

Classification-amas	Couche	Base: 12,2452987	m-e en eV	unité NV	rayon effondré	r.expansé/élect	vol. amas	vol.occupé	tx occupat.	rayon unit.	vol. unit.
A.0-bruno	0	1	1,088936E-15	1,16E-24	3,6440E-36	4,7044E-19	4,2E+00	4,2E+00	1E+00	1,0E+00	1,0E+00
A.1a /amorcer/raie15nano*K	1	12,2452987	1,333435E-14	1,42E-23	8,4938E-36	1,0926E-18	1,1E+02	5,1E+01	4,5E-01	3,0E+00	2,7E+01
B.1b /p1,9nano*K - 40hz	2	149,9473403	1,632830E-13	1,74E-22	1,9798E-35	2,5377E-18	3,1E+03	6,3E+02	2,1E-01	9,0E+00	7,3E+02
C.1c /p480hz-620km	3	1836,149971	1,999450E-12	2,13E-21	4,6147E-35	5,8941E-18	8,2E+04	7,7E+03	9,3E-02	2,7E+01	2,0E+04
D.1d-a / psonBF	4	22484,20485	2,448386E-11	2,61E-20	1,0756E-34	1,3690E-17	2,2E+06	9,4E+04	4,2E-02	8,1E+01	5,3E+05
E.2b /pultrason-3,5μ*K	5	275325,8044	2,998122E-10	3,20E-19	2,5072E-34	3,1795E-17	6,0E+07	1,2E+06	1,9E-02	2,4E+02	1,4E+07
F.2c/ pradioOC	6	3371446,715	3,671289E-09	3,91E-18	5,8440E-34	7,3848E-17	1,6E+09	1,4E+07	8,7E-03	7,3E+02	3,9E+08
G2.d-a / pHFradio	7	41284372,07	4,495604E-08	4,79E-17	1,3622E-33	1,7152E-16	4,4E+10	1,7E+08	3,9E-03	2,2E+03	1,0E+10
H.3b/ pVHF-2,3m -6,4m*K	8	505539467,7	5,505001E-07	5,87E-16	3,1751E-33	3,9836E-16	1,2E+12	2,1E+09	1,8E-03	6,6E+03	2,8E+11
I.3c/raie pHO,21m	9	6190481786	6,741038E-06	7,18E-15	7,4007E-33	9,2523E-16	3,2E+13	2,6E+10	8,1E-04	2,0E+04	7,6E+12
J.3d-a /radioton ve p1°K	10	7,580430E+10	8,254602E-05	8,80E-14	1,7250E-32	2,1489E-15	8,6E+14	3,2E+11	3,7E-04	5,9E+04	2,1E+14
K.4b/vμμonde/ pHe1mm	11	9,282463E+11	1,010801E-03	1,08E-12	4,0209E-32	4,9911E-15	2,3E+16	3,9E+12	1,7E-04	1,8E+05	5,6E+15
L.4c /~ vτ	12	1,136665E+13	1,237756E-02	1,32E-11	9,3722E-32	1,1592E-14	6,3E+17	4,8E+13	7,6E-05	5,3E+05	1,5E+17
M.4d-a /I. R.	13	1,391881E+14	1,515669E-01	1,62E-10	2,1846E-31	2,6924E-14	1,7E+19	5,8E+14	3,4E-05	1,6E+06	4,1E+18
N.5b /photon rouge	14	1,704399E+15	1,855982E+00	1,98E-09	5,0920E-31	6,2533E-14	4,6E+20	7,1E+15	1,6E-05	4,8E+06	1,1E+20
O.5c /bleu vert rydberg	15	2,087088E+16	2,272705E+01	2,42E-08	1,1869E-30	1,4524E-13	1,2E+22	8,7E+16	7,1E-06	1,4E+07	3,0E+21
P.5d-a / amas UV.	16	2,555702E+17	2,782995E+02	2,97E-07	2,7665E-30	3,3733E-13	3,3E+23	1,1E+18	3,2E-06	4,3E+07	8,0E+22
Q.6b /amas UV. X	17	3,129533E+18	3,407861E+03	3,63E-06	6,4484E-30	7,8348E-13	9,0E+24	1,3E+19	1,5E-06	1,3E+08	2,2E+24
R.6c / Xton	18	3,832206E+19	4,173027E+04	4,45E-05	1,5030E-29	1,8197E-12	2,4E+26	1,6E+20	6,6E-07	3,9E+08	5,8E+25
S.6d-a/électron-positron	19	4,692651E+20	5,109997E+05	5,45E-04	3,5034E-29	4,2264E-12	6,6E+27	2,0E+21	3,0E-07	1,2E+09	1,6E+27
T.7b /gammaton γ	20	5,746292E+21	6,257343E+06	6,67E-03	8,1661E-29	9,8162E-12	1,8E+29	2,4E+22	1,4E-07	3,5E+09	4,2E+28
U.7c /cosmoton	21	7,036506E+22	7,662304E+07	8,17E-02	1,9034E-28	2,2799E-11	4,8E+30	2,9E+23	6,1E-08	1,0E+10	1,1E+30
V.7d-a /proton/+at.+n	22	8,616412E+23	9,382720E+08	1,00E+00	4,4367E-28	5,2952E-11	1,3E+32	3,6E+24	2,8E-08	3,1E+10	3,1E+31
V.7d-a /at. de Bohr	22,001	8,621184E+23	9,387917E+08	1,00E+00	4,4387E-28	5,2977E-11	1,3E+32	3,6E+24	2,8E-08	3,1E+10	3,1E+31
V.7d-a /atome H1	22,001	8,625877E+23	9,393027E+08	1,00E+00	4,4387E-28	5,2977E-11	1,3E+32	3,6E+24	2,8E-08	3,1E+10	3,1E+31
V.7d-a /at. 'neutron'	22,001	8,630569E+23	9,398137E+08	1,00E+00	4,4387E-28	5,2977E-11	1,3E+32	3,6E+24	2,8E-08	3,1E+10	3,1E+31
W.8b*0,1 /at.deut. H2	23,000	1,724237E+24	1,877583E+09	2,00E+00	1,0341E-27	1,2299E-10	1,3E+32	7,2E+24	5,6E-08	9,4E+10	8,3E+32
W.8b*0,2 /at.trit H3	23,000	2,588506E+24	2,818717E+09	3,00E+00	1,0341E-27	1,2299E-10	1,3E+32	1,1E+25	8,4E-08	9,4E+10	8,3E+32
W.8b*0,4 /at.He4	23,000	3,451342E+24	3,758290E+09	4,01E+00	1,0341E-27	1,2299E-10	1,3E+32	1,4E+25	1,1E-07	9,4E+10	8,3E+32
W.8b*0,7 /at. Li7	23,000	6,039848E+24	6,577007E+09	7,01E+00	1,0341E-27	1,2299E-10	1,3E+32	2,5E+25	2,0E-07	9,4E+10	8,3E+32
W.8b*0,85 /at.Be9	23,000	7,765519E+24	8,456152E+09	9,01E+00	1,0341E-27	1,2299E-10	1,3E+32	3,3E+25	2,5E-07	9,4E+10	8,3E+32
W.8b*0,95 /at.B10	23,000	9,491190E+24	1,033530E+10	1,10E+01	1,0341E-27	1,2299E-10	1,3E+32	4,0E+25	3,1E-07	9,4E+10	8,3E+32
W.8b*1 /at.C12	23,000	1,035403E+25	1,127487E+10	1,20E+01	1,0341E-27	1,2299E-10	1,3E+32	4,3E+25	3,4E-07	9,4E+10	8,3E+32
W.8b/élémentsH2-C16/12	23	1,055105E+25	1,148942E+10	1,22E+01	1,0341E-27	1,2299E-10	3,5E+33	4,4E+25	1,3E-08	1,9E+11	8,3E+32

X.8c*0,1 /at.N14	24,000	1,207970E+25	1,315401E+10	1,40E+01	2,4105E-27	2,8565E-10	3,5E+33	5,1E+25	1,4E-08	2,8E+11	2,3E+34
X.8c*0,2 /at.O16	24,000	1,380537E+25	1,503316E+10	1,60E+01	2,4105E-27	2,8565E-10	3,5E+33	5,8E+25	1,7E-08	2,8E+11	2,3E+34
X8.c*0,3 /at.CF18	24,000	1,553104E+25	1,691230E+10	1,80E+01	2,4105E-27	2,8565E-10	3,5E+33	6,5E+25	1,9E-08	2,8E+11	2,3E+34
X8.c*0,4 /at.Ne20	24,000	1,725671E+25	1,879145E+10	2,00E+01	2,4105E-27	2,8565E-10	3,5E+33	7,2E+25	2,1E-08	2,8E+11	2,3E+34
X.8c*0,7 /pseudoW	24,000	7,386573E+25	8,043505E+10	8,57E+01	2,4105E-27	2,8565E-10	3,5E+33	3,1E+26	8,9E-08	2,8E+11	2,3E+34
X.8c*0,8 /pseudoZ	24,000	8,441798E+25	9,192577E+10	9,80E+01	2,4105E-27	2,8565E-10	3,5E+33	3,5E+26	1,0E-07	2,8E+11	2,3E+34
X.8c /élé. 7-61/145	24	1,292008E+26	1,406914E+11	1,50E+02	2,4105E-27	2,8565E-10	9,4E+34	5,4E+26	5,7E-09	5,6E+11	2,3E+34
Y.8d-a*0,2 /pseudo top	25,000	1,643124E+26	1,789257E+11	1,91E+02	5,6186E-27	6,6344E-10	9,4E+34	6,9E+26	7,3E-09	8,5E+11	6,1E+35
Y.8d-a /élé. m62-120/300	25	1,582102E+27	1,722808E+12	1,84E+03	5,6186E-27	6,6344E-10	2,5E+36	6,6E+27	2,6E-09	1,7E+12	6,1E+35
Z.9b*0,3 /pseudo higgs	26,000	4,477218E+27	4,875404E+12	5,20E+03	1,3096E-26	1,5409E-09	2,5E+36	1,9E+28	7,4E-09	2,5E+12	1,6E+37
Z.9b /mol. 1ières cellules	26	1,937332E+28	2,109630E+13	2,25E+04	1,3096E-26	1,5409E-09	6,9E+37	8,1E+28	1,2E-09	5,1E+12	1,6E+37
AA.9c /cellules	27	2,372320E+29	2,583305E+14	2,75E+05	3,0526E-26	3,5789E-09	1,9E+39	9,9E+29	5,3E-10	1,5E+13	4,4E+38
AB.9d-a	28	2,904977E+30	3,163334E+15	3,37E+06	7,1153E-26	8,3122E-09	5,0E+40	1,2E+31	2,4E-10	4,6E+13	1,2E+40
AC.10b	29	3,557231E+31	3,873597E+16	4,13E+07	1,6585E-25	1,9306E-08	1,4E+42	1,5E+32	1,1E-10	1,4E+14	3,2E+41
AD.10c	30	4,355936E+32	4,743335E+17	5,06E+08	3,8658E-25	4,4840E-08	3,7E+43	1,8E+33	5,0E-11	4,1E+14	8,7E+42
AE.10d-a	31	5,333974E+33	5,808356E+18	6,19E+09	9,0107E-25	1,0414E-07	9,9E+44	2,2E+34	2,3E-11	1,2E+15	2,4E+44
AF.11b	32	6,531610E+34	7,112505E+19	7,58E+10	2,1003E-24	2,4188E-07	2,7E+46	2,7E+35	1,0E-11	3,7E+15	6,4E+45
AG.11c	33	7,998152E+35	8,709475E+20	9,28E+11	4,8955E-24	5,6179E-07	7,2E+47	3,4E+36	4,7E-12	1,1E+16	1,7E+47
AH.11d-a	34	9,793976E+36	1,066501E+22	1,14E+13	1,1411E-23	1,3048E-06	1,9E+49	4,1E+37	2,1E-12	3,3E+16	4,6E+48
AI.12b	35	1,199302E+38	1,305963E+23	1,39E+14	2,6598E-23	3,0305E-06	5,2E+50	5,0E+38	9,6E-13	1,0E+17	1,3E+50
AJ.12c	36	1,468581E+39	1,599190E+24	1,70E+15	6,1996E-23	7,0387E-06	1,4E+52	6,2E+39	4,3E-13	3,0E+17	3,4E+51
AK.12d-a	37	1,798321E+40	1,958256E+25	2,09E+16	1,4451E-22	1,6348E-05	3,8E+53	7,5E+40	2,0E-13	9,0E+17	9,1E+52
AL.13b	38	2,202098E+41	2,397943E+26	2,56E+17	3,3683E-22	3,7970E-05	1,0E+55	9,2E+41	8,9E-14	2,7E+18	2,5E+54
AM.13c	39	2,696534E+42	2,936353E+27	3,13E+18	7,8511E-22	8,8188E-05	2,8E+56	1,1E+43	4,1E-14	8,1E+18	6,7E+55
AN.13d-a	40	3,301987E+43	3,595652E+28	3,83E+19	1,8300E-21	2,0482E-04	7,5E+57	1,4E+44	1,8E-14	2,4E+19	1,8E+57
AO.14b	41	4,043381E+44	4,402983E+29	4,69E+20	4,2656E-21	4,7572E-04	2,0E+59	1,7E+45	8,3E-15	7,3E+19	4,9E+58
AP.14c	42	4,951241E+45	5,391585E+30	5,75E+21	9,9425E-21	1,1049E-03	5,5E+60	2,1E+46	3,8E-15	2,2E+20	1,3E+60
AQ.14d-a /foudre boule	43	6,062943E+46	6,602156E+31	7,04E+22	2,3175E-20	2,5662E-03	1,5E+62	2,5E+47	1,7E-15	6,6E+20	3,5E+61
AR.15b*0,855 /mole	44,000	5,192853E+47	5,654684E+32	6,03E+23	5,4018E-20	5,9603E-03	4,0E+63	2,2E+48	5,4E-16	9,8E+20	9,6E+62
AR.15b	44	7,424255E+47	8,084538E+32	8,62E+23	5,4018E-20	5,9603E-03	4,0E+63	3,1E+48	7,8E-16	2,0E+21	9,6E+62
AS.15c	45	9,091222E+48	9,899758E+33	1,06E+25	1,2591E-19	1,3843E-02	1,1E+65	3,8E+49	3,5E-16	5,9E+21	2,6E+64
AT.15d-a /~1kg m/e	46	1,113247E+50	1,212255E+35	1,29E+26	2,9348E-19	3,2152E-02	2,9E+66	4,7E+50	1,6E-16	1,8E+22	7,0E+65
AU.16b	47	1,363205E+51	1,484442E+36	1,58E+27	6,8408E-19	7,4676E-02	7,9E+67	5,7E+51	7,3E-17	5,3E+22	1,9E+67
AV.16c	48	1,669285E+52	1,817744E+37	1,94E+28	1,5945E-18	1,7344E-01	2,1E+69	7,0E+52	3,3E-17	1,6E+23	5,1E+68
AW.16d-a	49	2,044089E+53	2,225882E+38	2,37E+29	3,7166E-18	4,0284E-01	5,7E+70	8,6E+53	1,5E-17	4,8E+23	1,4E+70

AX.17b		50	2,503048E+54	2,725659E+39	2,90E+30	8,6631E-18	9,3562E-01	1,5E+72	1,0E+55	6,8E-18	1,4E+24	3,7E+71
AY.17c		51	3,065057E+55	3,337651E+40	3,56E+31	2,0193E-17	2,173E+00	4,2E+73	1,3E+56	3,1E-18	4,3E+24	1,0E+73
AZ.17d-a		52	3,753254E+56	4,087053E+41	4,36E+32	4,7067E-17	5,047E+00	1,1E+75	1,6E+57	1,4E-18	1,3E+25	2,7E+74
AAA.18b		53	4,595971E+57	5,004718E+42	5,33E+33	1,0971E-16	1,172E+01	3,1E+76	1,9E+58	6,3E-19	3,9E+25	7,3E+75
AAB.18c		54	5,627904E+58	6,128427E+43	6,53E+34	2,5572E-16	2,723E+01	8,2E+77	2,4E+59	2,9E-19	1,2E+26	2,0E+77
	55,00	55	6,891537E+59	7,504442E+44	8,00E+35	5,9605E-16	6,324E+01	2,2E+79	2,9E+60	1,3E-19	3,5E+26	5,3E+78
	56,00	56	8,438893E+60	9,189413E+45	9,79E+36	1,3893E-15	1,469E+02	6,0E+80	3,5E+61	5,9E-20	1,0E+27	1,4E+80
	57,00	57	1,033368E+62	1,125271E+47	1,20E+38	3,2384E-15	3,411E+02	1,6E+82	4,3E+62	2,7E-20	3,1E+27	3,9E+81
	58,00	58	1,265390E+63	1,377928E+48	1,47E+39	7,5483E-15	7,923E+02	4,4E+83	5,3E+63	1,2E-20	9,4E+27	1,0E+83
	59,00	59	1,549507E+64	1,687314E+49	1,80E+40	1,7594E-14	1,840E+03	1,2E+85	6,5E+64	5,5E-21	2,8E+28	2,8E+84
	60,00	60	1,897418E+65	2,066167E+50	2,20E+41	4,1010E-14	4,274E+03	3,2E+86	7,9E+65	2,5E-21	8,5E+28	7,6E+85
	61,00	61	2,323445E+66	2,530083E+51	2,70E+42	9,5590E-14	9,926E+03	8,6E+87	9,7E+66	1,1E-21	2,5E+29	2,1E+87
	62,00	62	2,845128E+67	3,098162E+52	3,30E+43	2,2281E-13	2,305E+04	2,3E+89	1,2E+68	5,1E-22	7,6E+29	5,6E+88
	63,00	63	3,483944E+68	3,793792E+53	4,04E+44	5,1935E-13	5,355E+04	6,3E+90	1,5E+69	2,3E-22	2,3E+30	1,5E+90
	64,00	64	4,266193E+69	4,645611E+54	4,95E+45	1,2105E-12	1,244E+05	1,7E+92	1,8E+70	1,1E-22	6,9E+30	4,0E+91
	65,00	65	5,224081E+70	5,688690E+55	6,06E+46	2,8216E-12	2,889E+05	4,6E+93	2,2E+71	4,8E-23	2,1E+31	1,1E+93
	66,00	66	6,397043E+71	6,965970E+56	7,42E+47	6,5769E-12	6,709E+05	1,2E+95	2,7E+72	2,2E-23	6,2E+31	3,0E+94
	67,00	67	7,833371E+72	8,530039E+57	9,09E+48	1,5330E-11	1,558E+06	3,3E+96	3,3E+73	9,8E-24	1,9E+32	8,0E+95
	68,00	68	9,592197E+73	1,044529E+59	1,11E+50	3,5733E-11	3,619E+06	9,0E+97	4,0E+74	4,5E-24	5,6E+32	2,2E+97
	69,00	69	1,174593E+75	1,279057E+60	1,36E+51	8,3289E-11	8,406E+06	2,4E+99	4,9E+75	2,0E-24	1,7E+33	5,8E+98
70*0,286	/~Terre	70,000	3,366486E+75	3,665888E+60	3,91E+51	1,9414E-10	1,952E+07	7E+100	1,4E+76	2,1E-25	2,5E+33	1,6E+100
	70,00	70	1,438324E+76	1,566243E+61	1,67E+52	1,9414E-10	1,952E+07	7E+100	6,0E+76	9,2E-25	5,0E+33	1,6E+100
	71,00	71	1,761271E+77	1,917911E+62	2,04E+53	4,5251E-10	4,534E+07	2E+102	7,4E+77	4,2E-25	1,5E+34	4,2E+101
	72,00	72	2,156729E+78	2,348540E+63	2,50E+54	1,0548E-09	1,053E+08	5E+103	9,0E+78	1,9E-25	4,5E+34	1,1E+103
	73,00	73	2,640979E+79	2,875857E+64	3,07E+55	2,4585E-09	2,446E+08	1E+105	1,1E+80	8,6E-26	1,4E+35	3,1E+104
	74,00	74	3,233958E+80	3,521573E+65	3,75E+56	5,7306E-09	5,681E+08	3E+106	1,4E+81	3,9E-26	4,1E+35	8,3E+105
75*0,318	/~Soleil	75,000	1,028853E+81	1,120354E+66	1,19E+57	1,3357E-08	1,319E+09	9E+107	4,3E+81	4,6E-27	6,1E+35	2,3E+107
	75,00	75	3,960078E+81	4,312271E+66	4,60E+57	1,3357E-08	1,319E+09	9E+107	1,7E+82	1,8E-26	1,2E+36	2,3E+107
	76,00	76	4,849234E+82	5,280505E+67	5,63E+58	3,1134E-08	3,065E+09	3E+109	2,0E+83	8,0E-27	3,6E+36	6,1E+108
	77,00	77	5,938032E+83	6,466136E+68	6,89E+59	7,2571E-08	7,118E+09	7E+110	2,5E+84	3,6E-27	1,1E+37	1,6E+110
	78,00	78	7,271297E+84	7,917977E+69	8,44E+60	1,6915E-07	1,653E+10	2E+112	3,0E+85	1,6E-27	3,3E+37	4,4E+111
	79,00	79	8,903921E+85	9,695799E+70	1,03E+62	3,9428E-07	3,840E+10	5E+113	3,7E+86	7,4E-28	9,9E+37	1,2E+113
	80,00	80	1,090312E+87	1,187280E+72	1,27E+63	9,1903E-07	8,918E+10	1E+115	4,6E+87	3,4E-28	3,0E+38	3,2E+114
81	/u.a.	81	1,335119E+88	1,453859E+73	1,55E+64	2,1422E-06	2,071E+11	4E+116	5,6E+88	1,5E-28	8,9E+38	8,7E+115