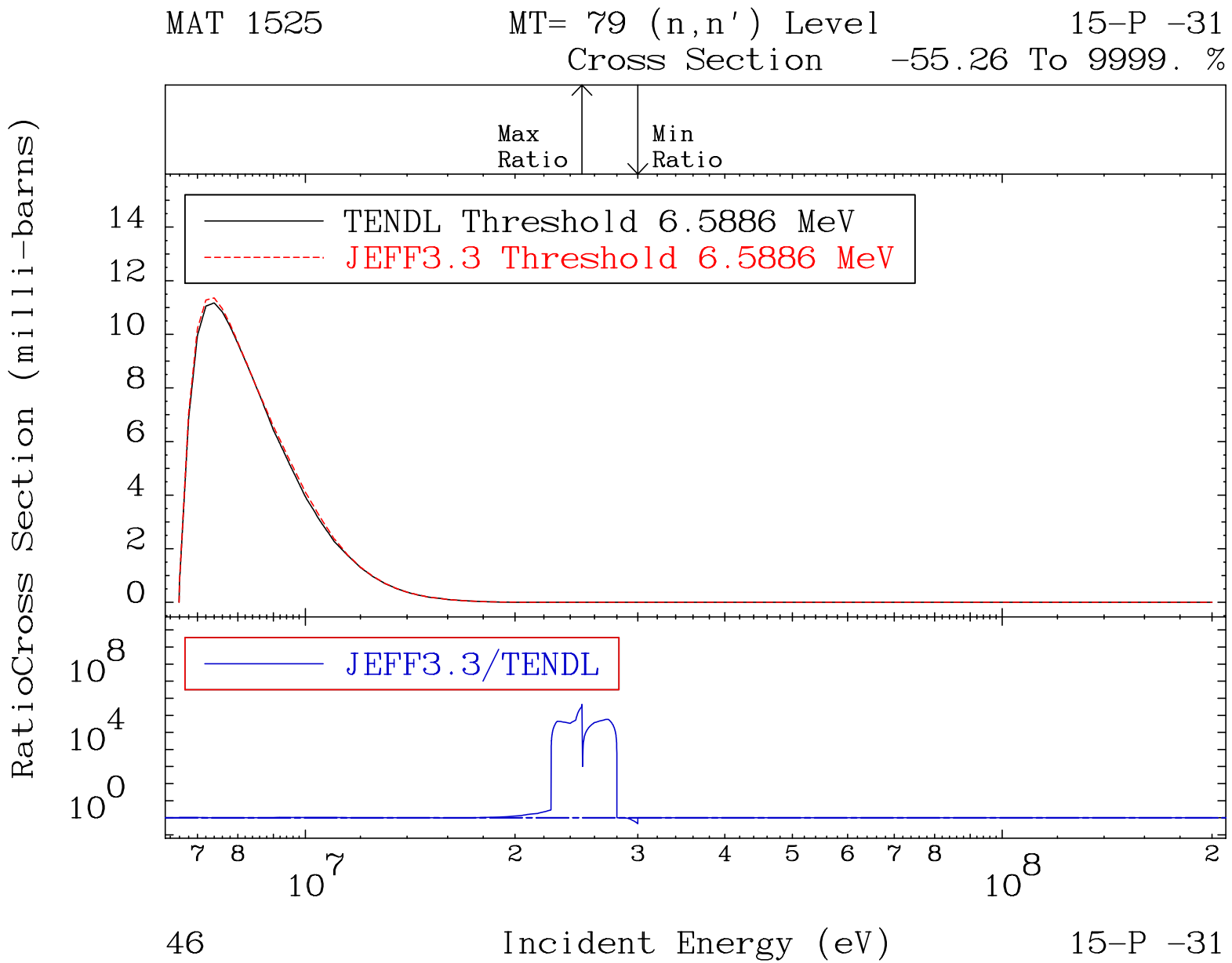

MAT 1525
MT= 74 (n,n') Level
15-P -31
Cross Section -99.67 To 0.000 %
Max Ratio
Min Ratio
TENDL Threshold 6.2433 MeV
JEFF3.3 Threshold 6.2433 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
25
20
15
10
5
0
10^{0}
10^{-2}
6 7 8 10^{7} 2 3 4 5 6 7 8 10^{8} 2
41
Incident Energy (eV)
15-P -31

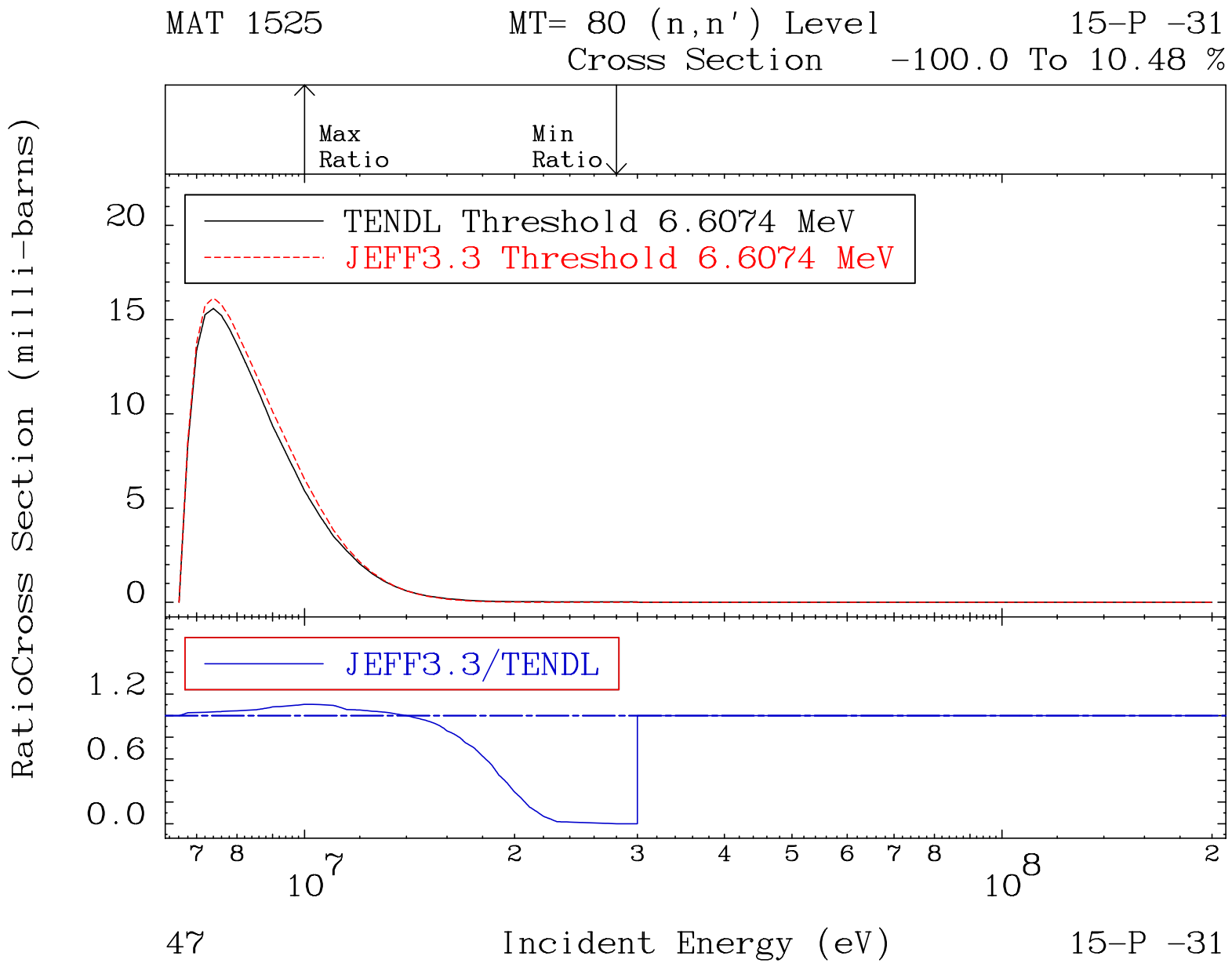

MAT 1525
MT= 75 (n,n') Level
15-P -31
Cross Section 0.000 To 14.26 %
Max Ratio
Min Ratio
TENDL Threshold 6.2760 MeV
JEFF3.3 Threshold 6.2760 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
12
8
4
0
1.2
1.1
1.0
6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
42
Incident Energy (eV)
15-P -31

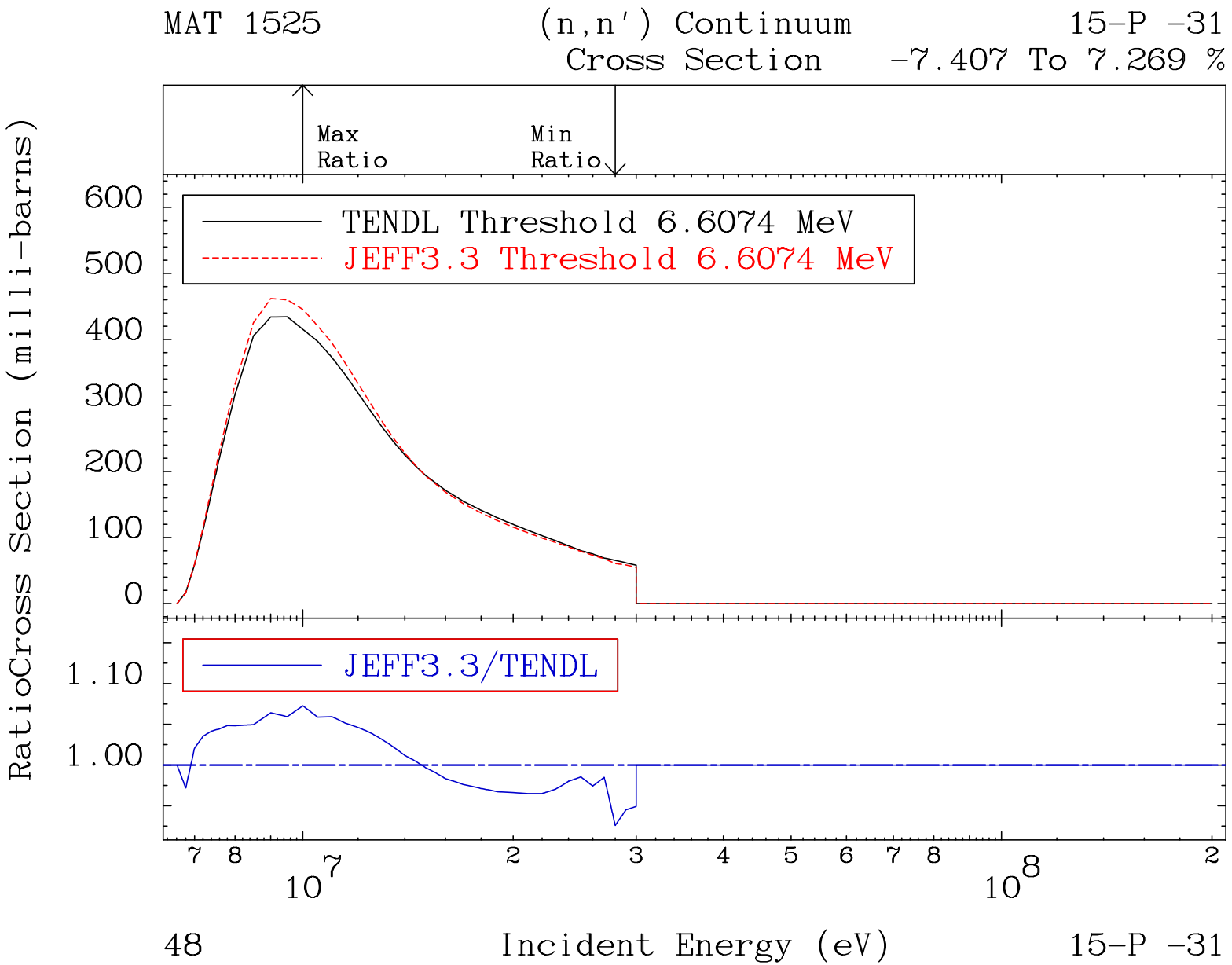

MAT 1525
MT= 76 (n,n') Level
15-P -31
Cross Section -100.0 To 9999. %
Min Ratio
Max Ratio
TENDL Threshold 6.3585 MeV
JEFF3.3 Threshold 6.3585 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
20
15
10
5
0
12
8
4
0
7 8
10^7
2 3 4 5 6 7 8
10^8
2
43
Incident Energy (eV)
15-P -31

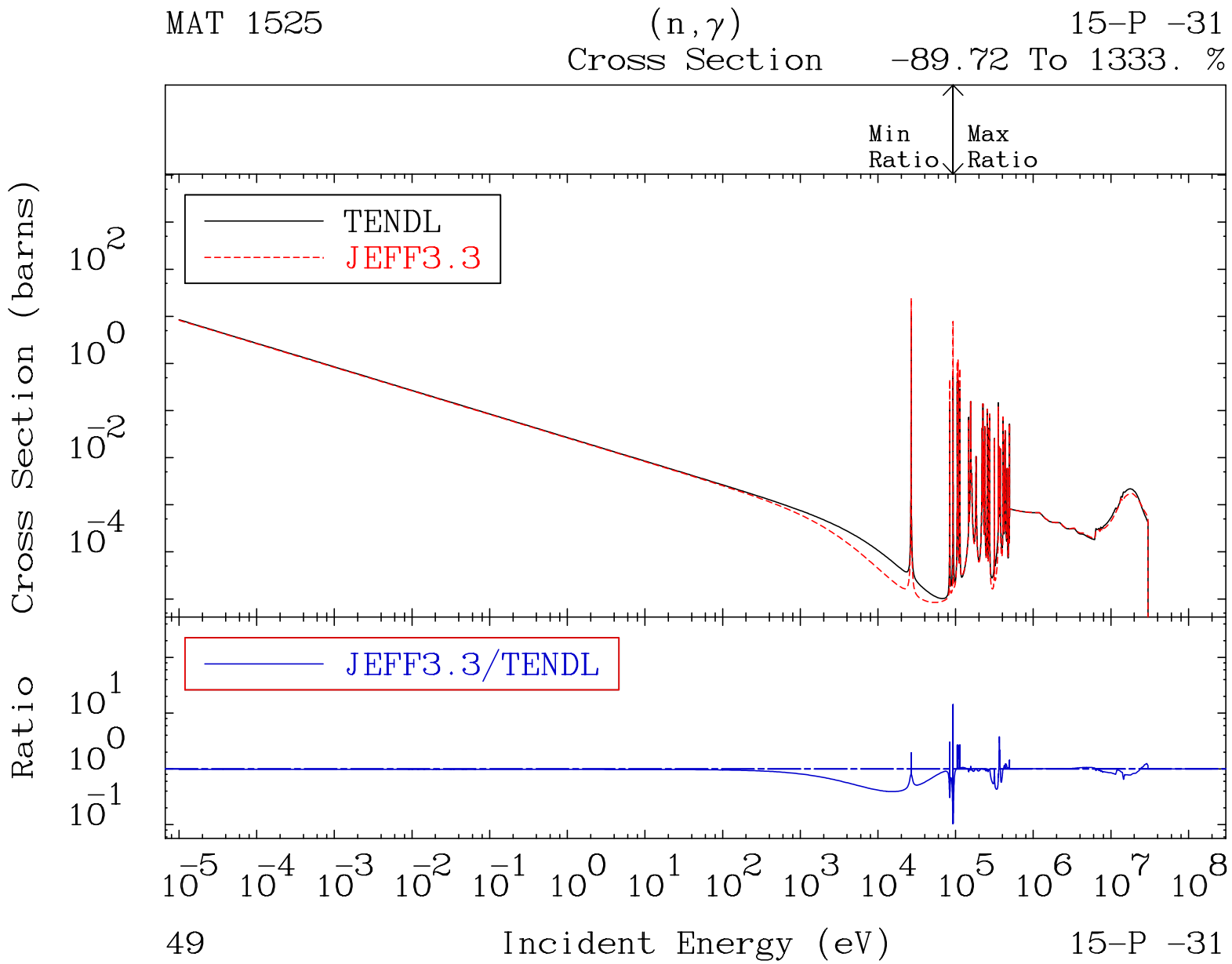

MAT 1525
MT= 77 (n,n') Level
15-P -31
Cross Section -68.13 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 6.4364 MeV
JEFF3.3 Threshold 6.4364 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
20
15
10
5
0
10^8
10^4
10^0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
44
Incident Energy (eV)
15-P -31

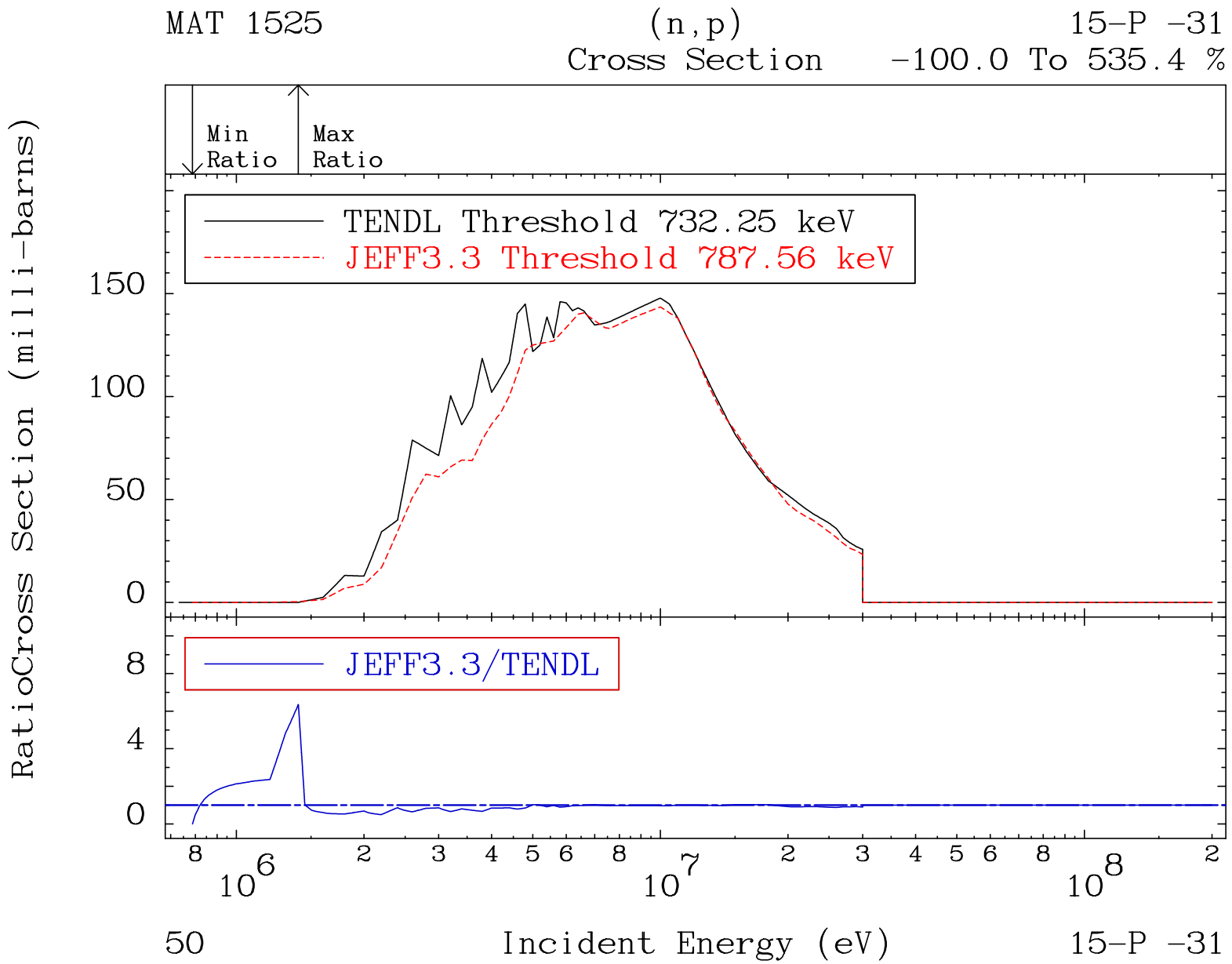

MAT 1525
MT= 78 (n,n') Level
15-P -31
Cross Section -55.36 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 6.5430 MeV
JEFF3.3 Threshold 6.5430 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
45
15-P -31

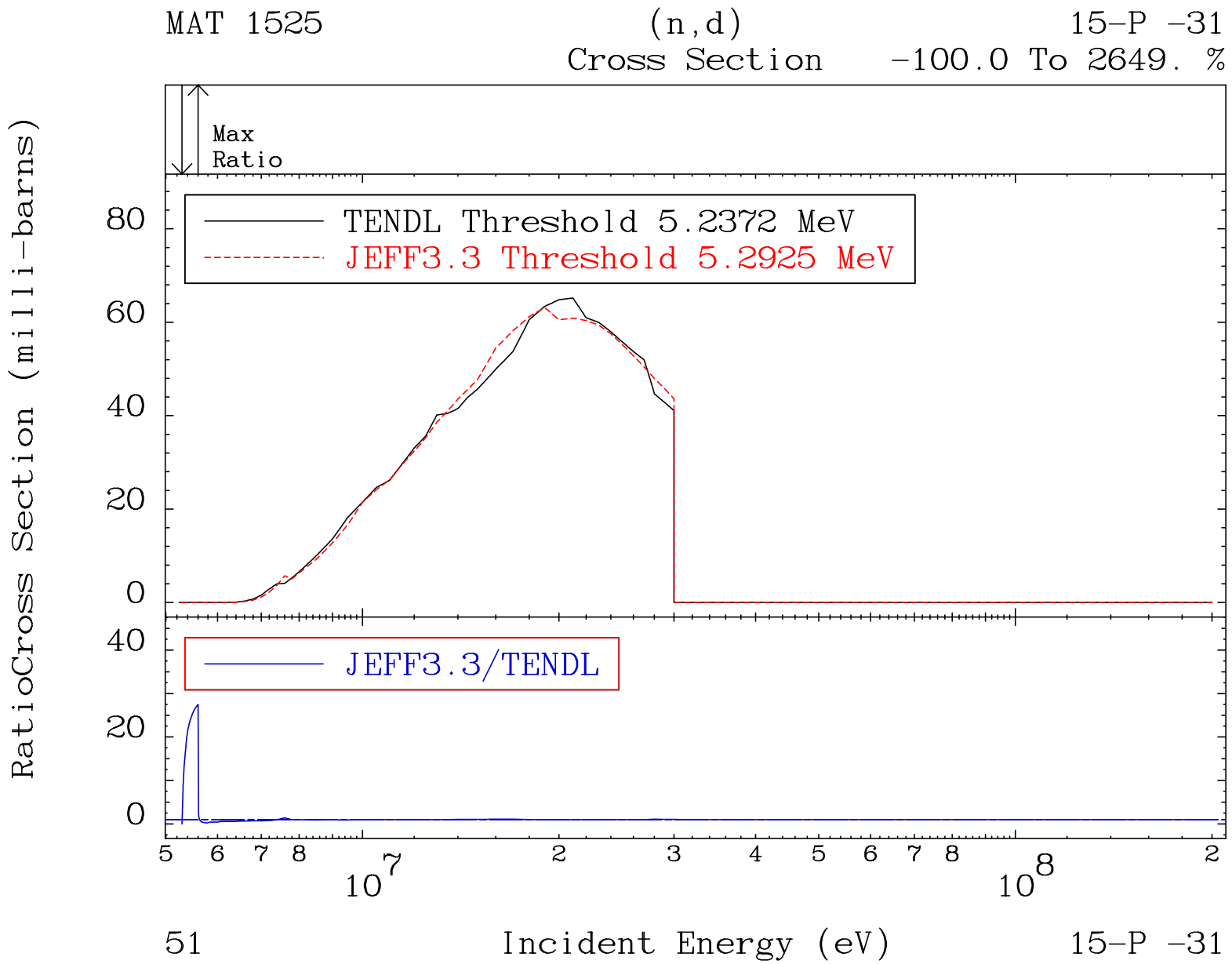

MAT 1525
MT= 79 (n,n') Level
15-P -31
Cross Section -55.26 To 9999. %
Max Ratio
Min Ratio
TENDL Threshold 6.5886 MeV
JEFF3.3 Threshold 6.5886 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
Incident Energy (eV)
46
15-P -31

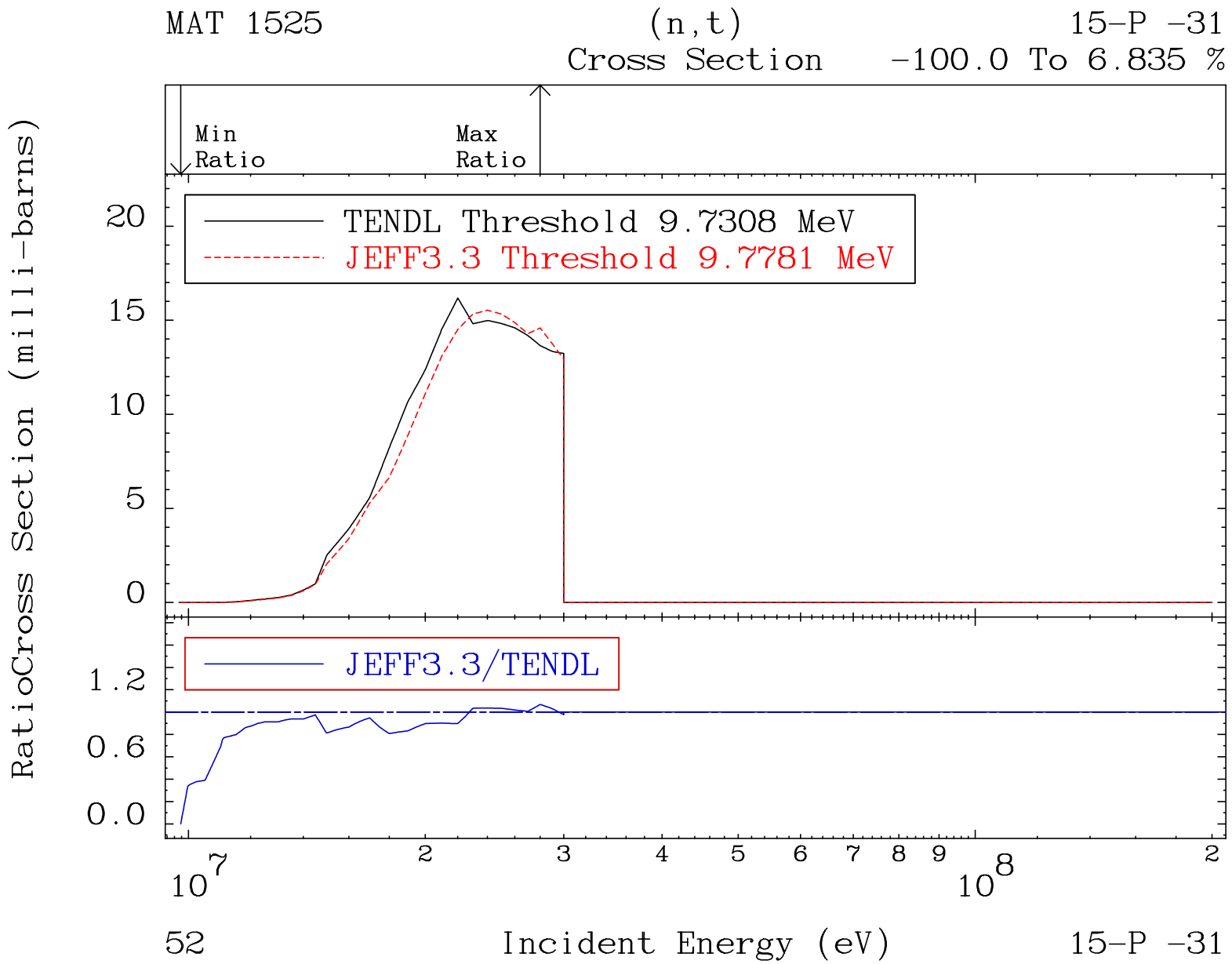

MAT 1525
MT= 80 (n,n') Level
15-P -31
Cross Section -100.0 To 10.48 %
Max Ratio
Min Ratio
TENDL Threshold 6.6074 MeV
JEFF3.3 Threshold 6.6074 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
20
15
10
5
0
1.2
0.6
0.0
7 8 10^7 2 3 4 5 6 7 8 10^8 2
47
Incident Energy (eV)
15-P -31

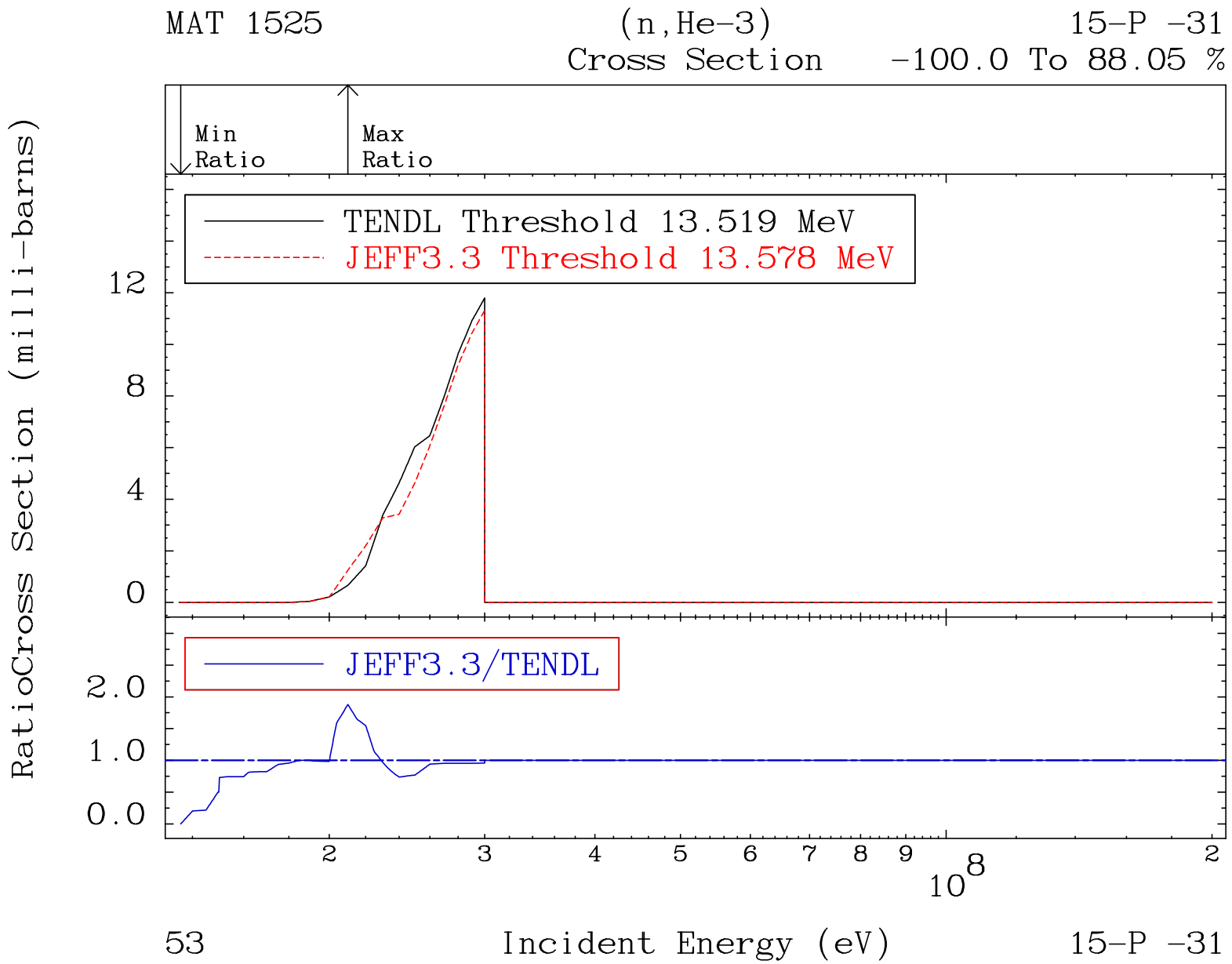

MAT 1525
(n,n') Continuum
Cross Section
15-P -31
-7.407 To 7.269 %
Max Ratio
Min Ratio
TENDL Threshold 6.6074 MeV
JEFF3.3 Threshold 6.6074 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
600
500
400
300
200
100
0
1.10
1.00
7 8 10^7 2 3 4 5 6 7 8 10^8 2
48
Incident Energy (eV)
15-P -31

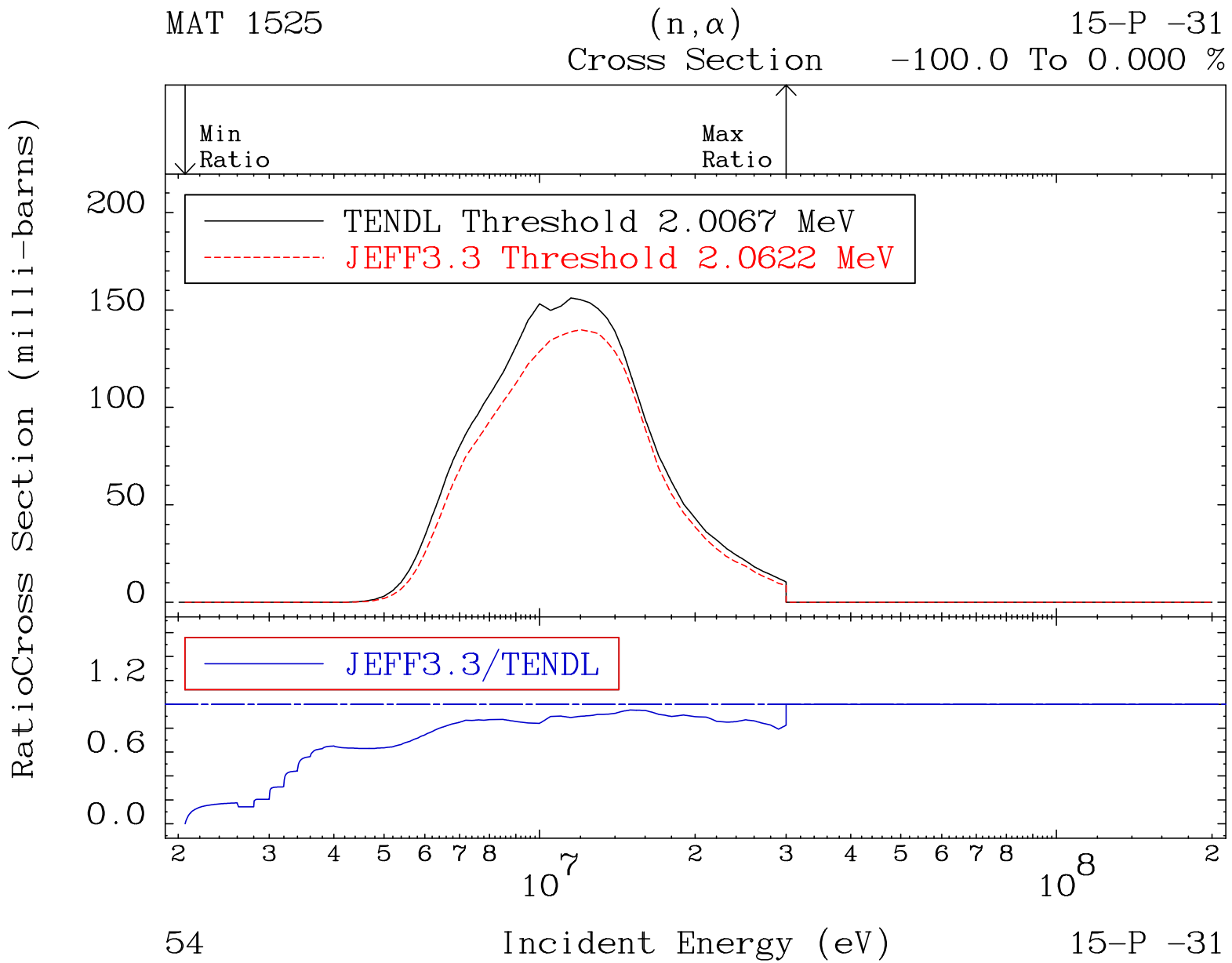

MAT 1525
(n,γ)
15-P -31
Cross Section
-89.72 To 1333. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
49
15-P -31

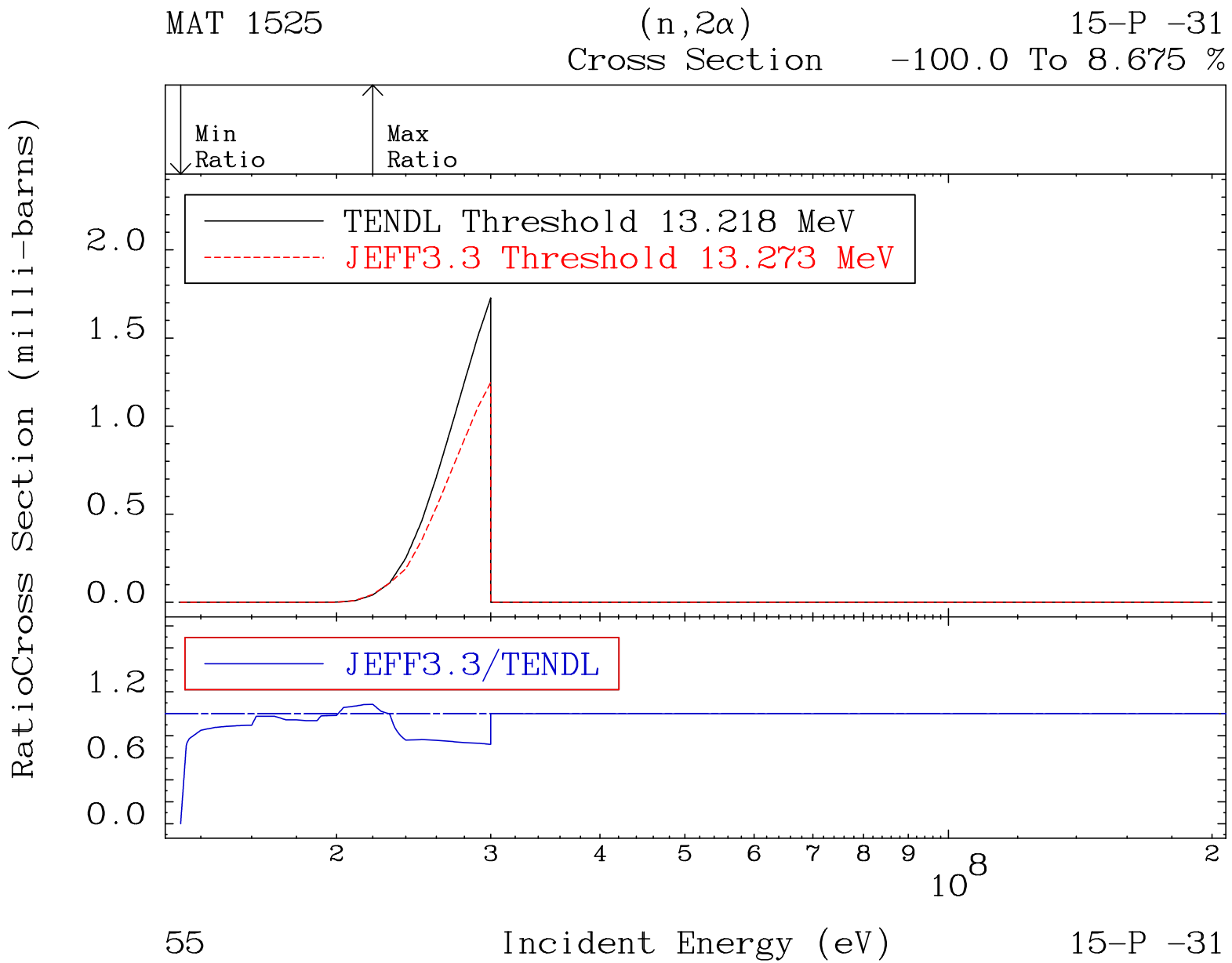

MAT 1525
(n,p)
Cross Section
15-P -31
-100.0 To 535.4 %
Min Ratio
Max Ratio
TENDL Threshold 732.25 keV
JEFF3.3 Threshold 787.56 keV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
150
100
50
0
8
4
0
8
2
3
4
5
6
8
10^6
10^7
10^8
50
Incident Energy (eV)
15-P -31

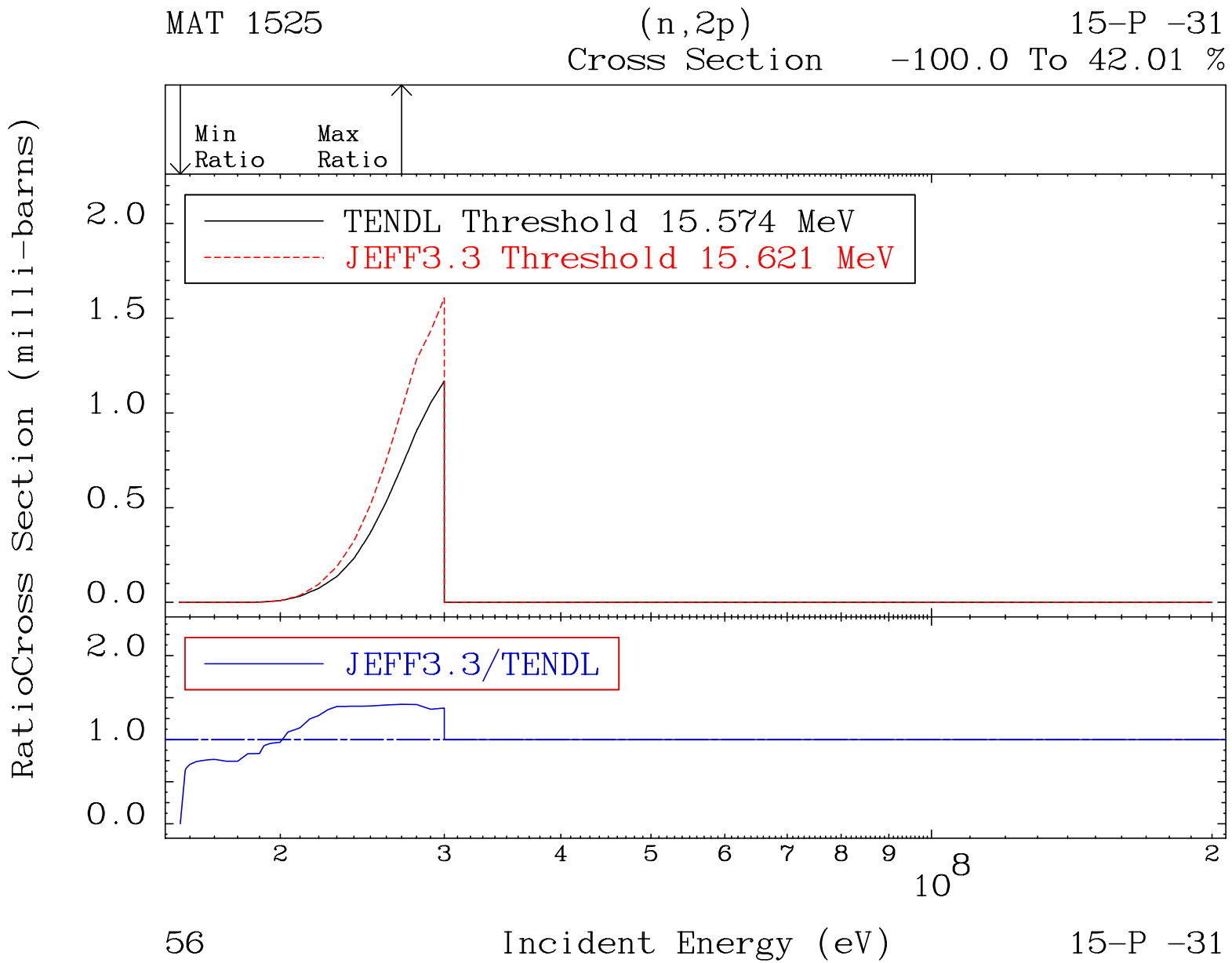

MAT 1525
(n,d)
15-P -31
Cross Section
-100.0 To 2649. %
Max
Ratio
TENDL Threshold 5.2372 MeV
JEFF3.3 Threshold 5.2925 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
80
60
40
20
0
40
20
0
5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
51
Incident Energy (eV)
15-P -31

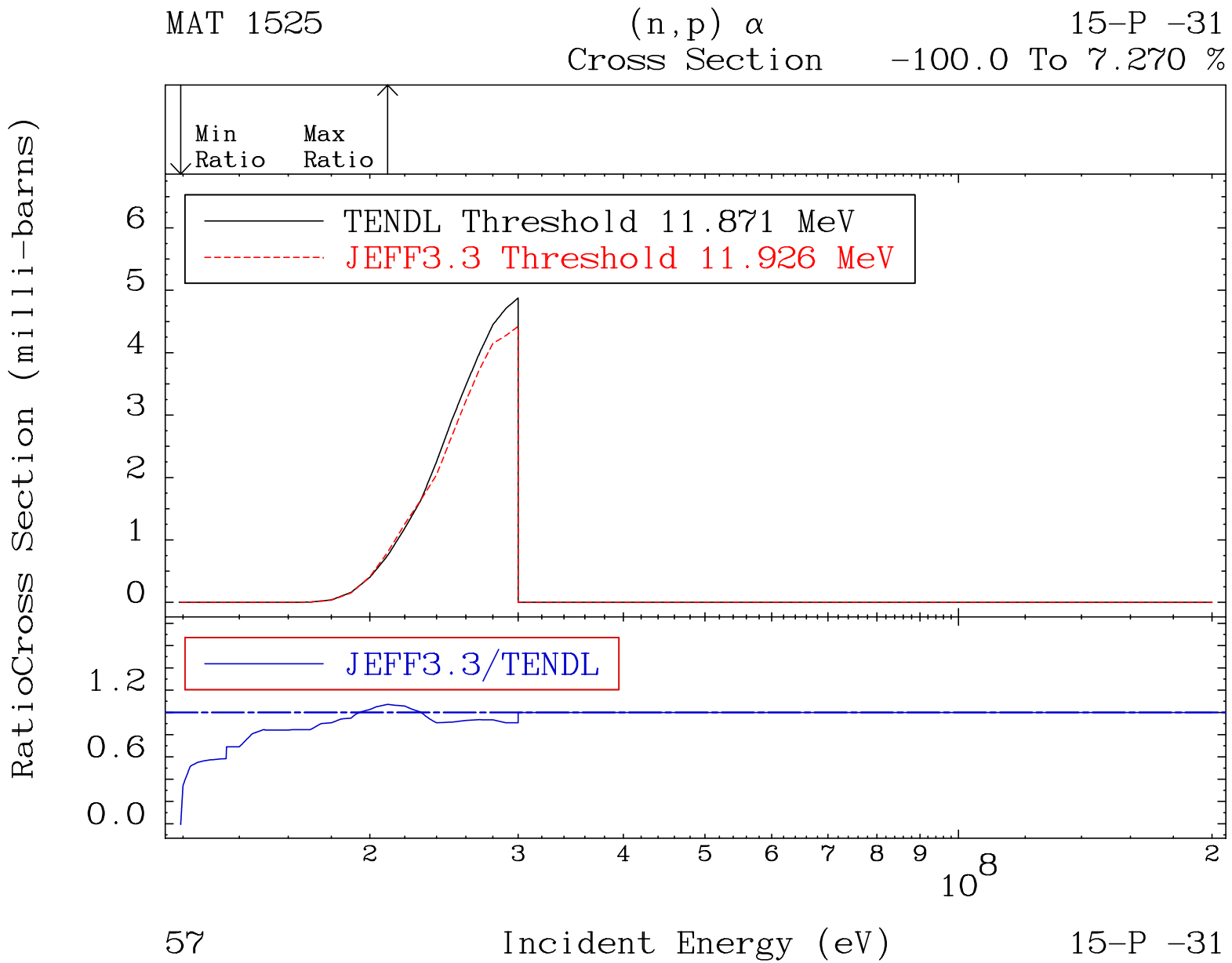

MAT 1525
(n,t)
15-P -31
Cross Section
-100.0 To 6.835 %
Min Ratio
Max Ratio
TENDL Threshold 9.7308 MeV
JEFF3.3 Threshold 9.7781 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
20
15
10
5
0
1.2
0.6
0.0
10^7
2
3
4
5
6
7
8
9
10^8
2
52
Incident Energy (eV)
15-P -31

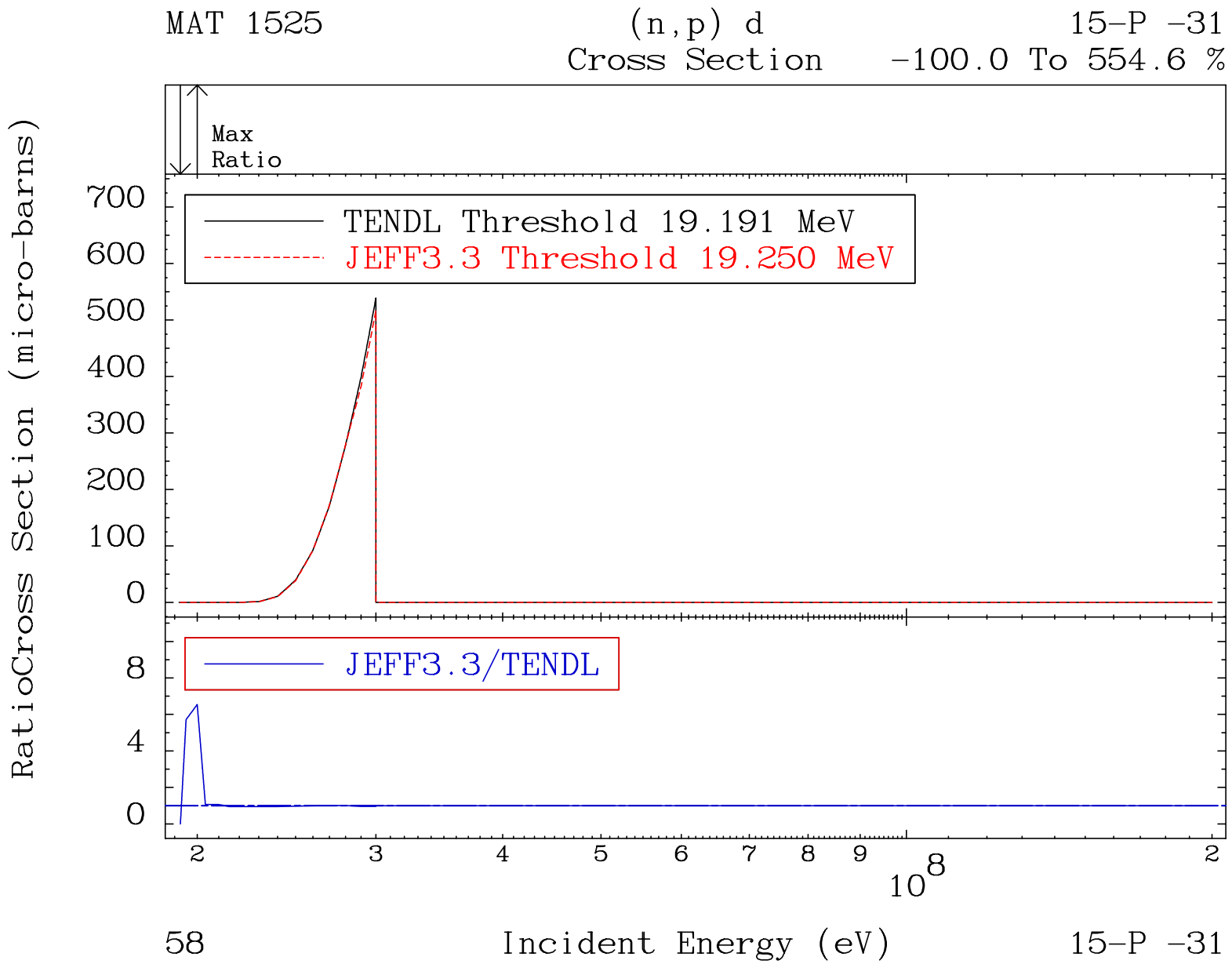

MAT 1525
(n,He-3)
15-P -31
Cross Section
-100.0 To 88.05 %
Min Ratio
Max Ratio
TENDL Threshold 13.519 MeV
JEFF3.3 Threshold 13.578 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
12
8
4
0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
53
Incident Energy (eV)
15-P -31

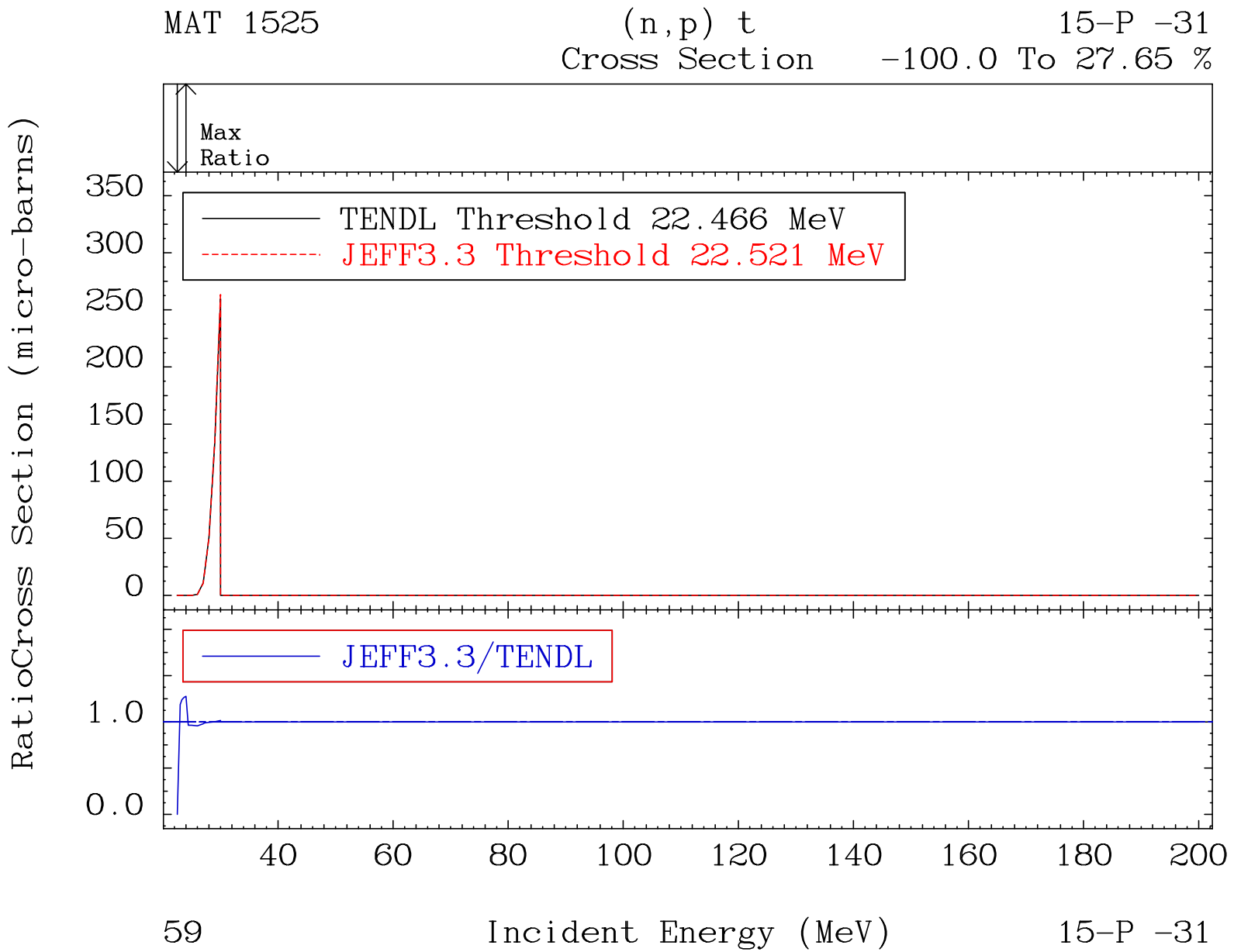

MAT 1525
(n,α)
Cross Section
15-P -31
-100.0 To 0.000 %
Min Ratio
Max Ratio
TENDL Threshold 2.0067 MeV
JEFF3.3 Threshold 2.0622 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
1.2
0.6
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
54
Incident Energy (eV)
15-P -31

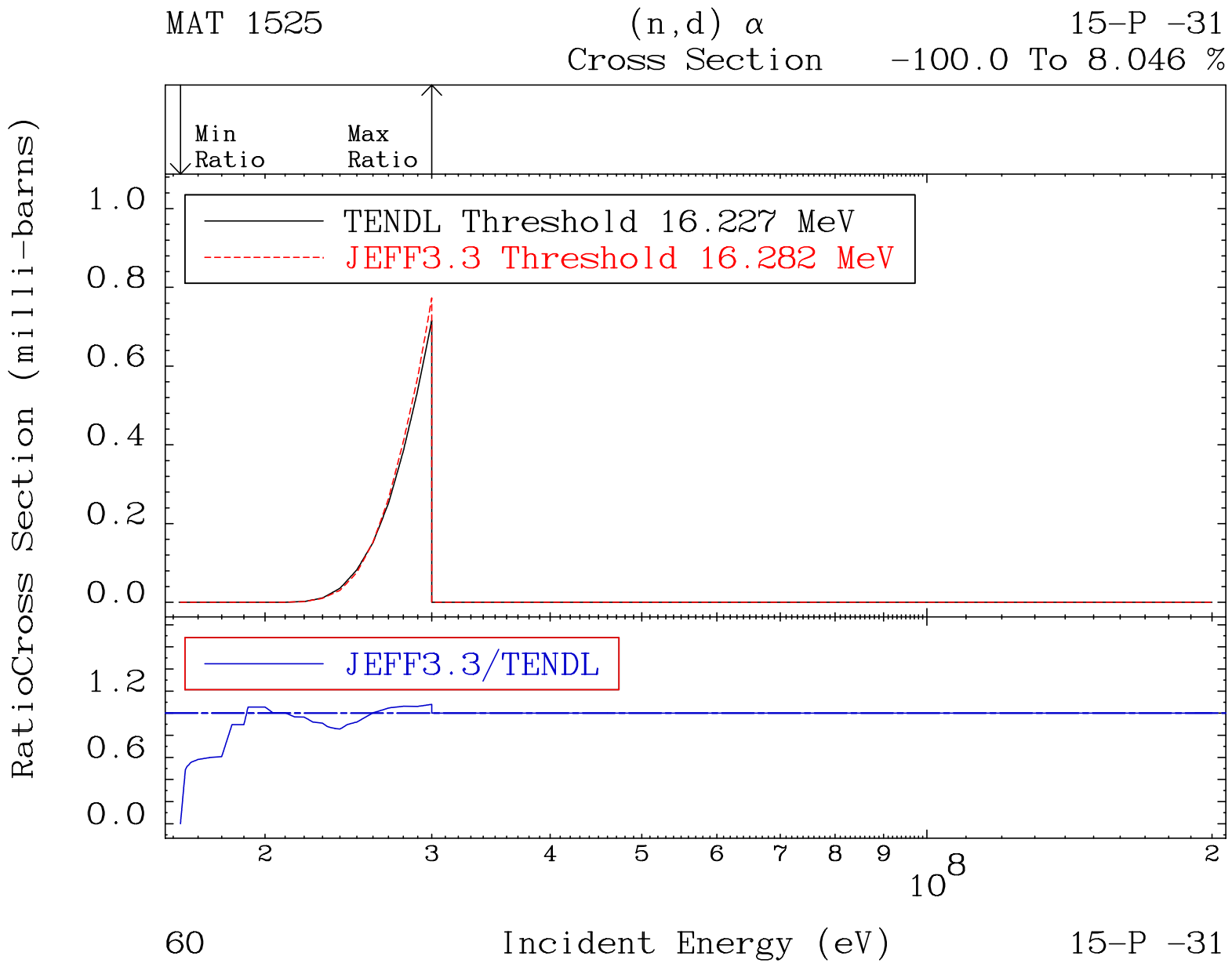

MAT 1525
(n,2α)
15-P -31
Cross Section
-100.0 To 8.675 %
Min Ratio
Max Ratio
TENDL Threshold 13.218 MeV
JEFF3.3 Threshold 13.273 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
55
Incident Energy (eV)
15-P -31

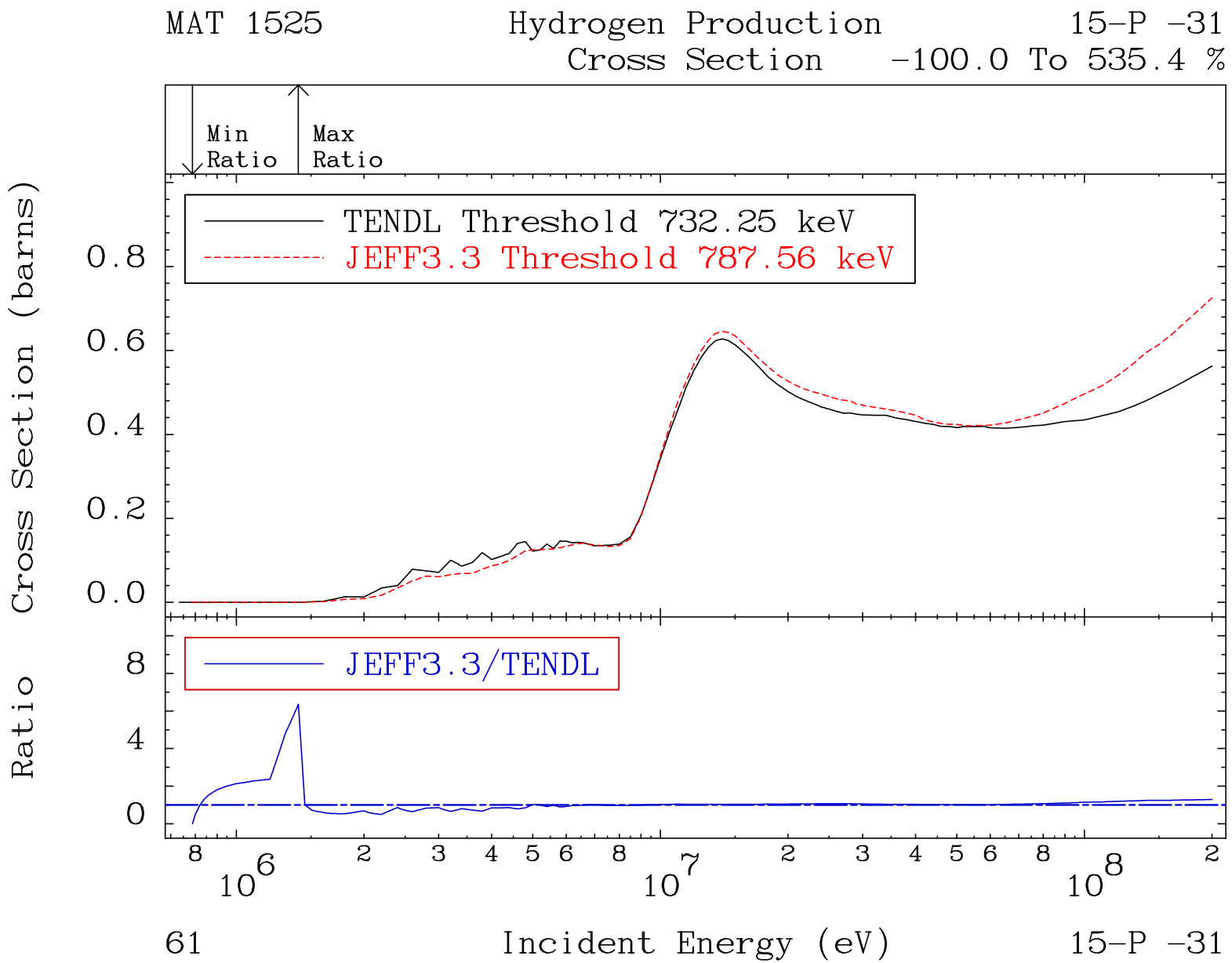

MAT 1525
(n,2p)
15-P -31
Cross Section
-100.0 To 42.01 %
Min Ratio
Max Ratio
TENDL Threshold 15.574 MeV
JEFF3.3 Threshold 15.621 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
56
Incident Energy (eV)
15-P -31

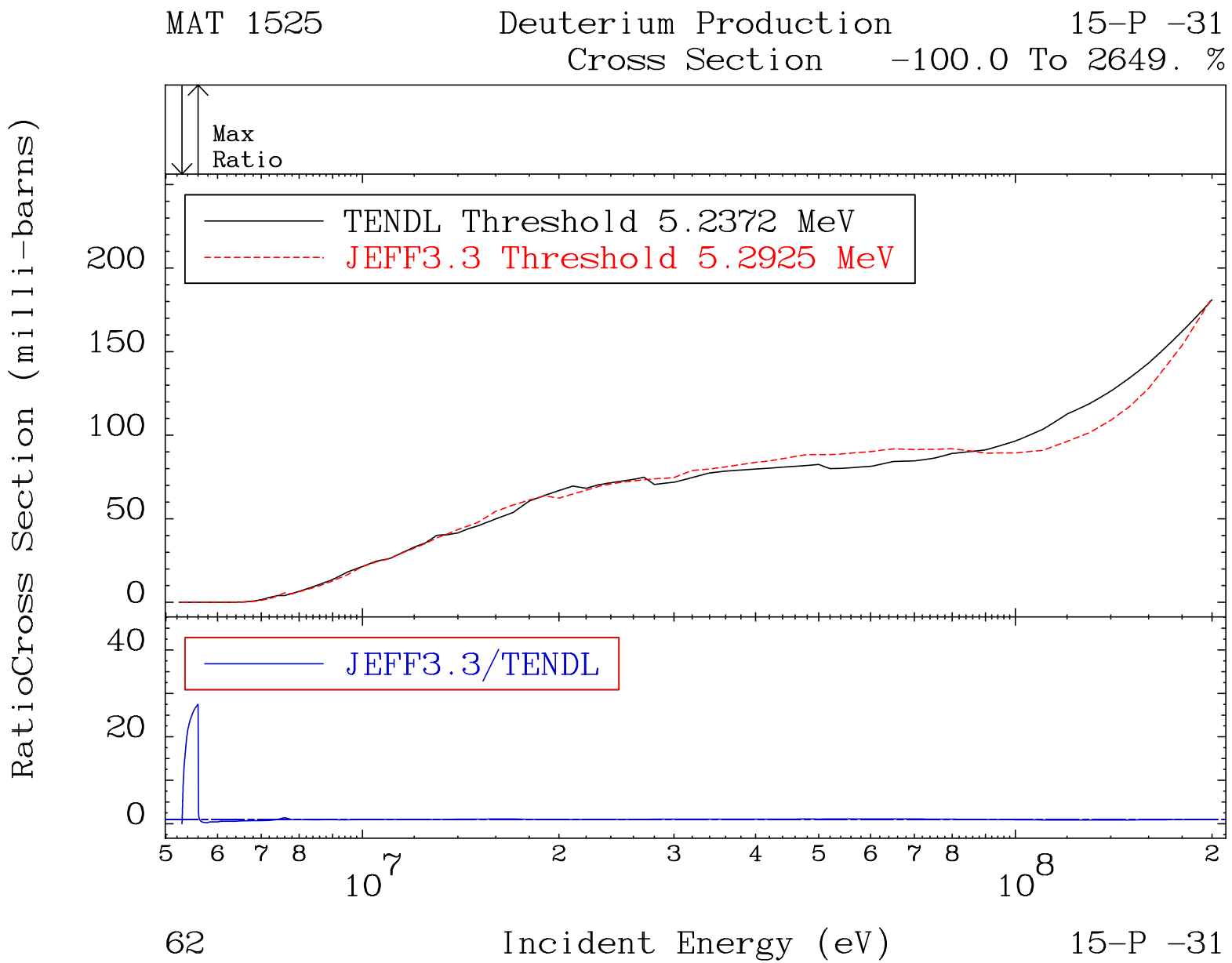

MAT 1525
(n,p) α
Cross Section
15-P -31
-100.0 To 7.270 %
Min Ratio
Max Ratio
TENDL Threshold 11.871 MeV
JEFF3.3 Threshold 11.926 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
6
5
4
3
2
1
0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
57
Incident Energy (eV)
15-P -31

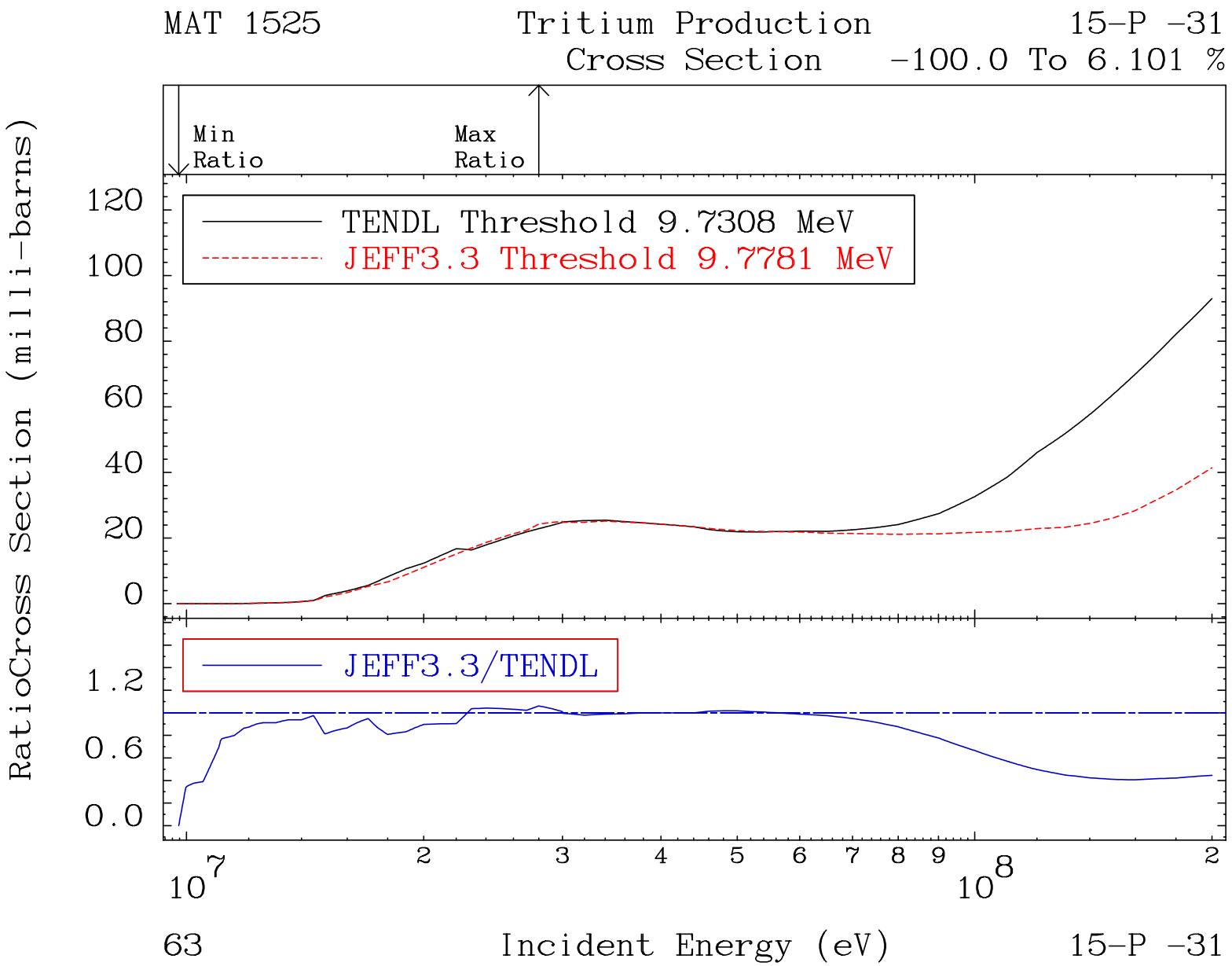

MAT 1525
(n,p) d
Cross Section
15-P -31
-100.0 To 554.6 %
Max
Ratio
TENDL Threshold 19.191 MeV
JEFF3.3 Threshold 19.250 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
700
600
500
400
300
200
100
0
8
4
0
2
3
4
5
6
7
8
9
10^8
2
58
Incident Energy (eV)
15-P -31

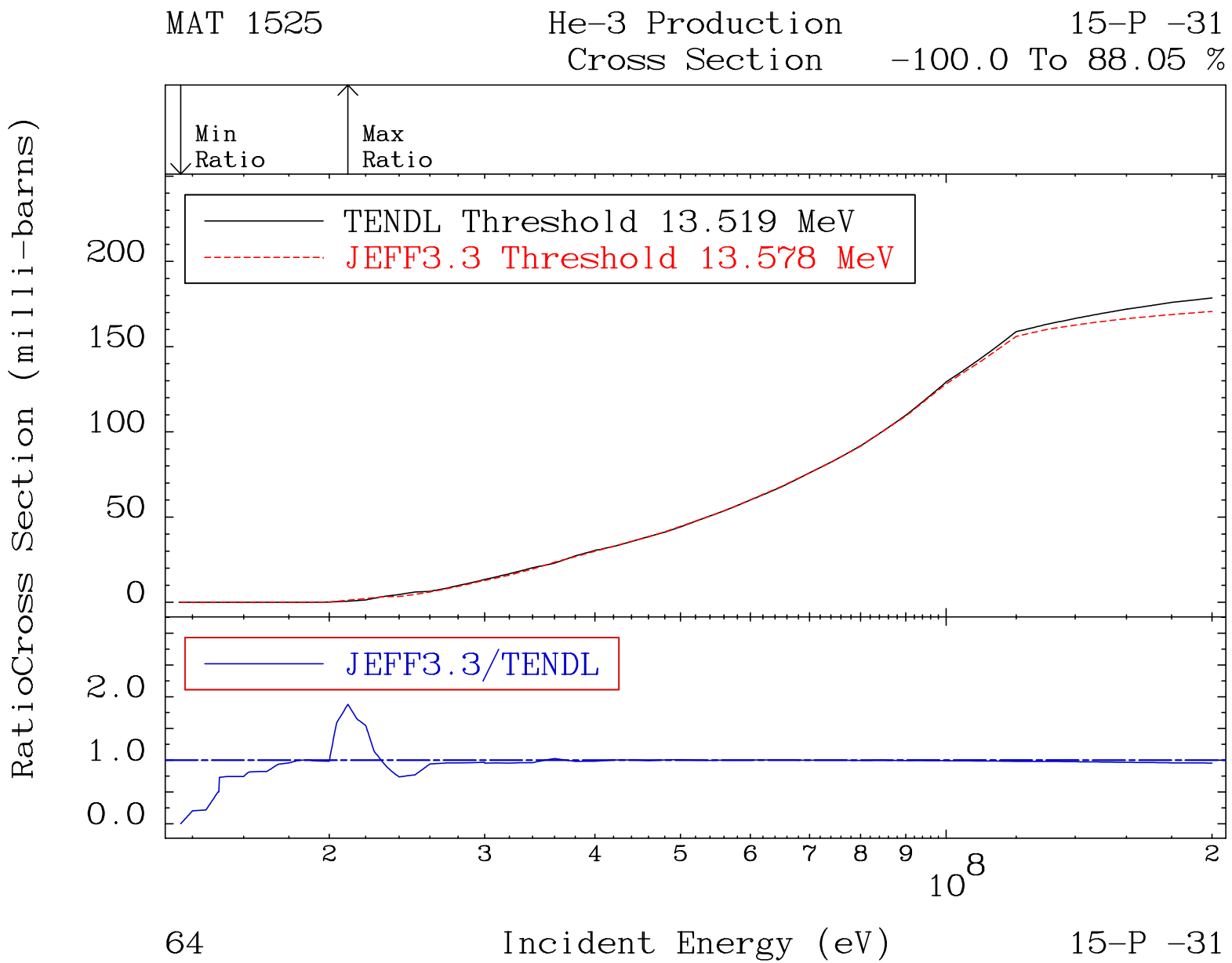

MAT 1525
(n,p) t
15-P -31
Cross Section
-100.0 To 27.65 %
Max
Ratio
TENDL Threshold 22.466 MeV
JEFF3.3 Threshold 22.521 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
350
300
250
200
150
100
50
0
1.0
0.0
40
60
80
100
120
140
160
180
200
59
Incident Energy (MeV)
15-P -31

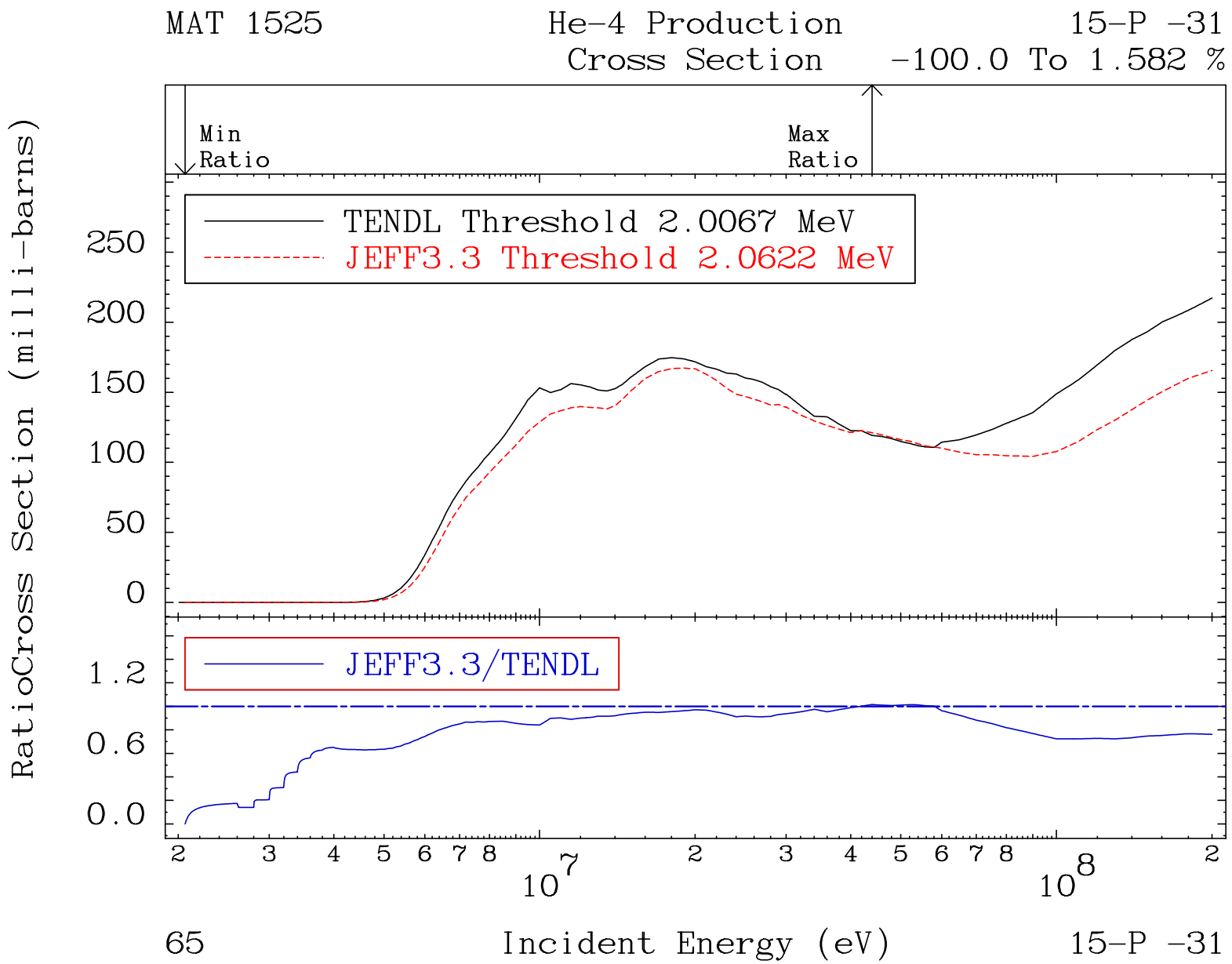

MAT 1525
(n,d) α
15-P -31
Cross Section
-100.0 To 8.046 %
Min Ratio
Max Ratio
TENDL Threshold 16.227 MeV
JEFF3.3 Threshold 16.282 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
1.0
0.8
0.6
0.4
0.2
0.0
1.2
0.6
0.0
2
3
4
5
6
7
8
9
10^8
2
60
Incident Energy (eV)
15-P -31

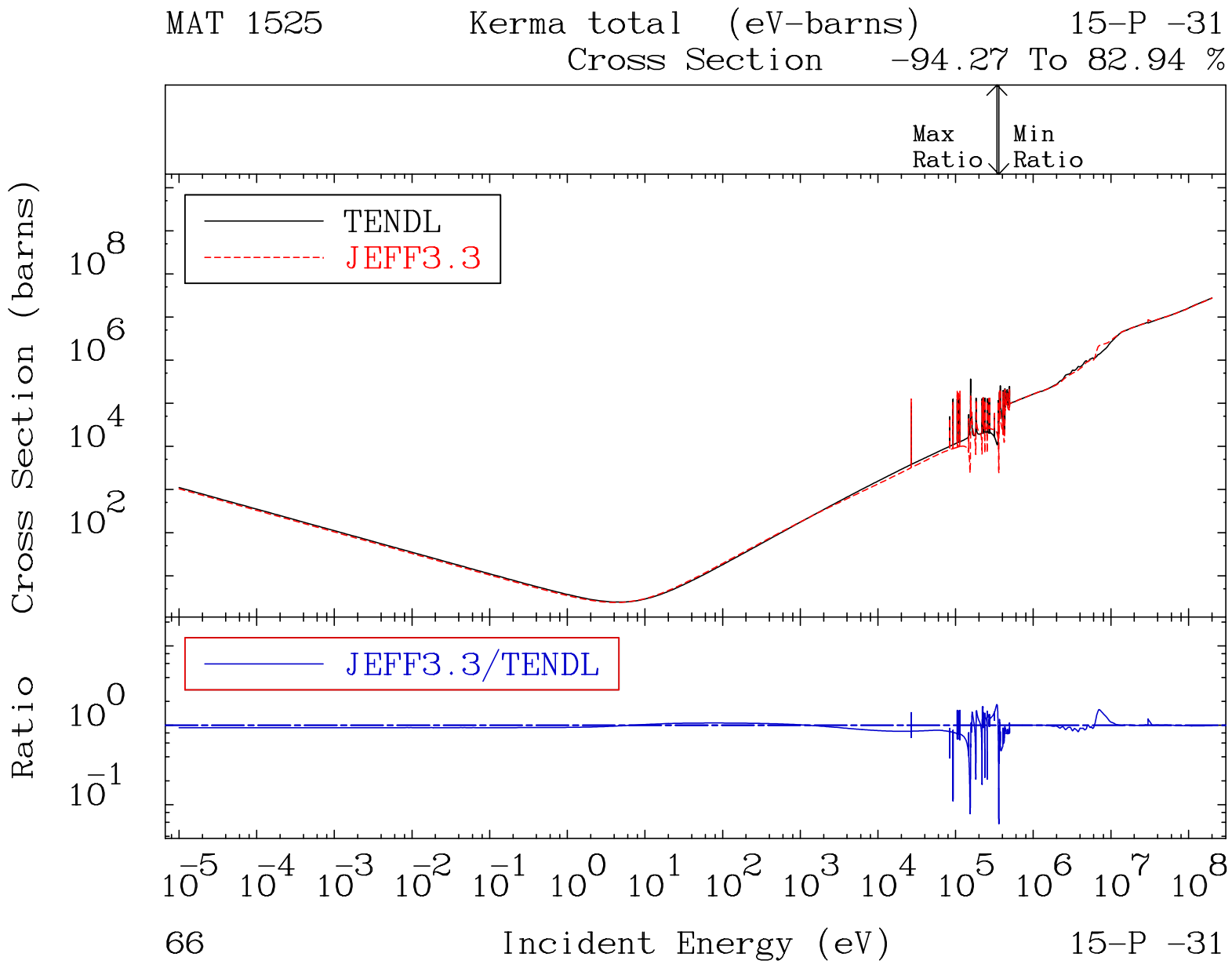

MAT 1525
Hydrogen Production
15-P -31
Cross Section
-100.0 To 535.4 %
Min Ratio
Max Ratio
TENDL Threshold 732.25 keV
JEFF3.3 Threshold 787.56 keV
Cross Section (barns)
0.8
0.6
0.4
0.2
0.0
JEFF3.3/TENDL
Ratio
8
4
0
8
2
3
4
5
6
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
61
Incident Energy (eV)
15-P -31

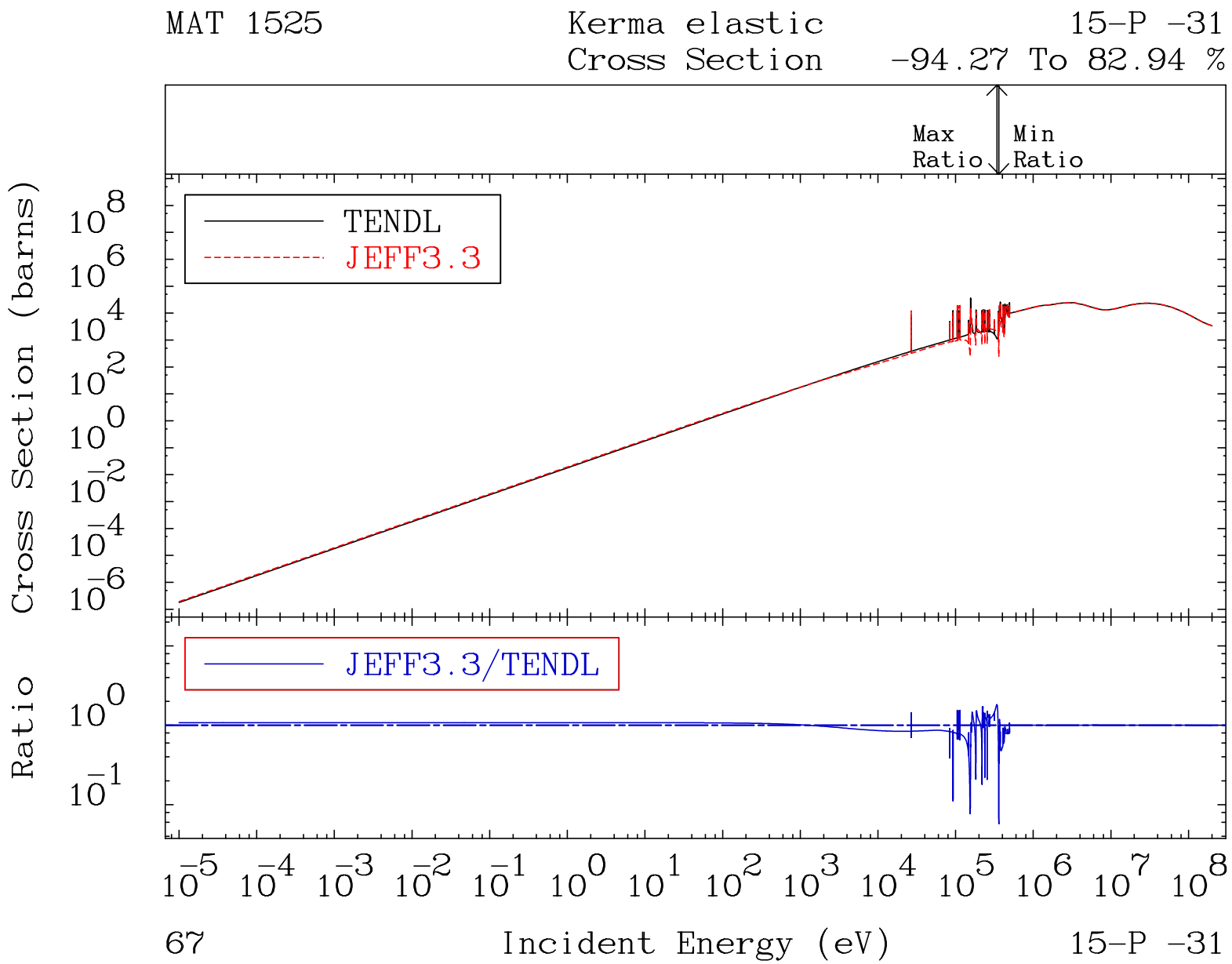

MAT 1525
Deuterium Production
15-P -31
Cross Section -100.0 To 2649. %
Max
Ratio
TENDL Threshold 5.2372 MeV
JEFF3.3 Threshold 5.2925 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
40
20
0
5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
62
Incident Energy (eV)
15-P -31

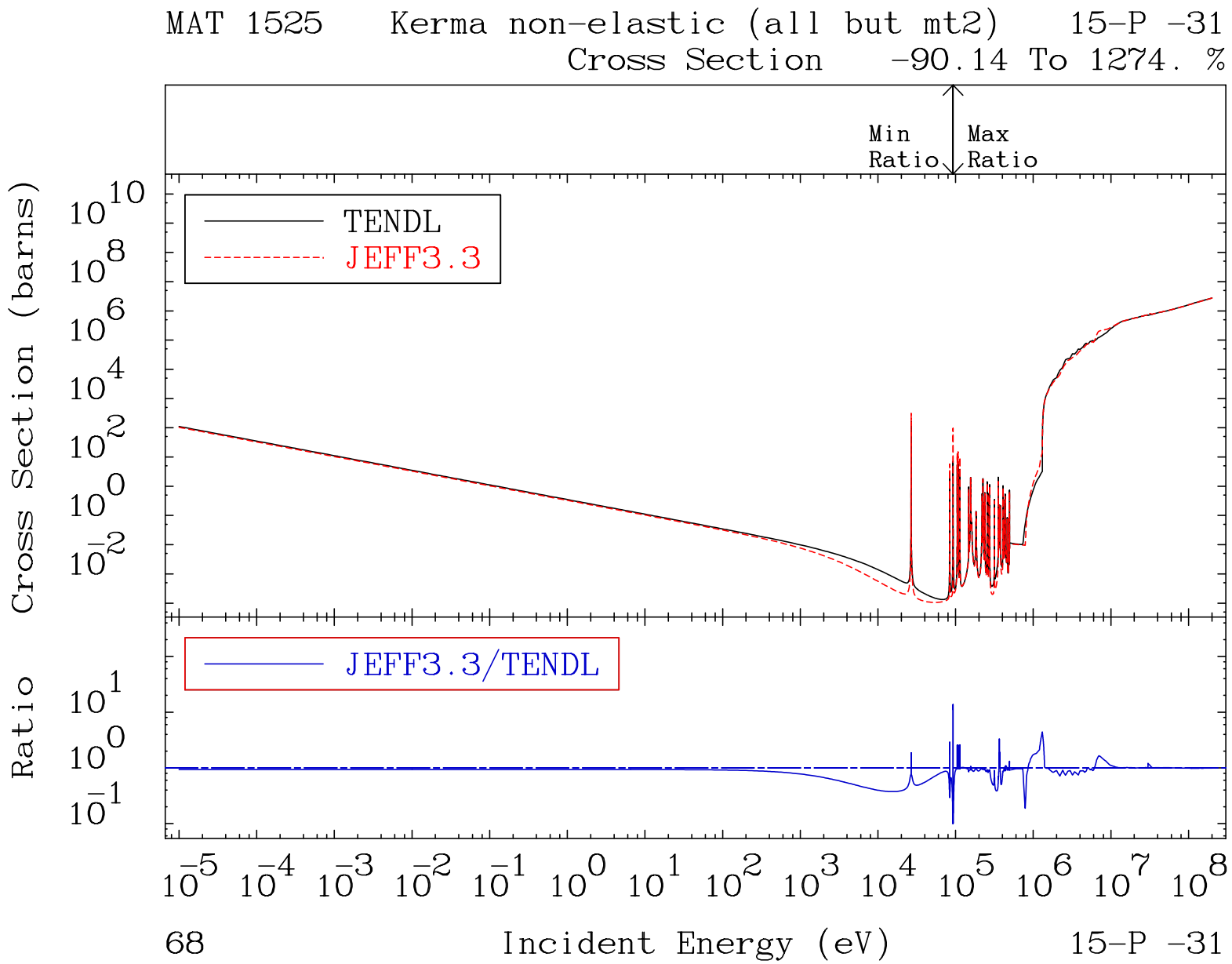

MAT 1525
Tritium Production
15-P -31
Cross Section
-100.0 To 6.101 %
Min Ratio
Max Ratio
TENDL Threshold 9.7308 MeV
JEFF3.3 Threshold 9.7781 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
120
100
80
60
40
20
0
1.2
0.6
0.0
10^7
2
3
4
5
6
7
8
9
10^8
2
63
Incident Energy (eV)
15-P -31

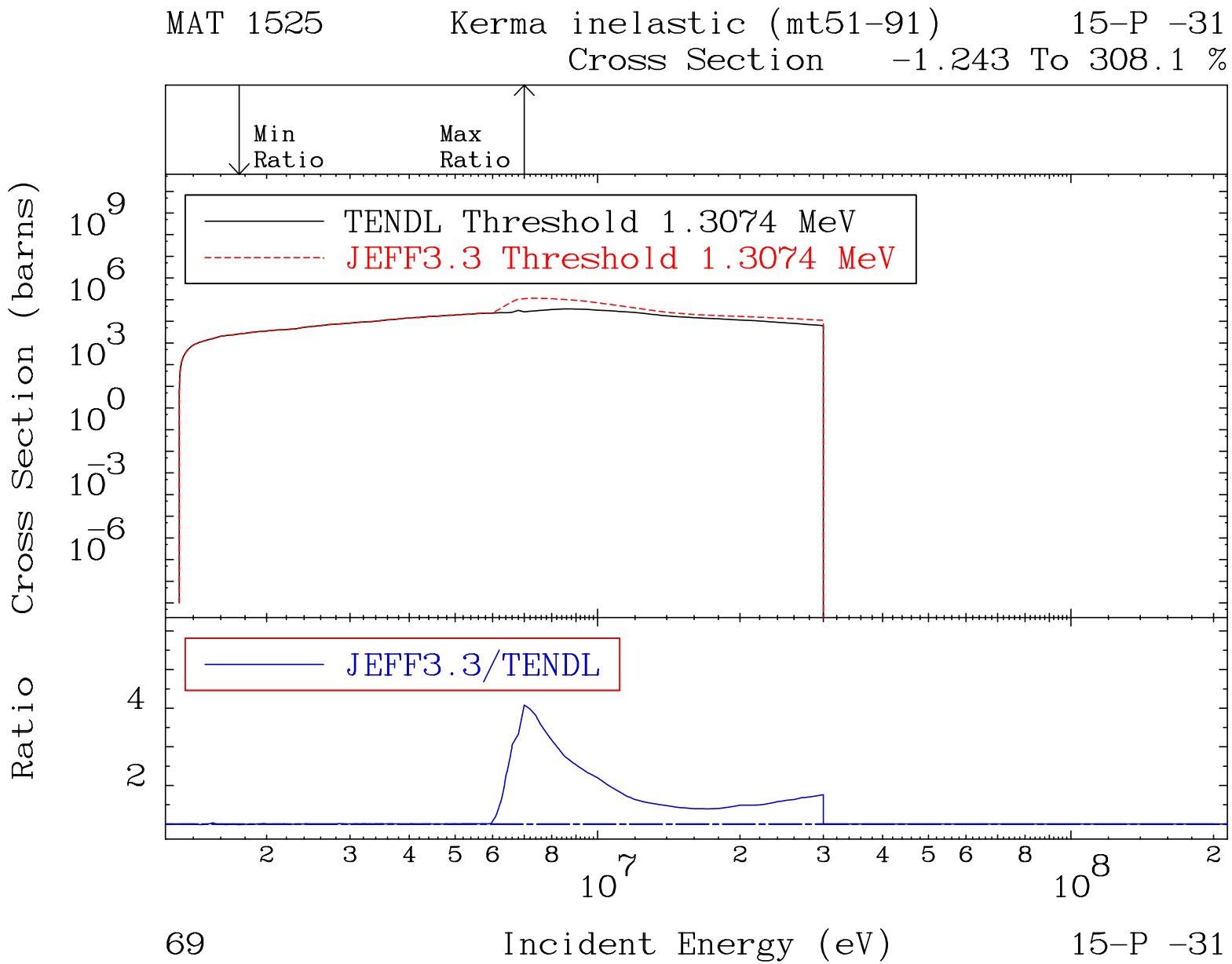

MAT 1525
He-3 Production
Cross Section
15-P -31
-100.0 To 88.05 %
Min Ratio
Max Ratio
TENDL Threshold 13.519 MeV
JEFF3.3 Threshold 13.578 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
200
150
100
50
0
2.0
1.0
0.0
2
3
4
5
6
7
8
9
10^8
2
64
Incident Energy (eV)
15-P -31

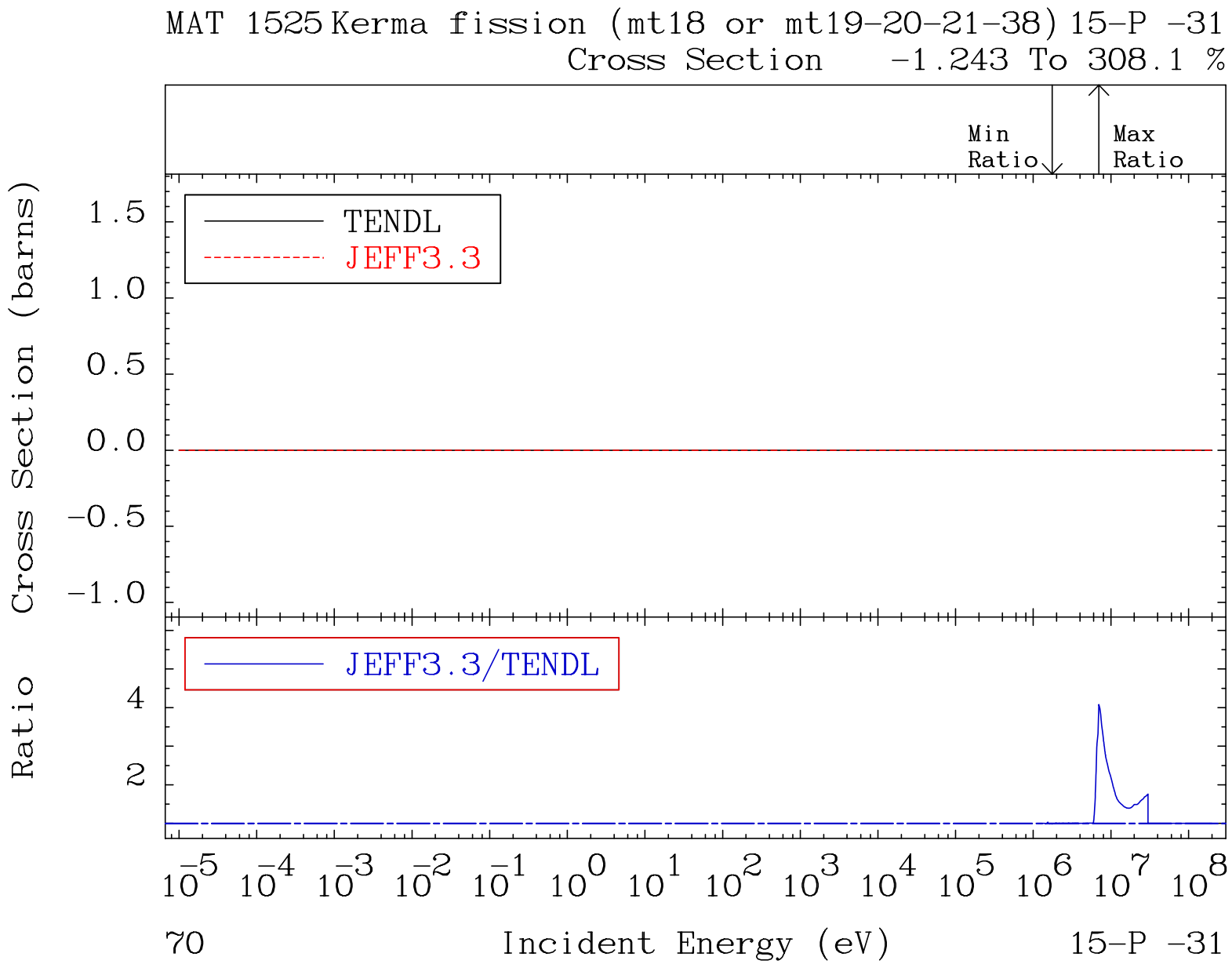

MAT 1525
He-4 Production
Cross Section
15-P -31
-100.0 To 1.582 %
Min Ratio
Max Ratio
TENDL Threshold 2.0067 MeV
JEFF3.3 Threshold 2.0622 MeV
JEFF3.3/TENDL
RatioCross Section (milli-barns)
250
200
150
100
50
0
1.2
0.6
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
65
Incident Energy (eV)
15-P -31

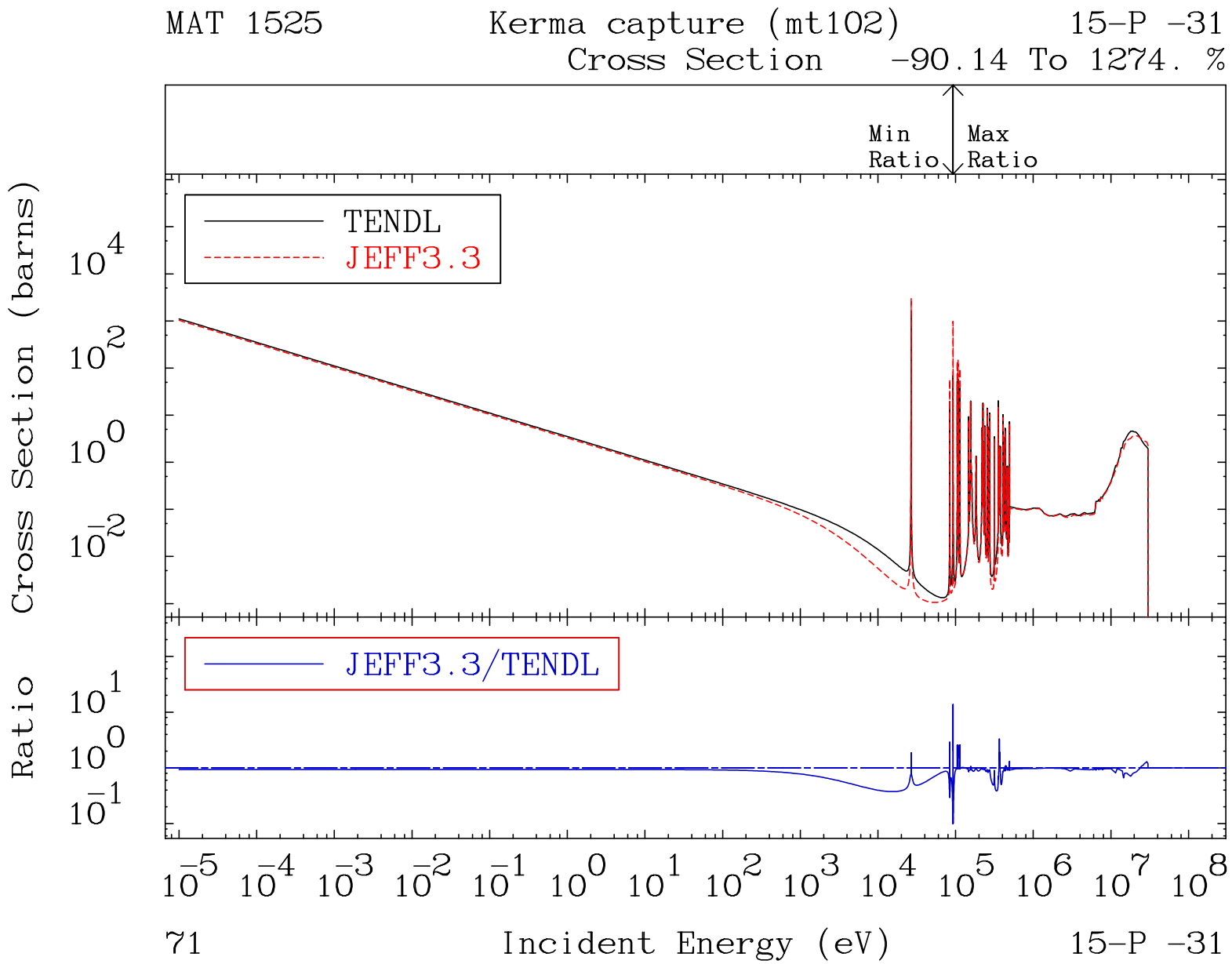

MAT 1525
Kerma total (eV-barns)
15-P -31
Cross Section -94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
66
15-P -31

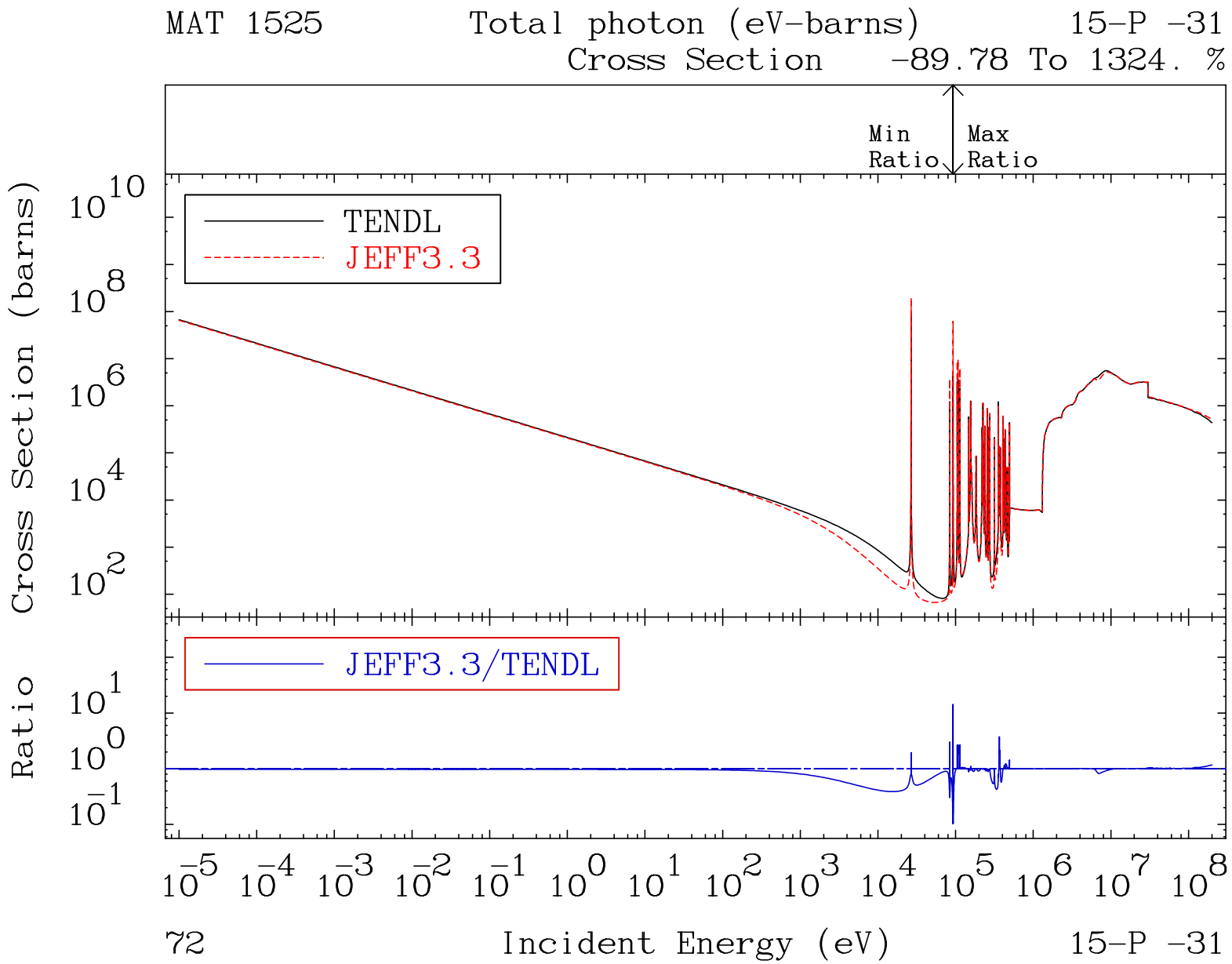

MAT 1525
Kerma elastic
Cross Section
15-P -31
-94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
67
15-P -31

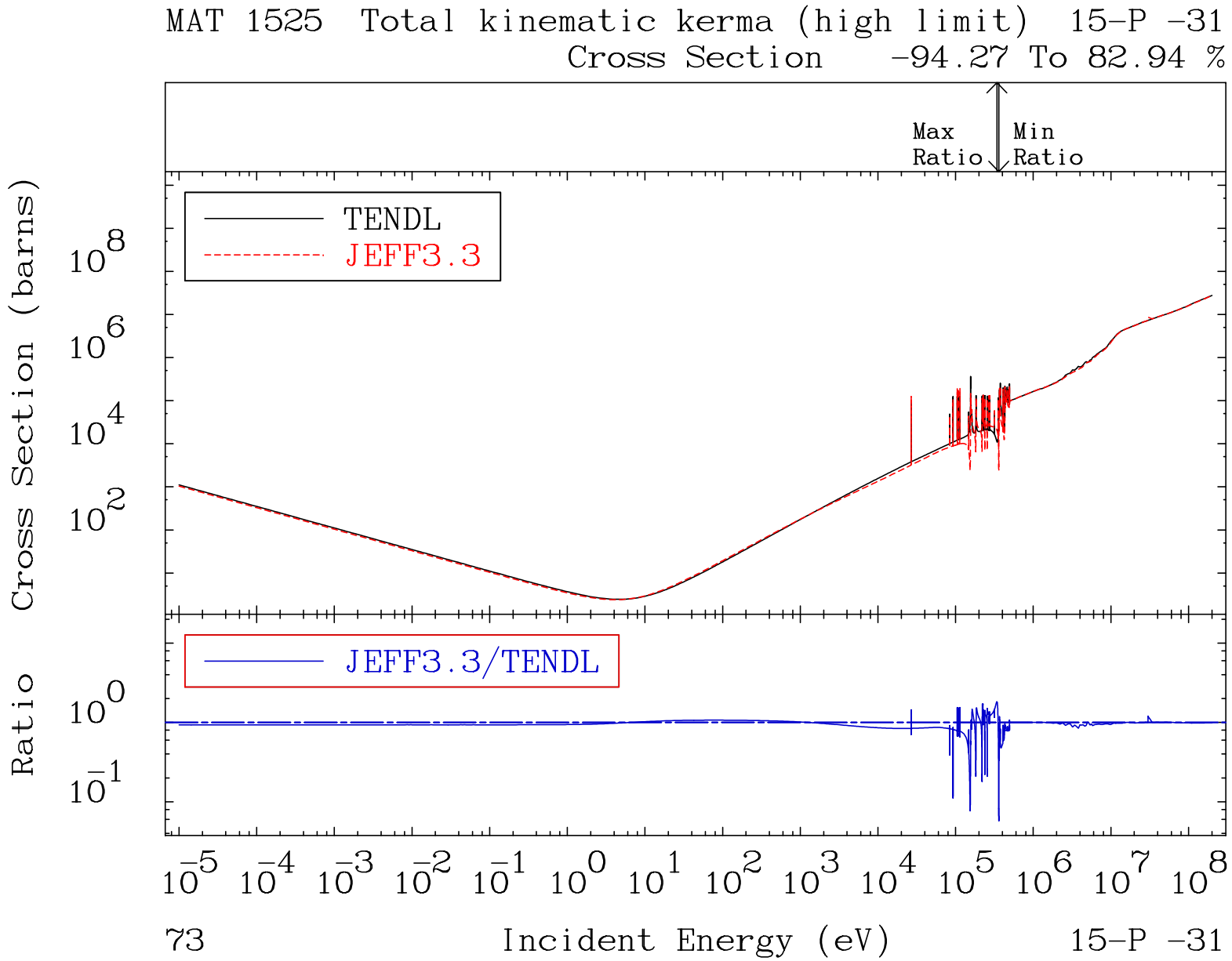

MAT 1525 Kerma non-elastic (all but mt2) 15-P -31
Cross Section -90.14 To 1274. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
68
15-P -31

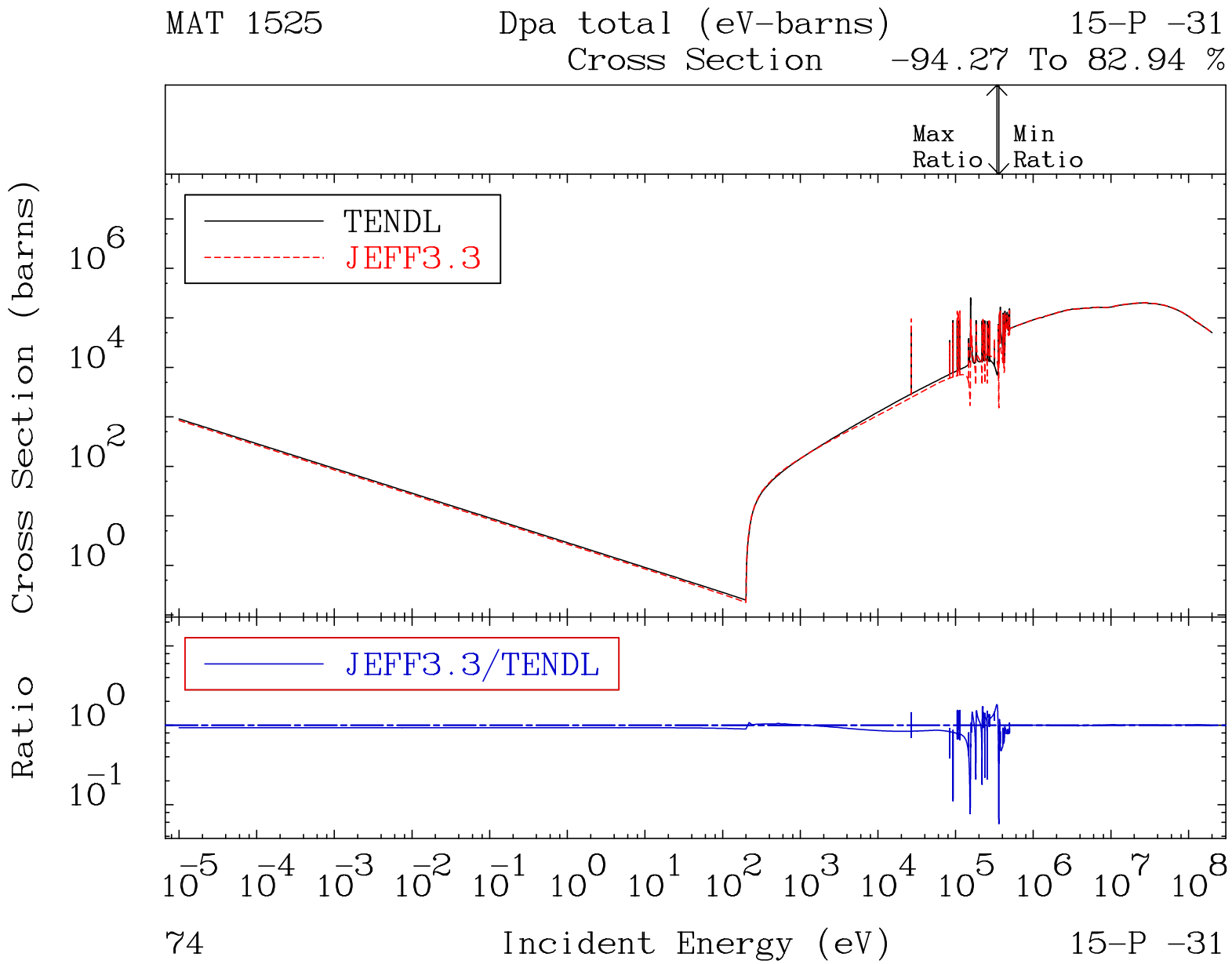

MAT 1525
Kerma inelastic (mt51-91)
15-P -31
Cross Section -1.243 To 308.1 %
Min Ratio
Max Ratio
TENDL Threshold 1.3074 MeV
JEFF3.3 Threshold 1.3074 MeV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
69
15-P -31

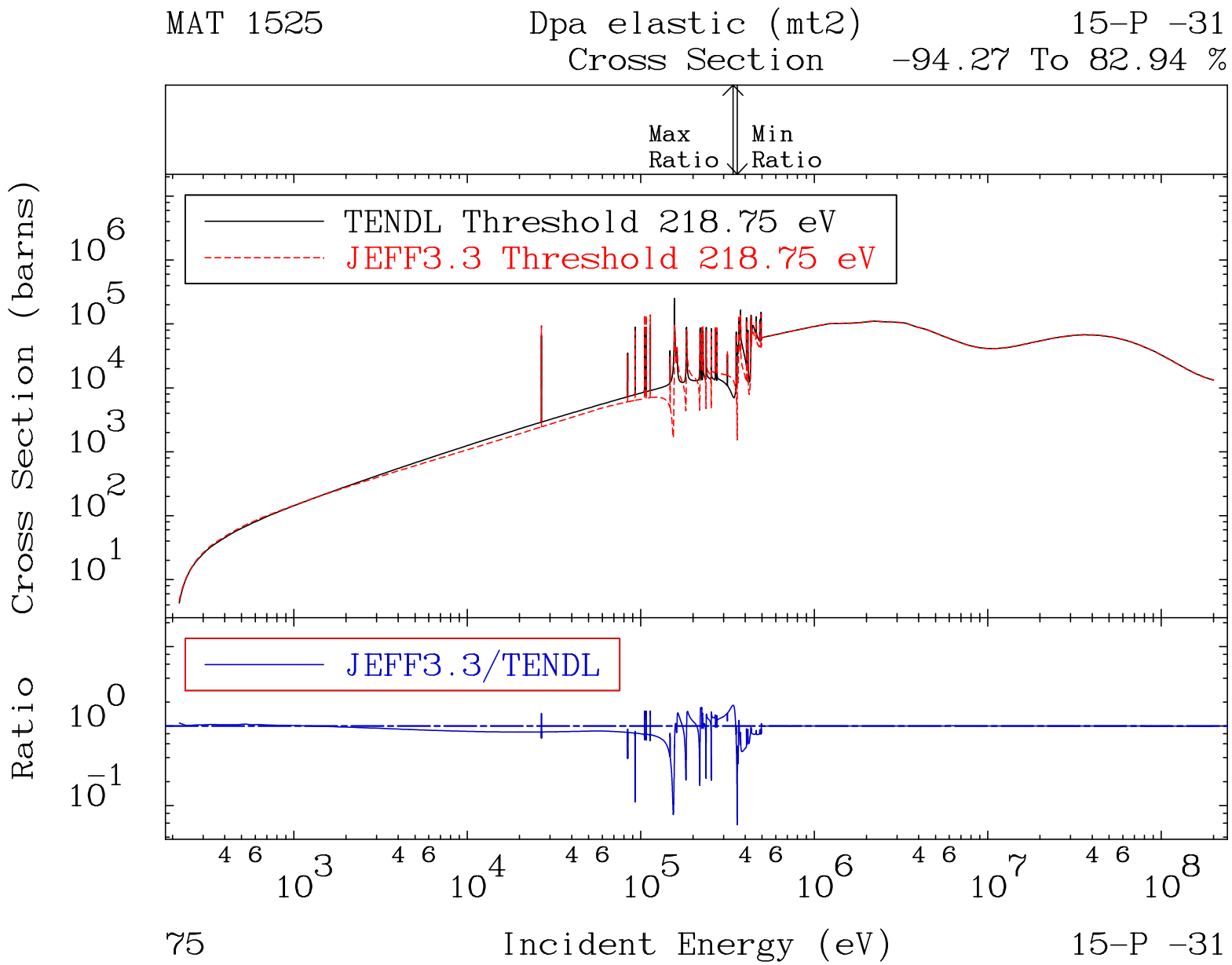

MAT 1525 Kerma fission (mt18 or mt19-20-21-38) 15-P -31
Cross Section -1.243 To 308.1 %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
4
2
10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2} 10^{3} 10^{4} 10^{5} 10^{6} 10^{7} 10^{8}
70
Incident Energy (eV)
15-P -31

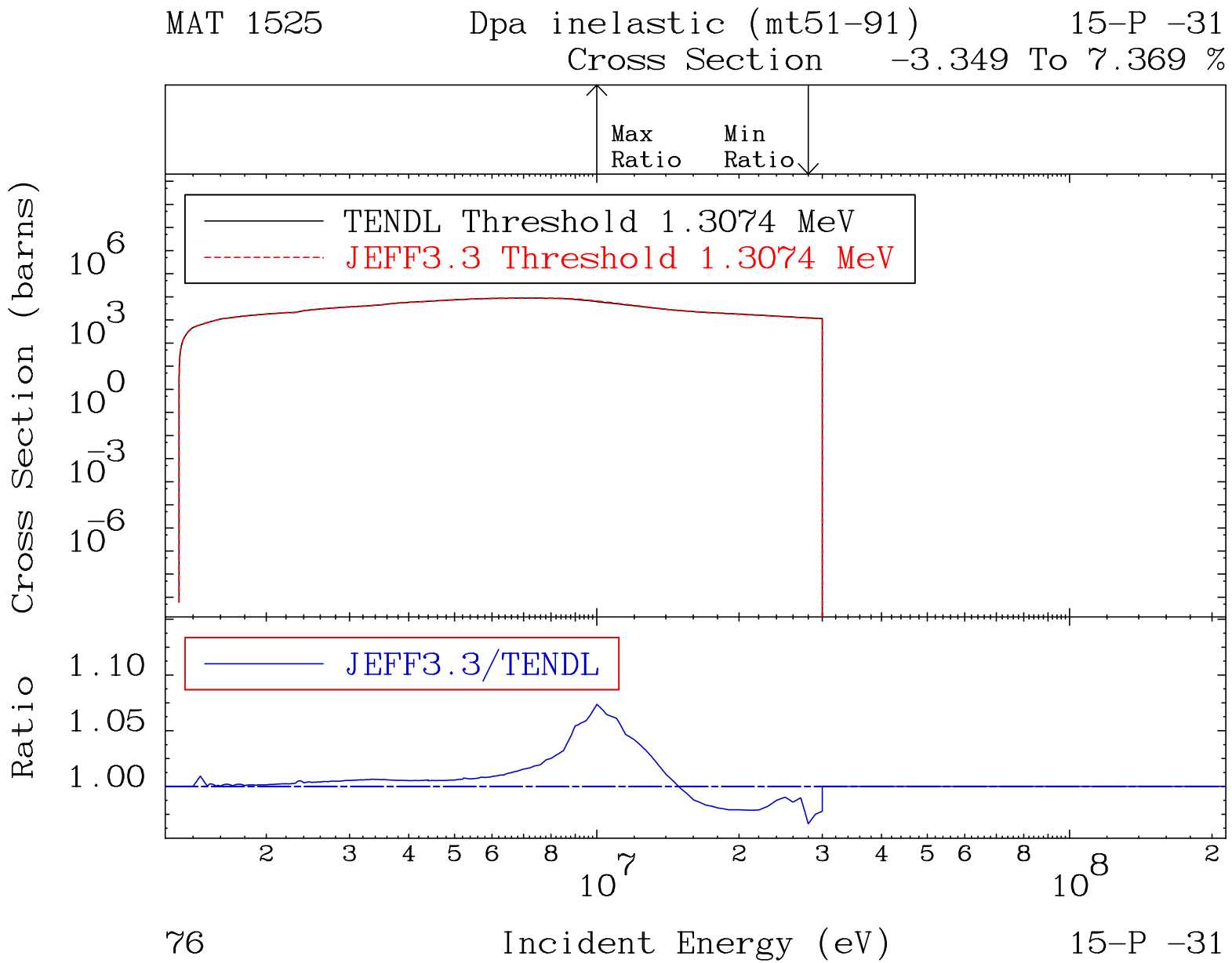

MAT 1525
Kerma capture (mt102)
15-P -31
Cross Section -90.14 To 1274. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
71
15-P -31

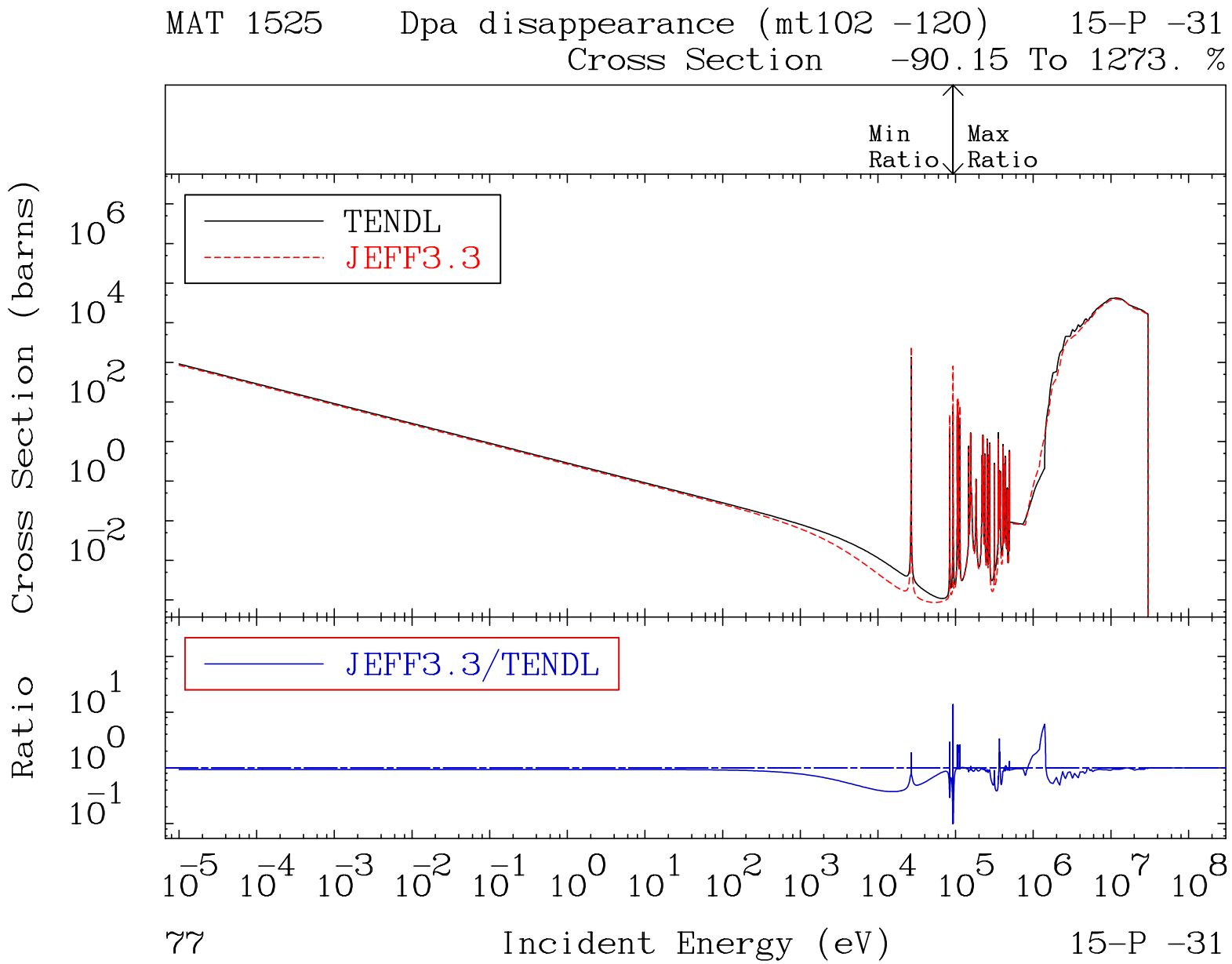

MAT 1525
Total photon (eV-barns)
15-P -31
Cross Section -89.78 To 1324. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
72
15-P -31

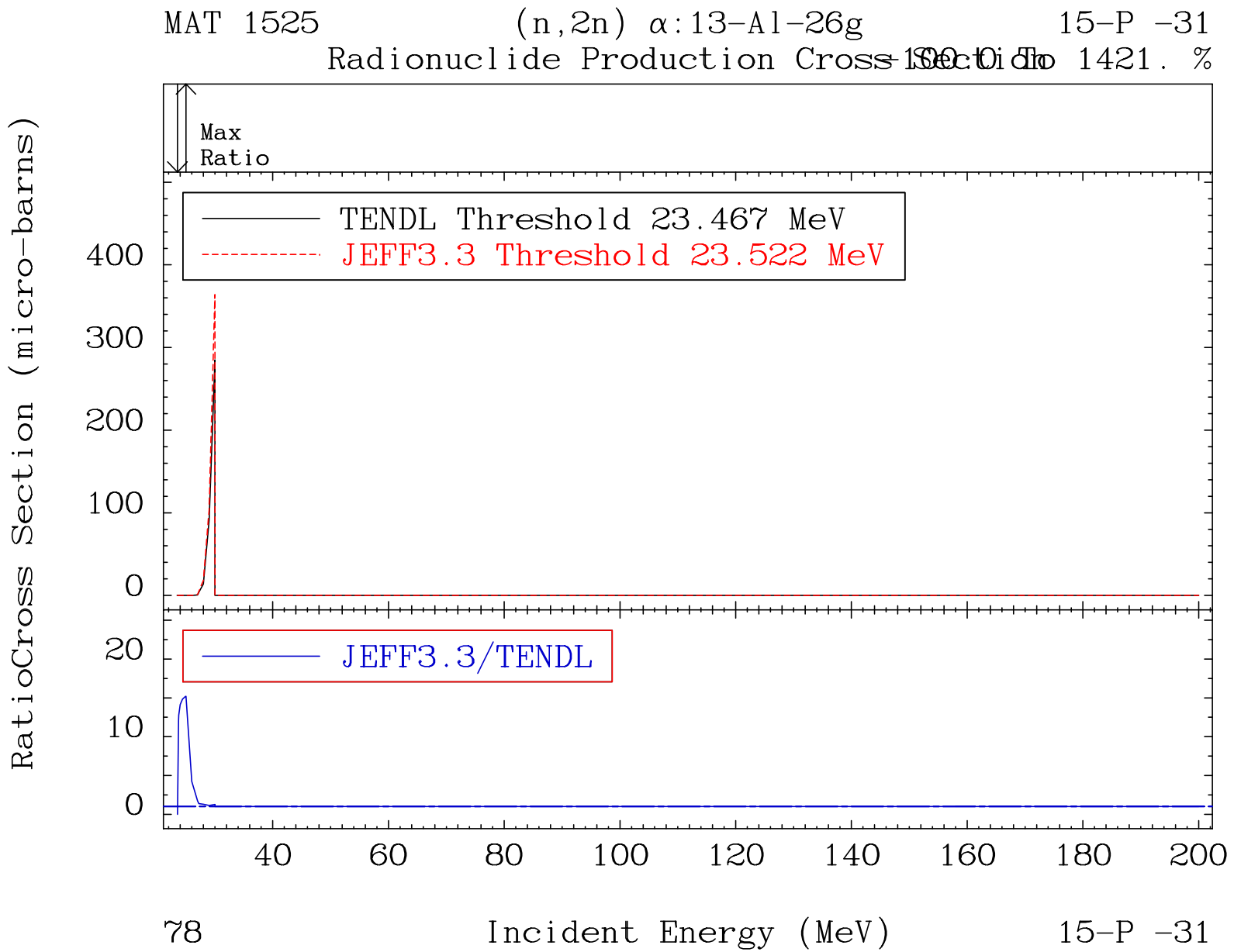

MAT 1525 Total kinematic kerma (high limit) 15-P -31
Cross Section -94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
73
15-P -31

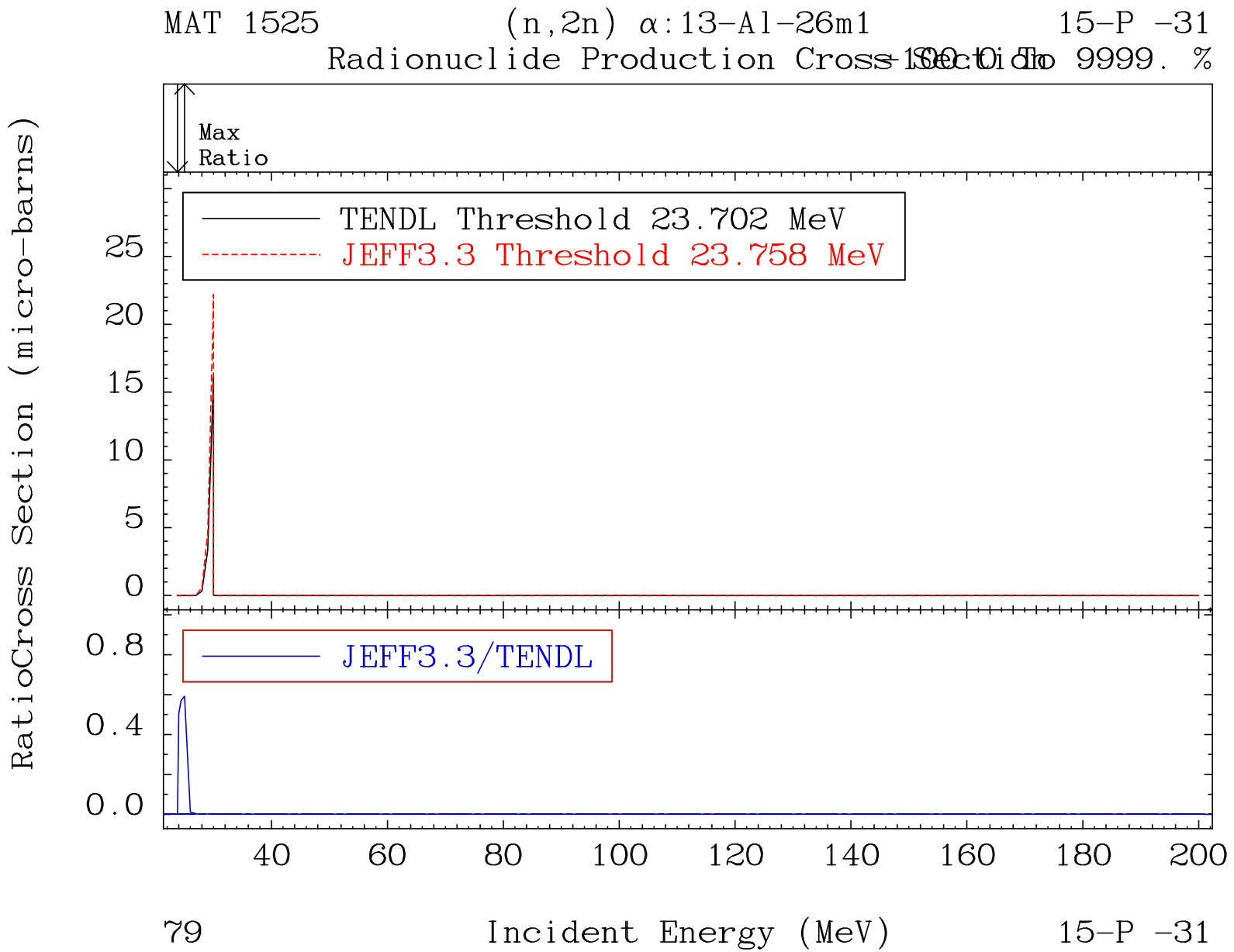

MAT 1525
Dpa total (eV-barns)
15-P -31
Cross Section -94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
74
15-P -31


MAT 1525
Dpa elastic (mt2)
Cross Section
15-P -31
-94.27 To 82.94 %
Max Ratio
Min Ratio
TENDL Threshold 218.75 eV
JEFF3.3 Threshold 218.75 eV
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
75
15-P -31


MAT 1525
Dpa inelastic (mt51-91)
15-P -31
Cross Section -3.349 To 7.369 %
Max Ratio
Min Ratio
TENDL Threshold 1.3074 MeV
JEFF3.3 Threshold 1.3074 MeV
Cross Section (barns)
10^6
10^3
10^0
10^-3
10^-6
JEFF3.3/TENDL
Ratio
1.10
1.05
1.00
2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
76
Incident Energy (eV)
15-P -31


MAT 1525 Dpa disappearance (mt102 -120) 15-P -31
Cross Section -90.15 To 1273. %
Min Ratio
Max Ratio
TENDL
JEFF3.3
JEFF3.3/TENDL
Cross Section (barns)
Ratio
Incident Energy (eV)
77
15-P -31


MAT 1525
(n,2n) α:13-Al-26g
15-P -31
Radionuclide Production Cross Section To 1421. %
Max
Ratio
TENDL Threshold 23.467 MeV
JEFF3.3 Threshold 23.522 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
400
300
200
100
0
20
10
0
40
60
80
100
120
140
160
180
200
78
Incident Energy (MeV)
15-P -31


MAT 1525
(n,2n) α:13-Al-26m1
15-P -31
Radionuclide Production Cross Section To 9999. %
Max
Ratio
TENDL Threshold 23.702 MeV
JEFF3.3 Threshold 23.758 MeV
JEFF3.3/TENDL
RatioCross Section (micro-barns)
25
20
15
10
5
0
0.8
0.4
0.0
40
60
80
100
120
140
160
180
200
79
Incident Energy (MeV)
15-P -31