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Electron Impact Ionization Data for Atoms and Ions
-up-dated in 1998-

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Electron Impact Ionization Data for Atoms and Ions - up-dated in 1998 -

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Abstract

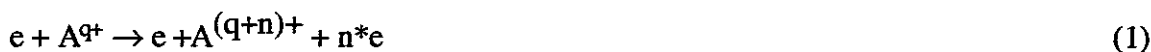
Ionization cross section data for neutral atoms and (positive and negative) ions have been compiled and shown in a series of figures. The present survey has included those published up to mid-1998.

[keywords : ionization cross section, ion, atom, electron impact]

1. Introduction

In a previous compilation we had shown the electron impact ionization cross section data for neutral atoms and ions including multiply charged ions taken up to around 1988^{1,2)}. Since then, a number of new experimental and theoretical investigations are continuously providing important data for such ionization processes. Their references are given in recent papers³⁻⁵⁾.

In this report we summarize the present situation (mid-1998) of electron impact ionization cross section data for neutral atoms and negative as well as positive ions ranging from H to U. Usually the ionization collisions accompanied with n electrons removed from an ion with the charge q , A^{q+} , can be expressed in the following form :



whose cross section is expressed with σ_n .

The partial ionization cross sections σ_n are determined through measuring the ionized secondary ion fraction over the initial ion intensity. In neutral gas (vapor) targets, the incident electrons pass through the target gases. But for ion targets we need a series of advanced techniques, so-called crossed-beams technique where the incident electron beam crosses the fast-moving target ions whose effective densities are very low, usually equivalent to less than 10^{-10} Torr, thus requiring ultra-high vacuum systems.

Some experimental data were also taken through so-called condenser plate technique which provides the apparent ionization cross sections as follows :

$$\sigma_{app} = \sum n \sigma_n \quad (2)$$

Note that the cross section, σ_{app} , differs from the sum of the partial ionization cross section $\sum \sigma_n$.

Here, without giving any detailed description of various ionization processes (see books and summaries⁶⁻⁷⁾), we give the ionization cross sections by electron impact in graphical forms, together with relevant bibliographic reference data.

2. Explanation of data for ionization by electron impact

The compiled ionization cross section data for various atoms and ions with different charge under electron impact are given in Figs.1-441 as a function of the electron impact energy. The notations after references, T and E, denote theoretical and experimental investigations, respectively.

It is important to note some differences of these data shown in these figures :

- a) In some of these figures (in particular where data look scattered), data for the state-selected product ions are given (see Fig.126 for Ar atoms), by measuring the energy loss of the incident electrons.
- b) Some theoretical calculations involving the inner-shell electron ionization had been performed. If one of the inner-shell electrons is ionized, the final charge state of the ionized target ions/atoms may

not increase by unity, as noted in figures, because the inner-shell electron ionization usually follows a series of autoionization or Auger electron emission, losing a few electrons. These data are accompanied with some notations on the (intermediate) electronic state just after ionization (without giving any information on the final charge states of product ions) (see Fig.125 for Ar atoms).

c) Also some theoretical cross sections are given for the metastable or excited state target ions (see Fig.232 for Ni¹⁰⁺ ions), though in most cases they correspond to ions in the ground state state.

d) Some ionization data are given as "sum" or "Σ" ("Sum Heⁿ⁺" at the top or "ΣHeⁿ⁺" at the figure caption in Fig.5 for He atoms) which are taken through a condenser-plate technique and, therefore, represent "the apparent ionization cross section, σ_{app} " (see eq. (2)).

These data can be accessible through WWW (free of charge) at

<http://shino.nifs.ac.jp>

where the ID can be obtained electronically (taking a few weeks after application). Then the databases can be accessed at

<http://amdata.nifs.ac.jp>

where the data can be acquired in plotted graphical forms and also in numerical forms, together with bibliographic references.

3) List of references

The references relevant to the compiled ionization cross section data are list in alphabetical order of the first author in the following table which are taken from NIFS databases.

Acknowledgements

The present authors would like to thank the members of Data & Planning Center, NIFS, for their continuous effort for developing databases.

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Fig. 1 H⁺ → H⁰
 Fig. 2 H⁺ → H⁺
 Fig. 3 H → H⁺
 Fig. 4 H(2s) → H⁺
 Fig. 5 He → ΣHeⁿ⁺
 Fig. 6 He → He⁺
 Fig. 7 He(1s2s) → He⁺
 Fig. 8 He → He²⁺
 Fig. 9 He⁺ → He²⁺
 Fig. 10 Li → ΣLiⁿ⁺
 Fig. 11 Li → Li⁺
 Fig. 12 Li → Li²⁺
 Fig. 13 Li⁺ → Li²⁺
 Fig. 14 Li⁺ → Li³⁺
 Fig. 15 Li²⁺ → Li³⁺
 Fig. 16 Be⁺ → Be²⁺
 Fig. 17 B → B⁺
 Fig. 18 B⁺ → B²⁺
 Fig. 19 B²⁺ → B³⁺
 Fig. 20 B³⁺ → B⁴⁺
 Fig. 21 C → C⁰
 Fig. 22 C → C⁺
 Fig. 23 C⁺ → C²⁺
 Fig. 24 C⁺ → C³⁺
 Fig. 25 C²⁺ → C³⁺
 Fig. 26 C³⁺ → C⁴⁺
 Fig. 27 C⁴⁺ → C⁵⁺
 Fig. 28 C⁵⁺ → C⁶⁺
 Fig. 29 N → ΣNⁿ⁺
 Fig. 30 N → N⁺
 Fig. 31 N⁺ → N²⁺
 Fig. 32 N⁺ → N³⁺
 Fig. 33 N²⁺ → N³⁺
 Fig. 34 N³⁺ → N⁴⁺
 Fig. 35 N⁴⁺ → N⁵⁺
 Fig. 36 N⁵⁺ → N⁶⁺
 Fig. 37 N⁶⁺ → N⁷⁺
 Fig. 38 O → O⁰
 Fig. 39 O → ΣOⁿ⁺
 Fig. 40 O → O⁺
 Fig. 41 O → O²⁺
 Fig. 42 O⁺ → O²⁺
 Fig. 43 O⁺ → O³⁺
 Fig. 44 O²⁺ → O³⁺
 Fig. 45 O³⁺ → O⁴⁺
 Fig. 46 O⁴⁺ → O⁵⁺

Fig. 92 Al⁵⁺ → Al⁶⁺
 Fig. 93 Al⁶⁺ → Al⁷⁺
 Fig. 94 Al⁷⁺ → Al⁸⁺
 Fig. 95 Al⁸⁺ → Al⁹⁺
 Fig. 96 Al⁹⁺ → Al¹⁰⁺
 Fig. 97 Al¹⁰⁺ → Al¹¹⁺
 Fig. 98 Al¹¹⁺ → Al¹²⁺
 Fig. 99 Si → Si⁺
 Fig. 100 Si → Si²⁺
 Fig. 101 Si⁺ → Si²⁺
 Fig. 102 Si²⁺ → Si³⁺
 Fig. 103 Si³⁺ → Si⁴⁺
 Fig. 104 Si⁴⁺ → Si⁵⁺
 Fig. 105 Si⁵⁺ → Si⁶⁺
 Fig. 106 Si⁶⁺ → Si⁷⁺
 Fig. 107 Si⁷⁺ → Si⁸⁺
 Fig. 108 P → P⁺
 Fig. 109 P → P²⁺
 Fig. 110 P⁺ → P²⁺
 Fig. 111 P²⁺ → P³⁺
 Fig. 112 S → S⁺
 Fig. 113 S → S²⁺
 Fig. 114 S → S³⁺
 Fig. 115 S → S⁴⁺
 Fig. 116 S⁺ → S²⁺
 Fig. 117 S²⁺ → S³⁺
 Fig. 118 S⁴⁺ → S⁵⁺
 Fig. 119 Cl → Cl⁺
 Fig. 120 Cl → Cl²⁺
 Fig. 121 Cl⁺ → Cl²⁺
 Fig. 122 Cl²⁺ → Cl³⁺
 Fig. 123 Cl³⁺ → Cl⁶⁺
 Fig. 124 Ar → ΣArⁿ⁺
 Fig. 125 Ar → Ar⁺
 Fig. 126 Ar → Ar²⁺
 Fig. 127 Ar → Ar³⁺
 Fig. 128 Ar → Ar⁴⁺
 Fig. 129 Ar → Ar⁵⁺
 Fig. 130 Ar → Ar⁶⁺
 Fig. 131 Ar → Ar⁷⁺
 Fig. 132 Ar⁺ → Ar²⁺
 Fig. 133 Ar⁺ → Ar³⁺
 Fig. 134 Ar⁺ → Ar⁴⁺
 Fig. 135 Ar⁺ → Ar⁵⁺
 Fig. 136 Ar²⁺ → Ar³⁺
 Fig. 137 Ar²⁺ → Ar⁴⁺

Fig. 138 Ar²⁺ → Ar⁵⁺
 Fig. 139 Ar³⁺ → Ar⁴⁺
 Fig. 140 Ar³⁺ → Ar⁵⁺
 Fig. 141 Ar⁴⁺ → Ar⁵⁺
 Fig. 142 Ar⁴⁺ → Ar⁶⁺
 Fig. 143 Ar⁵⁺ → Ar⁶⁺
 Fig. 144 Ar⁶⁺ → Ar⁷⁺
 Fig. 145 Ar⁶⁺ → Ar⁸⁺
 Fig. 146 Ar⁷⁺ → Ar⁸⁺
 Fig. 147 Ar⁷⁺ → Ar⁹⁺
 Fig. 148 Ar⁸⁺ → Ar⁹⁺
 Fig. 149 Ar¹⁰⁺ → Ar¹¹⁺
 Fig. 150 Ar¹¹⁺ → Ar¹²⁺
 Fig. 151 Ar¹²⁺ → Ar¹³⁺
 Fig. 152 Ar¹⁴⁺ → Ar¹⁵⁺
 Fig. 153 Ar¹⁵⁺ → Ar¹⁶⁺
 Fig. 154 Ar¹⁶⁺ → Ar¹⁷⁺
 Fig. 155 Ar¹⁷⁺ → Ar¹⁸⁺
 Fig. 156 K → ΣKⁿ⁺
 Fig. 157 K → K⁺
 Fig. 158 K⁺ → K²⁺
 Fig. 159 K⁺ → K³⁺
 Fig. 160 K²⁺ → K³⁺
 Fig. 161 Ca → ΣCaⁿ⁺
 Fig. 162 Ca → Ca⁺
 Fig. 163 Ca → Ca²⁺
 Fig. 164 Ca⁺ → Ca²⁺
 Fig. 165 Ca²⁺ → Ca³⁺
 Fig. 166 Ca⁹⁺ → Ca¹⁰⁺
 Fig. 167 Sc²⁺ → Sc³⁺
 Fig. 168 Sc³⁺ → Sc⁴⁺
 Fig. 169 Sc⁴⁺ → Sc⁵⁺
 Fig. 170 Sc⁵⁺ → Sc⁶⁺
 Fig. 171 Sc⁶⁺ → Sc⁷⁺
 Fig. 172 Sc⁷⁺ → Sc⁸⁺
 Fig. 173 Sc⁸⁺ → Sc⁹⁺
 Fig. 174 Sc⁹⁺ → Sc¹⁰⁺
 Fig. 175 Ti → Ti⁺
 Fig. 176 Ti⁺ → Ti²⁺
 Fig. 177 Ti²⁺ → Ti³⁺
 Fig. 178 Ti³⁺ → Ti⁴⁺
 Fig. 179 Ti⁵⁺ → Ti⁶⁺
 Fig. 180 Ti¹¹⁺ → Ti¹²⁺
 Fig. 181 Ti¹⁹⁺ → Ti²⁰⁺
 Fig. 182 V⁵⁺ → V⁶⁺

Fig. 183 V²⁰⁺ → V²¹⁺
 Fig. 184 Cr → Cr⁺
 Fig. 185 Cr⁺ → Cr²⁺
 Fig. 186 Cr⁶⁺ → Cr⁷⁺
 Fig. 187 Cr⁷⁺ → Cr⁸⁺
 Fig. 188 Cr⁸⁺ → Cr⁹⁺
 Fig. 189 Cr¹⁰⁺ → Cr¹¹⁺
 Fig. 190 Cr¹³⁺ → Cr¹⁴⁺
 Fig. 191 Cr²¹⁺ → Cr²²⁺
 Fig. 192 Mn²²⁺ → Mn²³⁺
 Fig. 193 Fe → Fe⁺
 Fig. 194 Fe → Fe²⁺
 Fig. 195 Fe → Fe³⁺
 Fig. 196 Fe → Fe⁴⁺
 Fig. 197 Fe⁺ → Fe²⁺
 Fig. 198 Fe²⁺ → Fe³⁺
 Fig. 199 Fe³⁺ → Fe⁴⁺
 Fig. 200 Fe⁴⁺ → Fe⁵⁺
 Fig. 201 Fe⁵⁺ → Fe⁶⁺
 Fig. 202 Fe⁶⁺ → Fe⁷⁺
 Fig. 203 Fe⁷⁺ → Fe⁸⁺
 Fig. 204 Fe⁸⁺ → Fe⁹⁺
 Fig. 205 Fe⁹⁺ → Fe¹⁰⁺
 Fig. 206 Fe¹⁰⁺ → Fe¹¹⁺
 Fig. 207 Fe¹¹⁺ → Fe¹²⁺
 Fig. 208 Fe¹²⁺ → Fe¹³⁺
 Fig. 209 Fe¹³⁺ → Fe¹⁴⁺
 Fig. 210 Fe¹⁴⁺ → Fe¹⁵⁺
 Fig. 211 Fe¹⁵⁺ → Fe¹⁶⁺
 Fig. 212 Fe¹⁶⁺ → Fe¹⁷⁺
 Fig. 213 Fe¹⁷⁺ → Fe¹⁸⁺
 Fig. 214 Fe¹⁸⁺ → Fe¹⁹⁺
 Fig. 215 Fe¹⁹⁺ → Fe²⁰⁺
 Fig. 216 Fe²⁰⁺ → Fe²¹⁺
 Fig. 217 Fe²¹⁺ → Fe²²⁺
 Fig. 218 Fe²²⁺ → Fe²³⁺
 Fig. 219 Fe²³⁺ → Fe²⁴⁺
 Fig. 220 Fe²⁴⁺ → Fe²⁵⁺
 Fig. 221 Fe²⁵⁺ → Fe²⁶⁺
 Fig. 222 Ni → Ni⁺
 Fig. 223 Ni⁺ → Ni²⁺
 Fig. 224 Ni²⁺ → Ni³⁺
 Fig. 225 Ni³⁺ → Ni⁴⁺
 Fig. 226 Ni⁴⁺ → Ni⁵⁺
 Fig. 227 Ni⁵⁺ → Ni⁶⁺

Fig. 228 Ni⁶⁺ → Ni⁷⁺
 Fig. 229 Ni⁷⁺ → Ni⁸⁺
 Fig. 230 Ni⁸⁺ → Ni⁹⁺
 Fig. 231 Ni⁹⁺ → Ni¹⁰⁺
 Fig. 232 Ni¹⁰⁺ → Ni¹¹⁺
 Fig. 233 Ni¹¹⁺ → Ni¹²⁺
 Fig. 234 Ni¹²⁺ → Ni¹³⁺
 Fig. 235 Ni¹³⁺ → Ni¹⁴⁺
 Fig. 236 Ni¹⁴⁺ → Ni¹⁵⁺
 Fig. 237 Ni¹⁵⁺ → Ni¹⁶⁺
 Fig. 238 Ni¹⁶⁺ → Ni¹⁷⁺
 Fig. 239 Ni¹⁷⁺ → Ni¹⁸⁺
 Fig. 240 Cu → ΣCuⁿ⁺
 Fig. 241 Cu → Cu⁺
 Fig. 242 Cu → Cu²⁺
 Fig. 243 Cu → Cu³⁺
 Fig. 244 Cu → Cu⁴⁺
 Fig. 245 Cu → Cu⁵⁺
 Fig. 246 Cu²⁺ → Cu³⁺
 Fig. 247 Cu³⁺ → Cu⁴⁺
 Fig. 248 Zn → ΣZnⁿ⁺
 Fig. 249 Zn → Zn⁺
 Fig. 250 Zn⁺ → Zn²⁺
 Fig. 251 Zn¹⁹⁺ → Zn²⁰⁺
 Fig. 252 Ga → Ga⁺
 Fig. 253 Ga → Ga²⁺
 Fig. 254 Ga → Ga³⁺
 Fig. 255 Ga → Ga⁴⁺
 Fig. 256 Ga⁺ → Ga²⁺
 Fig. 257 Ge → Ge⁺
 Fig. 258 Ge → Ge²⁺
 Fig. 259 Ge → Ge³⁺
 Fig. 260 As → As⁺
 Fig. 261 As → As²⁺
 Fig. 262 As → As³⁺
 Fig. 263 Se → Se⁺
 Fig. 264 Se → Se²⁺
 Fig. 265 Se → Se³⁺
 Fig. 266 Se⁺ → Se²⁺
 Fig. 267 Br → Br⁺
 Fig. 268 Br → Br²⁺
 Fig. 269 Br → Br³⁺
 Fig. 270 Kr → ΣKrⁿ⁺
 Fig. 271 Kr → Kr⁺
 Fig. 272 Kr → Kr²⁺
 Fig. 273 Kr → Kr³⁺

Fig. 320 Cd → ΣCdⁿ⁺
 Fig. 321 Cd → Cd⁺
 Fig. 322 Cd⁺ → Cd²⁺
 Fig. 323 In → ΣInⁿ⁺
 Fig. 324 In → In⁺
 Fig. 325 In → In²⁺
 Fig. 326 In → In³⁺
 Fig. 327 In⁺ → In²⁺
 Fig. 328 Sn → Sn⁺
 Fig. 329 Sn → Sn²⁺
 Fig. 330 Sn → Sn³⁺
 Fig. 331 Sb → Sb⁺
 Fig. 332 Sb → Sb²⁺
 Fig. 333 Sb → Sb³⁺
 Fig. 334 Sb⁺ → Sb²⁺
 Fig. 335 Sb⁺ → Sb³⁺
 Fig. 336 Sb²⁺ → Sb³⁺
 Fig. 337 Sb³⁺ → Sb⁴⁺
 Fig. 338 Te → ΣTeⁿ⁺
 Fig. 339 Te → Te⁺
 Fig. 340 Te → Te²⁺
 Fig. 341 Te → Te³⁺
 Fig. 342 Te⁺ → Te²⁺
 Fig. 343 I → I⁺
 Fig. 344 I → I²⁺
 Fig. 345 I → I³⁺
 Fig. 346 I⁺ → I³⁺
 Fig. 347 Xe → ΣXeⁿ⁺
 Fig. 348 Xe → Xe⁺
 Fig. 349 Xe → Xe²⁺
 Fig. 350 Xe → Xe³⁺
 Fig. 351 Xe → Xe⁴⁺
 Fig. 352 Xe → Xe⁵⁺
 Fig. 353 Xe → Xe⁶⁺
 Fig. 354 Xe → Xe⁷⁺
 Fig. 355 Xe → Xe⁸⁺
 Fig. 356 Xe → Xe⁹⁺
 Fig. 357 Xe → Xe¹⁰⁺
 Fig. 358 Xe → Xe¹¹⁺
 Fig. 359 Xe → Xe¹²⁺
 Fig. 360 Xe → Xe¹³⁺
 Fig. 361 Xe⁺ → Xe²⁺
 Fig. 362 Xe⁺ → Xe³⁺
 Fig. 363 Xe⁺ → Xe⁴⁺
 Fig. 364 Xe⁺ → Xe⁵⁺
 Fig. 365 Xe²⁺ → Xe³⁺

Fig. 366 Xe²⁺ → Xe³⁺
 Fig. 367 Xe²⁺ → Xe⁴⁺
 Fig. 368 Xe²⁺ → Xe⁶⁺
 Fig. 369 Xe³⁺ → Xe⁴⁺
 Fig. 370 Xe³⁺ → Xe⁵⁺
 Fig. 371 Xe³⁺ → Xe⁶⁺
 Fig. 372 Xe⁴⁺ → Xe⁵⁺
 Fig. 373 Xe⁴⁺ → Xe⁶⁺
 Fig. 374 Xe⁵⁺ → Xe⁶⁺
 Fig. 375 Xe⁶⁺ → Xe⁷⁺
 Fig. 376 Xe⁶⁺ → Xe⁸⁺
 Fig. 377 Xe⁶⁺ → Xe⁹⁺
 Fig. 378 Xe⁸⁺ → Xe⁹⁺
 Fig. 379 Xe⁸⁺ → Xe¹⁰⁺
 Fig. 380 Cs → ΣCsⁿ⁺
 Fig. 381 Cs → Cs⁺
 Fig. 382 Cs⁺ → Cs²⁺
 Fig. 383 Cs⁺ → Cs³⁺
 Fig. 384 Cs⁺ → Cs⁴⁺
 Fig. 385 Cs⁺ → Cs⁵⁺
 Fig. 386 Ba → ΣBaⁿ⁺
 Fig. 387 Ba → Ba⁺
 Fig. 388 Ba → Ba²⁺
 Fig. 389 Ba → Ba³⁺
 Fig. 390 Ba → Ba⁴⁺
 Fig. 391 Ba⁺ → Ba²⁺
 Fig. 392 Ba⁺ → Ba³⁺
 Fig. 393 Ba²⁺ → Ba³⁺
 Fig. 394 Ba²⁺ → Ba⁴⁺
 Fig. 395 Ba³⁺ → Ba⁴⁺
 Fig. 396 La⁺ → La³⁺
 Fig. 397 La²⁺ → La³⁺
 Fig. 398 La²⁺ → La⁴⁺
 Fig. 399 La²⁺ → La⁵⁺
 Fig. 400 La³⁺ → La⁴⁺
 Fig. 401 Hf³⁺ → Hf⁴⁺
 Fig. 402 Ta⁺ → Ta²⁺
 Fig. 403 Ta³⁺ → Ta⁴⁺
 Fig. 404 W → W⁺ (5d⁴ → 5d¹)
 Fig. 405 W → W⁺ (6s² → 6s¹)
 Fig. 406 W⁺ → W²⁺
 Fig. 407 Au⁺ → ΣAuⁿ⁺
 Fig. 408 Au → Au⁺
 Fig. 409 Au³⁺ → Au⁴⁺
 Fig. 410 Hg → ΣHgⁿ⁺
 Fig. 411 Hg → Hg⁺

Fig. 412 Hg → Hg²⁺
 Fig. 413 Hg → Hg³⁺
 Fig. 414 Hg → Hg⁴⁺
 Fig. 415 Hg → Hg⁵⁺
 Fig. 416 Hg⁺ → Hg²⁺
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 Fig. 418 Tl → Tl⁺
 Fig. 419 Tl⁺ → Tl²⁺
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 Fig. 422 Pb → Pb²⁺
 Fig. 423 Pb → Pb³⁺
 Fig. 424 Bi → Bi⁺
 Fig. 425 Bi → Bi²⁺
 Fig. 426 Bi → Bi³⁺
 Fig. 427 Bi⁺ → Bi²⁺
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 Fig. 429 Bi²⁺ → Bi³⁺
 Fig. 430 Bi²⁺ → Bi⁴⁺
 Fig. 431 Bi³⁺ → Bi⁵⁺
 Fig. 432 U → ΣUⁿ⁺
 Fig. 433 U → U⁺
 Fig. 434 U → U²⁺
 Fig. 435 U → U³⁺
 Fig. 436 U → U⁴⁺
 Fig. 437 U¹⁰⁺ → U¹¹⁺
 Fig. 438 U¹⁰⁺ → U¹²⁺
 Fig. 439 U¹²⁺ → U¹⁴⁺
 Fig. 440 U¹³⁺ → U¹⁴⁺
 Fig. 441 U¹⁶⁺ → U¹⁷⁺

AMDIS-ION

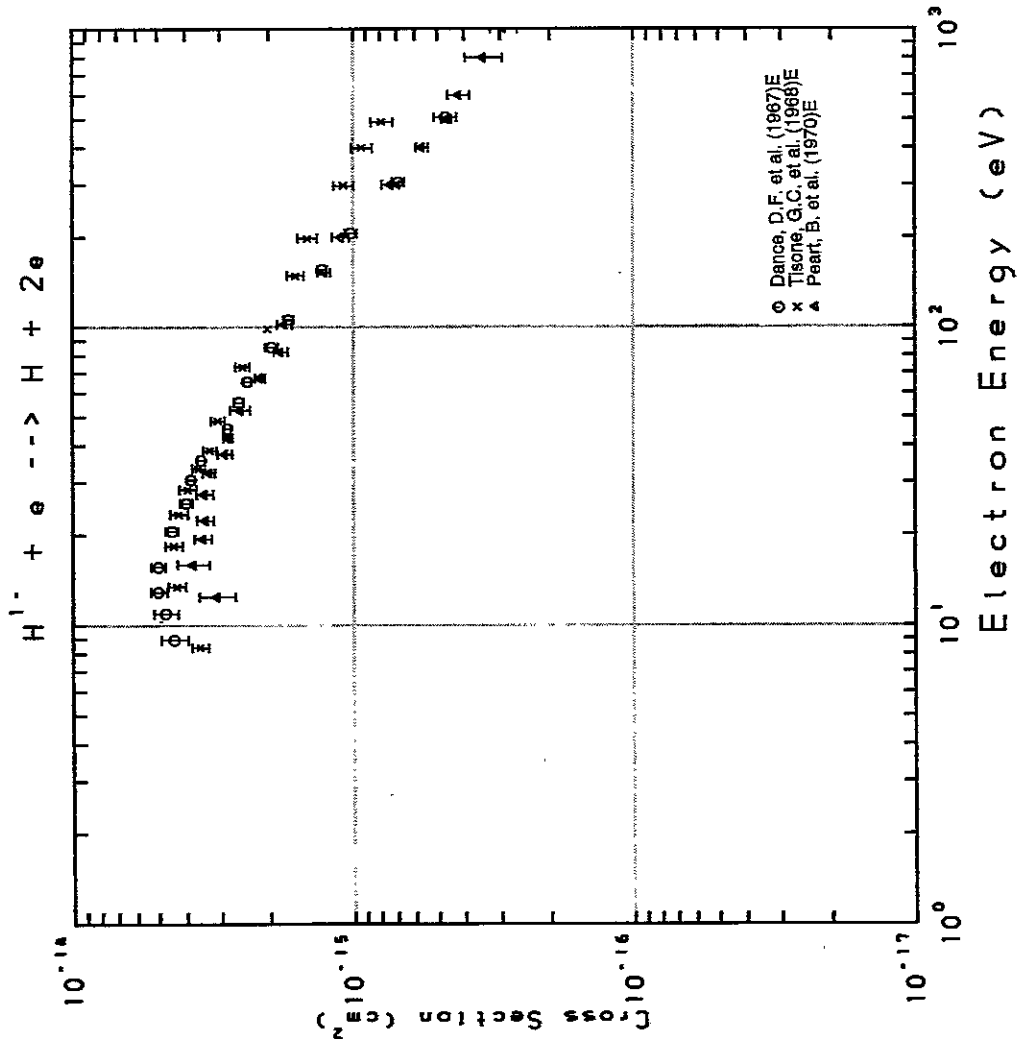


Fig. 1 $H^- \rightarrow H^0$

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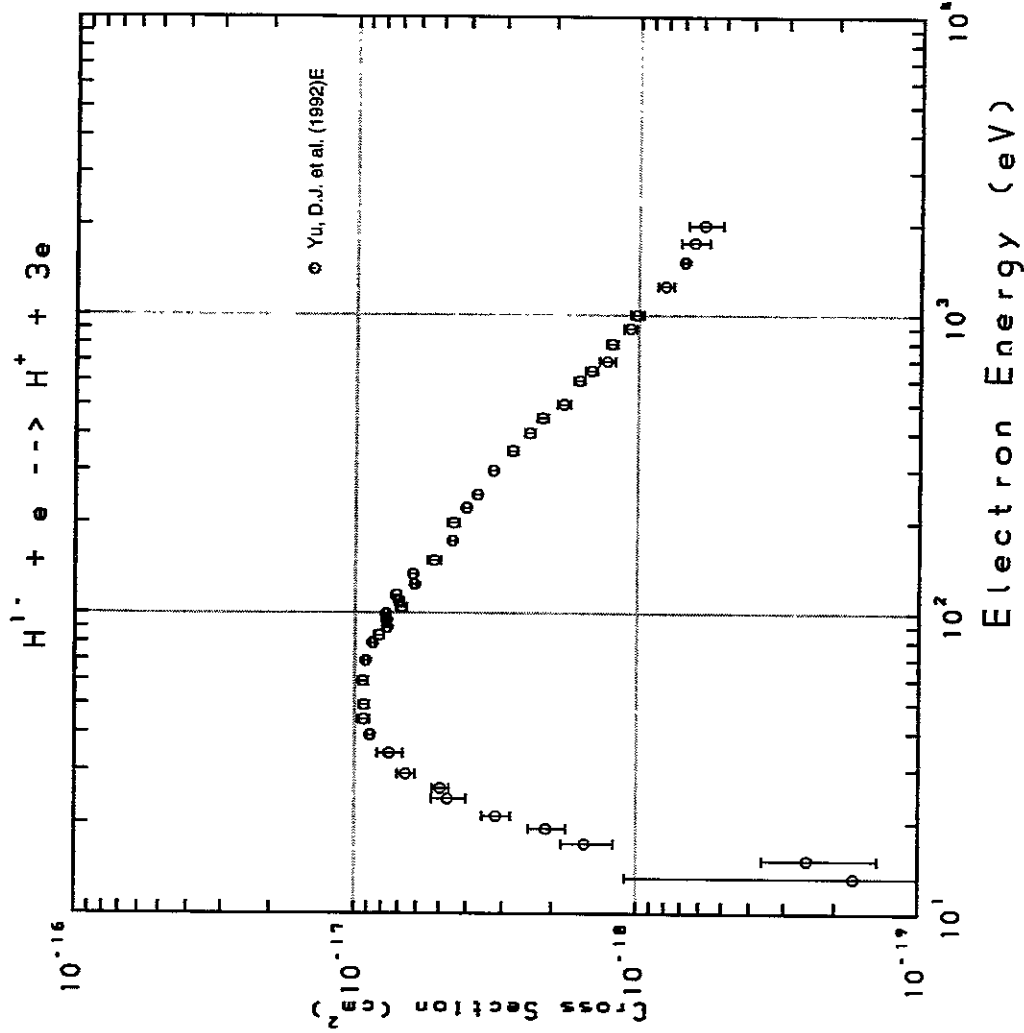


Fig. 2 $H^- \rightarrow H^+$

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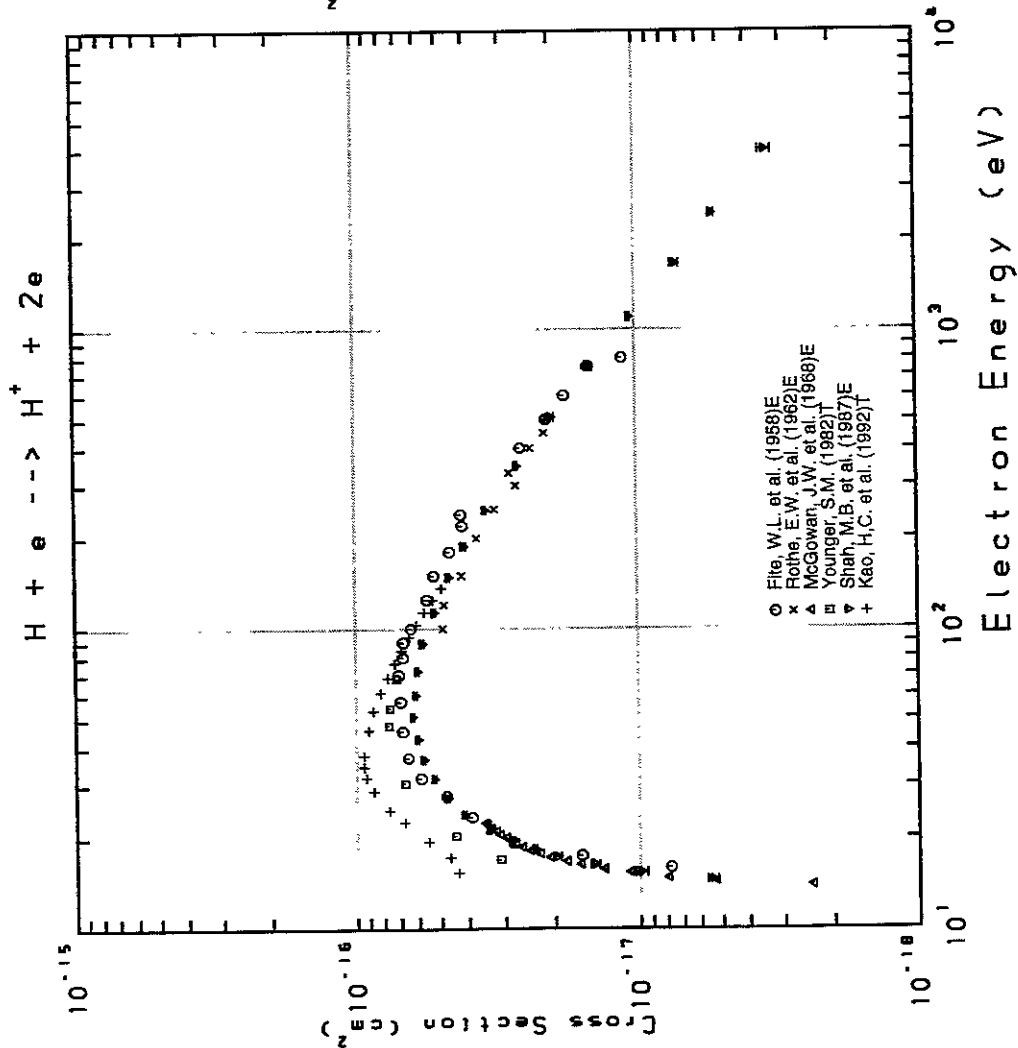


Fig. 3 $H \rightarrow H^+$

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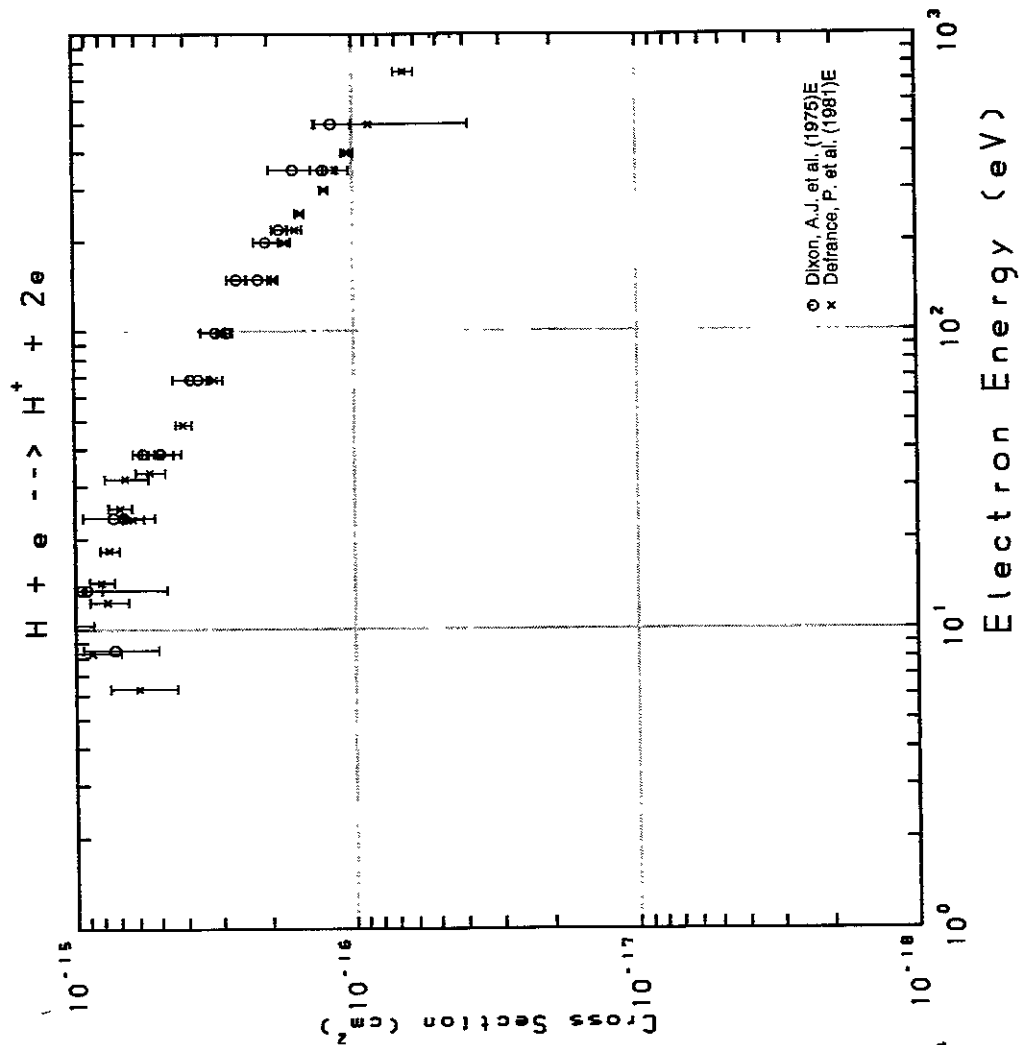


Fig. 4 $H(2s) \rightarrow H^+$

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$\text{He} + e \rightarrow \text{Sum He}^{n+} + (n+1)e$

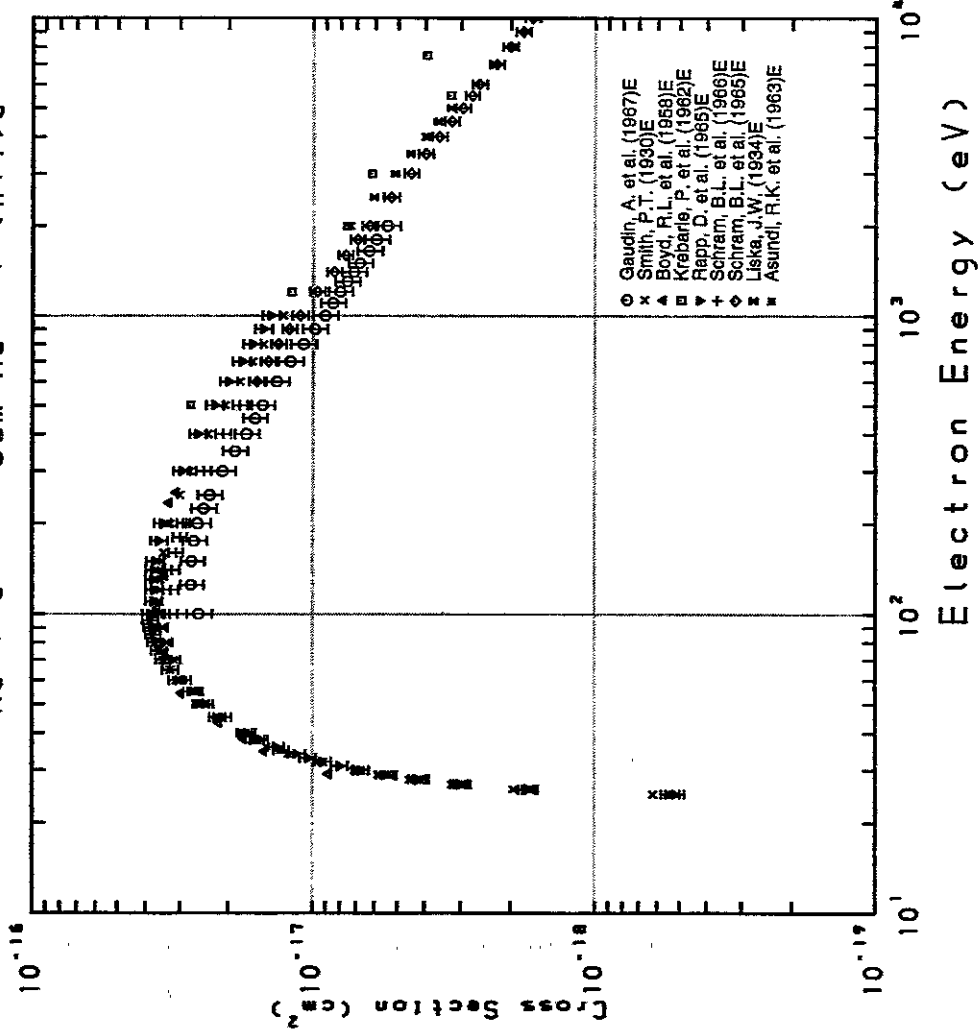


Fig. 5 $\text{He} \rightarrow \Sigma \text{He}^{n+}$

AMDIS-ION

$\text{He} + e \rightarrow \text{He}^+ + 2e$

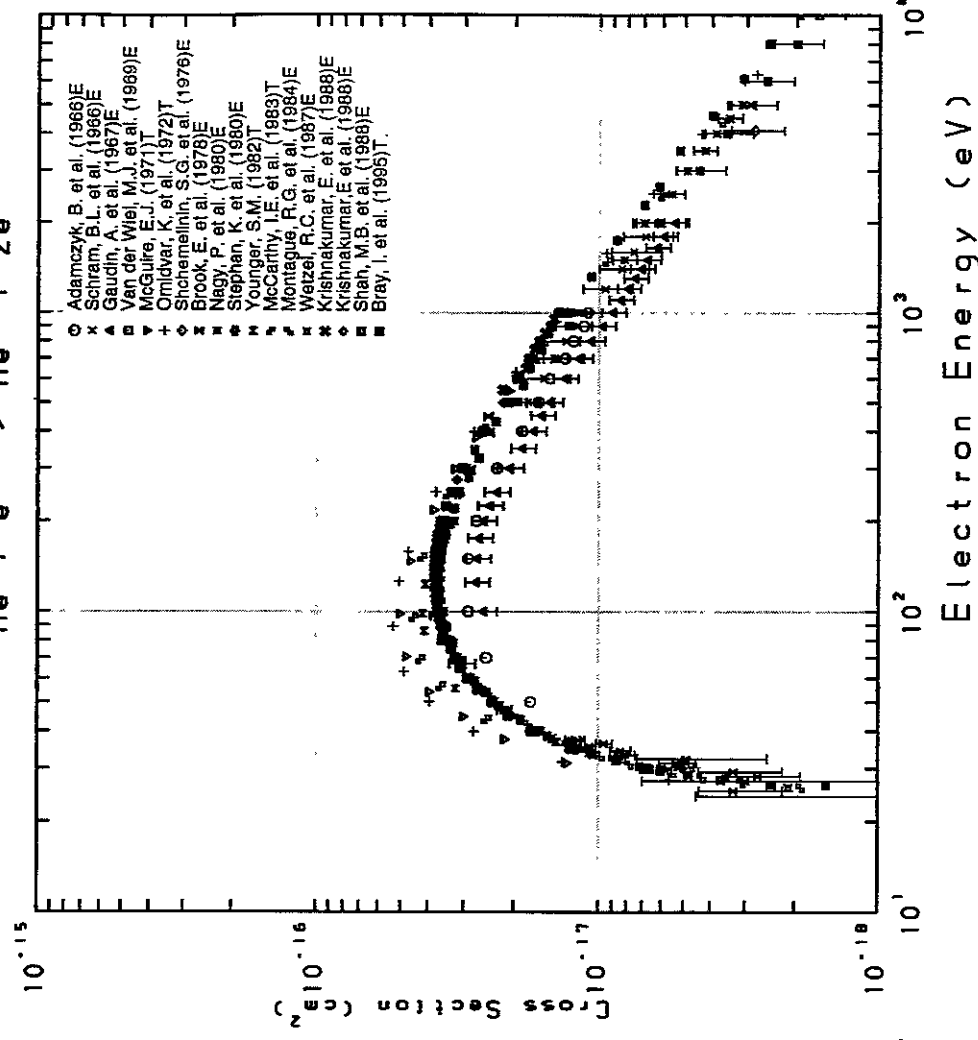


Fig. 6 $\text{He} \rightarrow \text{He}^+$

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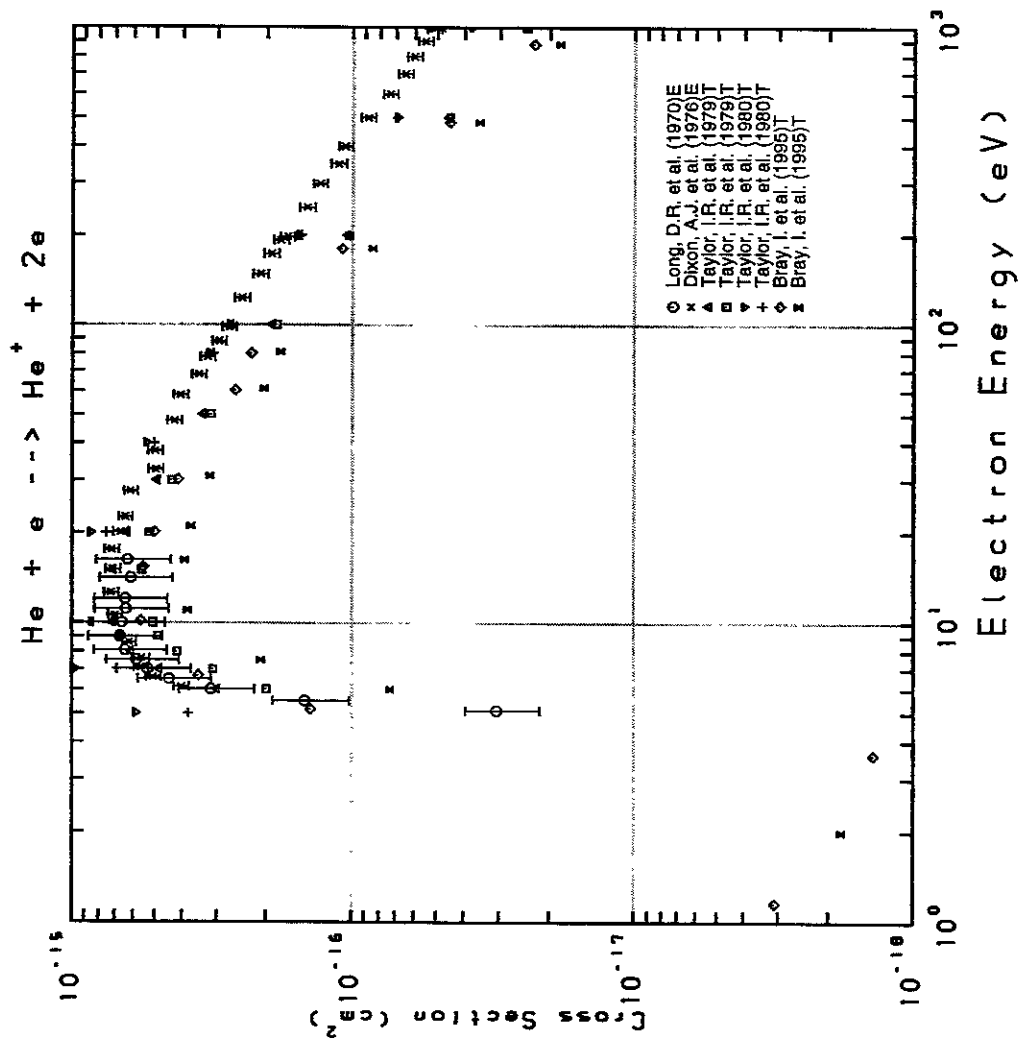


Fig. 7 He(1s2s) → He⁺

AMDIS-ION

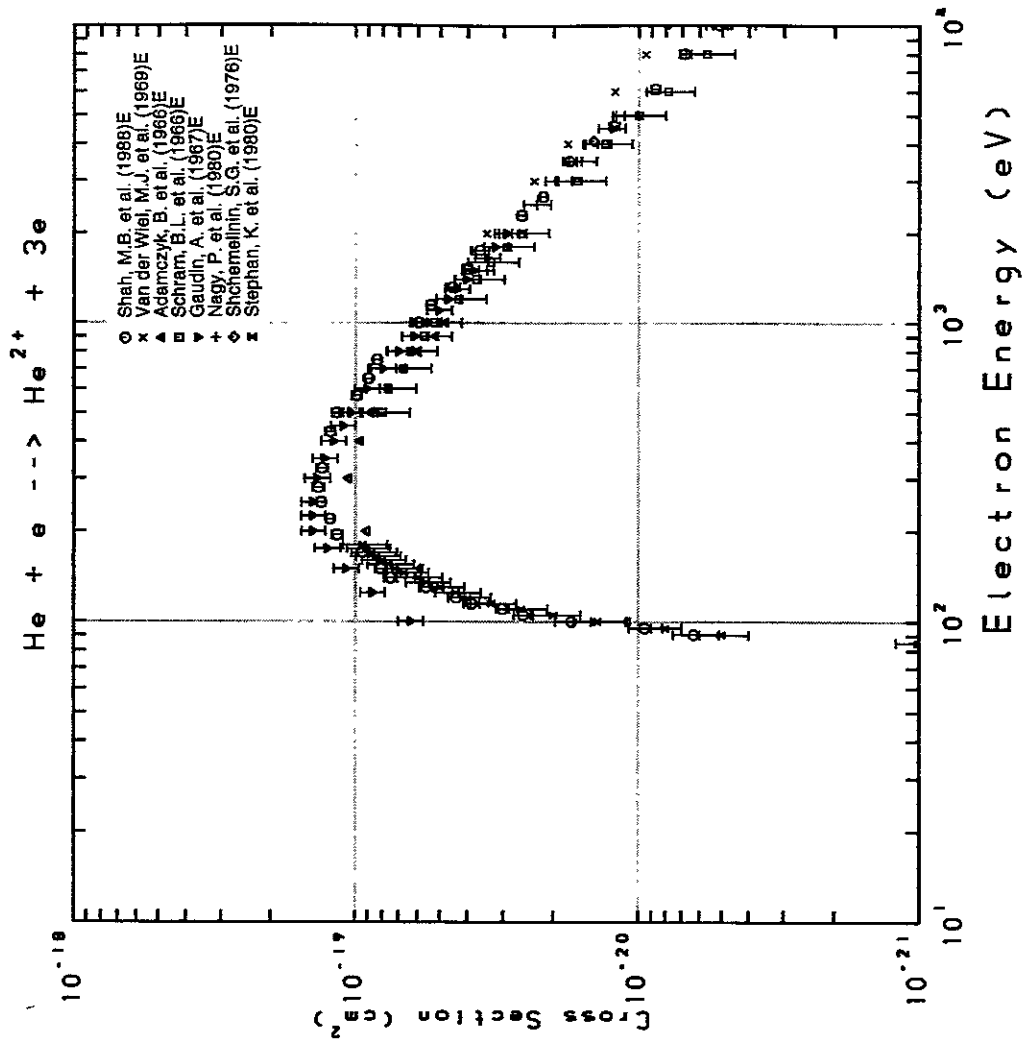


Fig. 8 He → He²⁺

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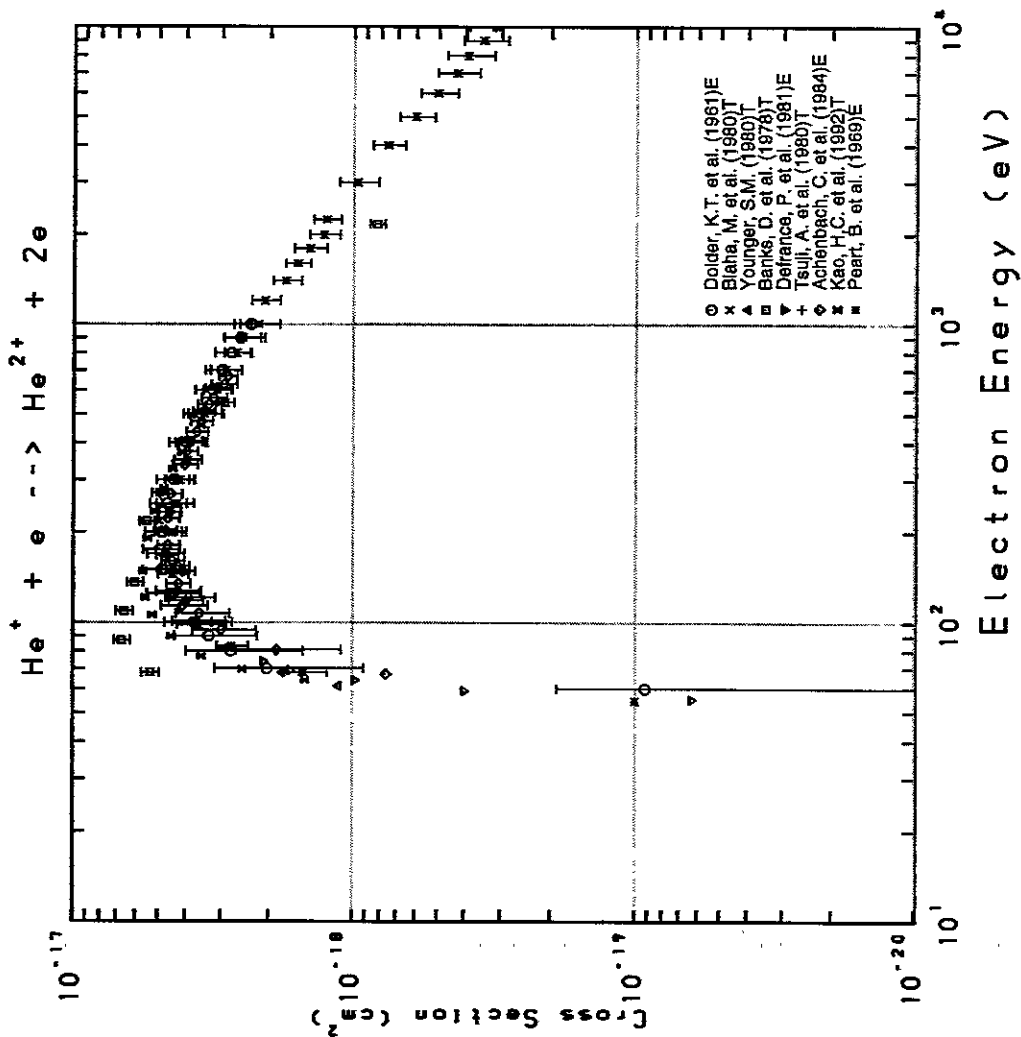


Fig. 9 $\text{He}^+ \rightarrow \text{He}^{2+}$

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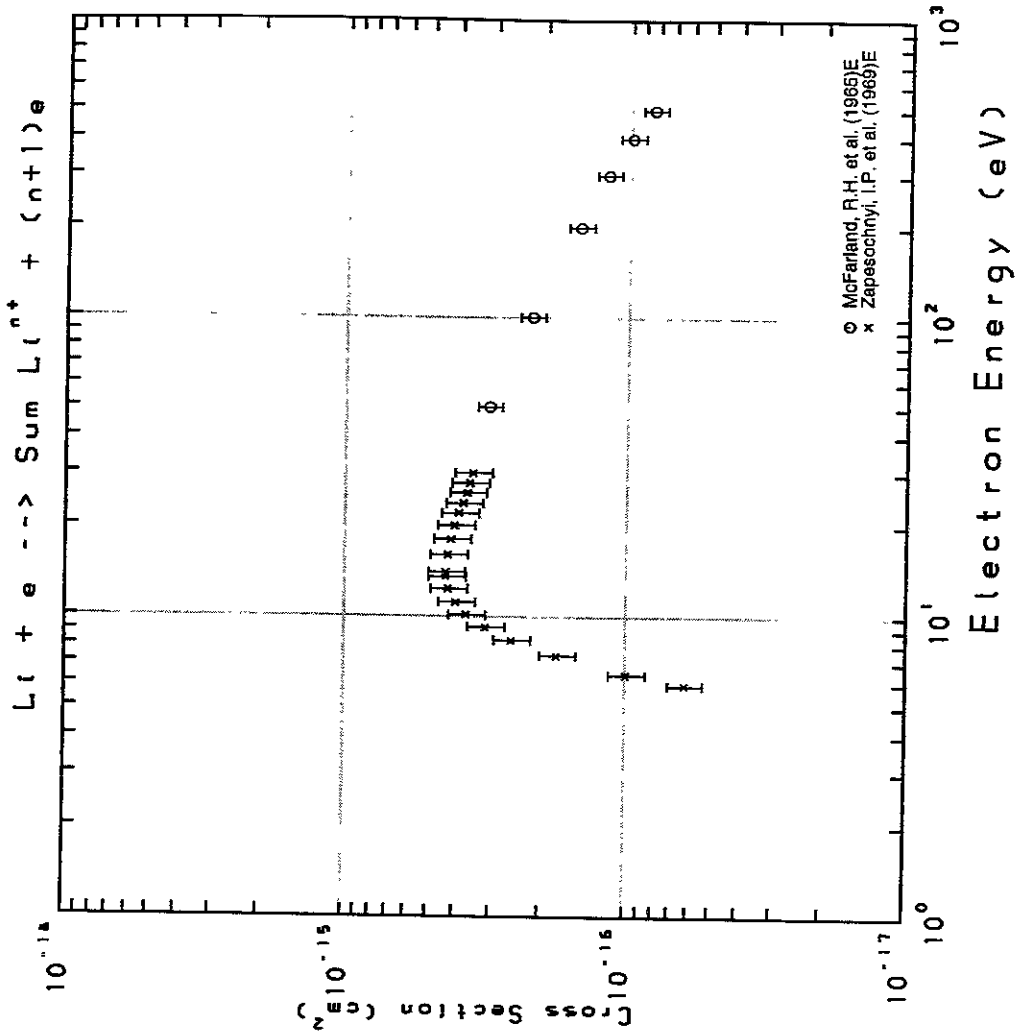


Fig. 10 $\text{Li} \rightarrow \Sigma\text{Li}^{n+}$

AMDIS-ION

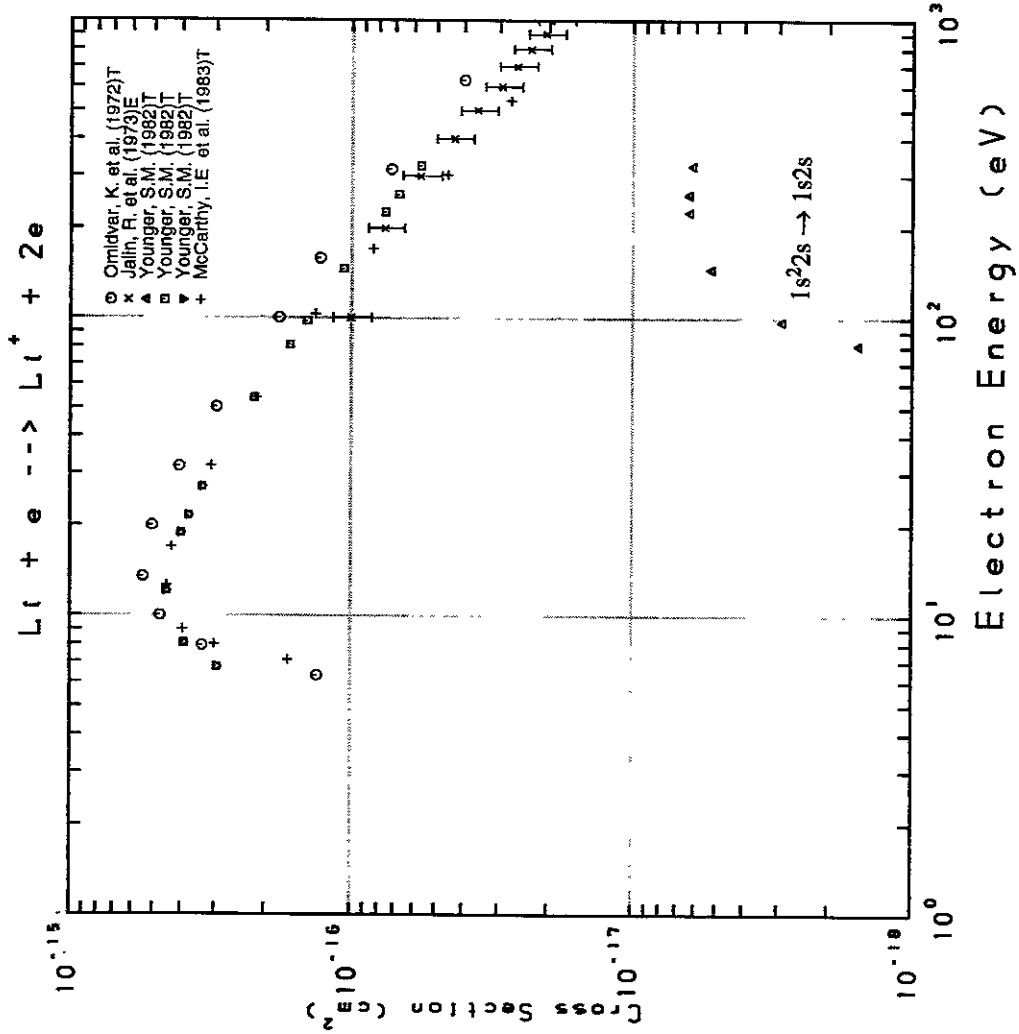


Fig. 11 Li \rightarrow Li⁺

AMDIS-ION

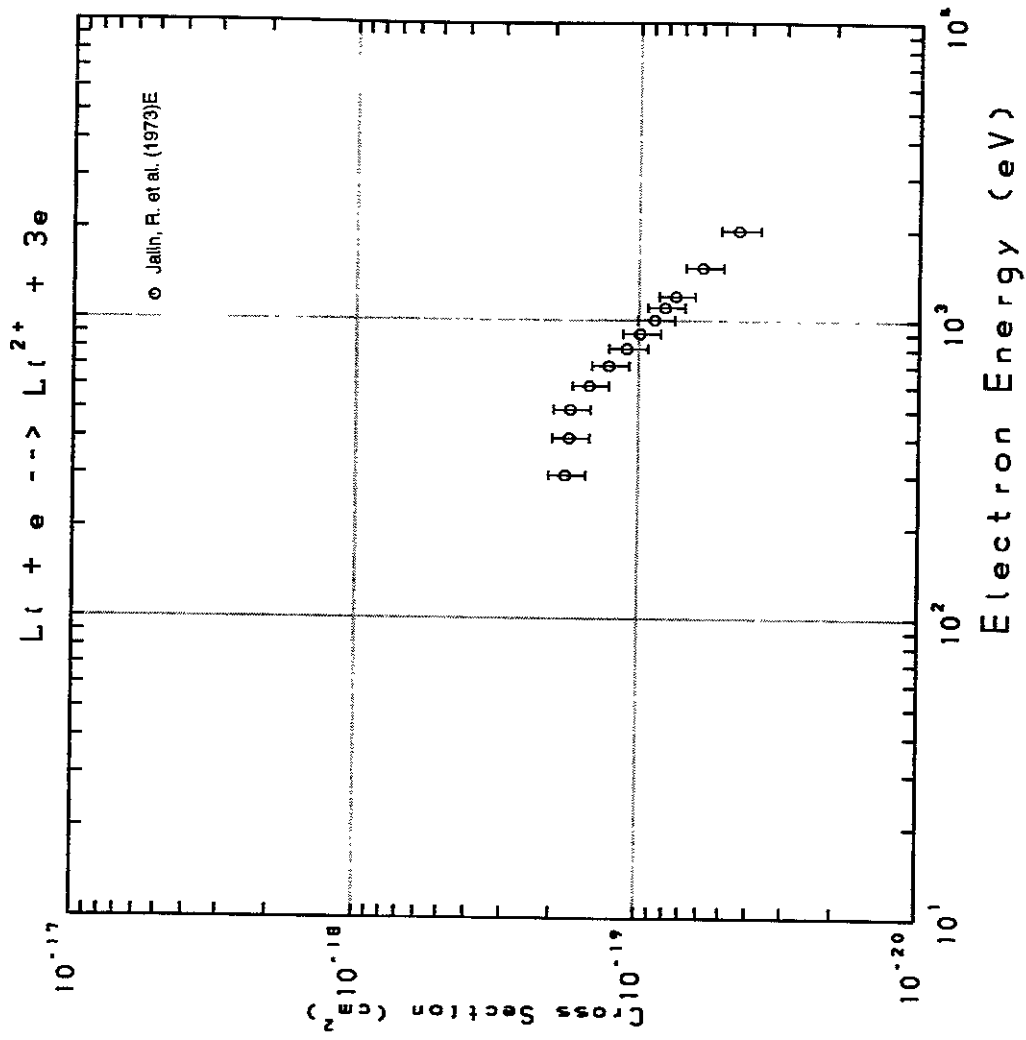


Fig. 12 Li \rightarrow Li²⁺

AMDIS-ION

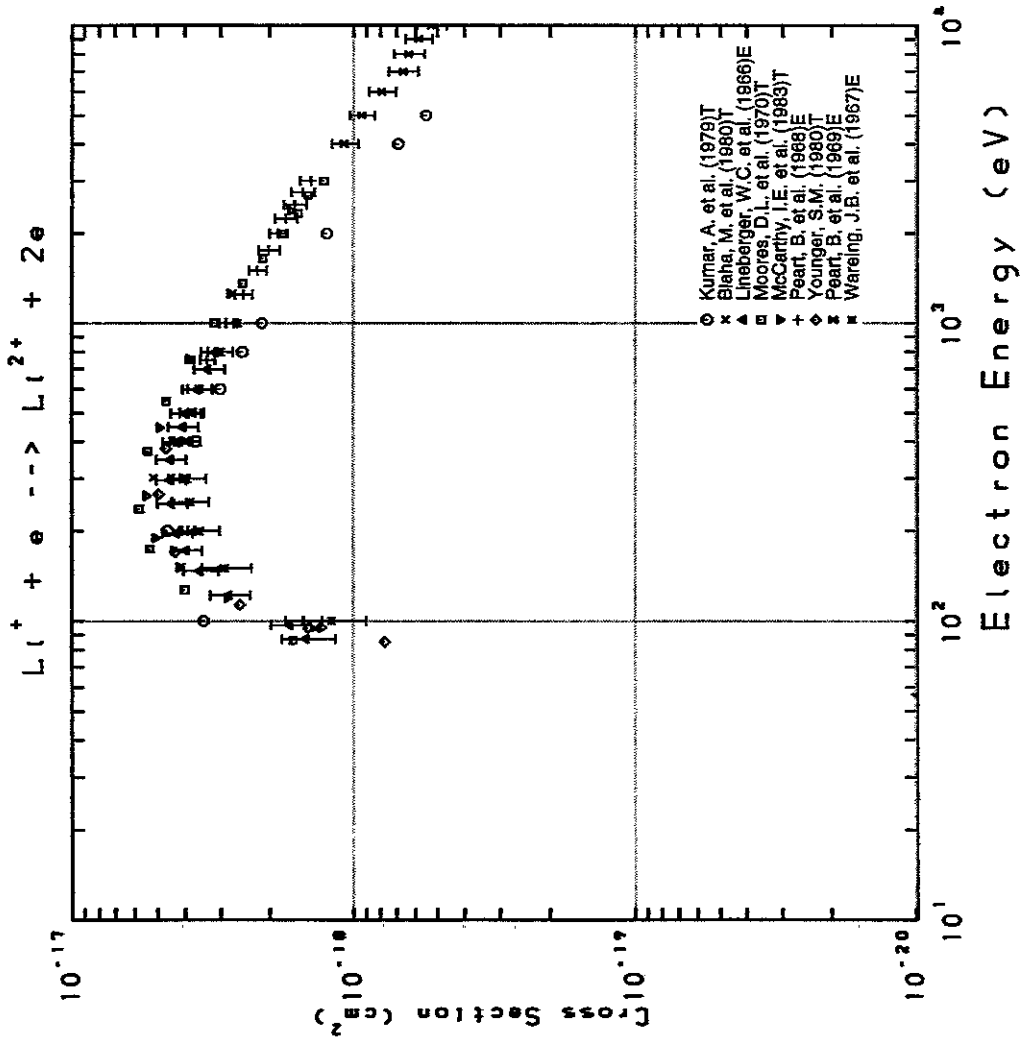


Fig. 13 $\text{Li}^+ \rightarrow \text{Li}^{2+}$

AMDIS-ION

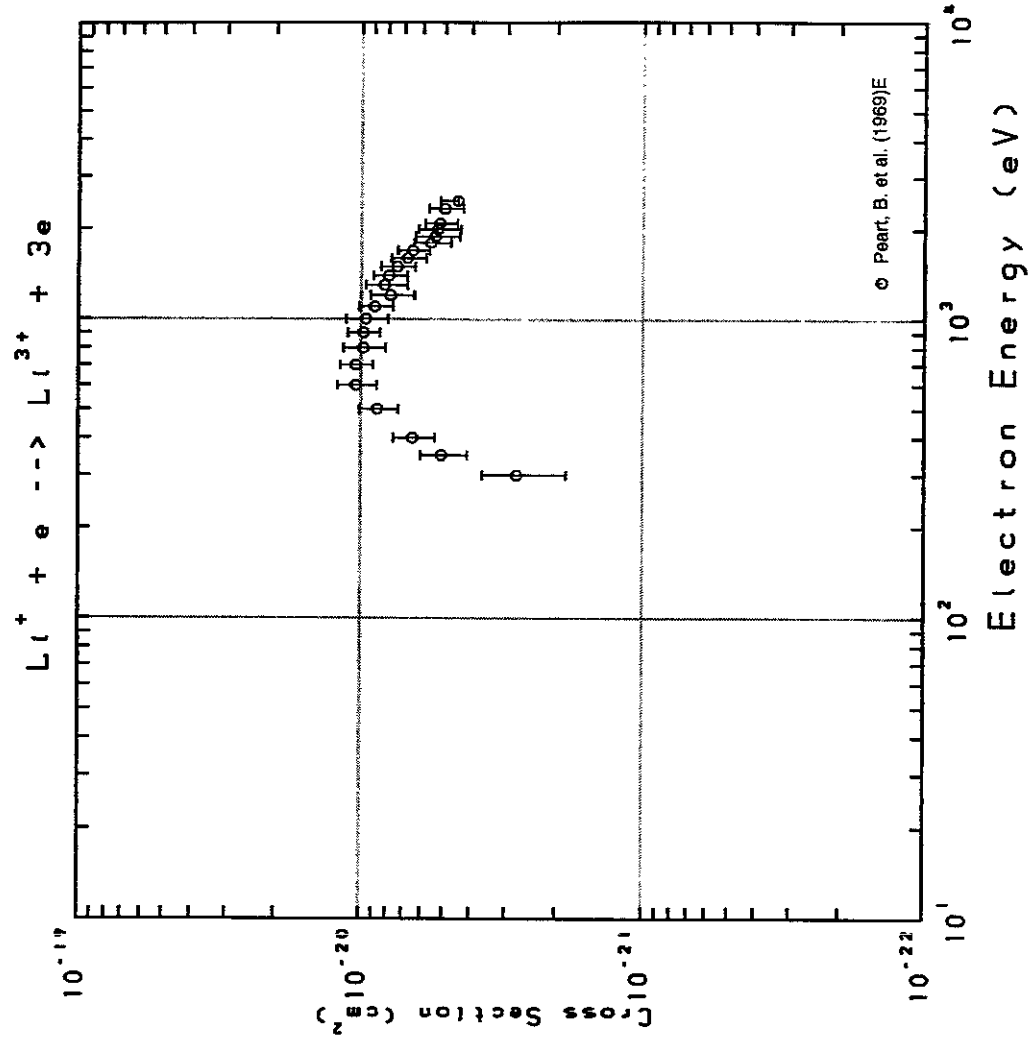


Fig. 14 $\text{Li}^+ \rightarrow \text{Li}^{3+}$

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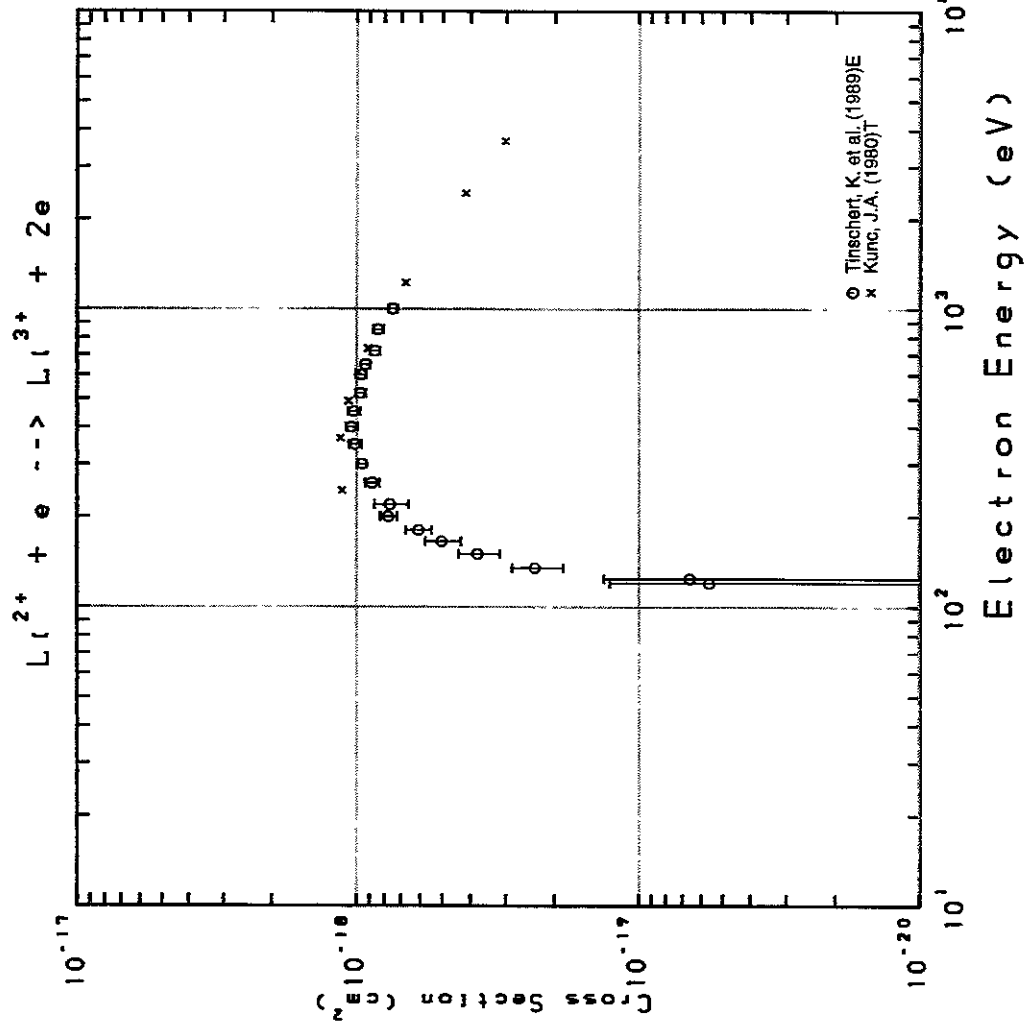


Fig. 15 $\text{Li}^{2+} \rightarrow \text{Li}^{3+}$

AMDIS-ION

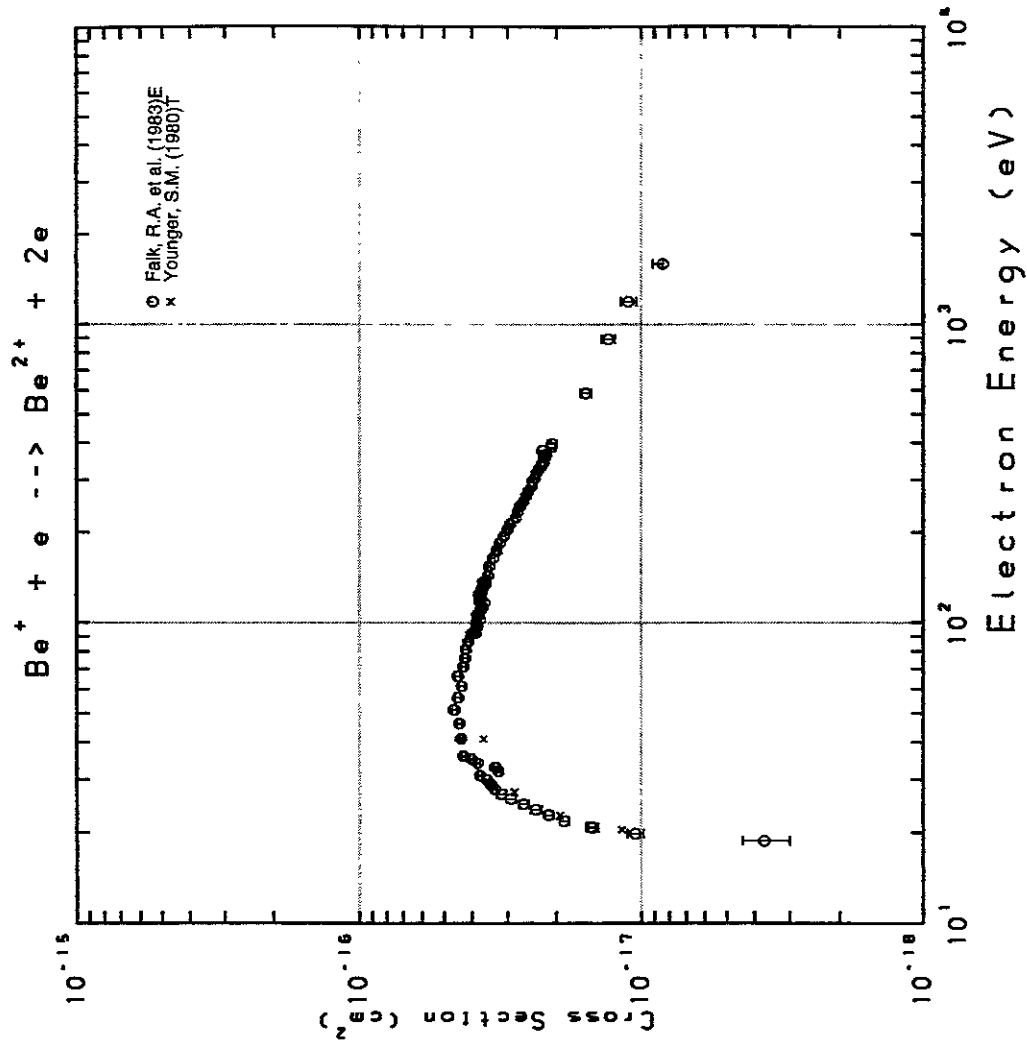


Fig. 16 $\text{Be}^{+} \rightarrow \text{Be}^{2+}$

AMDIS-ION

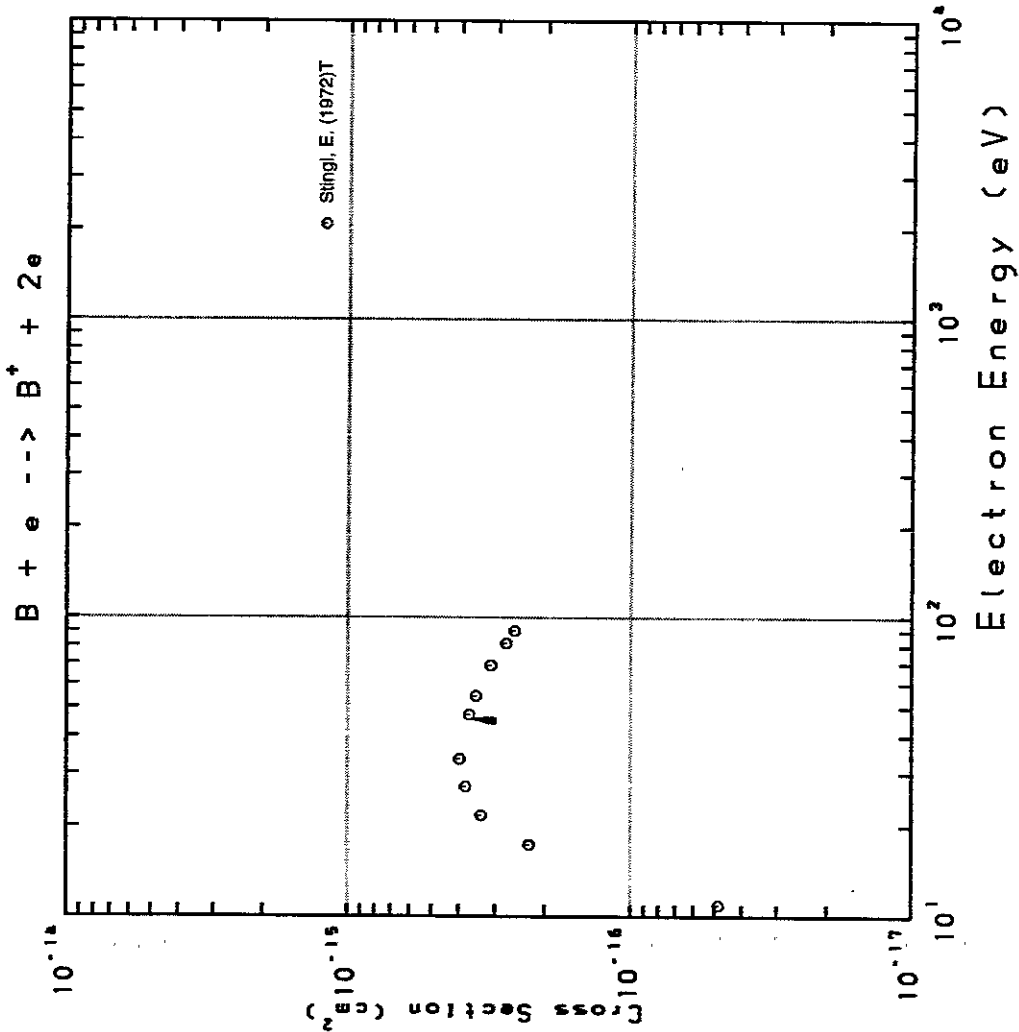


Fig. 17 $B \rightarrow B^+$

AMDIS-ION

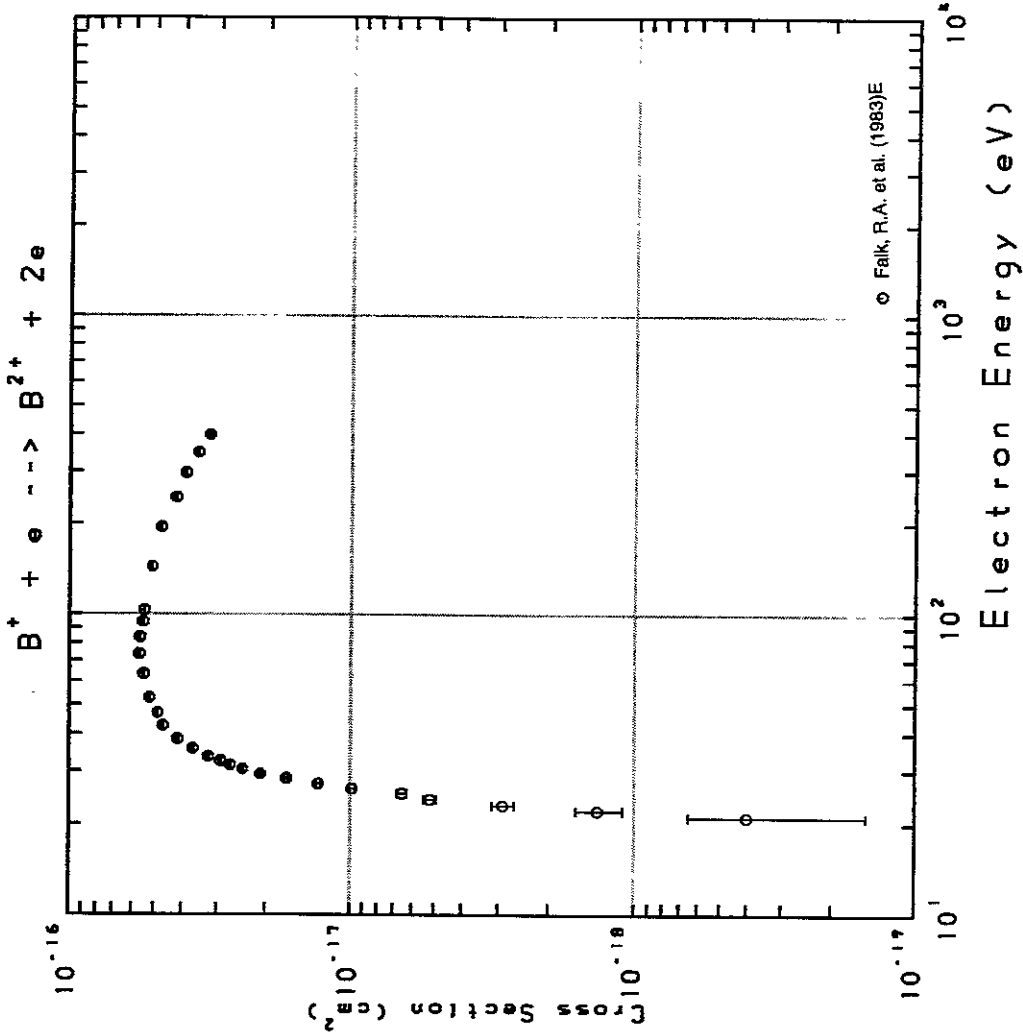


Fig. 18 $B^+ \rightarrow B^{2+}$

AMDIS-ION

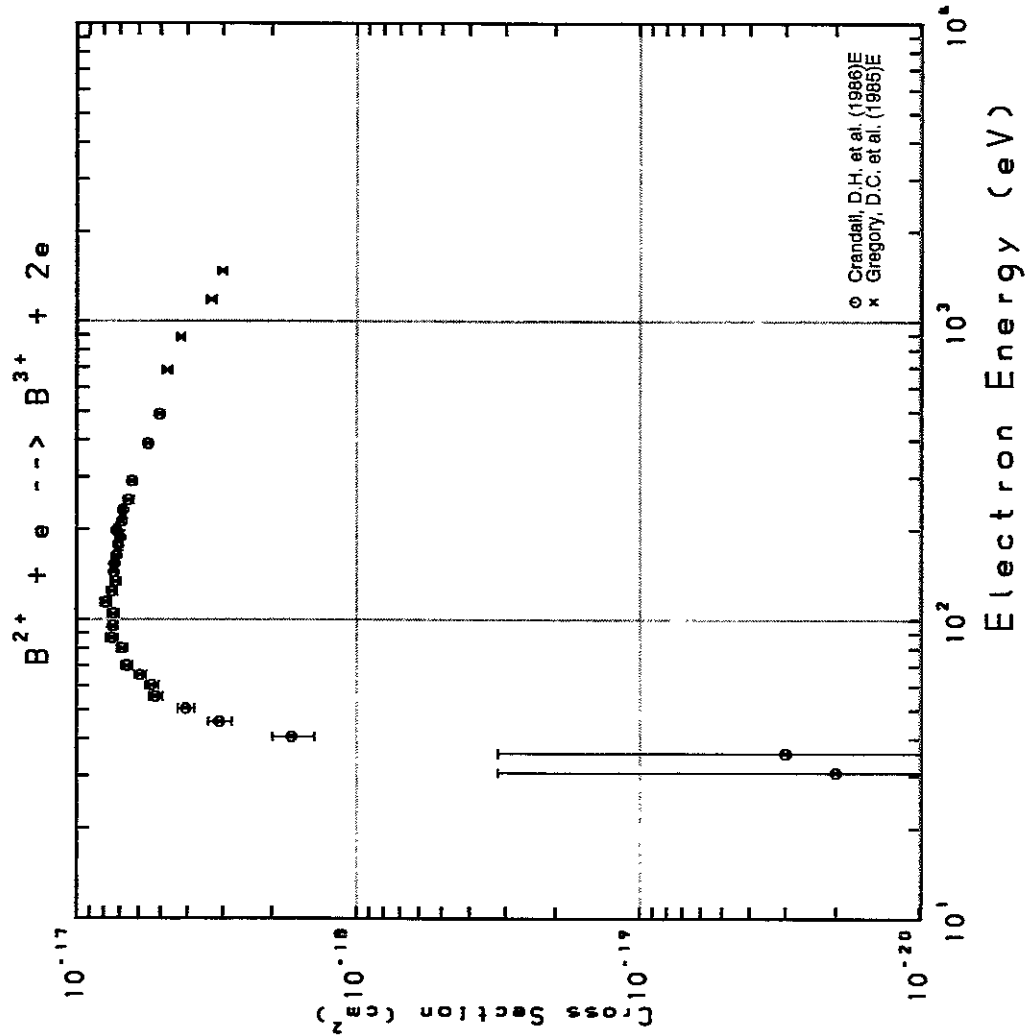


Fig. 19 $B^{2+} \rightarrow B^{3+}$

AMDIS-ION

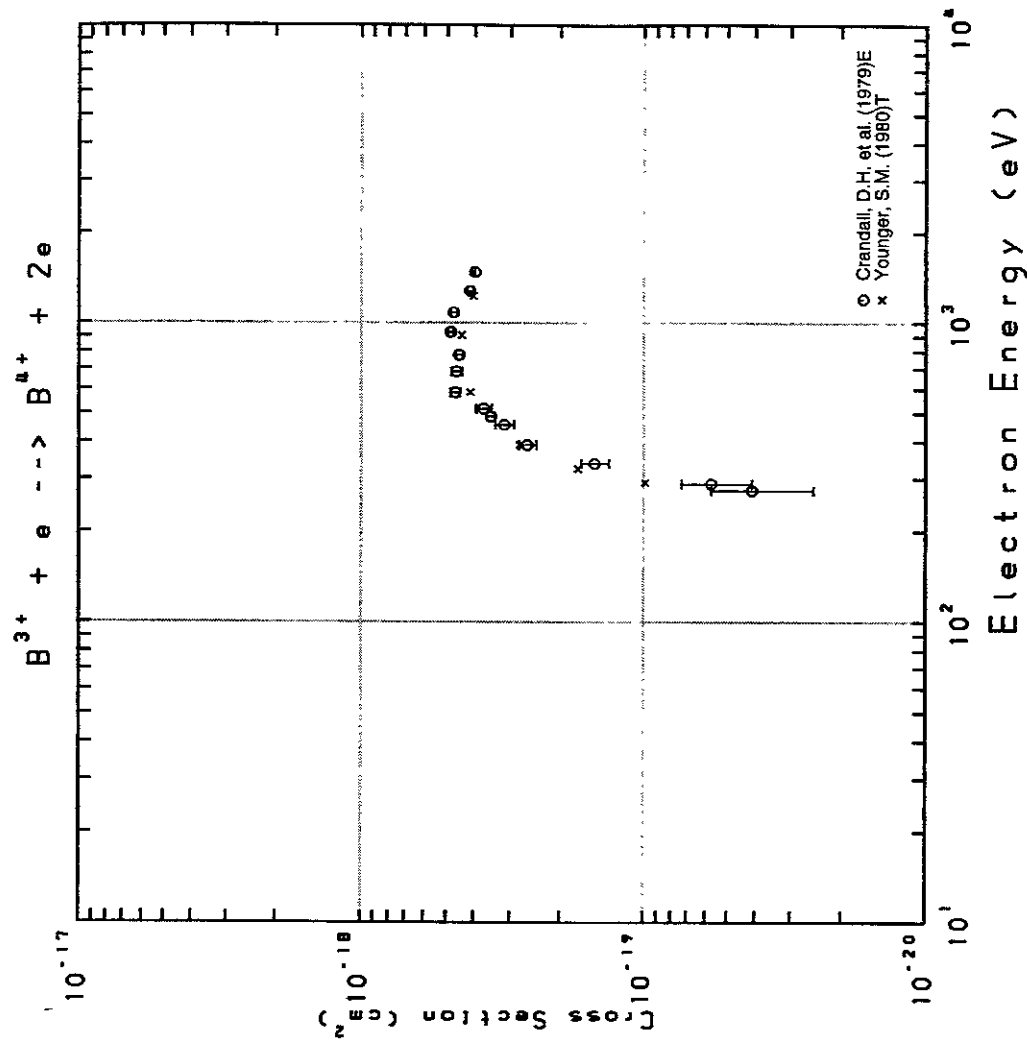


Fig. 20 $B^{3+} \rightarrow B^{4+}$

AMDIS-ION

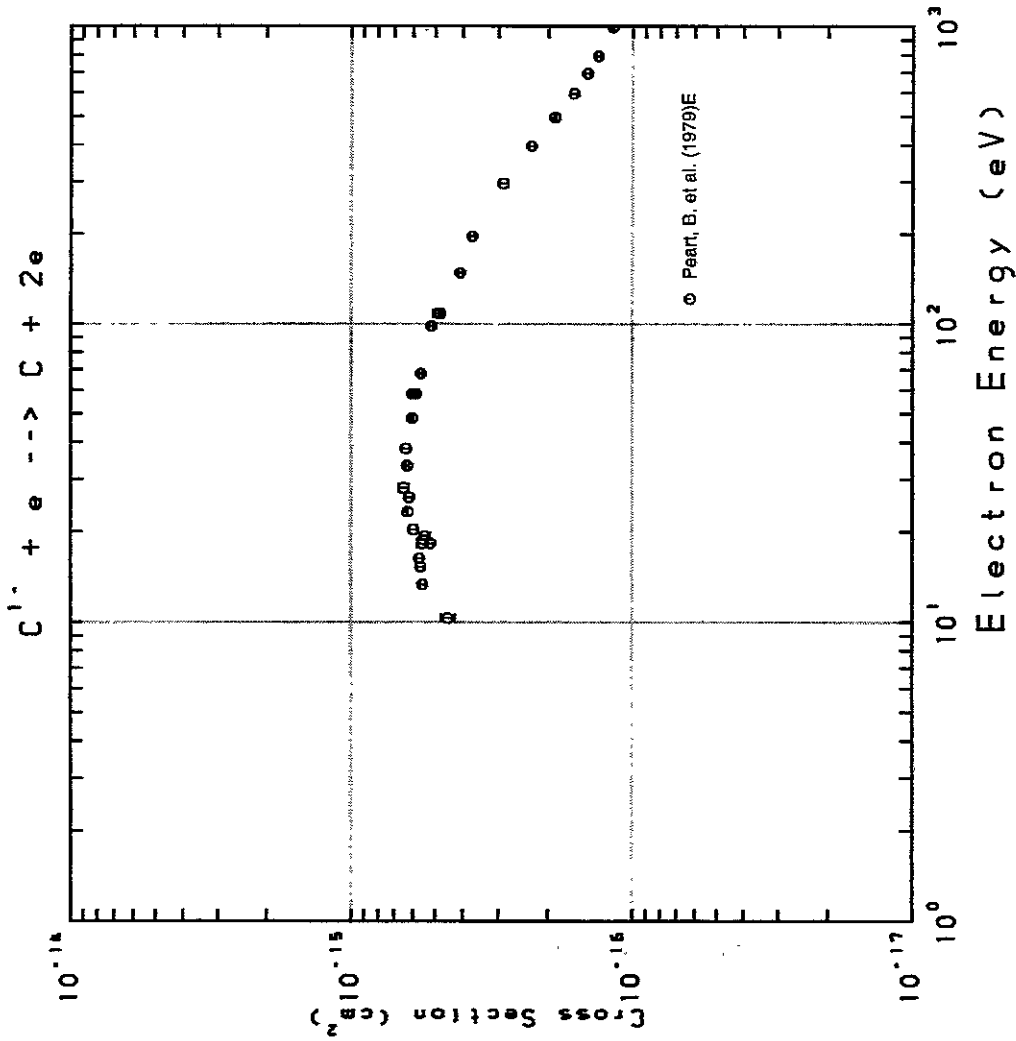


Fig. 21 $\text{C}^+ \rightarrow \text{C}^0$

AMDIS-ION

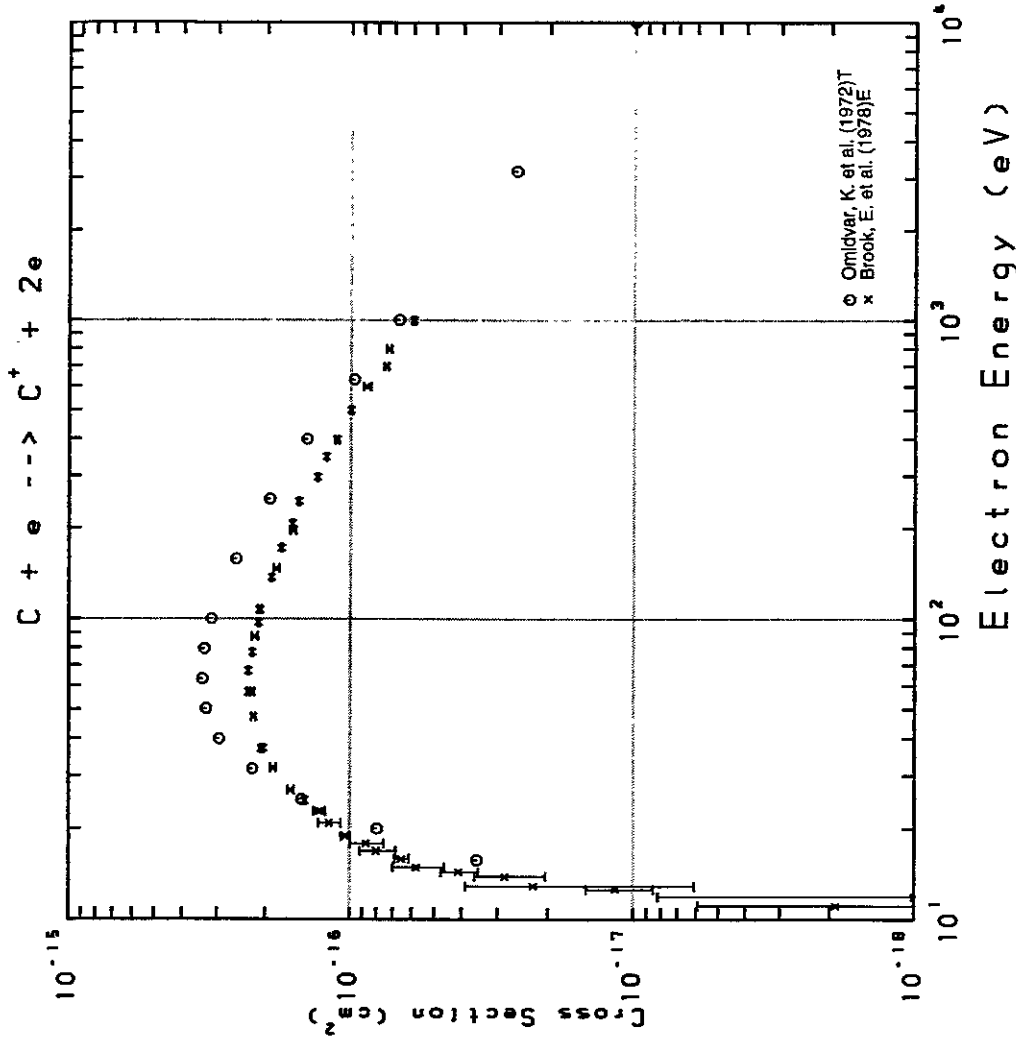


Fig. 22 $\text{C} \rightarrow \text{C}^+$

AMDIS-ION

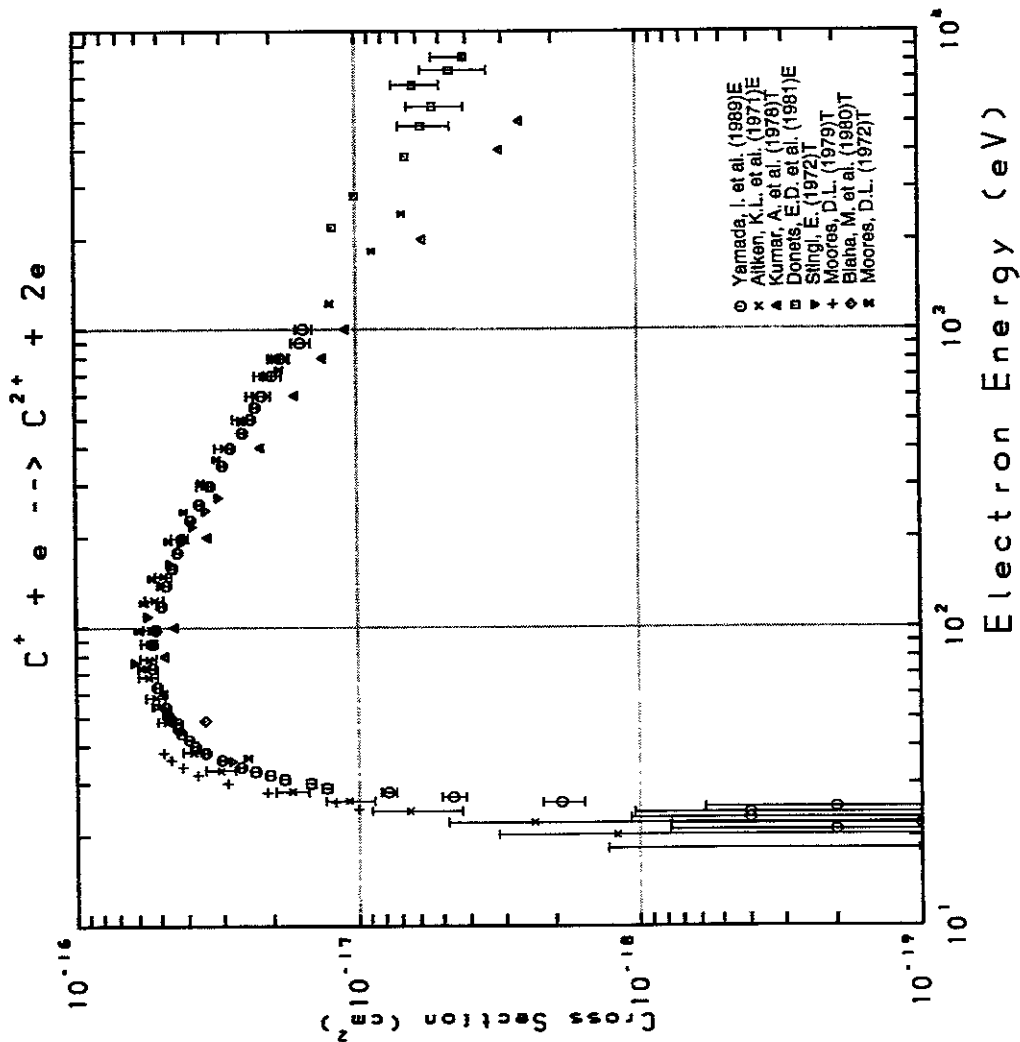


Fig. 23 $C^+ \rightarrow C^{2+}$

AMDIS-ION

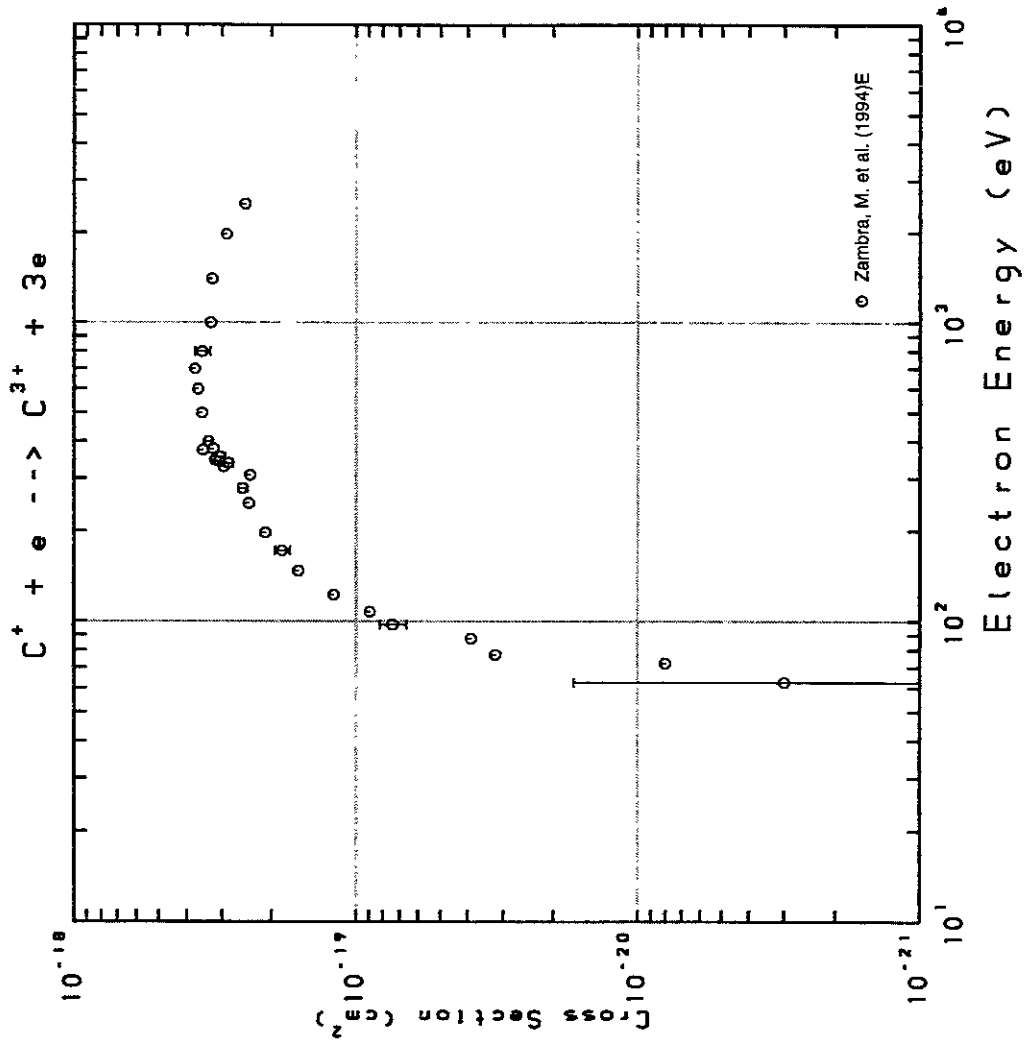


Fig. 24 $C^+ \rightarrow C^{3+}$

AMDIS-ION

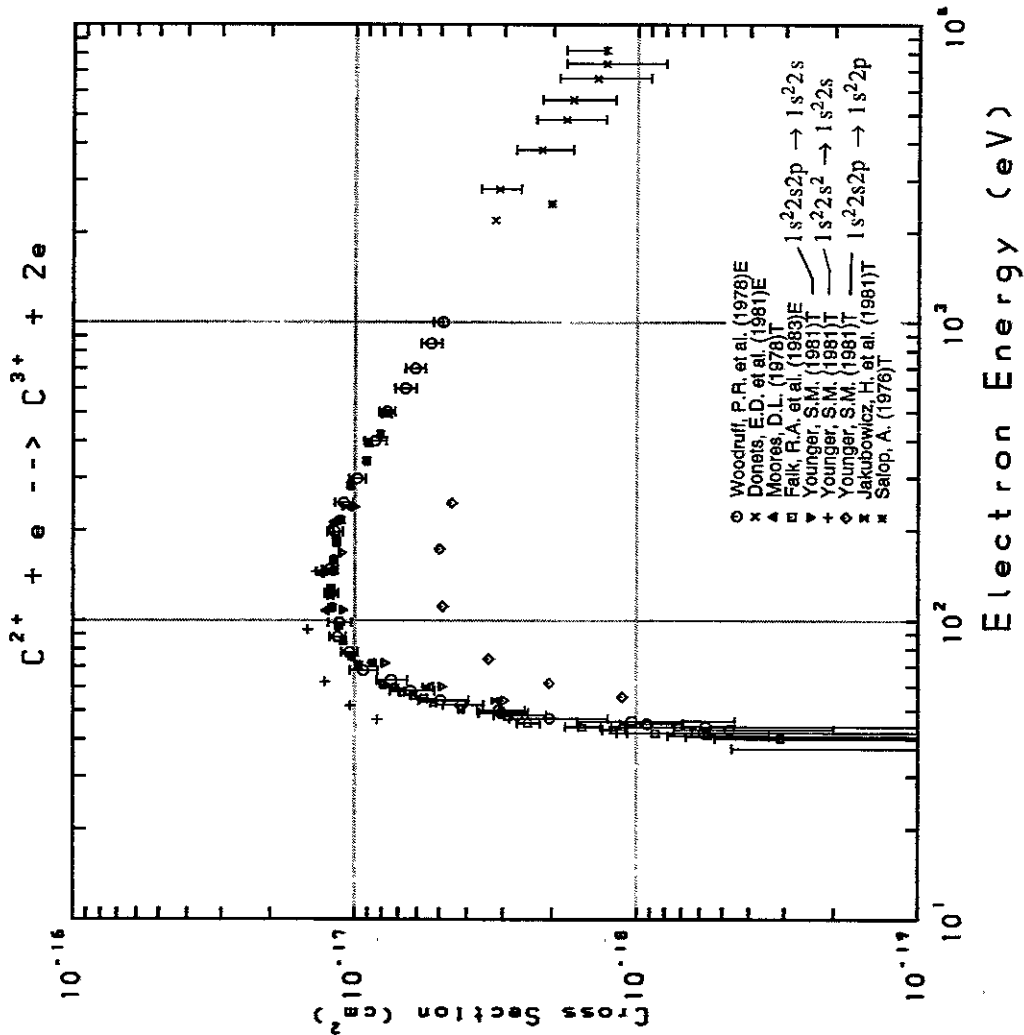


Fig. 25 $C^{2+} \rightarrow C^{3+}$

AMDIS-ION

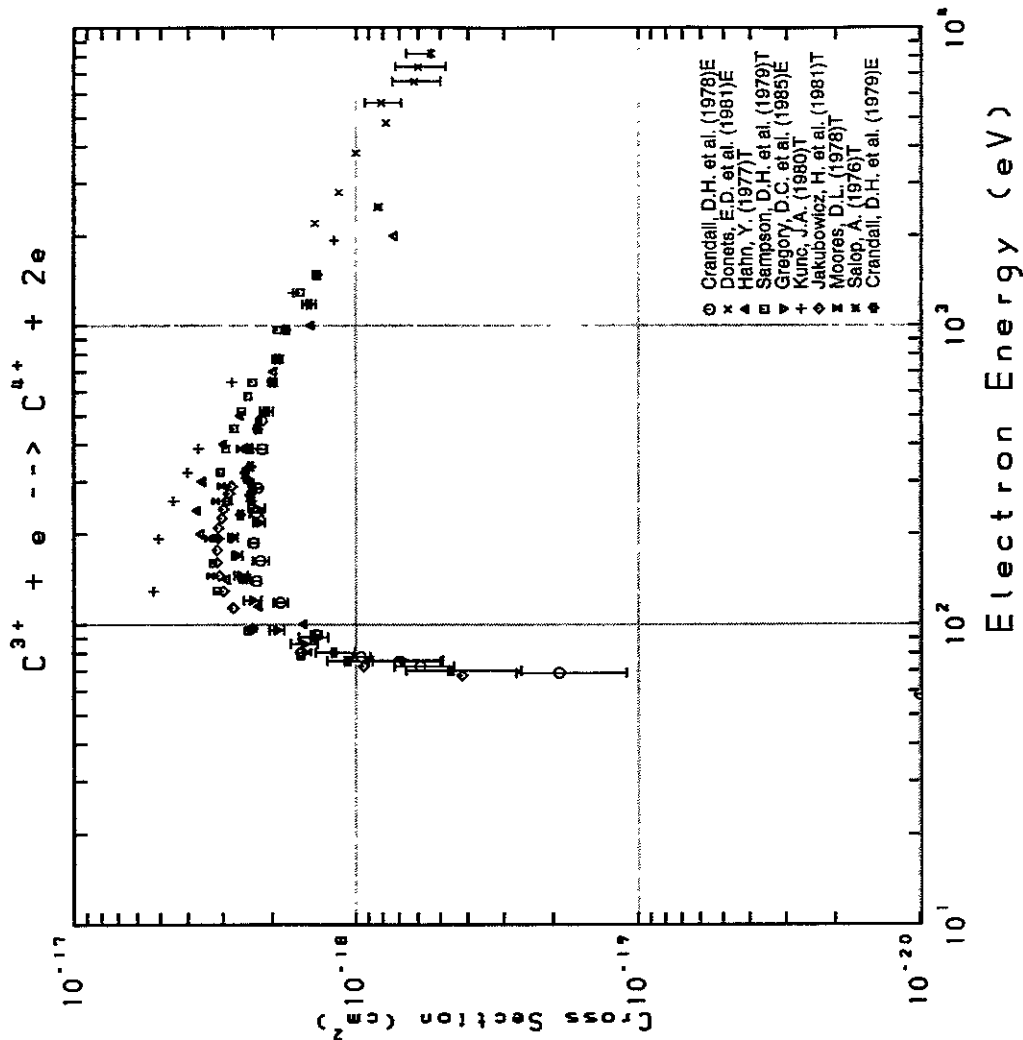


Fig. 26 $C^{3+} \rightarrow C^{4+}$

AMDIS-ION

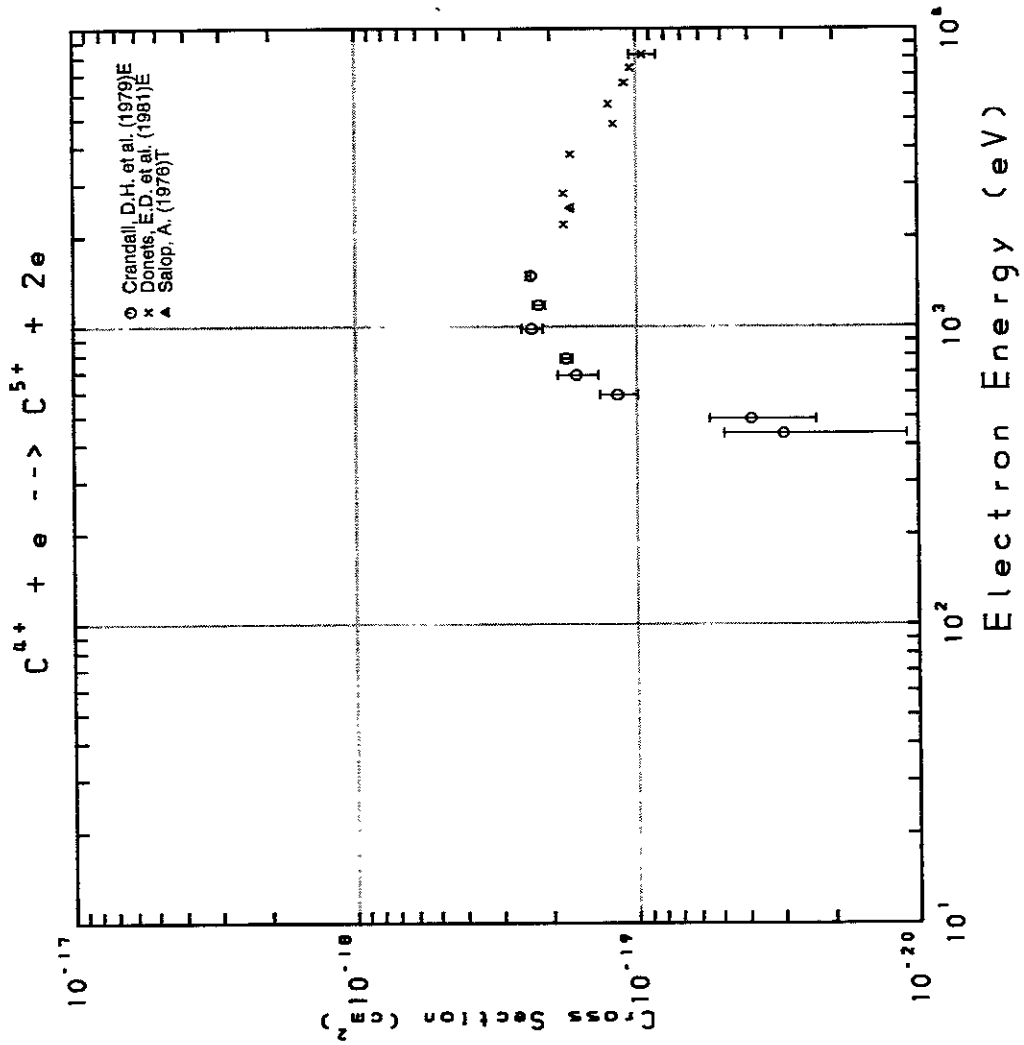


Fig. 27 $C^{4+} \rightarrow C^{5+}$

AMDIS-ION

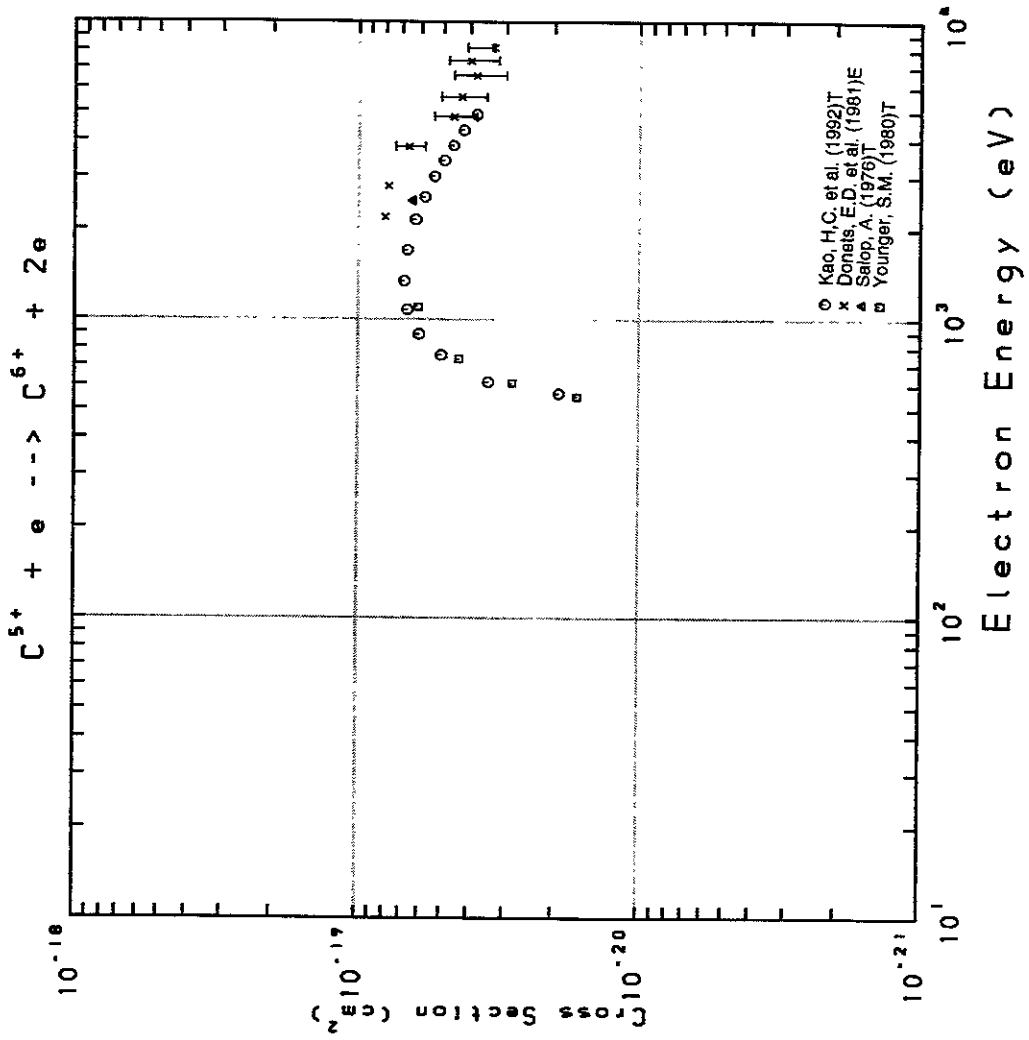


Fig. 28 $C^{5+} \rightarrow C^{6+}$

AMDIS-ION

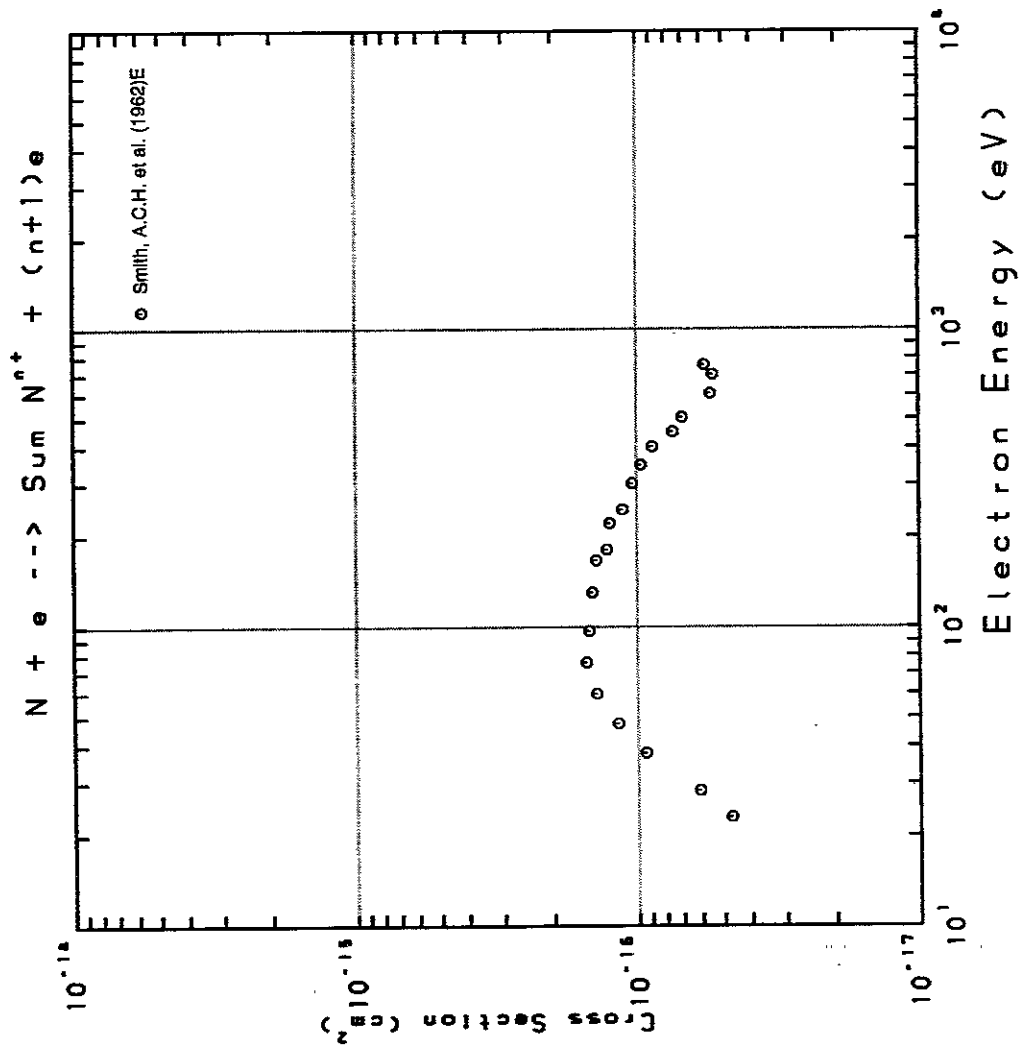


Fig. 29 $N \rightarrow \Sigma N^{n+}$

AMDIS-ION

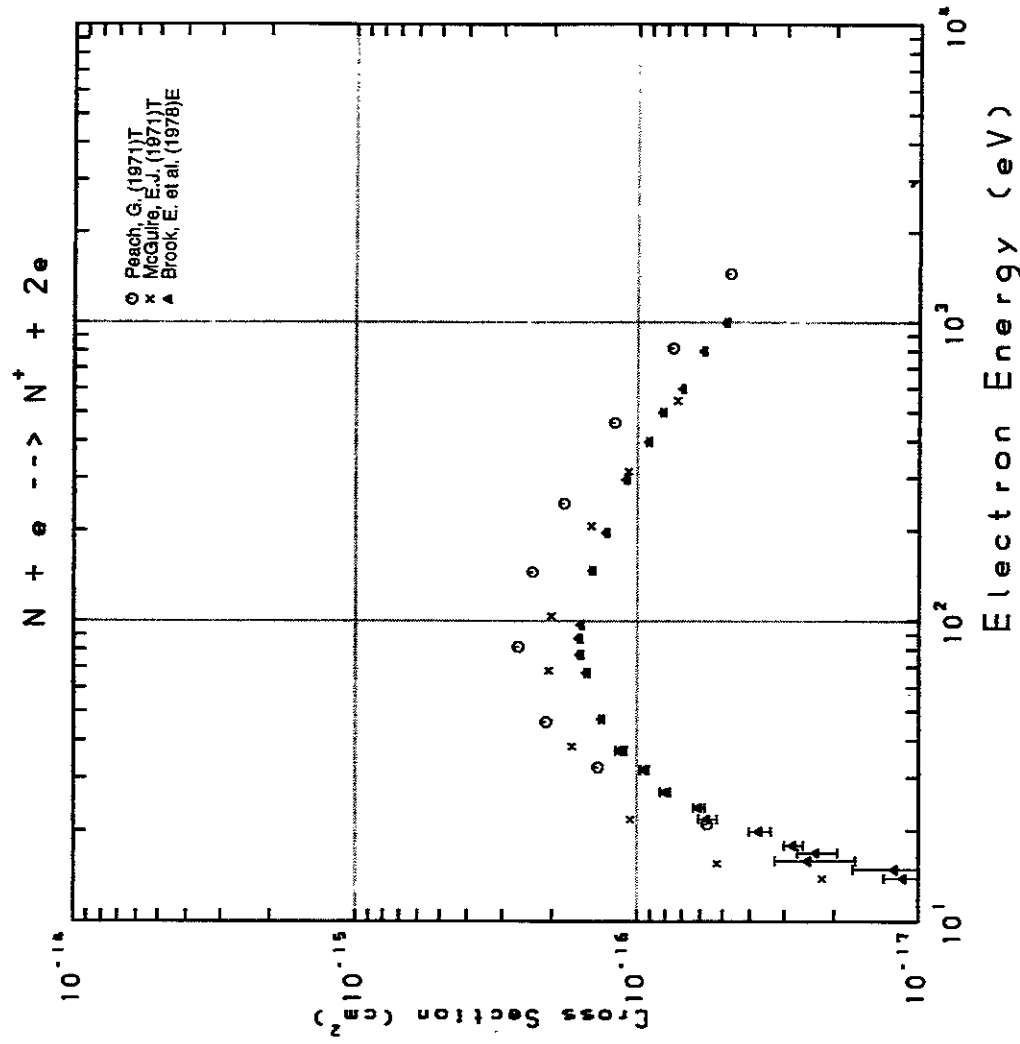


Fig. 30 $N \rightarrow N^+$

AMDIS-ION

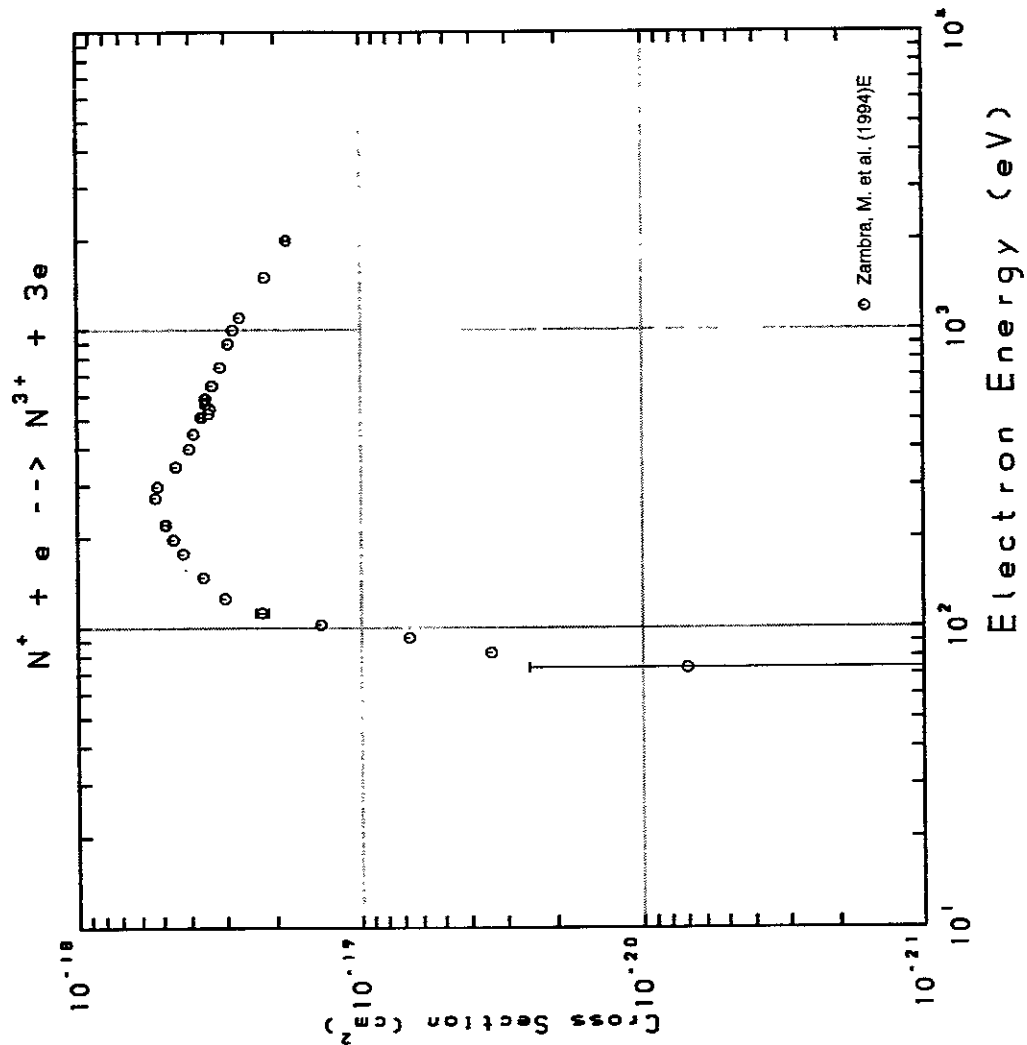


Fig. 32 $N^+ \rightarrow N^{3+}$

AMDIS-ION

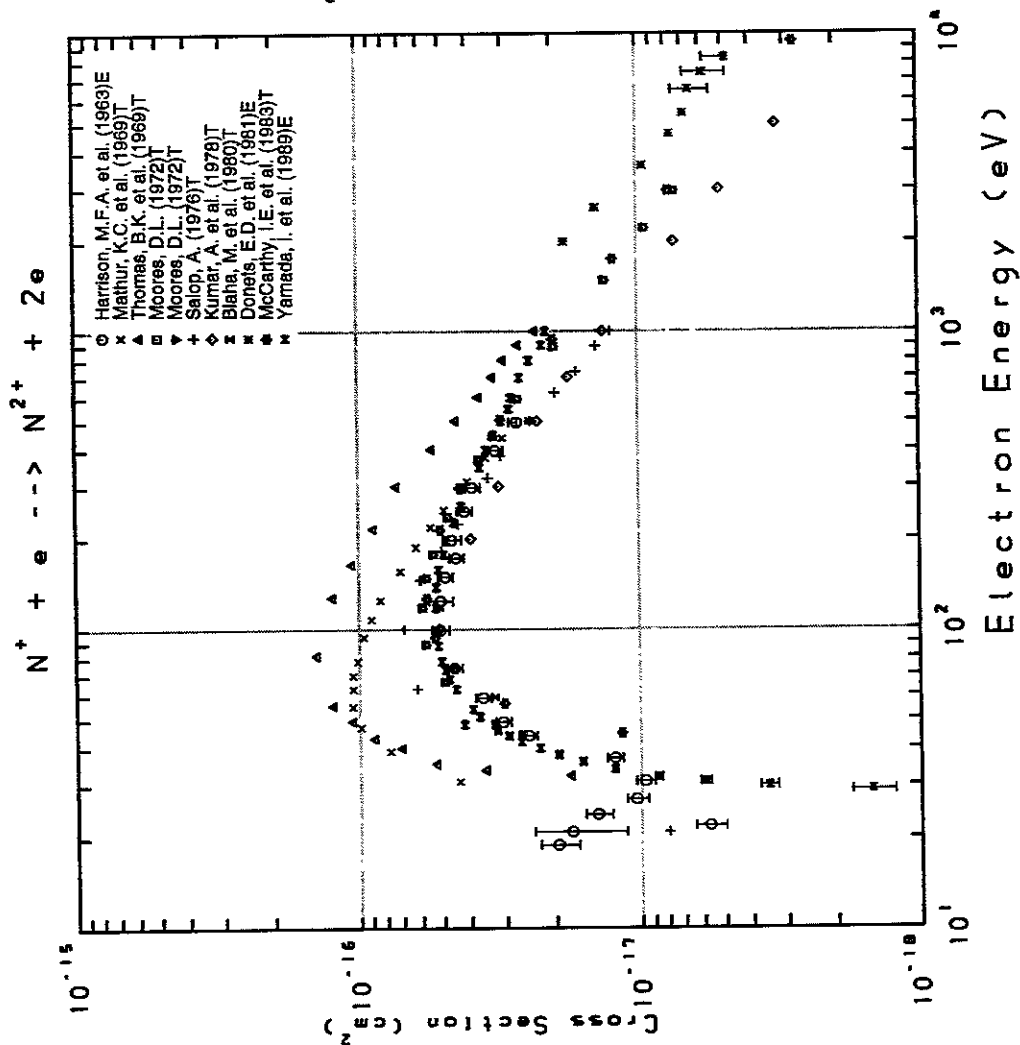


Fig. 31 $N^+ \rightarrow N^{2+}$

AMDIS-ION

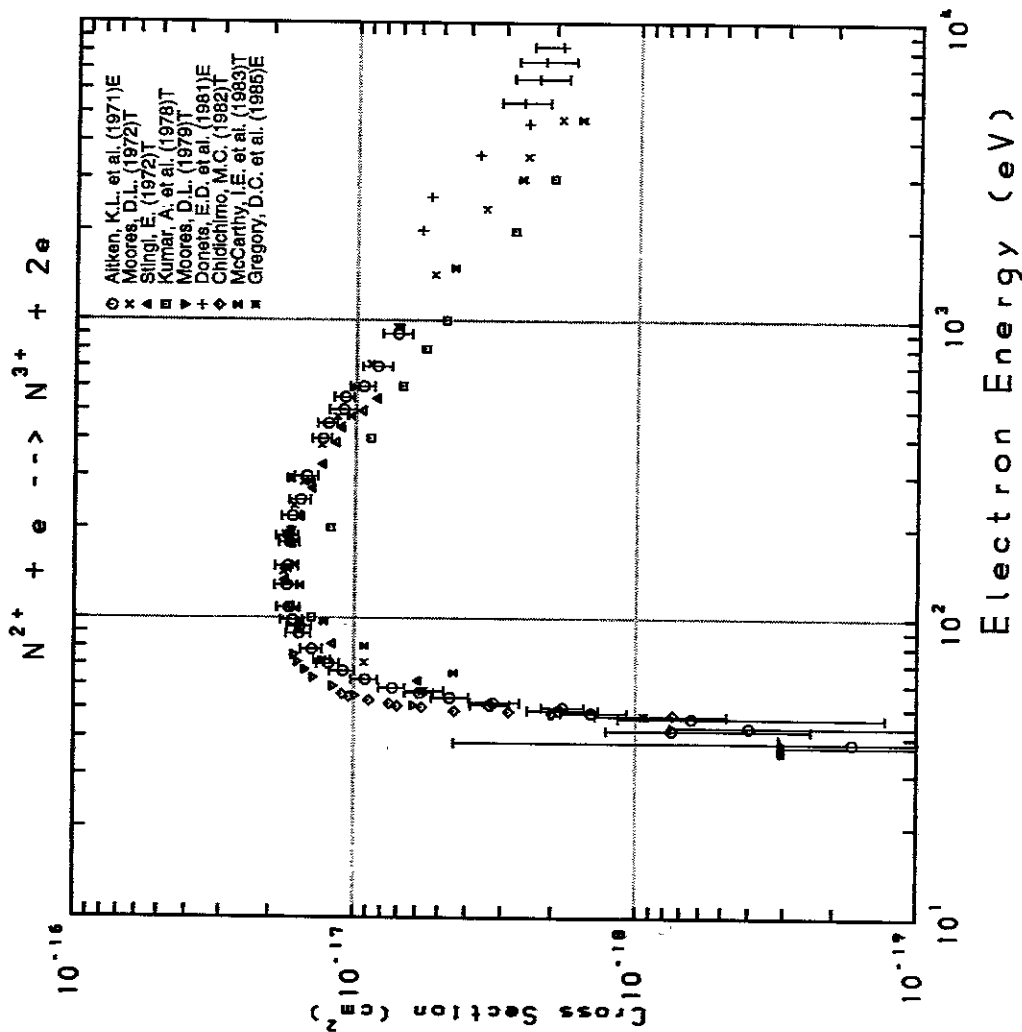


Fig. 33 $N^{2+} \rightarrow N^{3+}$

AMDIS-ION

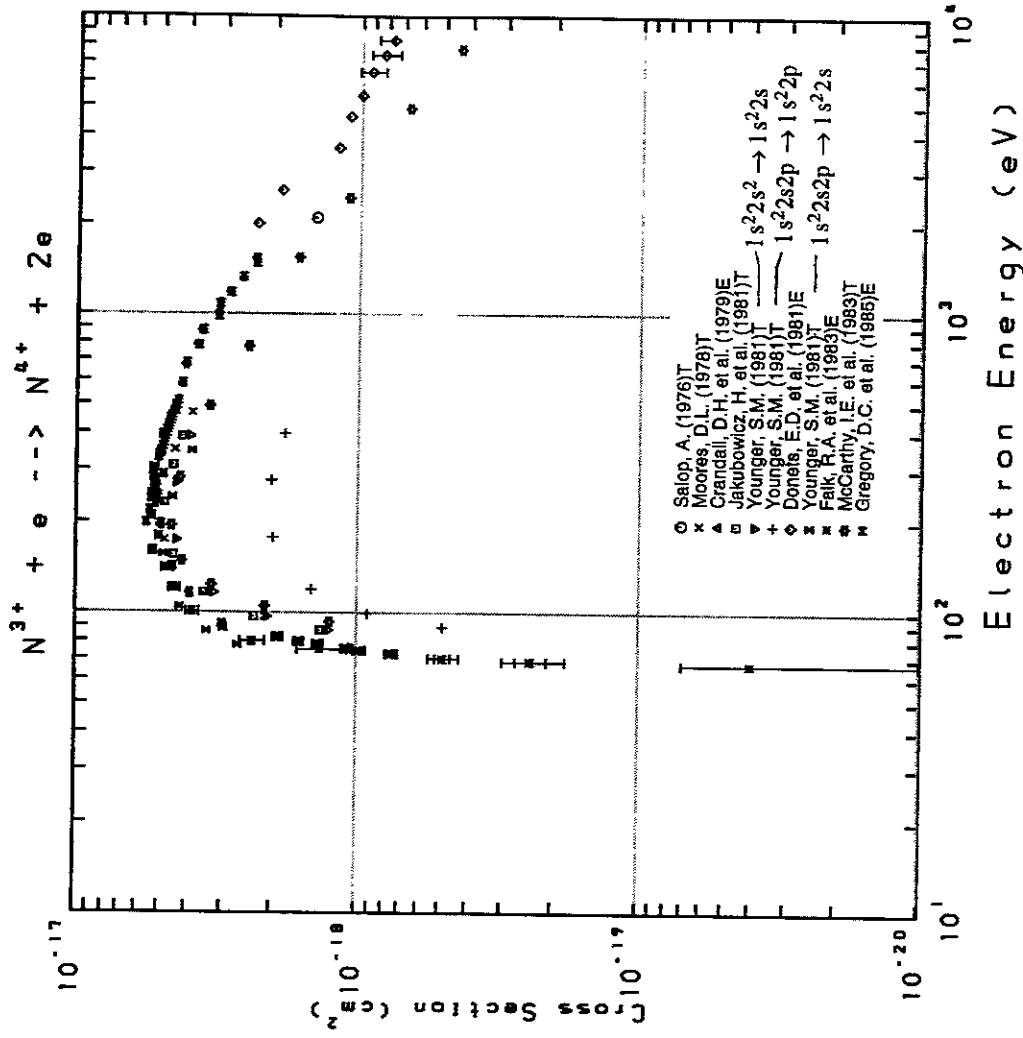


Fig. 34 $N^{3+} \rightarrow N^{4+}$

AMDIS-ION

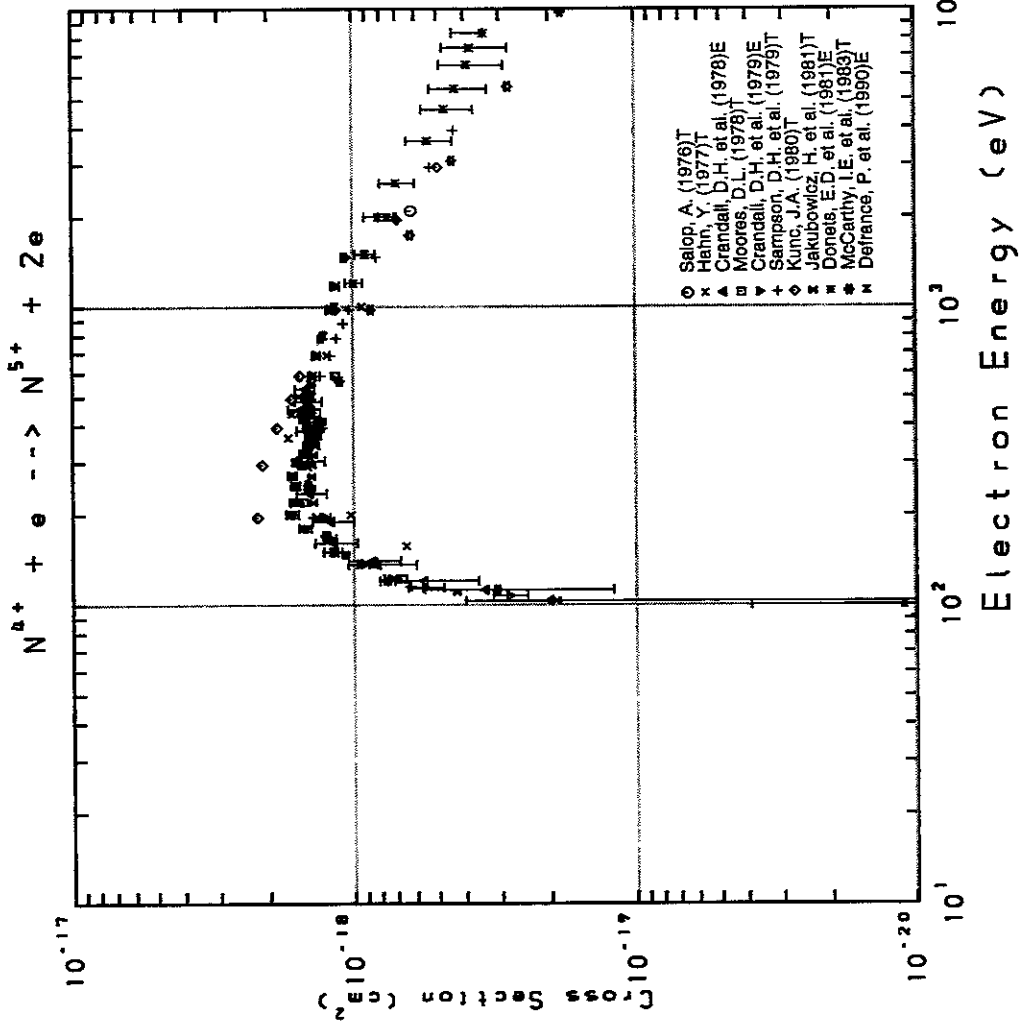


Fig. 35 $N^{4+} \rightarrow N^{5+}$

AMDIS-ION

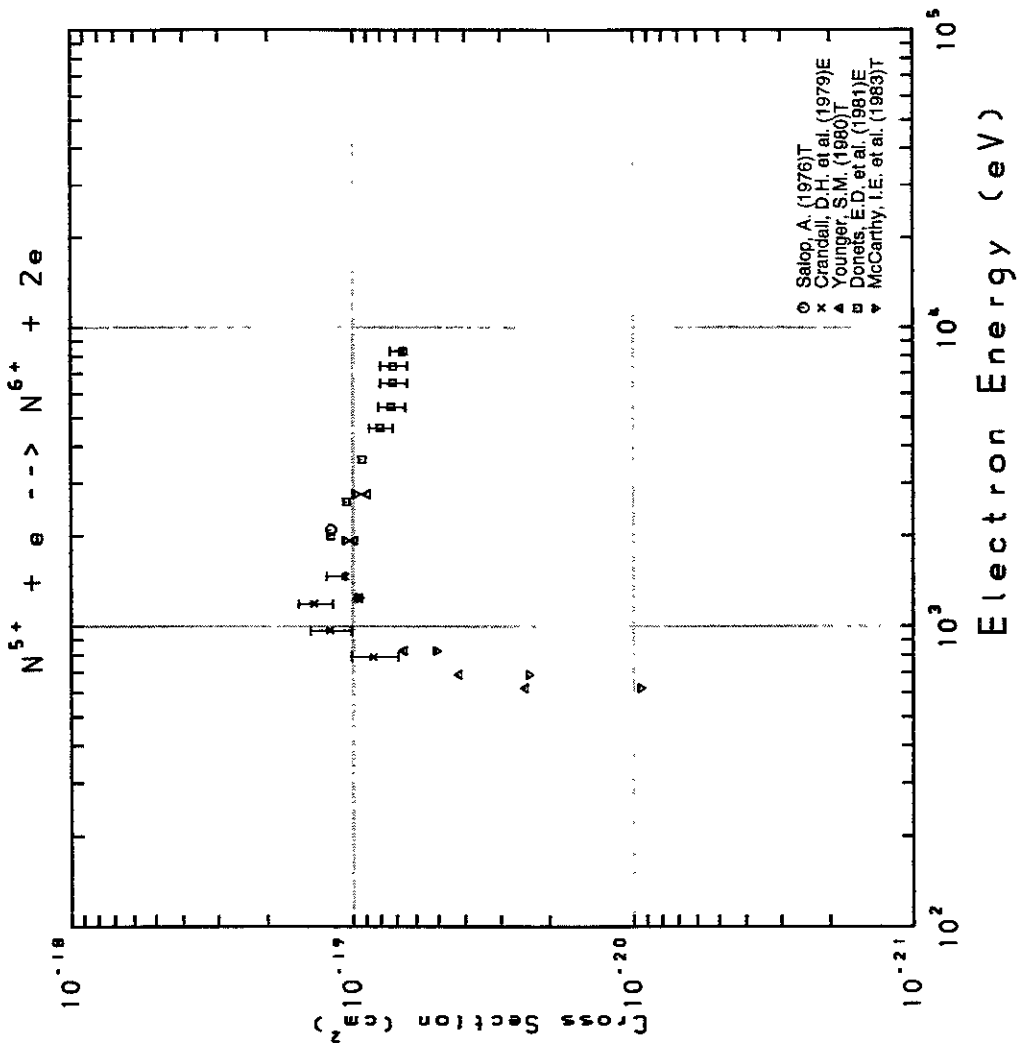


Fig. 36 $N^{5+} \rightarrow N^{6+}$

AMDIS-ION

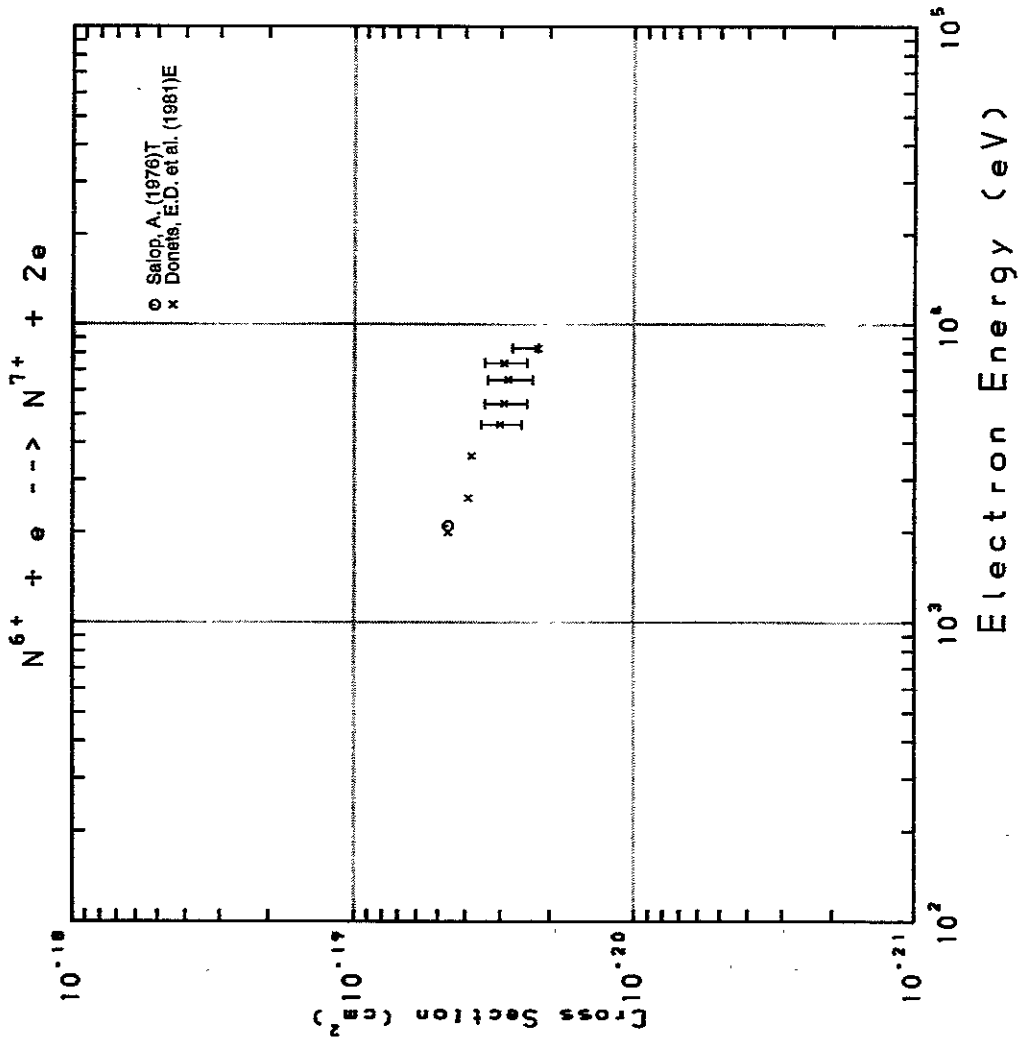


Fig. 37 $N^{6+} \rightarrow N^{7+}$

AMDIS-ION

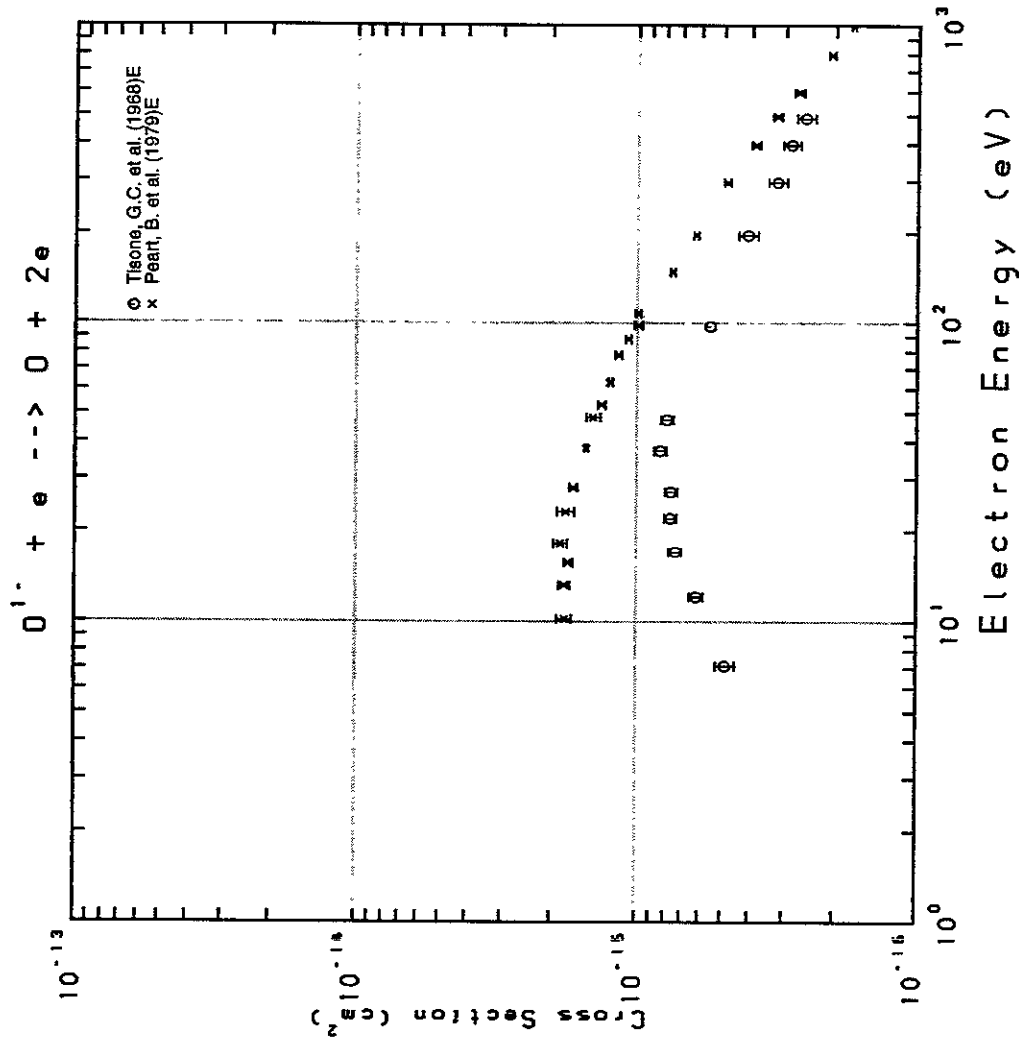


Fig. 38 $O^+ \rightarrow O^0$

AMDIS-ION

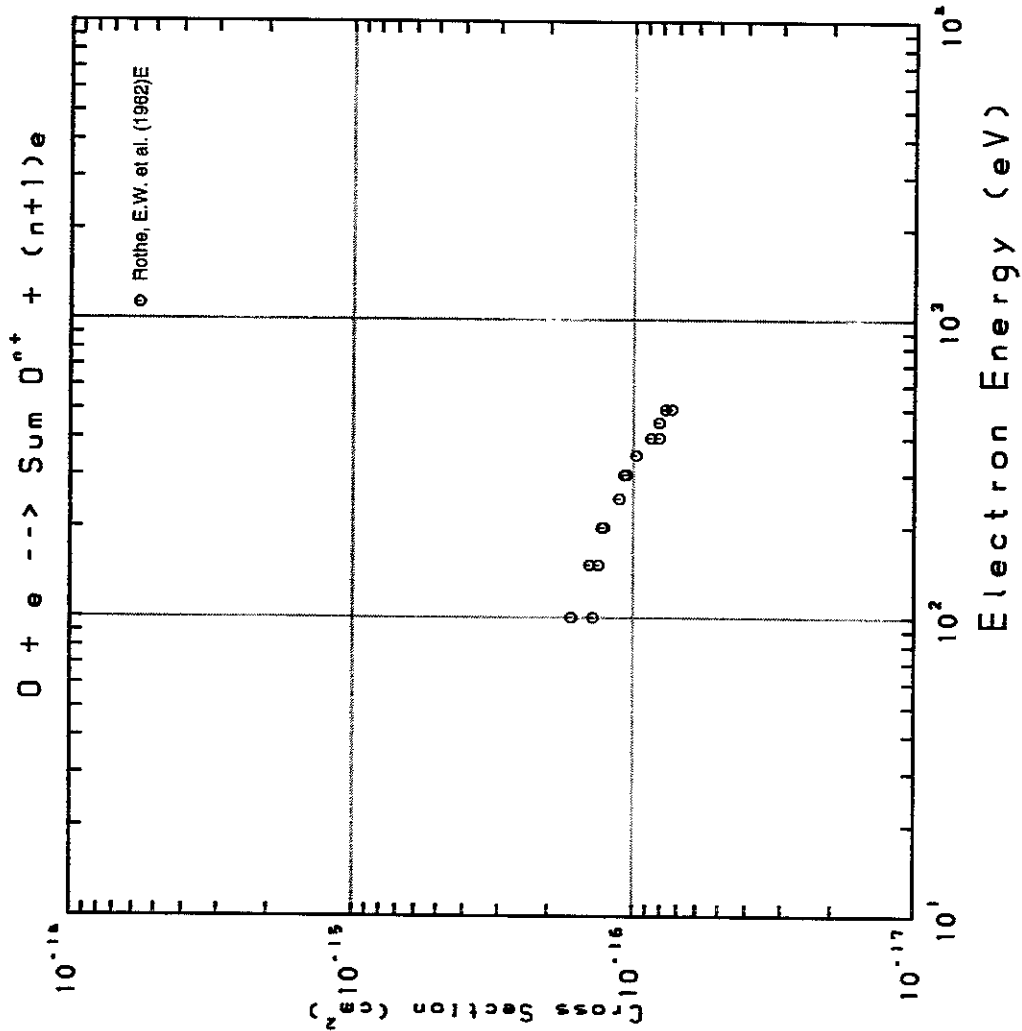


Fig. 39 O \rightarrow ΣO^{n+}

AMDIS-ION

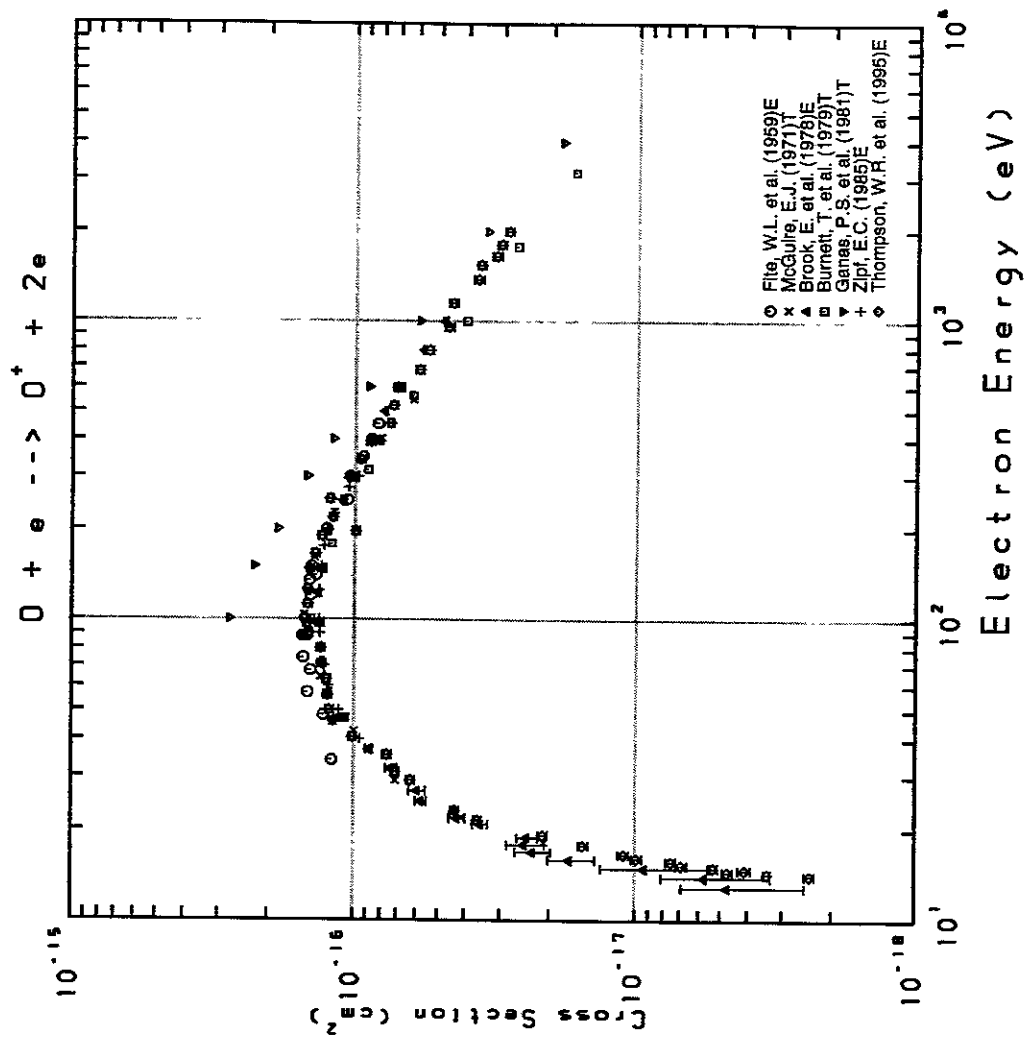


Fig. 40 O \rightarrow O⁺

AMDIS-ION

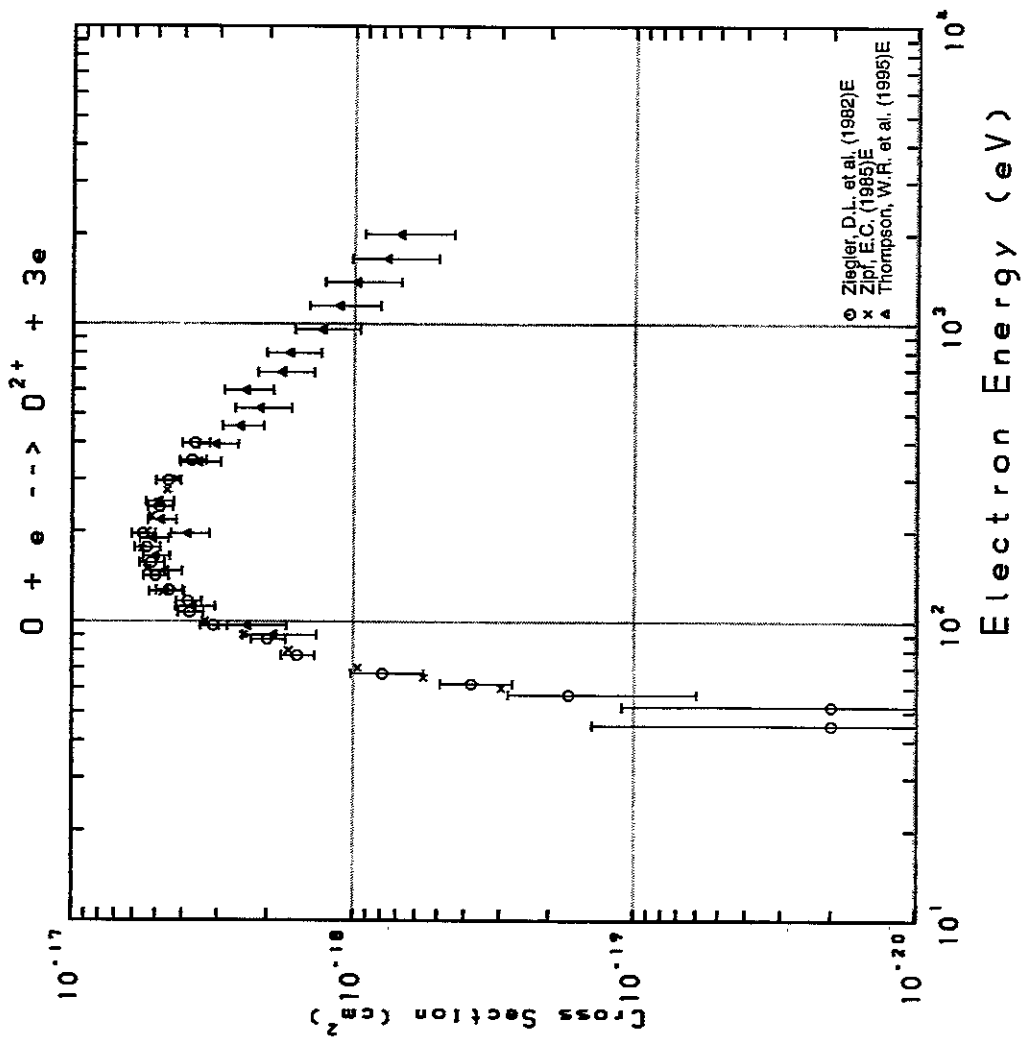


Fig. 41 $O \rightarrow O^{2+}$

AMDIS-ION

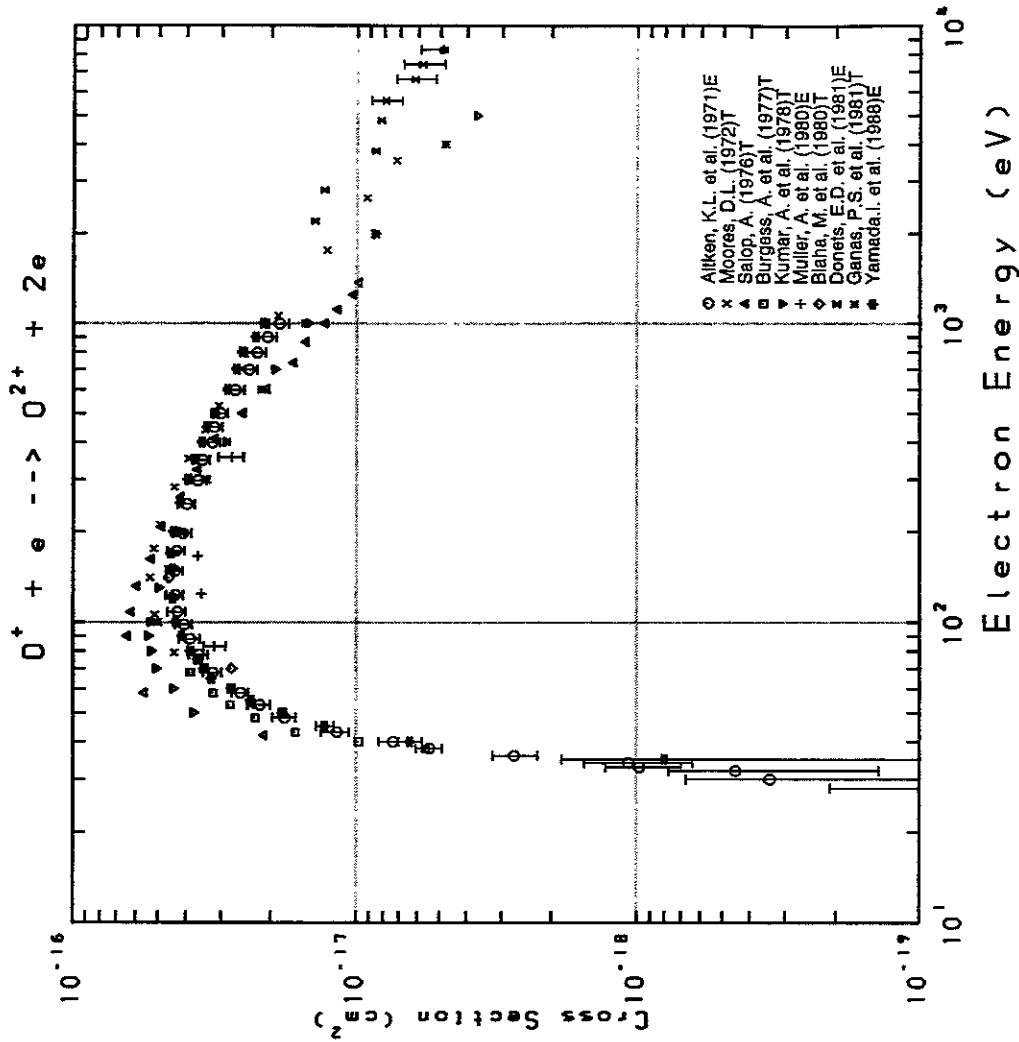


Fig. 42 $O^+ \rightarrow O^{2+}$

AMDIS-ION

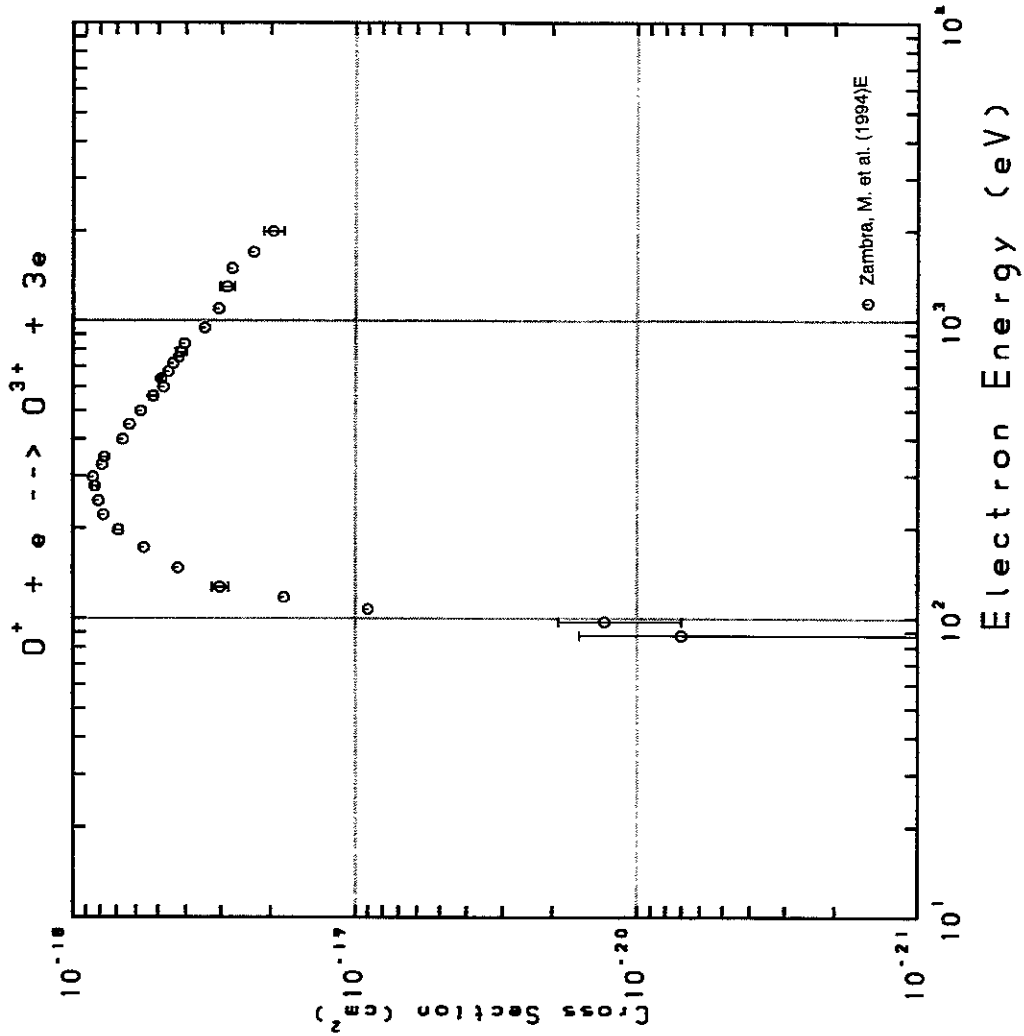


Fig. 43 $O^+ \rightarrow O^{3+}$

AMDIS-ION

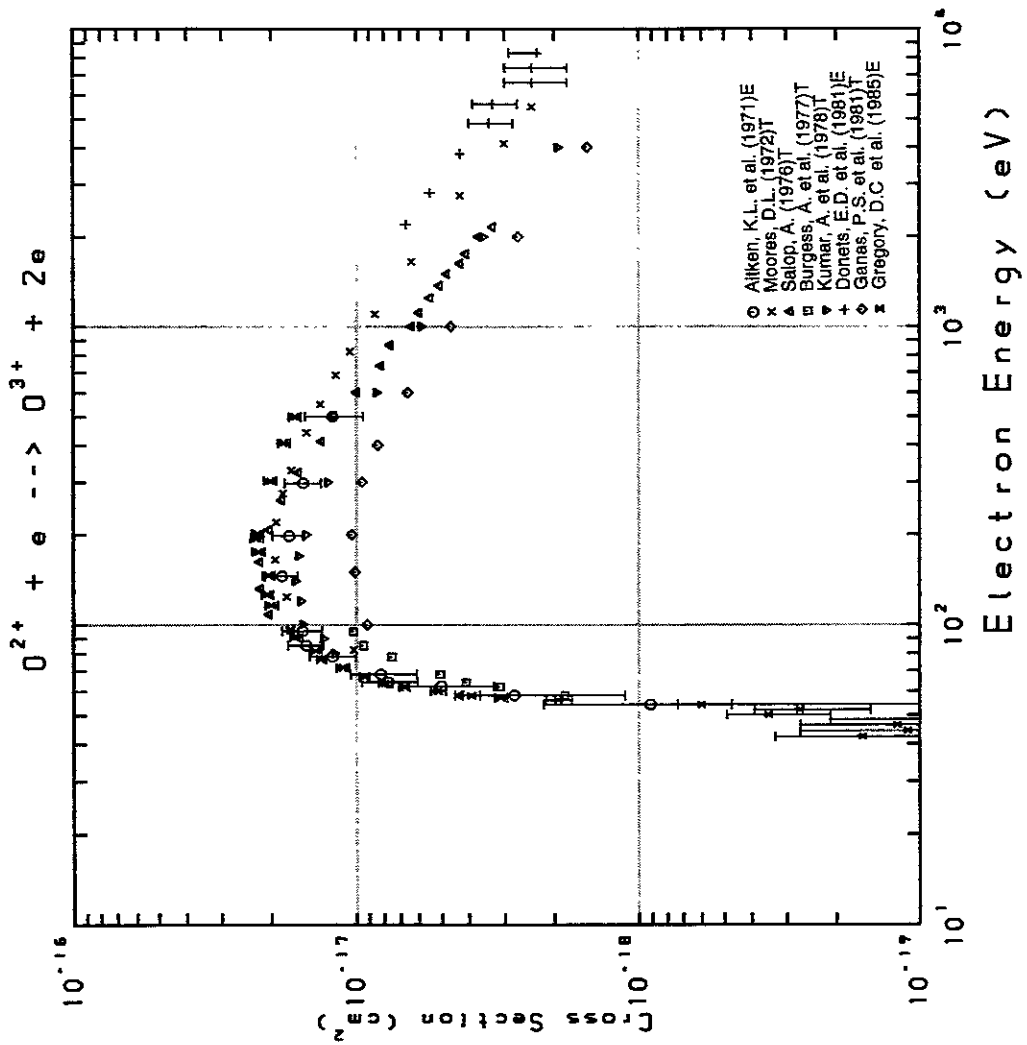


Fig. 44 $O^{2+} \rightarrow O^{3+}$

AMDIS-ION

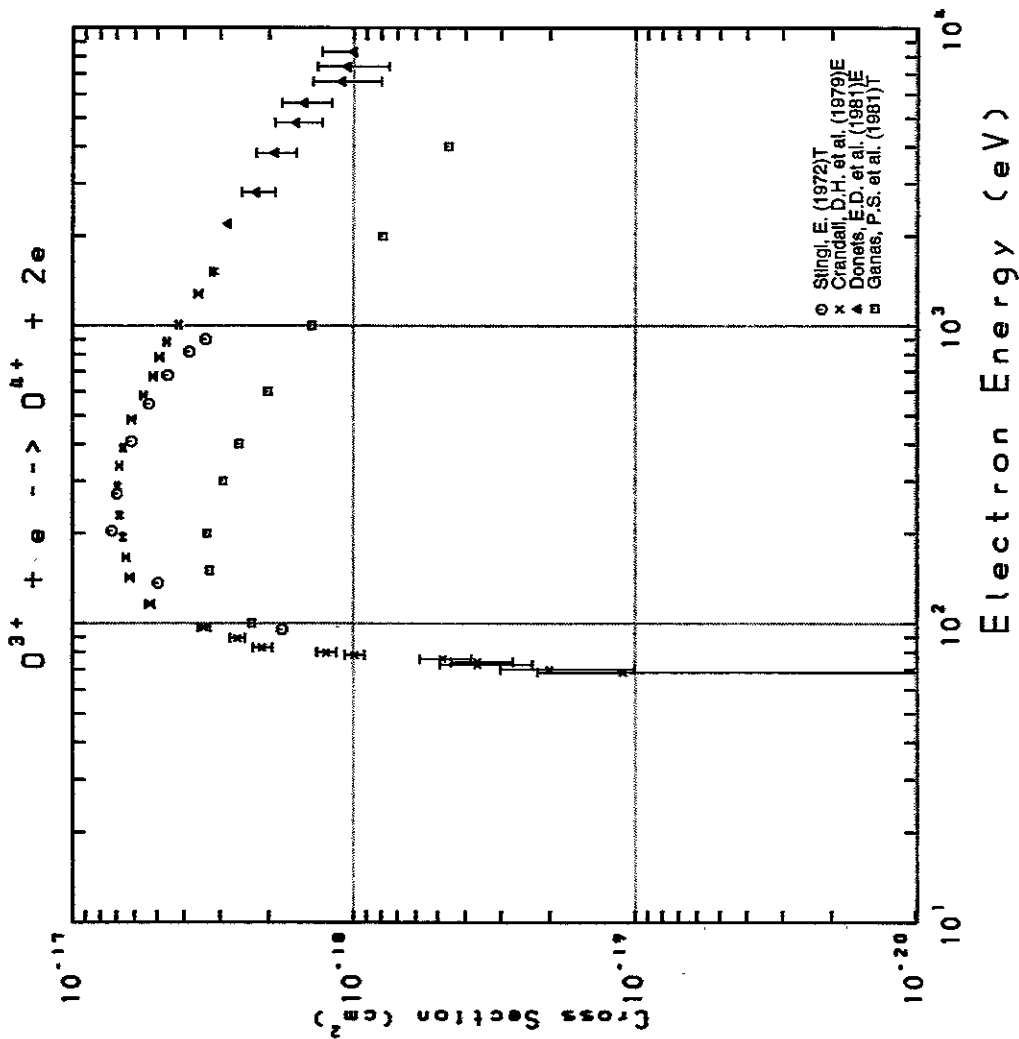


Fig. 45 $O^{3+} \rightarrow O^{4+}$

AMDIS-ION

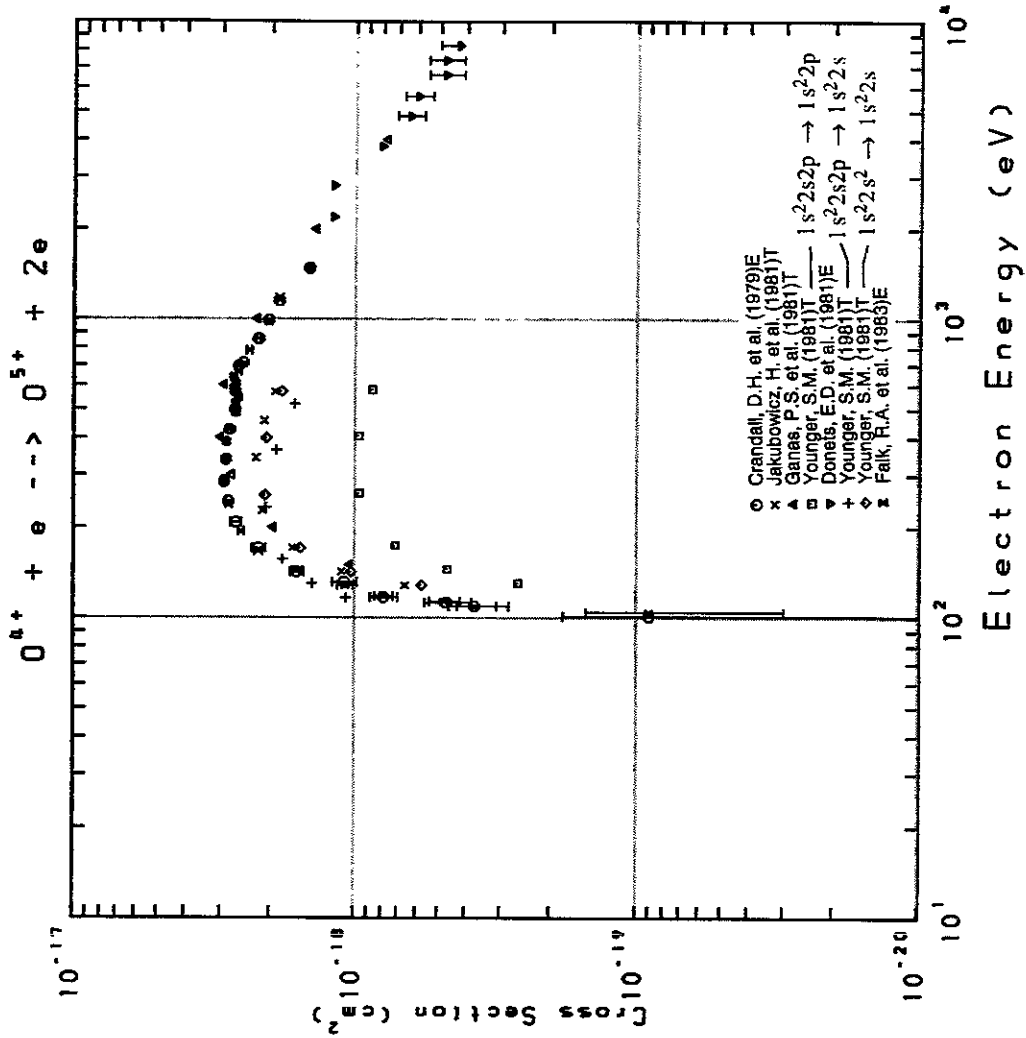


Fig. 46 $O^{4+} \rightarrow O^{5+}$

AMDIS-ION

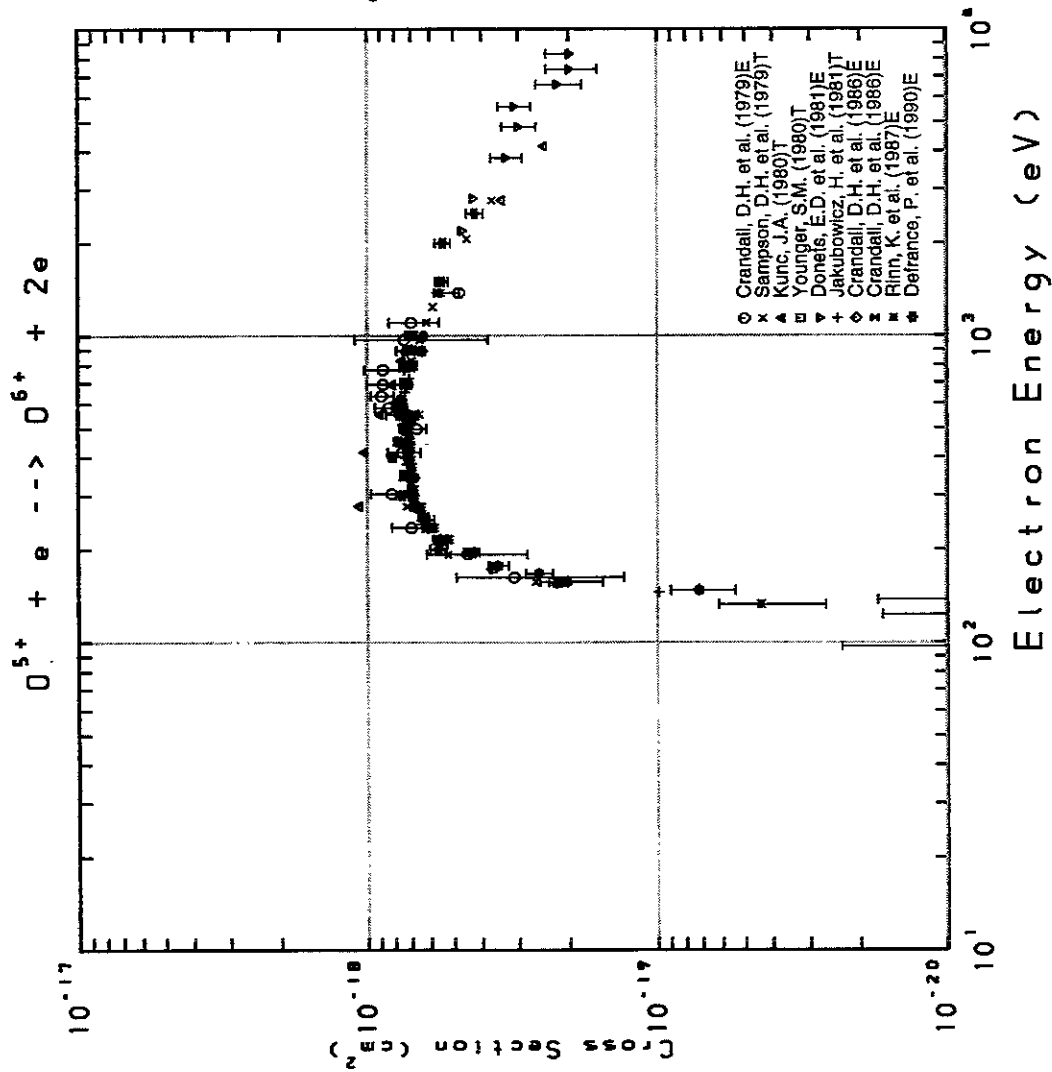


Fig. 47 $O^{5+} \rightarrow O^{6+}$

AMDIS-ION

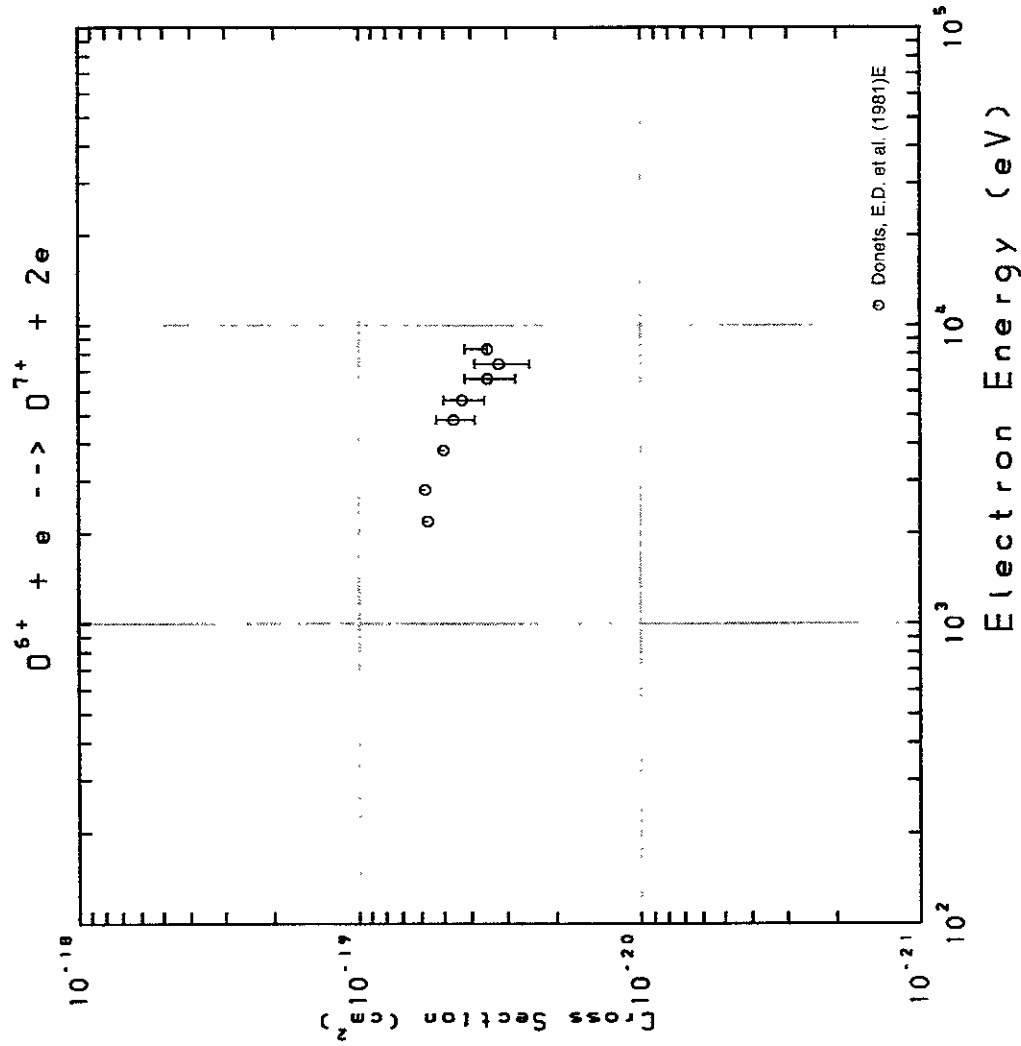


Fig. 48 $O^{6+} \rightarrow O^{7+}$

AMDIS-ION

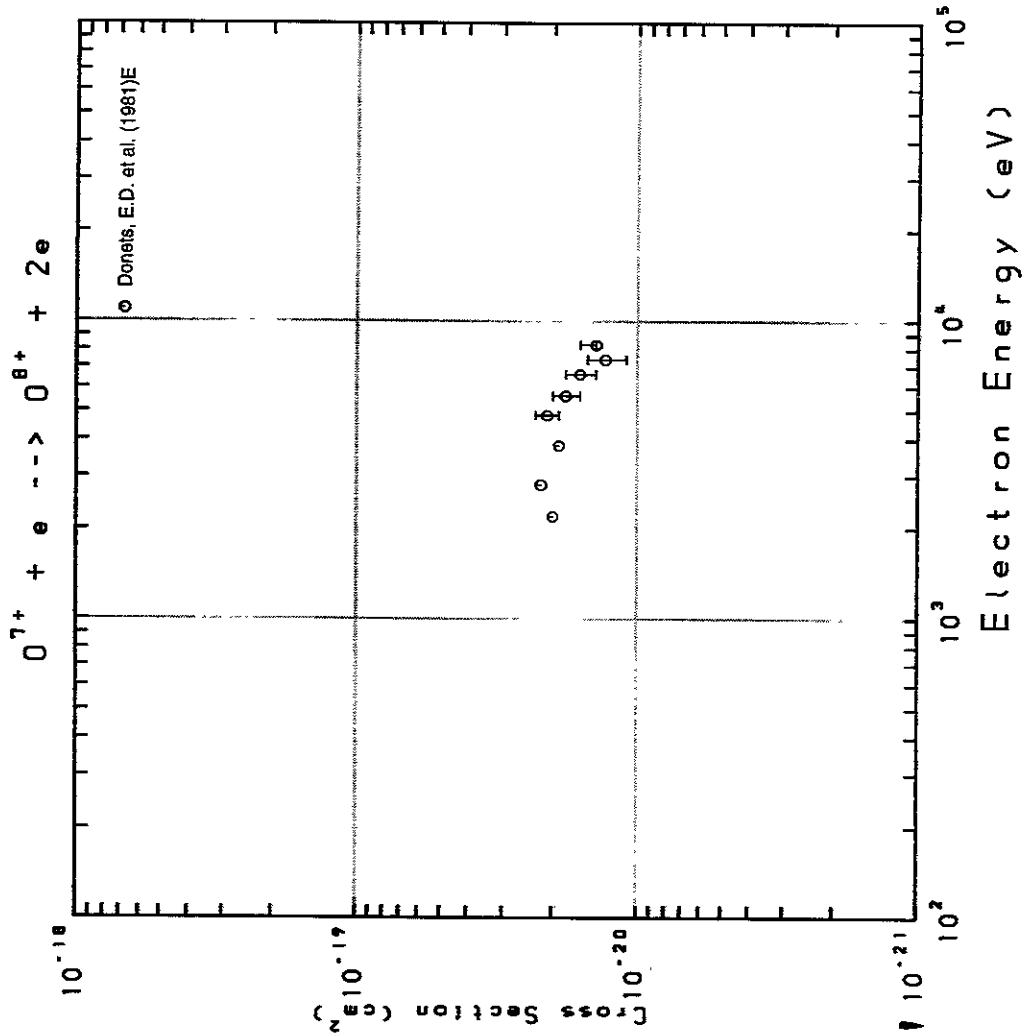


Fig. 49 $O^{7+} \rightarrow O^{8+}$

AMDIS-ION

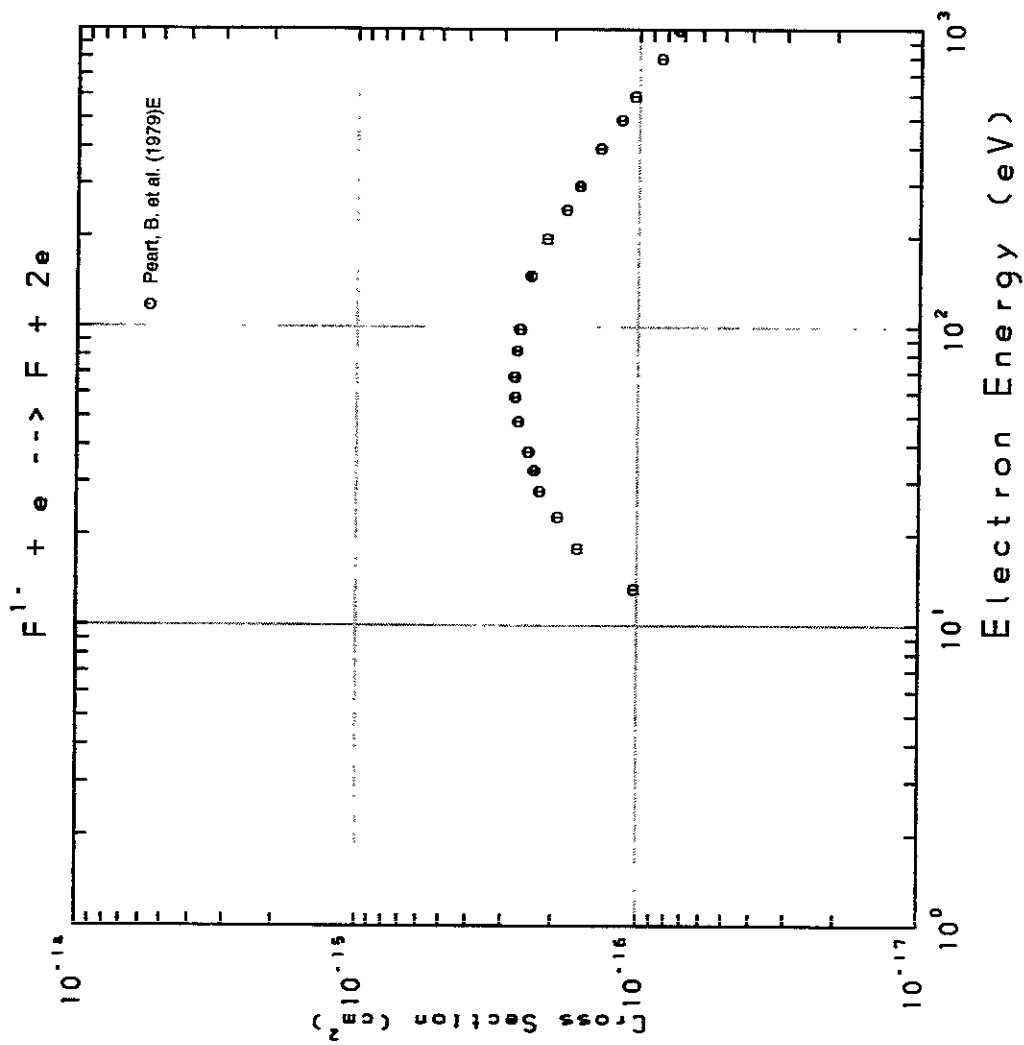


Fig. 50 $F^{-} \rightarrow F^0$

AMDIS-ION

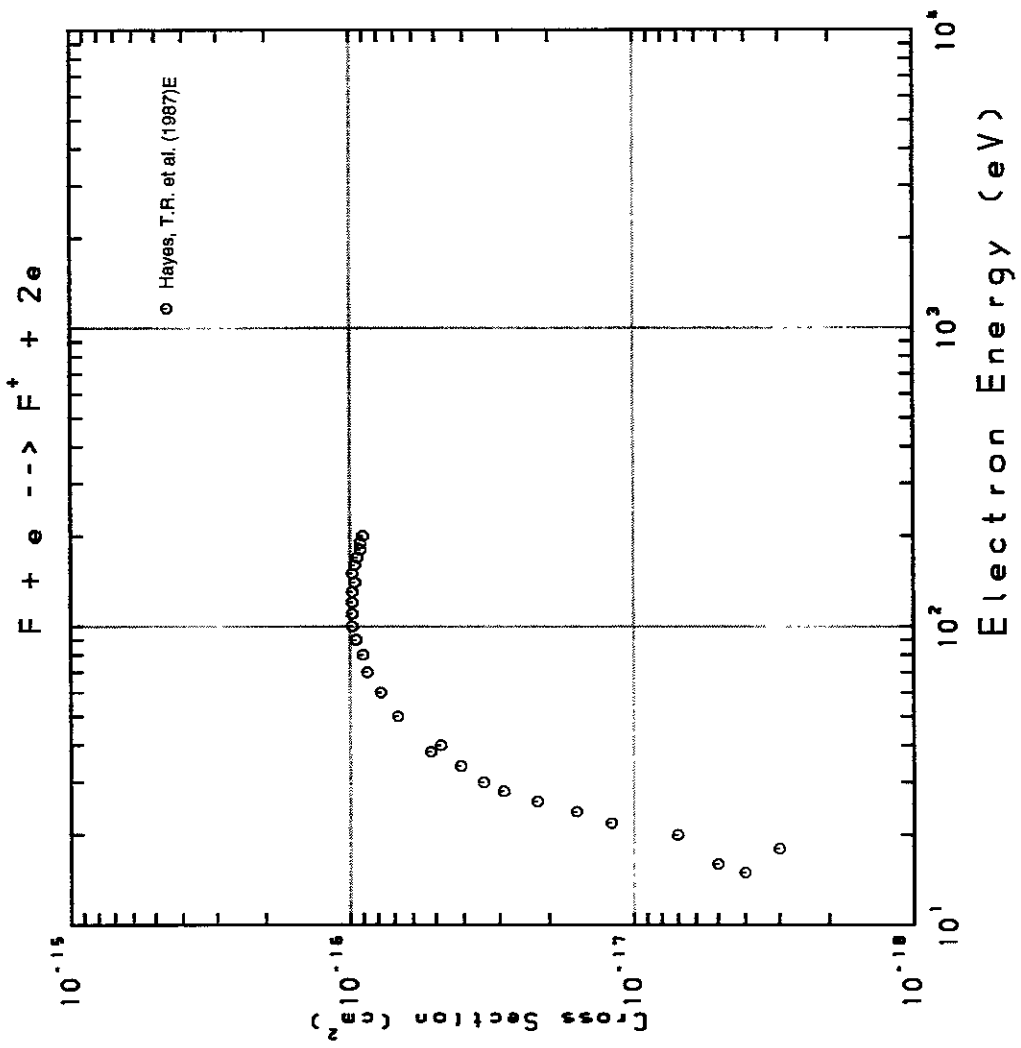


Fig. 51 $F \rightarrow F^+$

AMDIS-ION

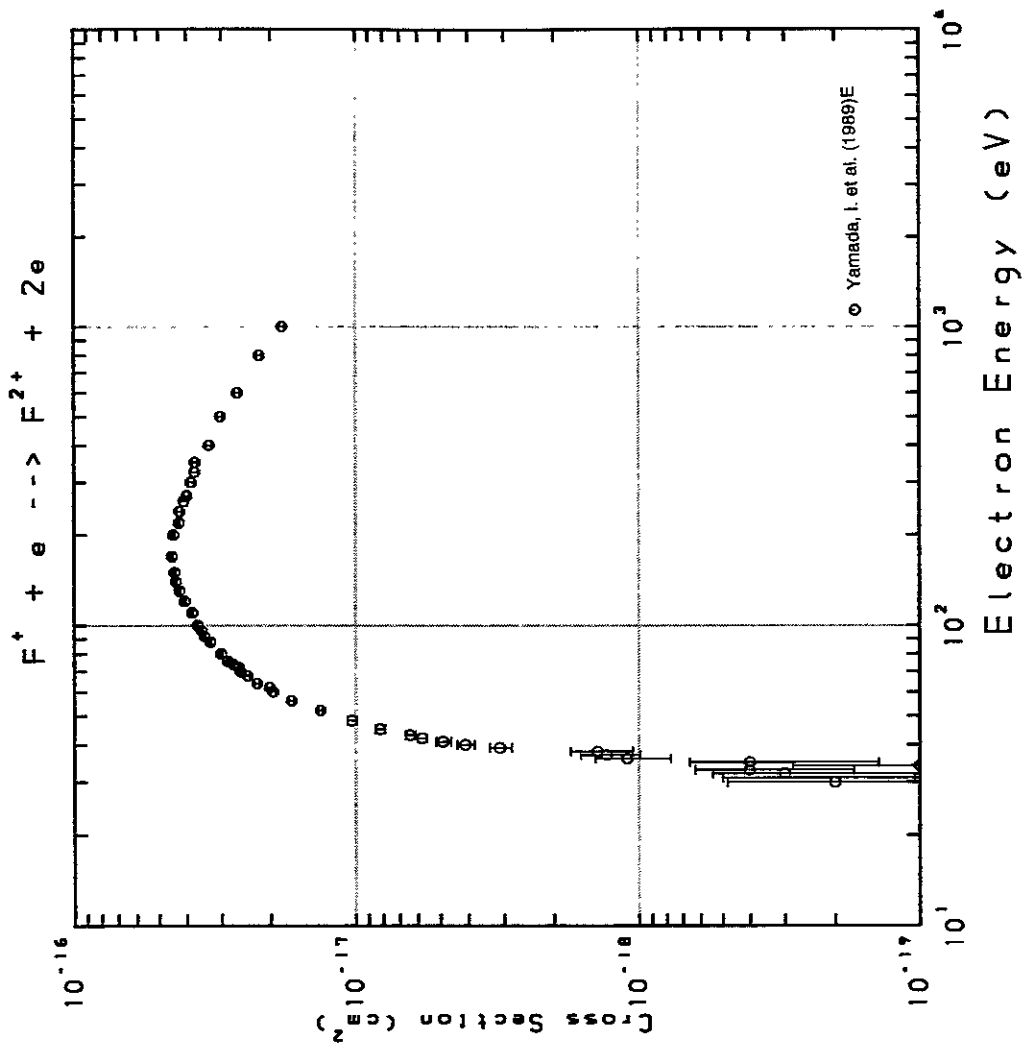


Fig. 52 $F^+ \rightarrow F^{2+}$

AMDIS-ION

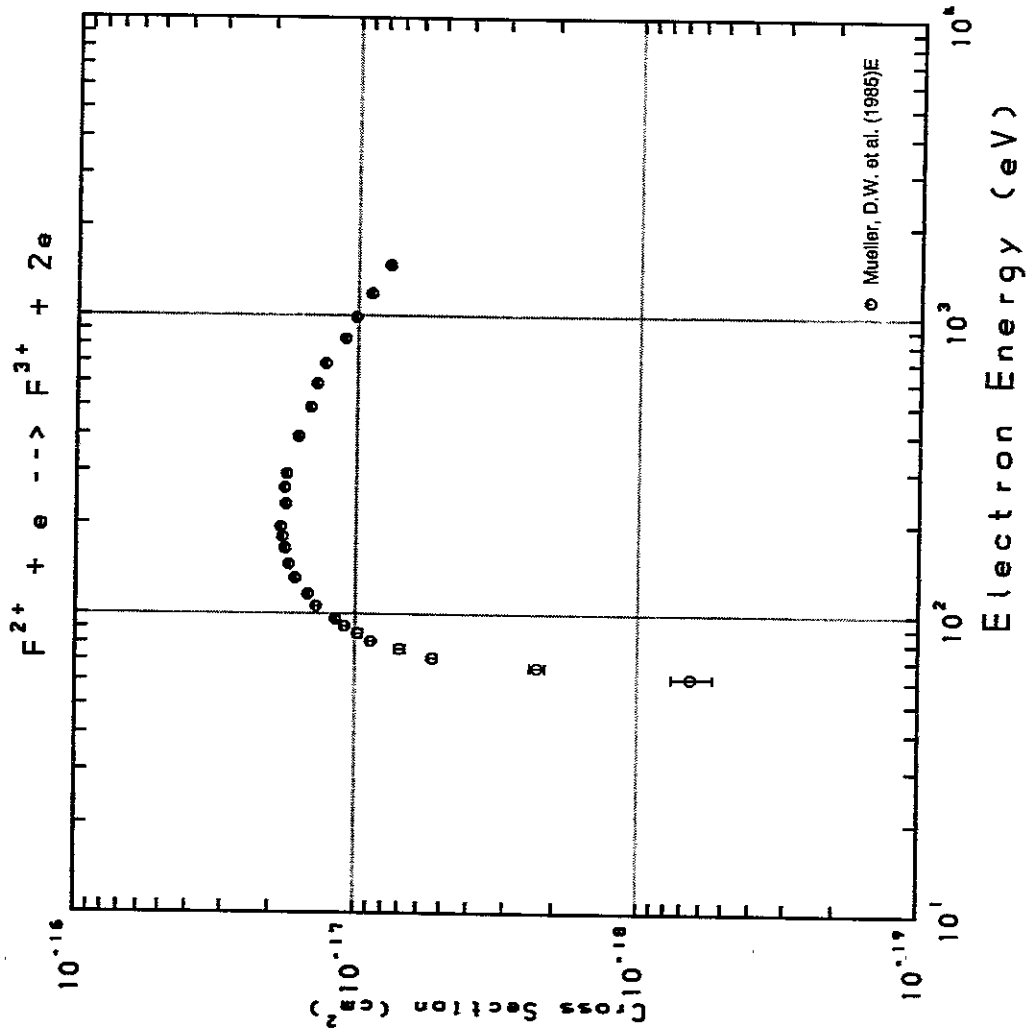


Fig. 53 $F^{2+} \rightarrow F^{3+}$

AMDIS-ION

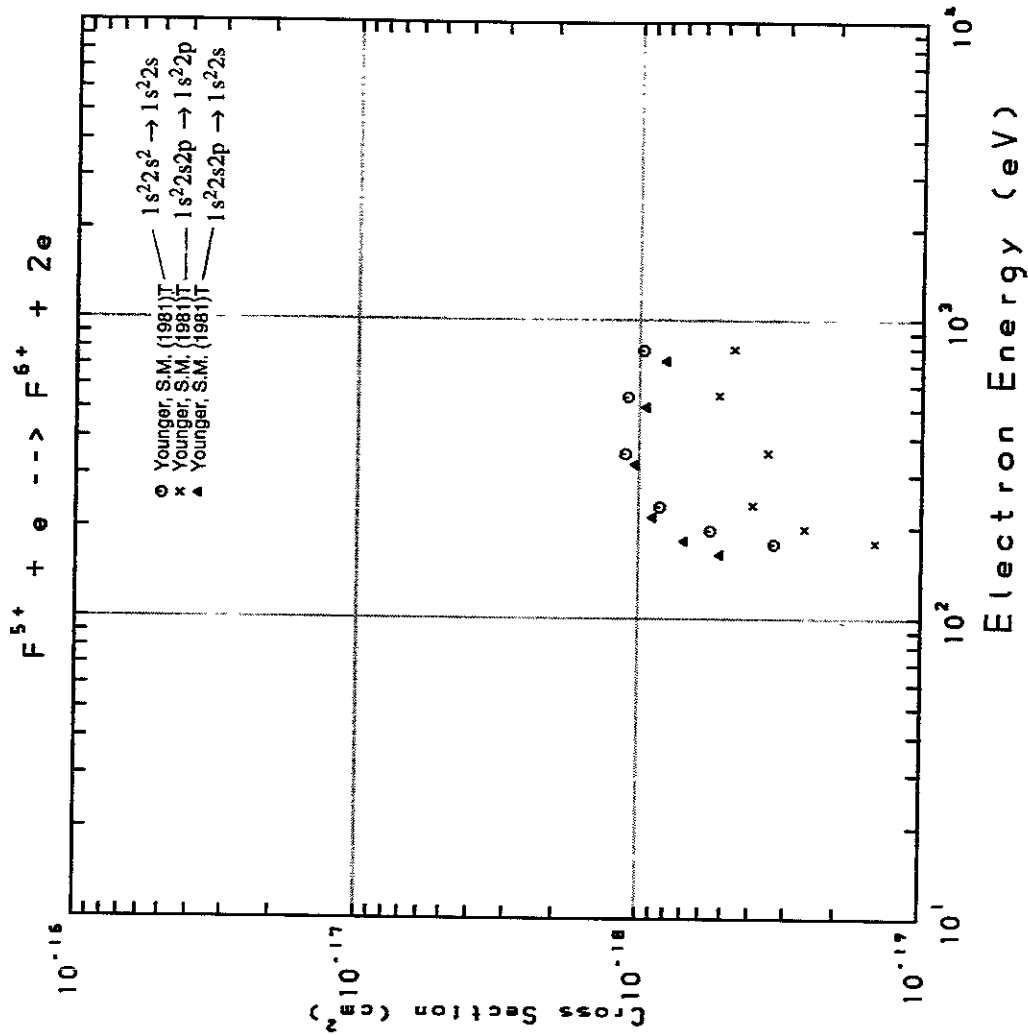


Fig. 54 $F^{5+} \rightarrow F^{6+}$

AMDIS-ION

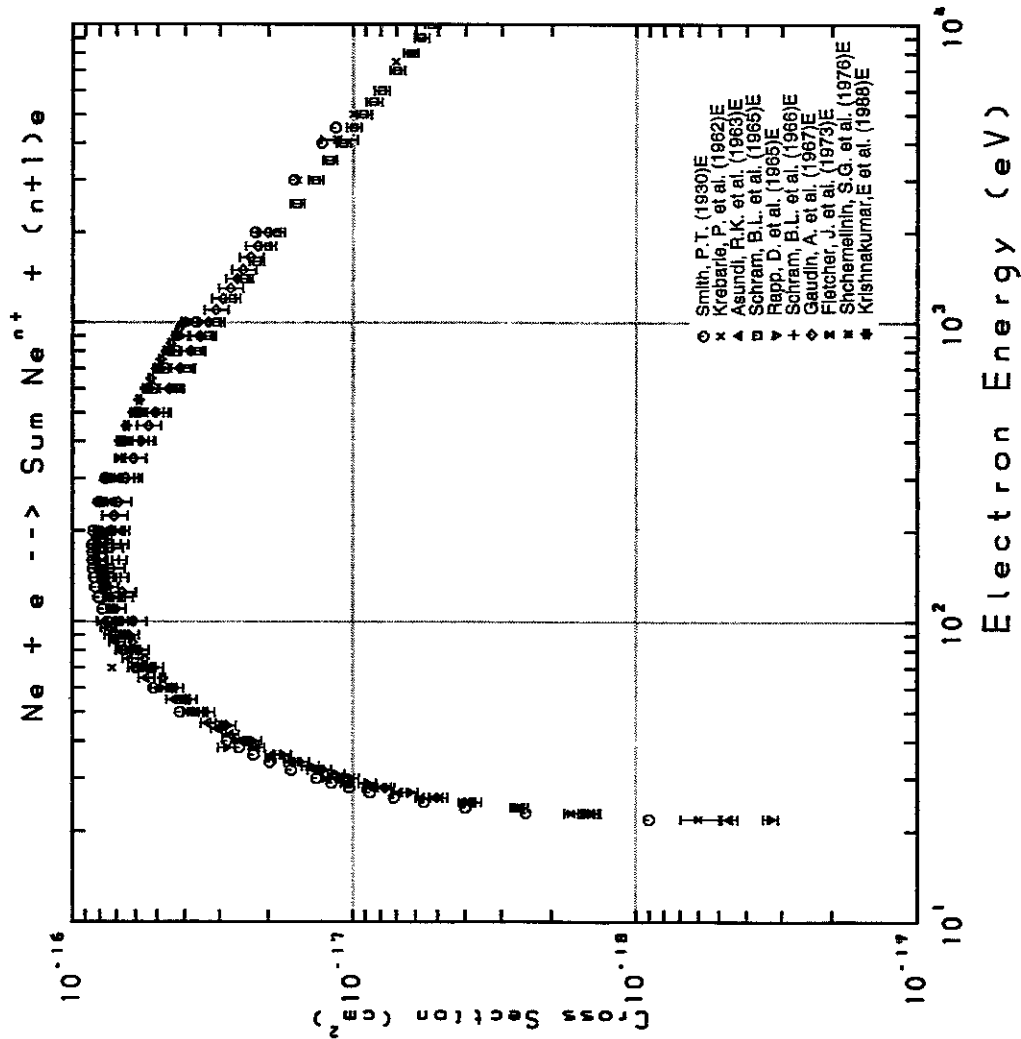


Fig. 55 $Ne \rightarrow \Sigma Ne^{n+}$

AMDIS-ION

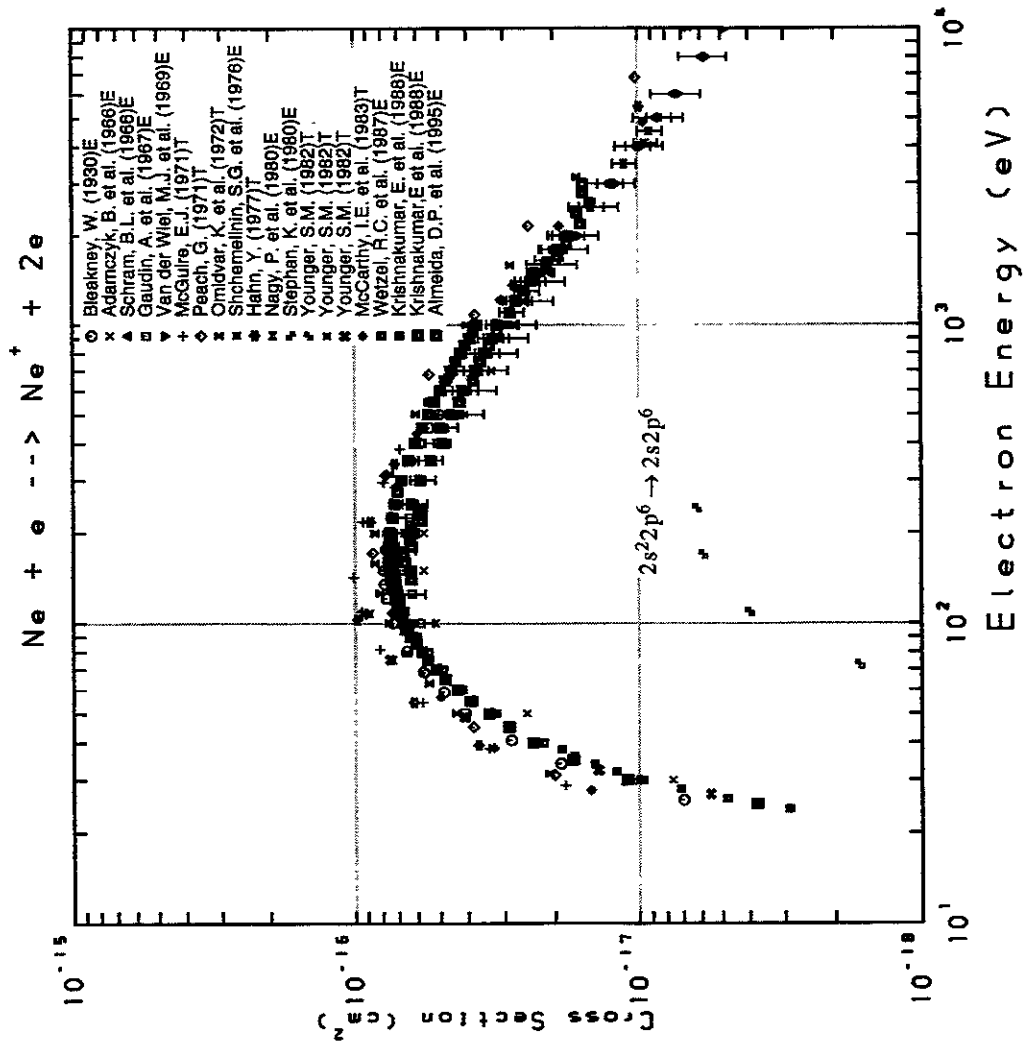


Fig. 56 $Ne \rightarrow Ne^+$

AMDIS-ION

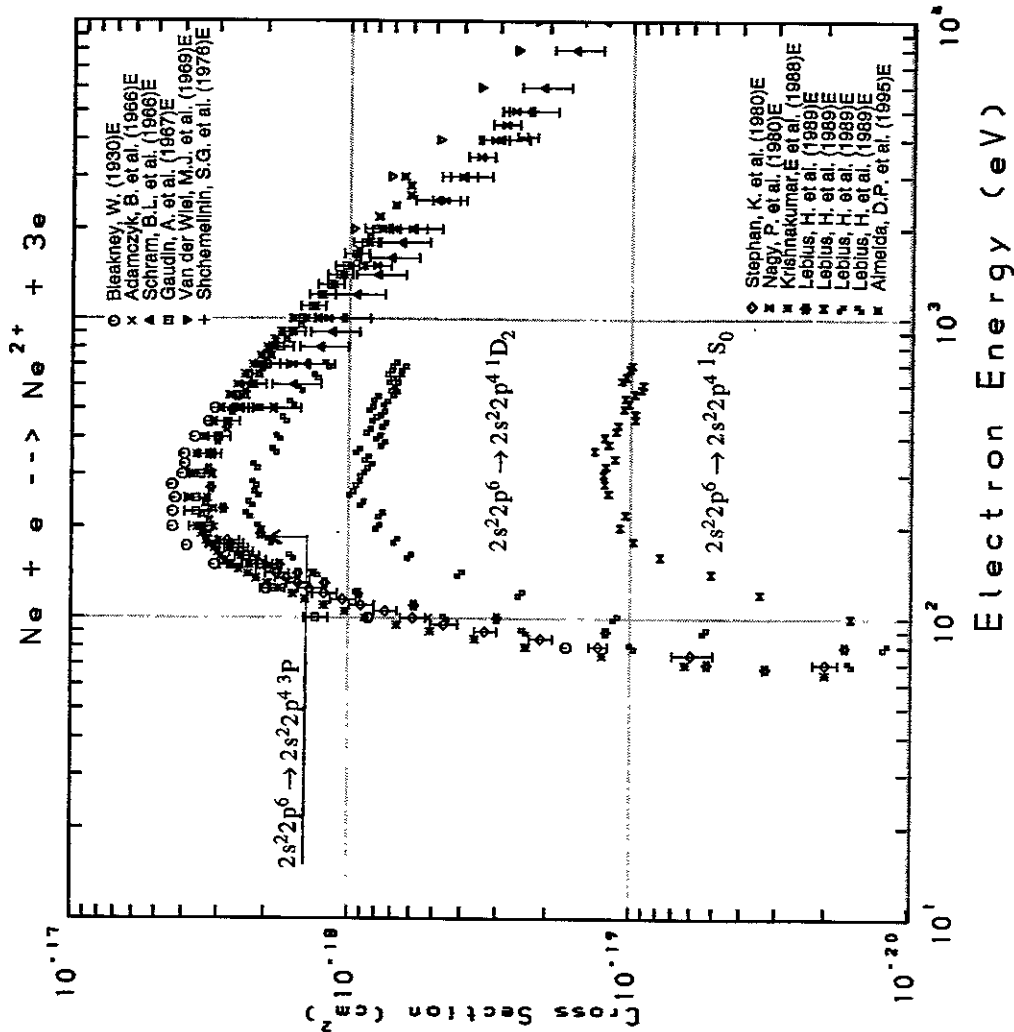


Fig. 57 Ne \rightarrow Ne²⁺

AMDIS-ION

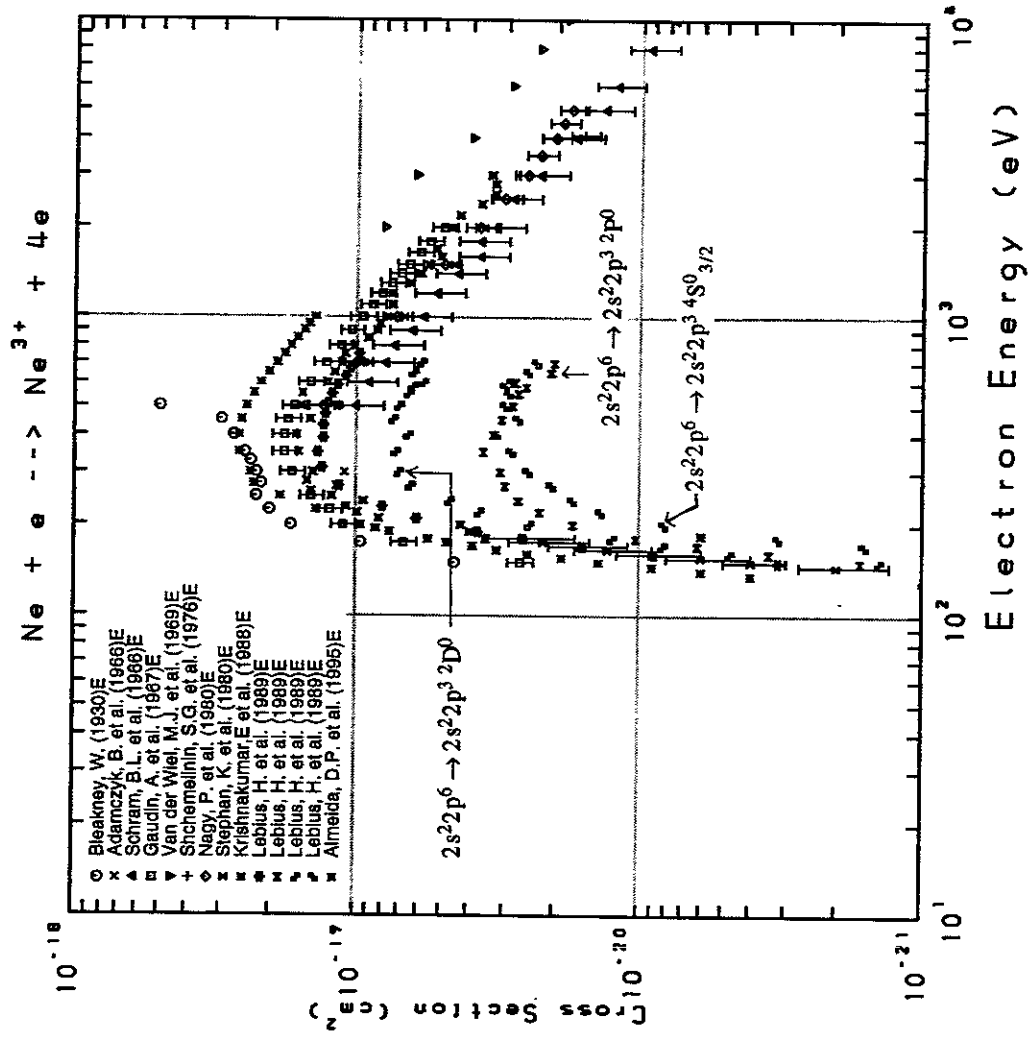


Fig. 58 Ne \rightarrow Ne³⁺

AMDIS-ION

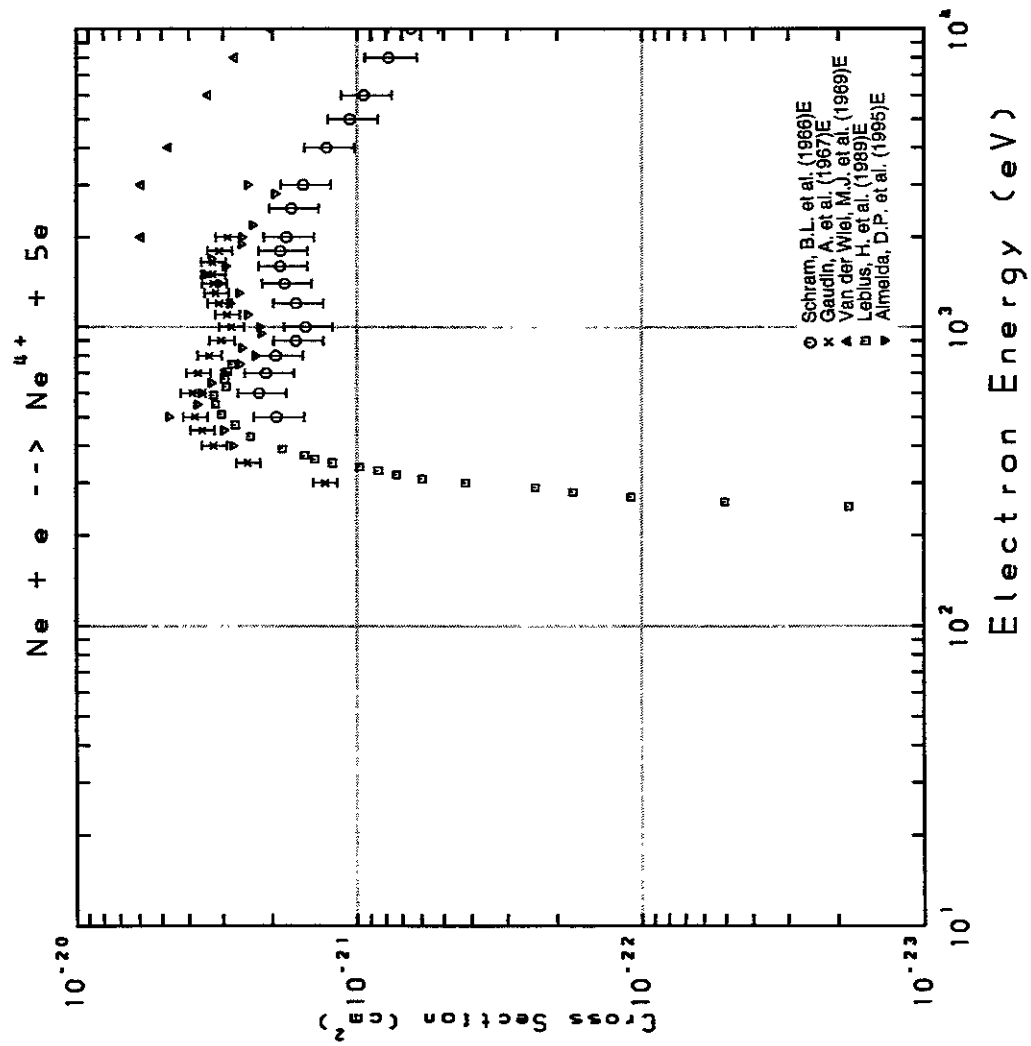


Fig. 59 Ne \rightarrow Ne⁴⁺

AMDIS-ION

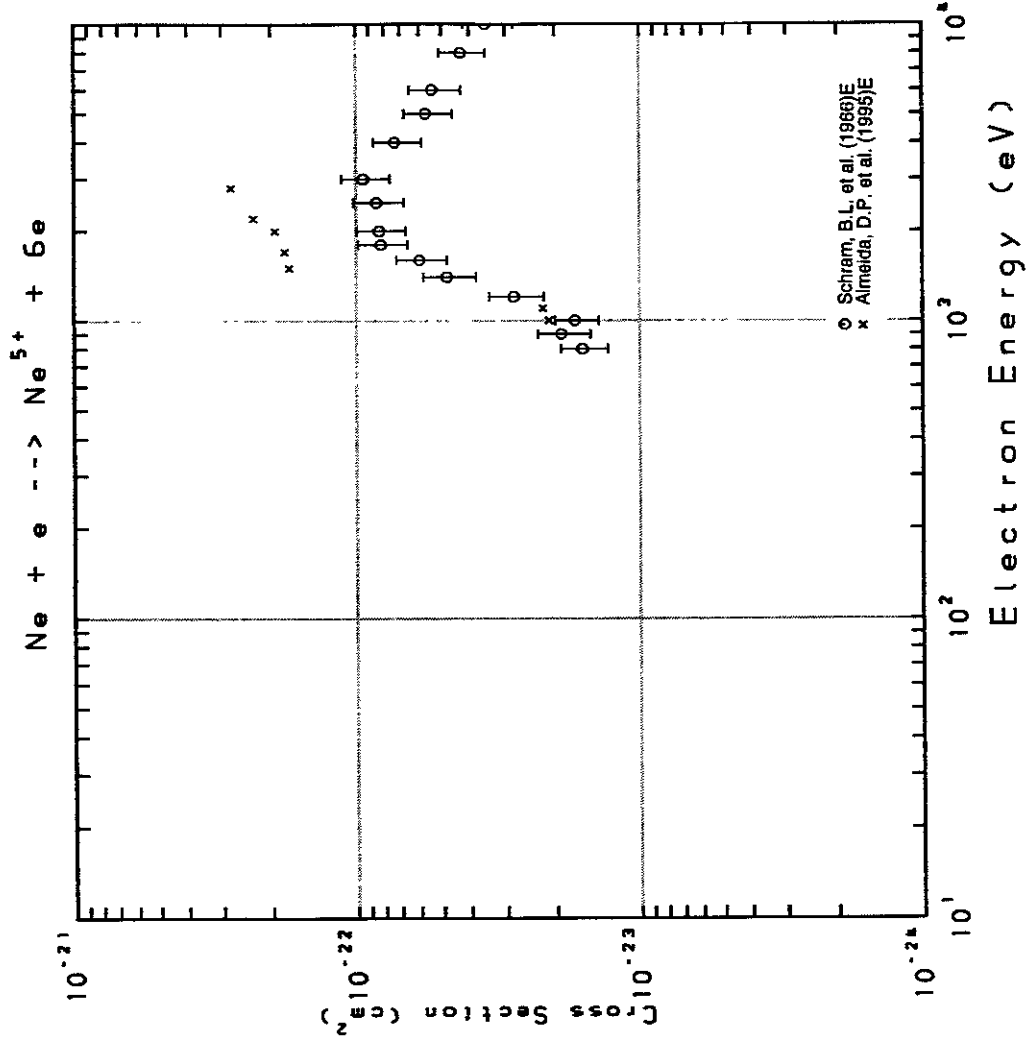


Fig. 60 Ne \rightarrow Ne⁵⁺

AMDIS-ION

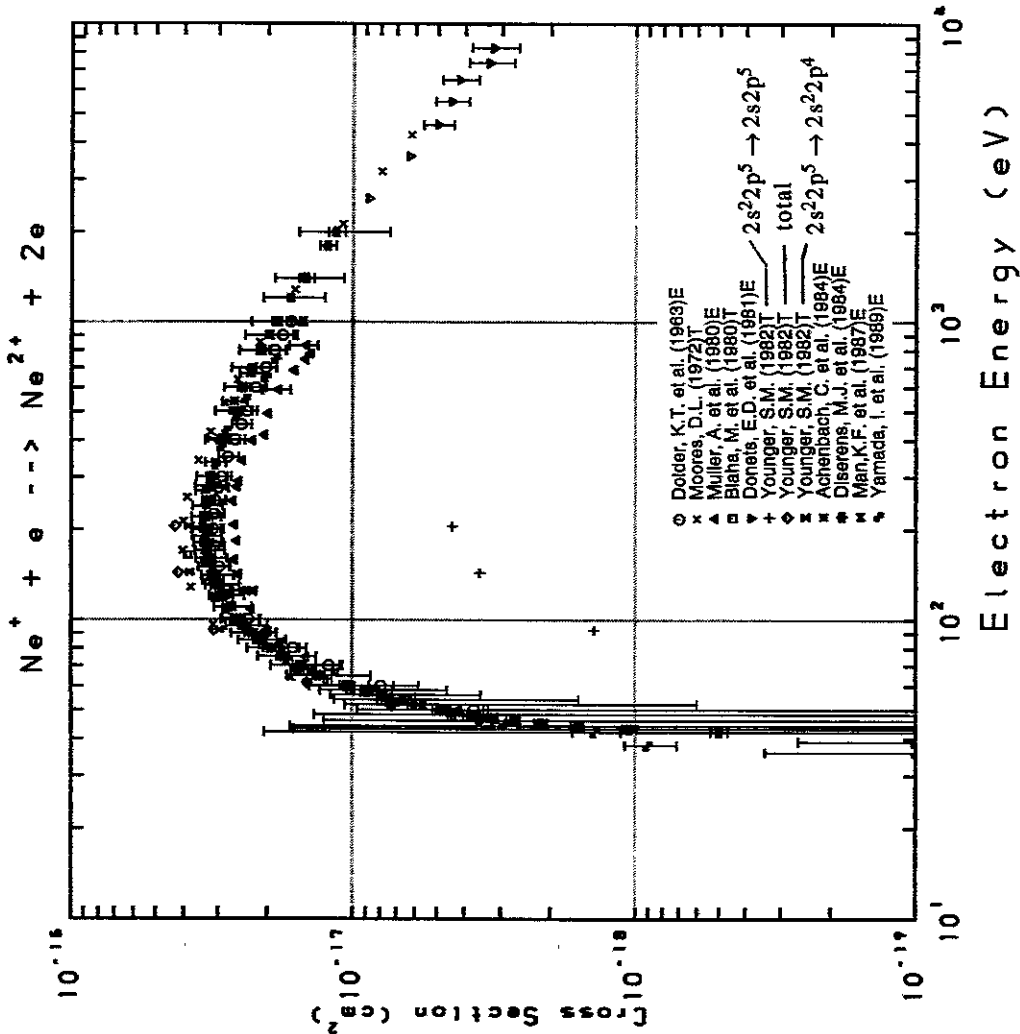


Fig. 61 $Ne^+ \rightarrow Ne^{2+}$

AMDIS-ION

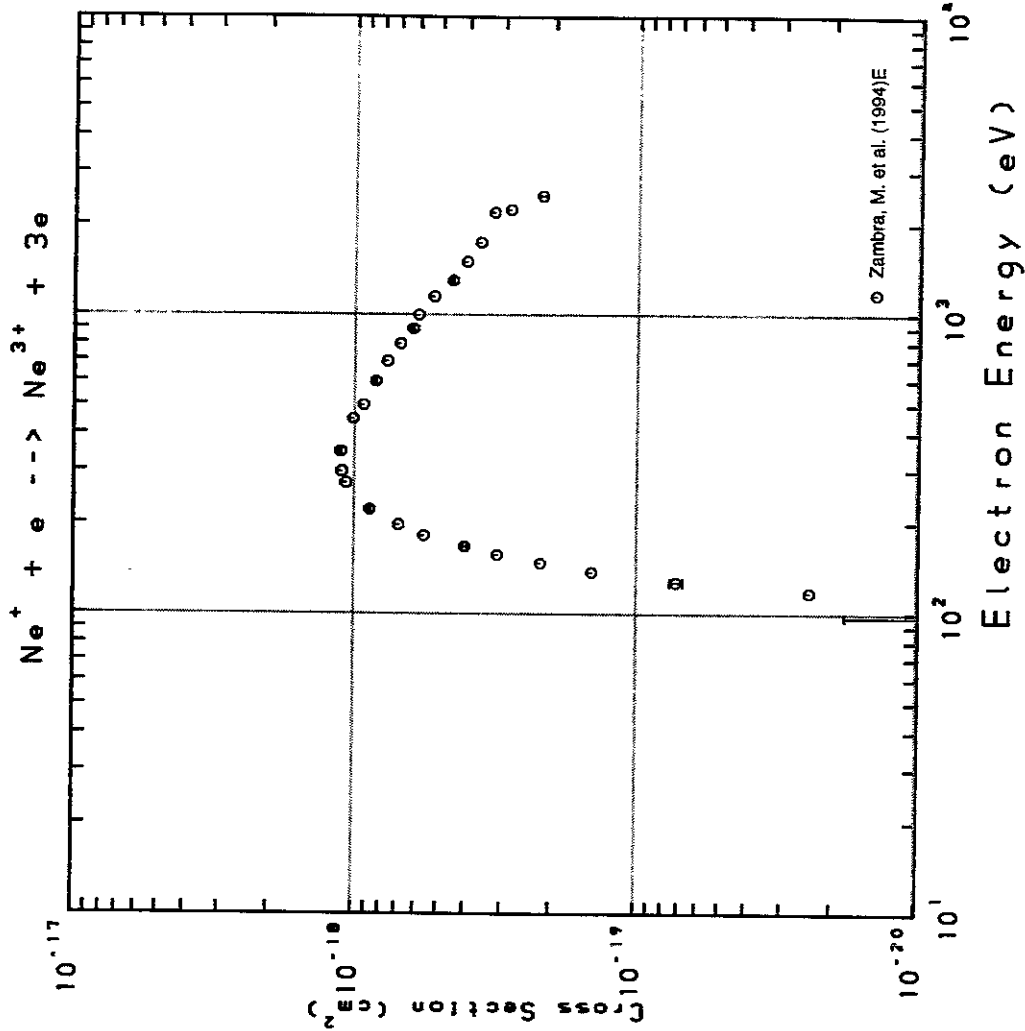


Fig. 62 $Ne^+ \rightarrow Ne^{3+}$

AMDIS-ION

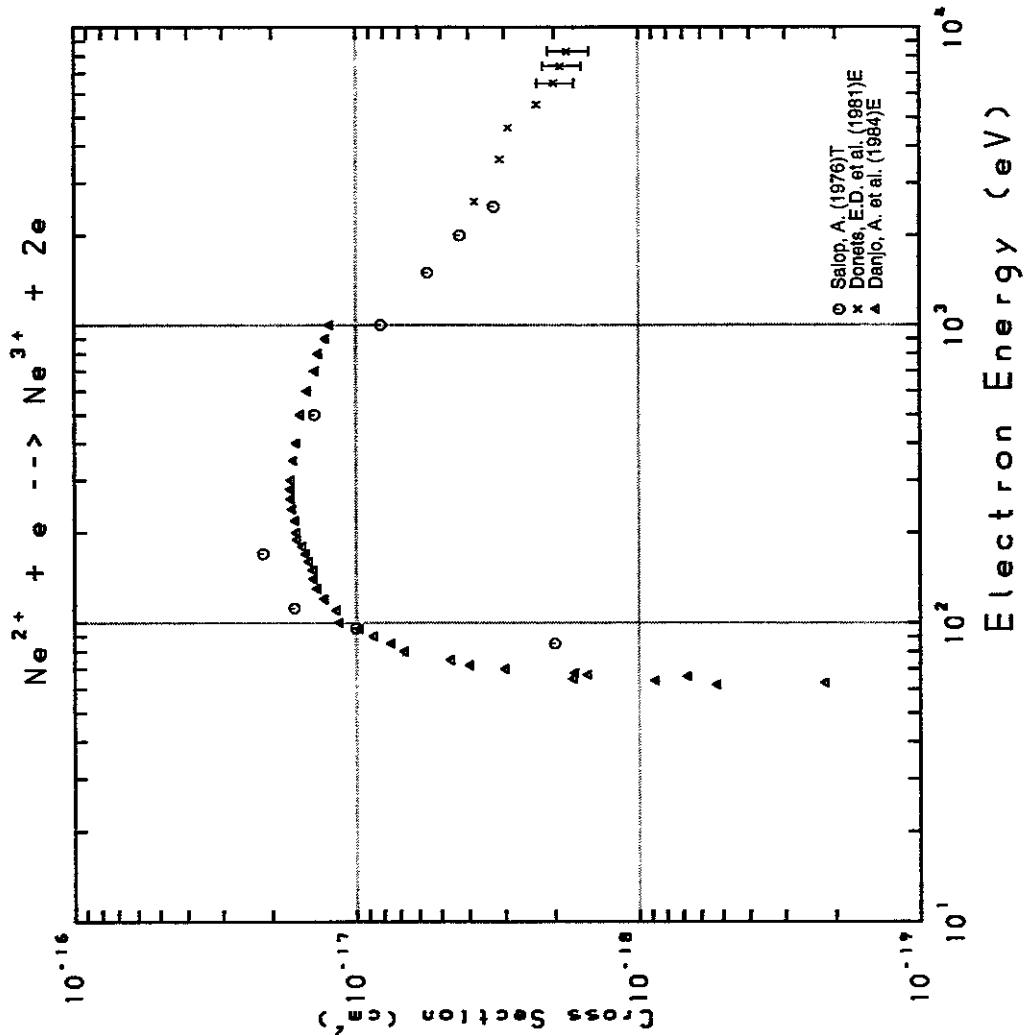


Fig. 63 $Ne^{2+} \rightarrow Ne^{3+}$

AMDIS-ION

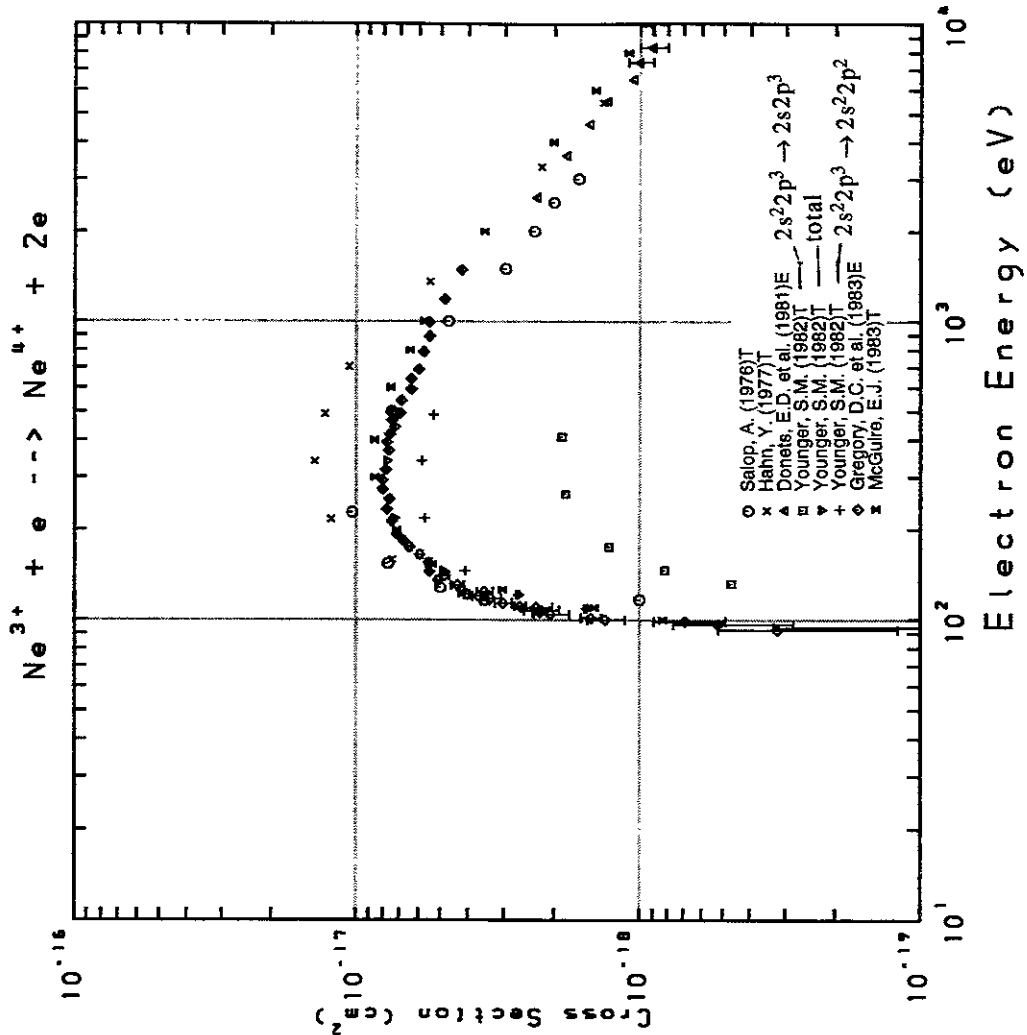


Fig. 64 $Ne^{3+} \rightarrow Ne^{4+}$

AMDIS-ION

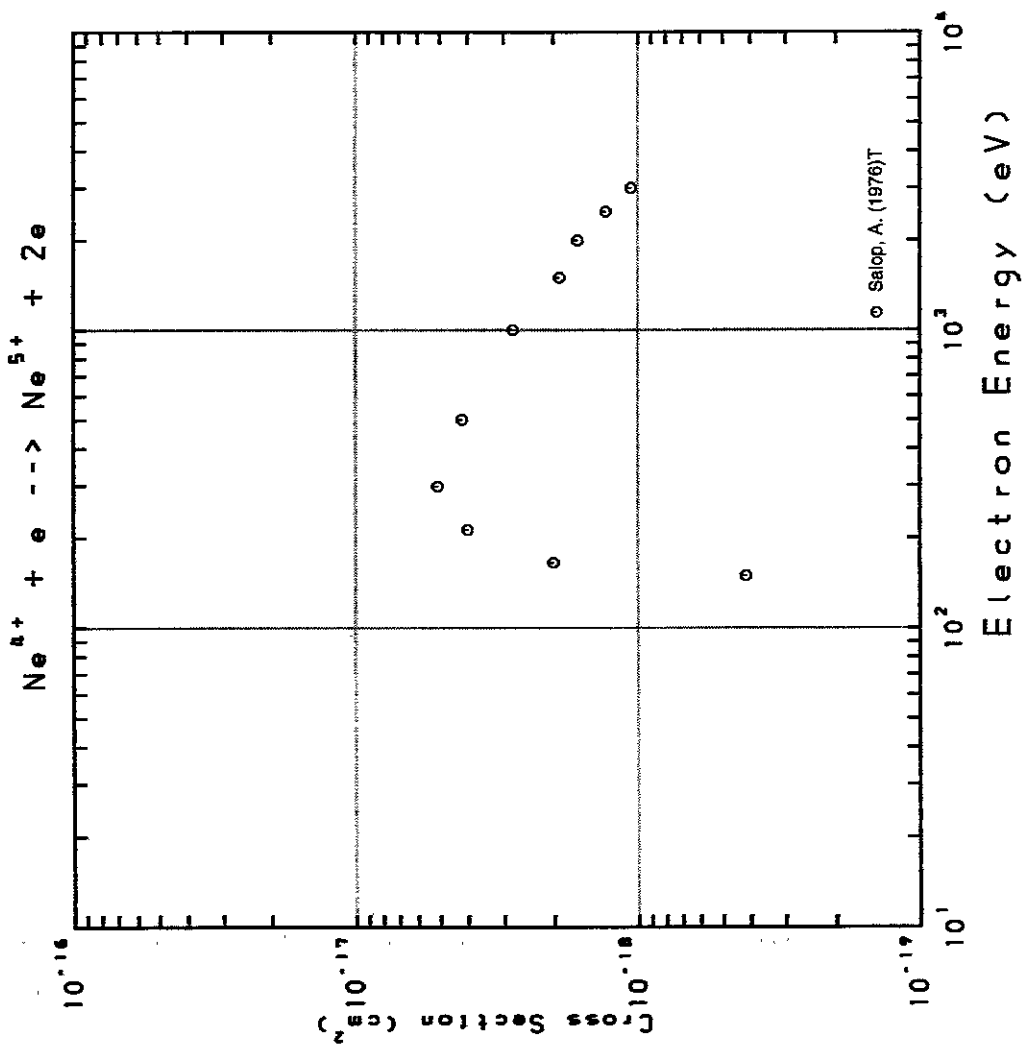


Fig. 65 $Ne^{4+} \rightarrow Ne^{5+}$

AMDIS-ION

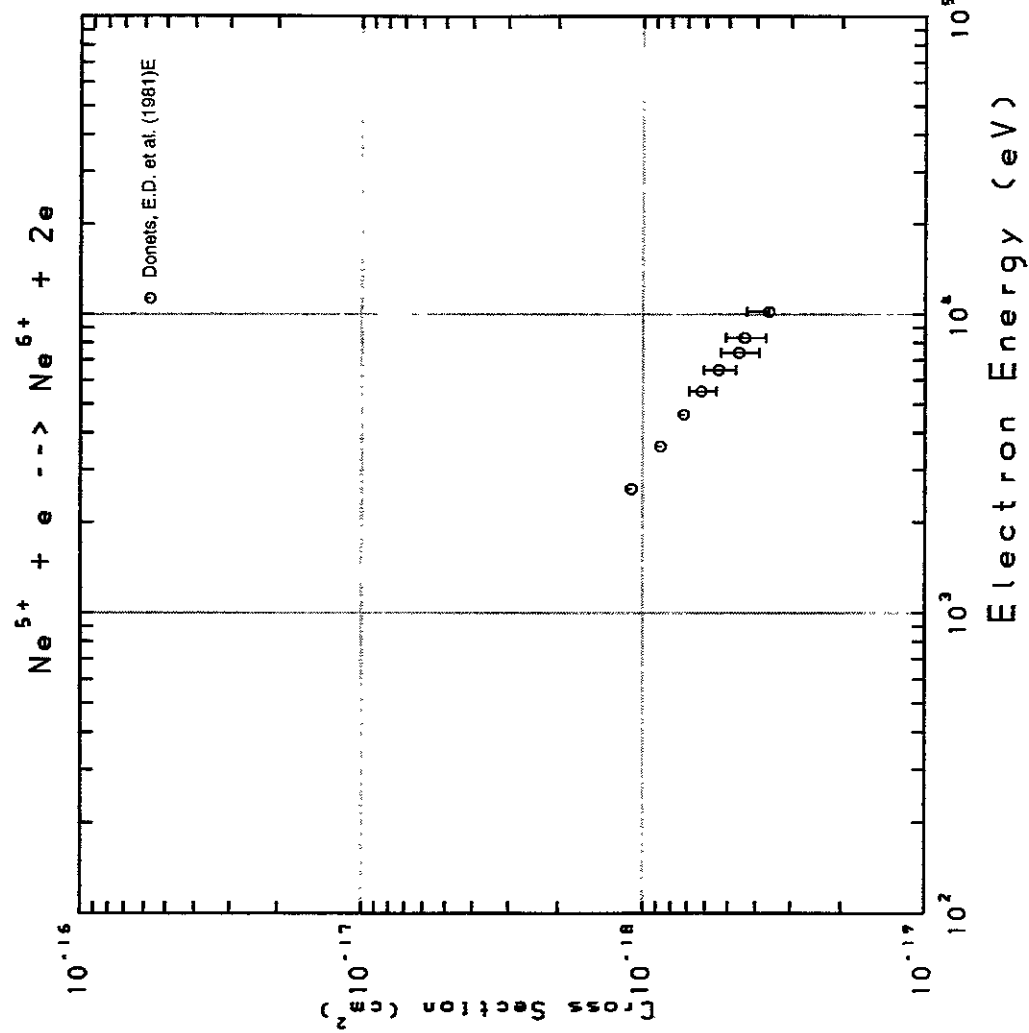


Fig. 66 $Ne^{5+} \rightarrow Ne^{6+}$

AMDIS-ION

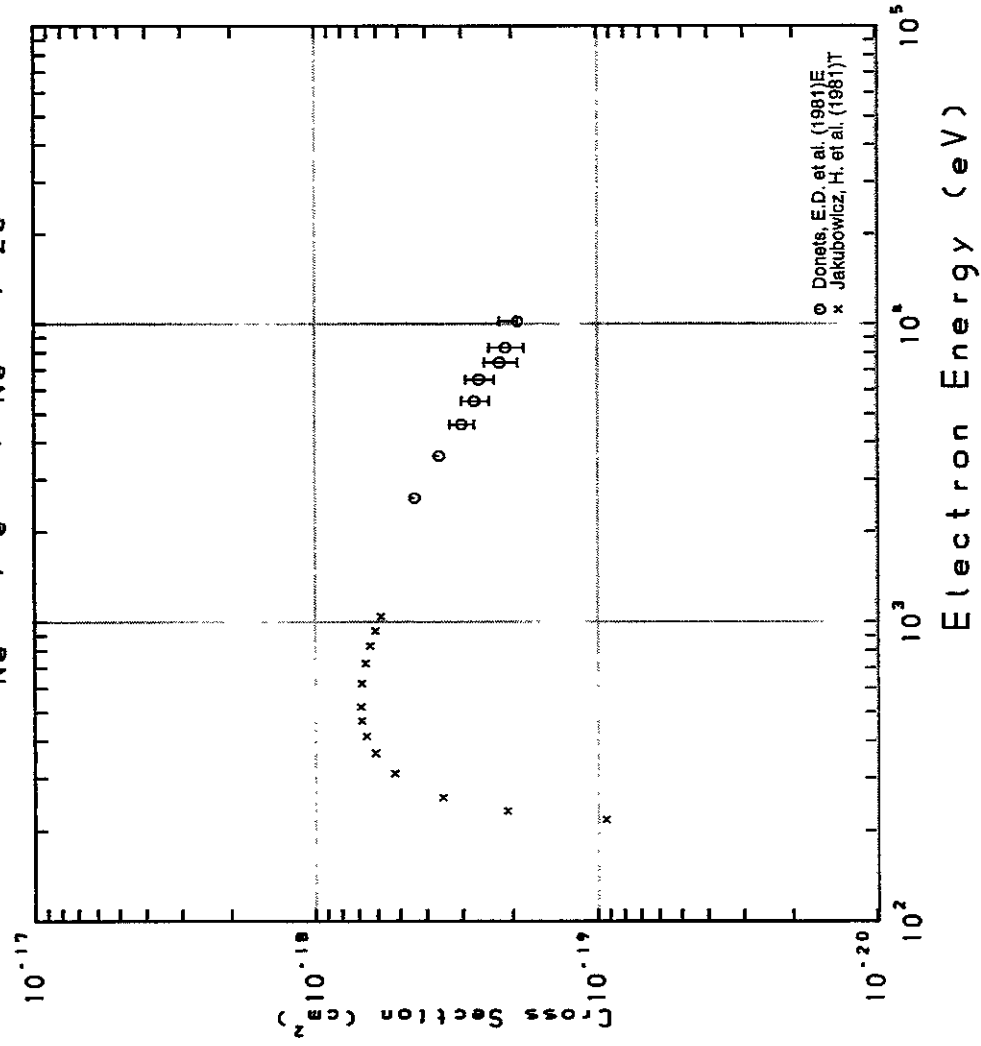
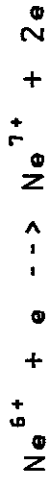


Fig. 67 $\text{Ne}^{6+} \rightarrow \text{Ne}^{7+}$

AMDIS-ION

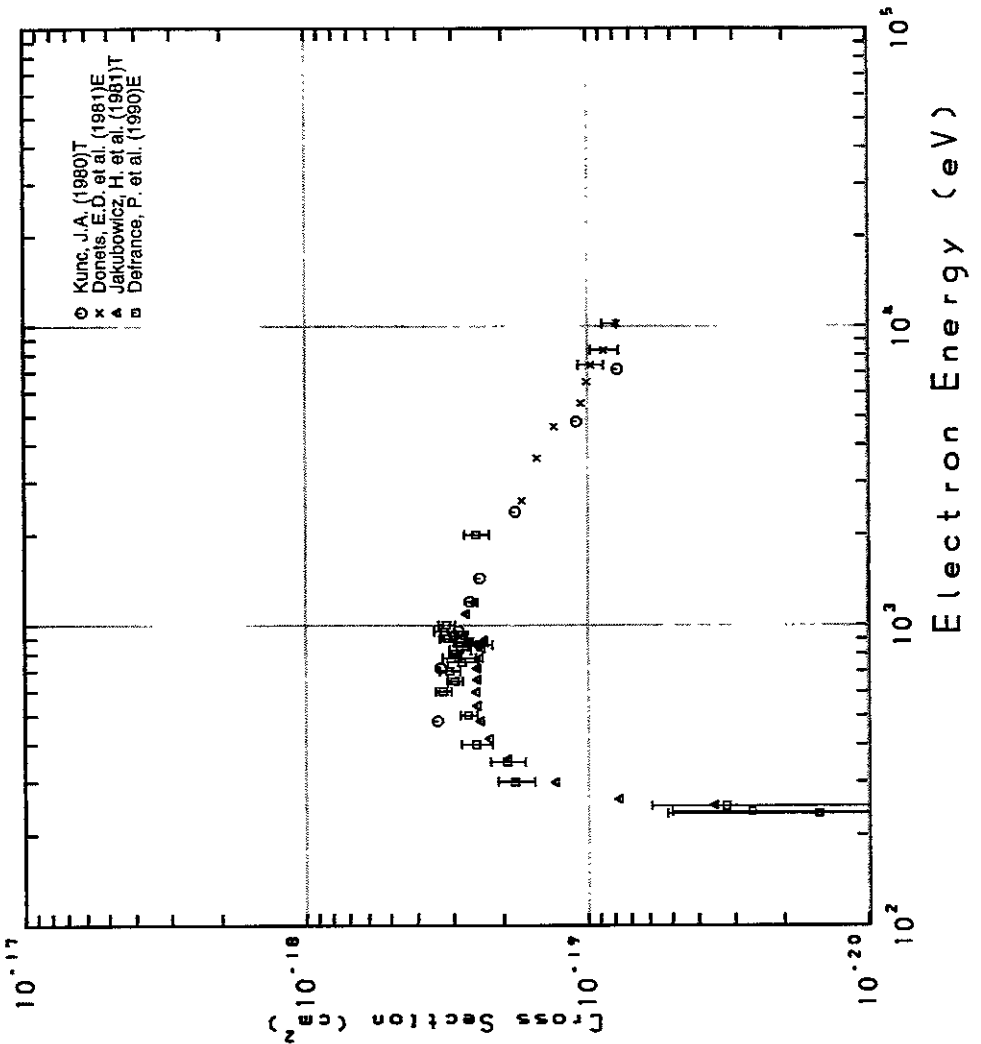


Fig. 68 $\text{Ne}^{7+} \rightarrow \text{Ne}^{8+}$

AMDIS-ION

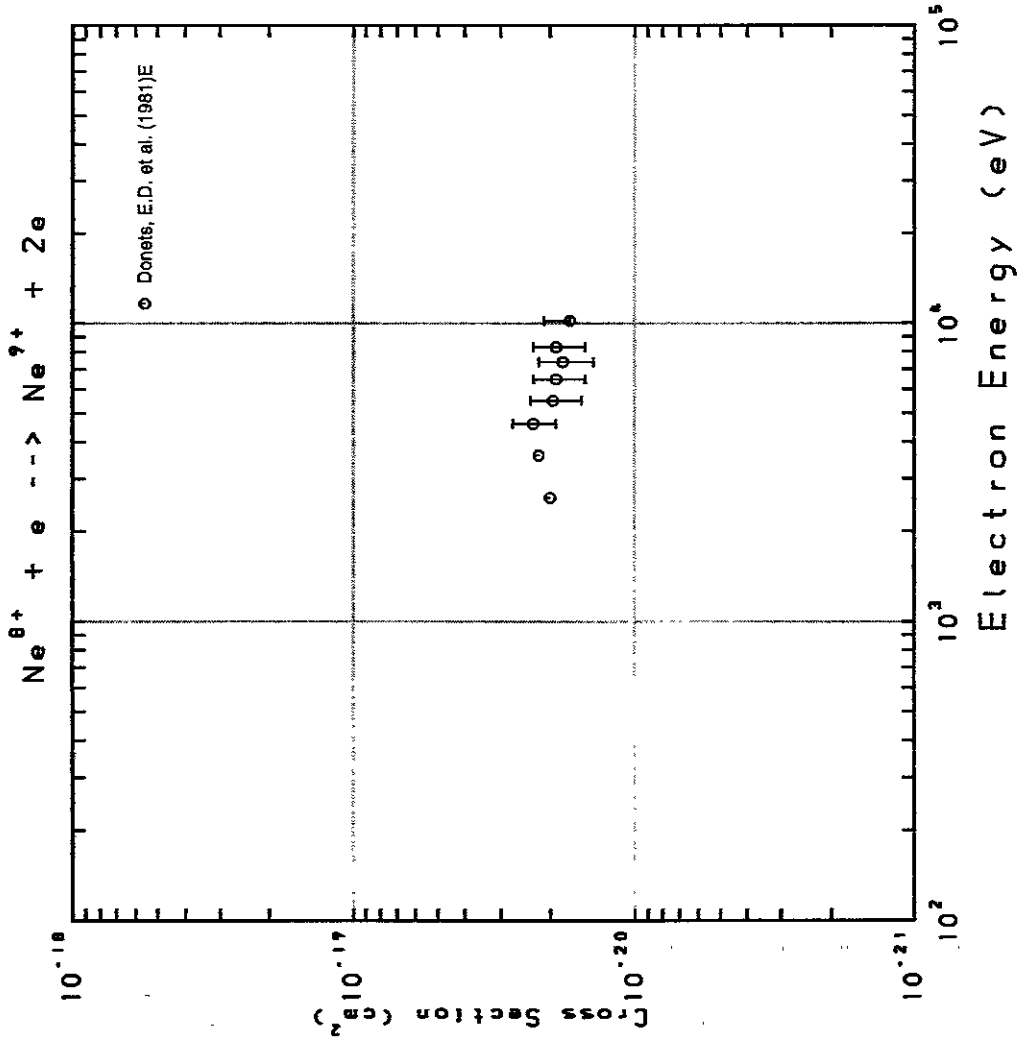


Fig. 69 $Ne^{8+} \rightarrow Ne^{9+}$

AMDIS-ION

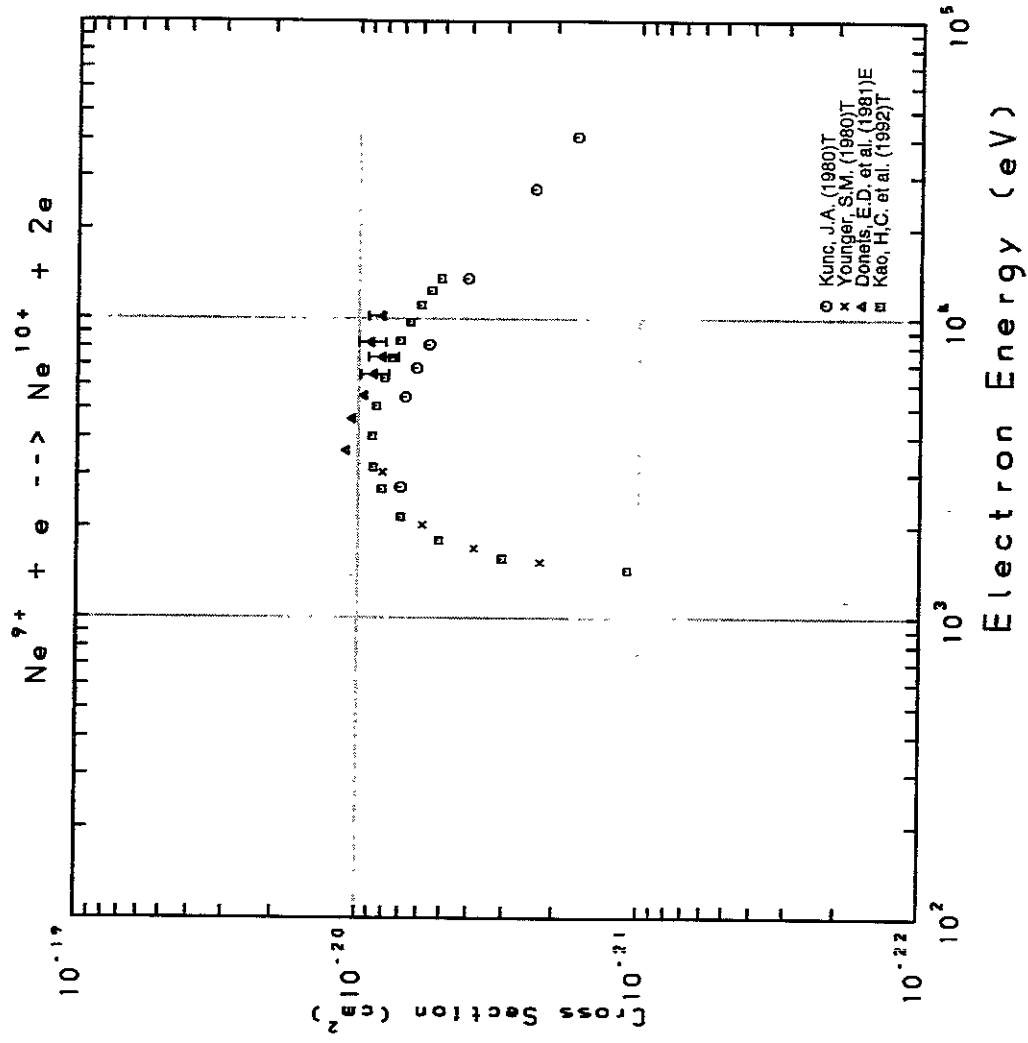


Fig. 70 $Ne^{9+} \rightarrow Ne^{10+}$

AMDIS-ION

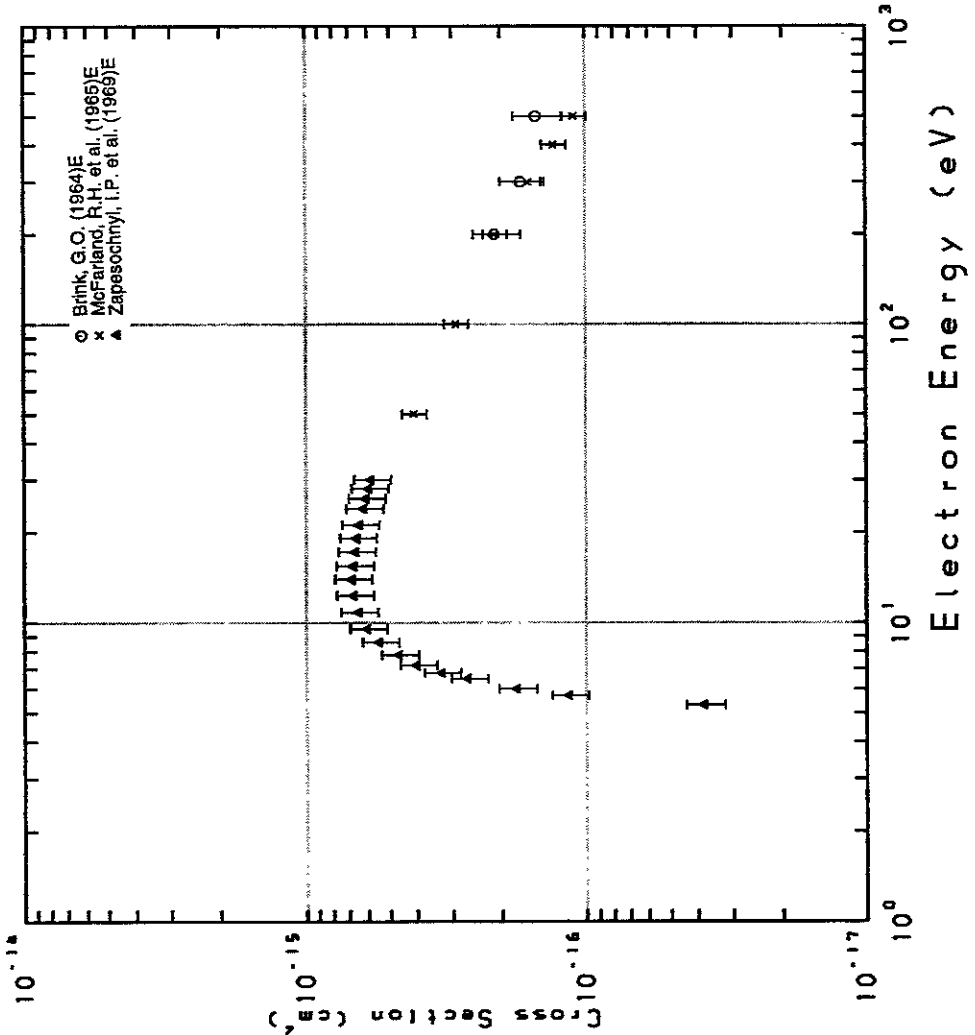
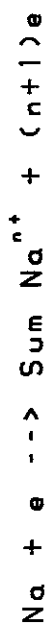


Fig. 71 $\text{Na} \rightarrow \Sigma \text{Na}^{n+}$

AMDIS-ION

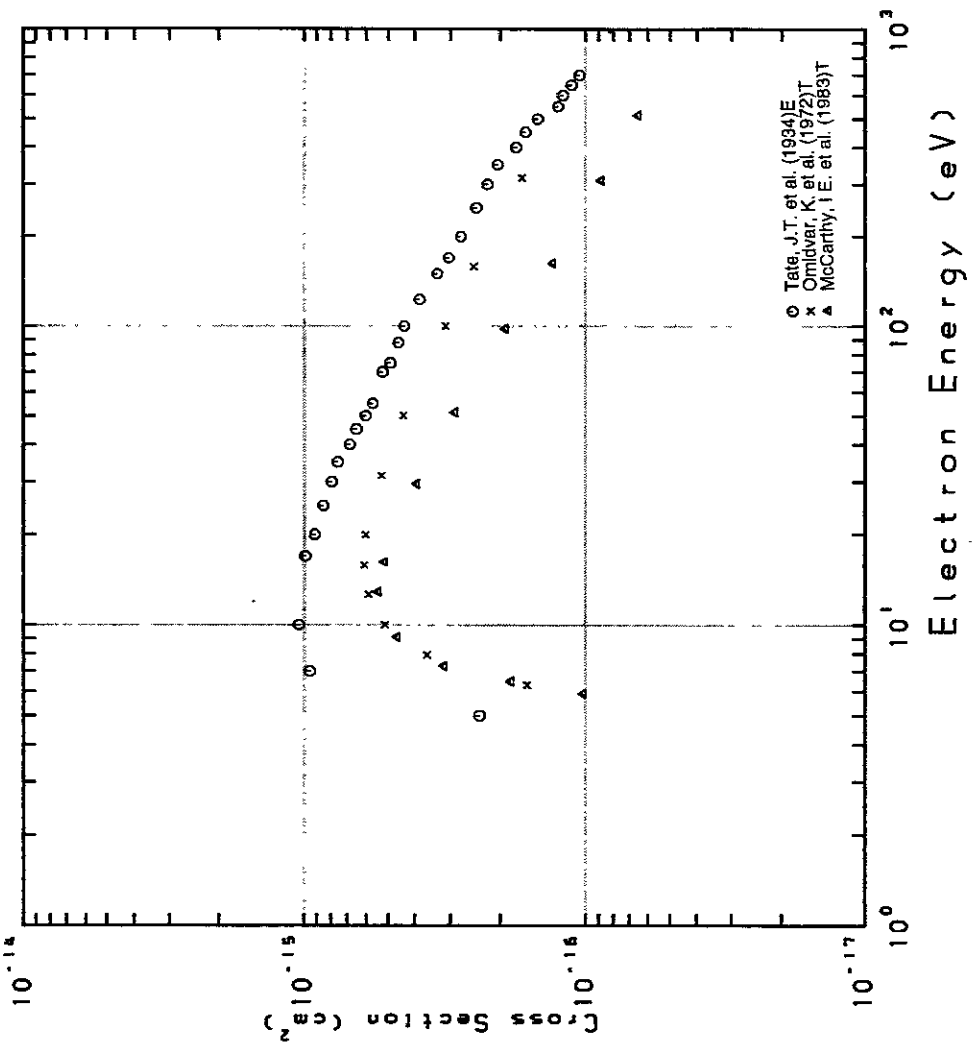
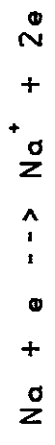


Fig. 72 $\text{Na} \rightarrow \text{Na}^+$

AMDIS-ION

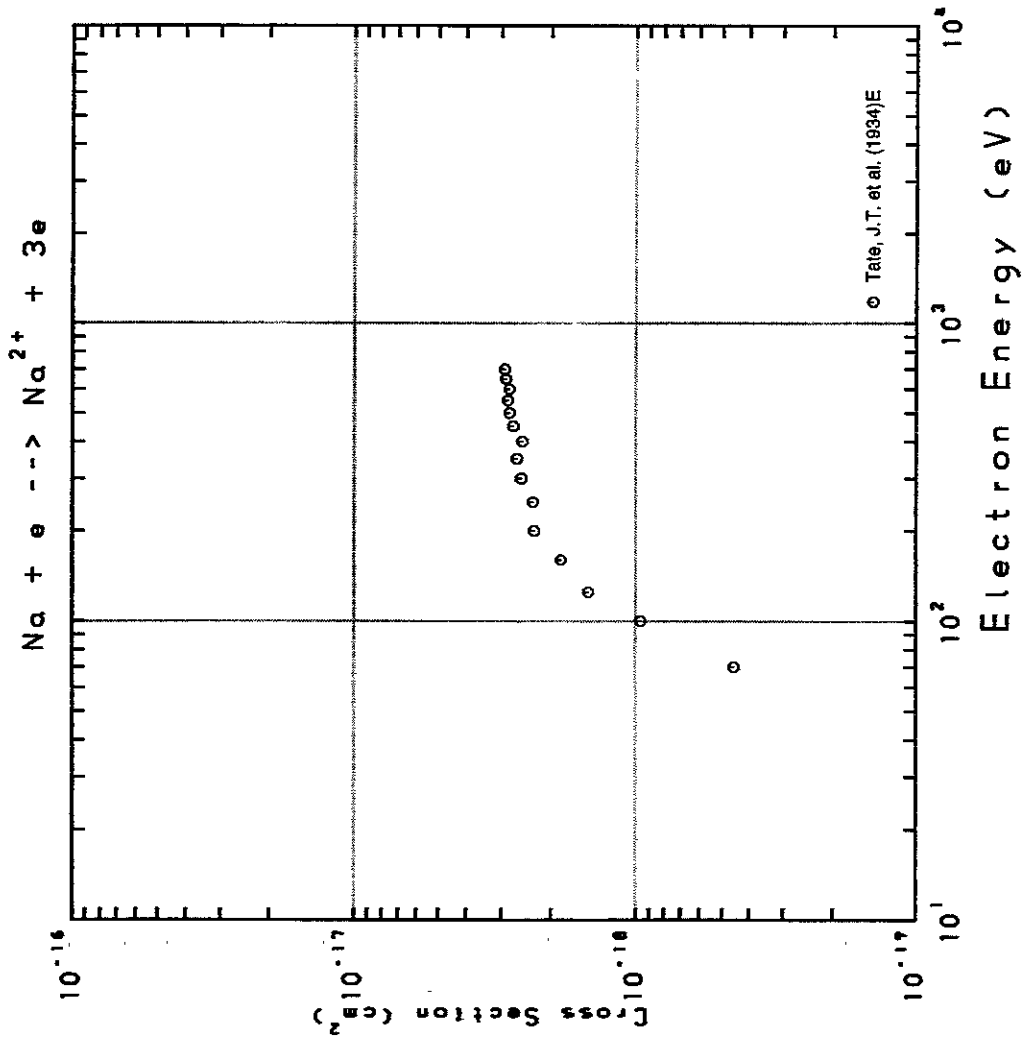


Fig. 73 Na → Na²⁺

AMDIS-ION

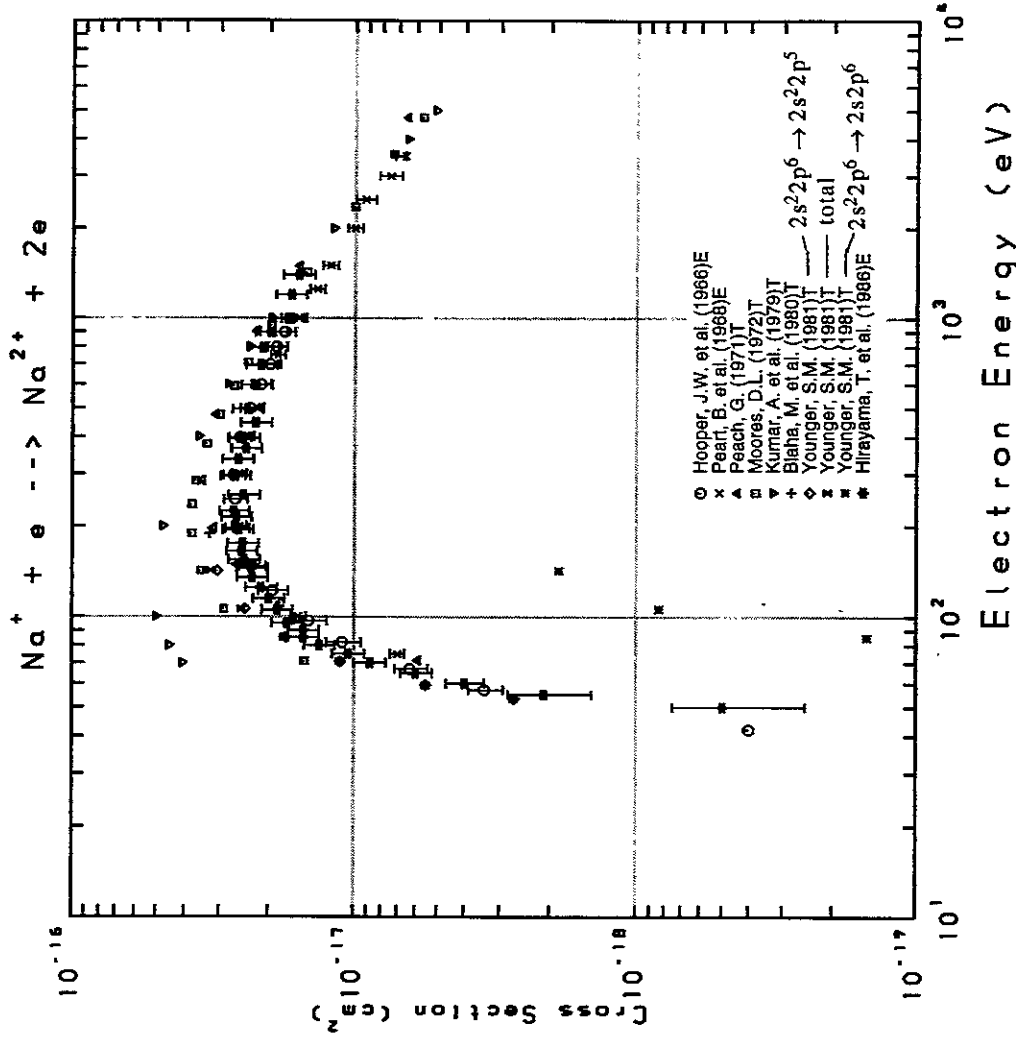


Fig. 74 Na⁺ → Na²⁺

AMDIS-ION

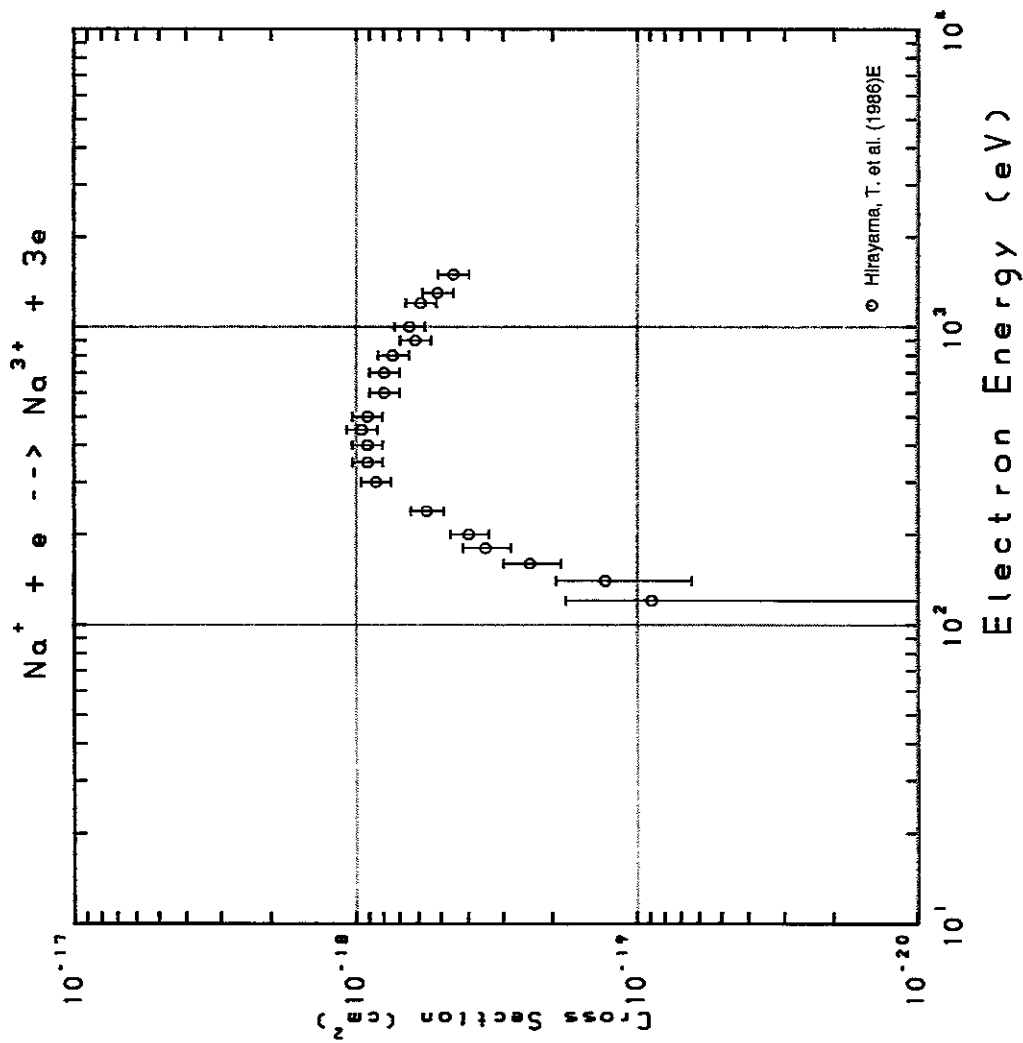


Fig. 75 Na⁺ → Na³⁺

AMDIS-ION

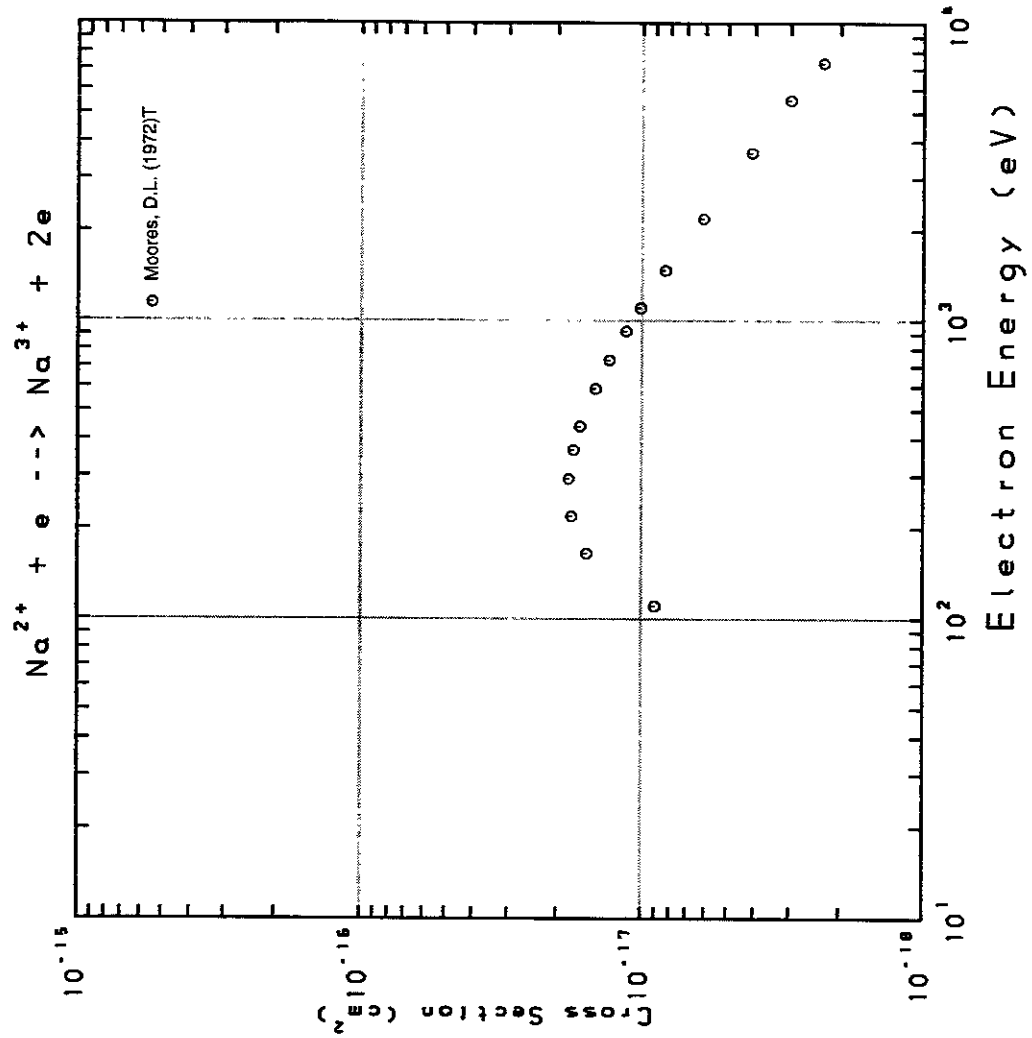


Fig. 76 Na²⁺ → Na³⁺

AMDIS-ION

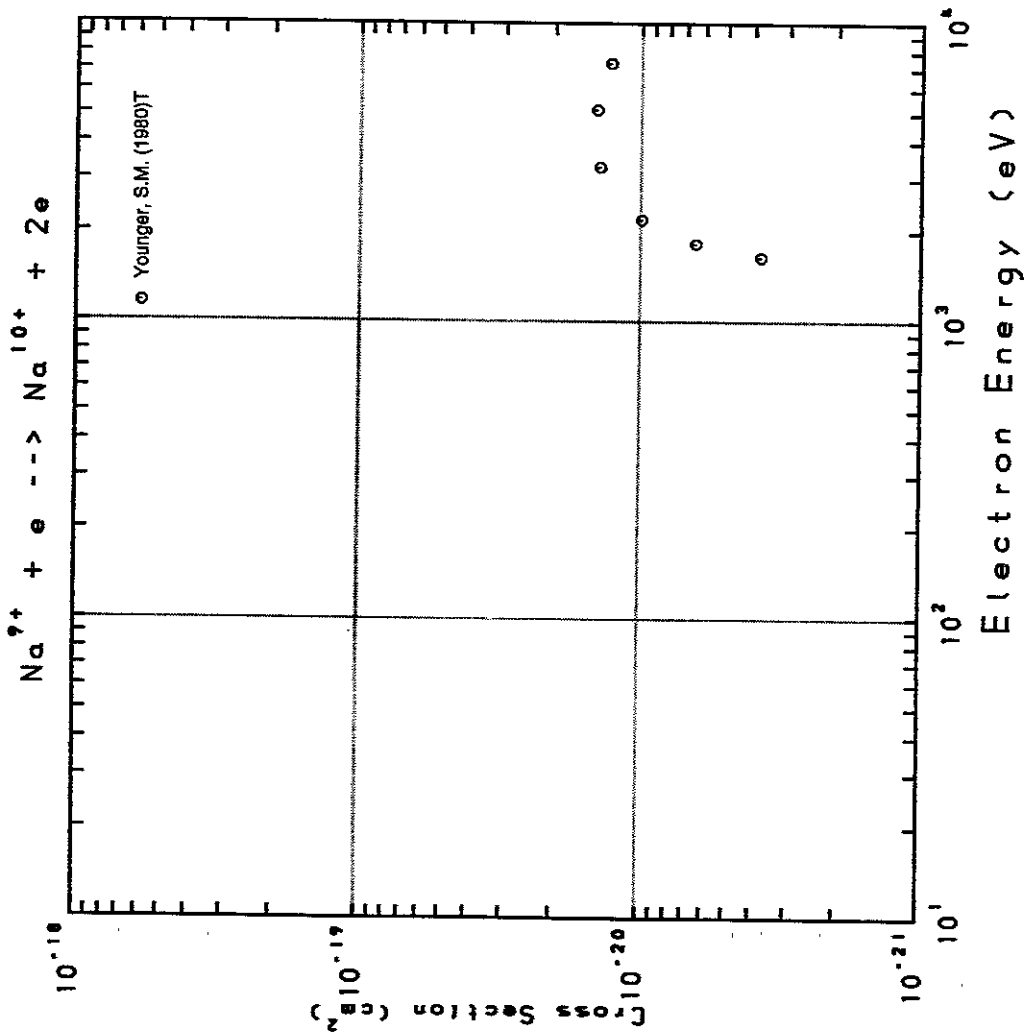


Fig. 77 $\text{Na}^{9+} \rightarrow \text{Na}^{10+}$

AMDIS-ION

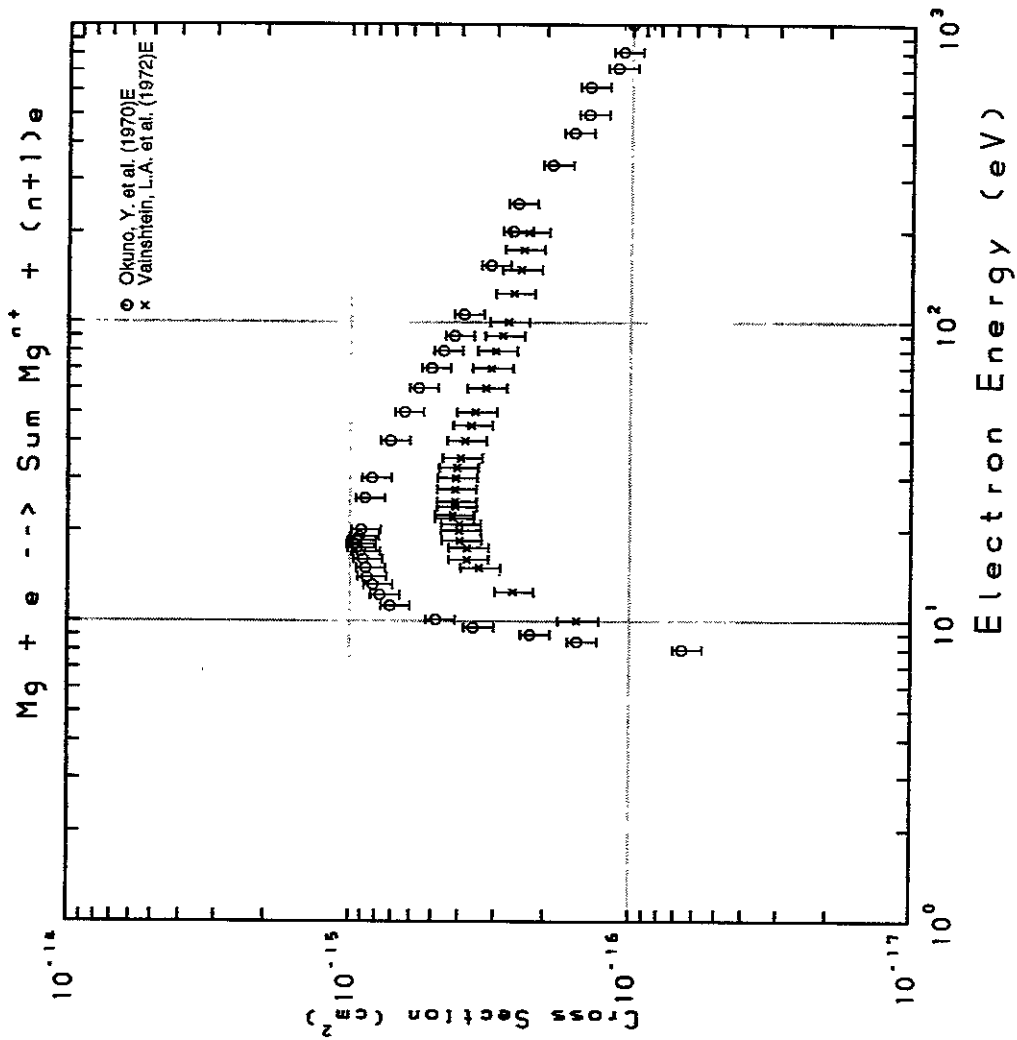


Fig. 78 $\text{Mg} \rightarrow \text{Sum Mg}^{n+}$

AMDIS-ION

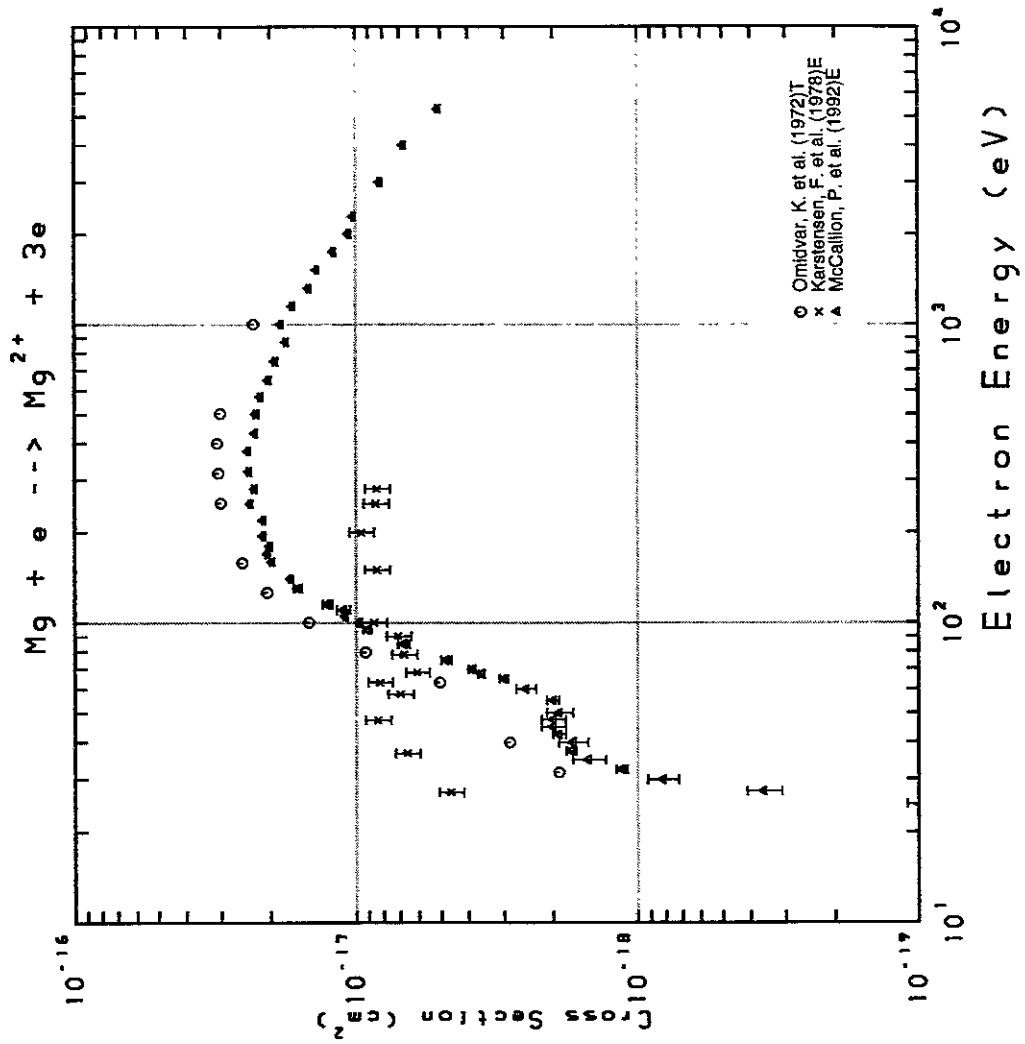


Fig. 80 $Mg \rightarrow Mg^{2+}$

AMDIS-ION

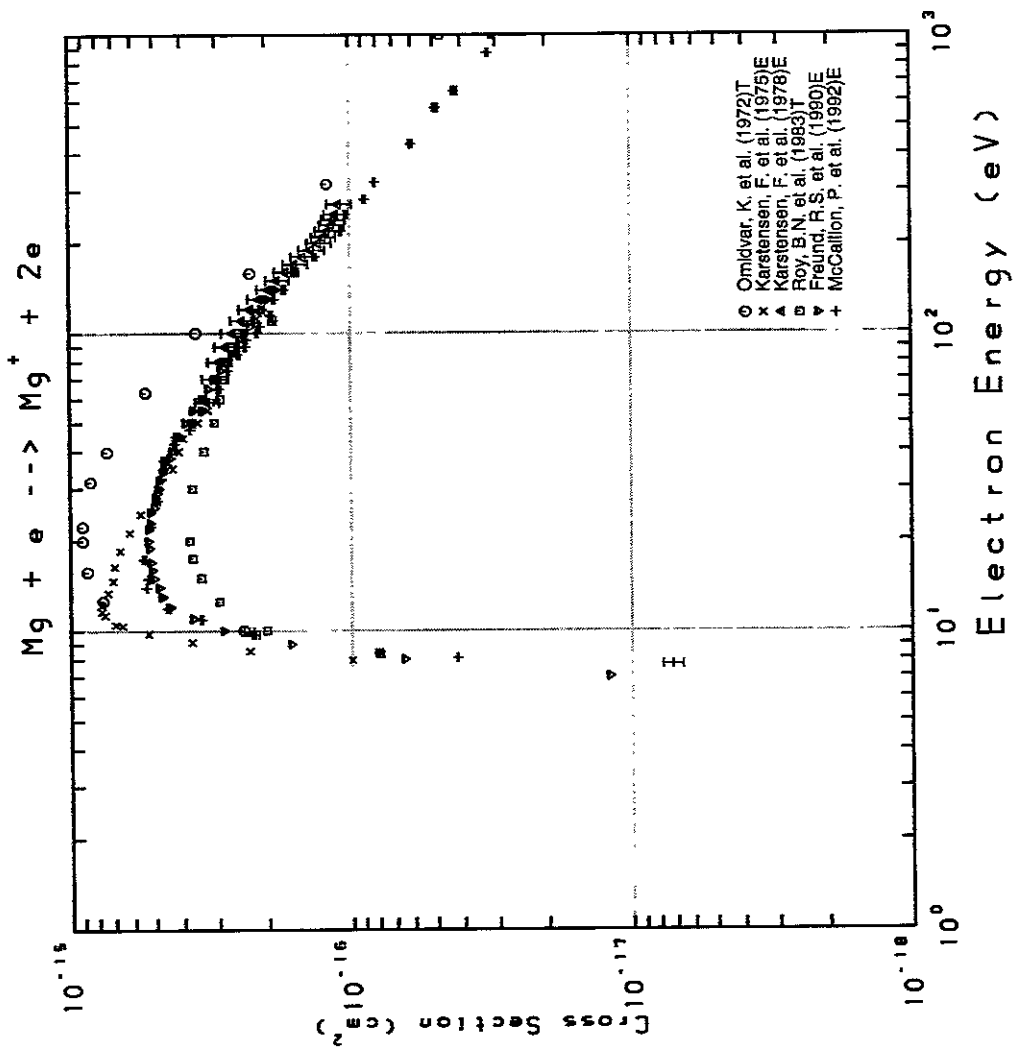


Fig. 79 $Mg \rightarrow Mg^+$

AMDIS-ION

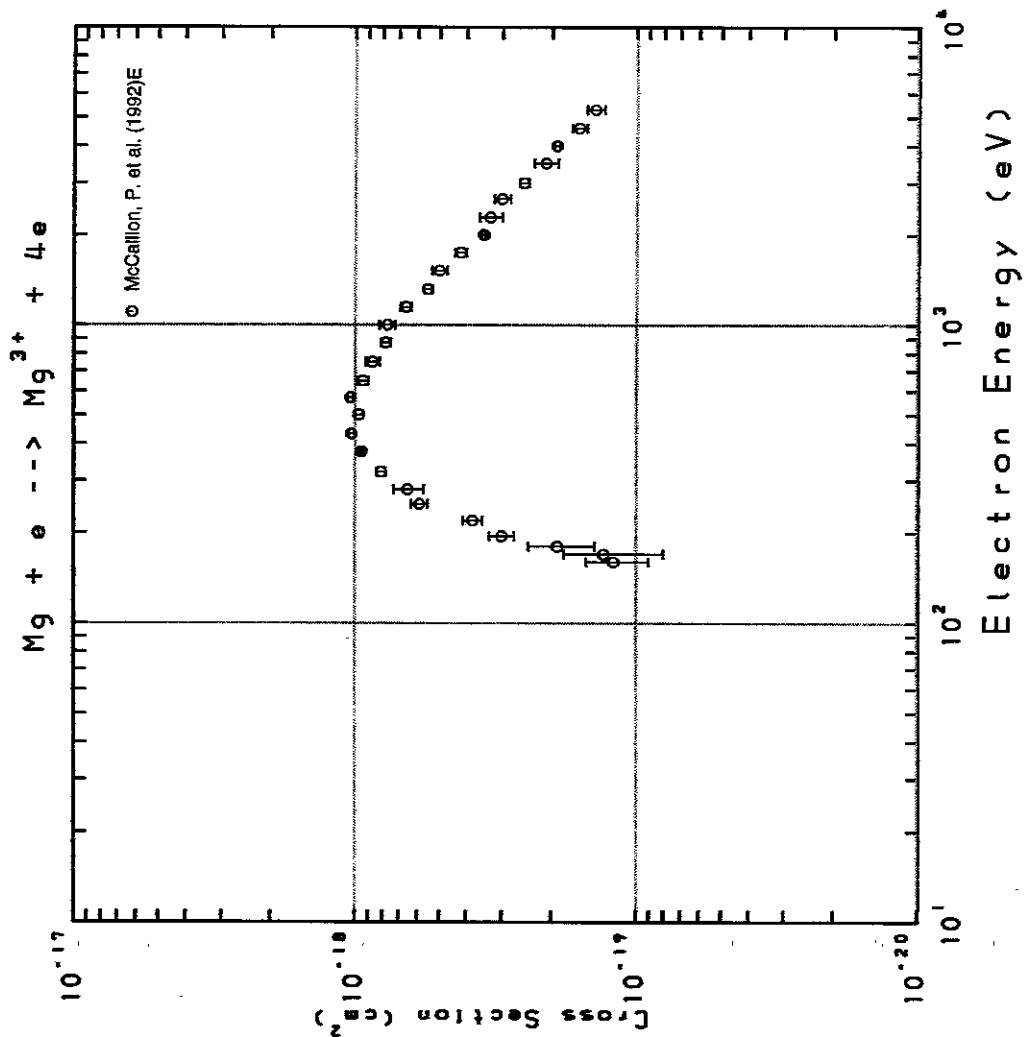


Fig. 81 $Mg \rightarrow Mg^{3+}$

AMDIS-ION

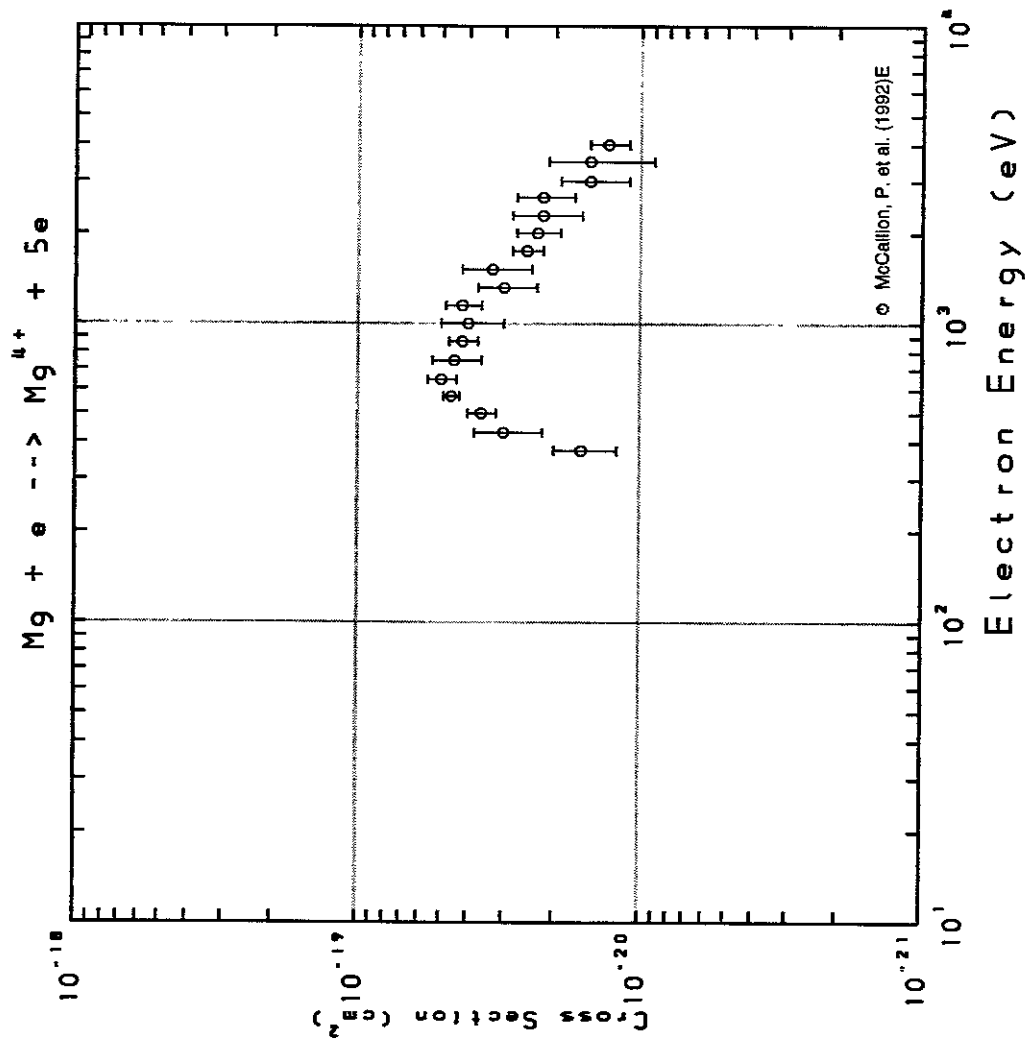


Fig. 82 $Mg \rightarrow Mg^{4+}$

AMDIS-ION

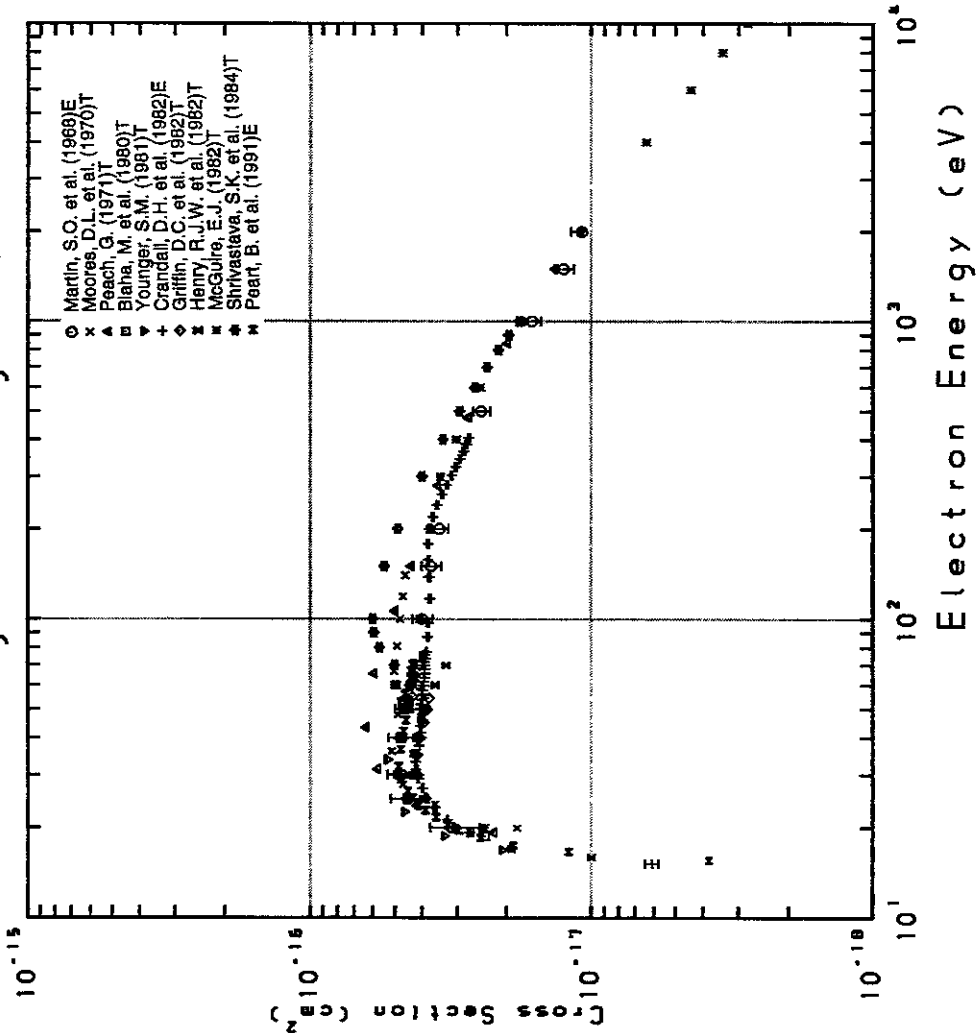


Fig. 83 $\text{Mg}^+ \rightarrow \text{Mg}^{2+}$

AMDIS-ION

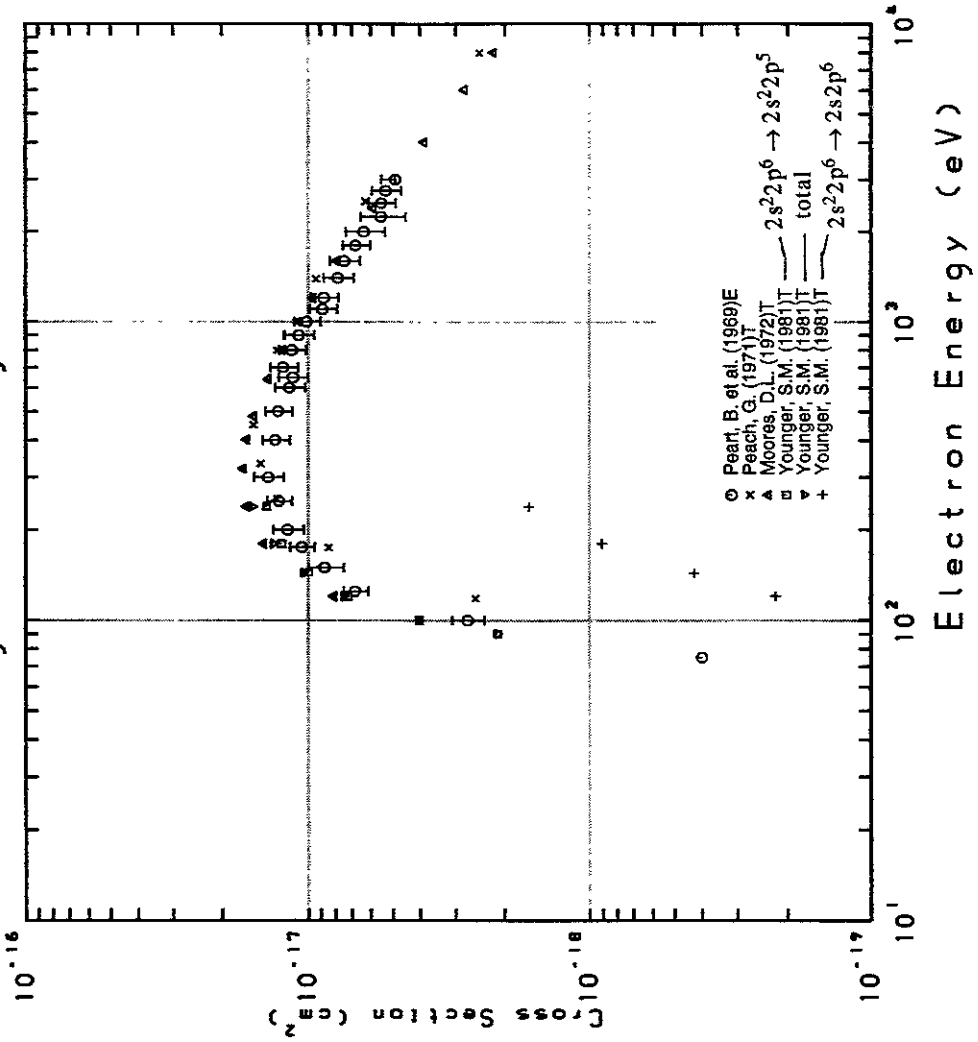
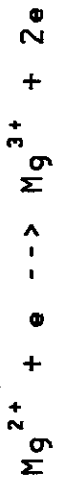


Fig. 84 $\text{Mg}^{2+} \rightarrow \text{Mg}^{3+}$

AMDIS-ION

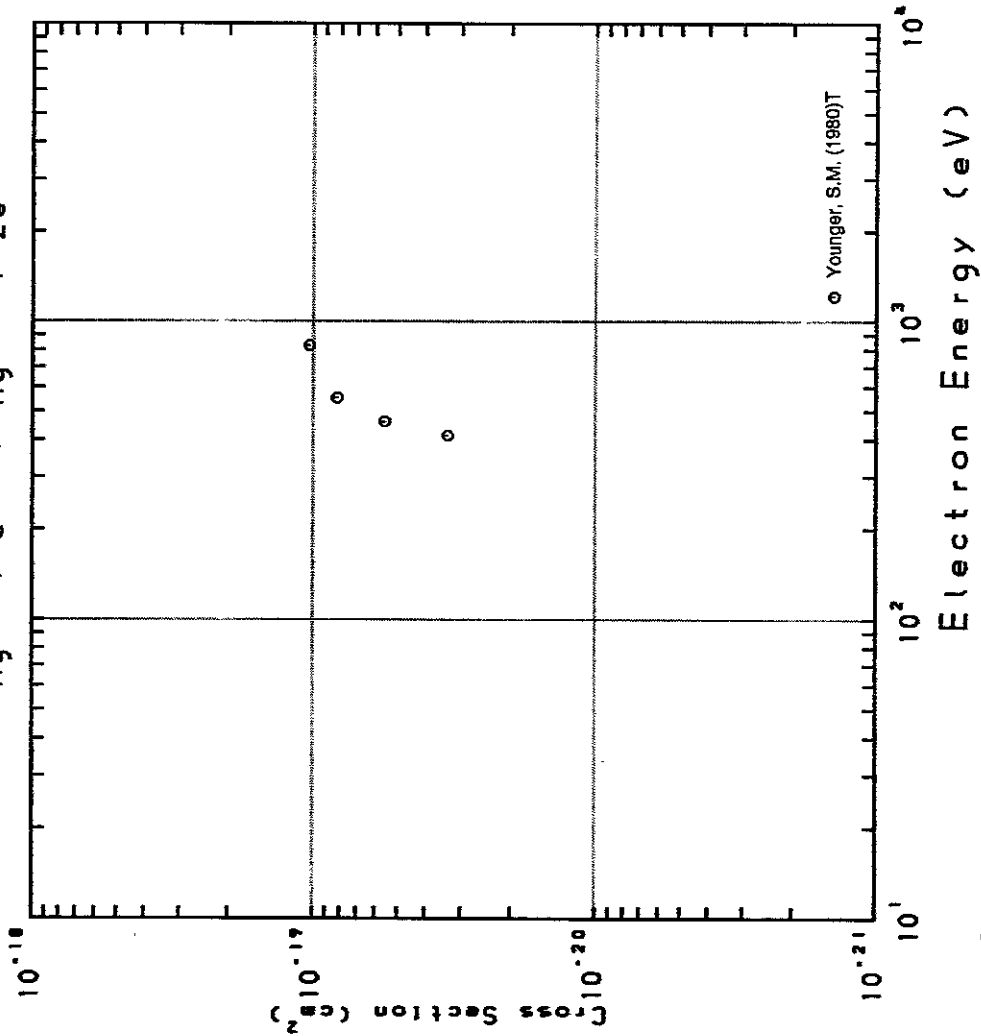


Fig. 85 Mg⁹⁺ → Mg¹⁰⁺

AMDIS-ION

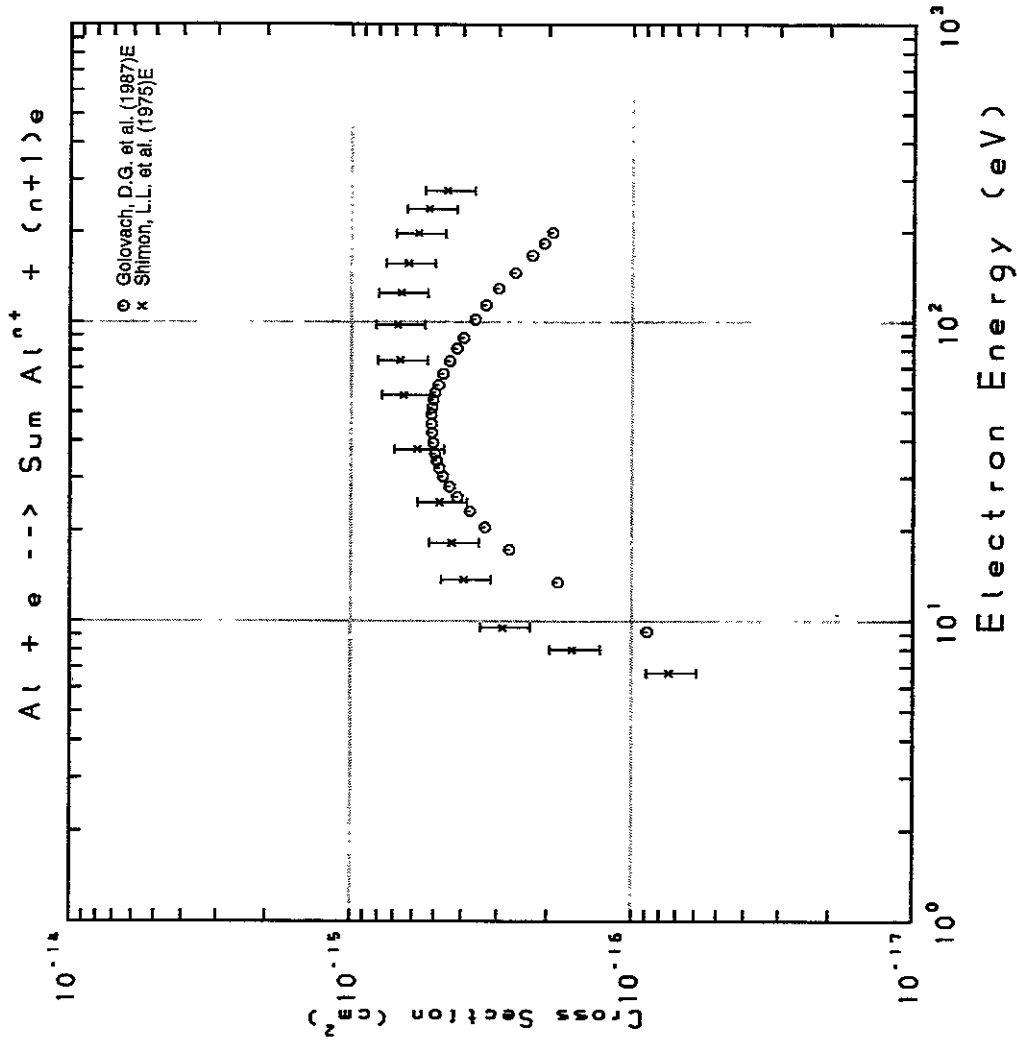
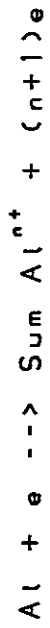


Fig. 86 Al → ΣAlⁿ⁺

AMDIS-ION

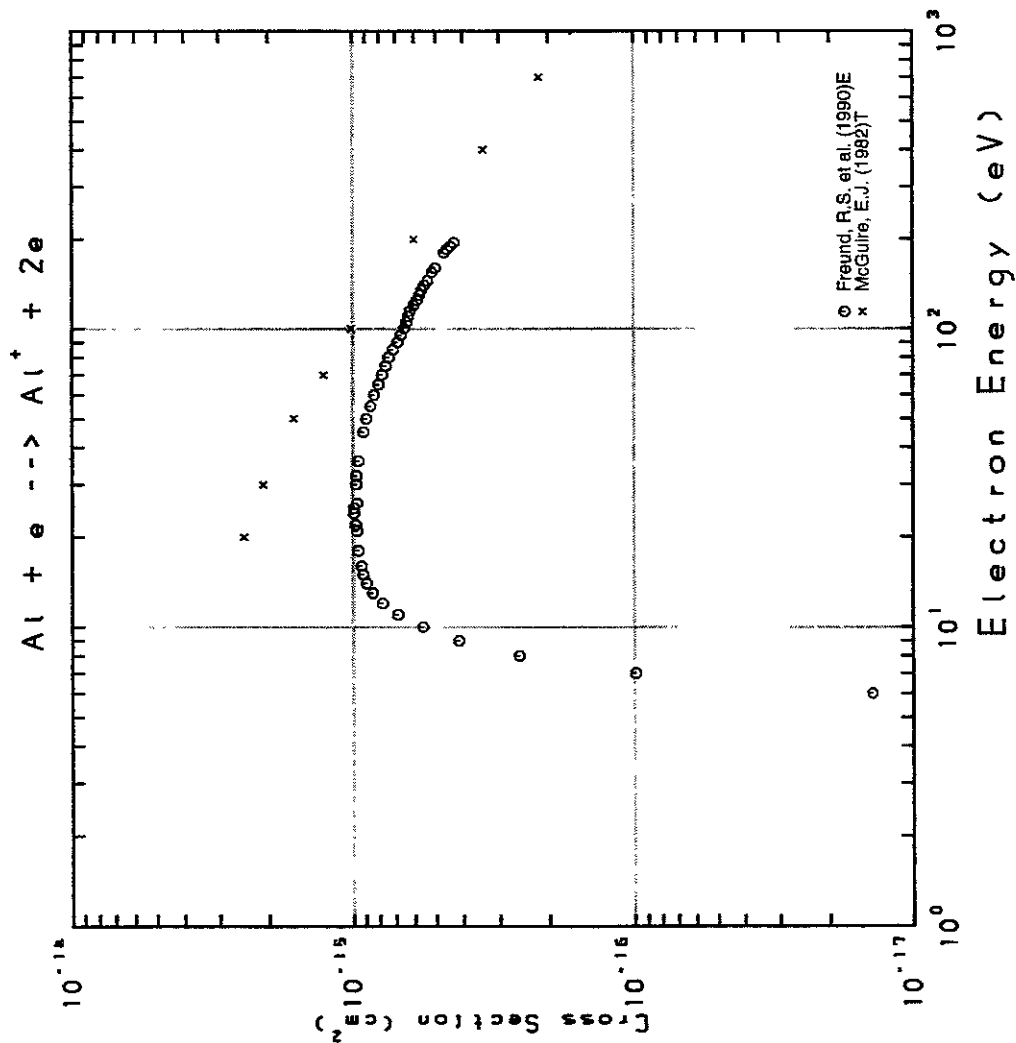


Fig. 87 $Al \rightarrow Al^+$

AMDIS-ION

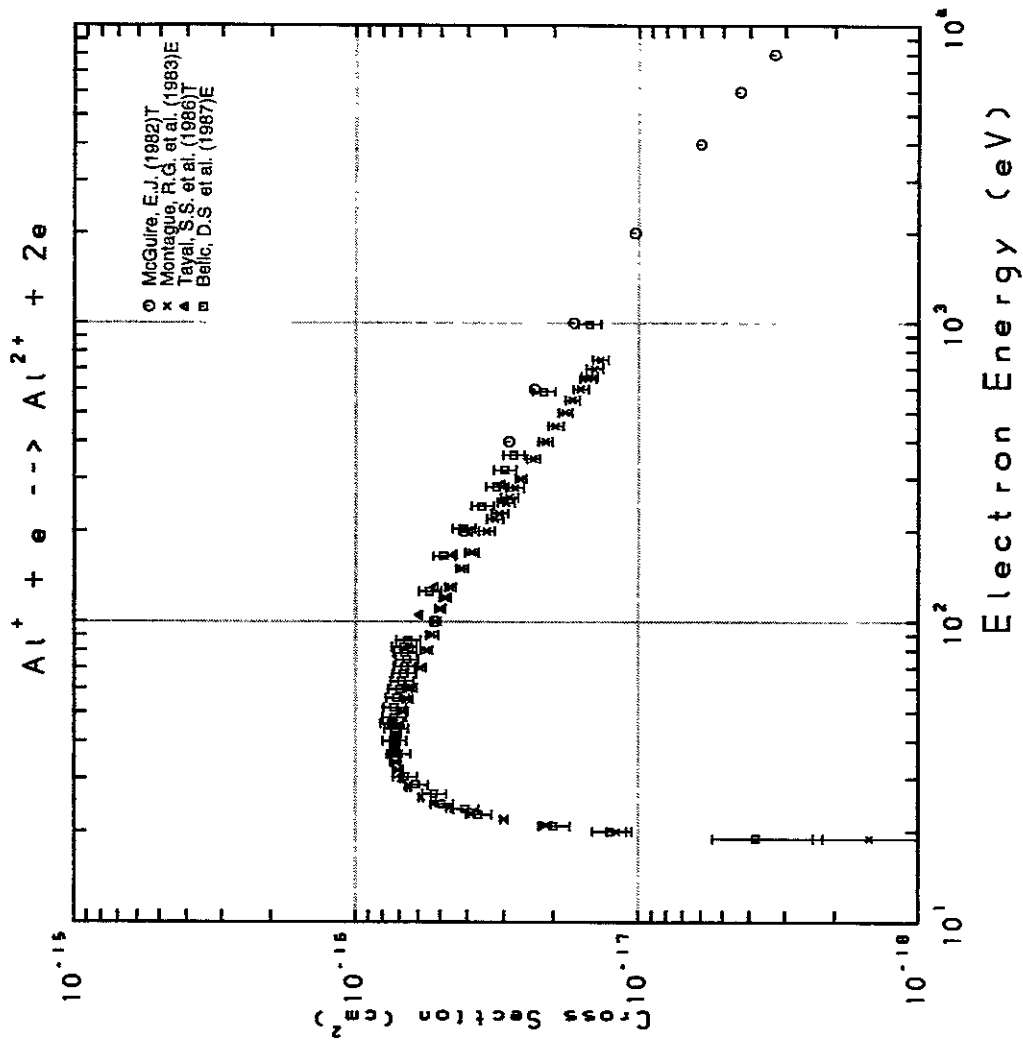


Fig. 88 $Al^+ \rightarrow Al^{2+}$

AMDIS-ION

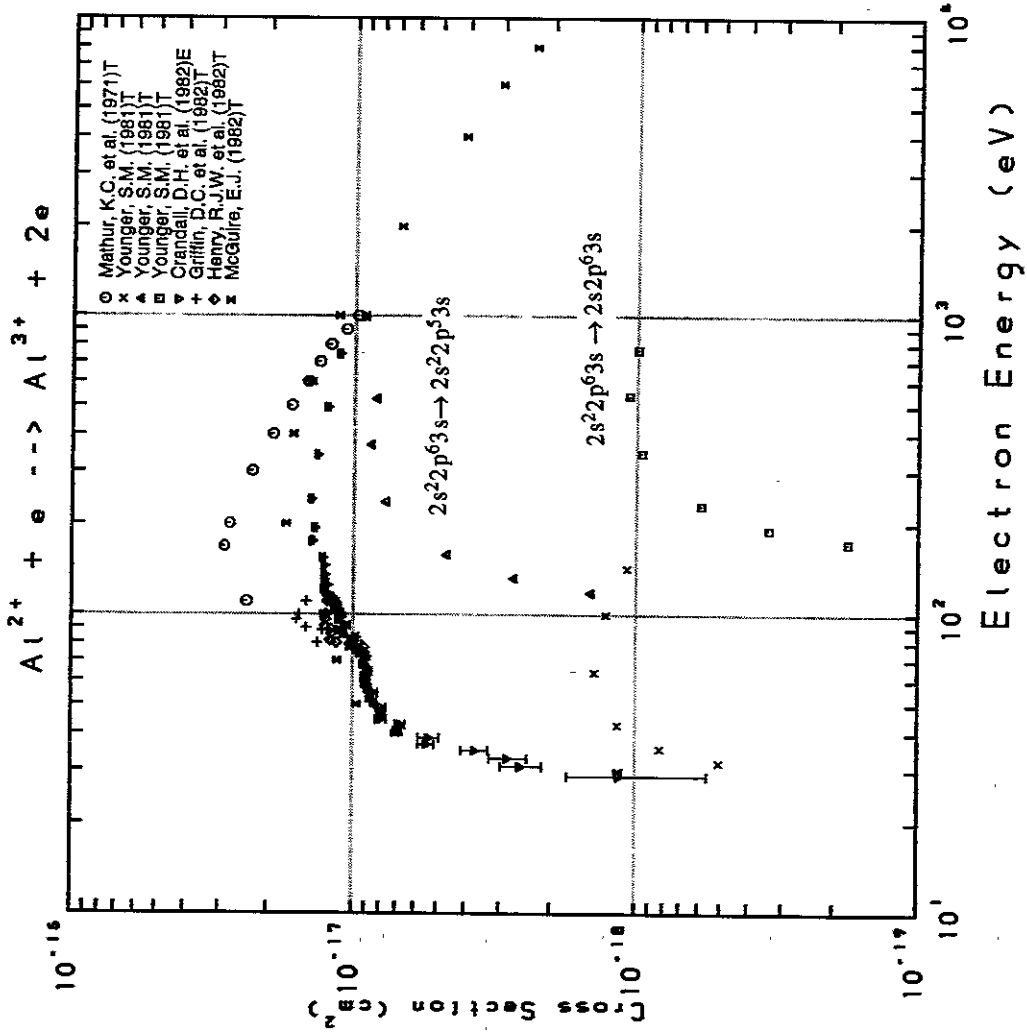


Fig. 89 $Al^{2+} \rightarrow Al^{3+}$

AMDIS-ION

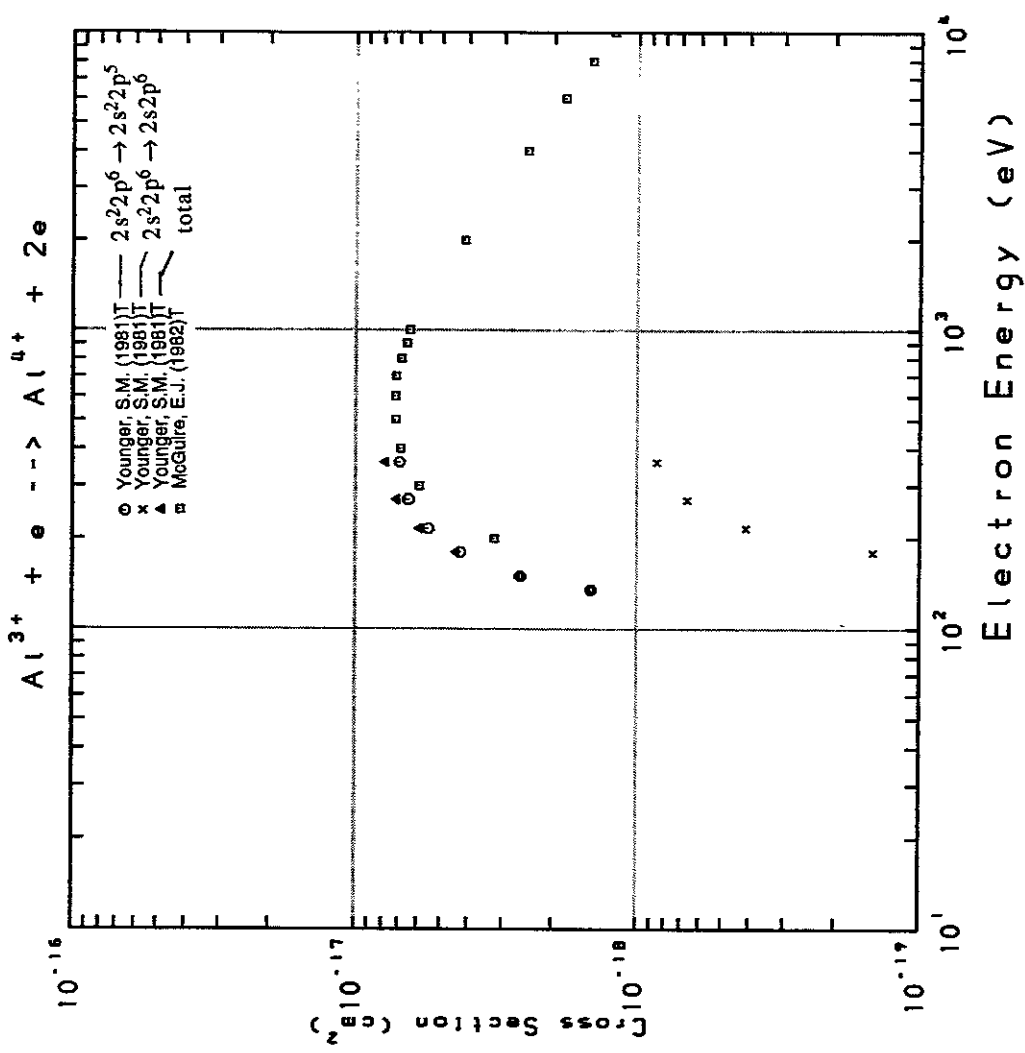


Fig. 90 $Al^{3+} \rightarrow Al^{4+}$

AMDIS-ION

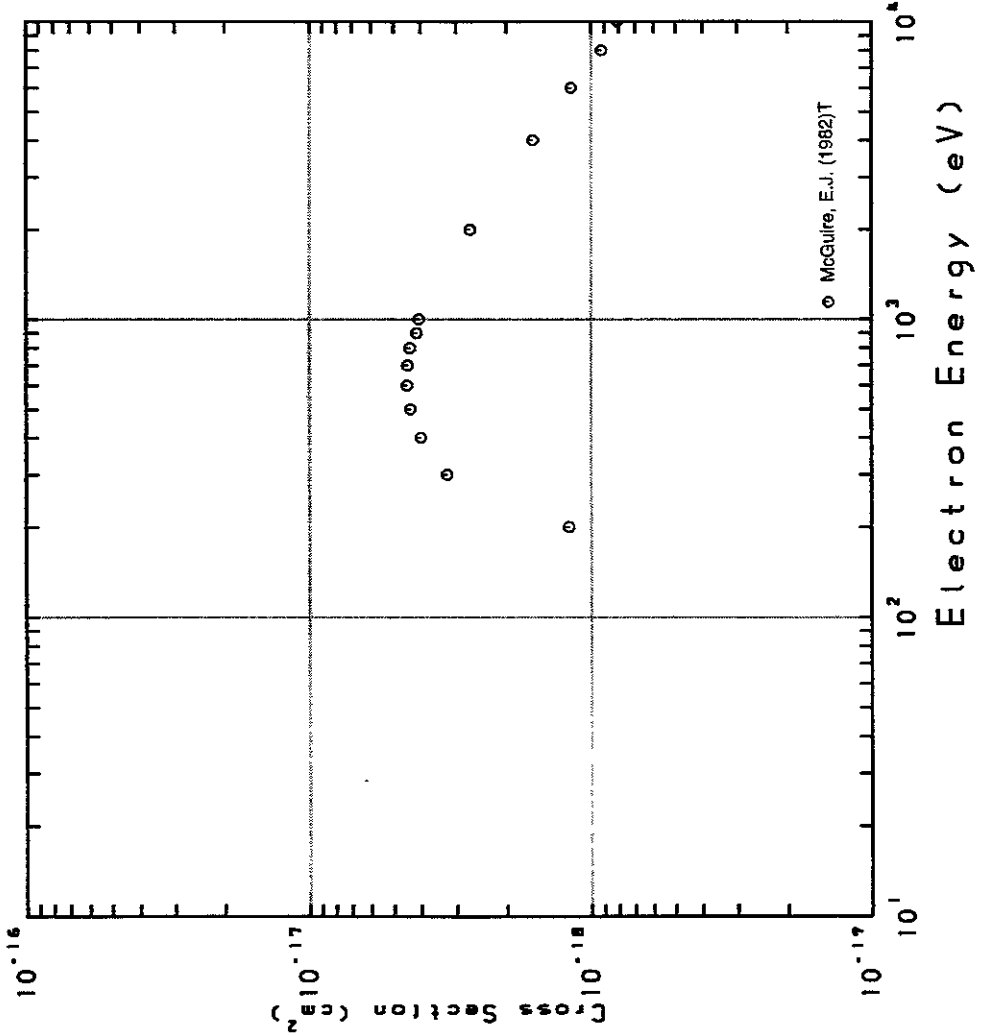
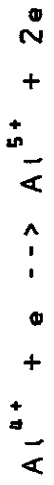


Fig. 91 $\text{Al}^{4+} \rightarrow \text{Al}^{5+}$

AMDIS-ION

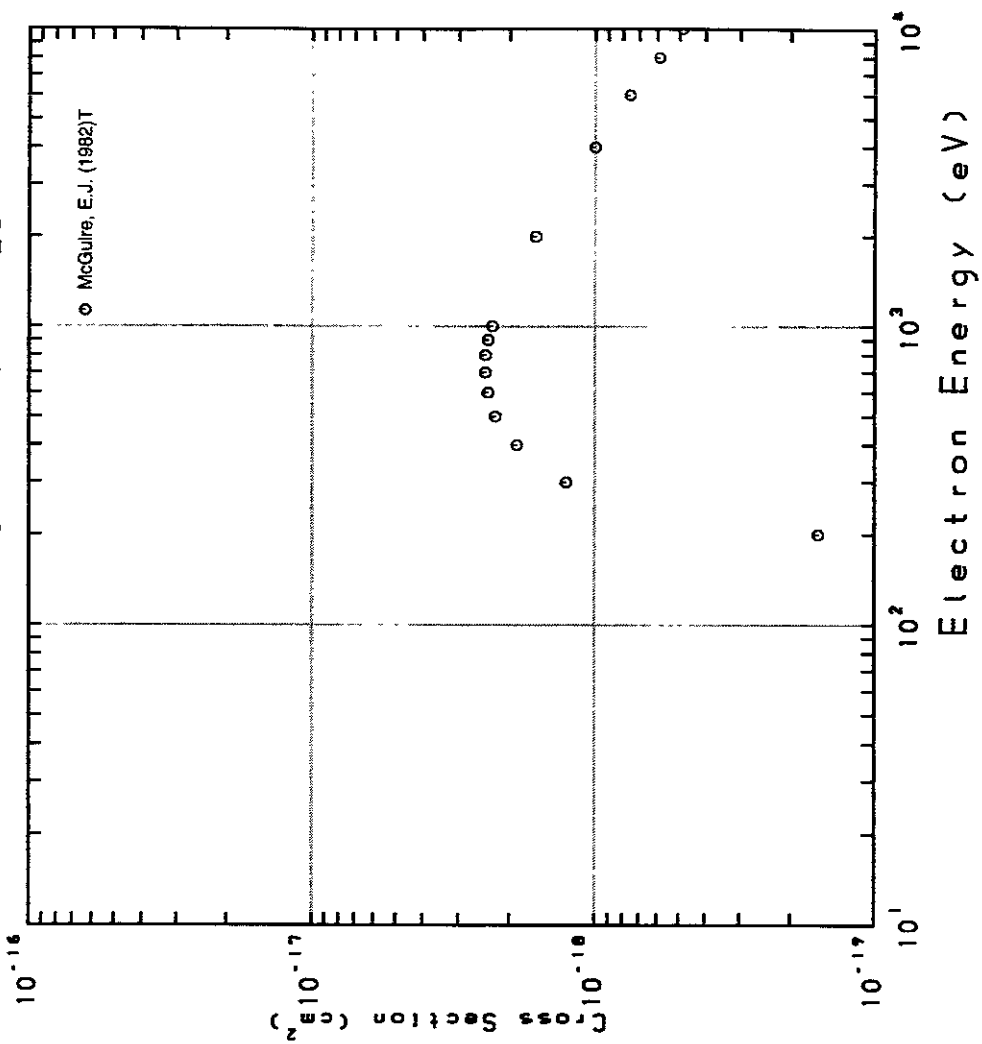
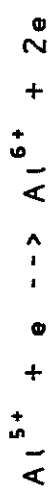


Fig. 92 $\text{Al}^{5+} \rightarrow \text{Al}^{6+}$

AMDIS-ION

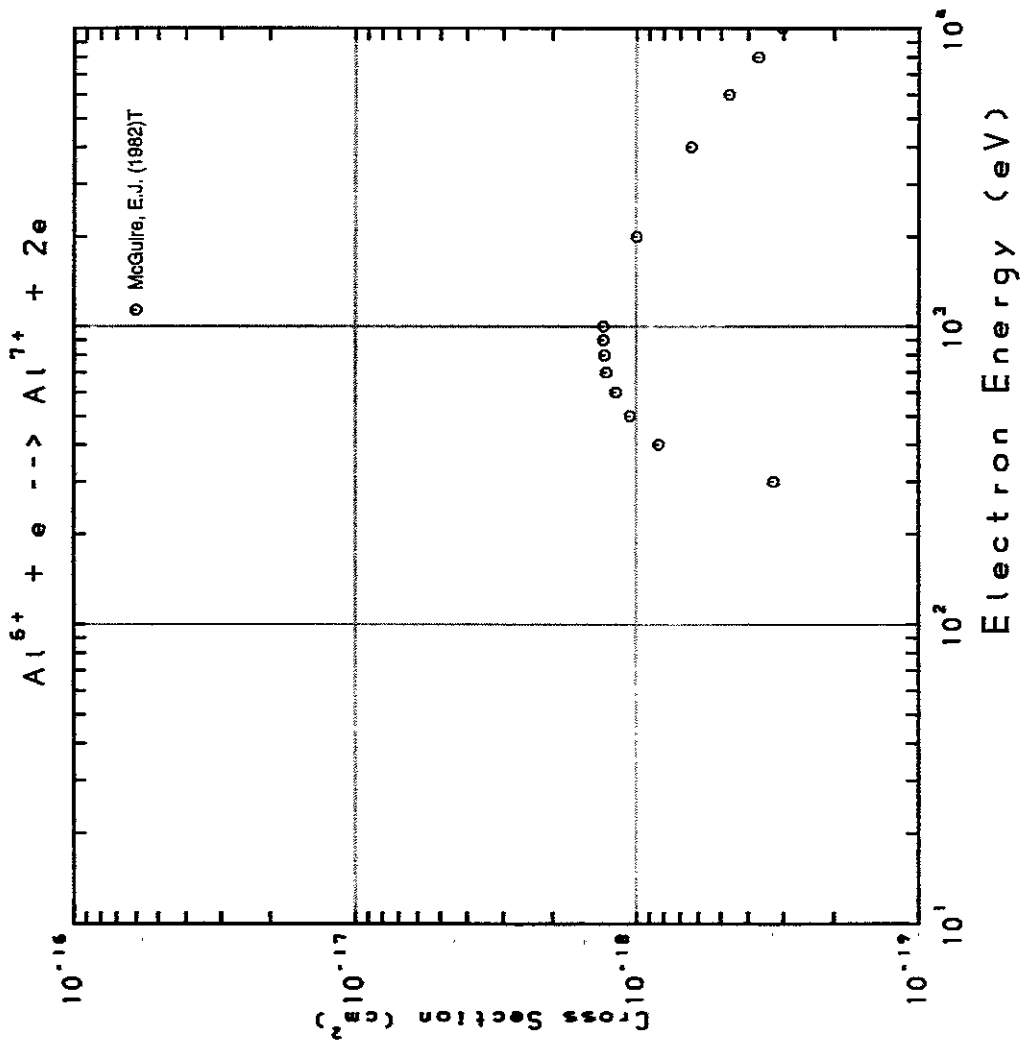


Fig. 93 Al⁶⁺ → Al⁷⁺

AMDIS-ION

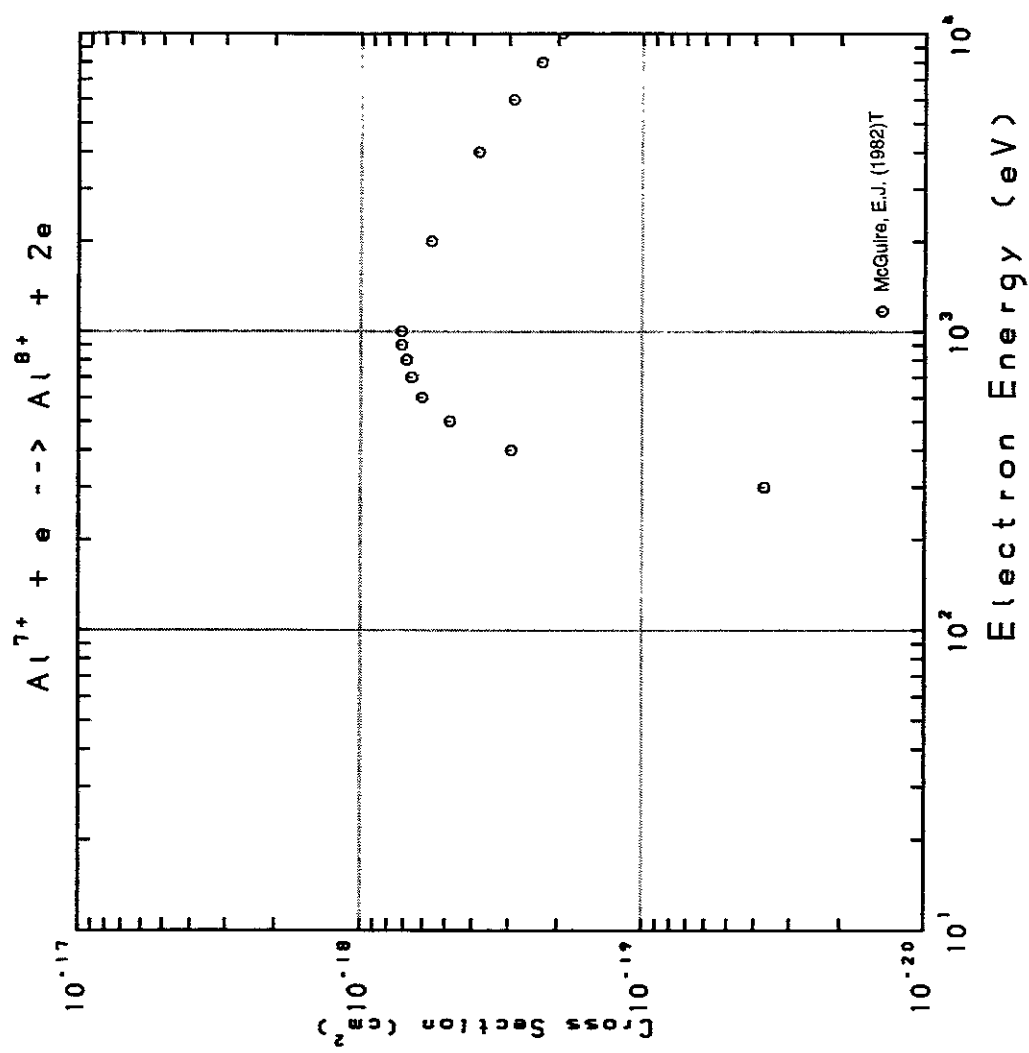


Fig. 94 Al⁷⁺ → Al⁸⁺

AMDIS-ION

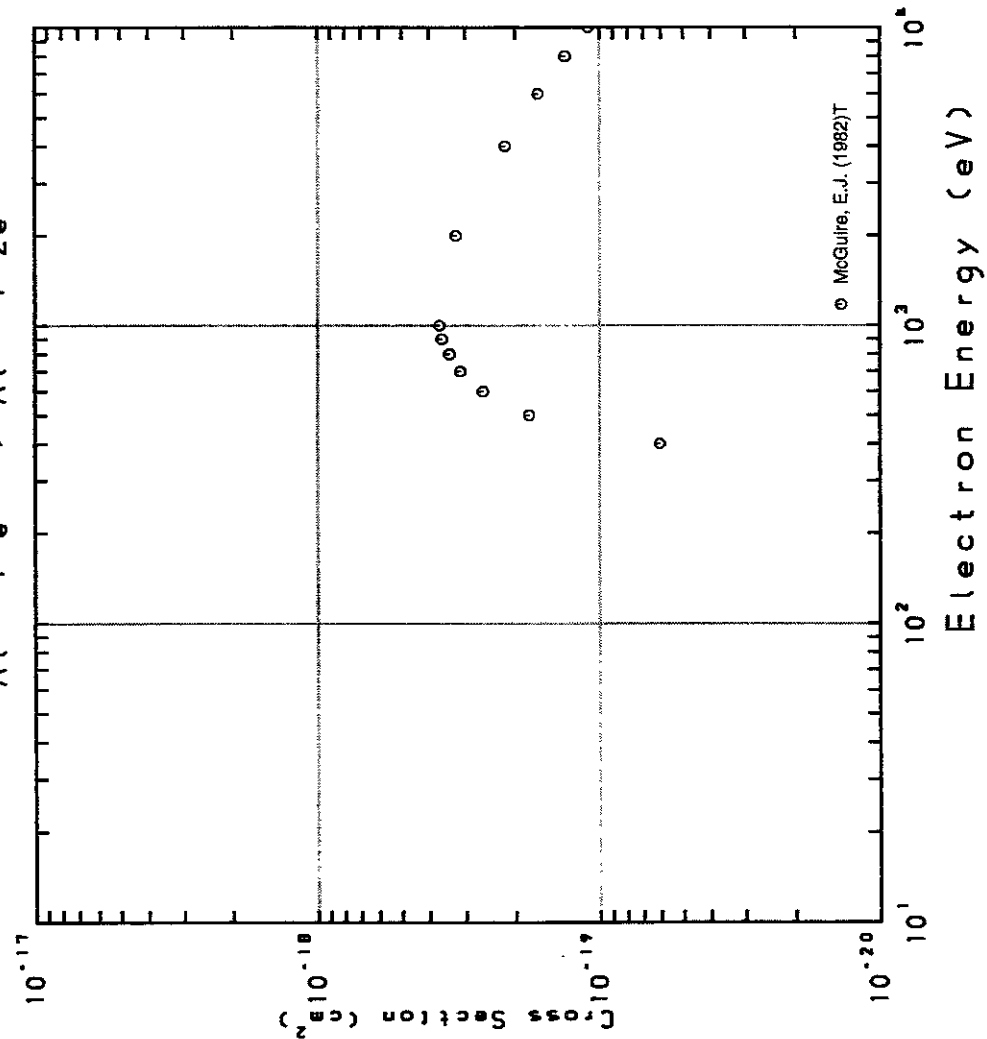
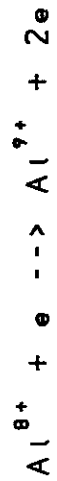


Fig. 95 Al⁸⁺ → Al⁹⁺

AMDIS-ION

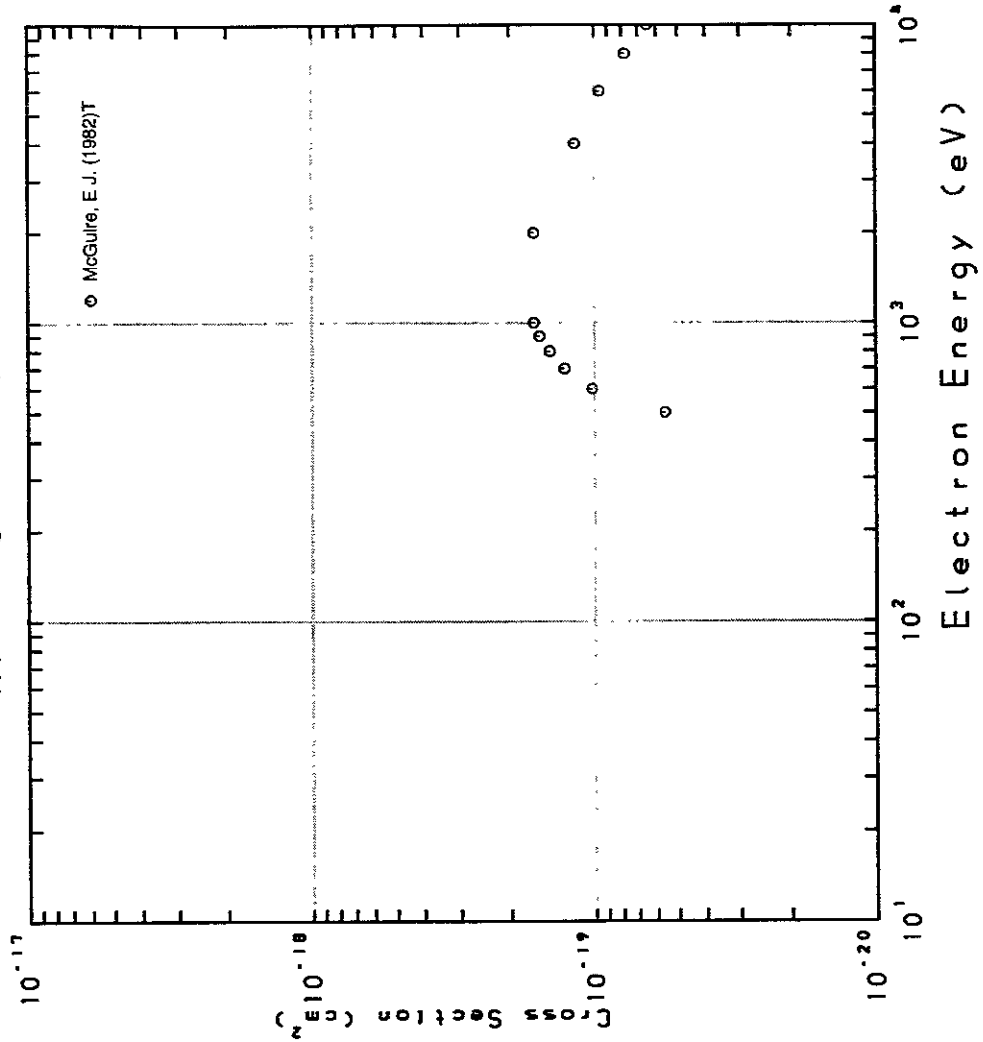


Fig. 96 Al⁹⁺ → Al¹⁰⁺

AMDIS-ION

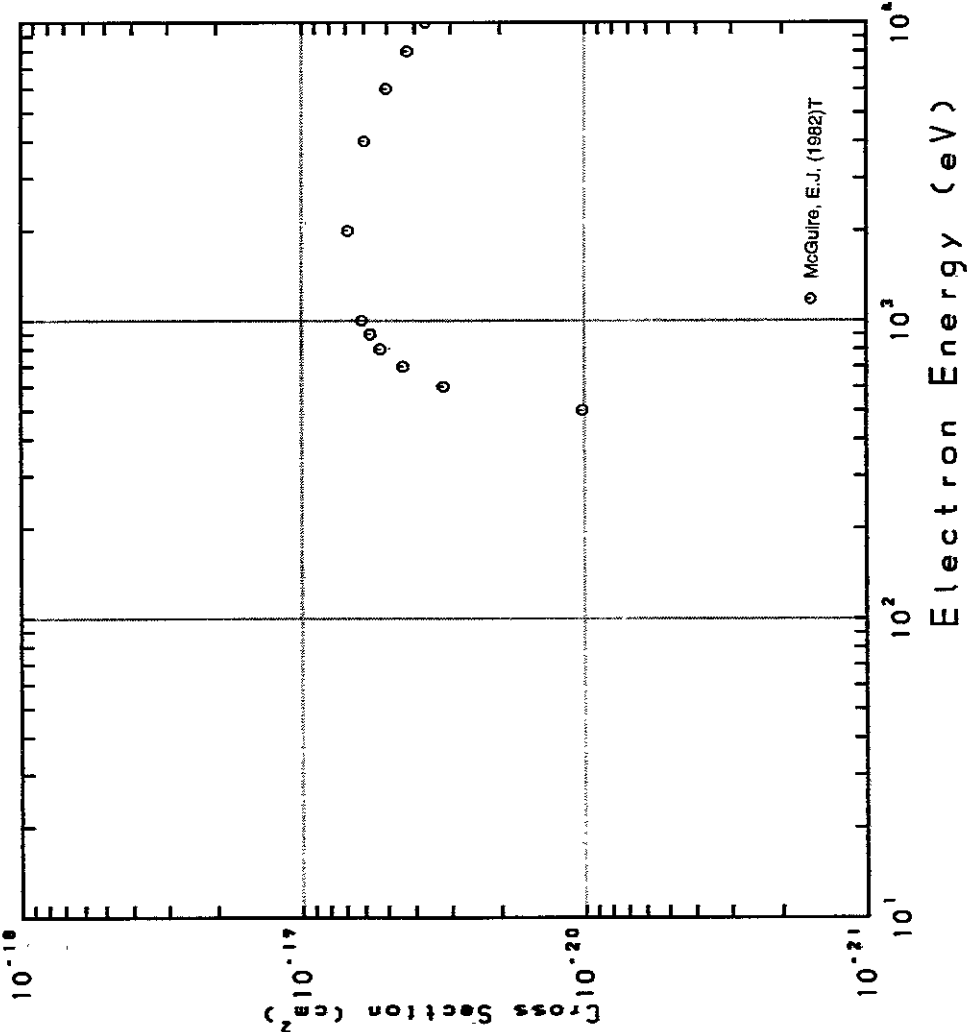


Fig. 97 Al¹⁰⁺ → Al¹¹⁺

AMDIS-ION

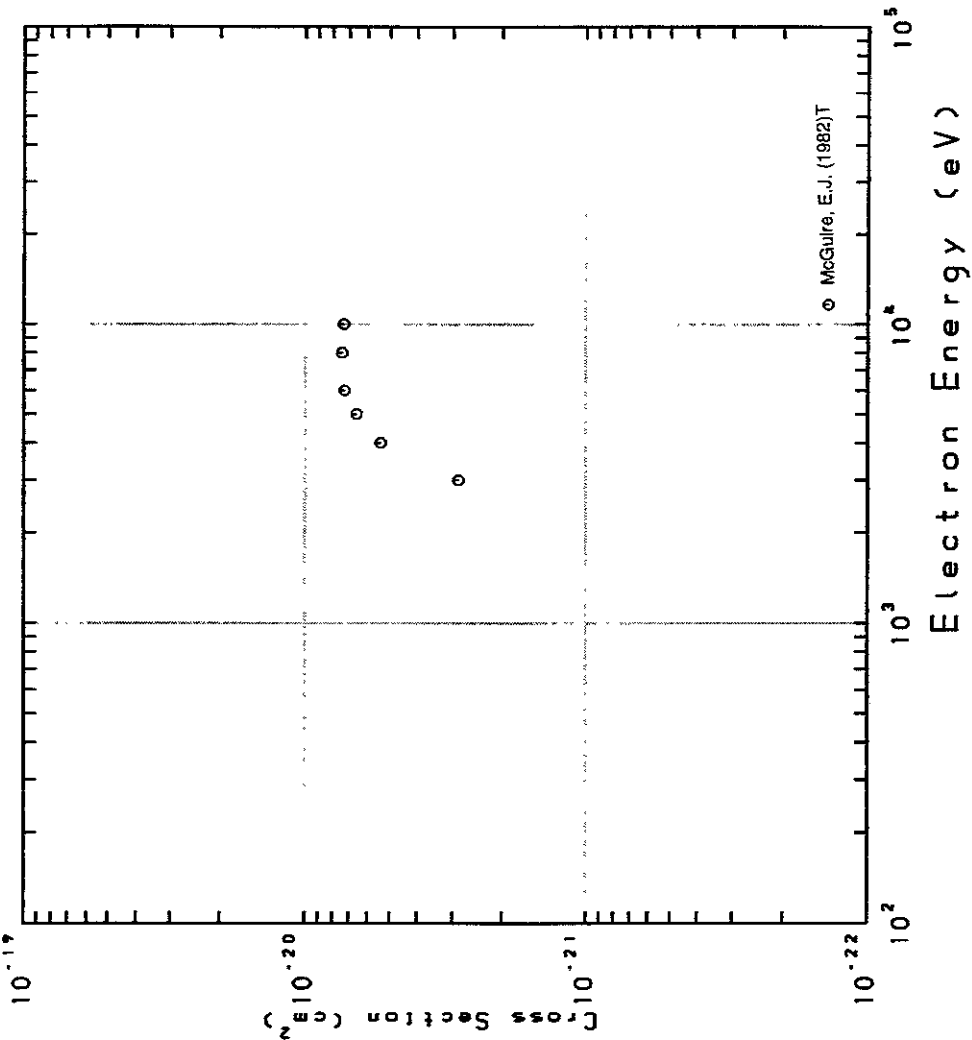
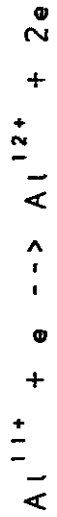


Fig. 98 Al¹¹⁺ → Al¹²⁺

AMDIS-ION

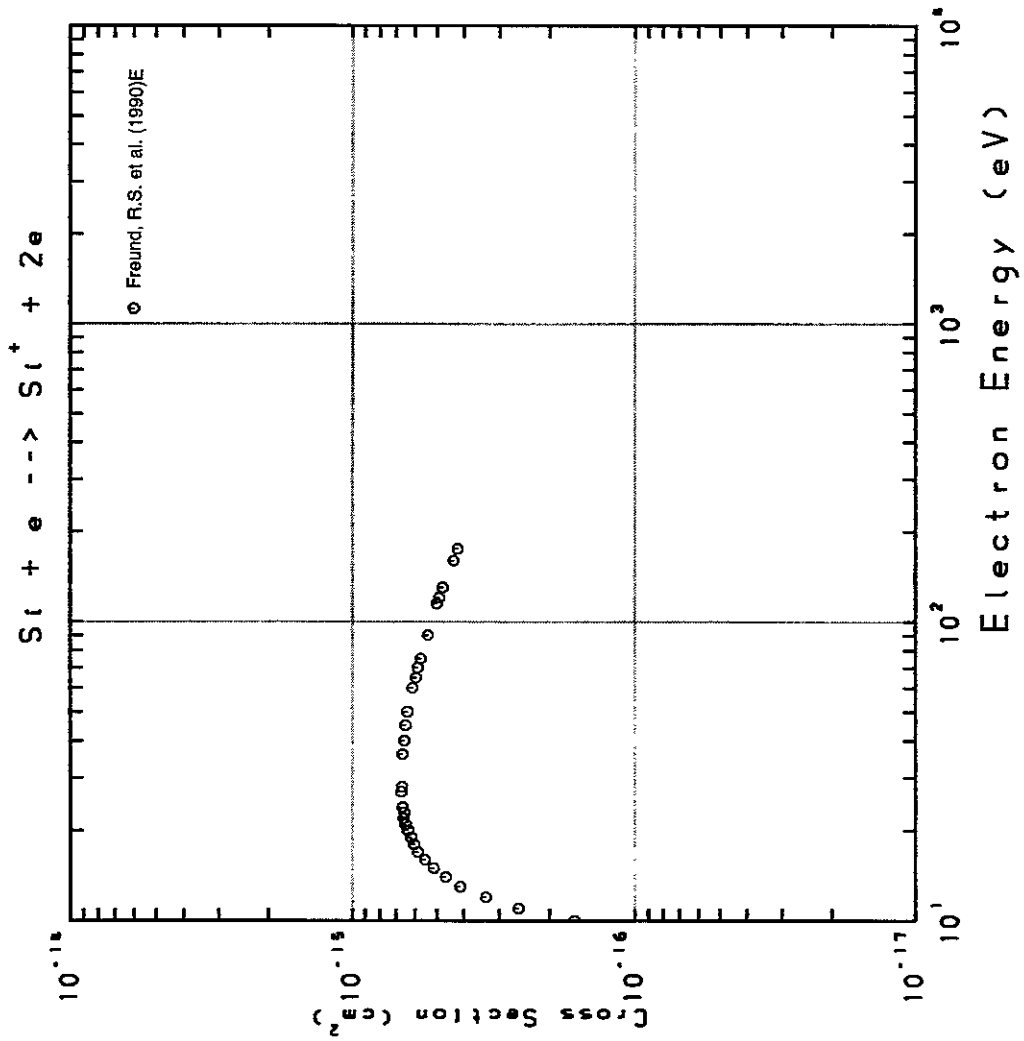


Fig. 99 Si \rightarrow Si⁺

AMDIS-ION

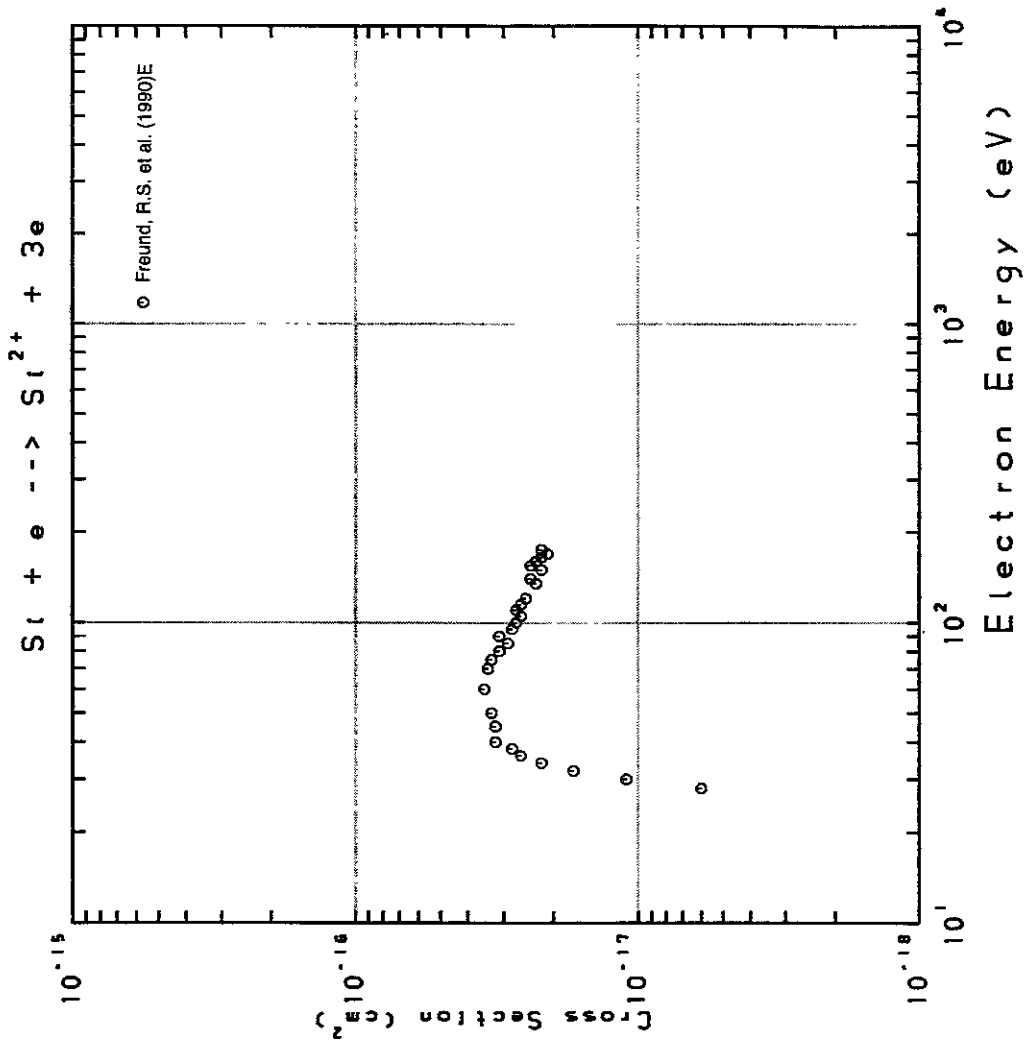


Fig. 100 Si \rightarrow Si²⁺

AMDIS-ION

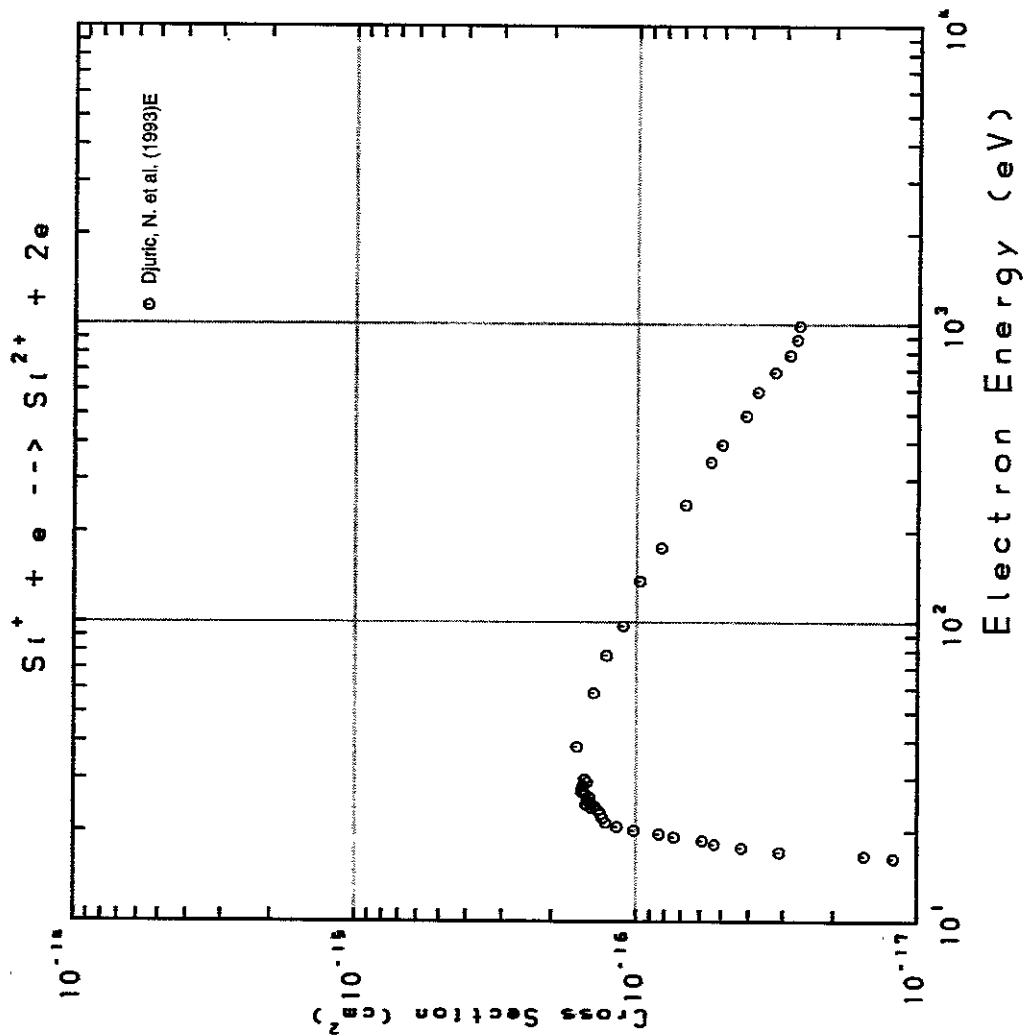


Fig. 101 $\text{Si}^+ \rightarrow \text{Si}^{2+}$

AMDIS-ION

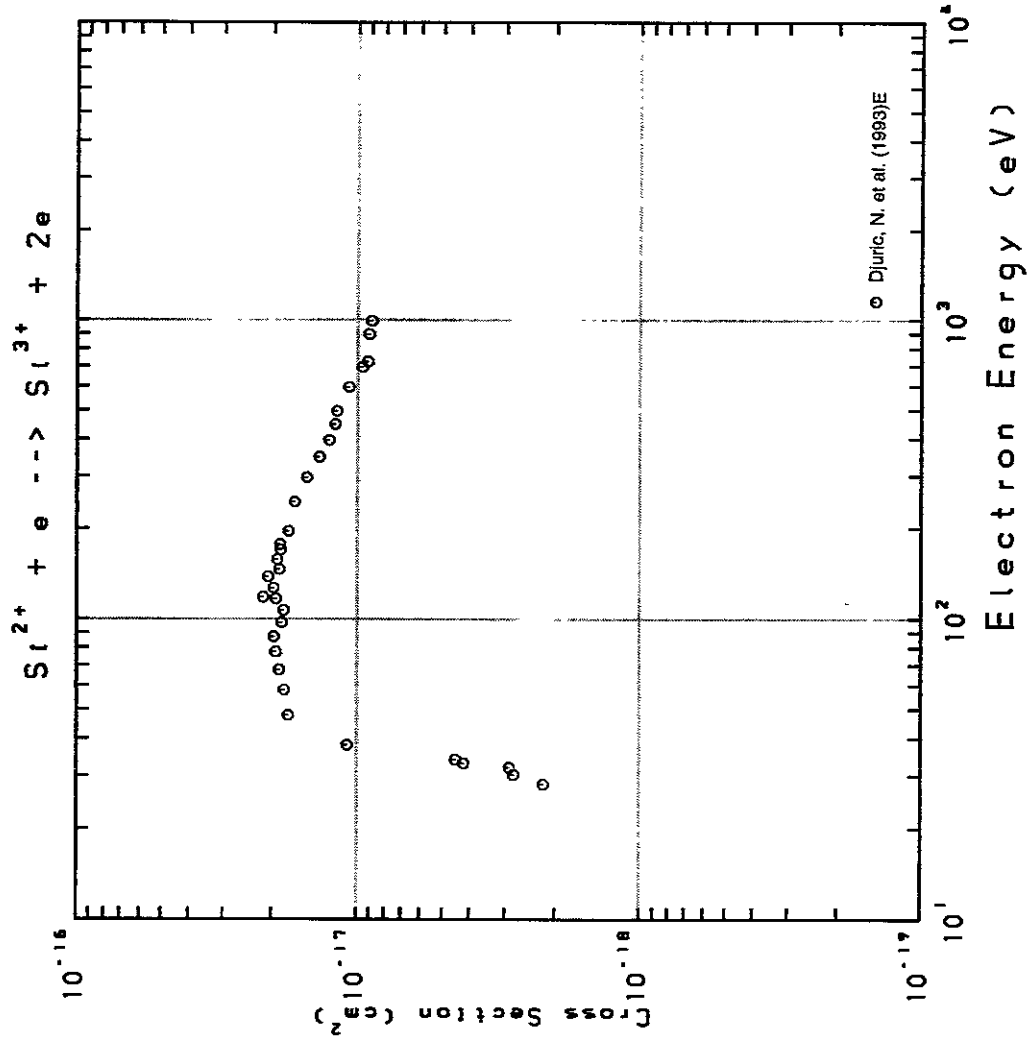


Fig. 102 $\text{Si}^{2+} \rightarrow \text{Si}^{3+}$

AMDIS-ION

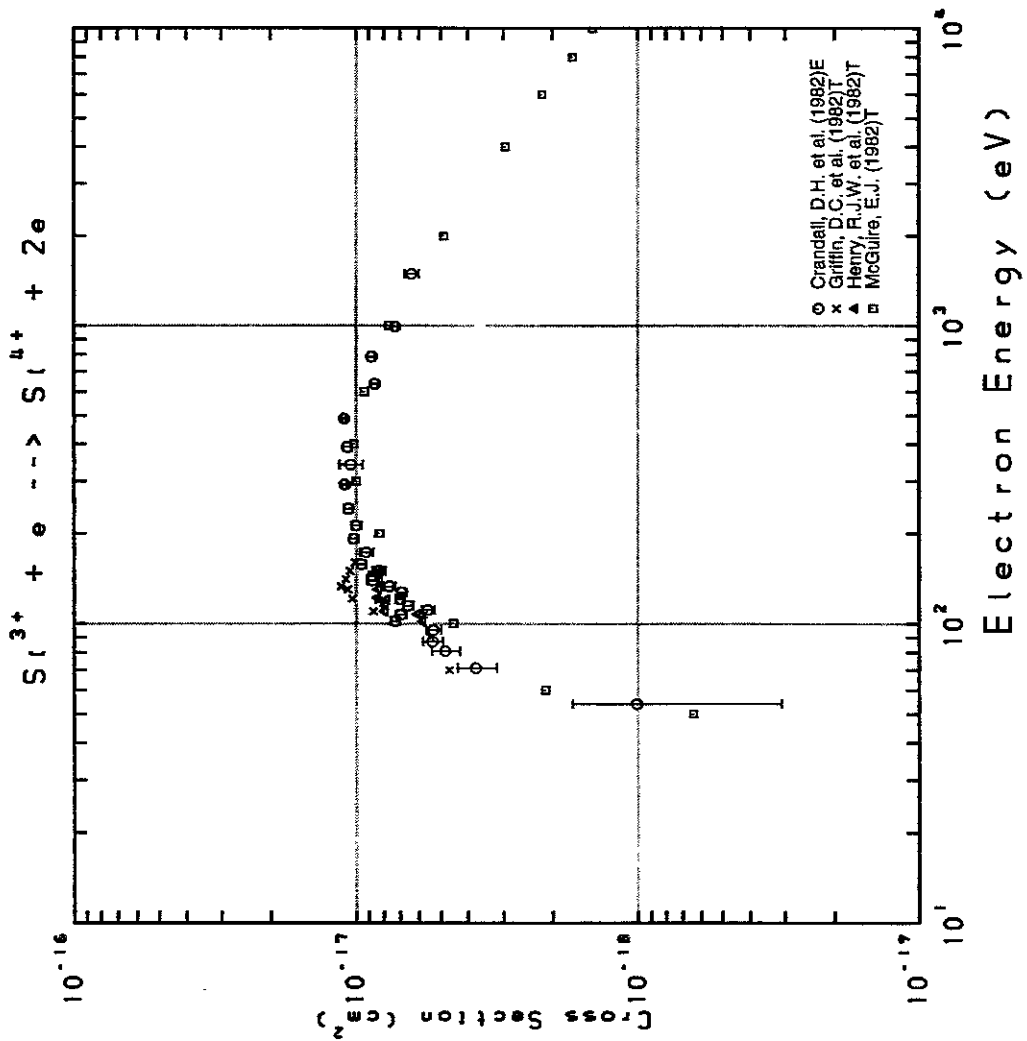


Fig. 103 $\text{Si}^{3+} \rightarrow \text{Si}^{4+}$

AMDIS-ION

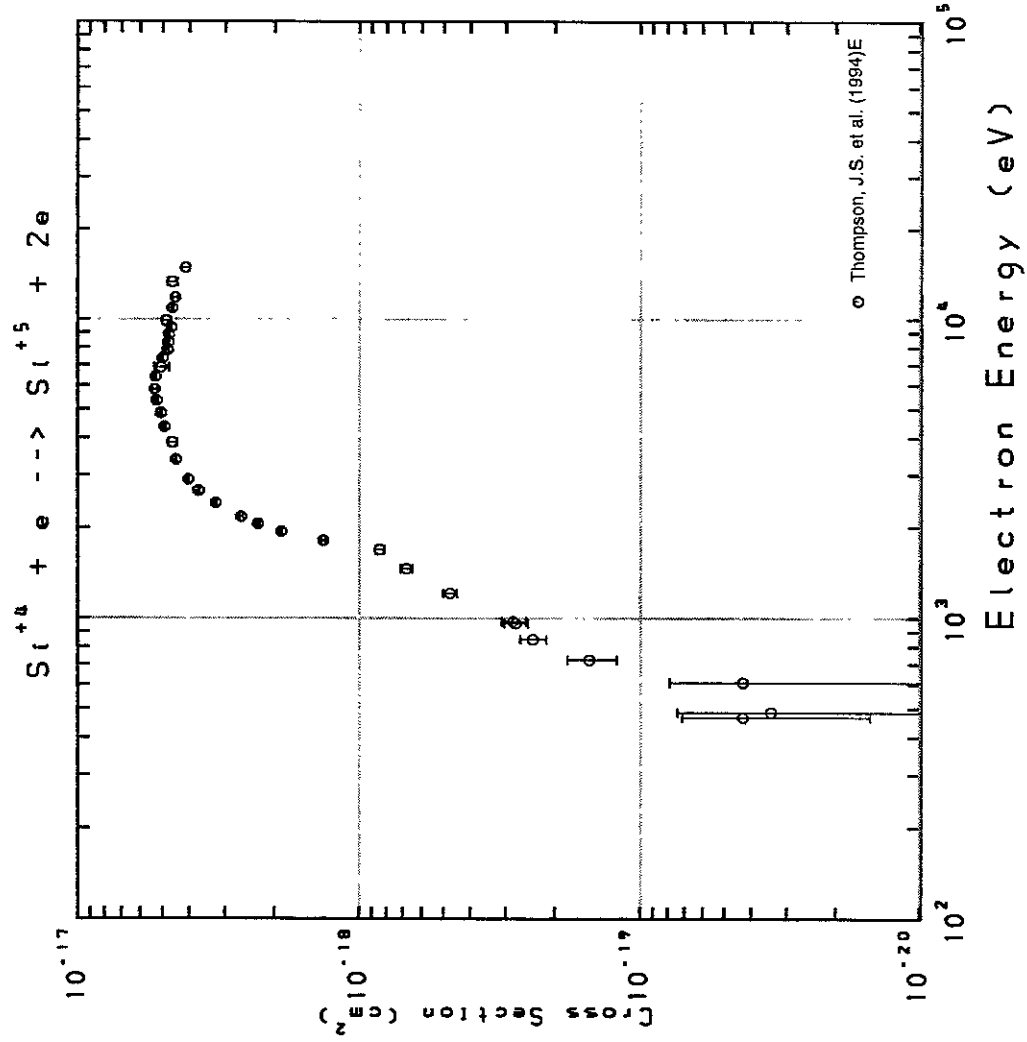


Fig. 104 $\text{Si}^{4+} \rightarrow \text{Si}^{5+}$

AMDIS-ION

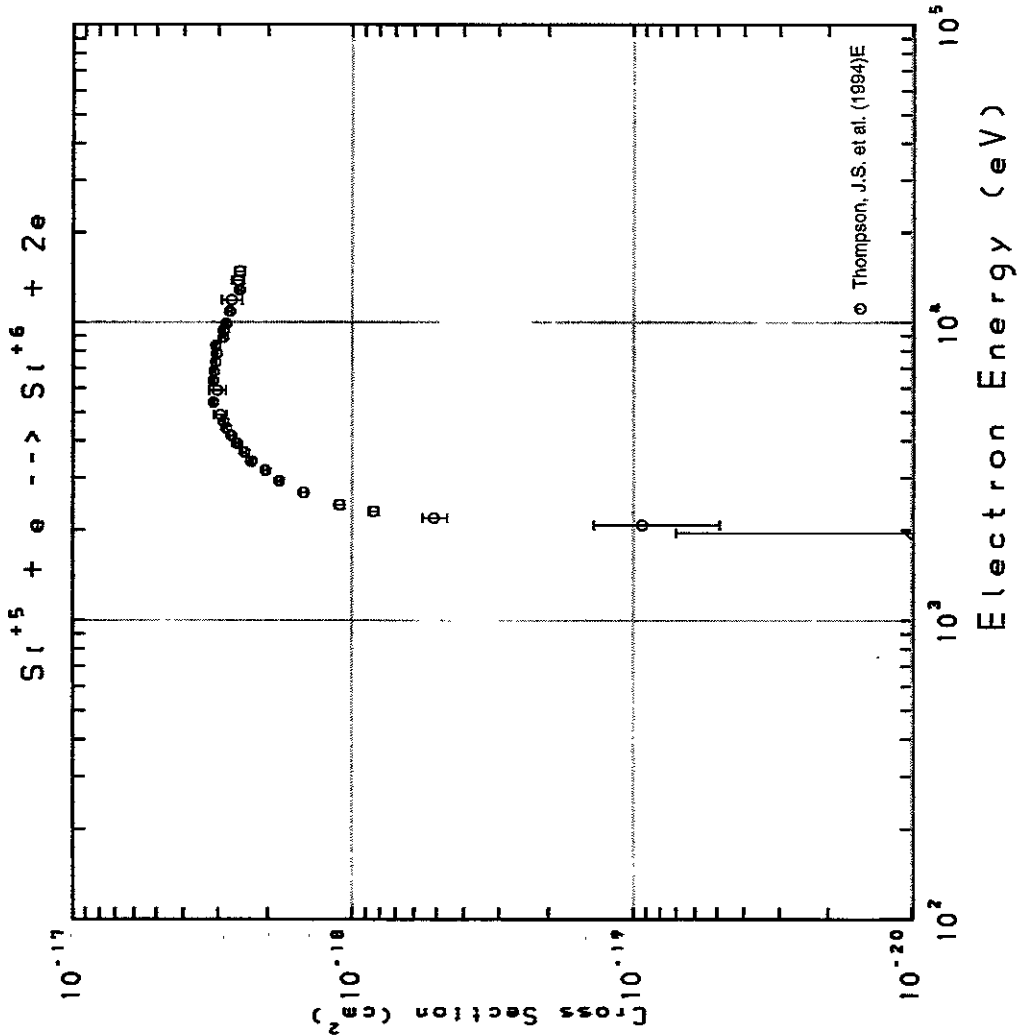


Fig. 105 $\text{Si}^{5+} \rightarrow \text{Si}^{6+}$

AMDIS-ION

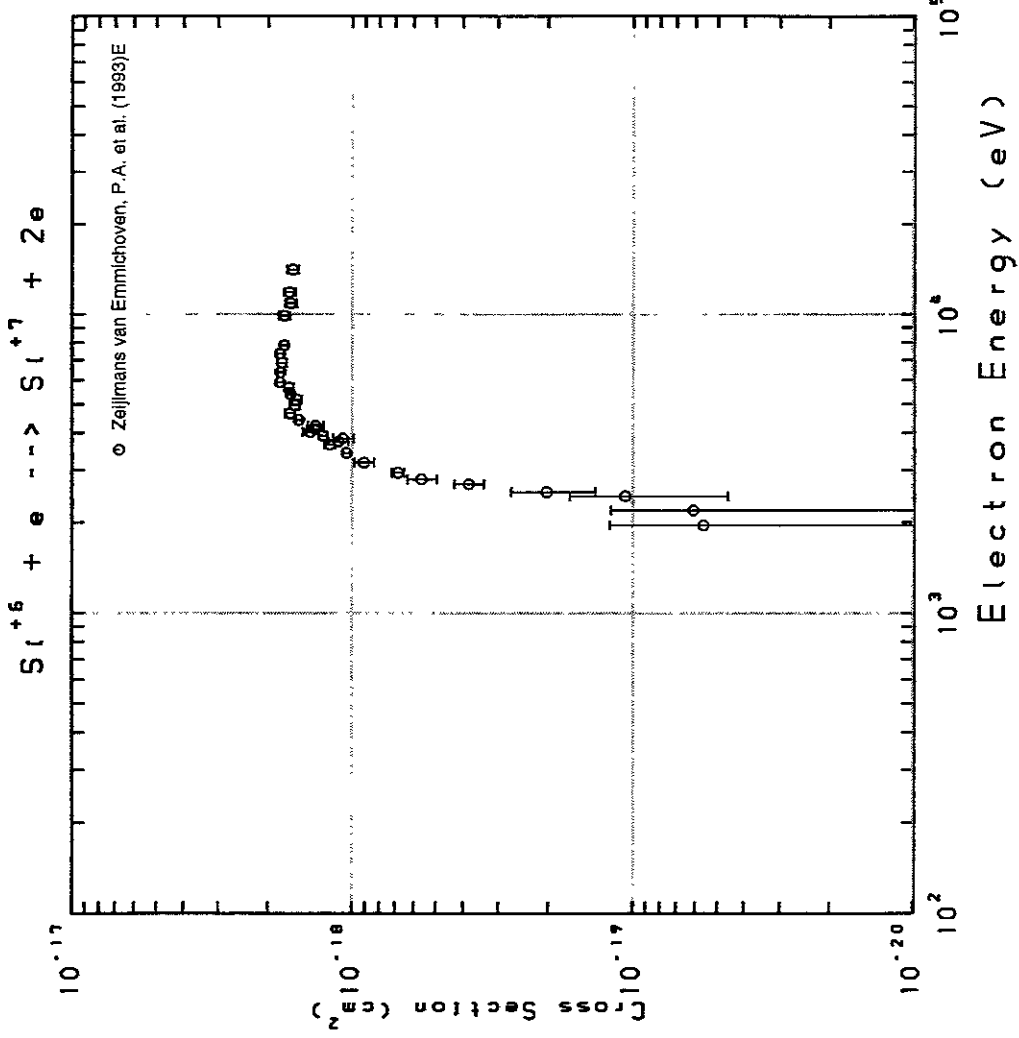


Fig. 106 $\text{Si}^{6+} \rightarrow \text{Si}^{7+}$

AMDIS-ION

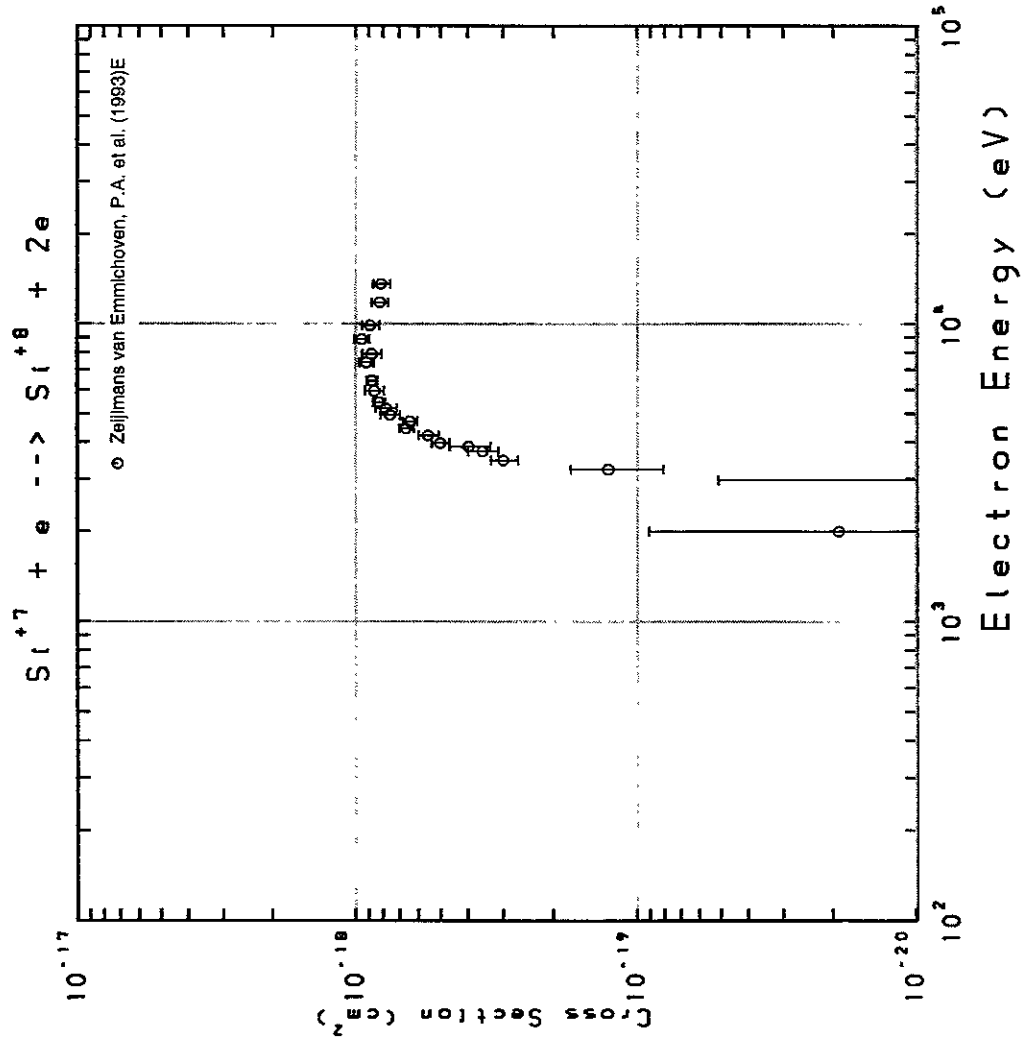


Fig. 107 $\text{Si}^{7+} \rightarrow \text{Si}^{8+}$

AMDIS-ION

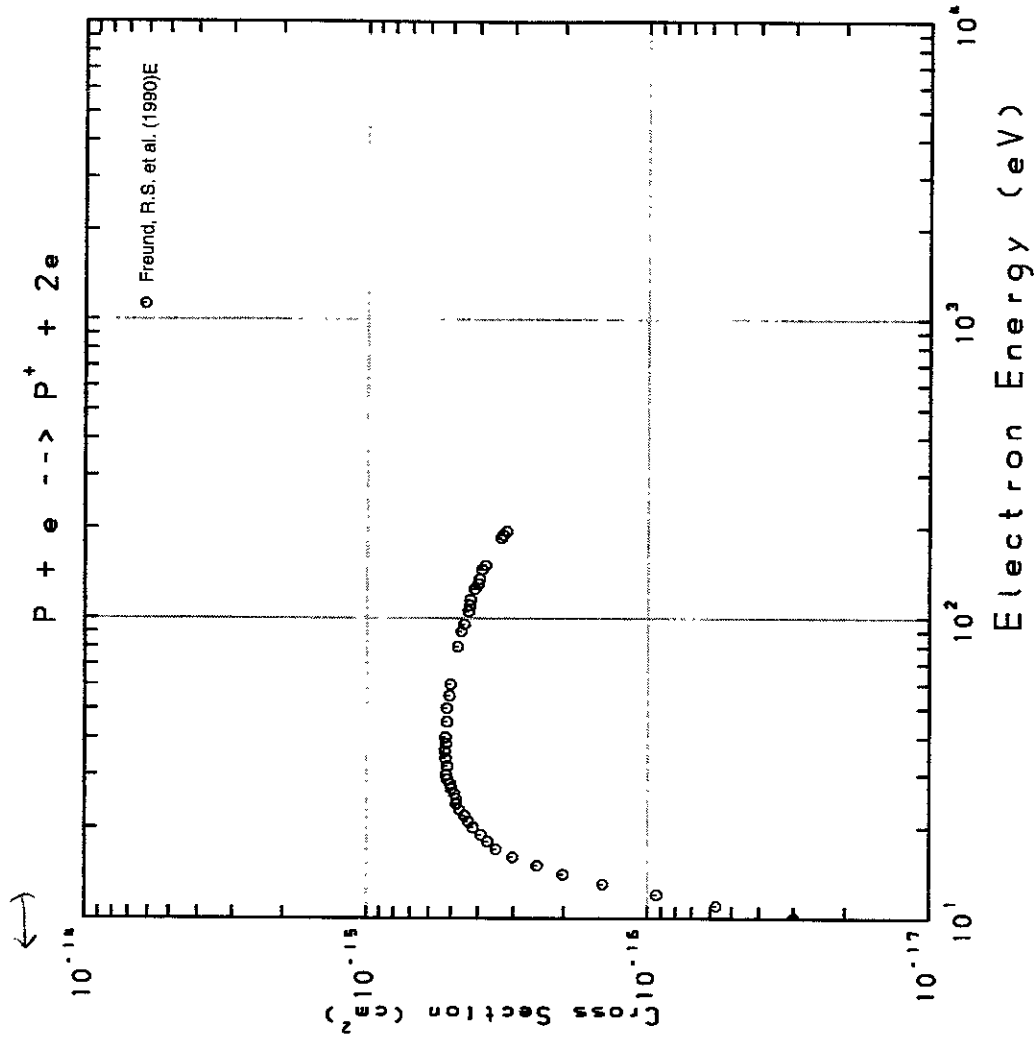


Fig. 108 $\text{P} \rightarrow \text{P}^+$

AMDIS-ION

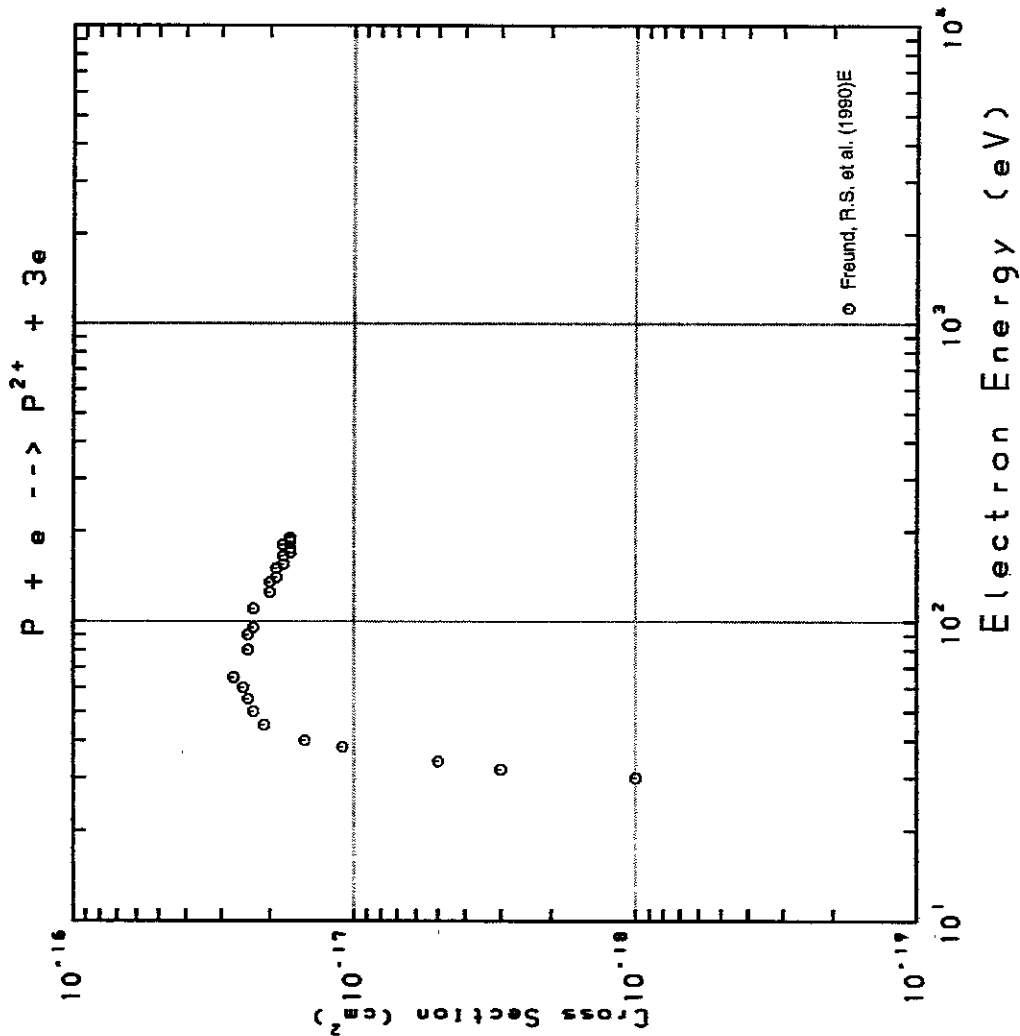


Fig. 109 P → P²⁺

AMDIS-ION

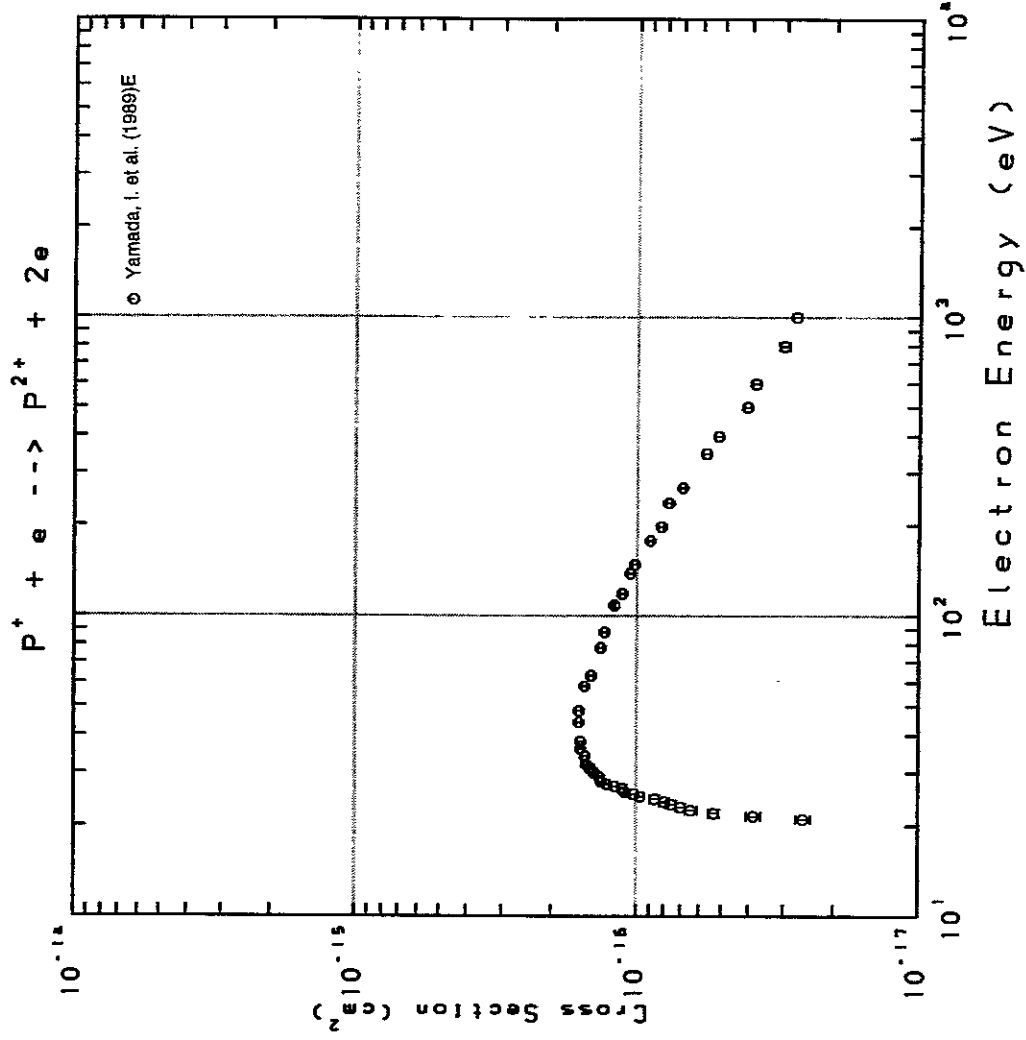


Fig. 110 P⁺ → P²⁺

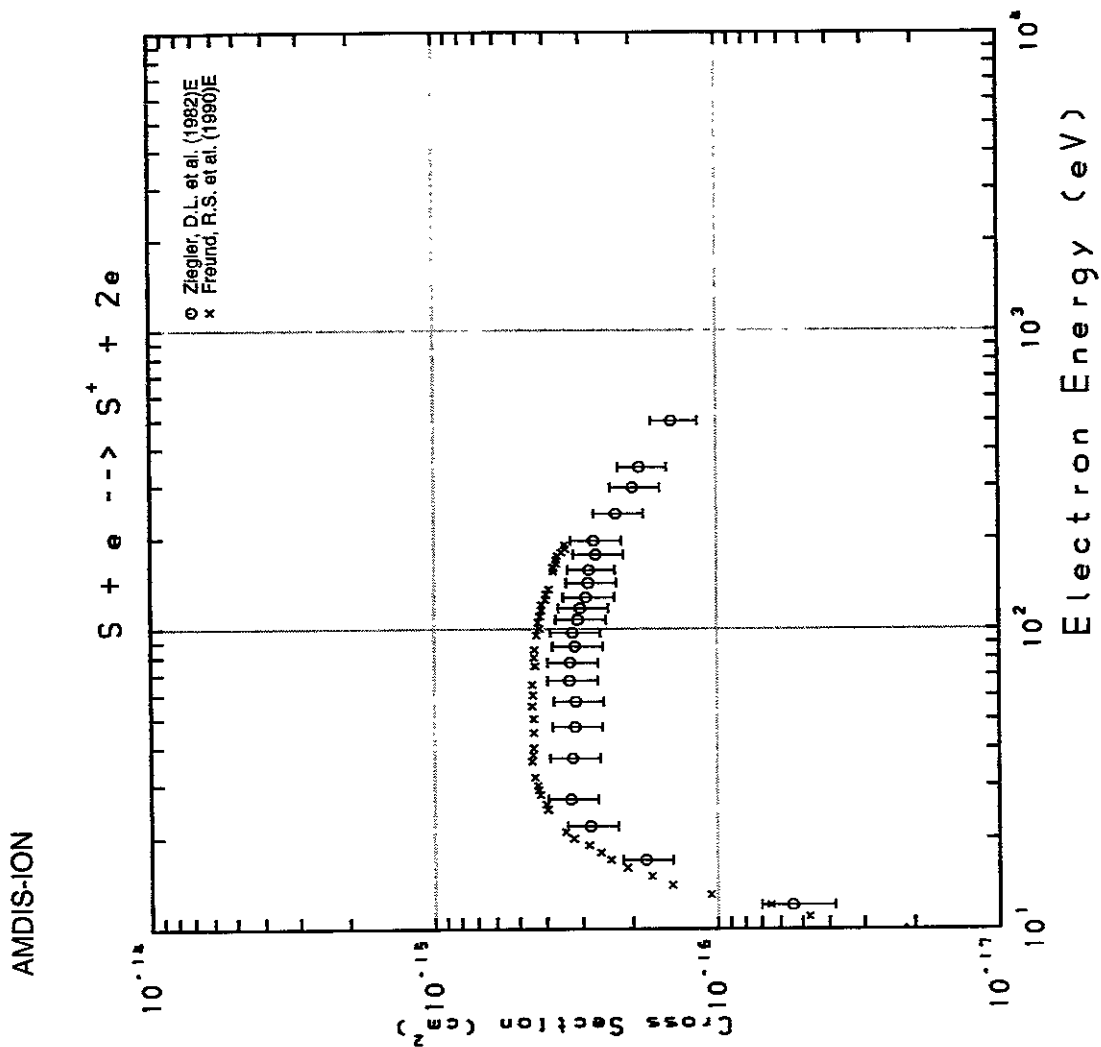


Fig. 112 $S \rightarrow S^+$

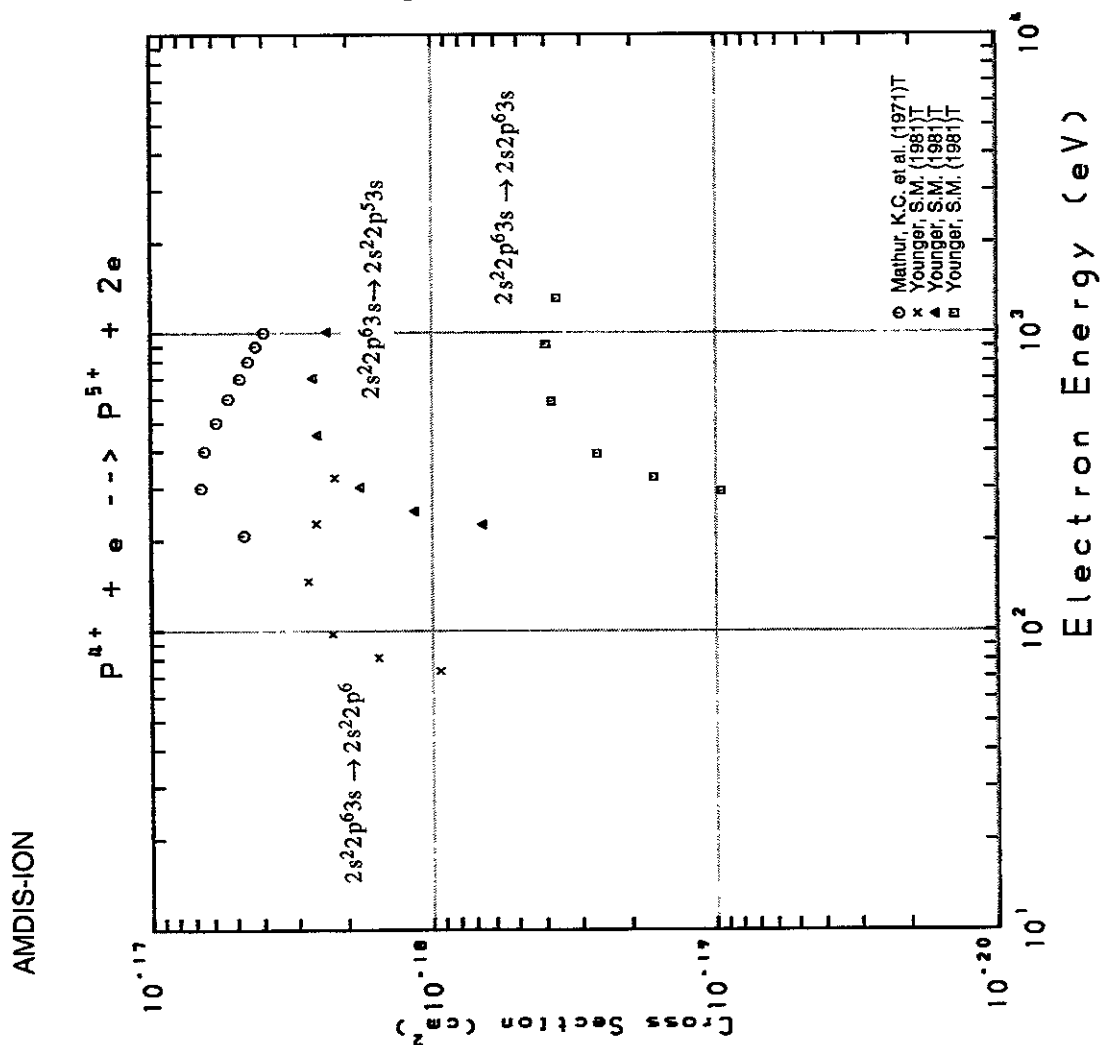


Fig. 111 $P^{4+} \rightarrow P^{5+}$

AMDIS-ION

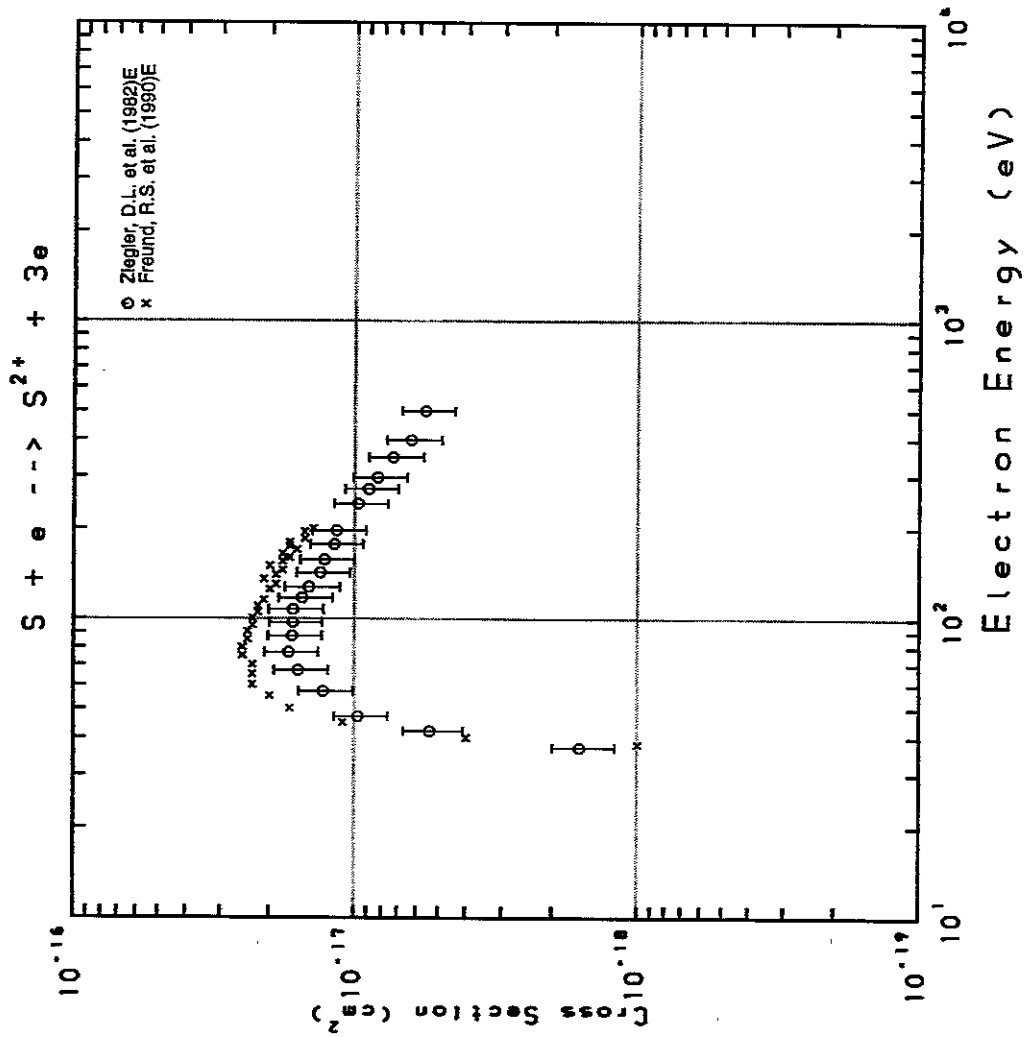


Fig. 113 $S \rightarrow S^{2+}$

AMDIS-ION

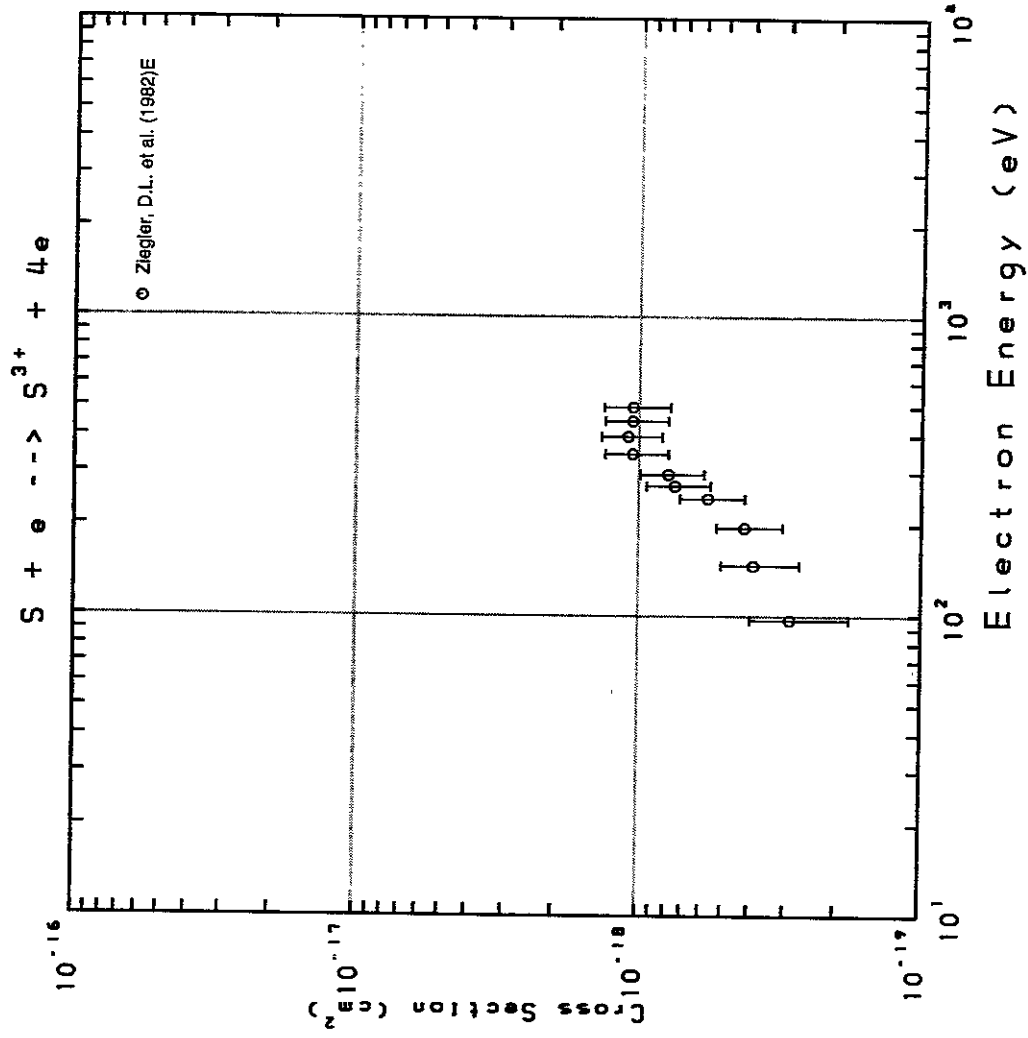


Fig. 114 $S \rightarrow S^{3+}$

AMDIS-ION

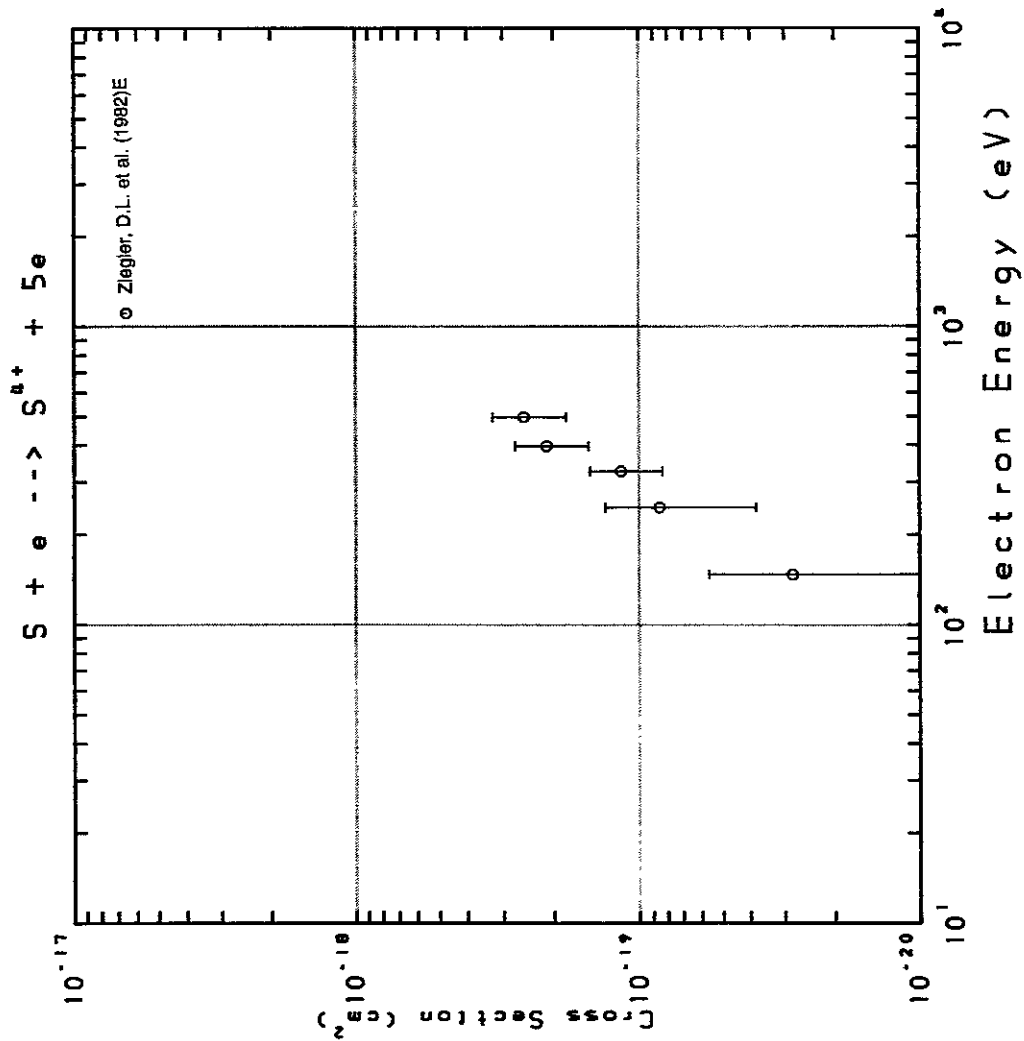


Fig. 115 $S \rightarrow S^{4+}$

AMDIS-ION

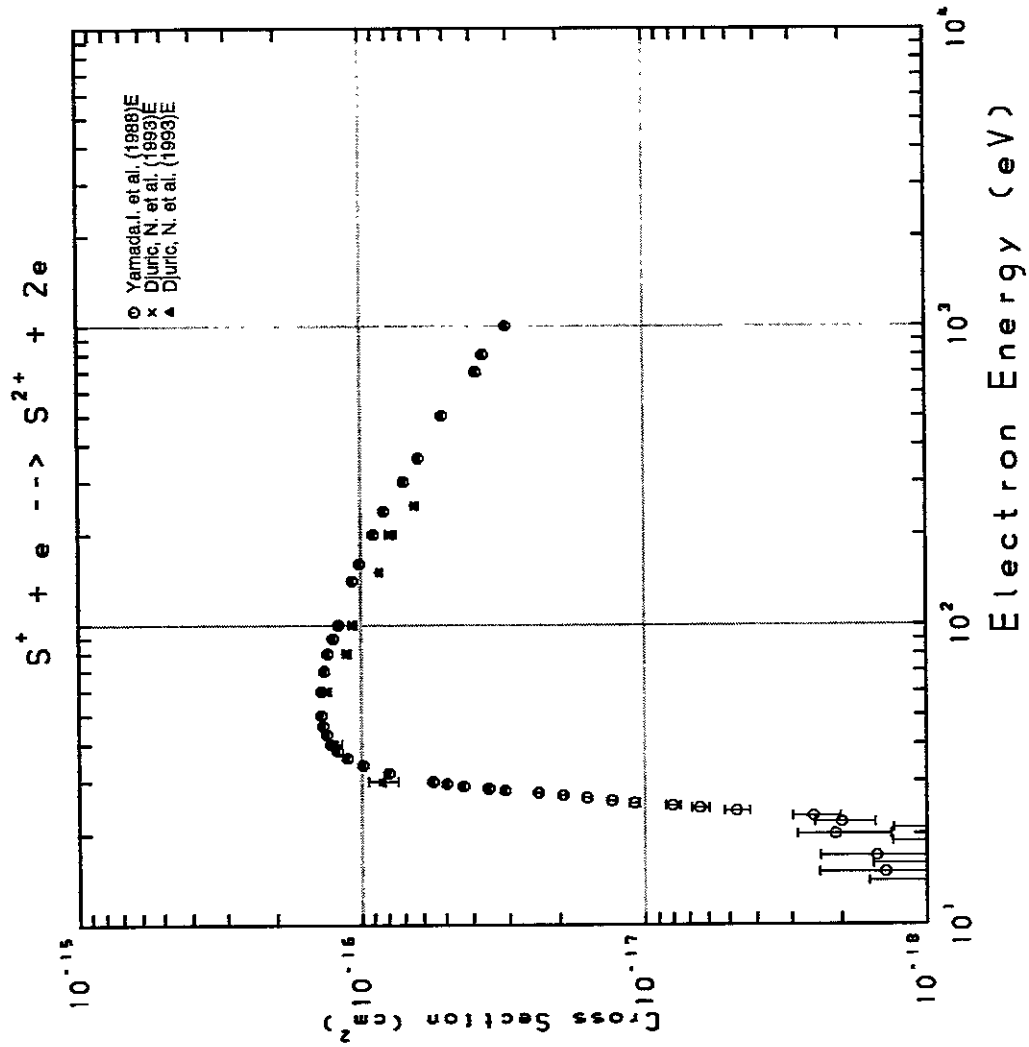


Fig. 116 $S^+ \rightarrow S^{2+}$

AMDIS-ION

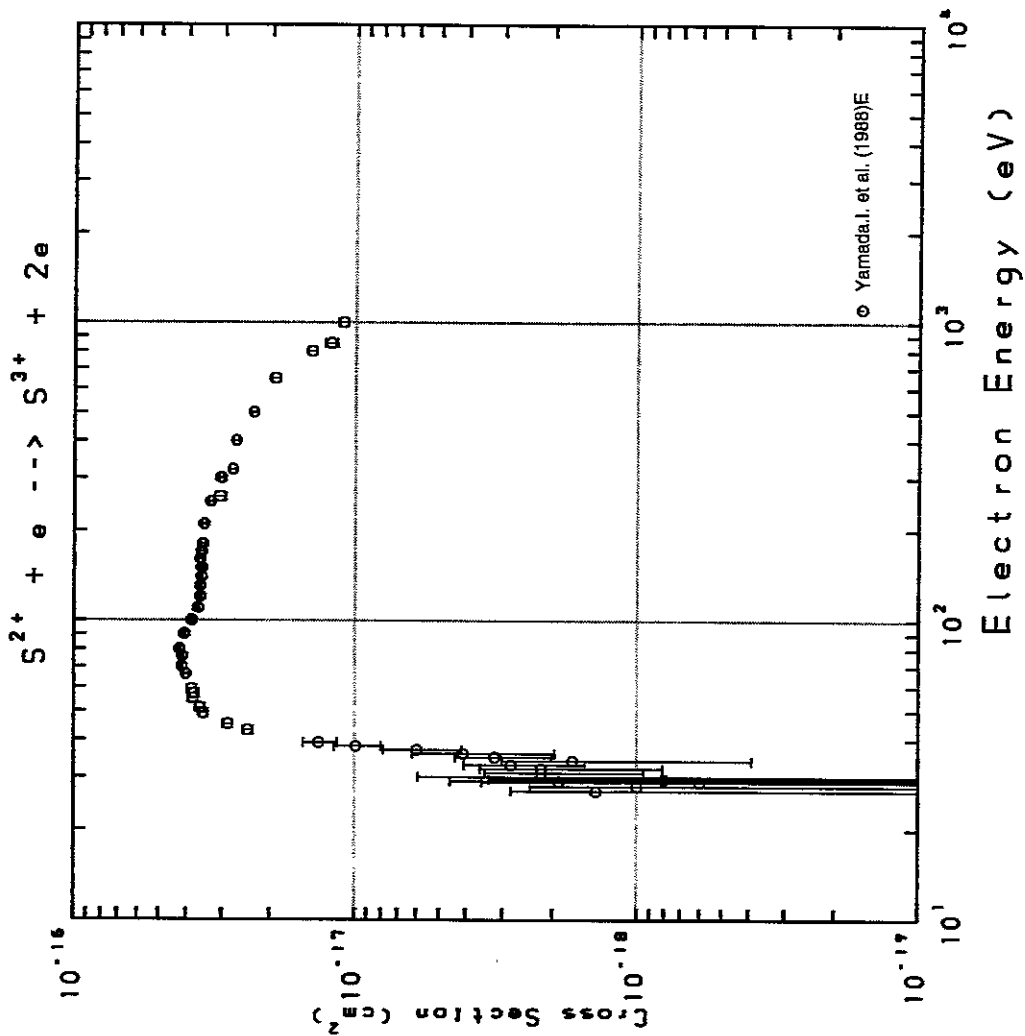


Fig. 117 $S^{2+} \rightarrow S^{3+}$

AMDIS-ION

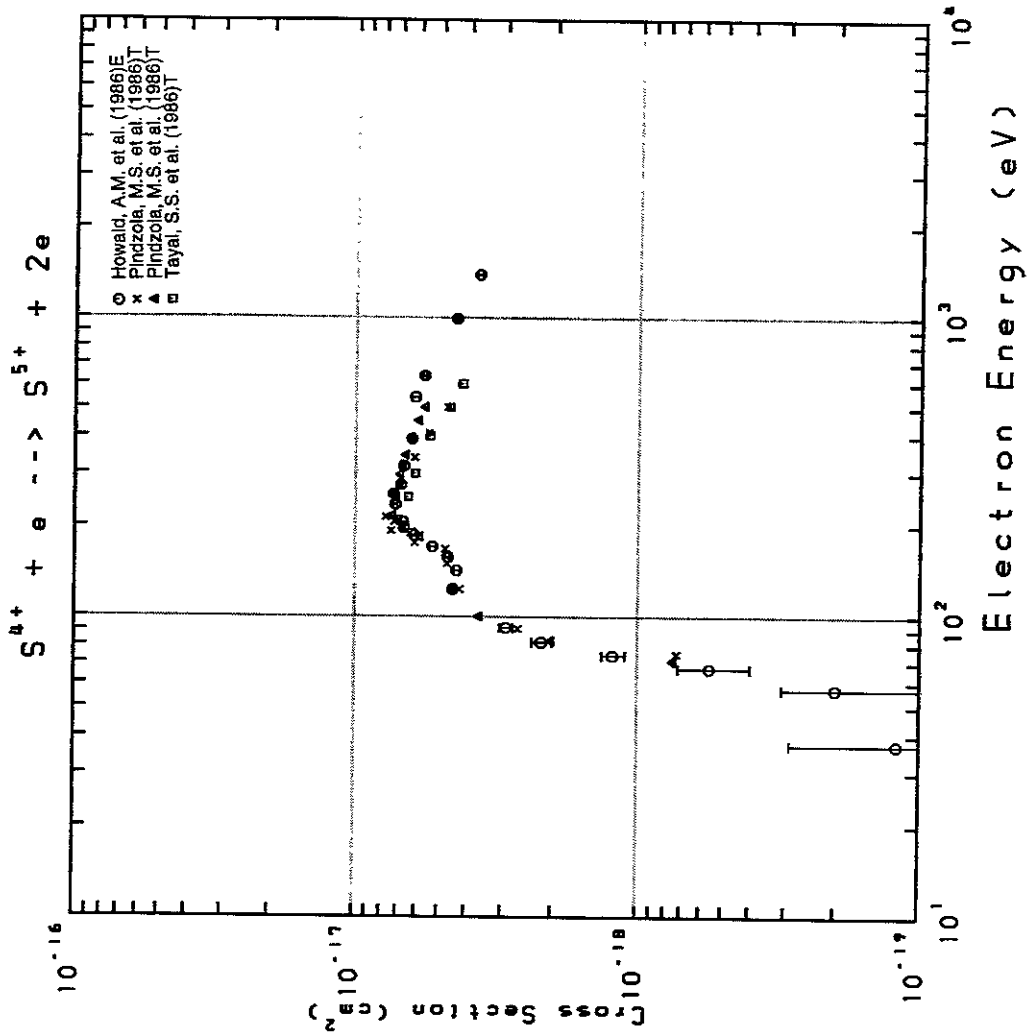


Fig. 118 $S^{4+} \rightarrow S^{5+}$

AMDIS-ION

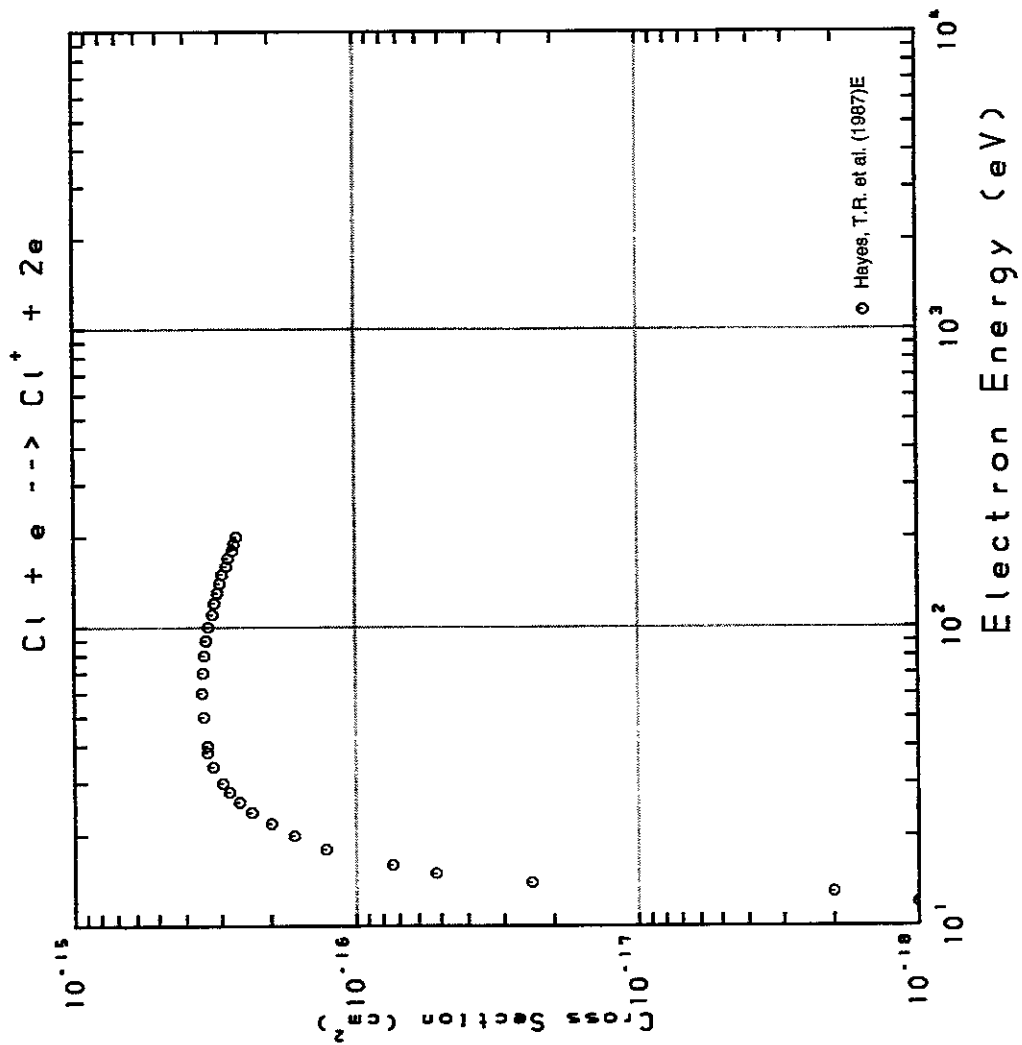


Fig. 119 $\text{Cl} \rightarrow \text{Cl}^+$

AMDIS-ION

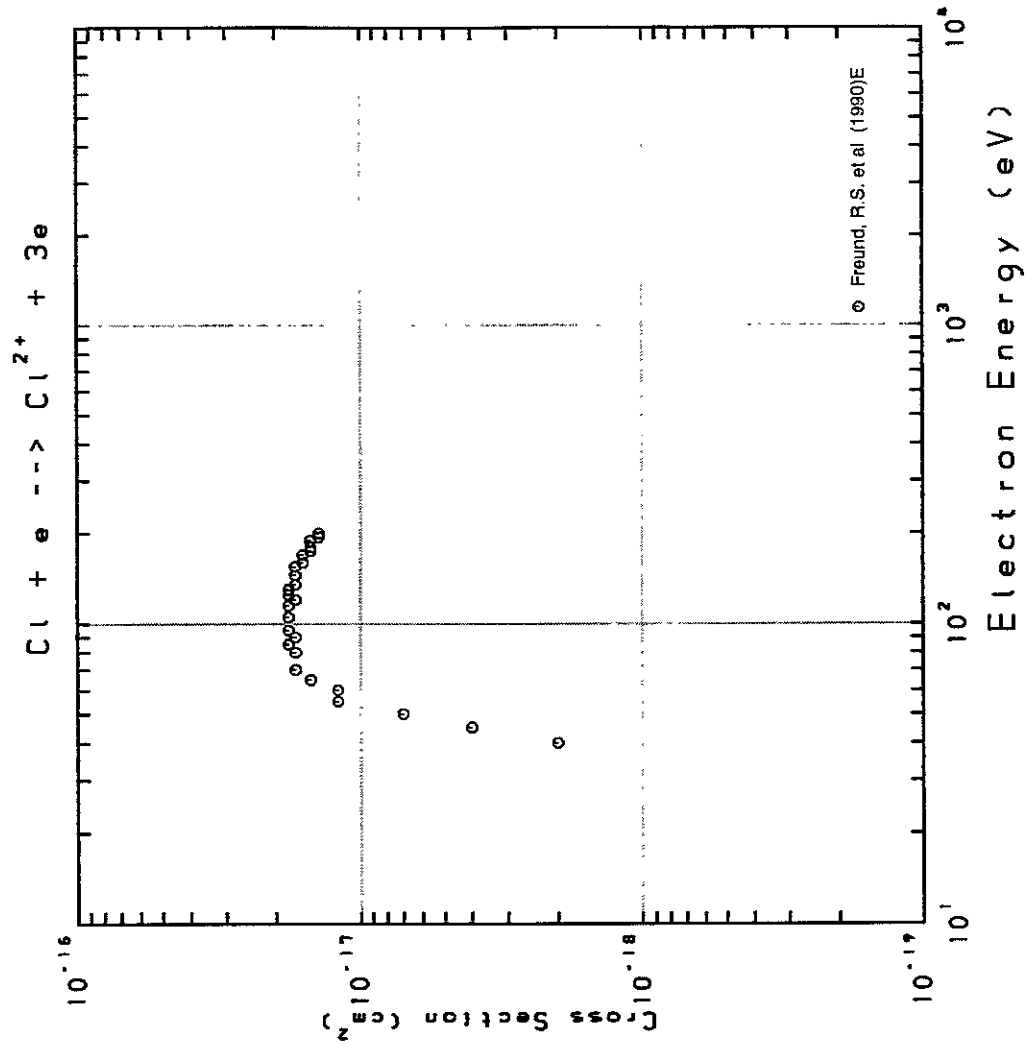


Fig. 120 $\text{Cl} \rightarrow \text{Cl}^{2+}$

AMDIS-ION

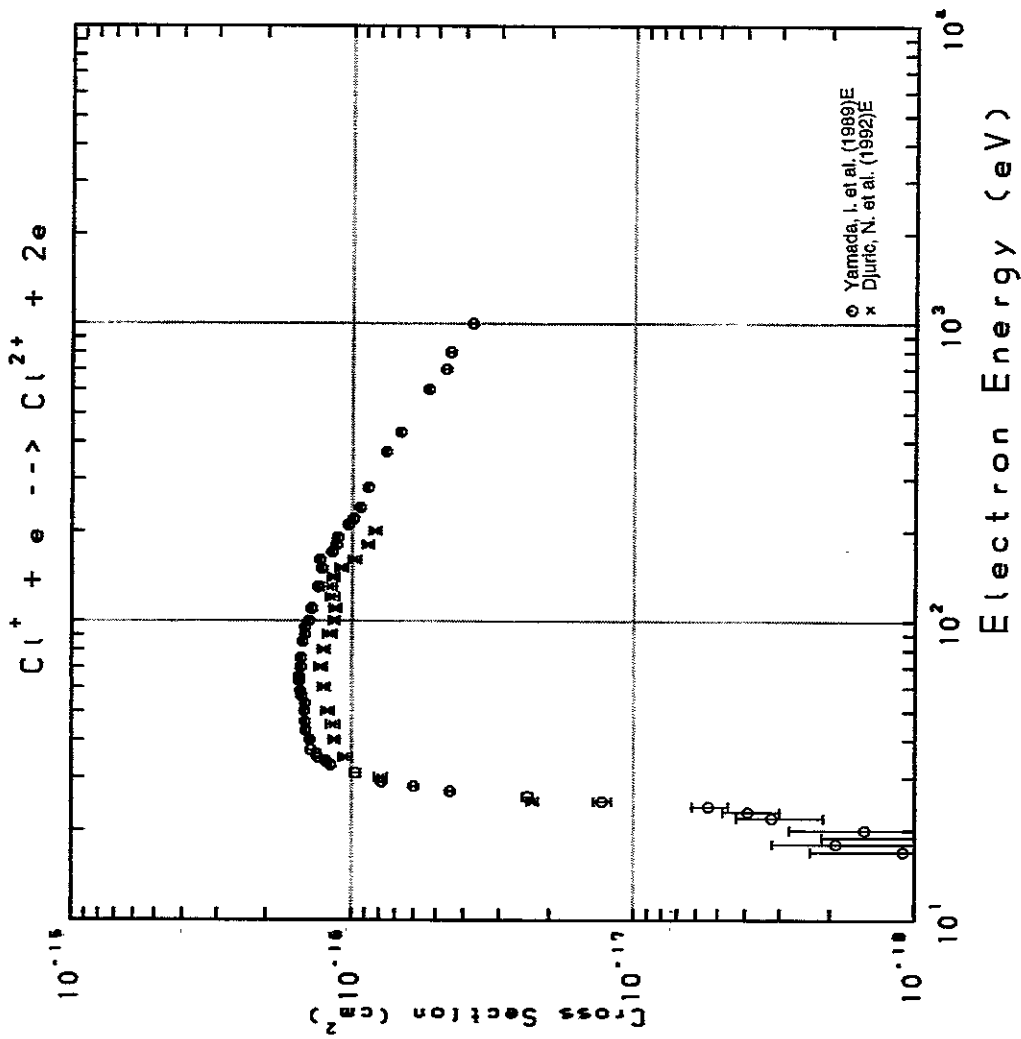


Fig. 121 $\text{Cl}^+ \rightarrow \text{Cl}^{2+}$

AMDIS-ION

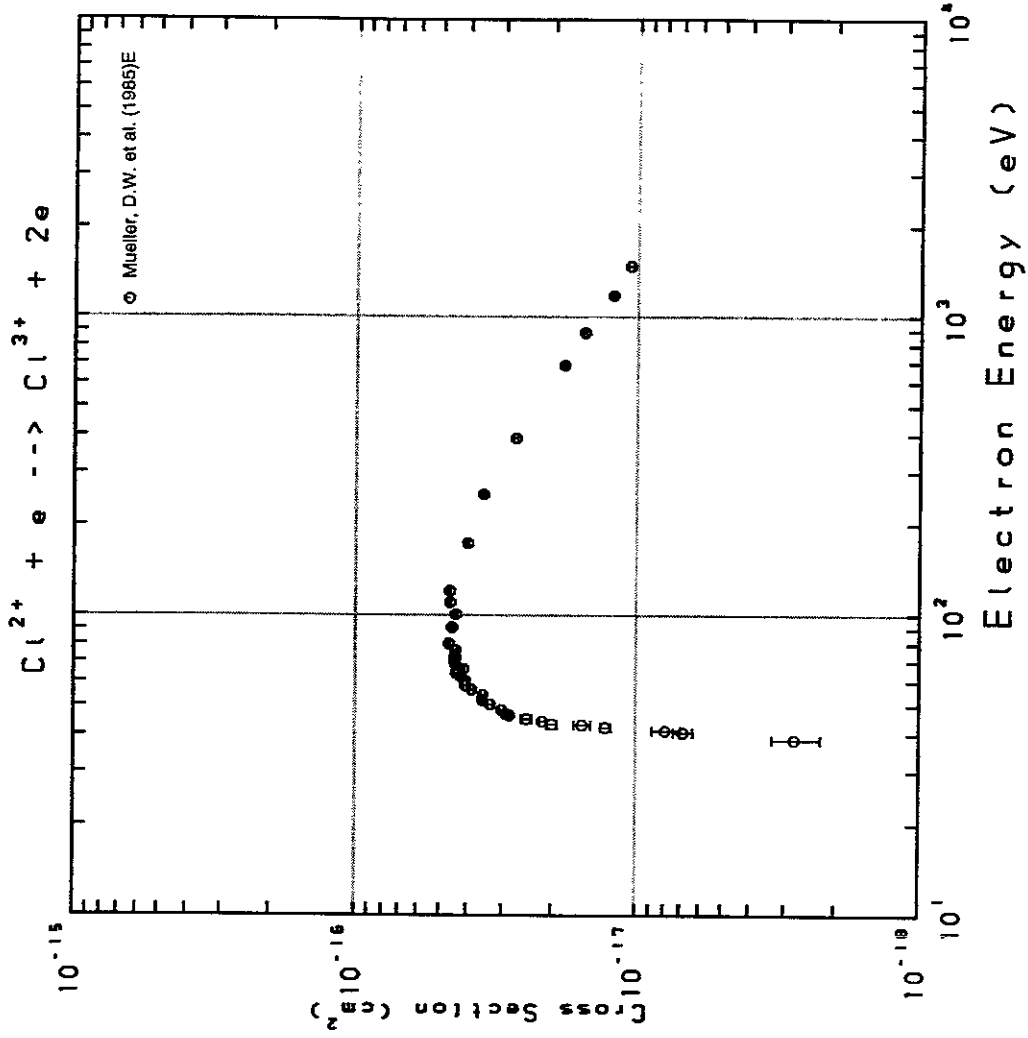


Fig. 122 $\text{Cl}^{2+} \rightarrow \text{Cl}^{3+}$

AMDIS-ION

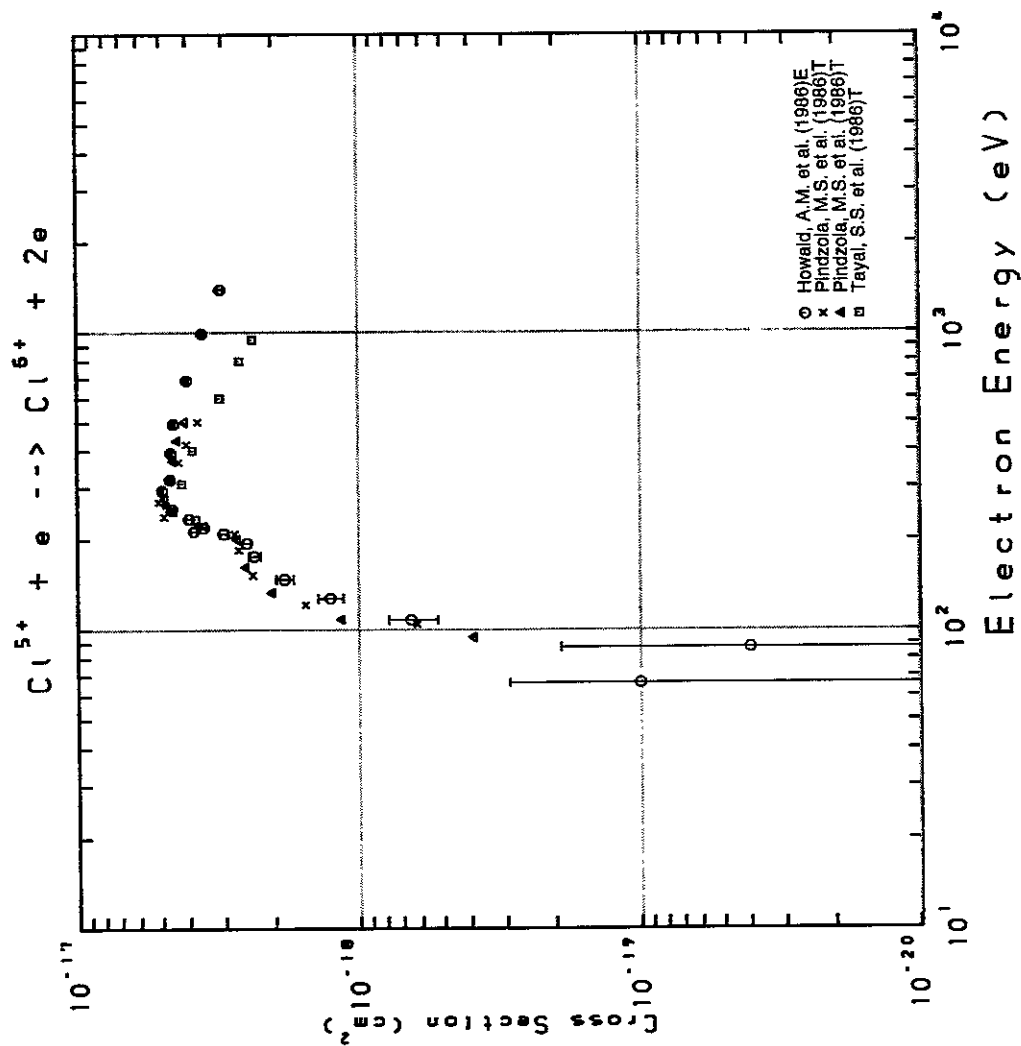


Fig. 123 $\text{Cl}^{5+} \rightarrow \text{Cl}^{6+}$

AMDIS-ION

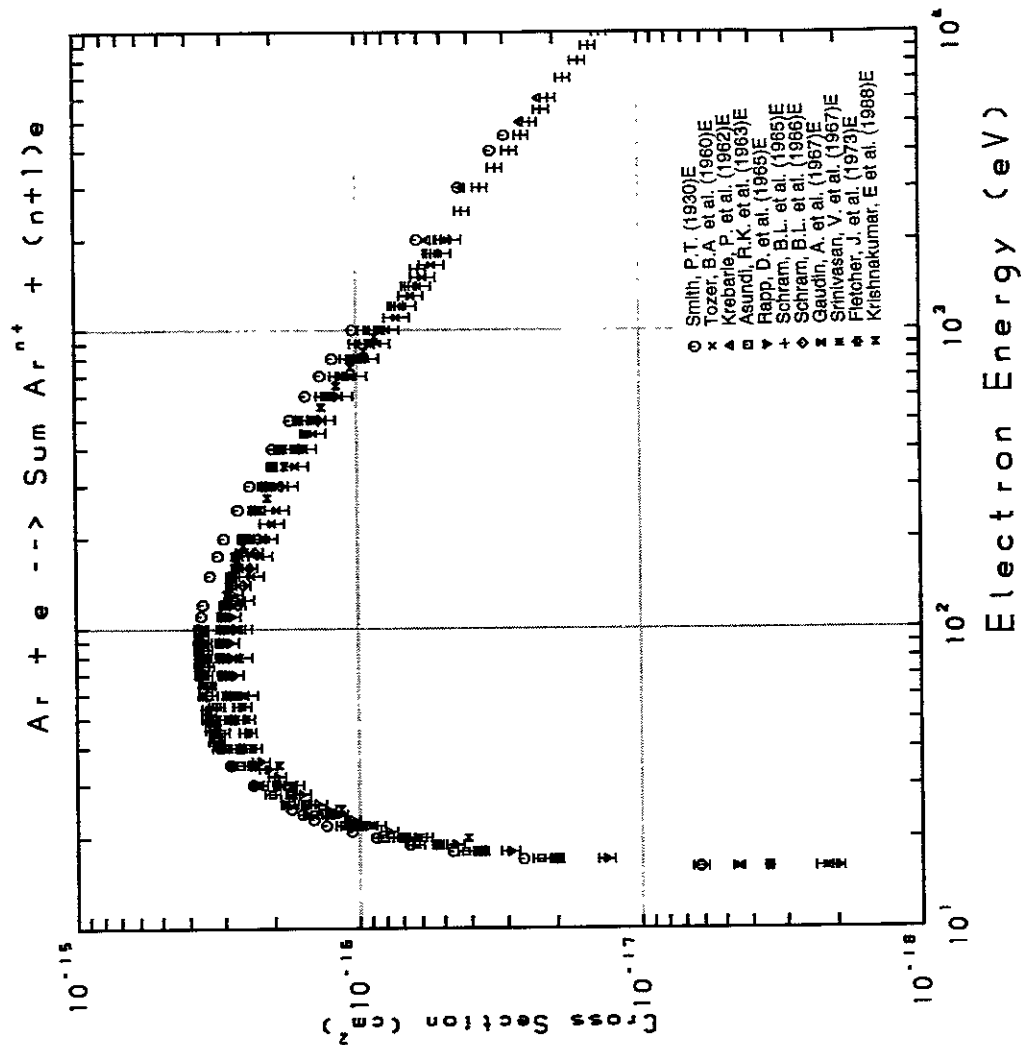


Fig. 124 $\text{Ar} \rightarrow \text{Sum Ar}^{n+}$

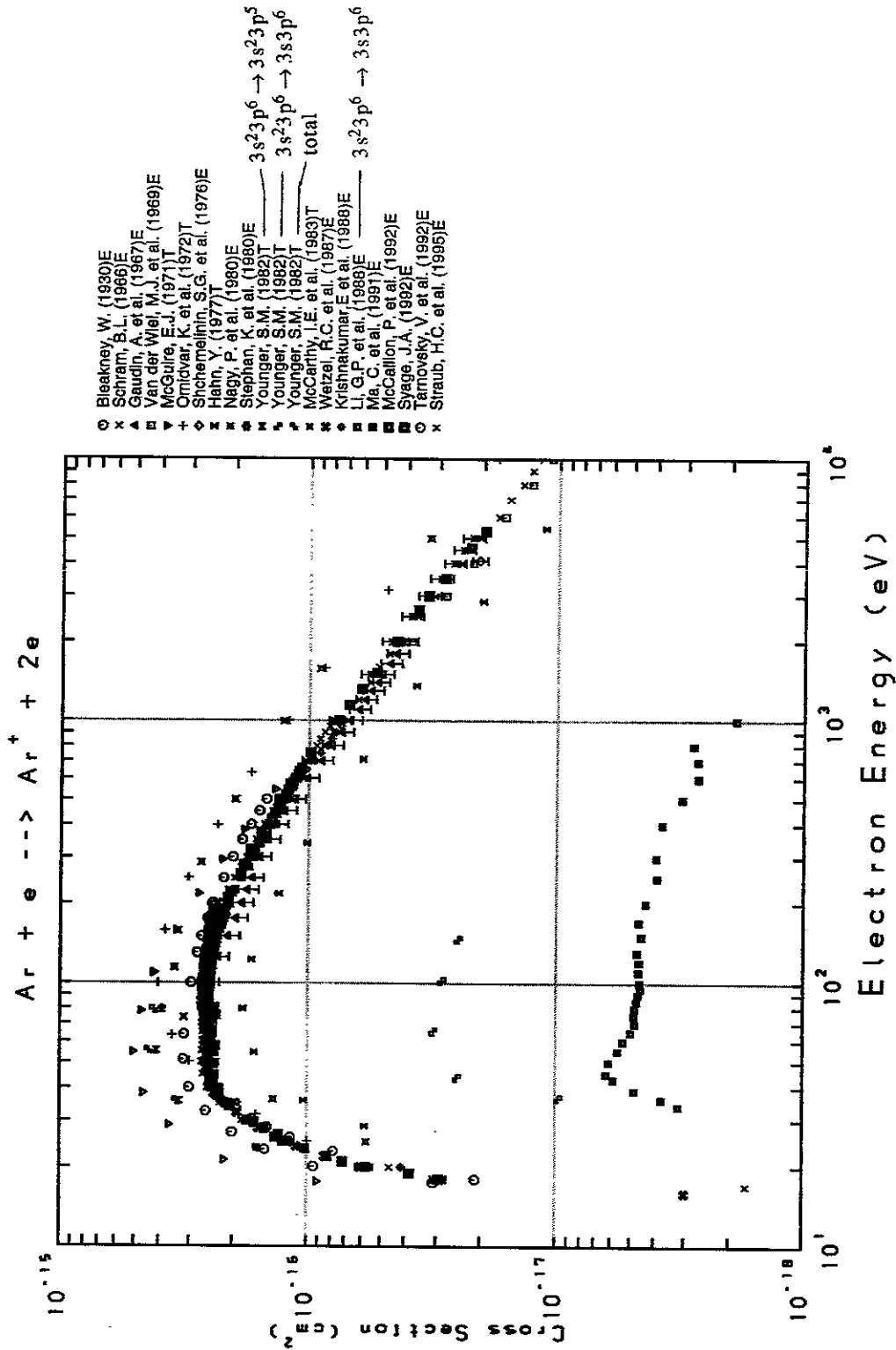
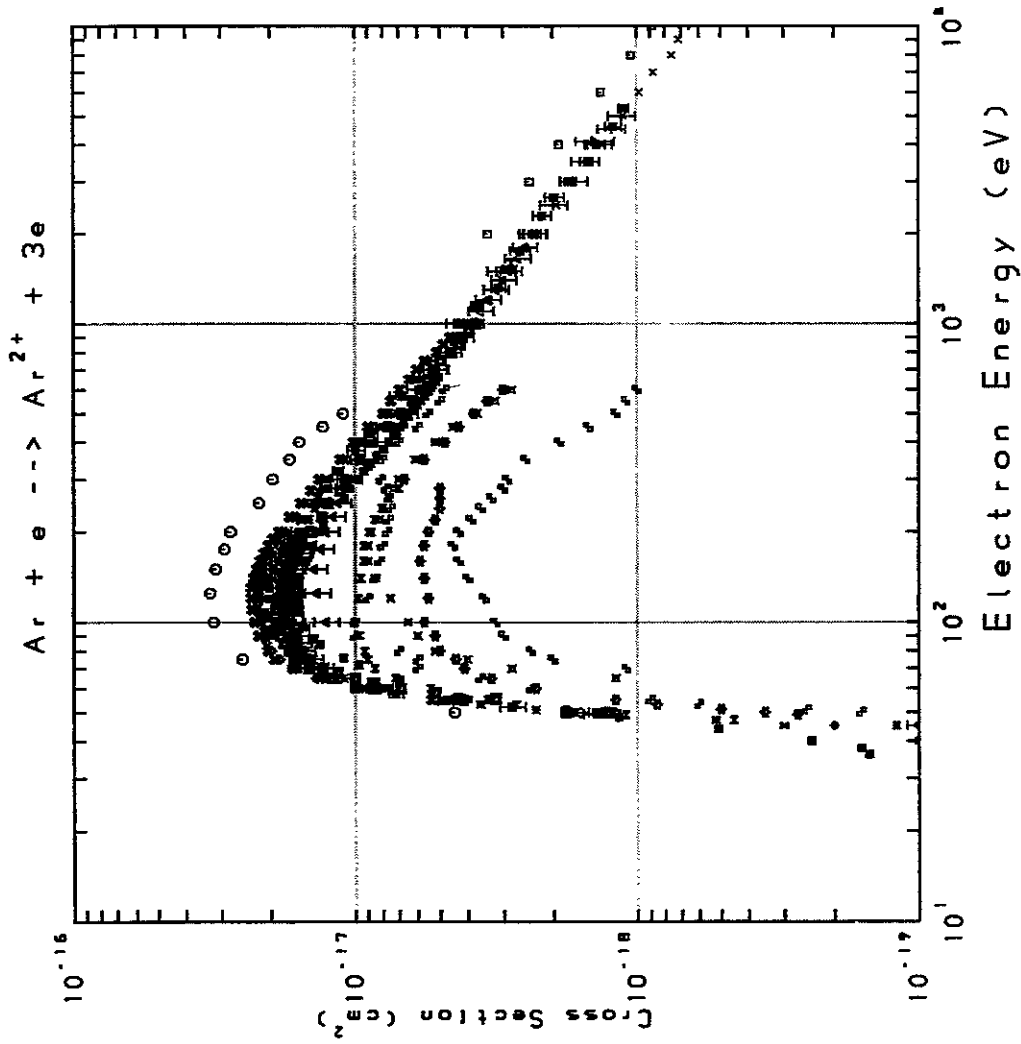


Fig. 125 Ar → Ar⁺



- Bleekney, W. (1930)E
 - × Schram, B.L. (1966)E
 - ▲ Gaudin, A. et al. (1967)E
 - Van der Wiel, M.J. et al. (1969)E
 - ▽ Stichelmeilich, S.G. et al. (1976)E
 - ◆ Nagy, P. et al. (1980)E
 - Stephan, K. et al. (1980)E
 - × Welzel, R.C. et al. (1987)E
 - × Wiesemann, K. et al. (1987)E
 - × Wiesemann, K. et al. (1987)E
 - × Wiesemann, K. et al. (1987)E
 - × Wiesemann, K. et al. (1987)E
 - × Wiesemann, K. et al. (1987)E
 - × Krishnakumar, E. et al. (1988)E
 - ◆ Ma, C. et al. (1991)E
 - McCallion, P. et al. (1992)E
 - Syage, J.A. (1992)E
 - Tarnovsky, V. et al. (1992)E
 - Straub, H.C. et al. (1995)E
- total
- 3s²3p⁶ → 3s²3p⁵1D
 - 3s²3p⁶ → 3s²3p⁵3P
 - 3s²3p⁶ → 3s²3p⁵1S
 - 3s²3p⁶ → 3s²3p⁵3P^o
 - 3s²3p⁶ → 3s²3p⁵5D^o

Fig. 126 Ar → Ar²⁺

AMDIS-ION

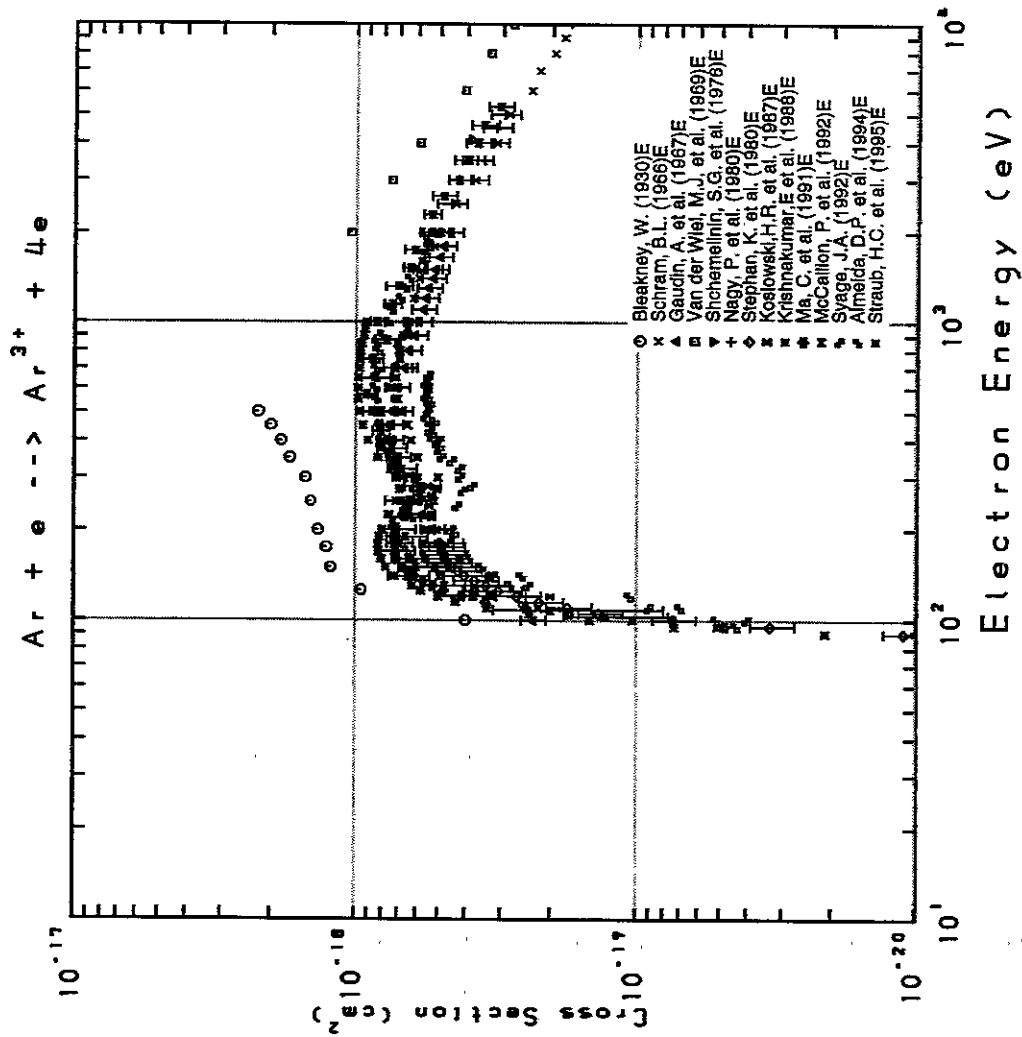


Fig. 127 $Ar \rightarrow Ar^{3+}$

AMDIS-ION

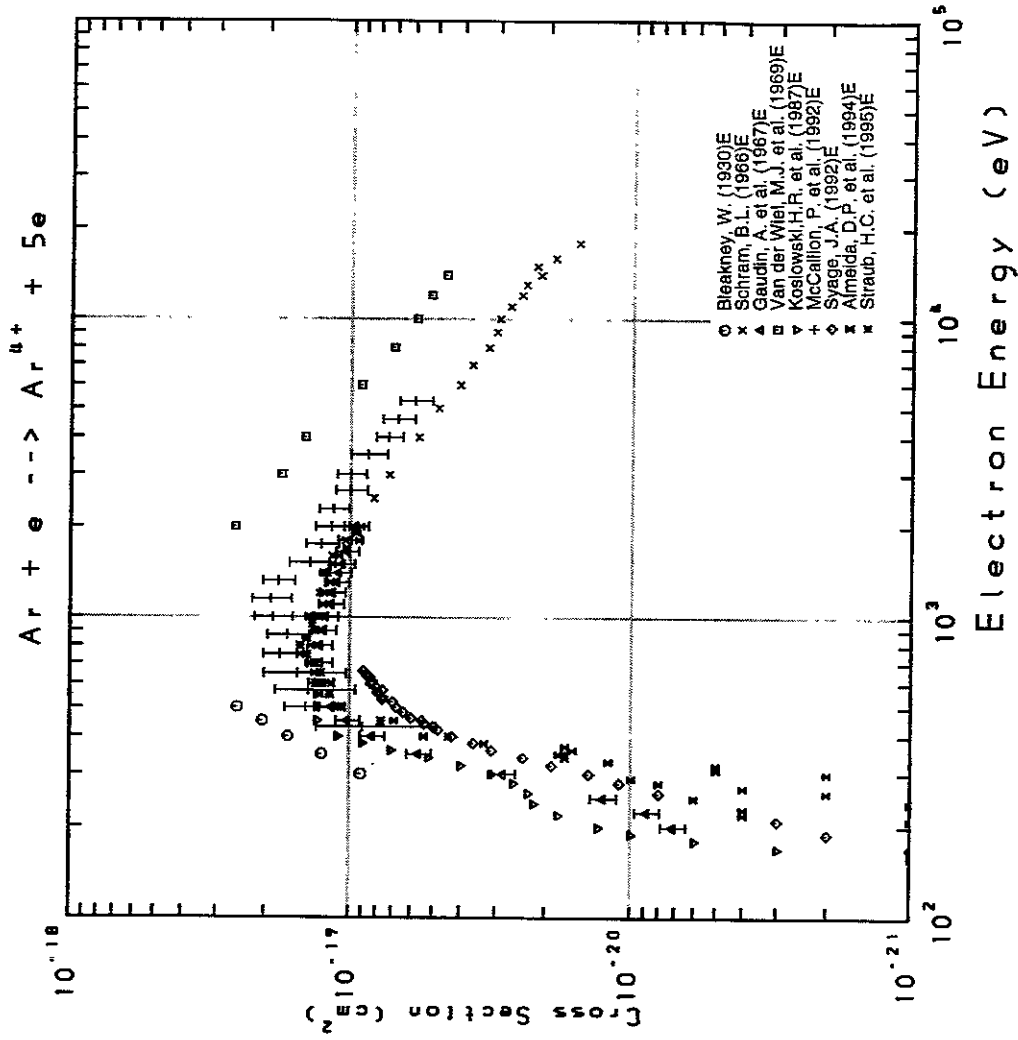


Fig. 128 $Ar \rightarrow Ar^{4+}$

AMDIS-ION

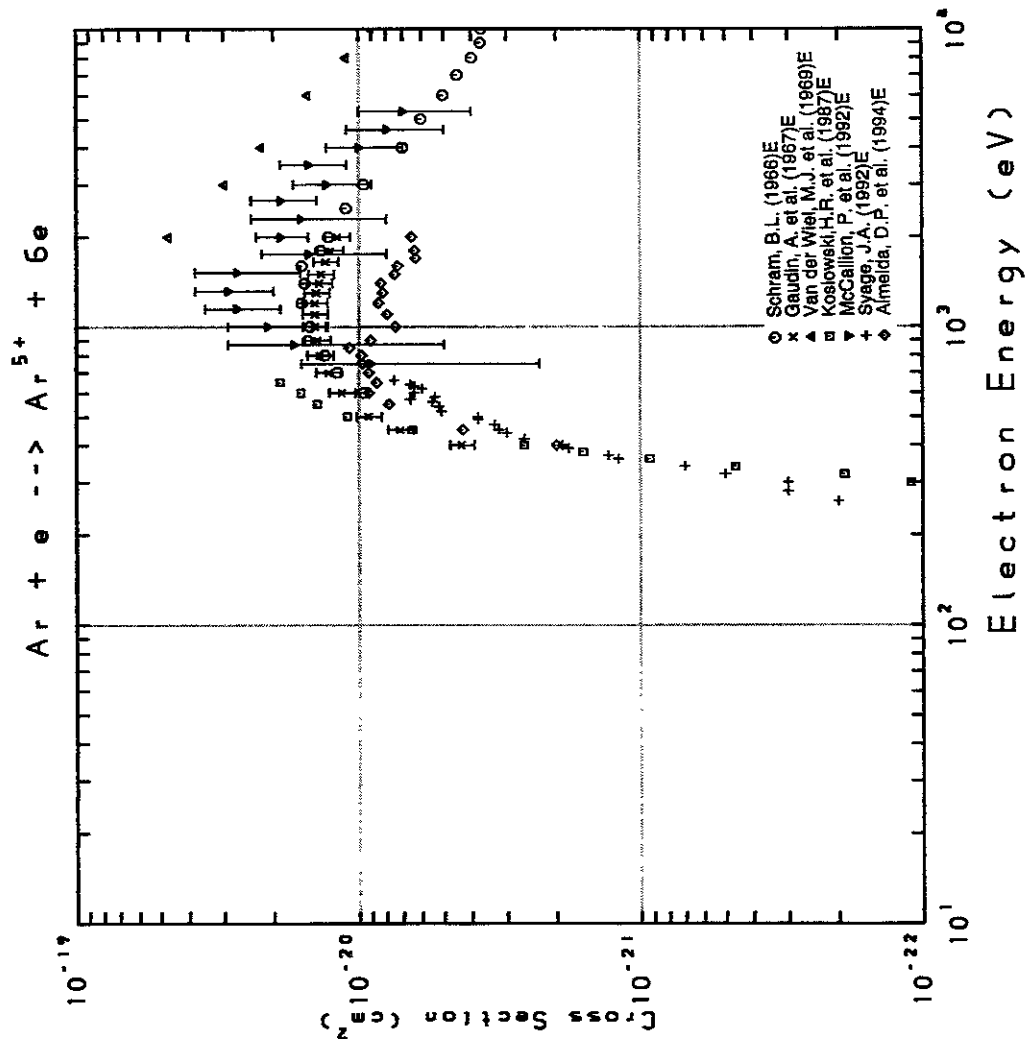


Fig. 129 $\text{Ar} \rightarrow \text{Ar}^{5+}$

AMDIS-ION

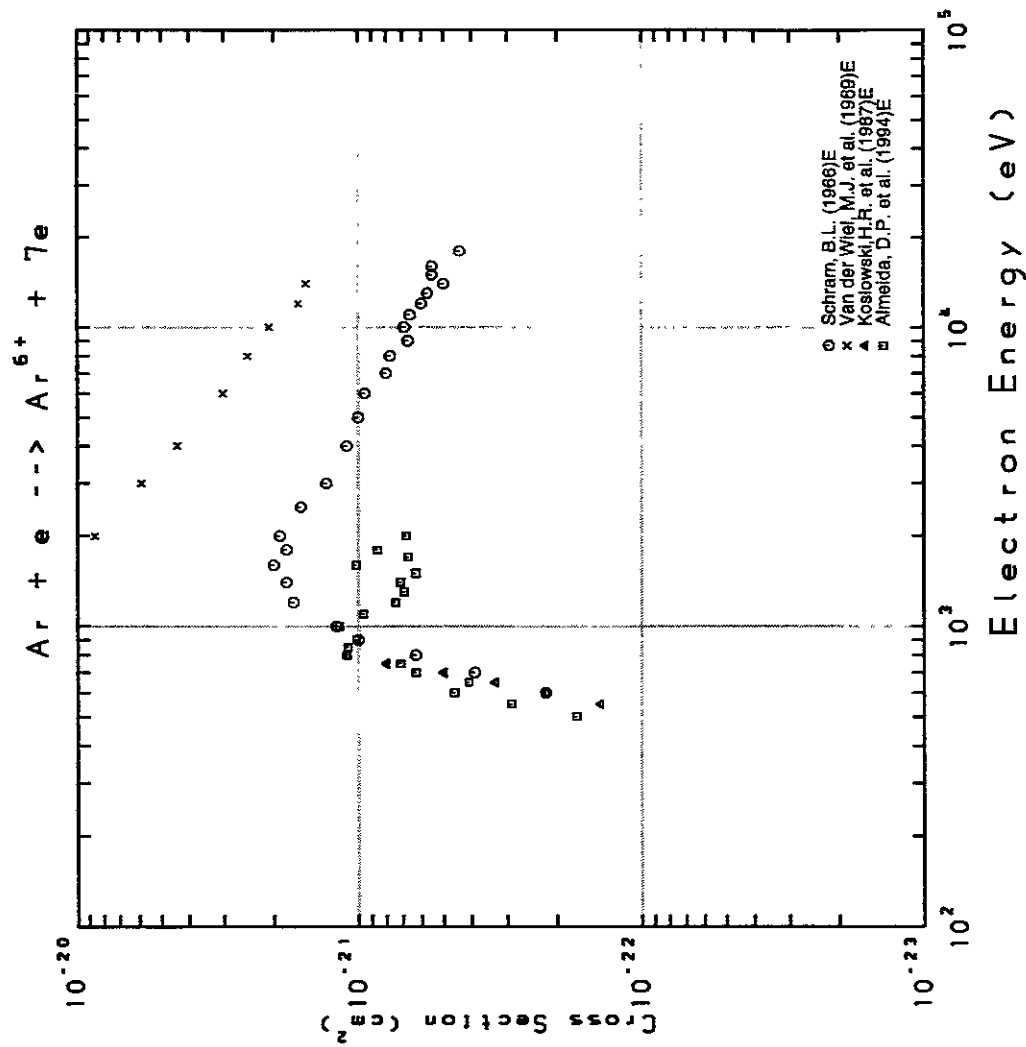


Fig. 130 $\text{Ar} \rightarrow \text{Ar}^{6+}$

AMDIS-ION

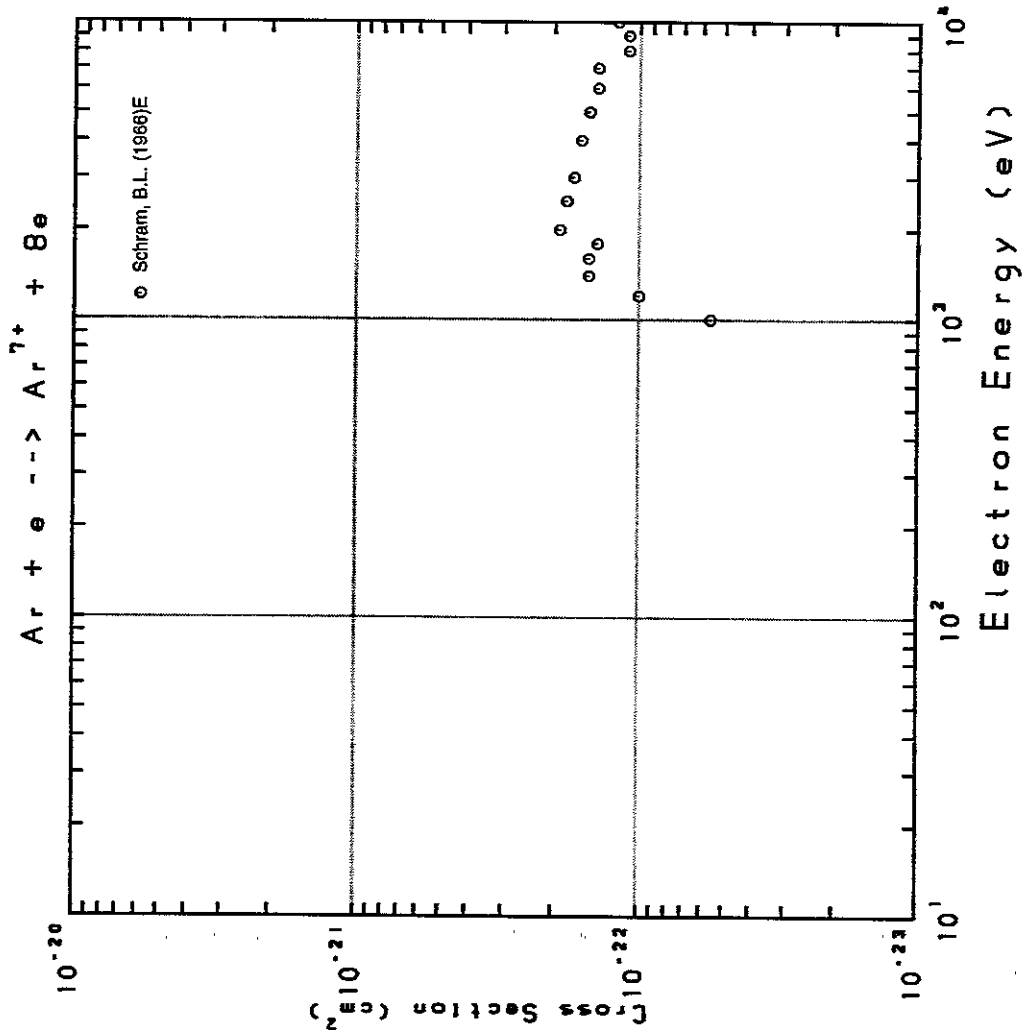


Fig. 131 $Ar \rightarrow Ar^{7+}$

AMDIS-ION

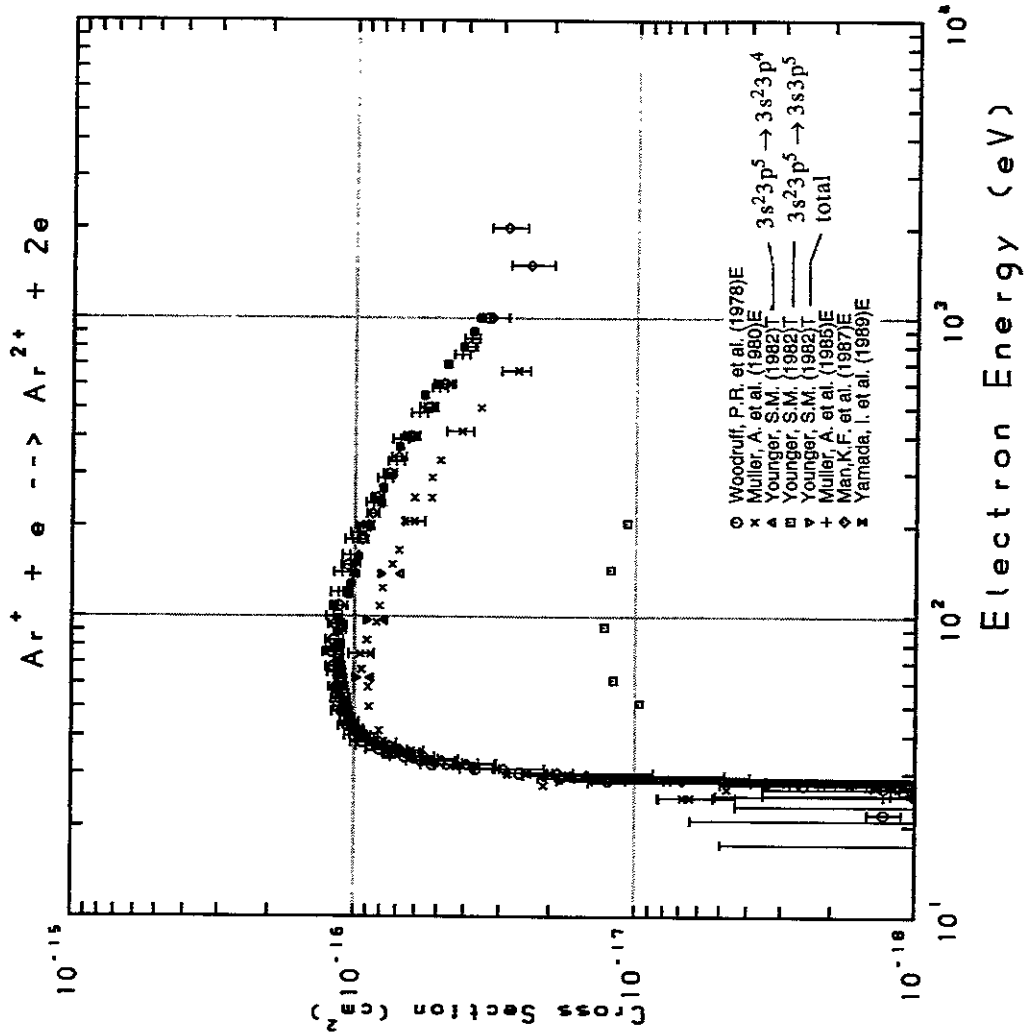


Fig. 132 $Ar^+ \rightarrow Ar^{2+}$

AMDIS-ION

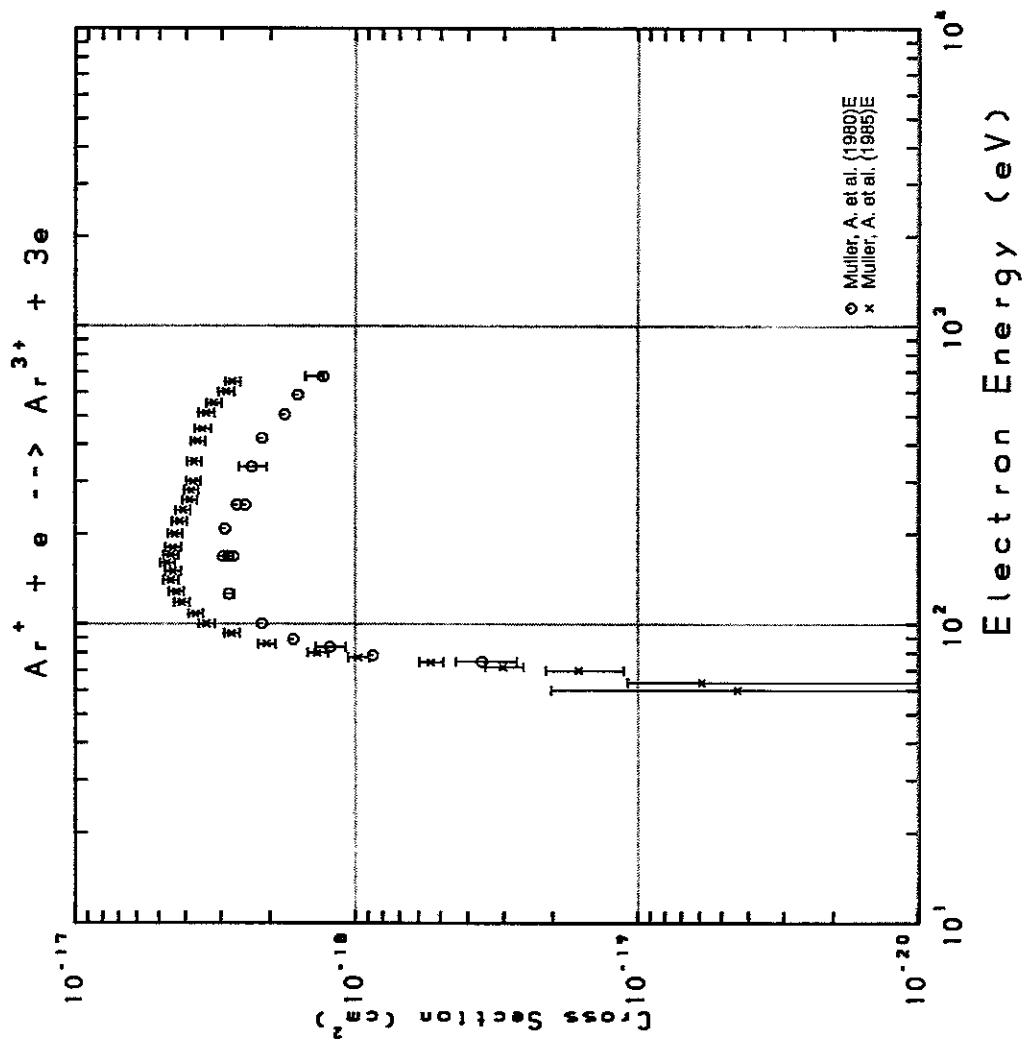


Fig. 133 $Ar^+ \rightarrow Ar^{3+}$

AMDIS-ION

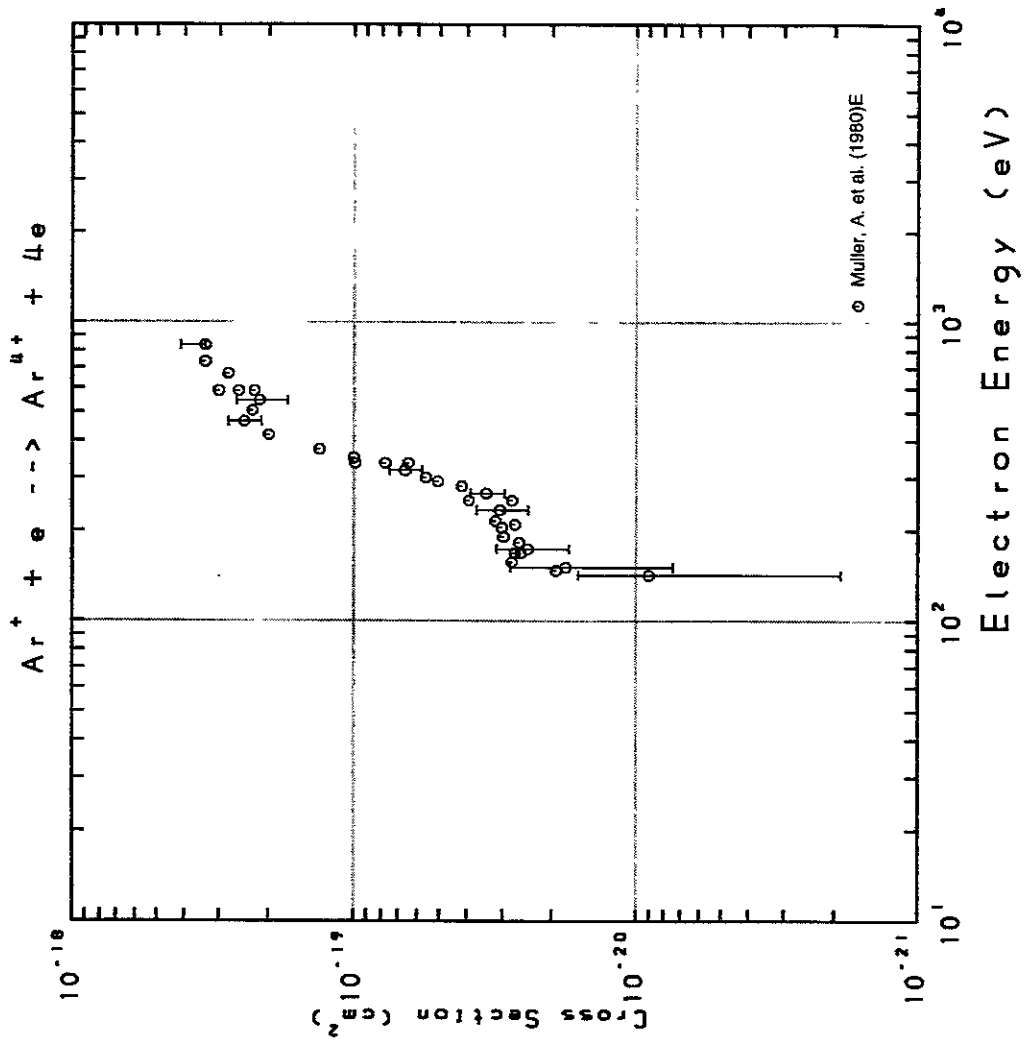


Fig. 134 $Ar^+ \rightarrow Ar^{4+}$

AMDIS-ION

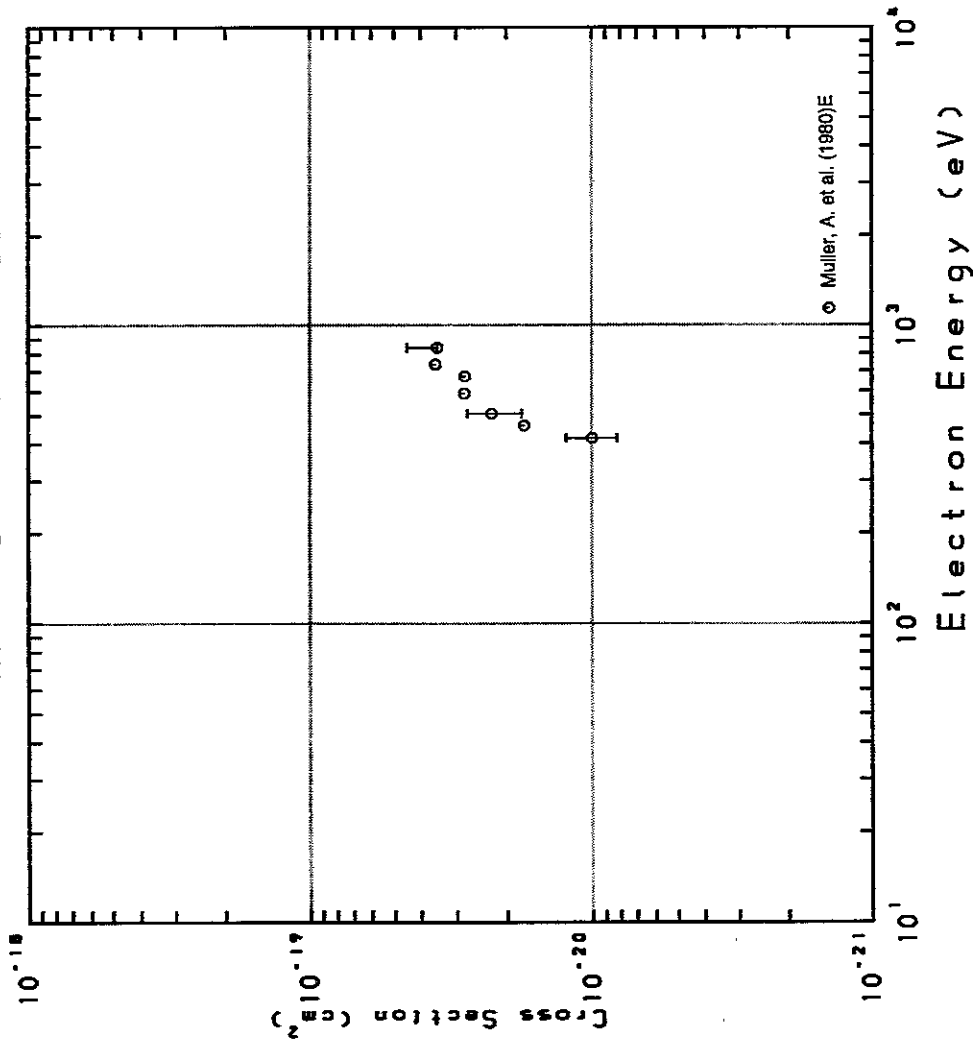


Fig. 135 $Ar^+ \rightarrow Ar^{5+}$

AMDIS-ION

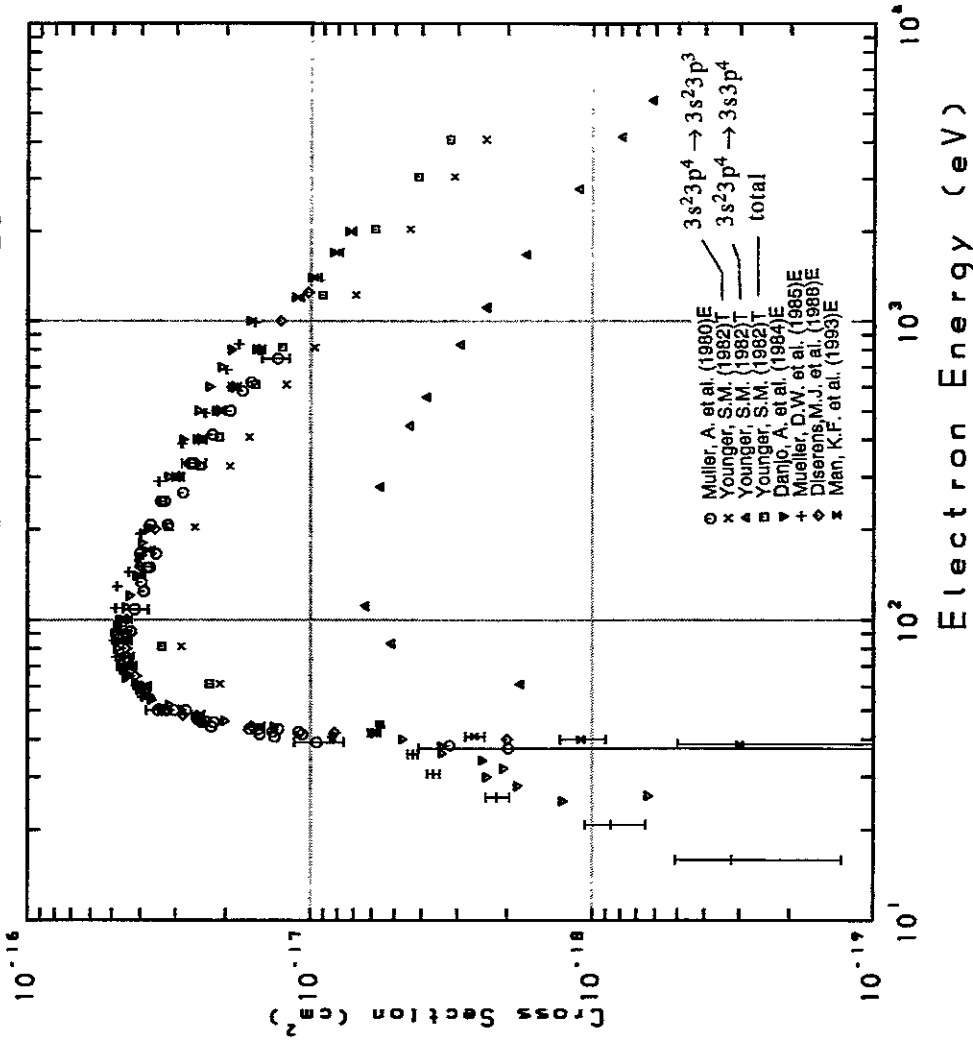


Fig. 136 $Ar^{2+} \rightarrow Ar^{3+}$

AMDIS-ION

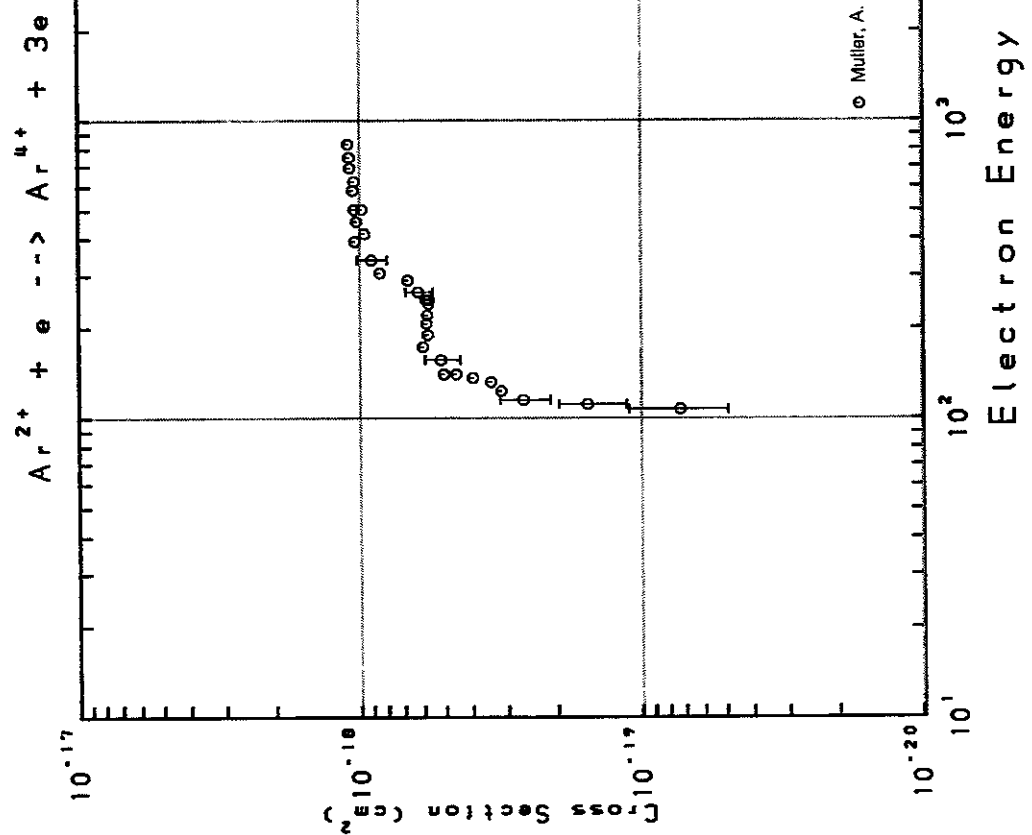


Fig. 137 $Ar^{2+} \rightarrow Ar^{4+}$

AMDIS-ION

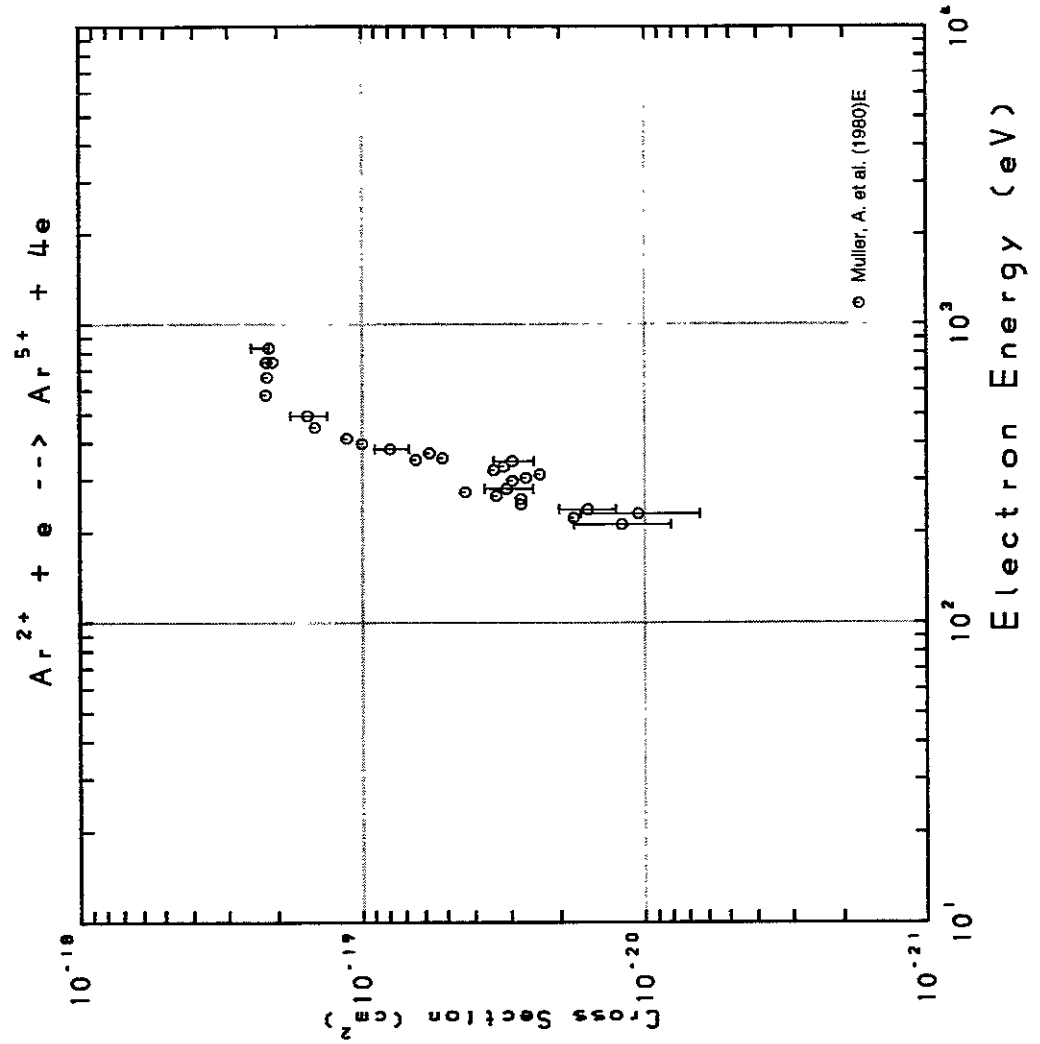


Fig. 138 $Ar^{2+} \rightarrow Ar^{5+}$

AMDIS-ION

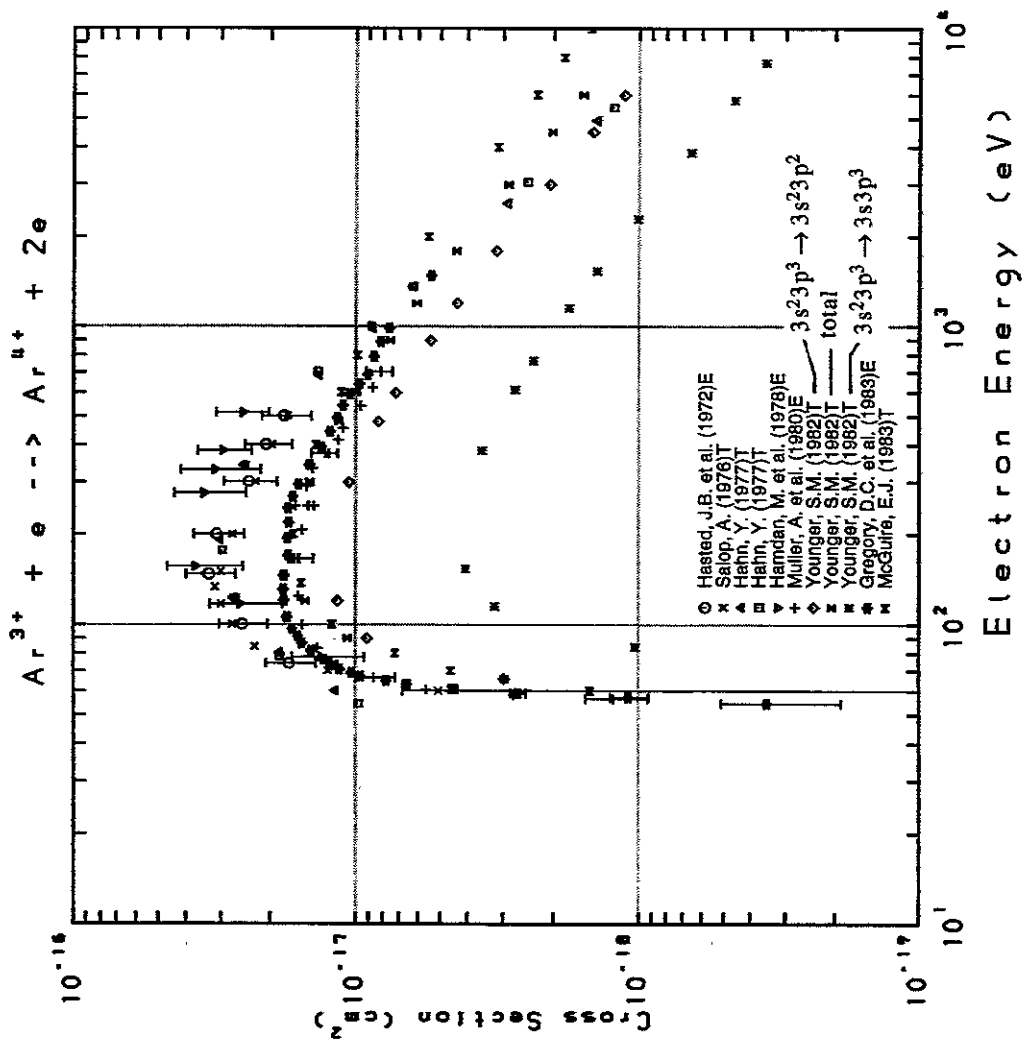


Fig. 139 $Ar^{3+} \rightarrow Ar^{4+}$

AMDIS-ION

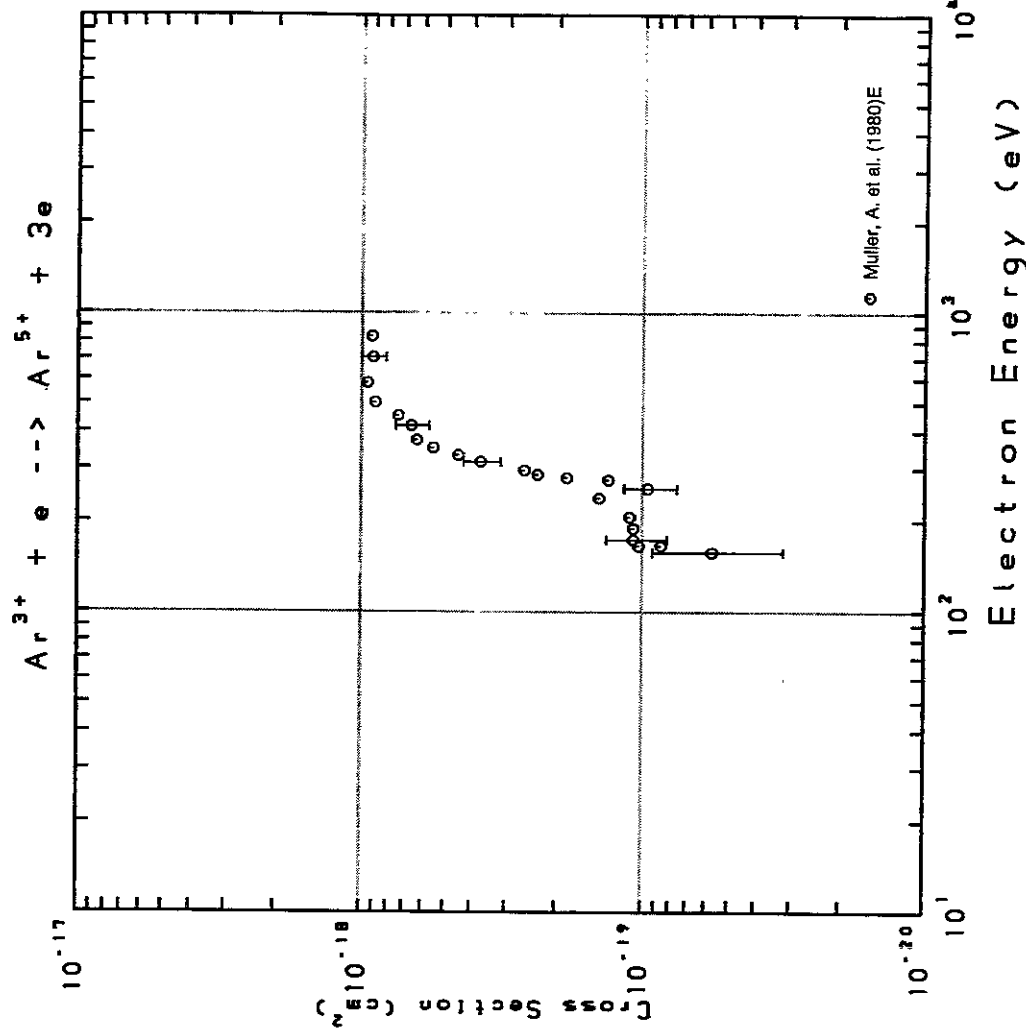


Fig. 140 $Ar^{3+} \rightarrow Ar^{5+}$

AMDIS-ION

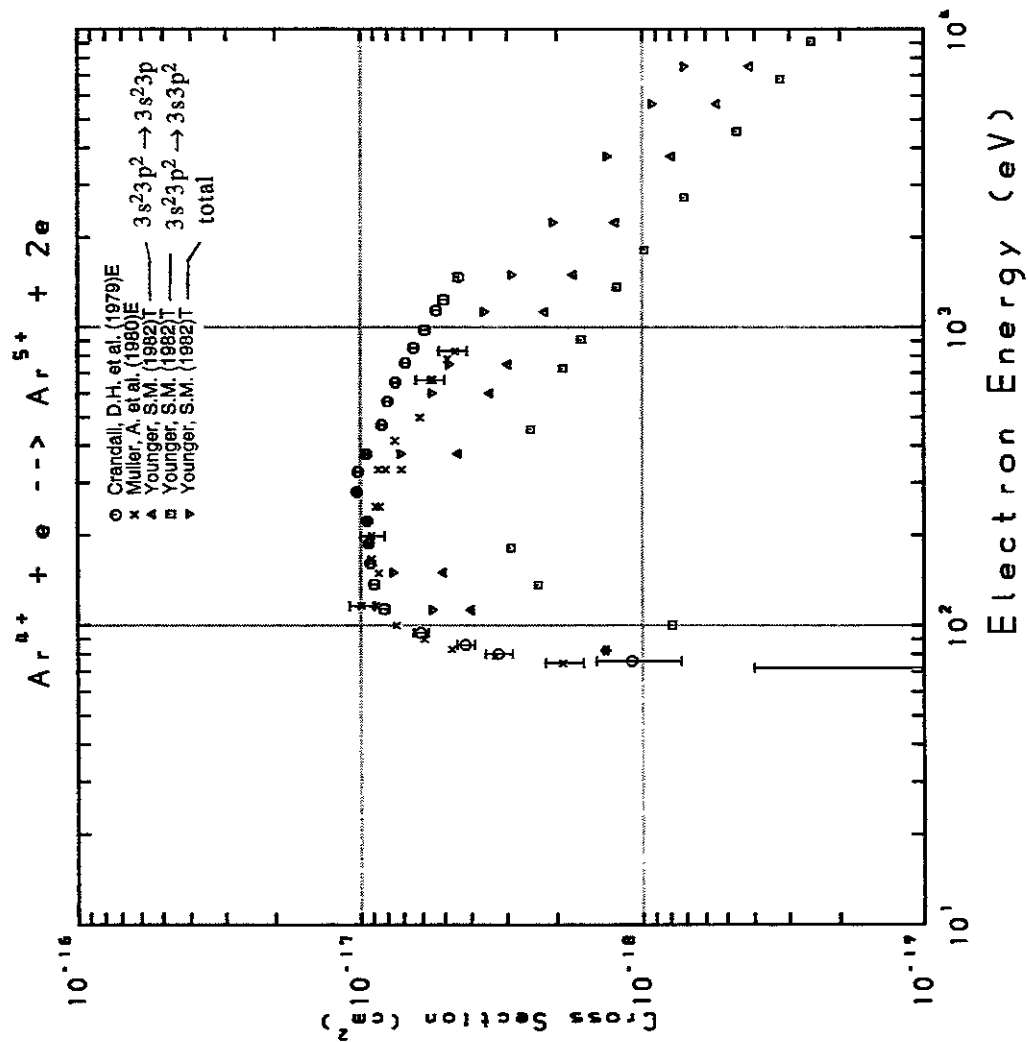


Fig. 141 $Ar^{4+} \rightarrow Ar^{5+}$

AMDIS-ION

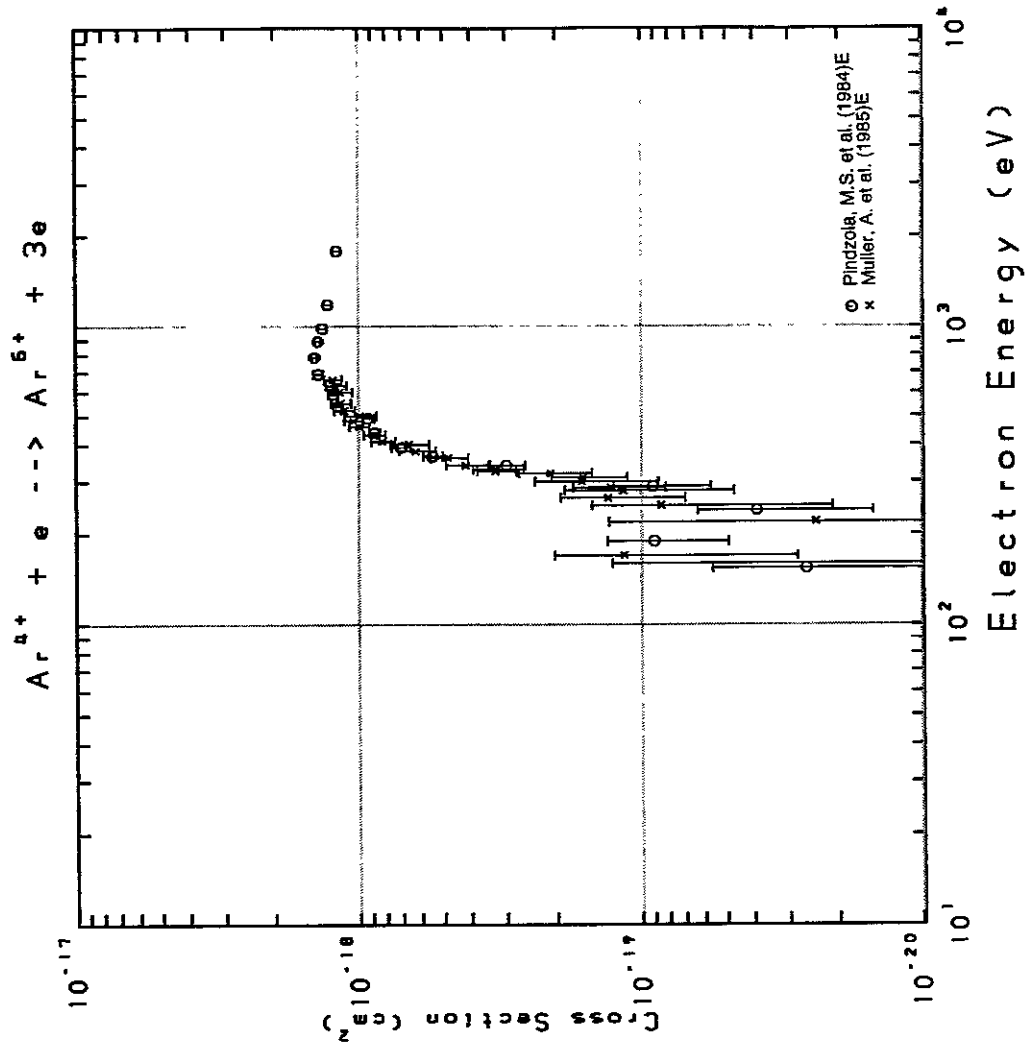


Fig. 142 $Ar^{4+} \rightarrow Ar^{6+}$

AMDIS-ION

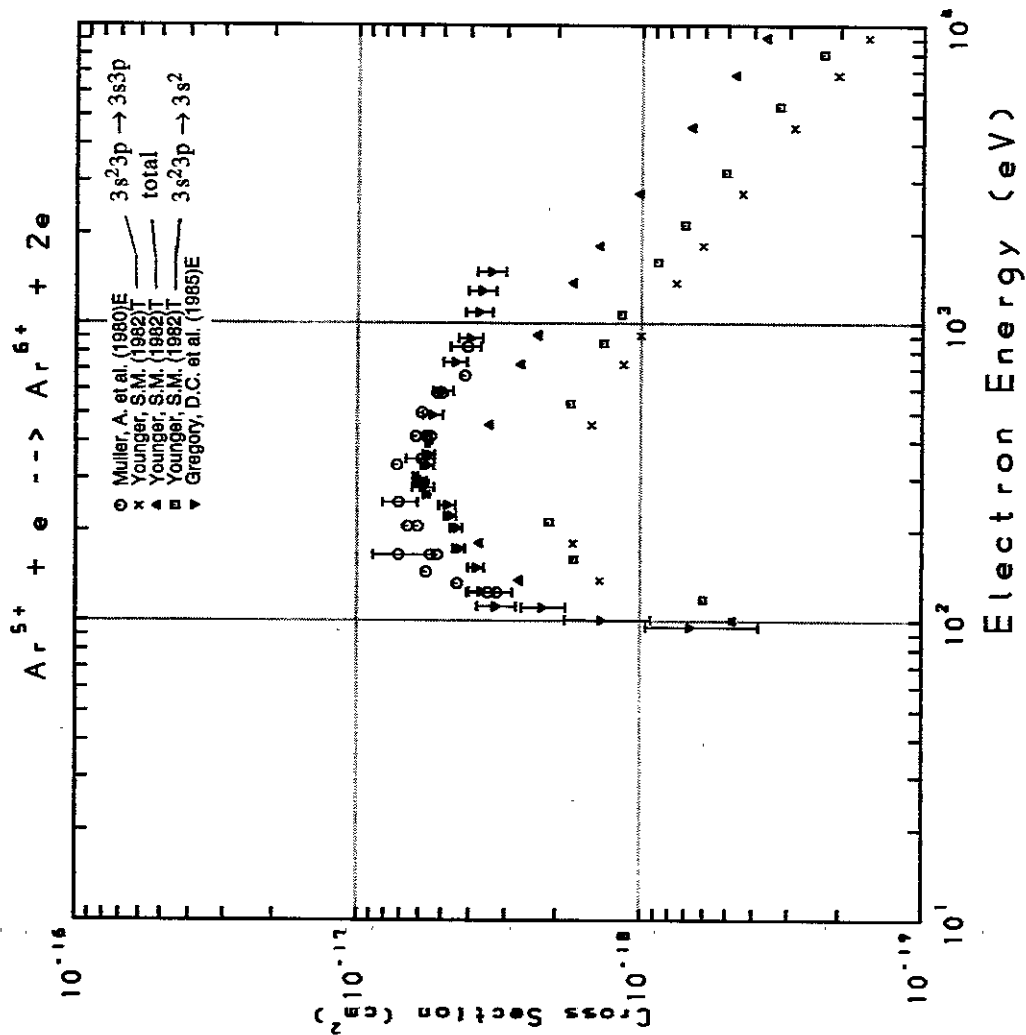


Fig. 143 $Ar^{5+} \rightarrow Ar^{6+}$

AMDIS-ION

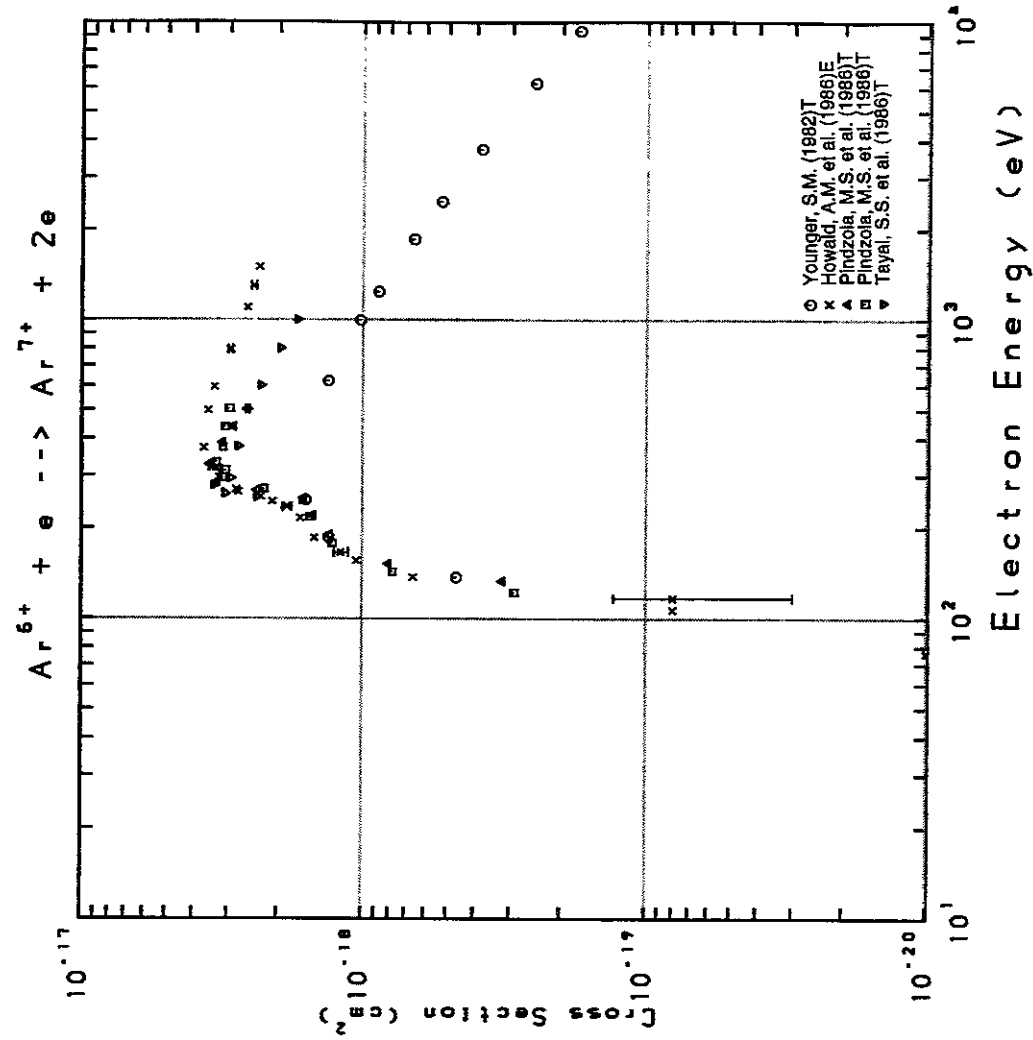


Fig. 144 $Ar^{6+} \rightarrow Ar^{7+}$

AMDIS-ION

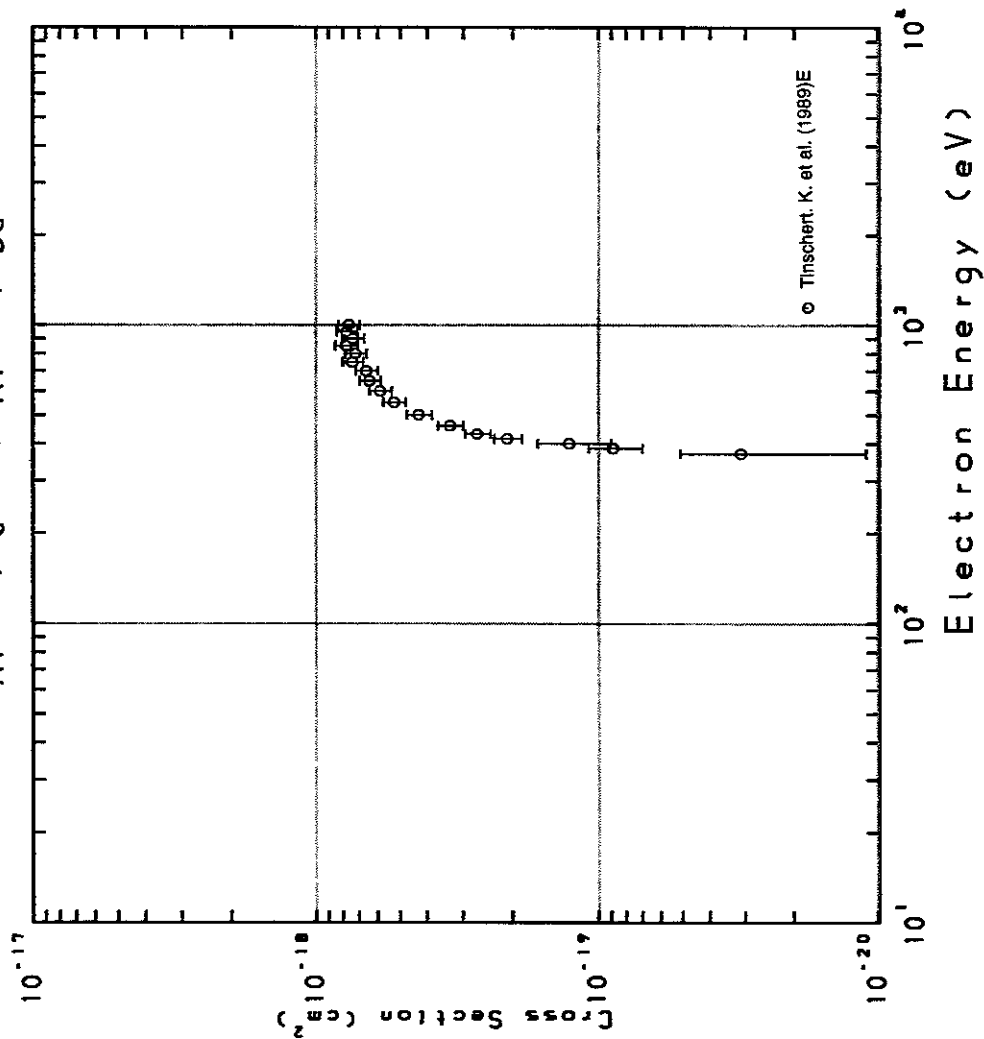


Fig. 145 $\text{Ar}^{6+} \rightarrow \text{Ar}^{8+}$

AMDIS-ION

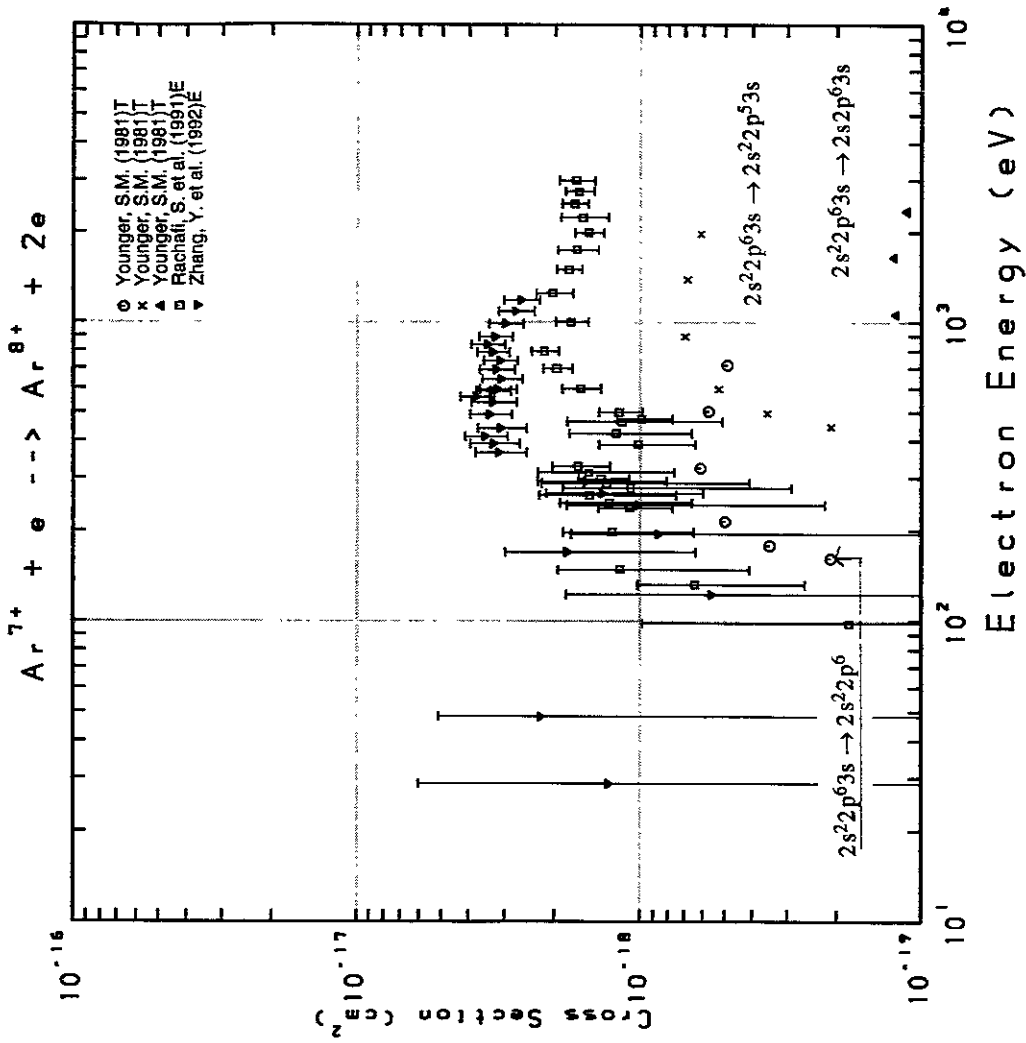


Fig. 146 $\text{Ar}^{7+} \rightarrow \text{Ar}^{8+}$

AMDIS-ION

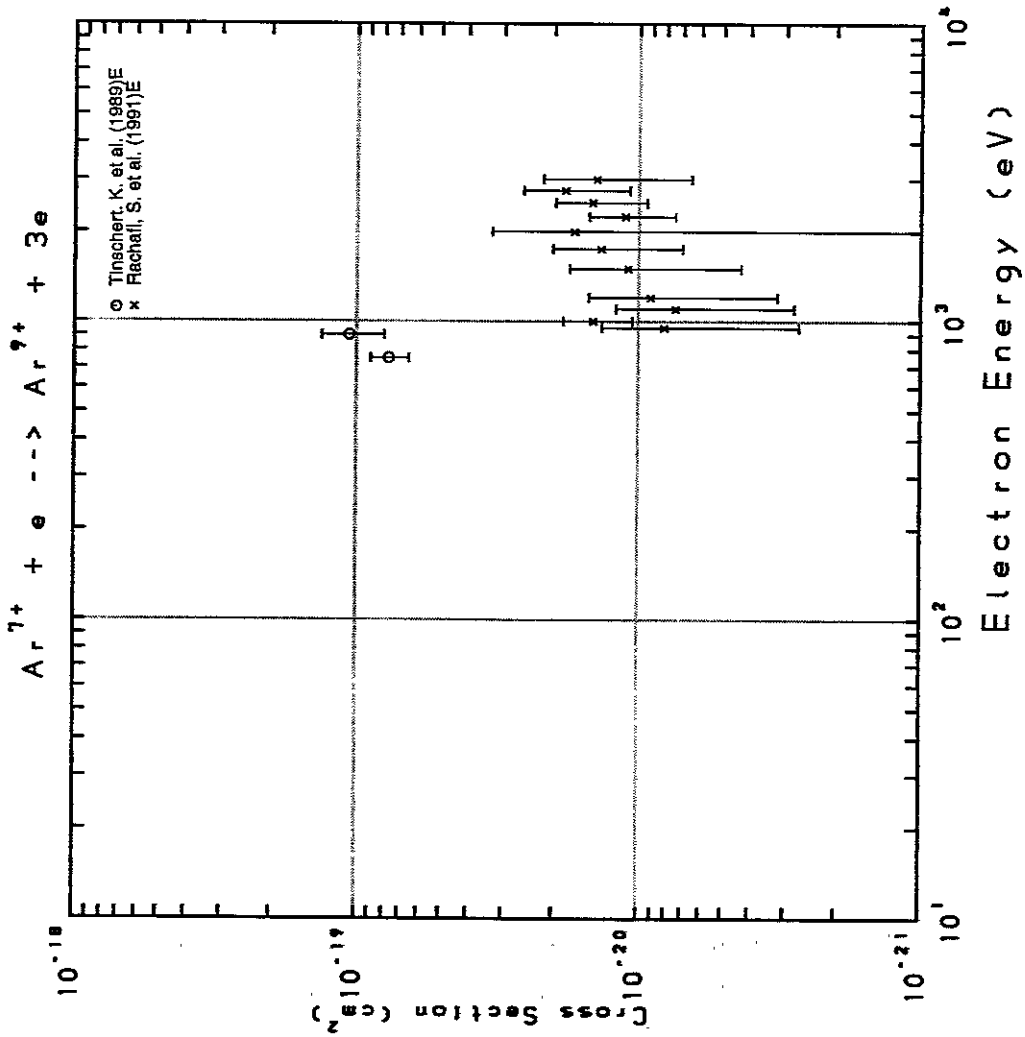


Fig. 147 $Ar^{7+} \rightarrow Ar^{9+}$

AMDIS-ION

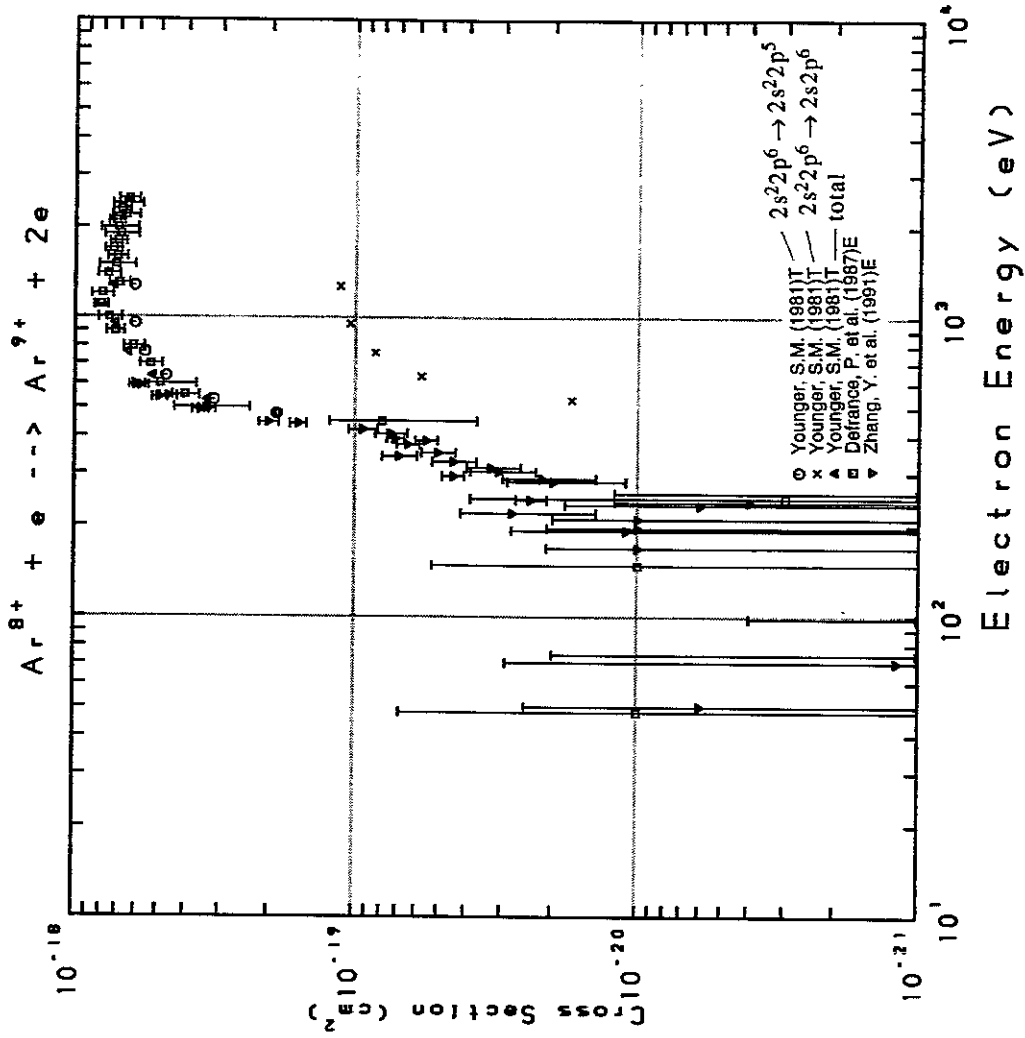


Fig. 148 $Ar^{8+} \rightarrow Ar^{9+}$

AMDIS-ION

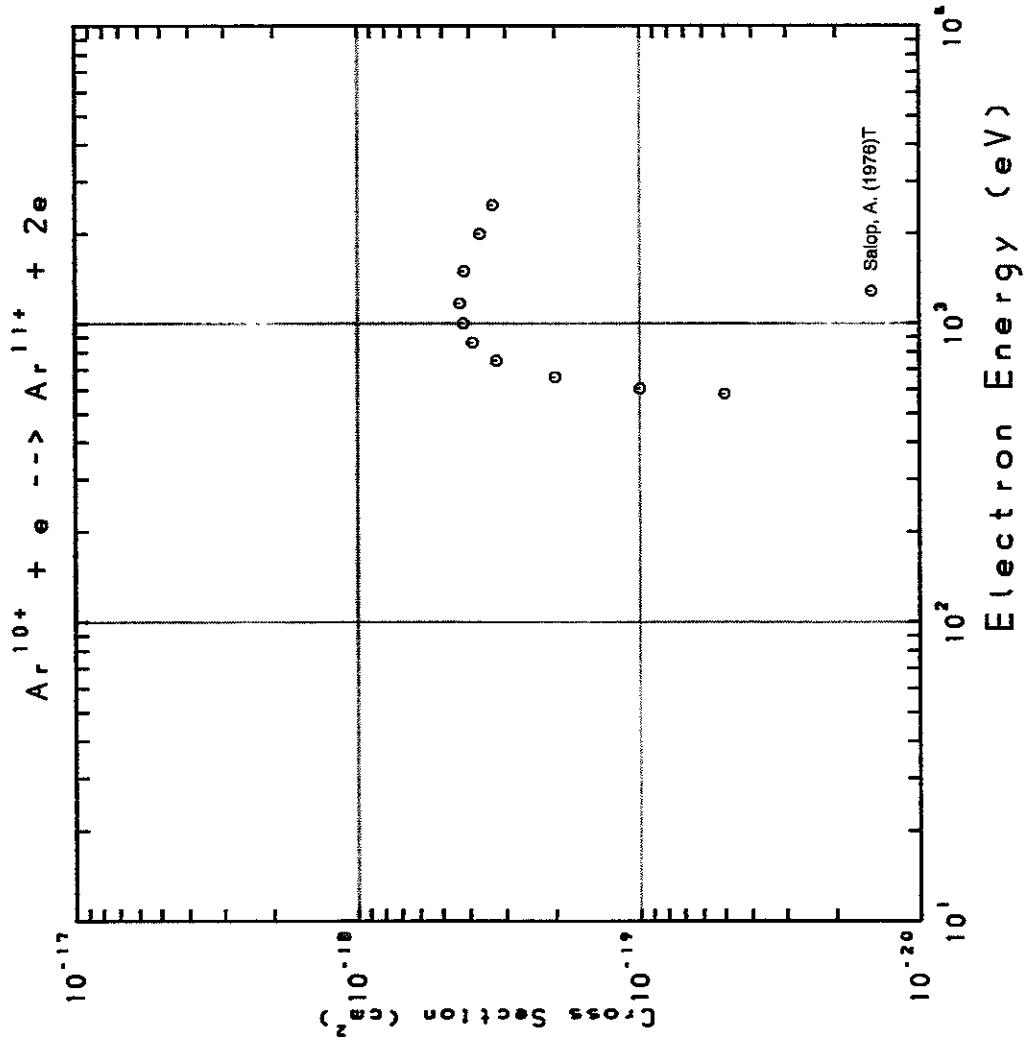


Fig. 149 $Ar^{10+} \rightarrow Ar^{11+}$

AMDIS-ION

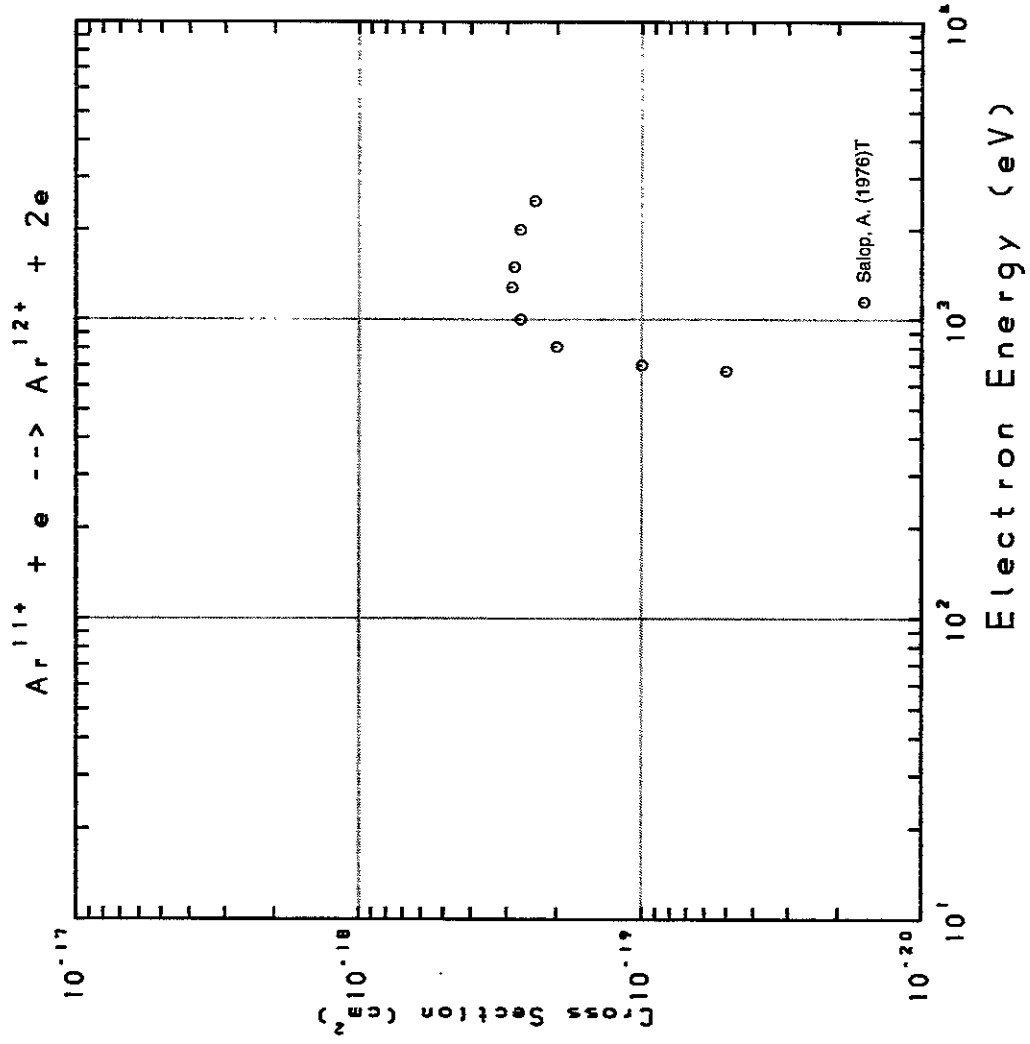


Fig. 150 $Ar^{11+} \rightarrow Ar^{12+}$

AMDIS-ION

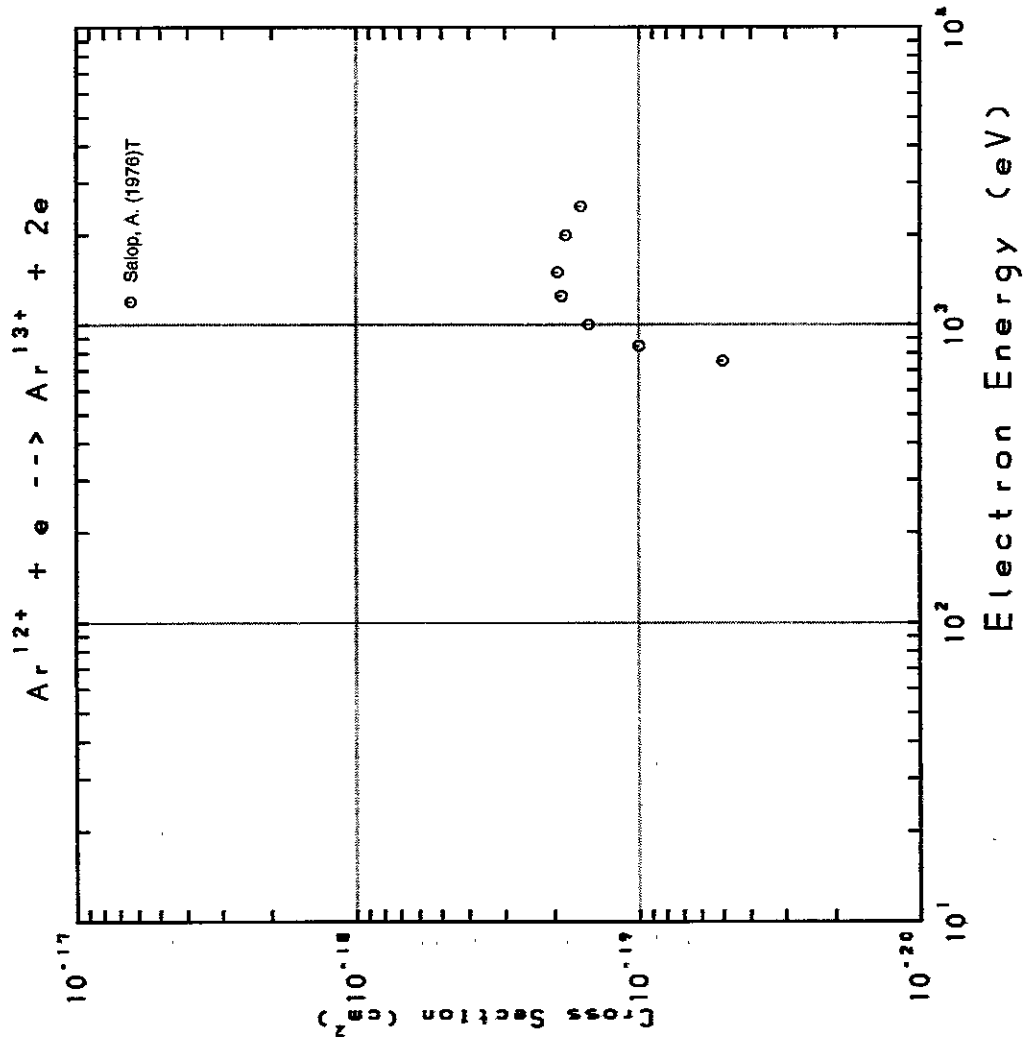


Fig. 151 $\text{Ar}^{12+} \rightarrow \text{Ar}^{13+}$

AMDIS-ION

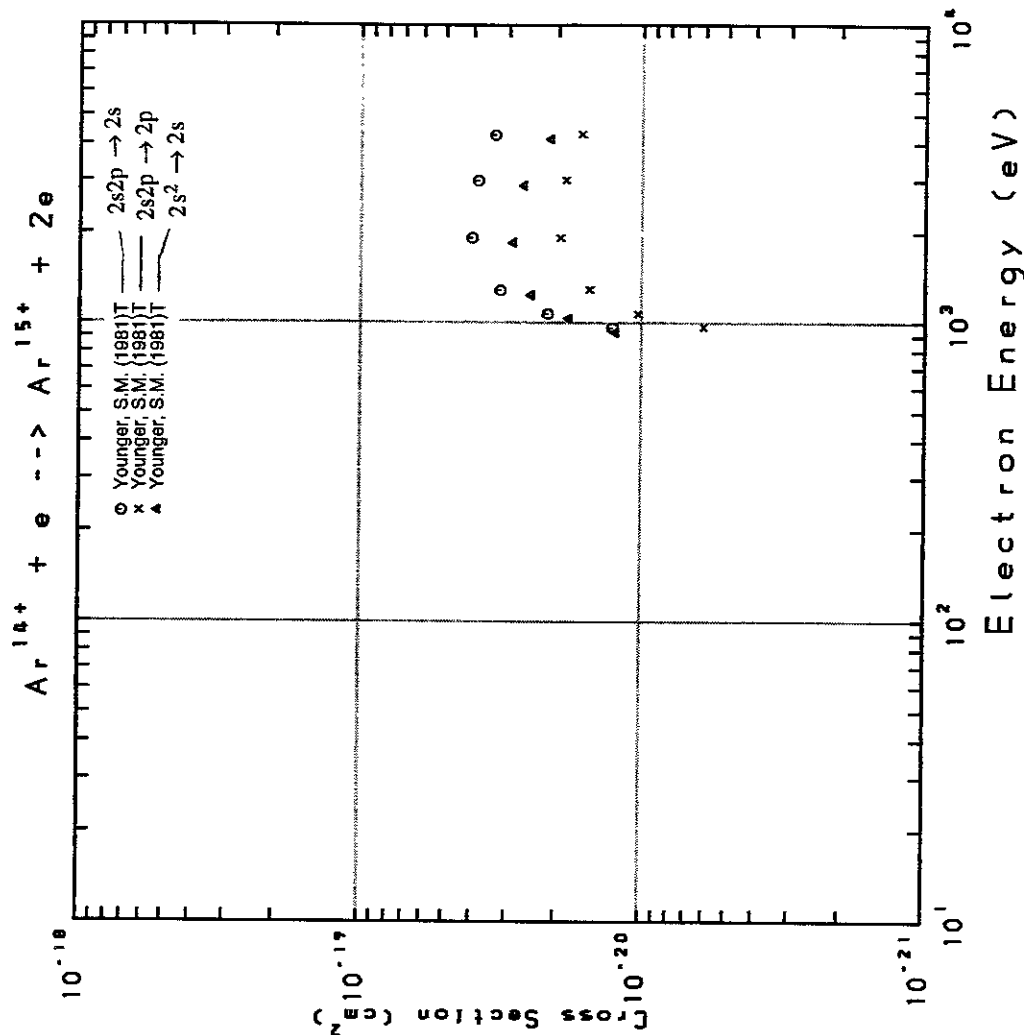


Fig. 152 $\text{Ar}^{14+} \rightarrow \text{Ar}^{15+}$

AMDIS-ION

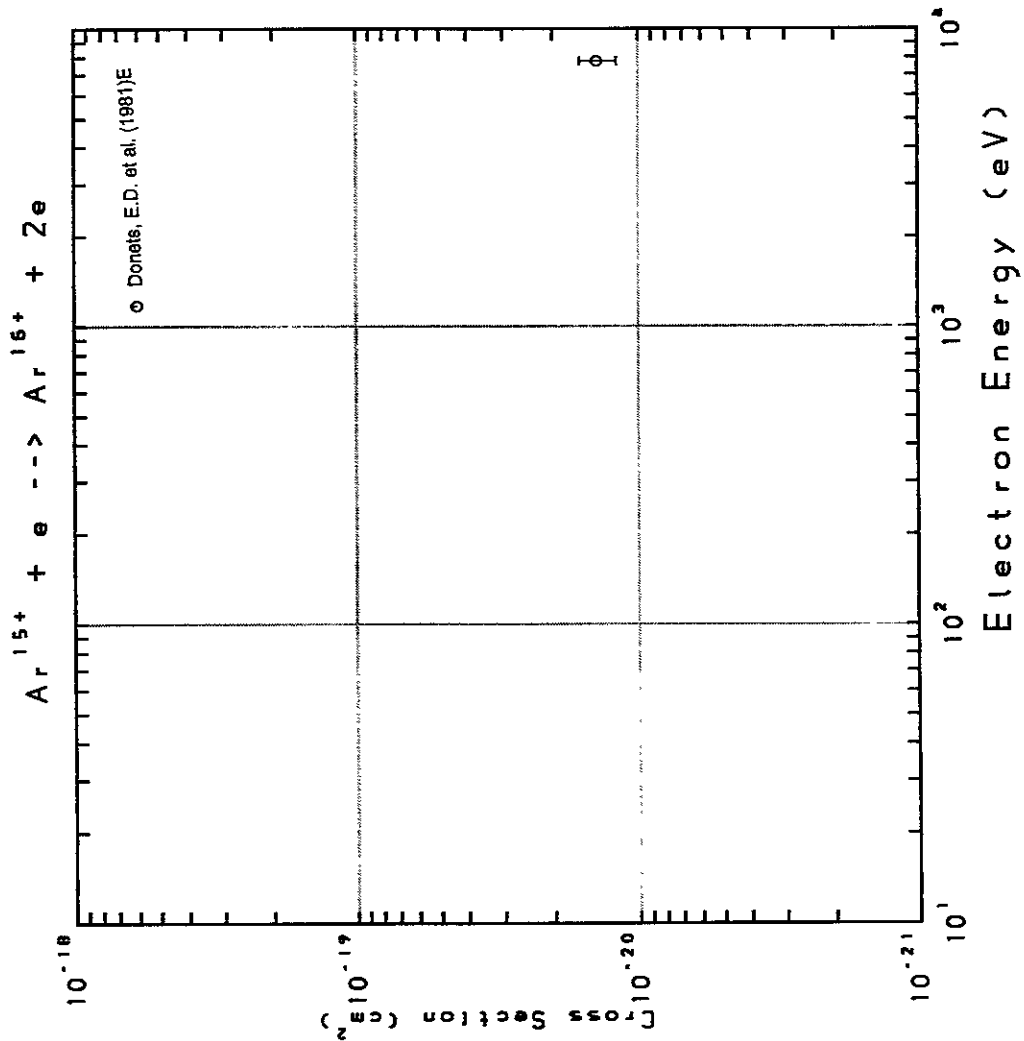


Fig. 153 $Ar^{15+} \rightarrow Ar^{16+}$

AMDIS-ION

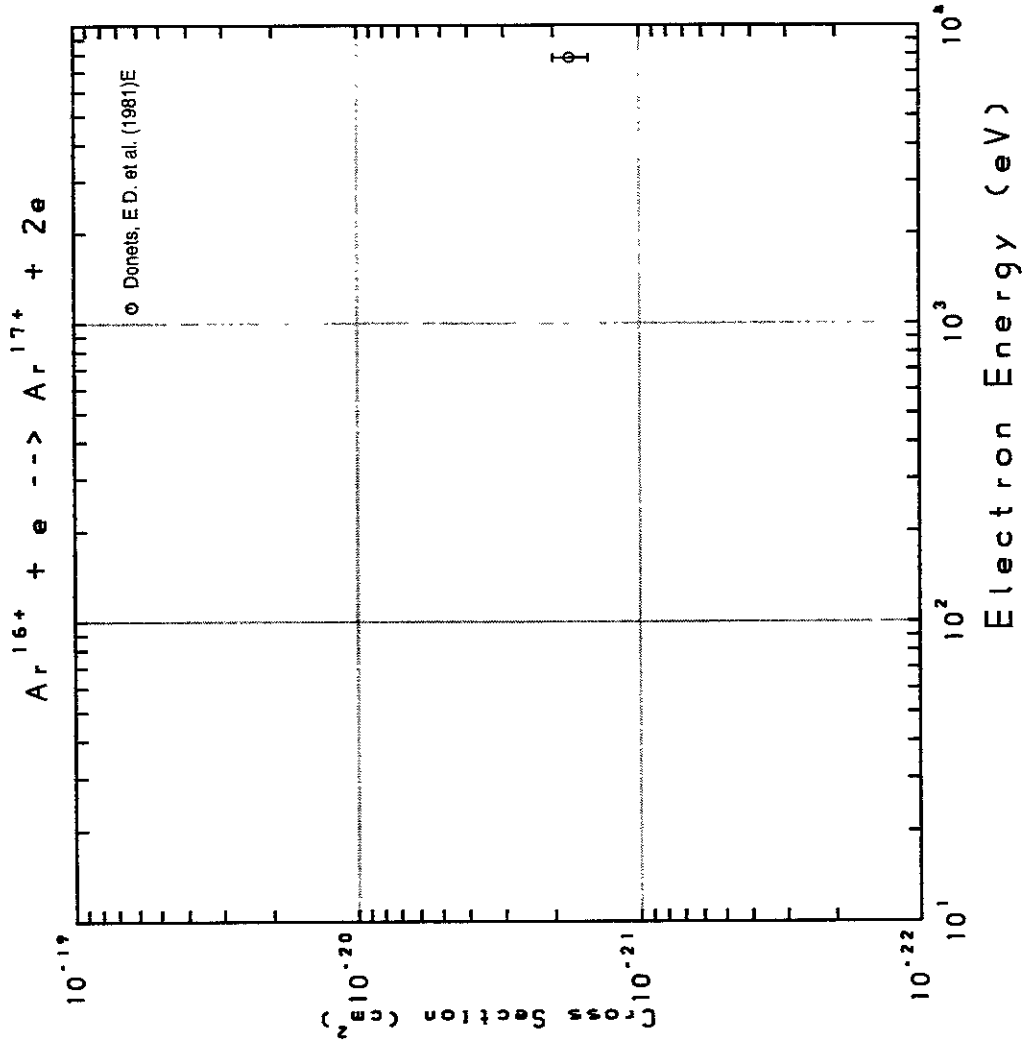


Fig. 154 $Ar^{16+} \rightarrow Ar^{17+}$

AMDIS-ION

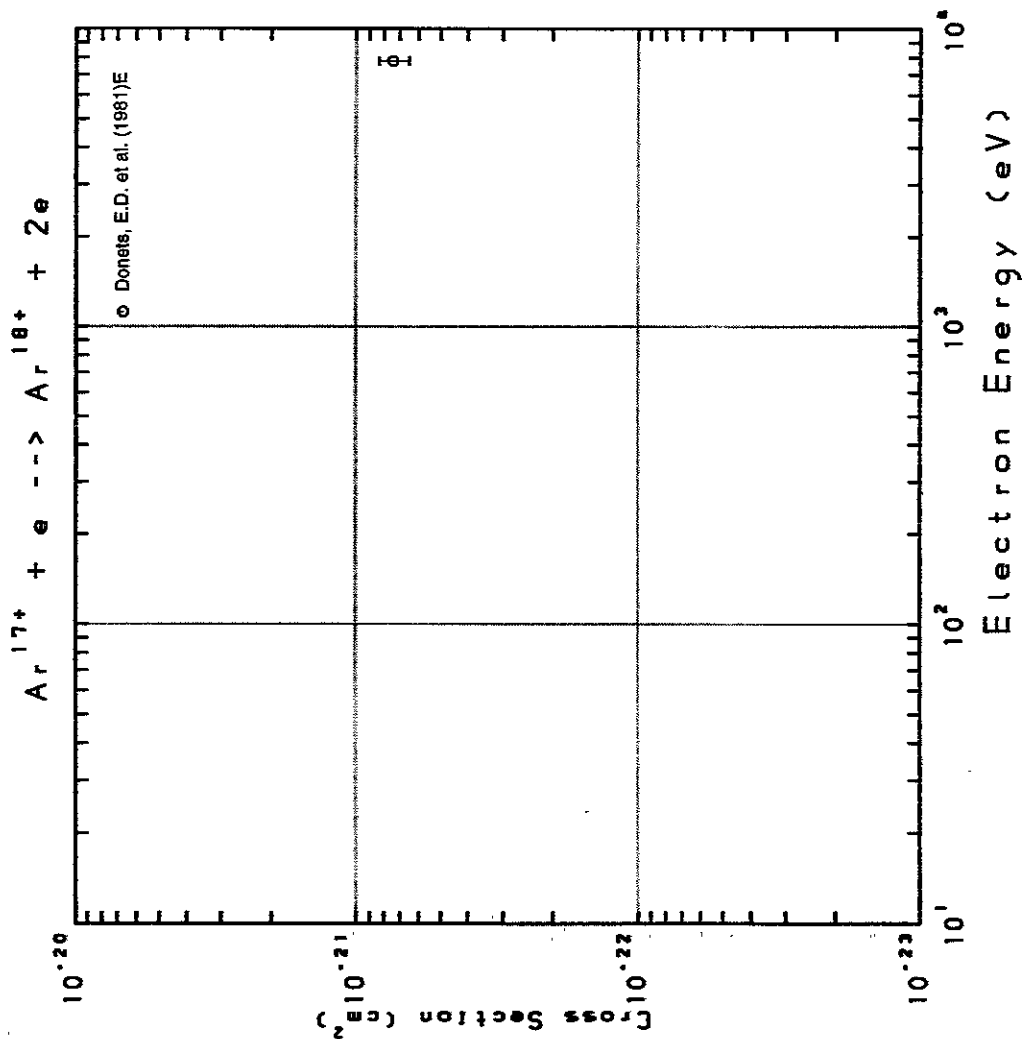


Fig. 155 $Ar^{17+} \rightarrow Ar^{18+}$

AMDIS-ION

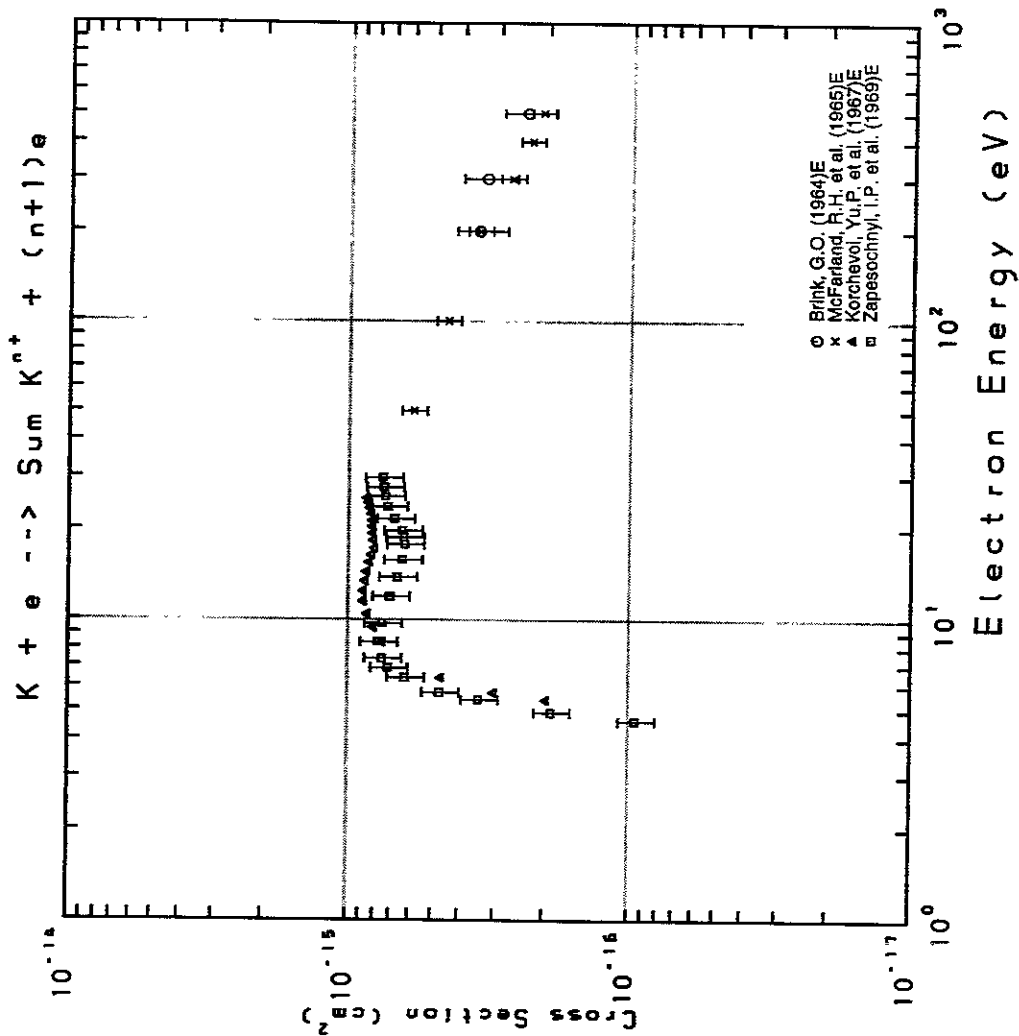


Fig. 156 $K \rightarrow \Sigma K^{n+}$

AMDIS-ION

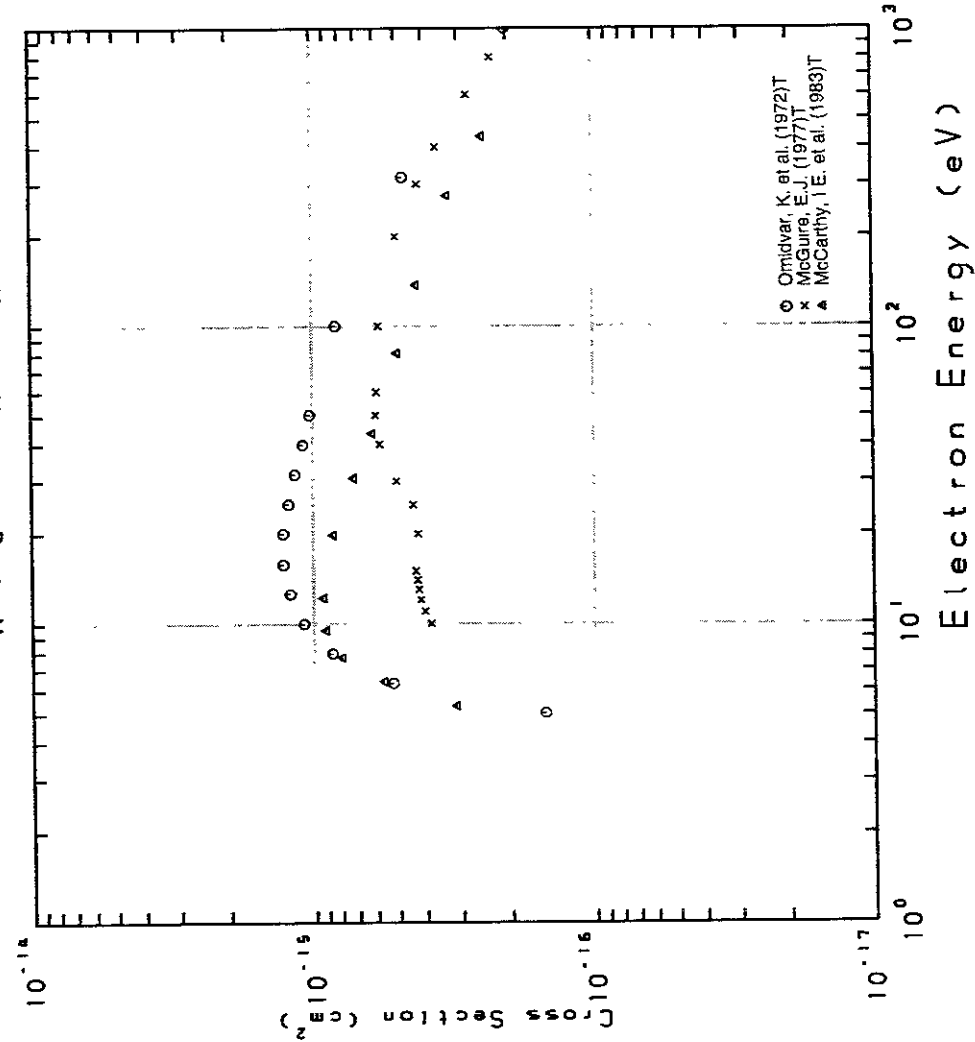


Fig. 157 $K \rightarrow K^+$

AMDIS-ION

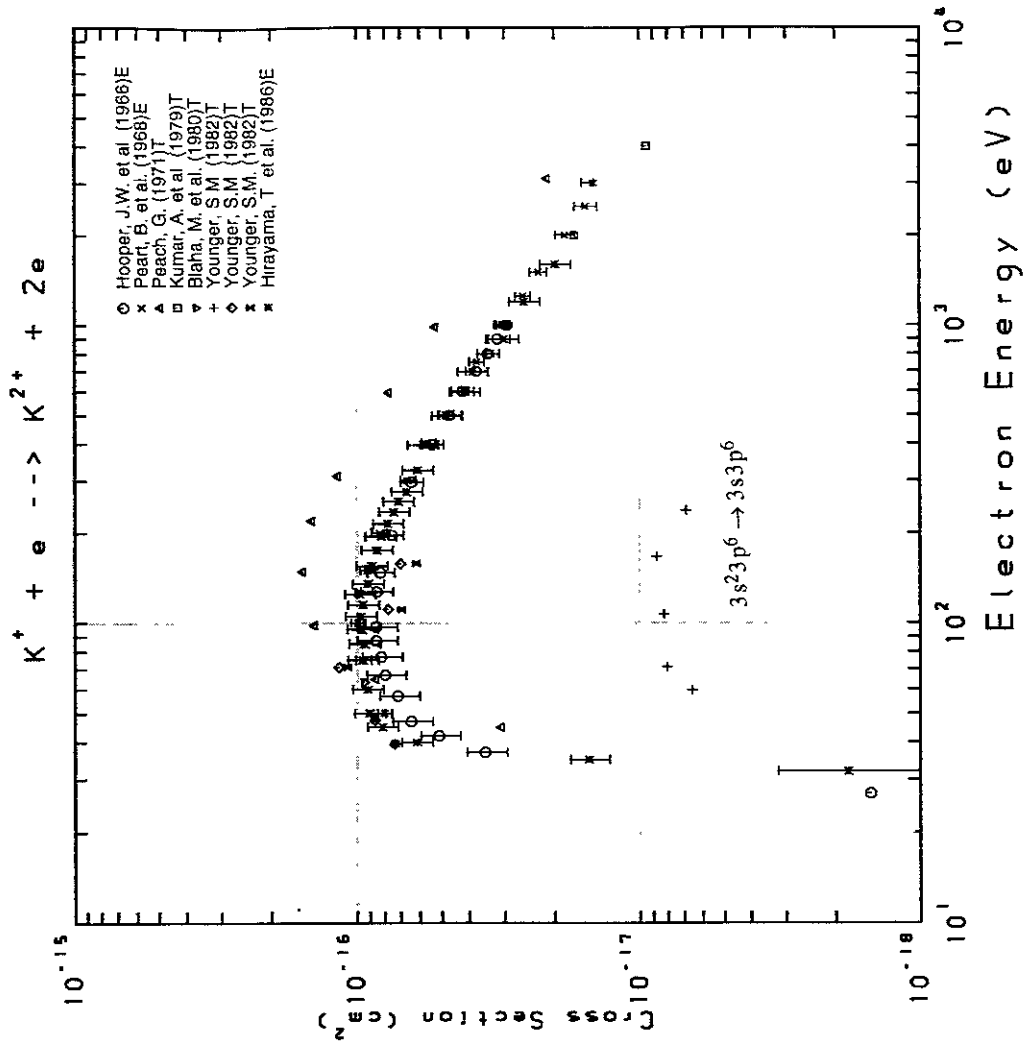


Fig. 158 $K^+ \rightarrow K^{2+}$

AMDIS-ION

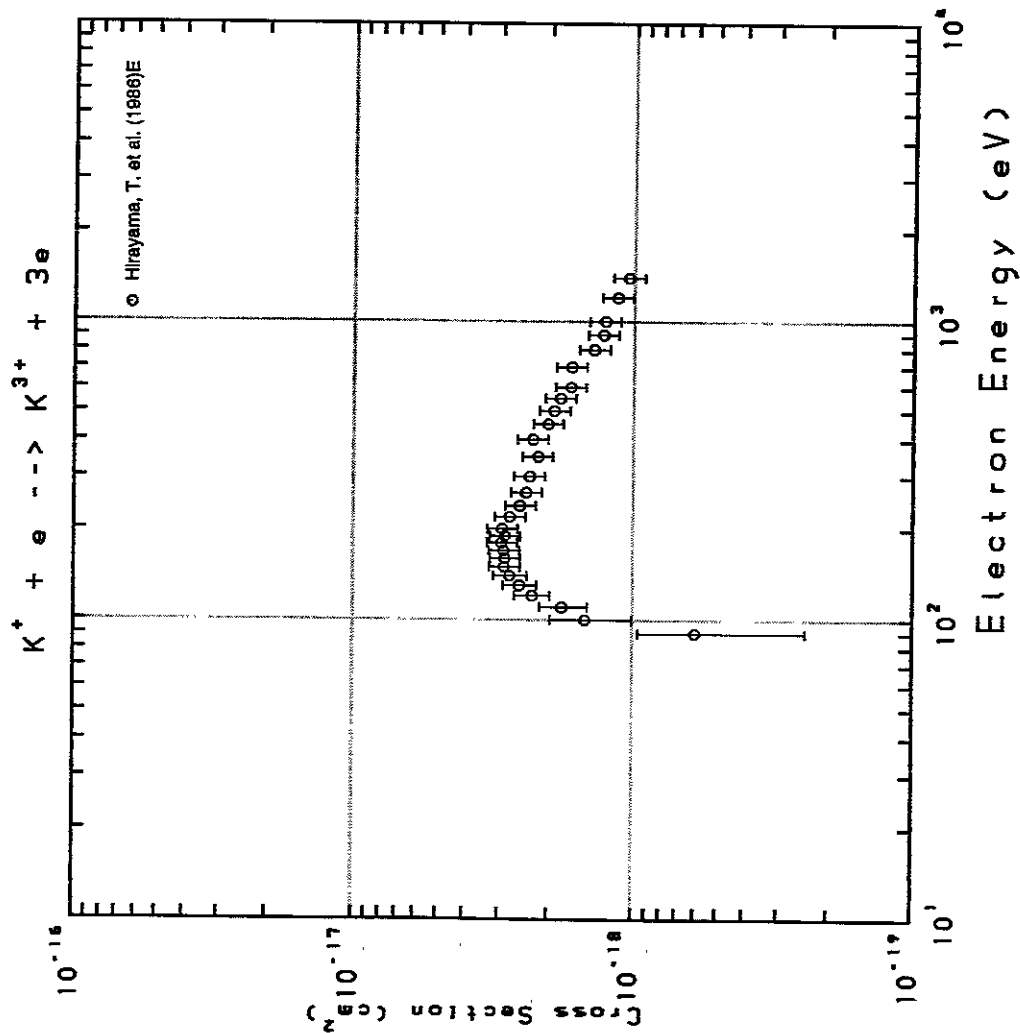


Fig. 159 $K^+ \rightarrow K^{3+}$

AMDIS-ION

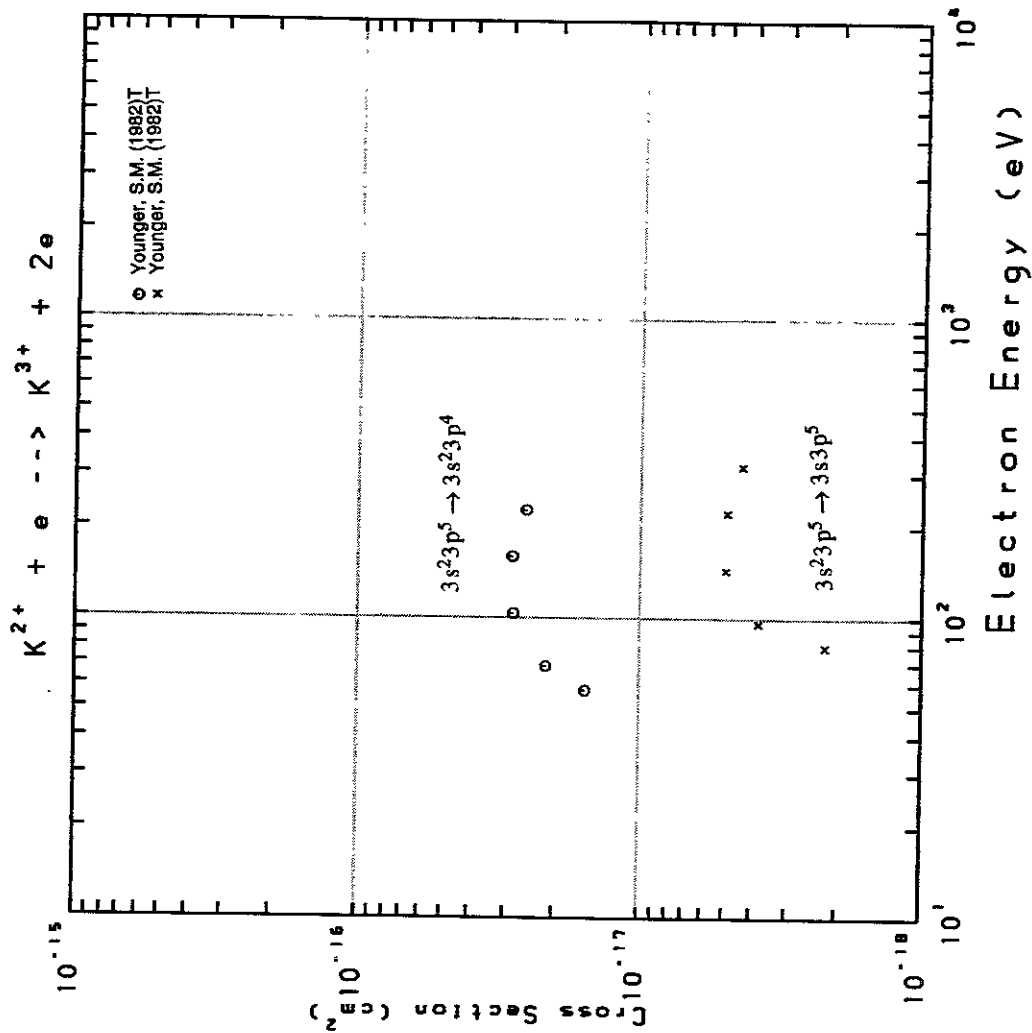


Fig. 160 $K^{2+} \rightarrow K^{3+}$

AMDIS-ION

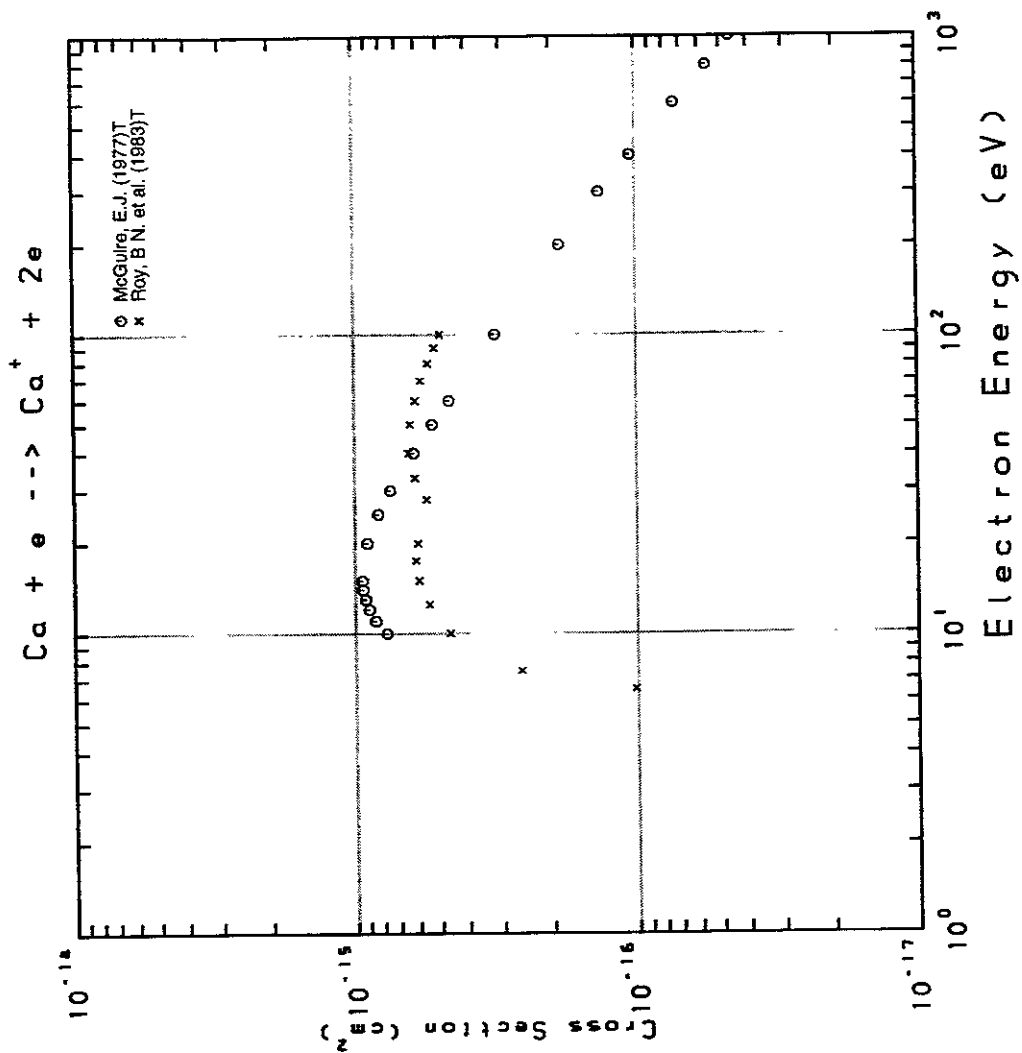


Fig. 162 $\text{Ca} \rightarrow \text{Ca}^+$

AMDIS-ION

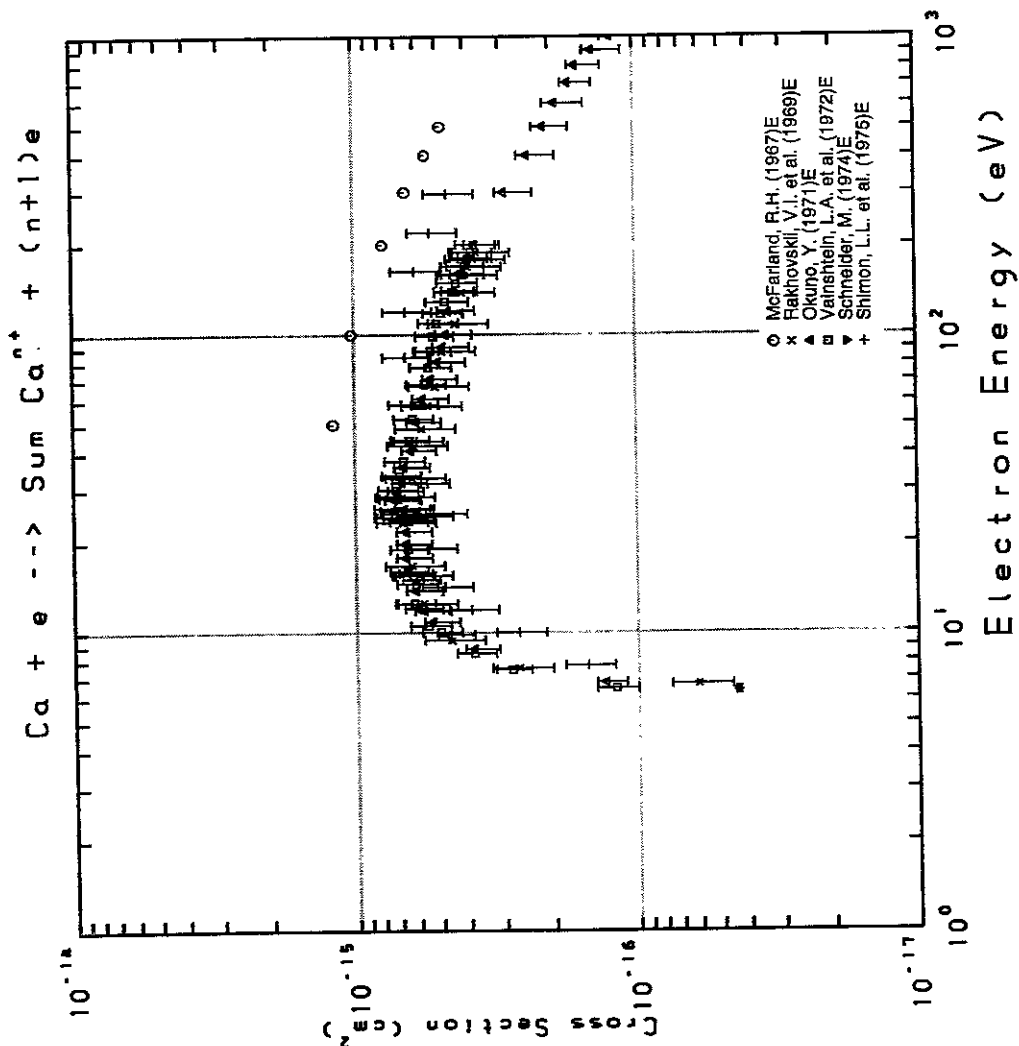


Fig. 161 $\text{Ca} \rightarrow \Sigma \text{Ca}^{n+}$

AMDIS-ION

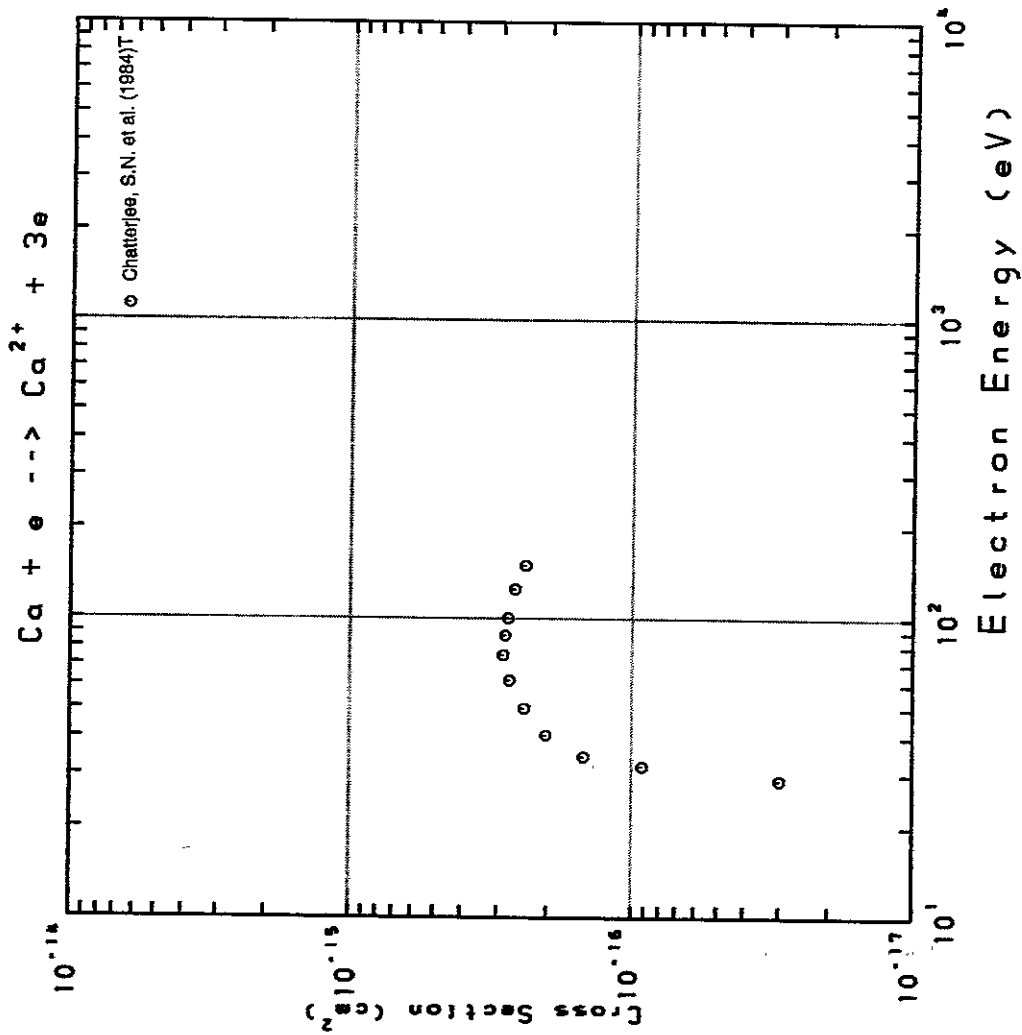


Fig. 163 Ca → Ca²⁺

AMDIS-ION

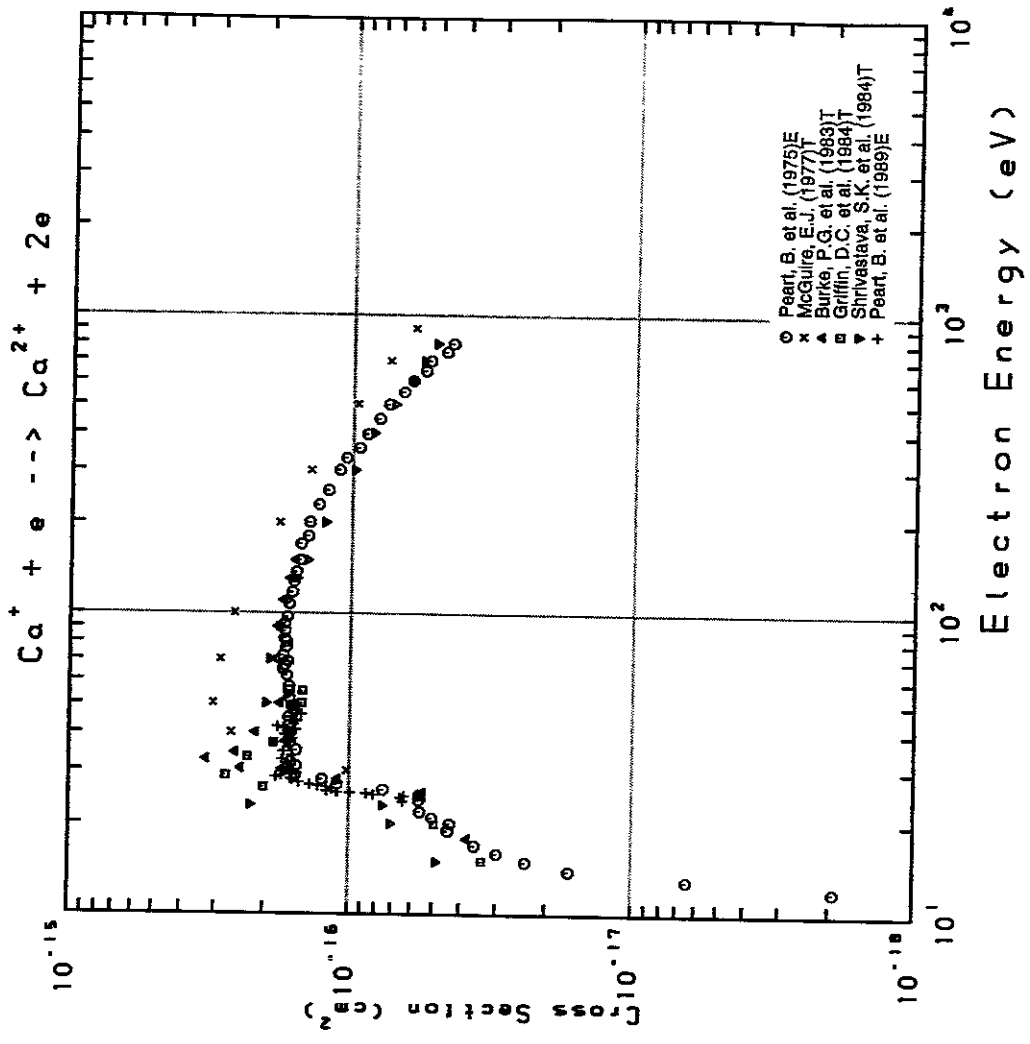


Fig. 164 Ca⁺ → Ca²⁺

AMDIS-ION

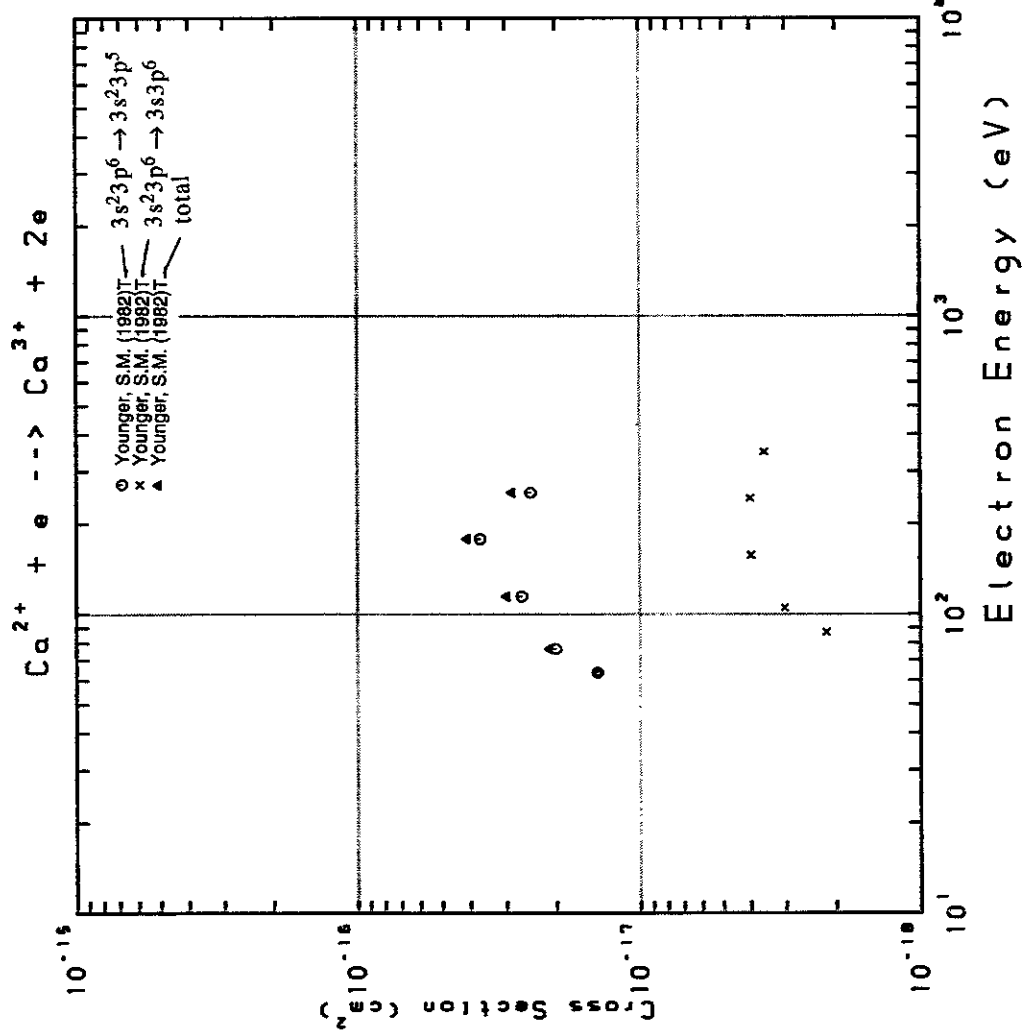


Fig. 165 $\text{Ca}^{2+} \rightarrow \text{Ca}^{3+}$

AMDIS-ION

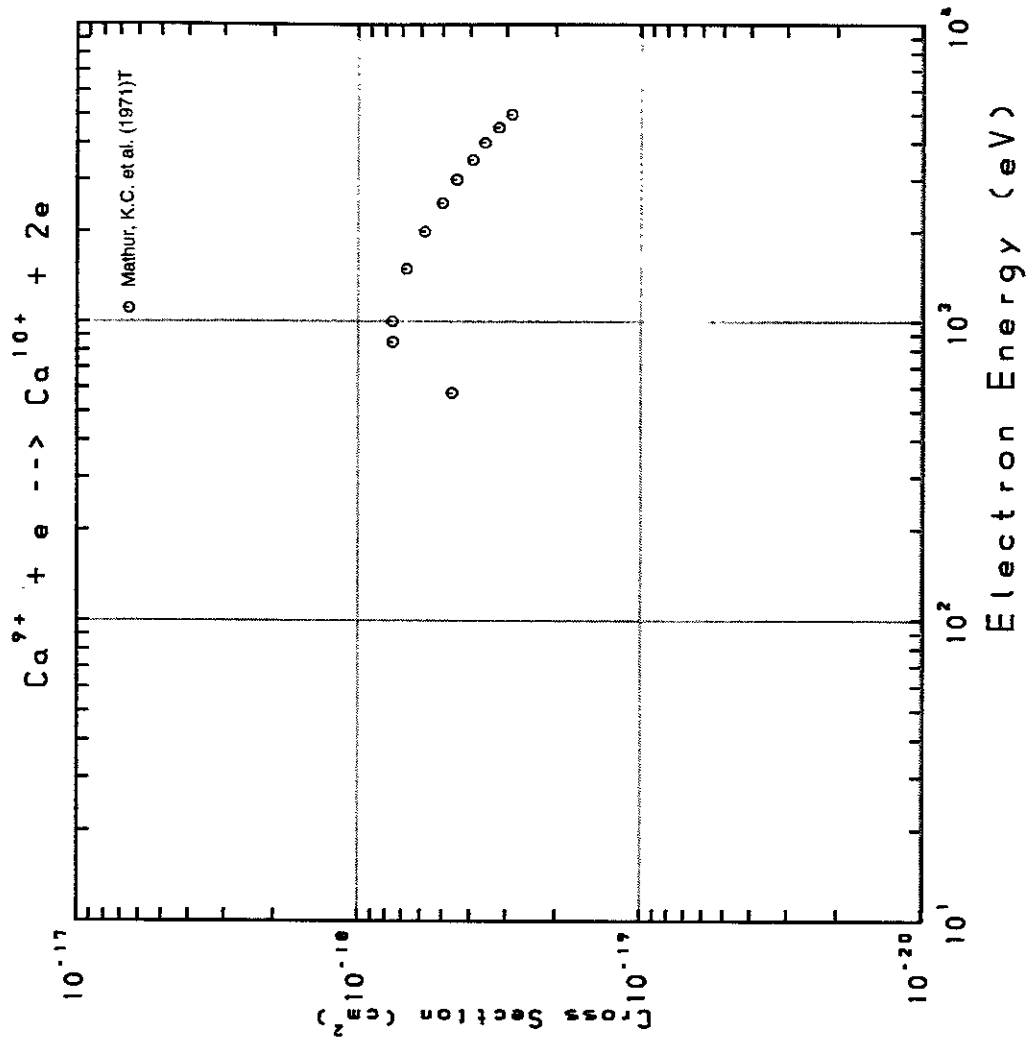


Fig. 166 $\text{Ca}^{9+} \rightarrow \text{Ca}^{10+}$

AMDIS-ION

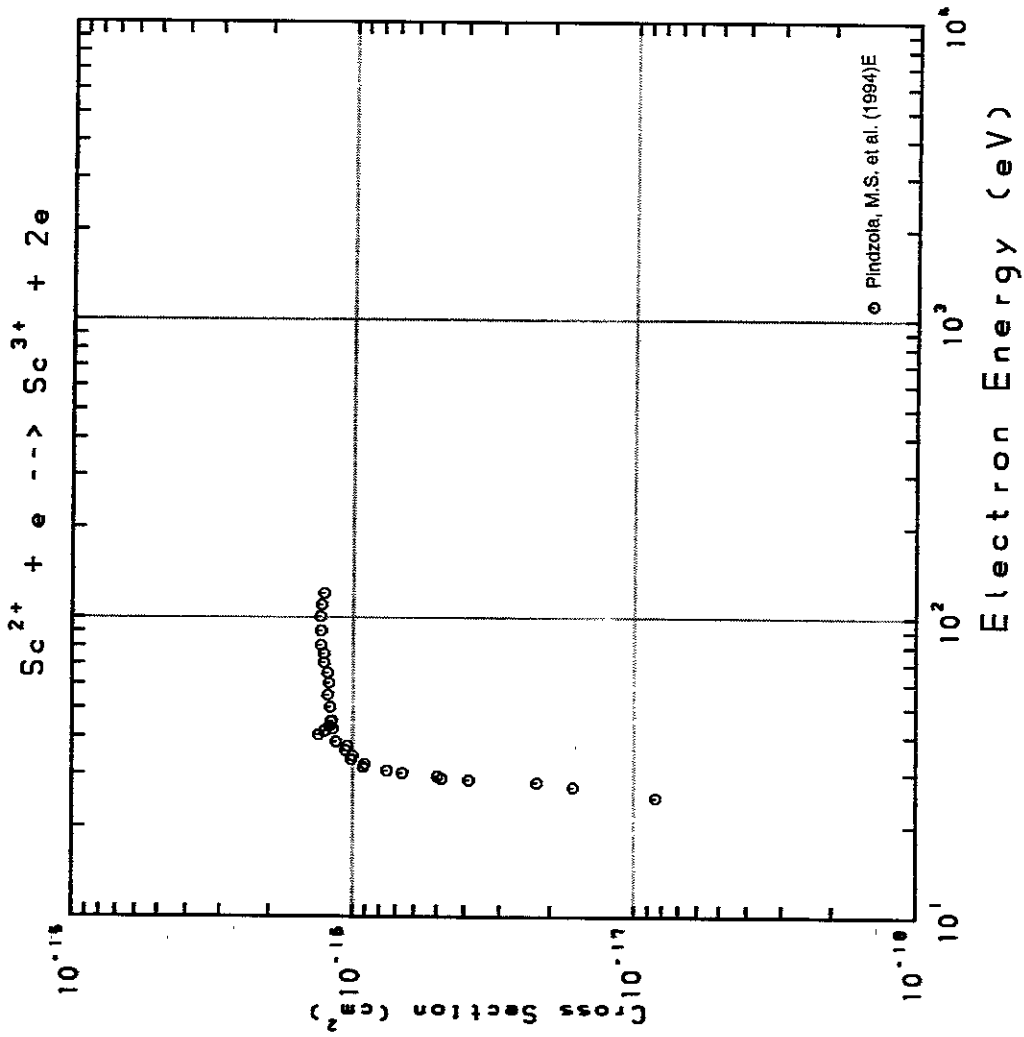


Fig. 167 Sc²⁺ → Sc³⁺

AMDIS-ION

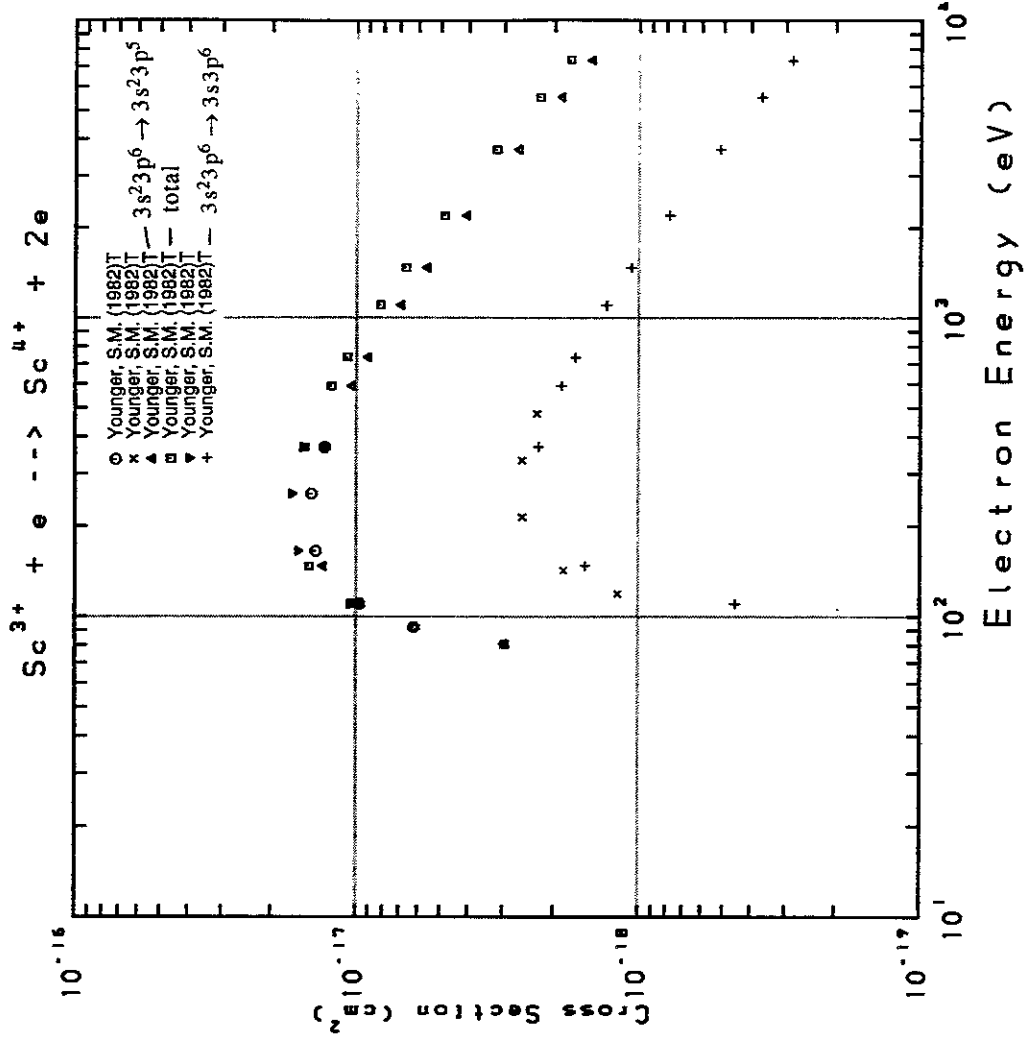


Fig. 168 Sc³⁺ → Sc⁴⁺

AMDIS-ION

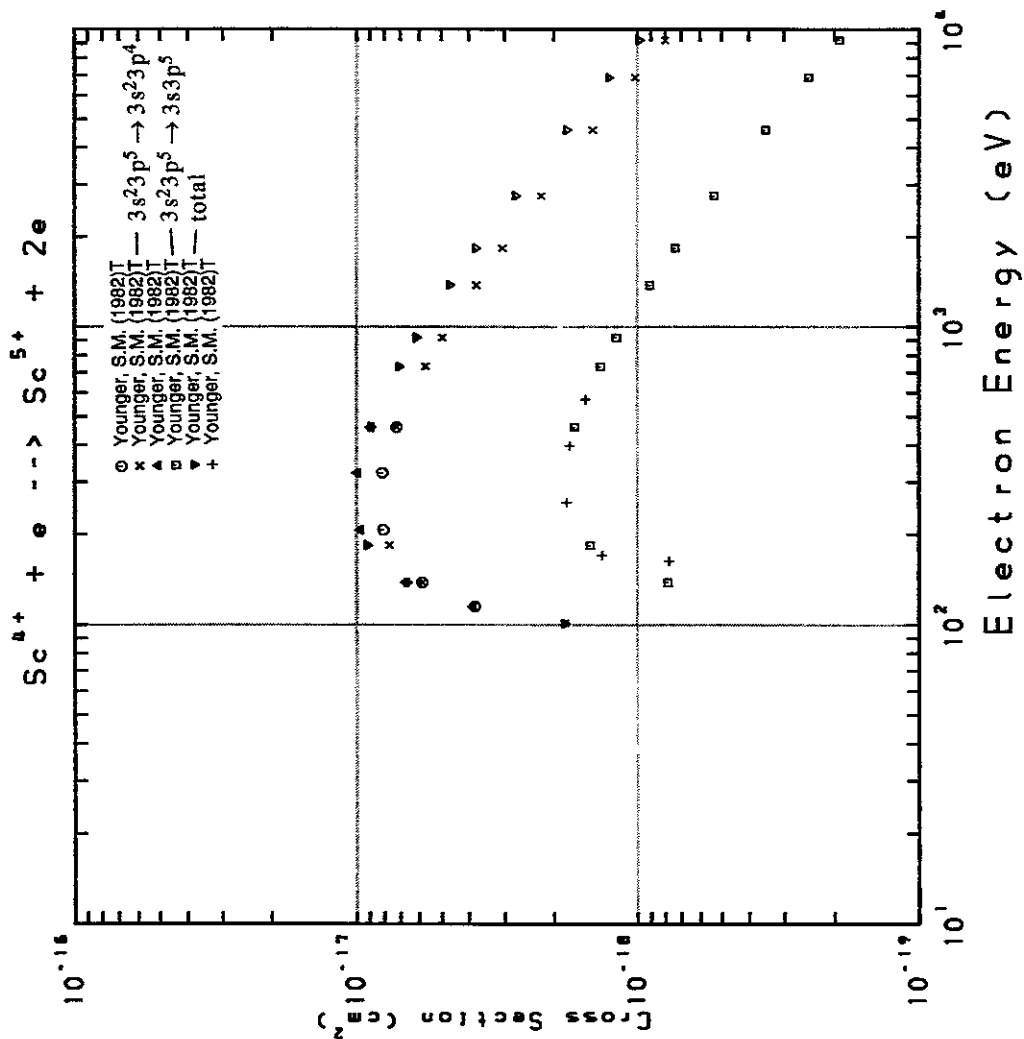


Fig. 169 $Sc^{4+} \rightarrow Sc^{5+}$

AMDIS-ION

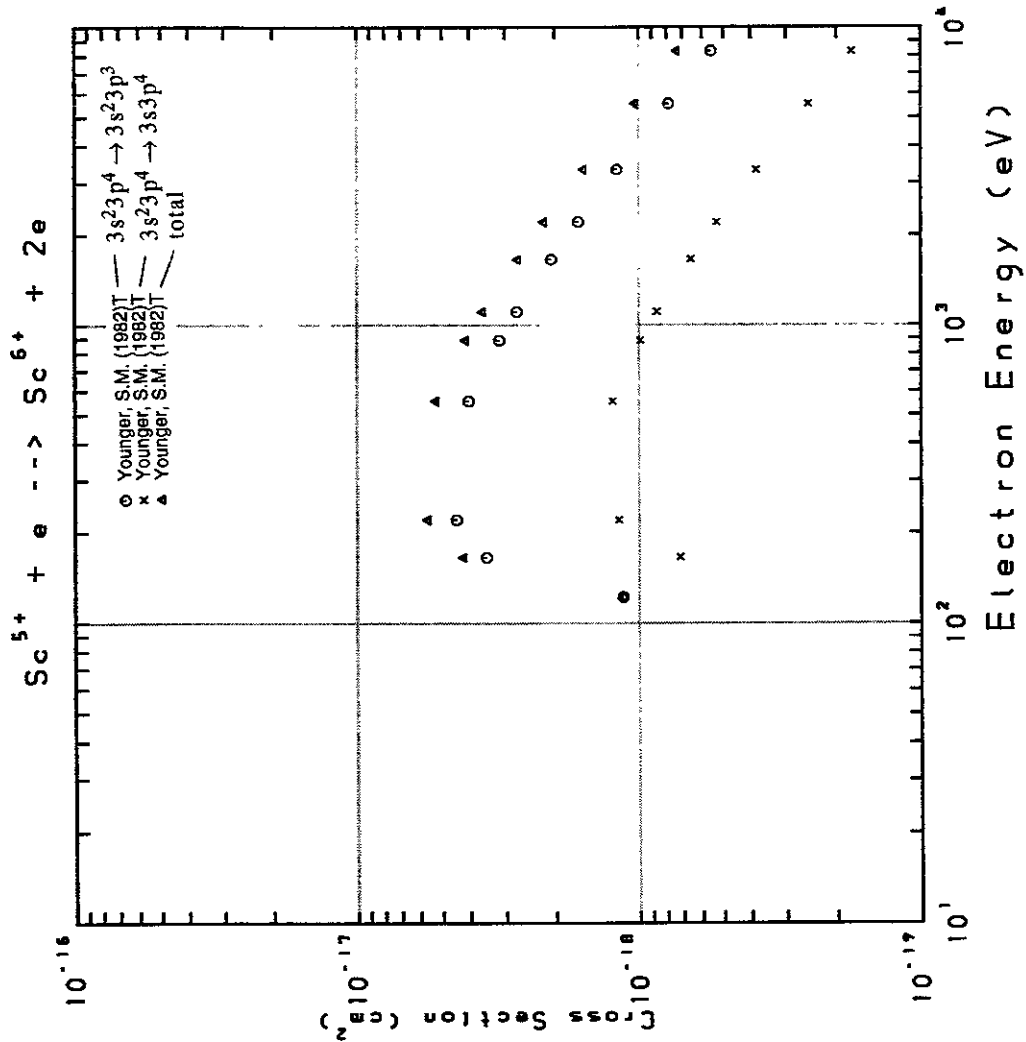


Fig. 170 $Sc^{5+} \rightarrow Sc^{6+}$

AMDIS-ION

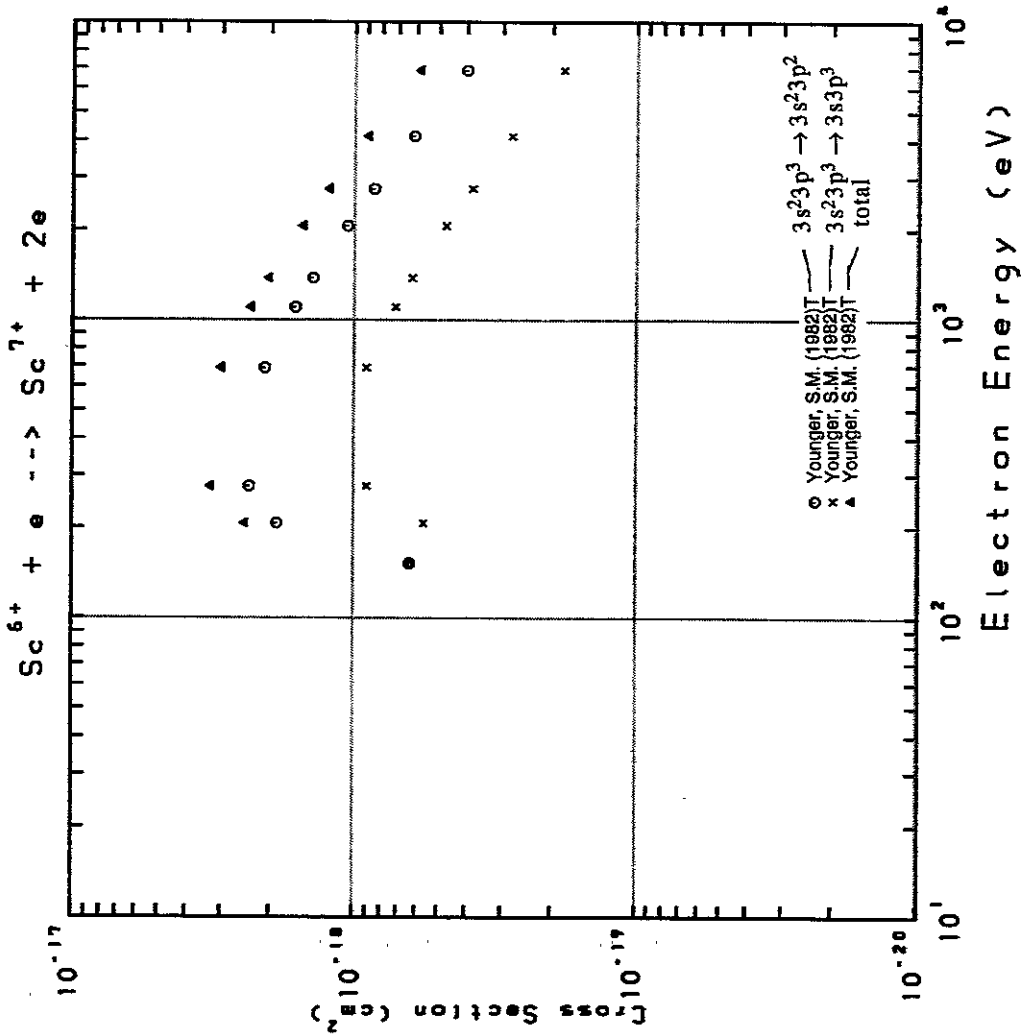


Fig. 171 Sc⁶⁺ → Sc⁷⁺

AMDIS-ION

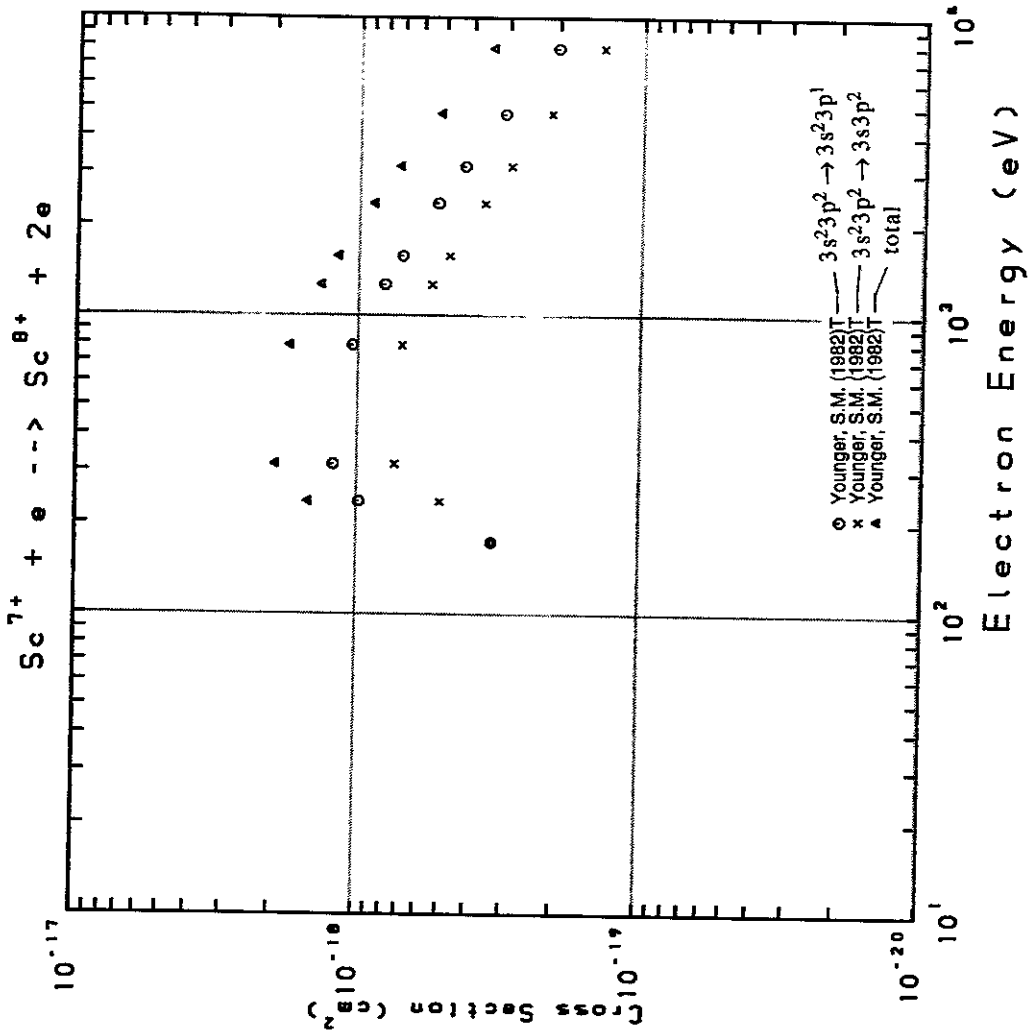


Fig. 172 Sc⁷⁺ → Sc⁸⁺

AMDIS-ION

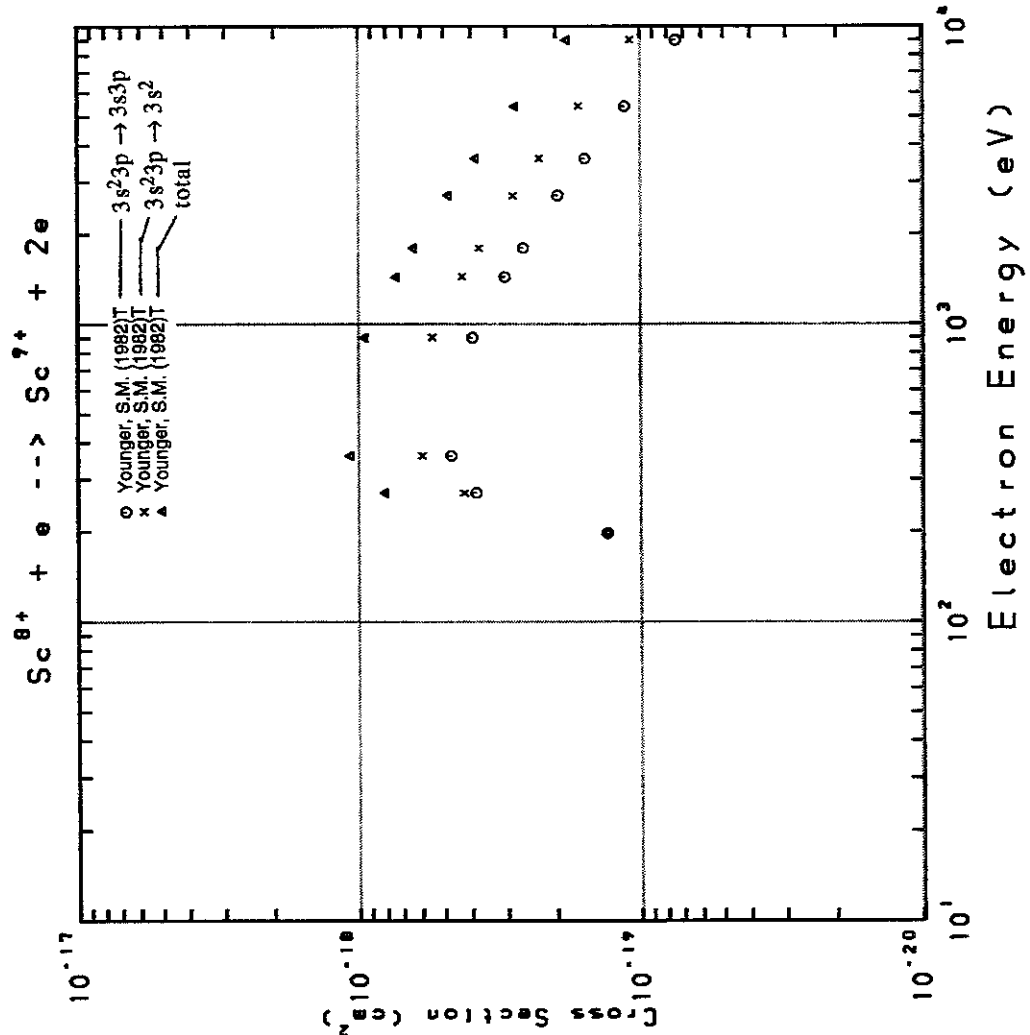


Fig. 173 $Sc^{8+} \rightarrow Sc^{9+}$

AMDIS-ION

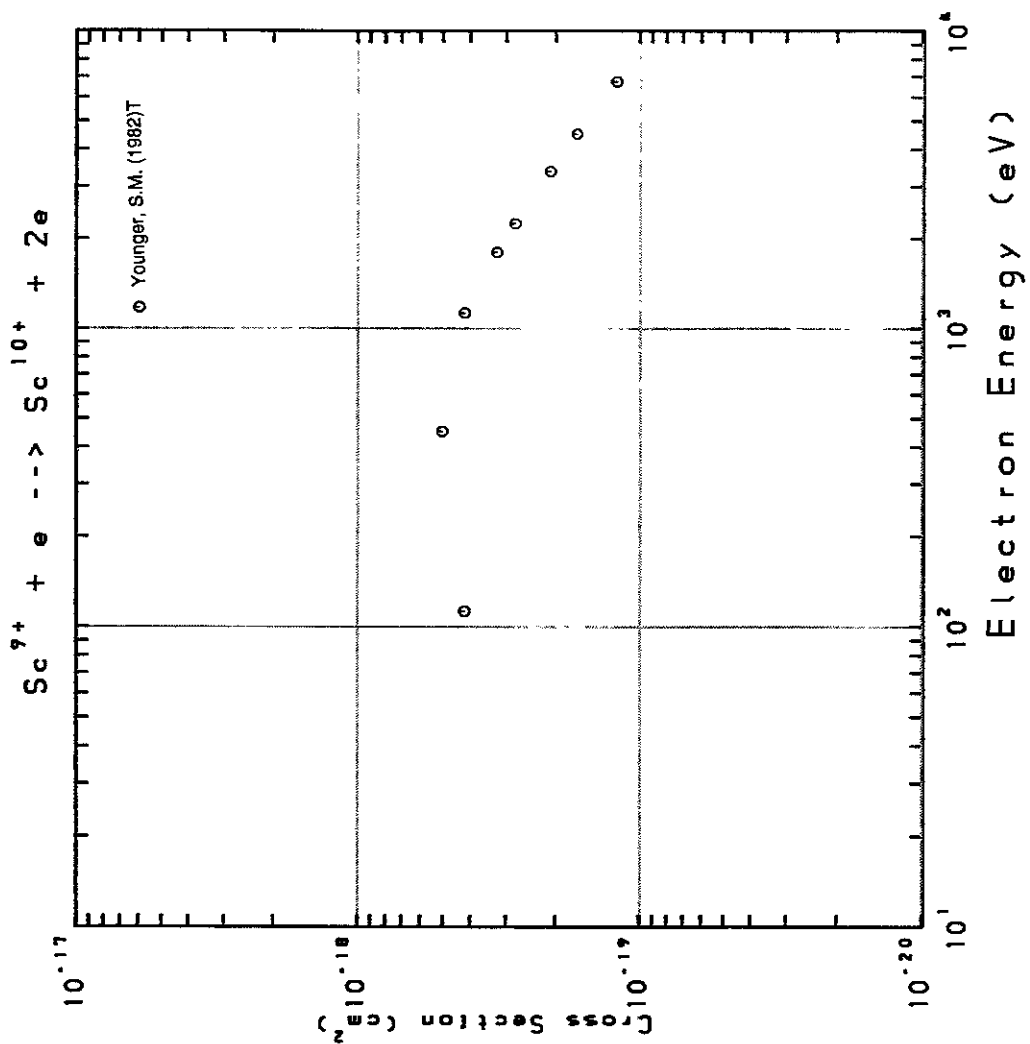


Fig. 174 $Sc^{9+} \rightarrow Sc^{10+}$

AMDIS-ION

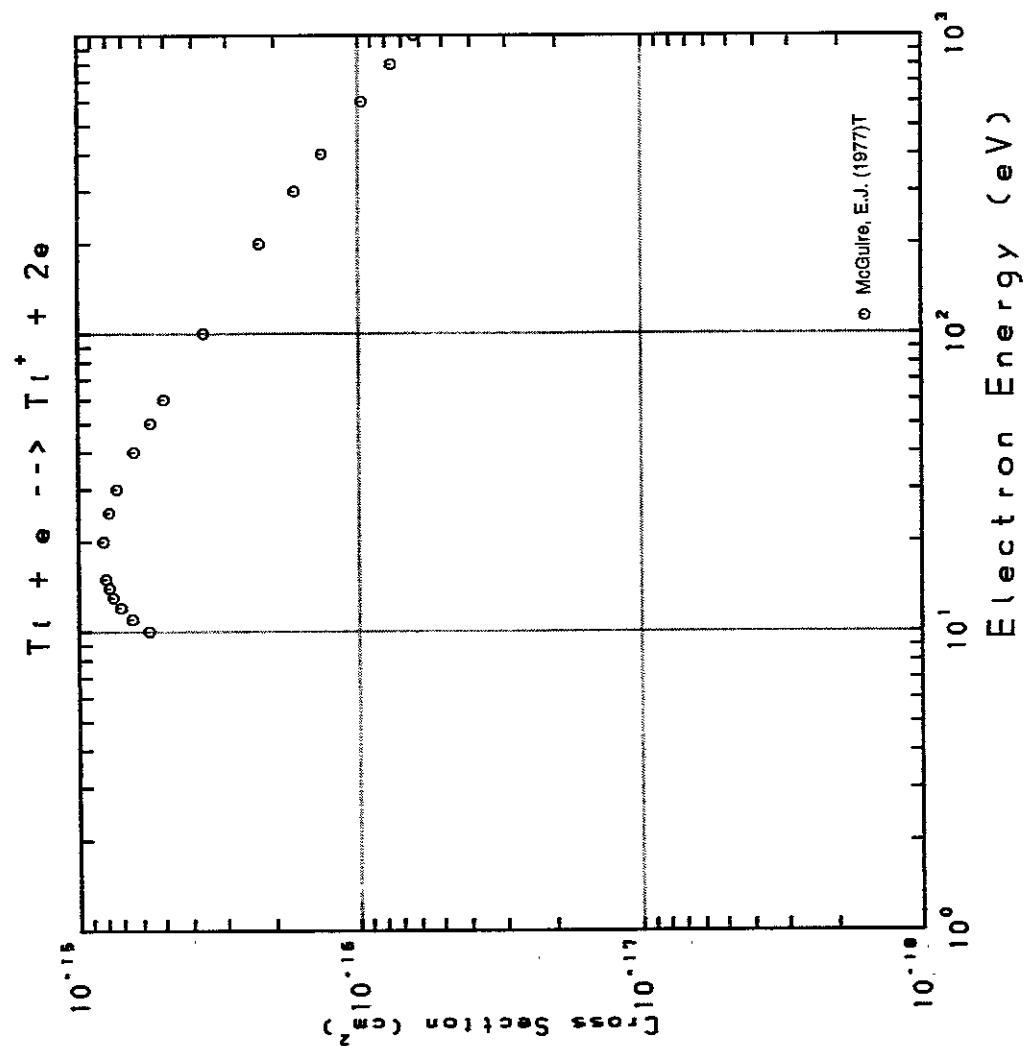


Fig. 175 $\text{Ti} \rightarrow \text{Ti}^+$

AMDIS-ION

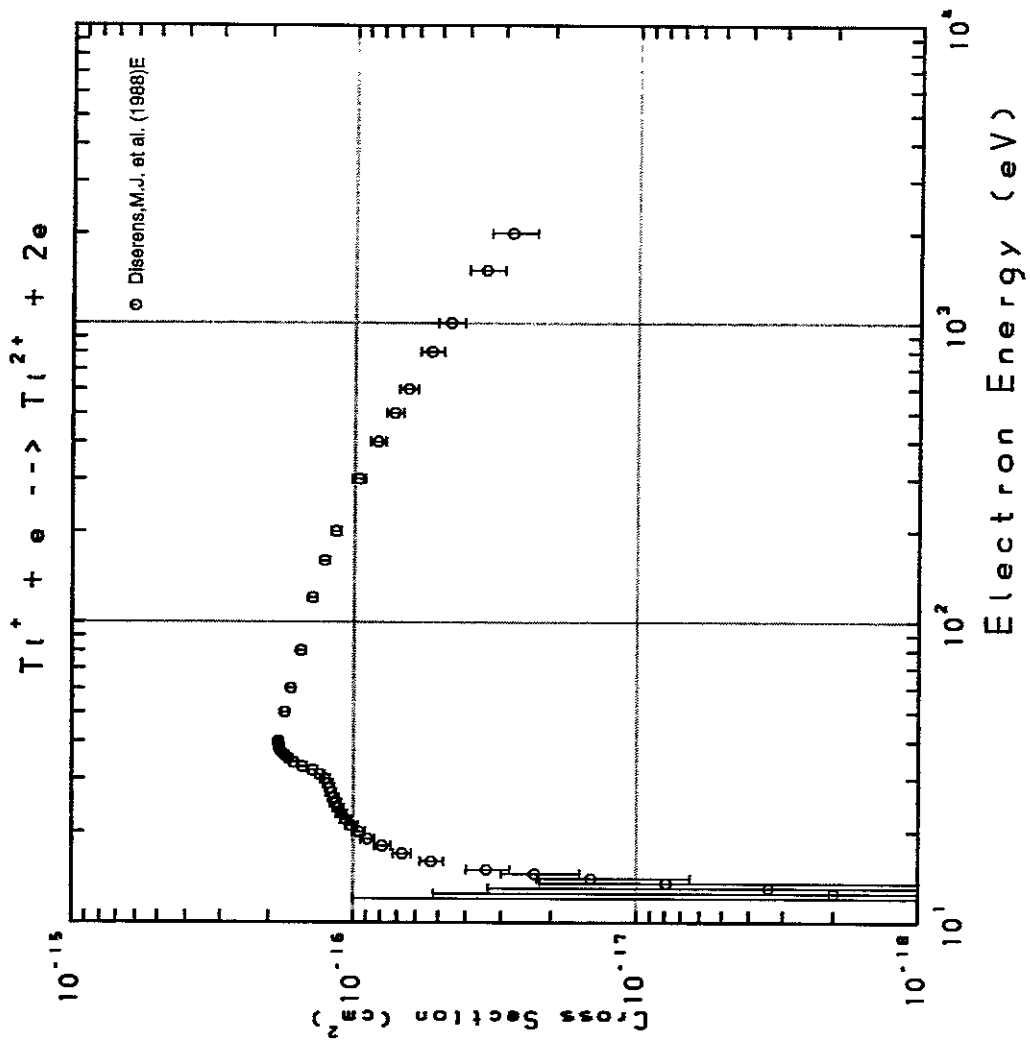


Fig. 176 $\text{Ti}^+ \rightarrow \text{Ti}^{2+}$

AMDIS-ION

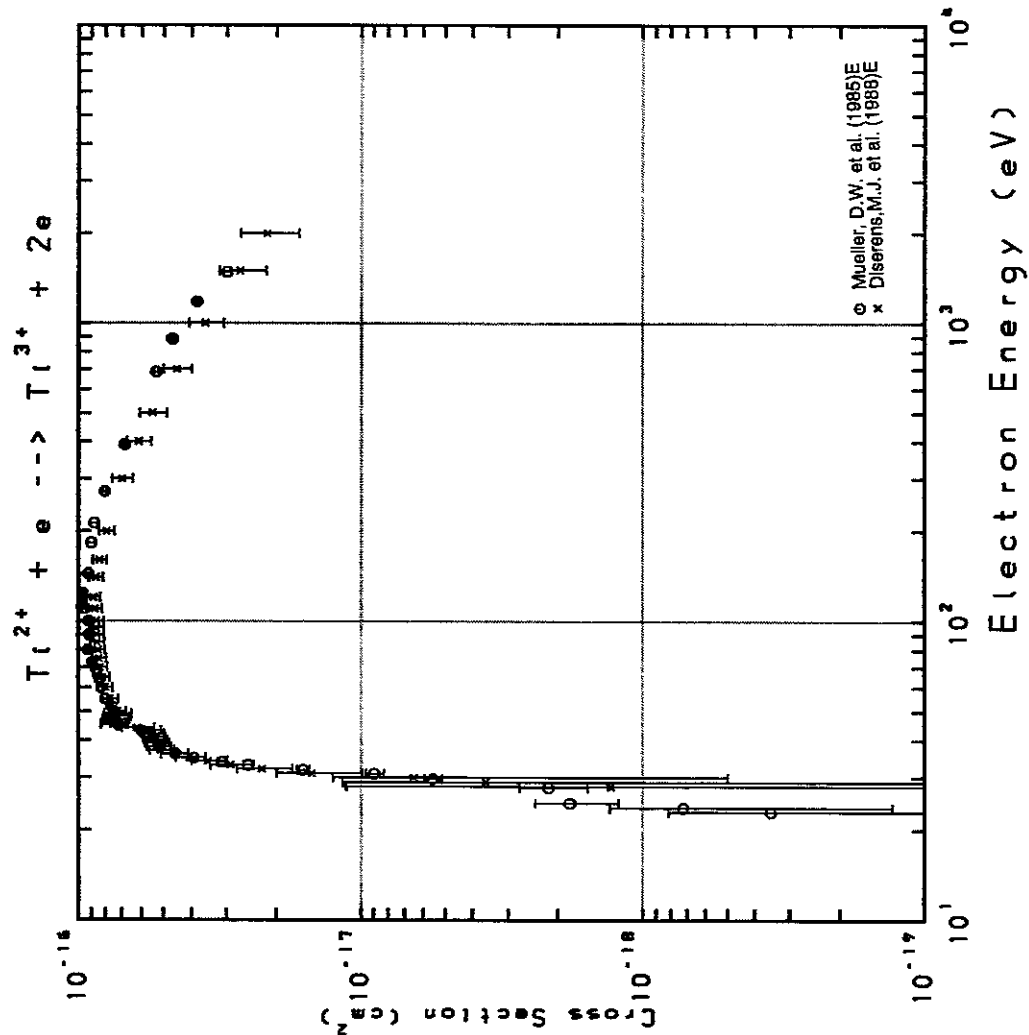


Fig. 177 $Ti^{2+} \rightarrow Ti^{3+}$

AMDIS-ION

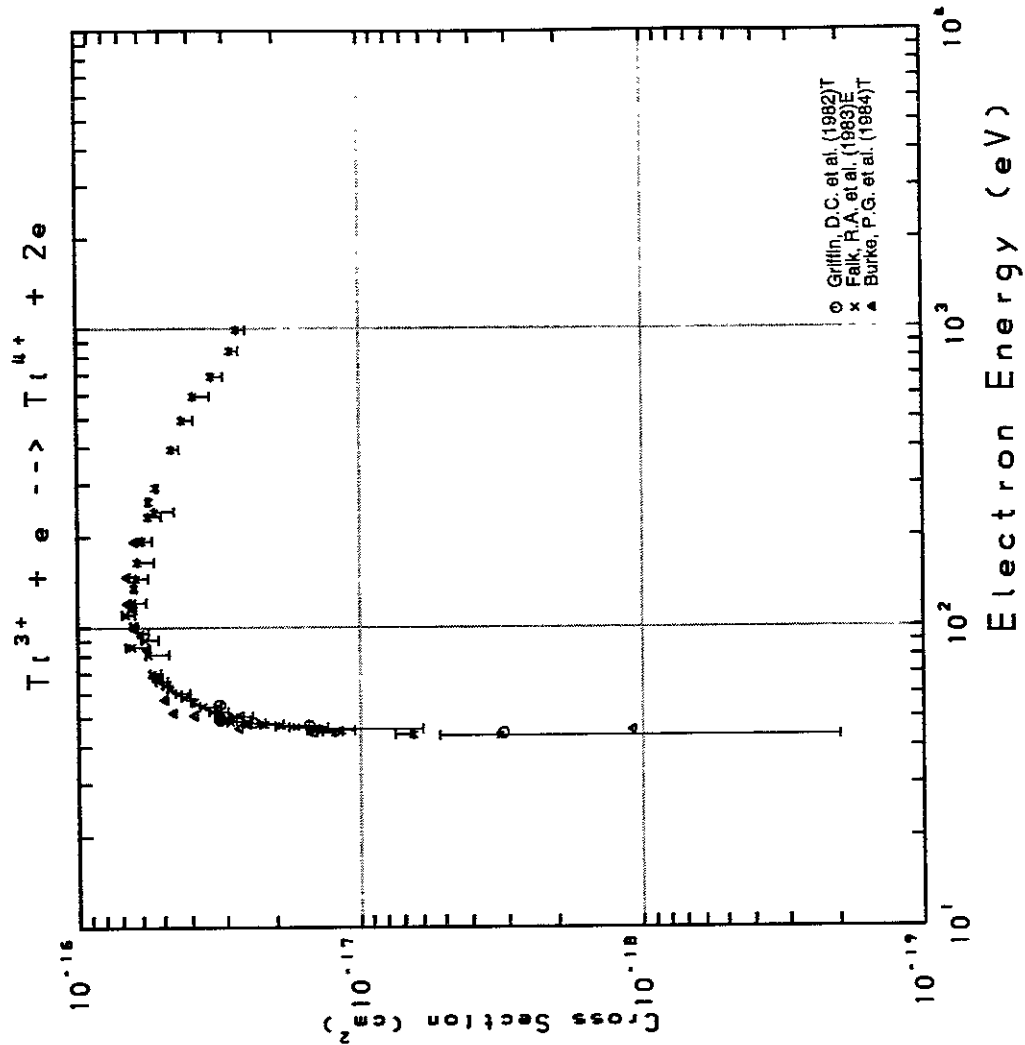


Fig. 178 $Ti^{3+} \rightarrow Ti^{4+}$

AMDIS-ION

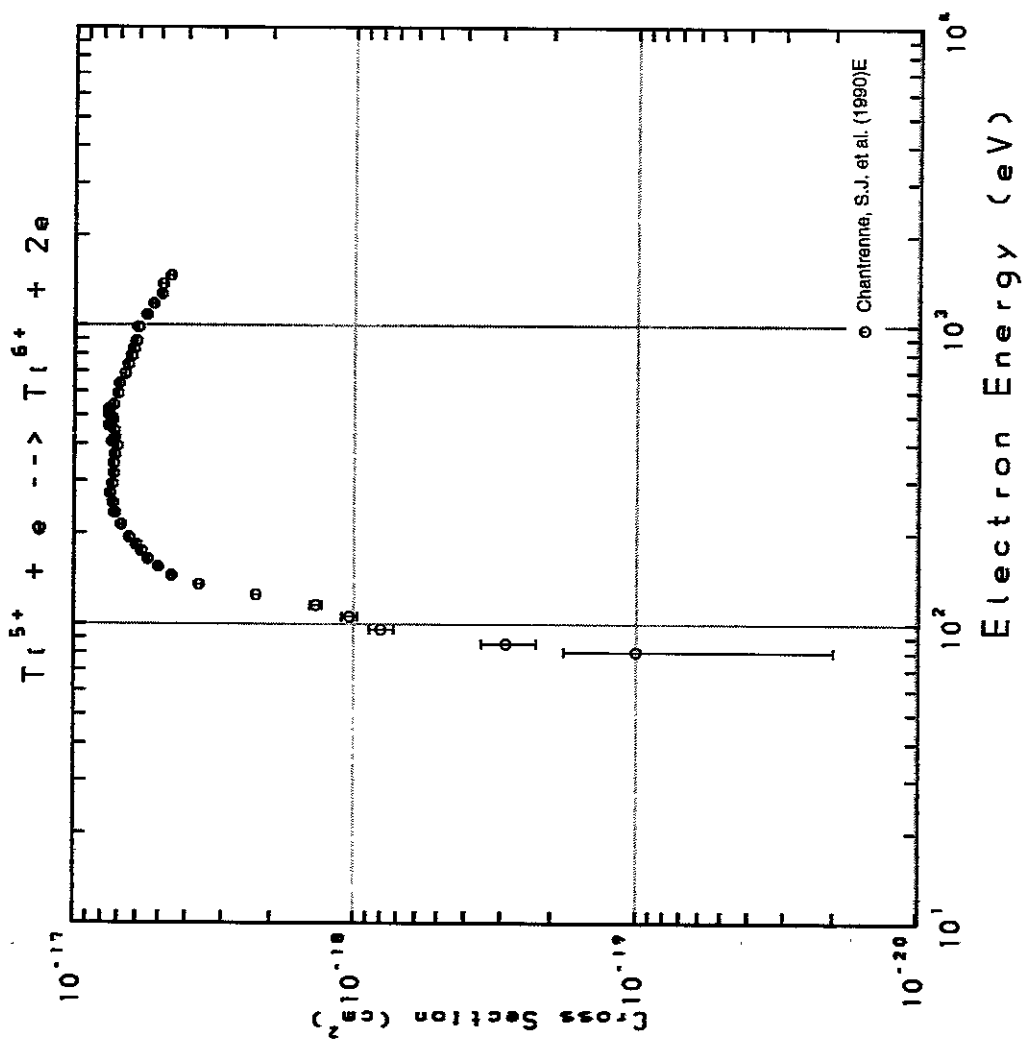


Fig. 179 $Ti^{5+} \rightarrow Ti^{6+}$

AMDIS-ION

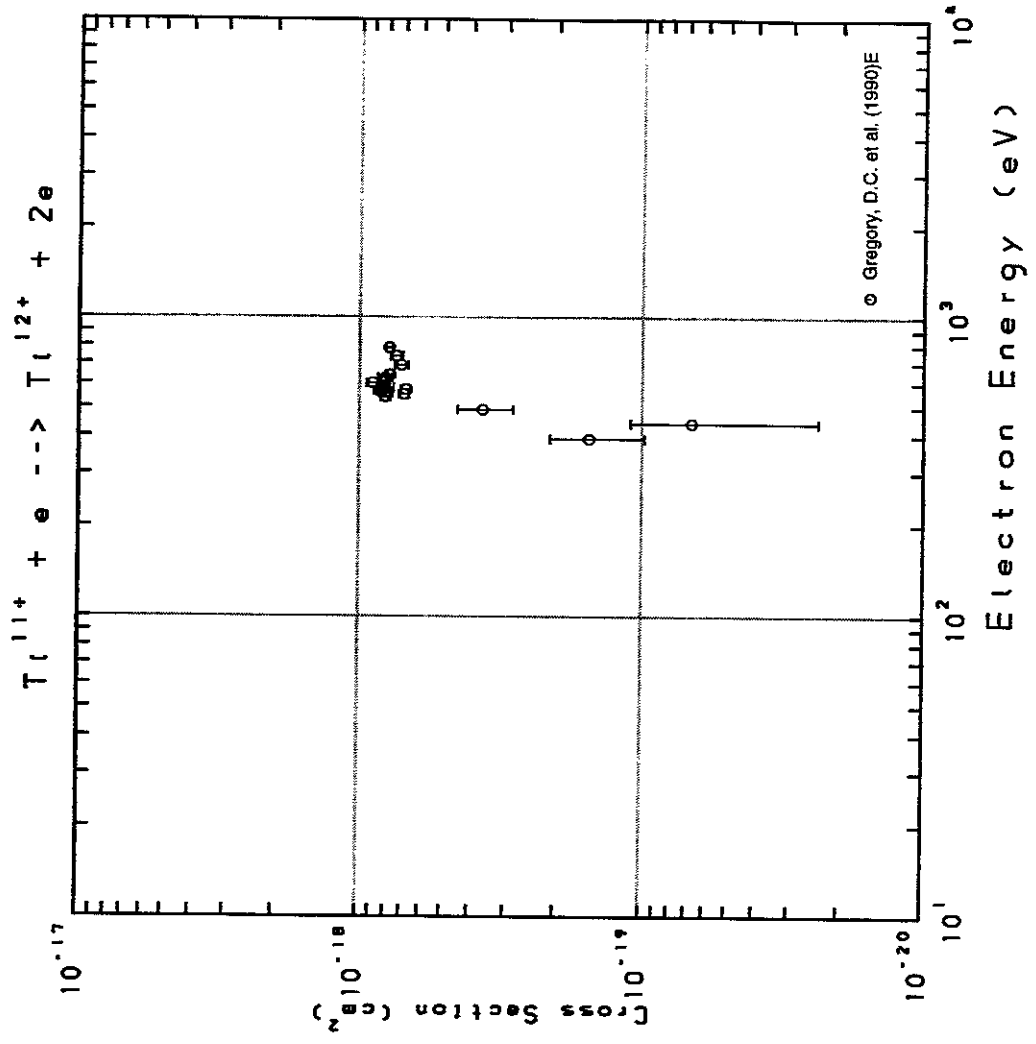


Fig. 180 $Ti^{11+} \rightarrow Ti^{12+}$

AMDIS-ION

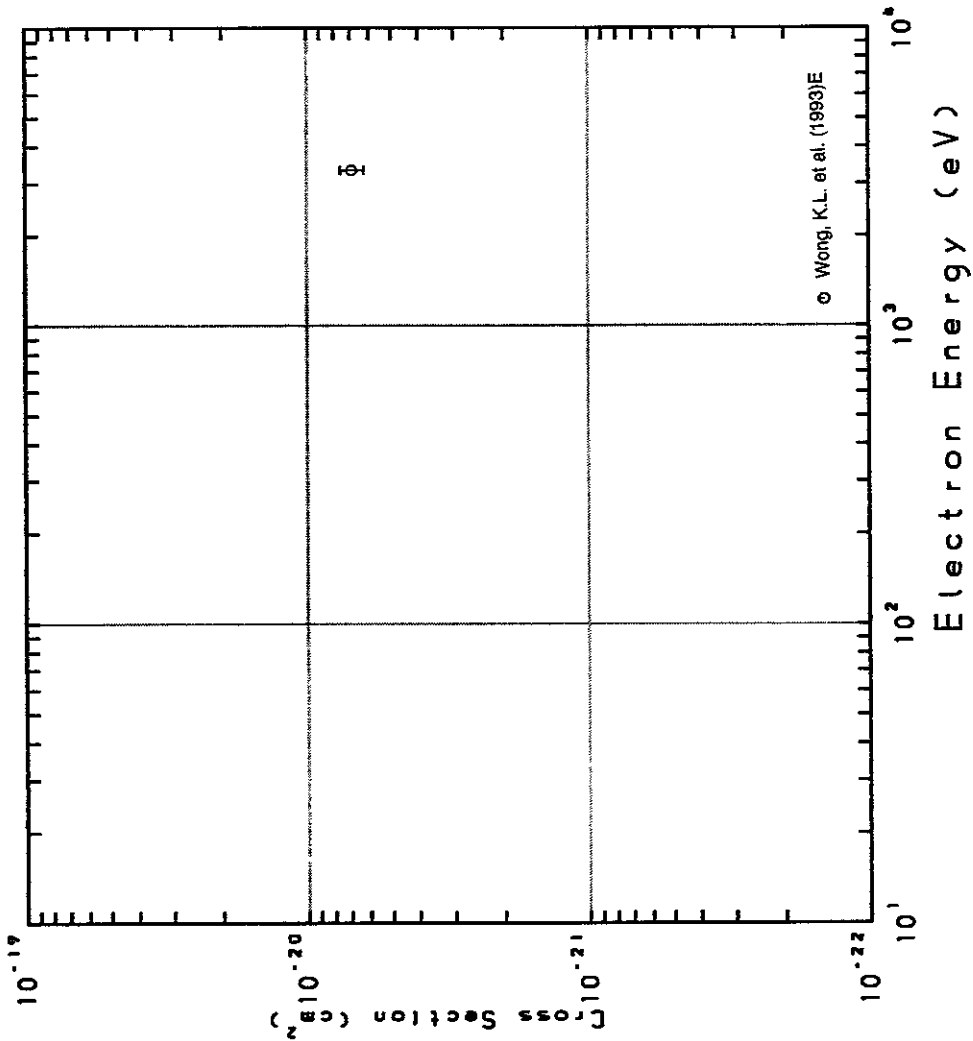


Fig. 181 $\text{Ti}^{19+} \rightarrow \text{Ti}^{20+}$

AMDIS-ION

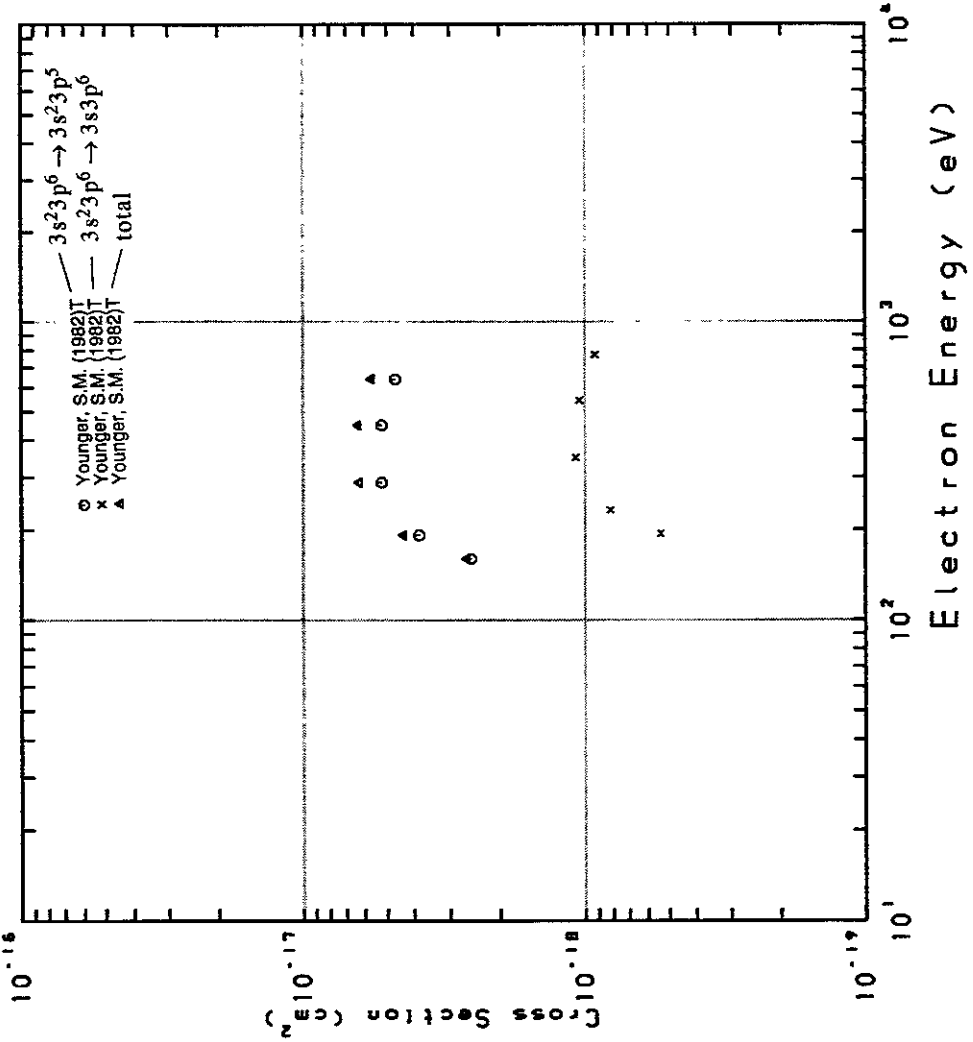
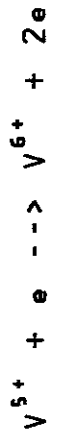


Fig. 182 $\text{V}^{5+} \rightarrow \text{V}^{6+}$

AMDIS-ION

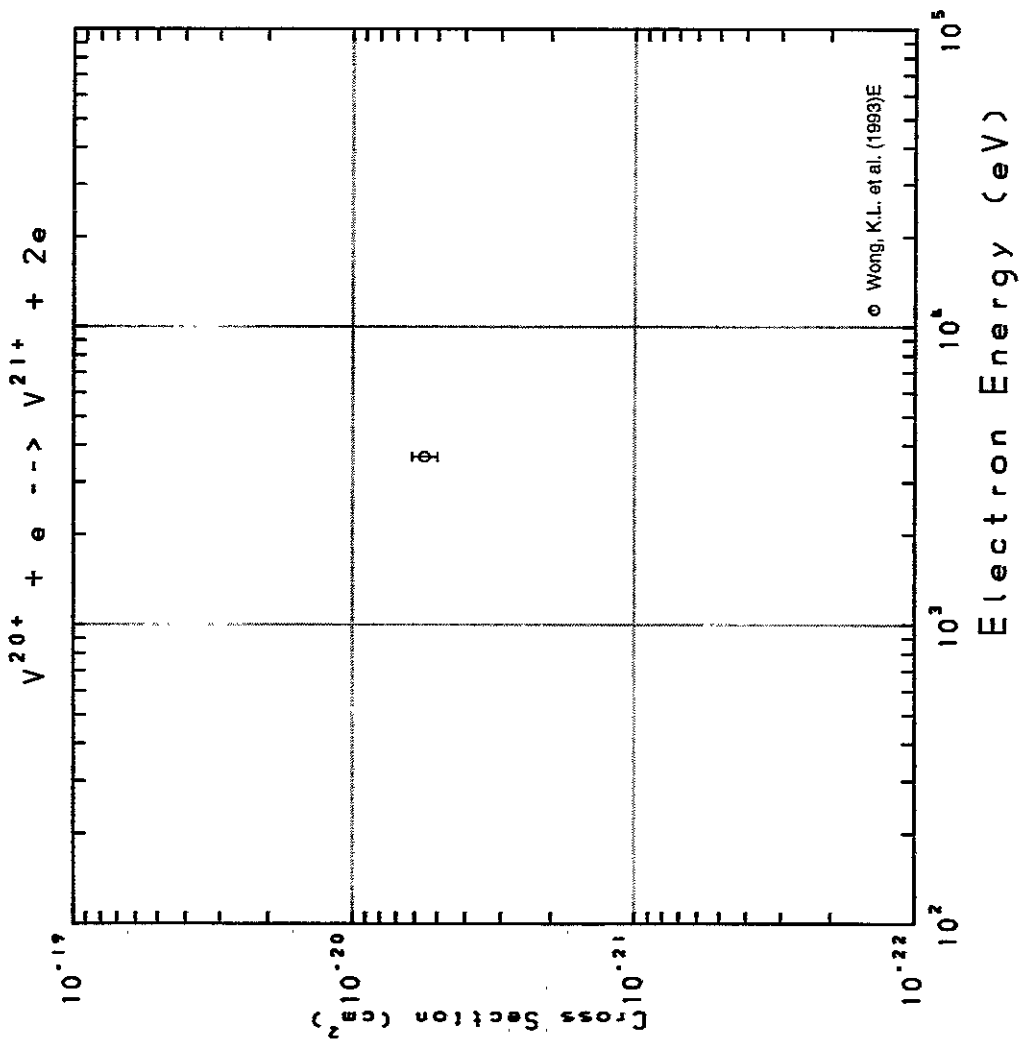


Fig. 183 $V^{20+} \rightarrow V^{21+}$

AMDIS-ION

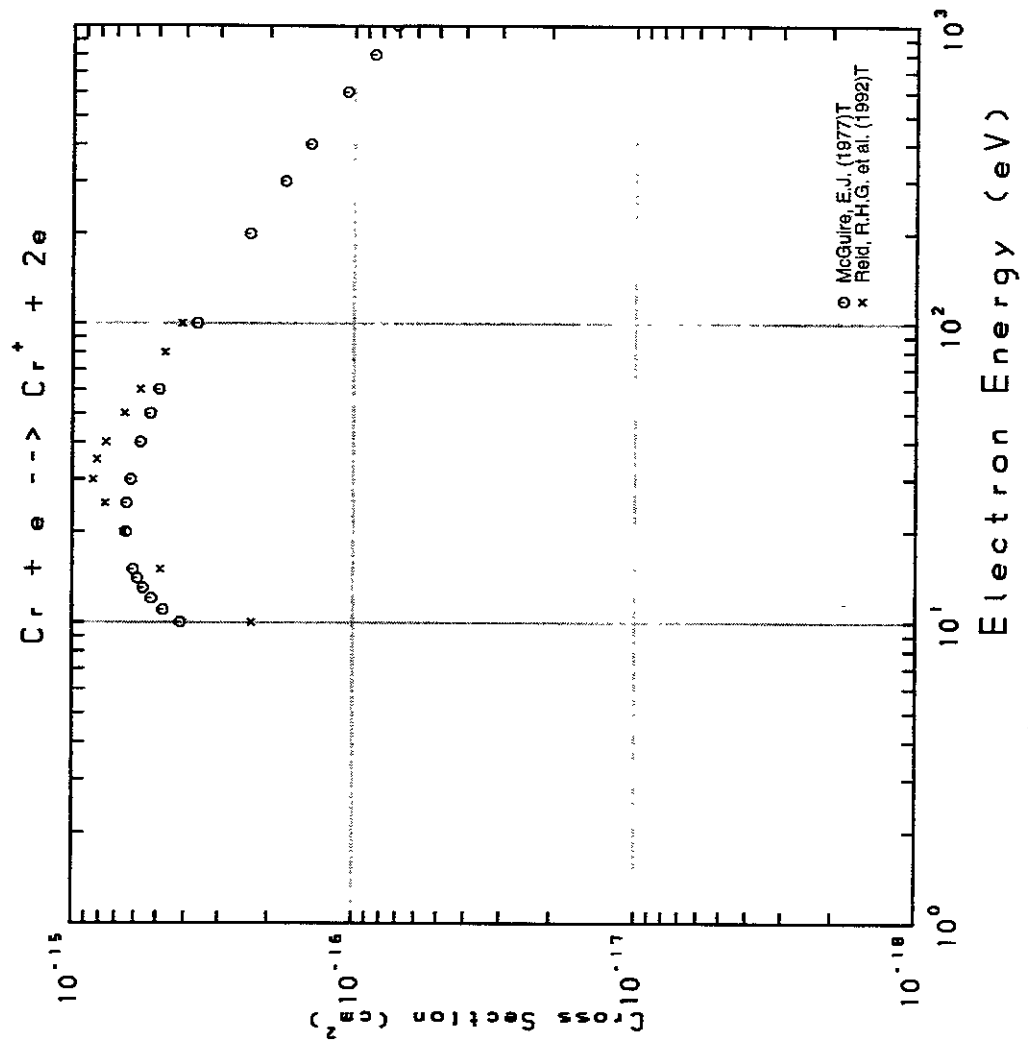


Fig. 184 $Cr \rightarrow Cr^+$

AMDIS-ION

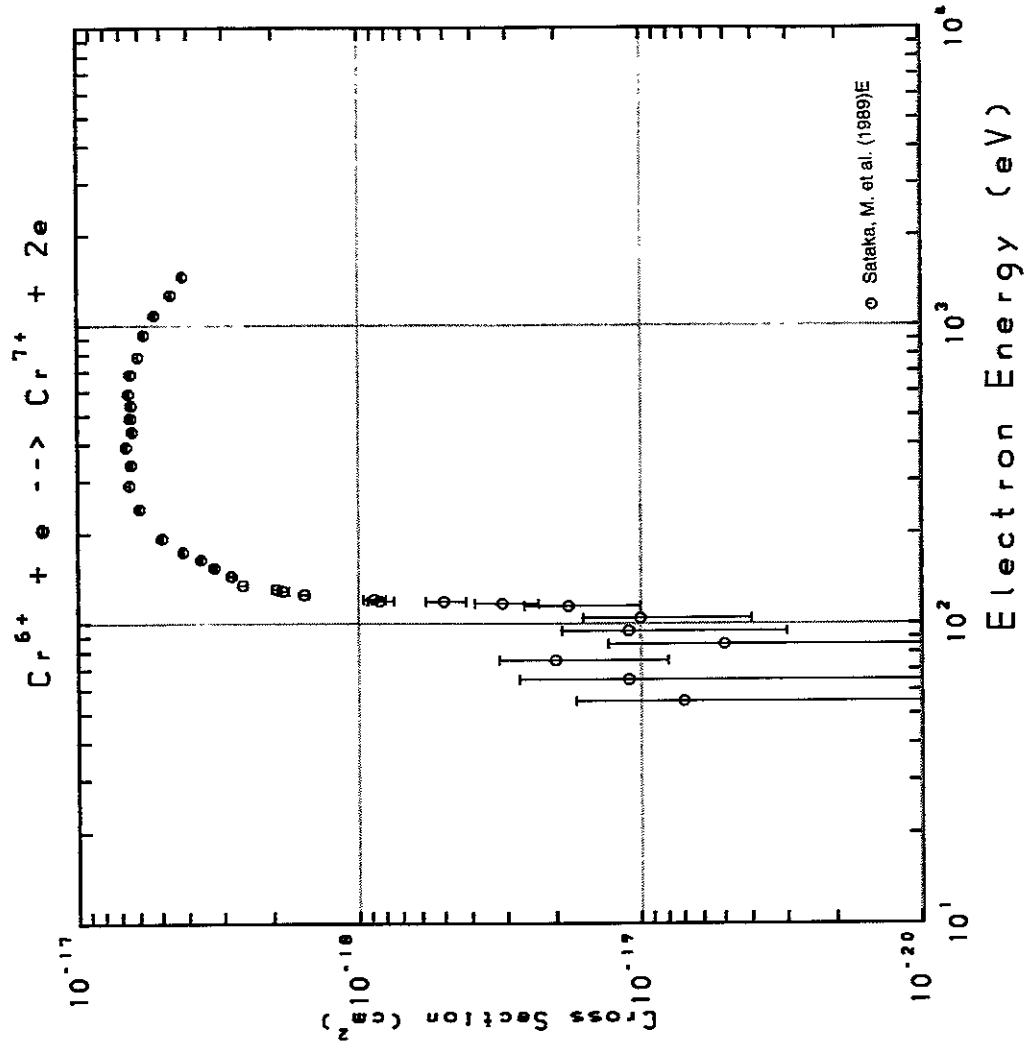


Fig. 186Cr⁶⁺ → Cr⁷⁺

AMDIS-ION

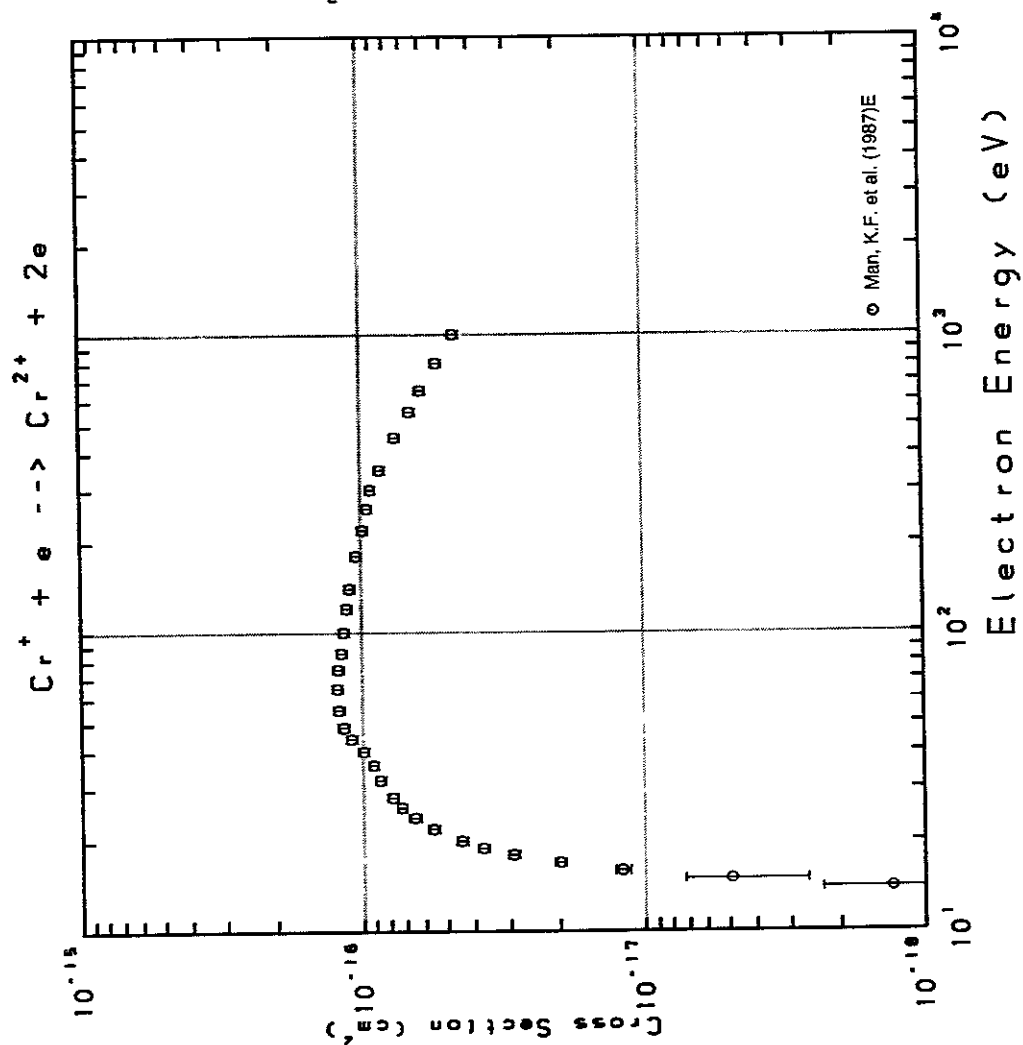


Fig. 185Cr⁺ → Cr²⁺

AMDIS-ION

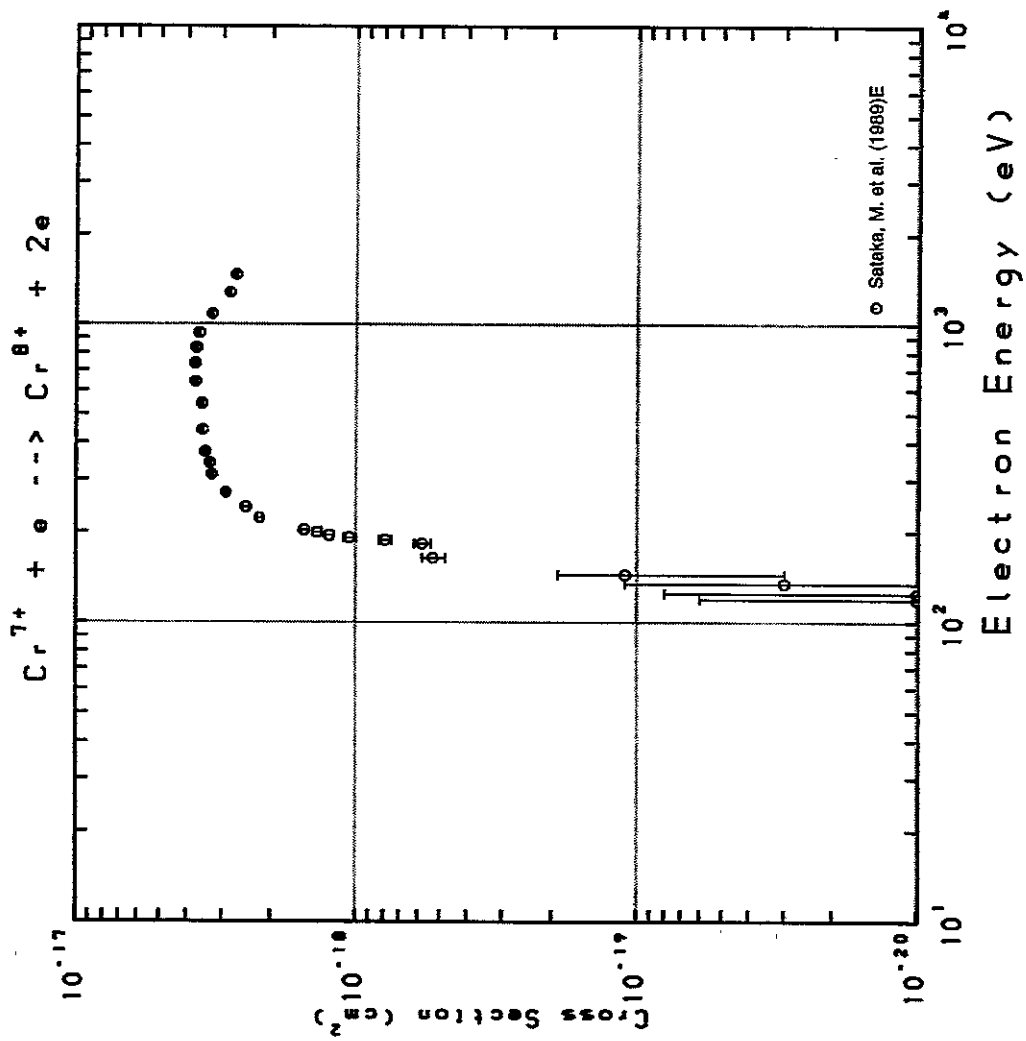


Fig. 187 $\text{Cr}^{7+} \rightarrow \text{Cr}^{8+}$

AMDIS-ION

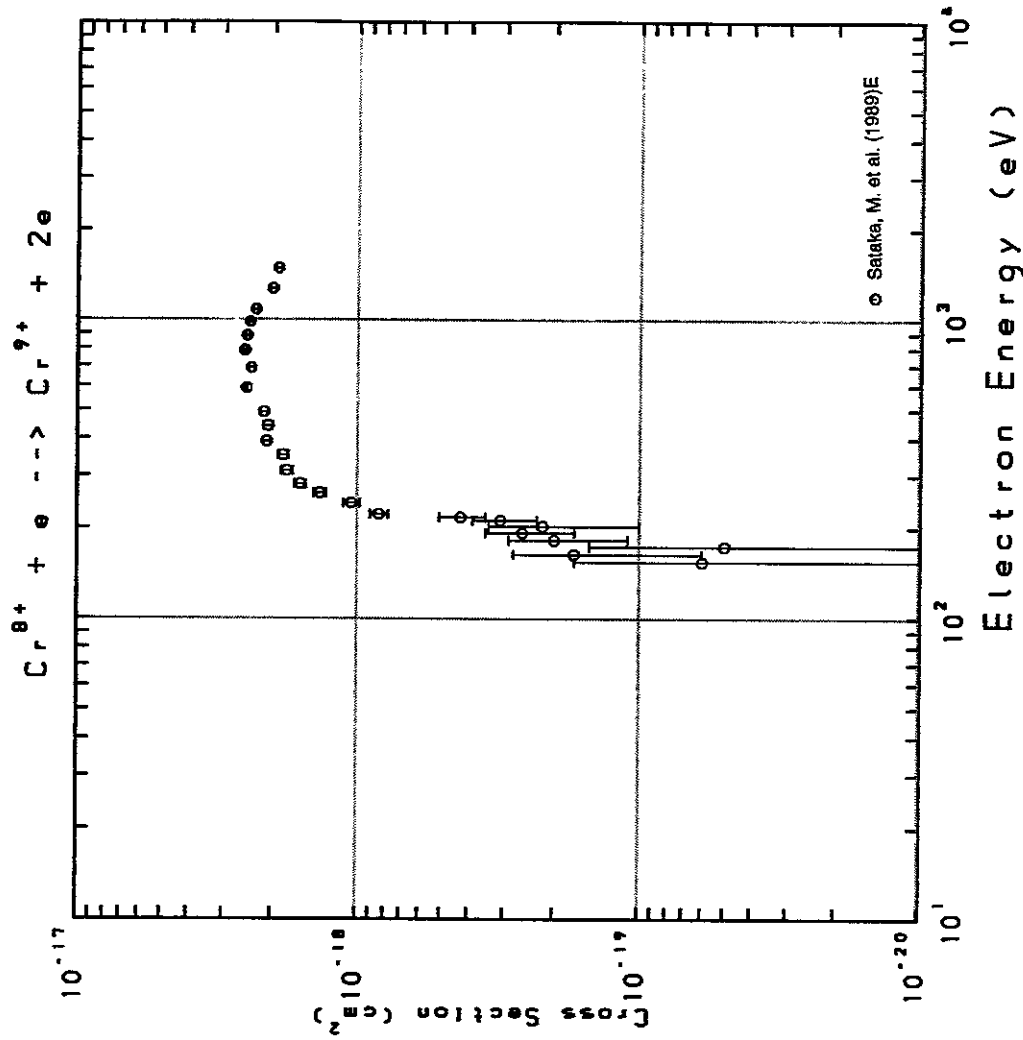


Fig. 188 $\text{Cr}^{8+} \rightarrow \text{Cr}^{9+}$

AMDIS-ION

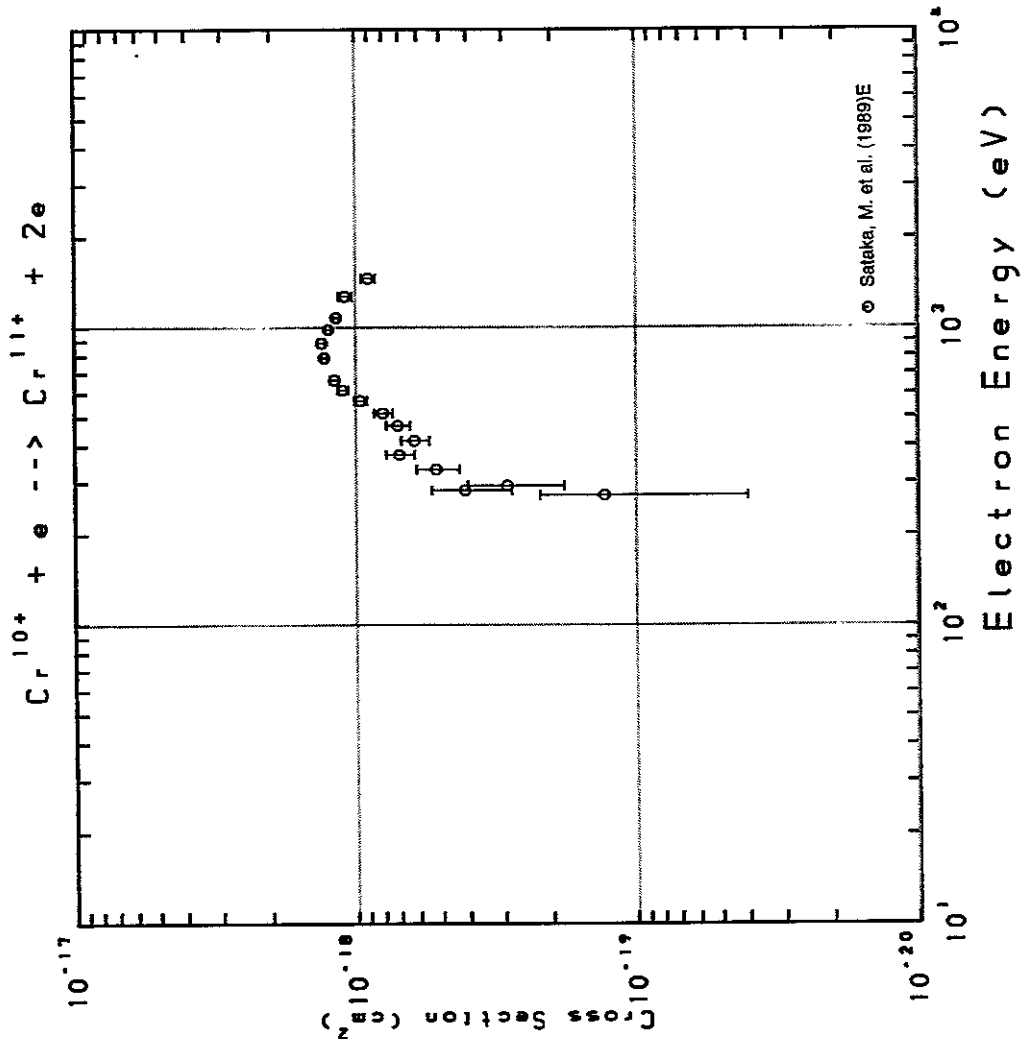


Fig. 189 $\text{Cr}^{10+} \rightarrow \text{Cr}^{11+}$

AMDIS-ION

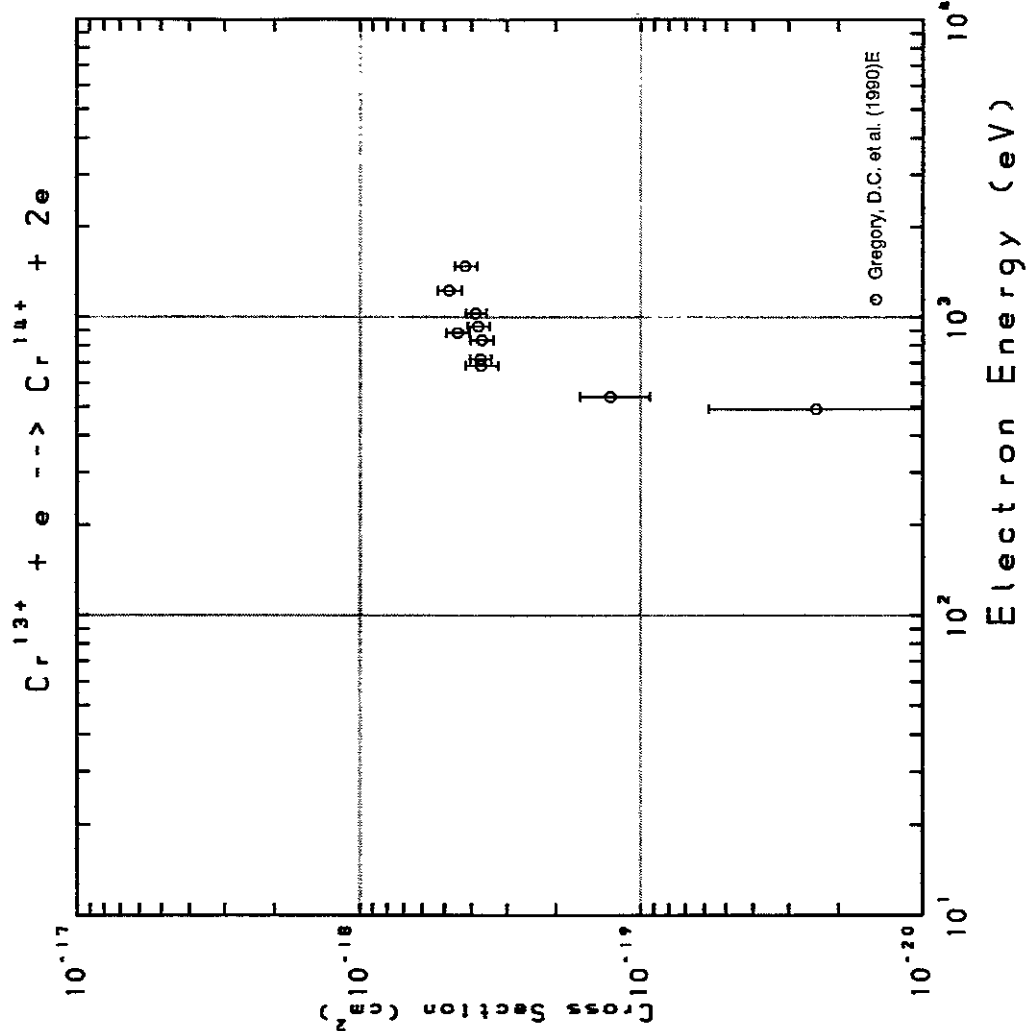


Fig. 190 $\text{Cr}^{13+} \rightarrow \text{Cr}^{14+}$

AMDIS-ION

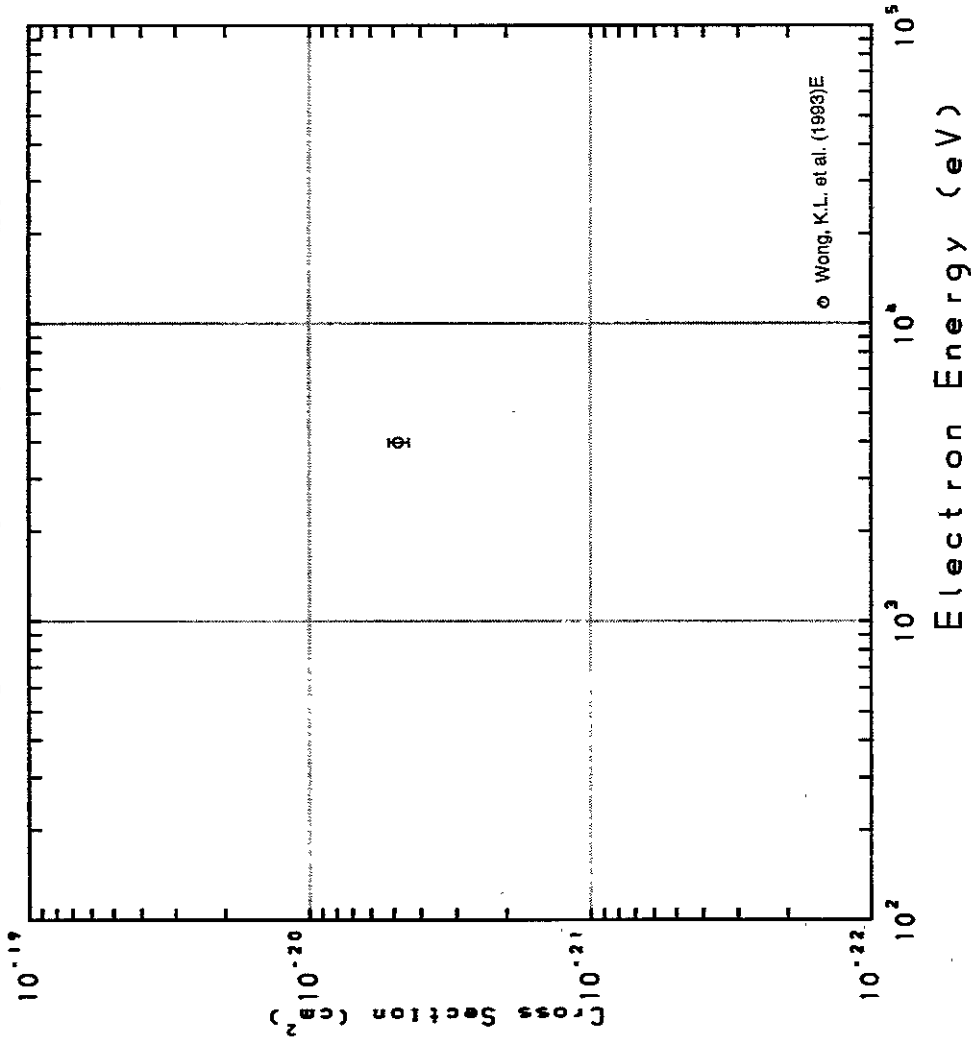
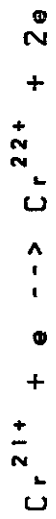


Fig. 191 $\text{Cr}^{21+} \rightarrow \text{Cr}^{22+}$

AMDIS-ION

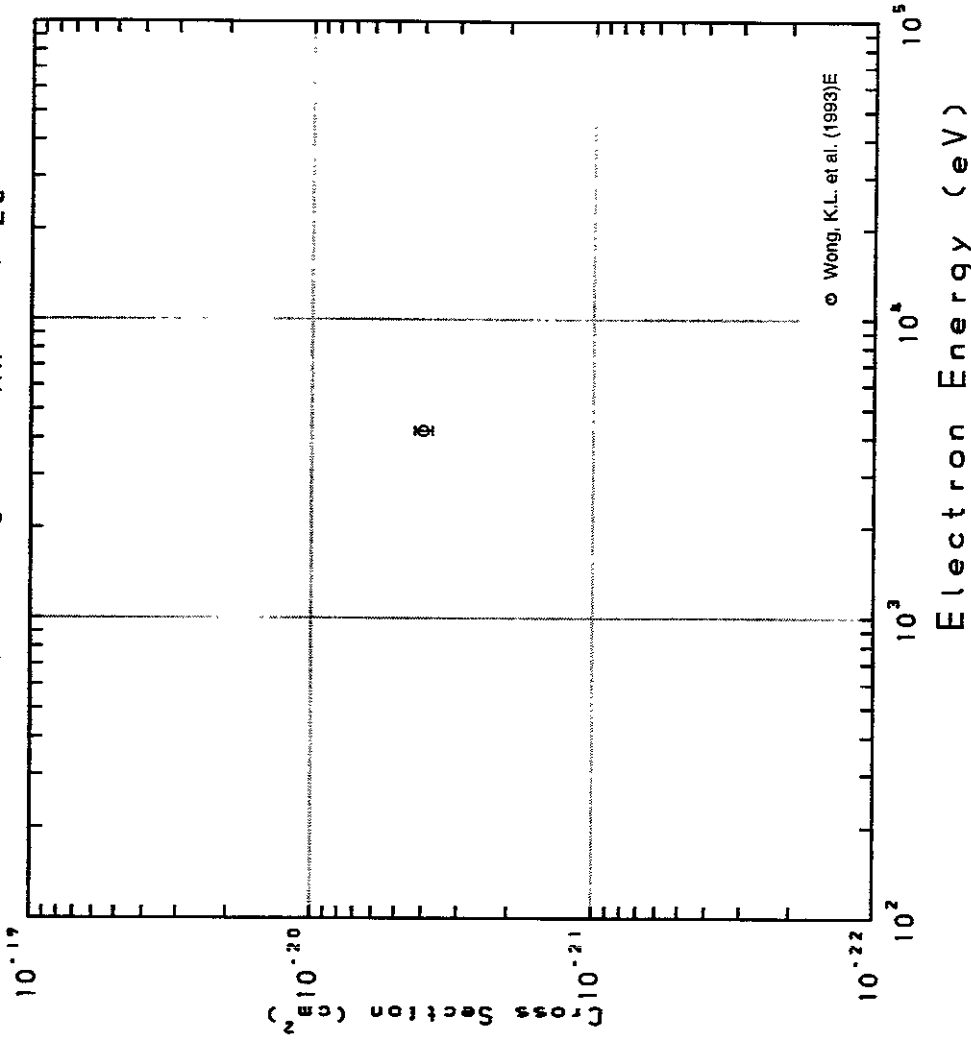
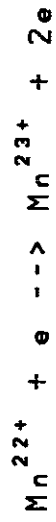


Fig. 192 $\text{Mn}^{22+} \rightarrow \text{Mn}^{23+}$

AMDIS-ION

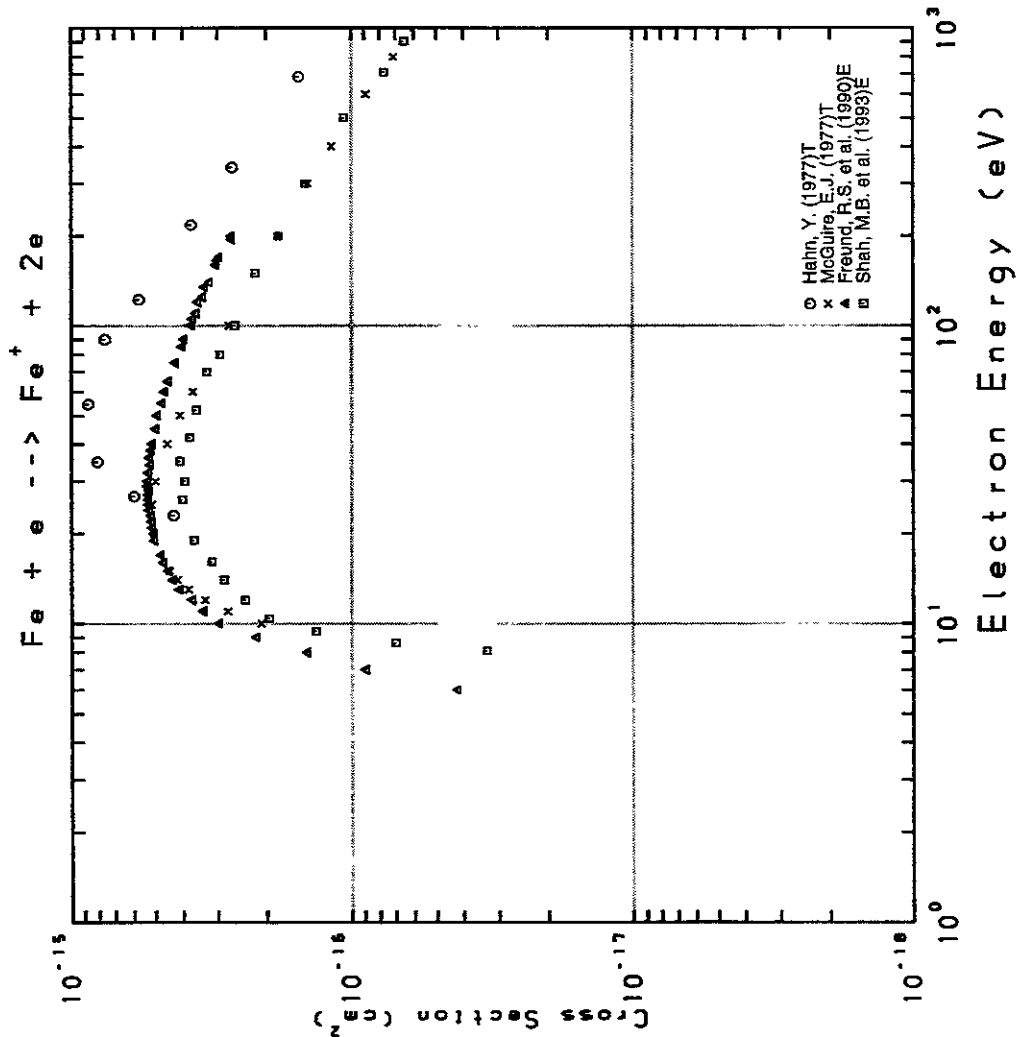


Fig. 193 $Fe \rightarrow Fe^+$

AMDIS-ION

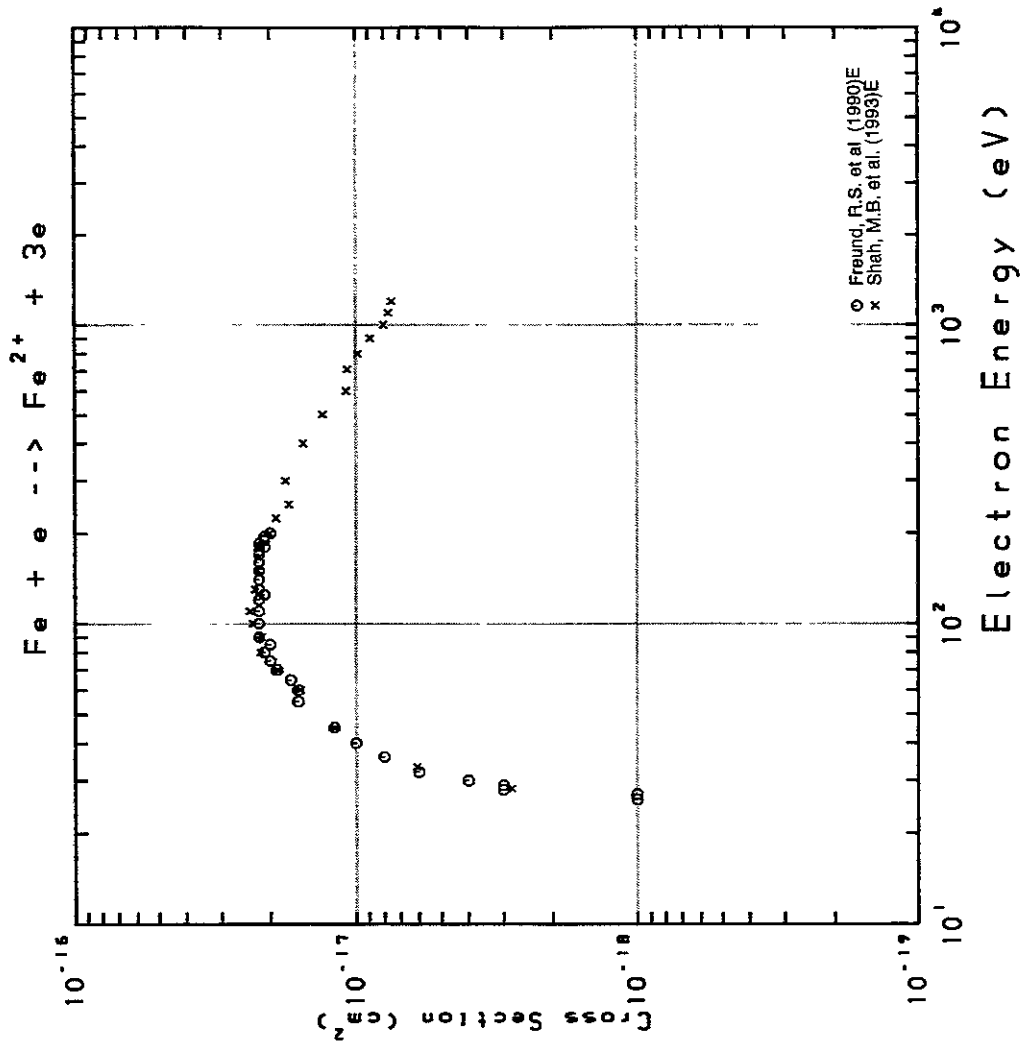


Fig. 194 $Fe \rightarrow Fe^{2+}$

AMDIS-ION

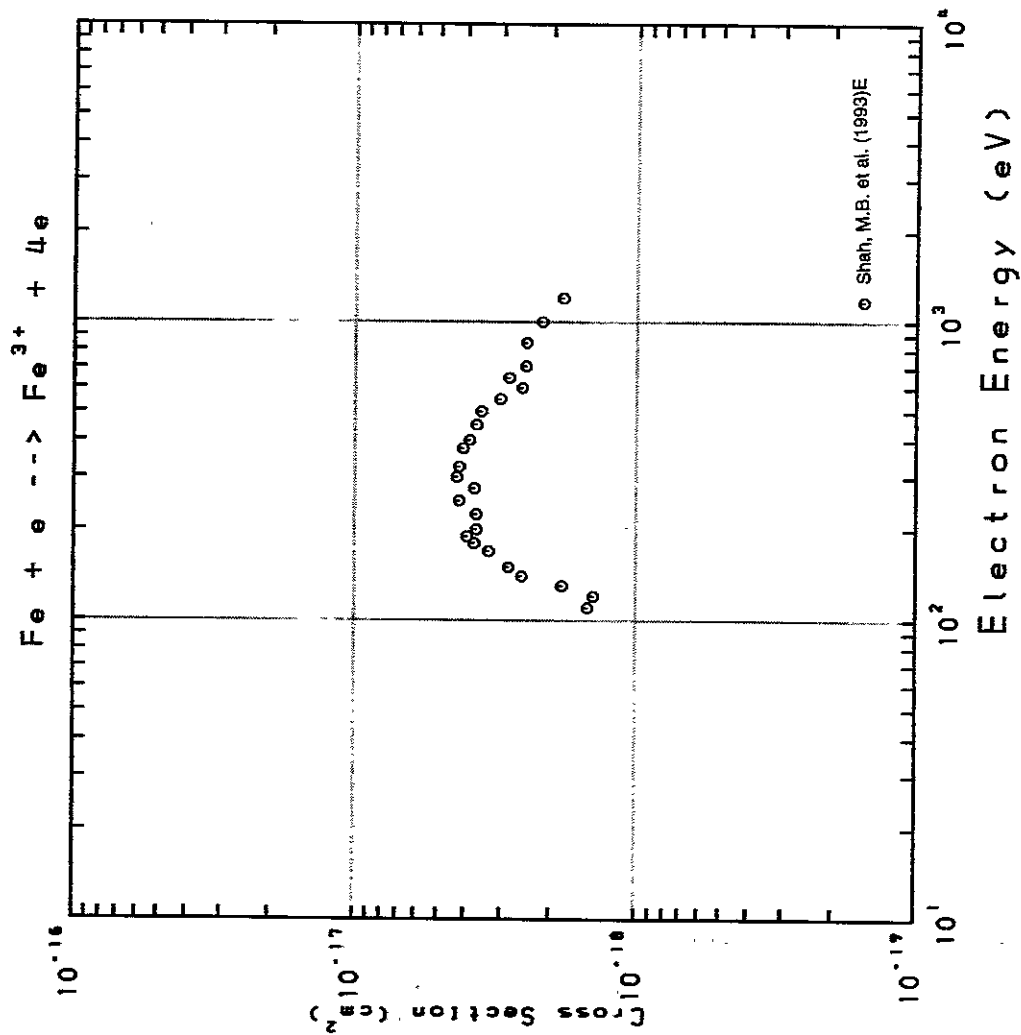


Fig. 195 Fe → Fe³⁺

AMDIS-ION

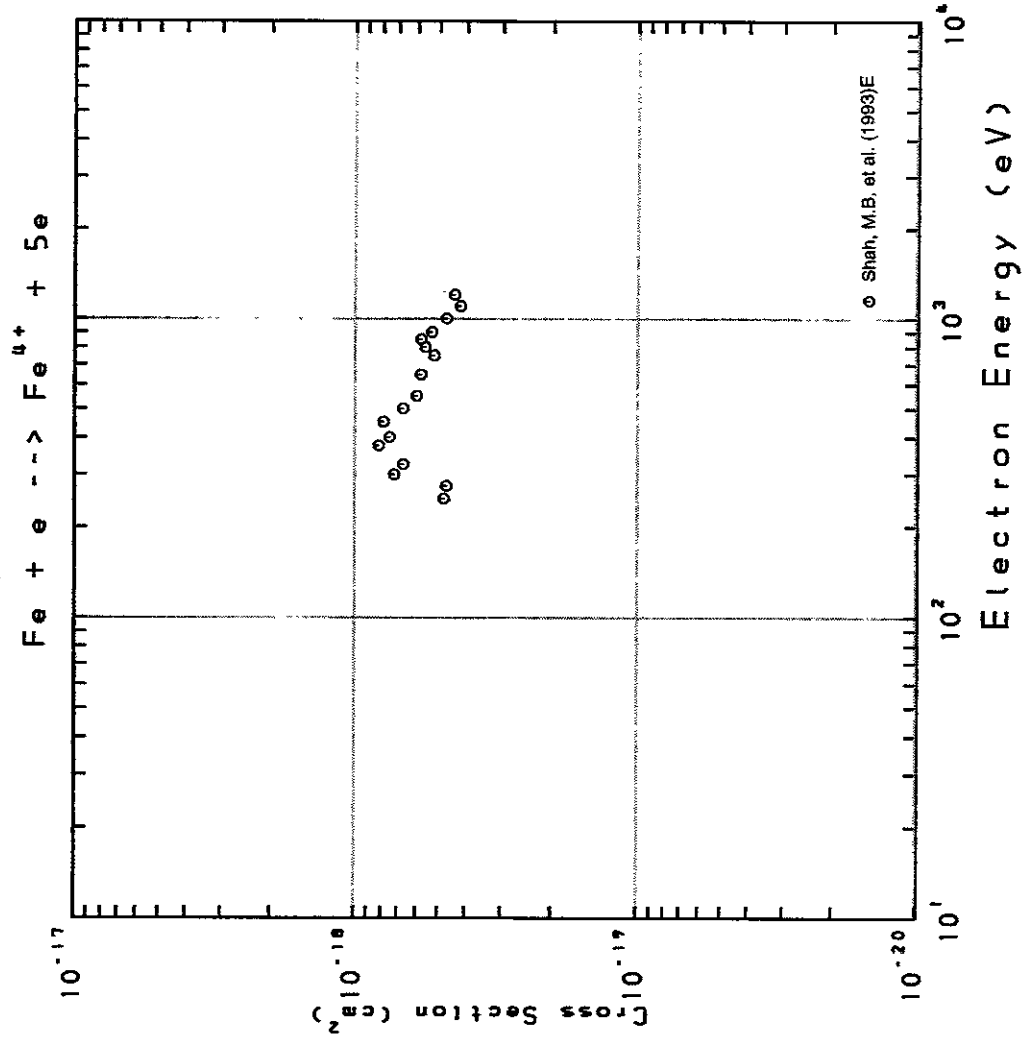


Fig. 196 Fe → Fe⁴⁺

AMDIS-ION

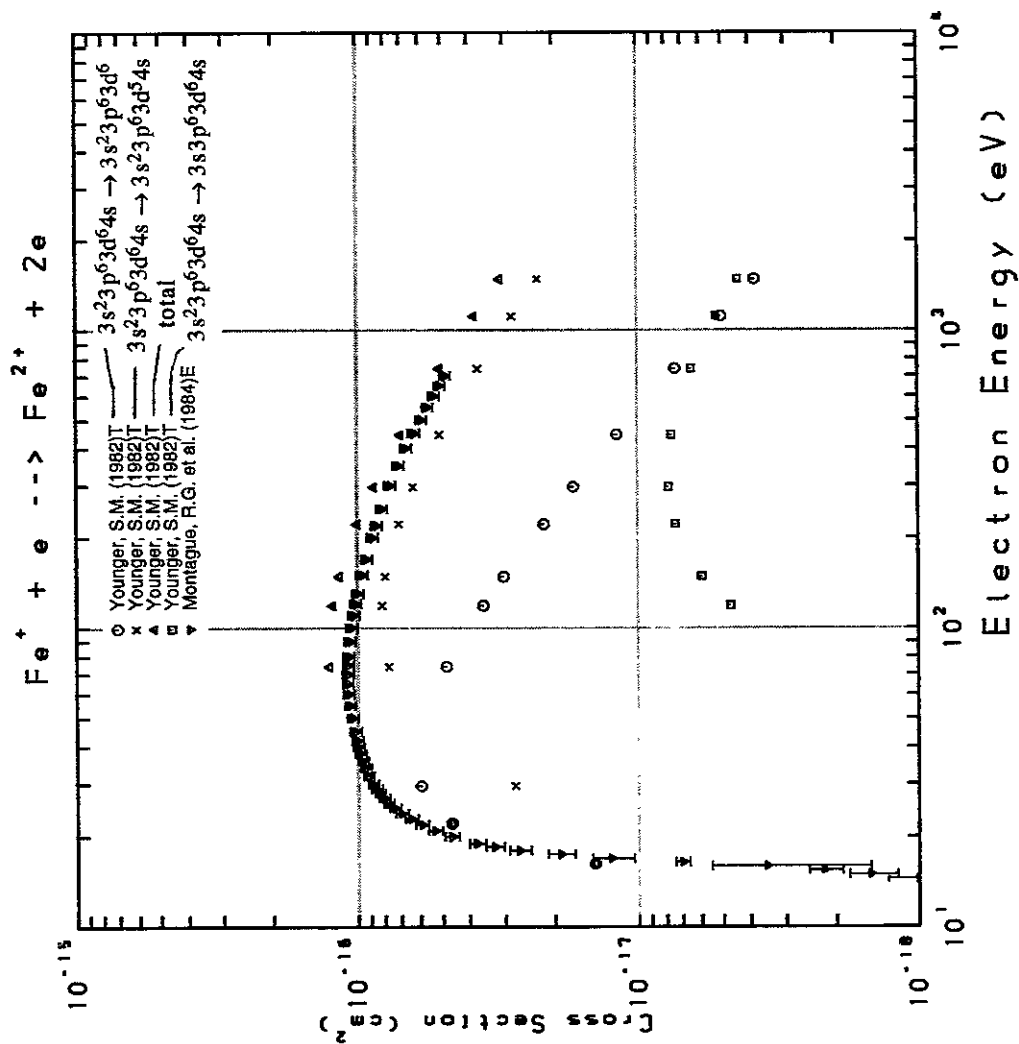


Fig. 197 $\text{Fe}^+ \rightarrow \text{Fe}^{2+}$

AMDIS-ION

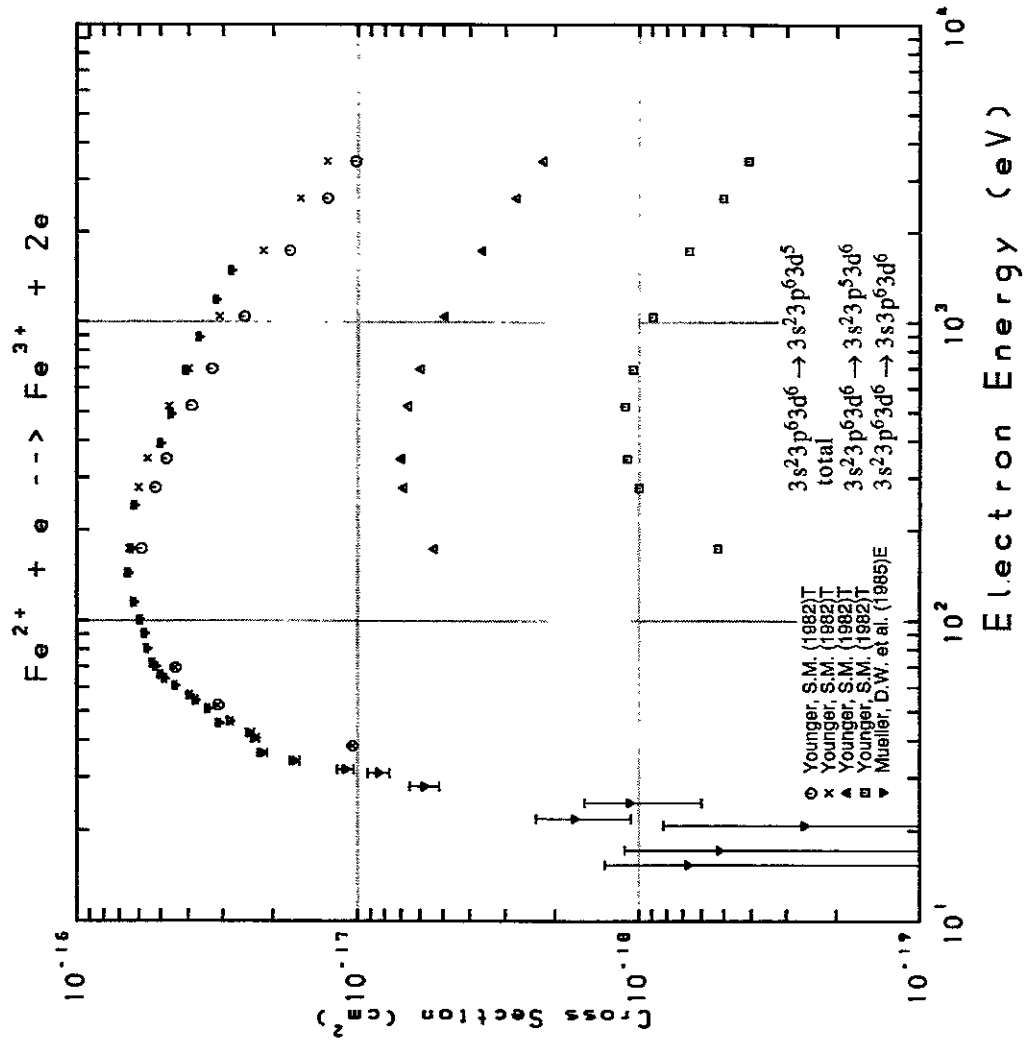


Fig. 198 $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}$

AMDIS-ION

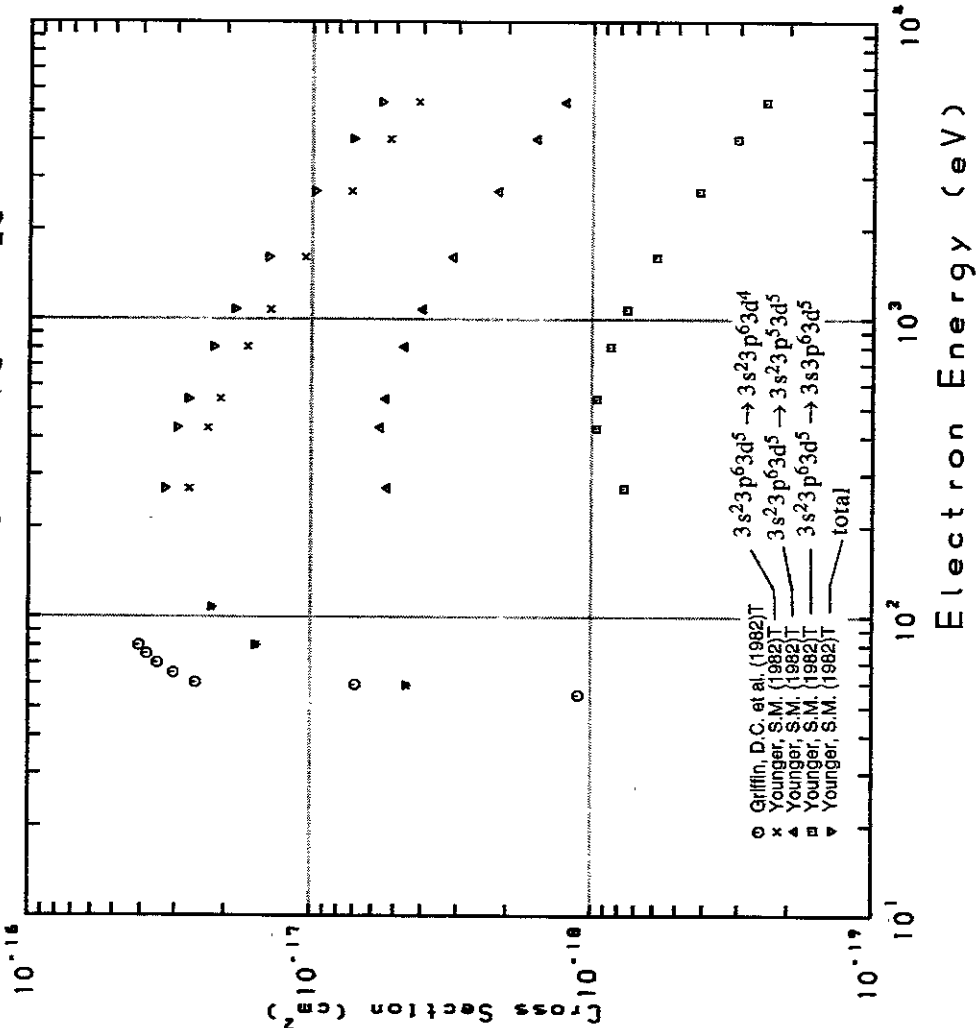


Fig. 199 Fe³⁺ → Fe⁴⁺

AMDIS-ION

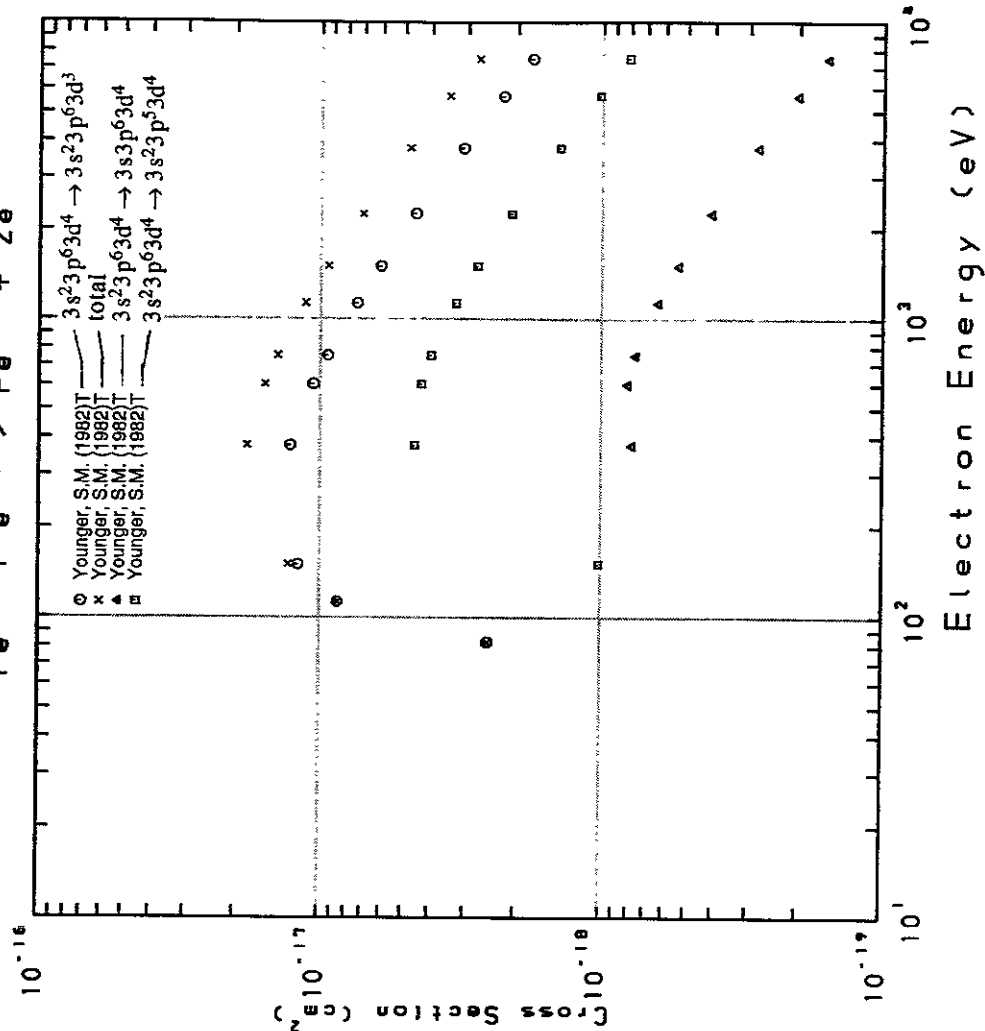


Fig. 200 Fe⁴⁺ → Fe⁵⁺

AMDIS-ION

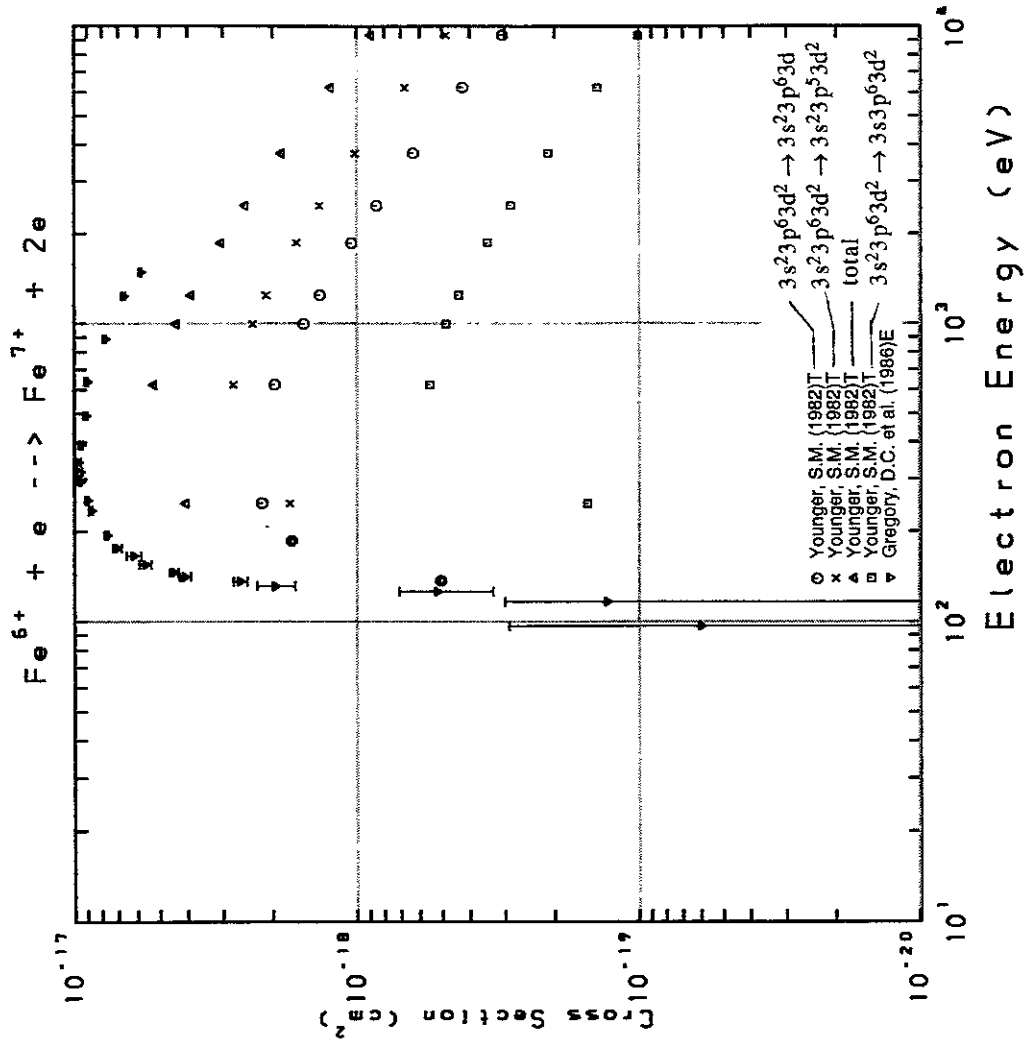


Fig. 202 $Fe^{6+} \rightarrow Fe^{7+}$

AMDIS-ION

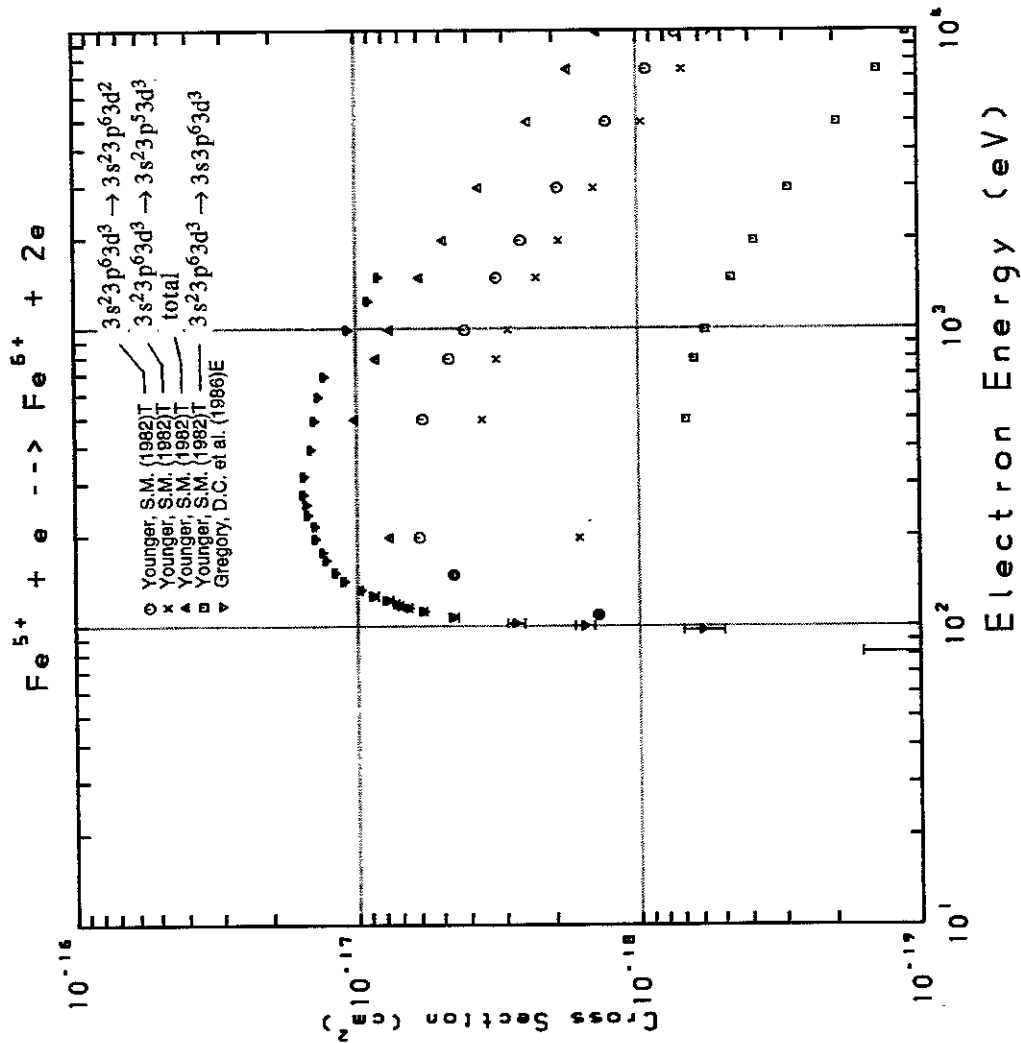


Fig. 201 $Fe^{5+} \rightarrow Fe^{6+}$

AMDIS-ION

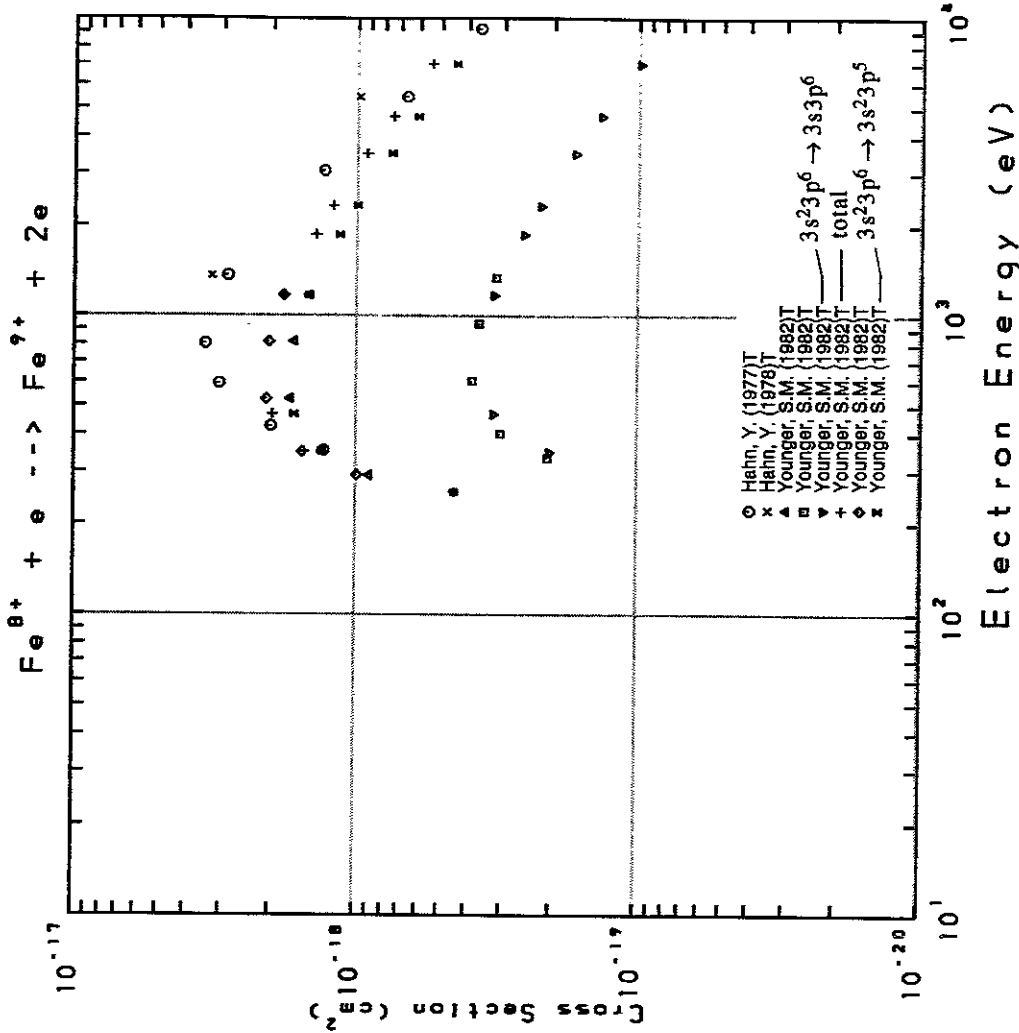


Fig. 204 $\text{Fe}^{8+} \rightarrow \text{Fe}^{9+}$

AMDIS-ION

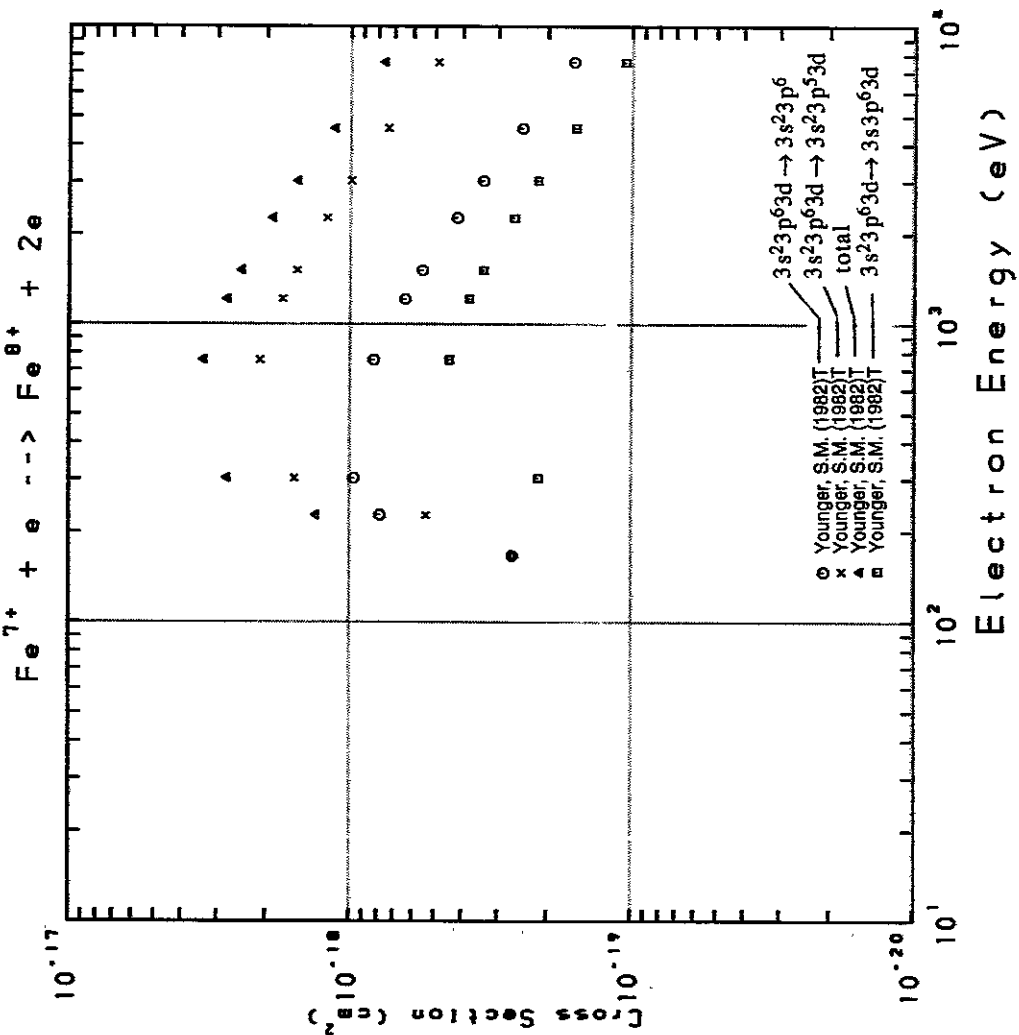


Fig. 203 $\text{Fe}^{7+} \rightarrow \text{Fe}^{8+}$

AMDIS-ION

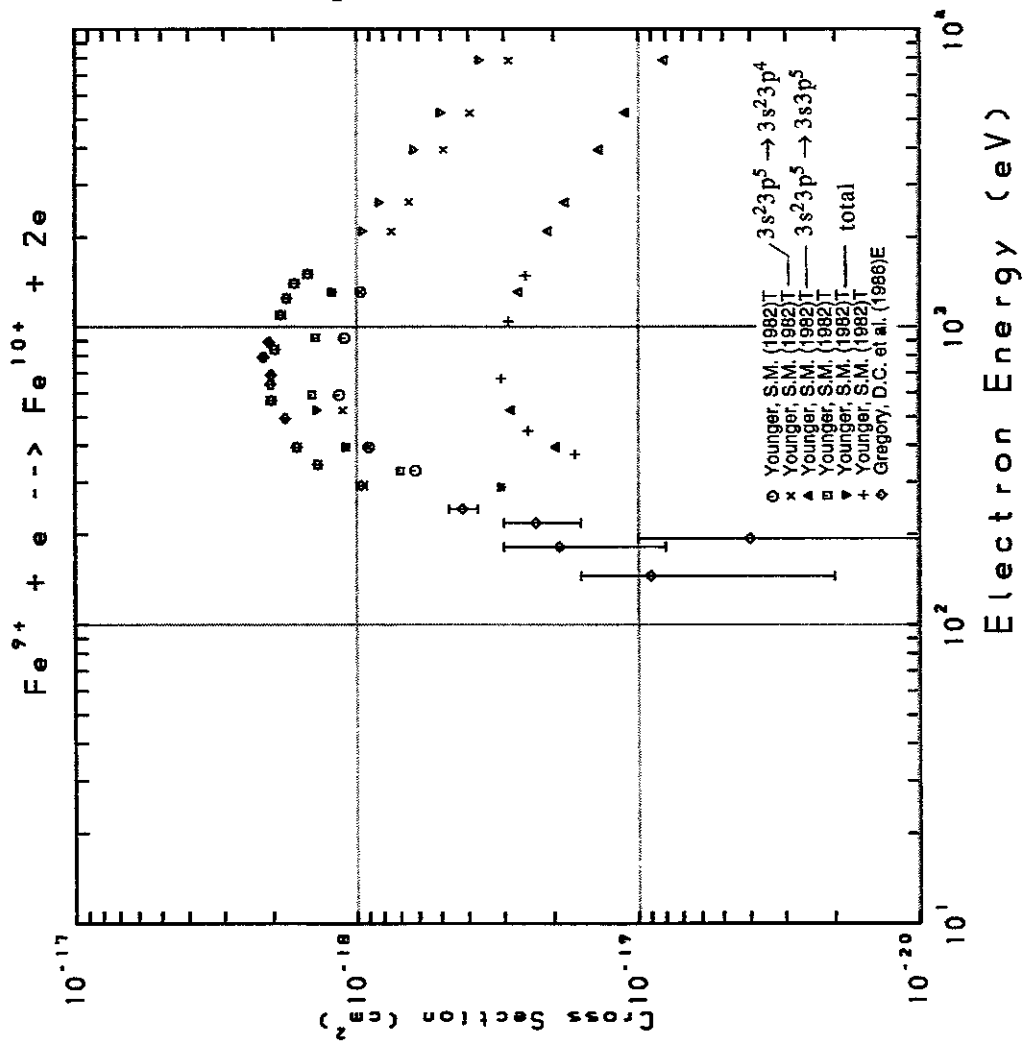


Fig. 205 $\text{Fe}^{9+} \rightarrow \text{Fe}^{10+}$

AMDIS-ION

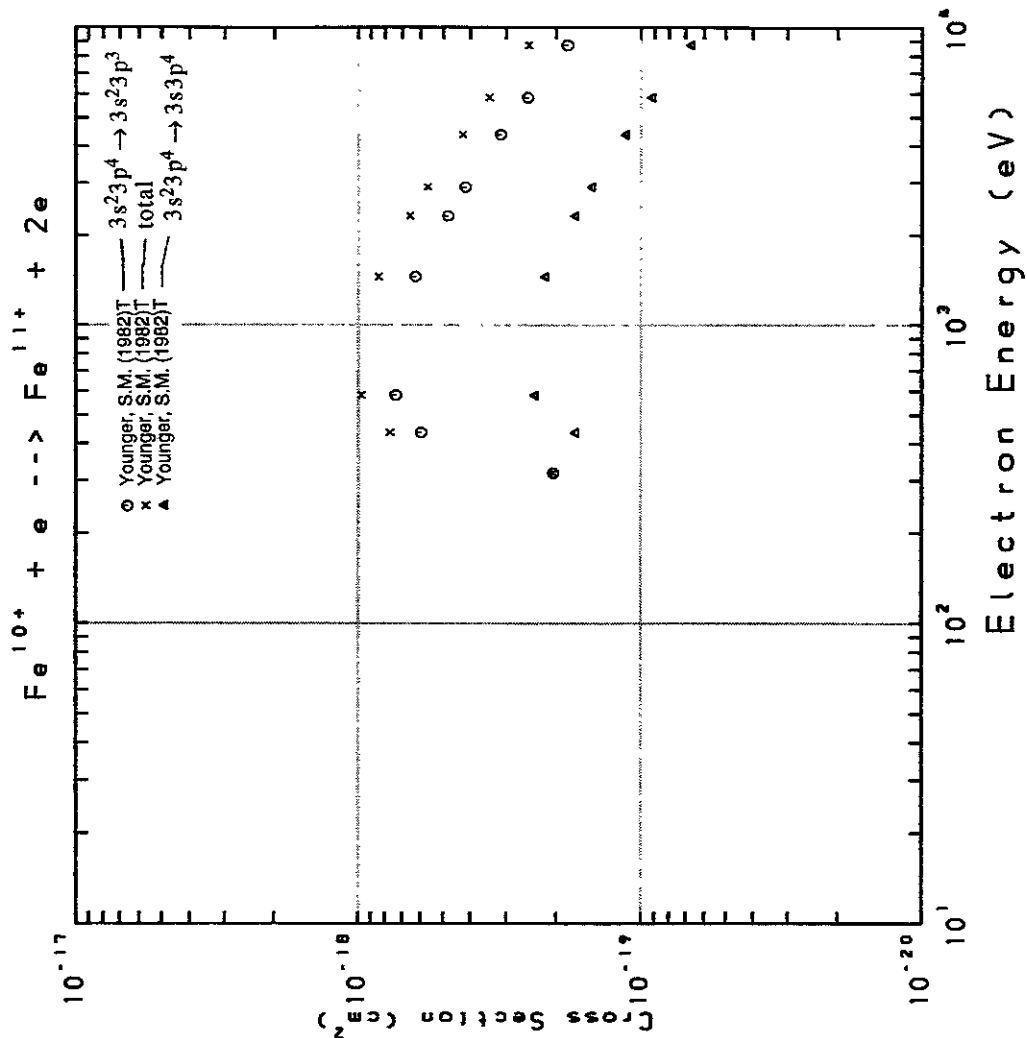


Fig. 206 $\text{Fe}^{10+} \rightarrow \text{Fe}^{11+}$

AMDIS-ION

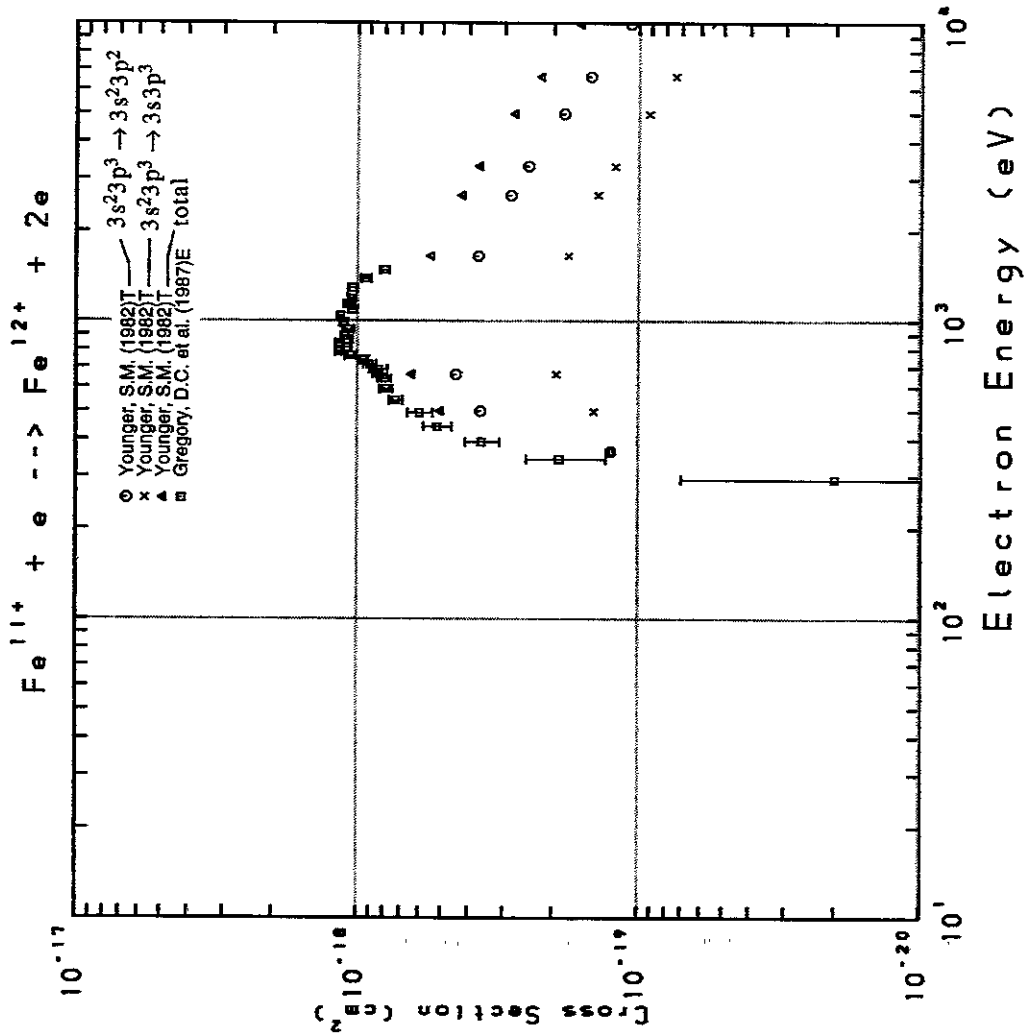


Fig. 207 $Fe^{11+} \rightarrow Fe^{12+}$

AMDIS-ION

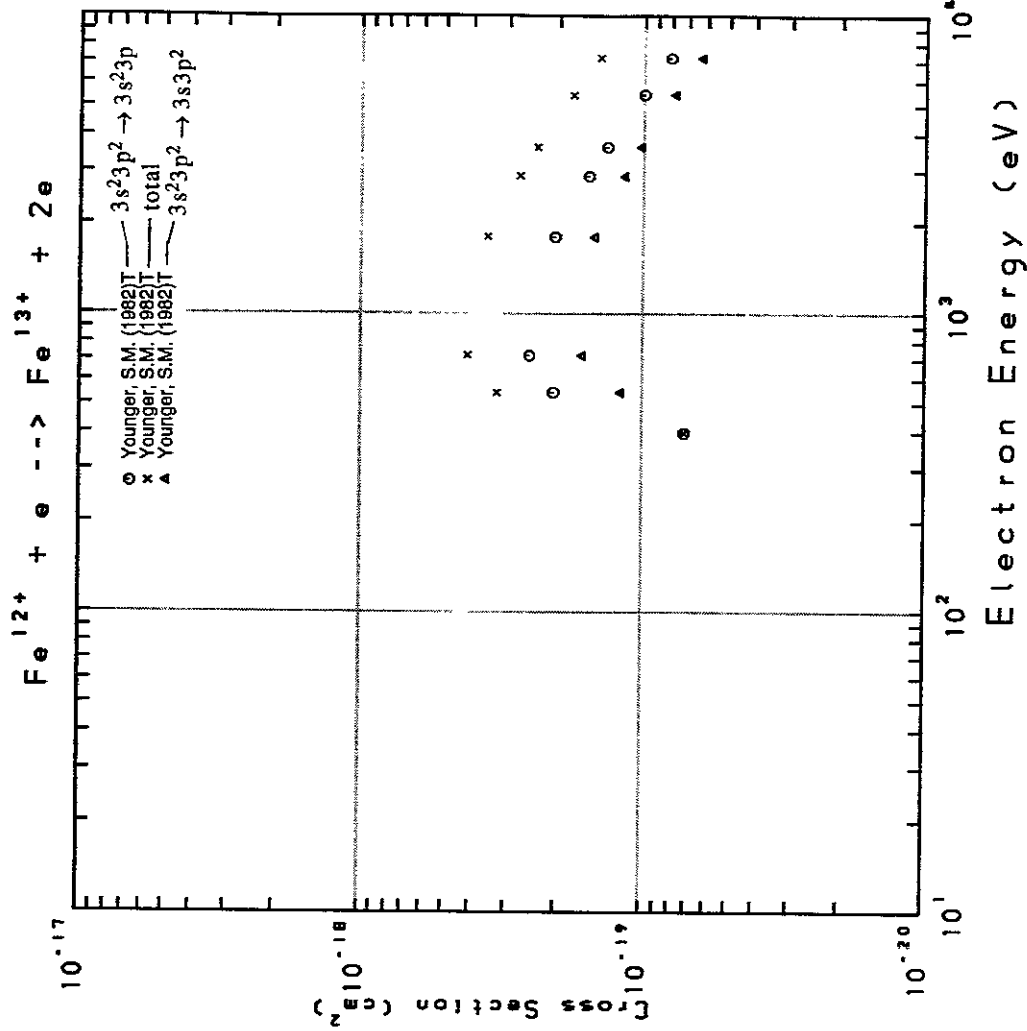


Fig. 208 $Fe^{12+} \rightarrow Fe^{13+}$

AMDIS-ION

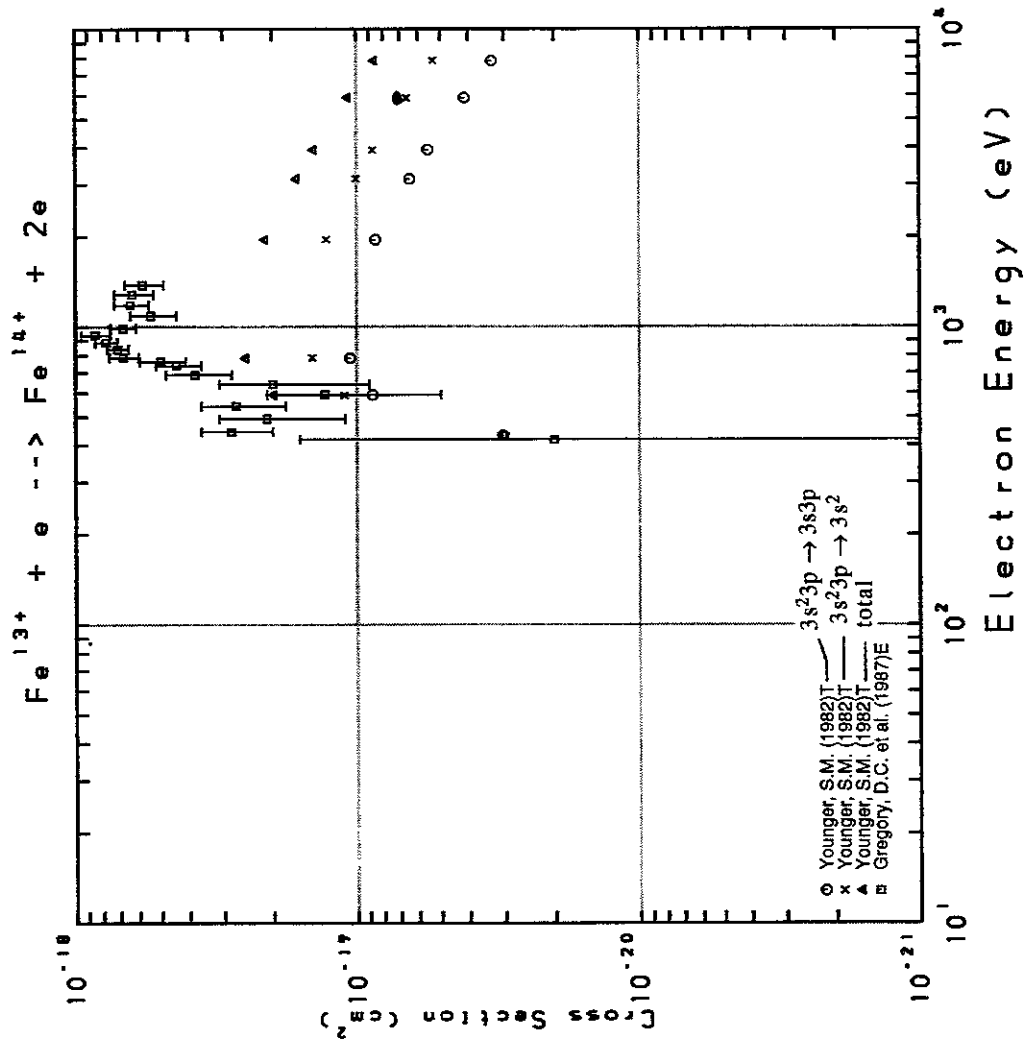


Fig. 209 $\text{Fe}^{13+} \rightarrow \text{Fe}^{14+}$

AMDIS-ION

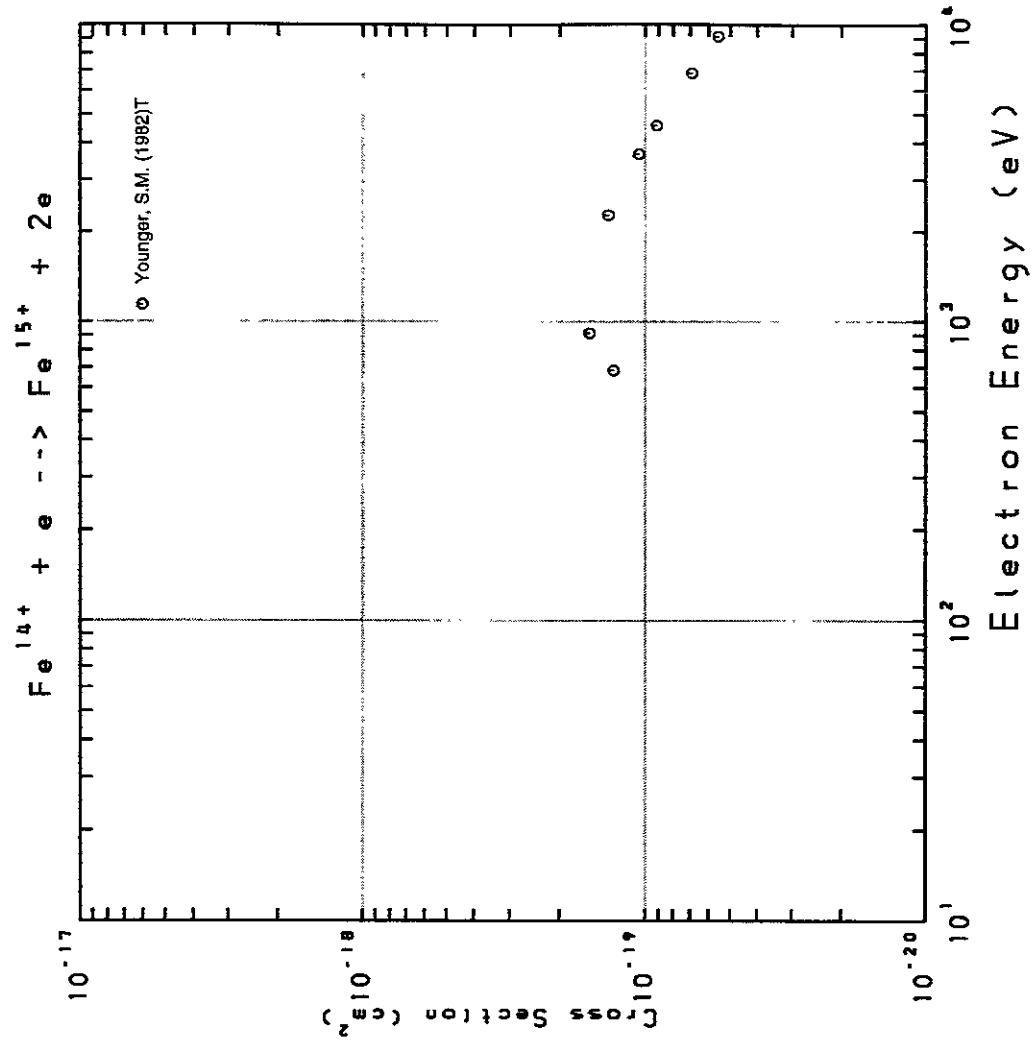


Fig. 210 $\text{Fe}^{14+} \rightarrow \text{Fe}^{15+}$

AMDIS-ION

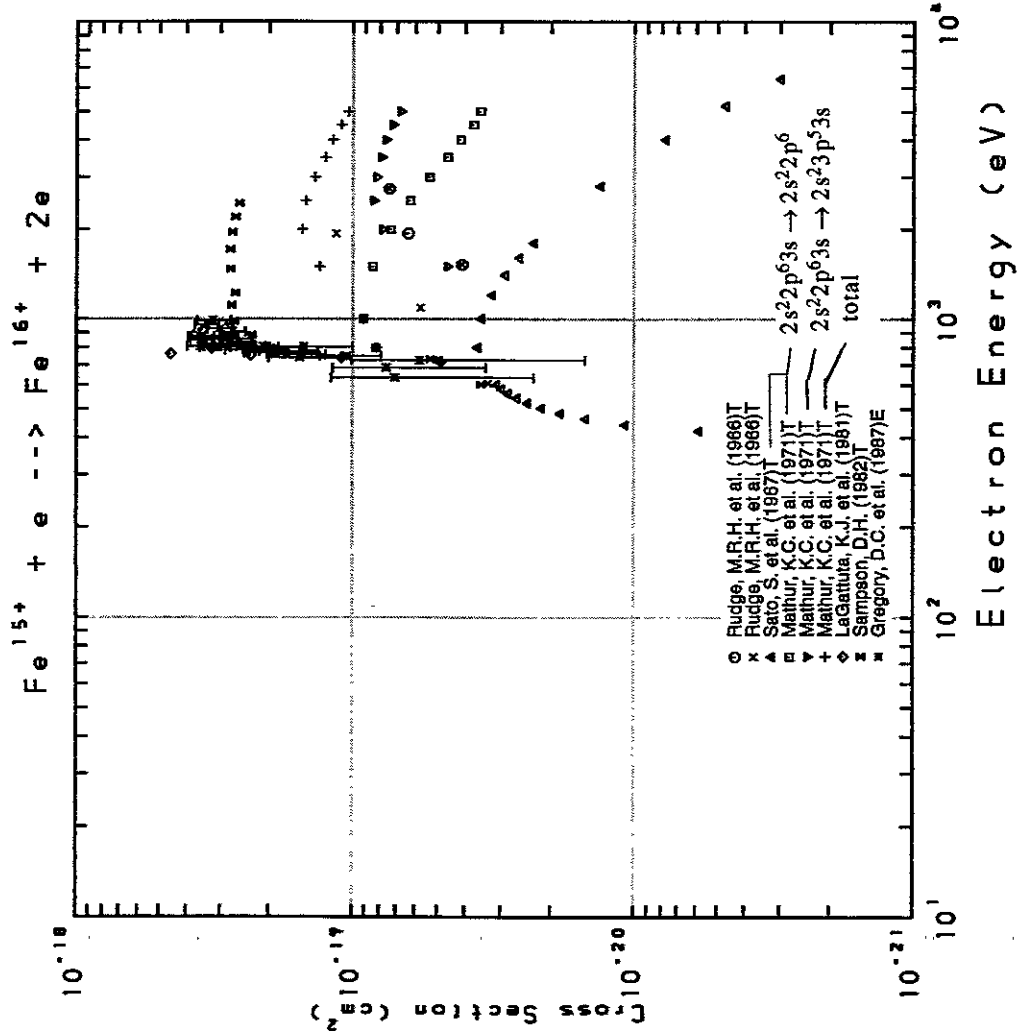


Fig. 211 $Fe^{15+} \rightarrow Fe^{16+}$

AMDIS-ION

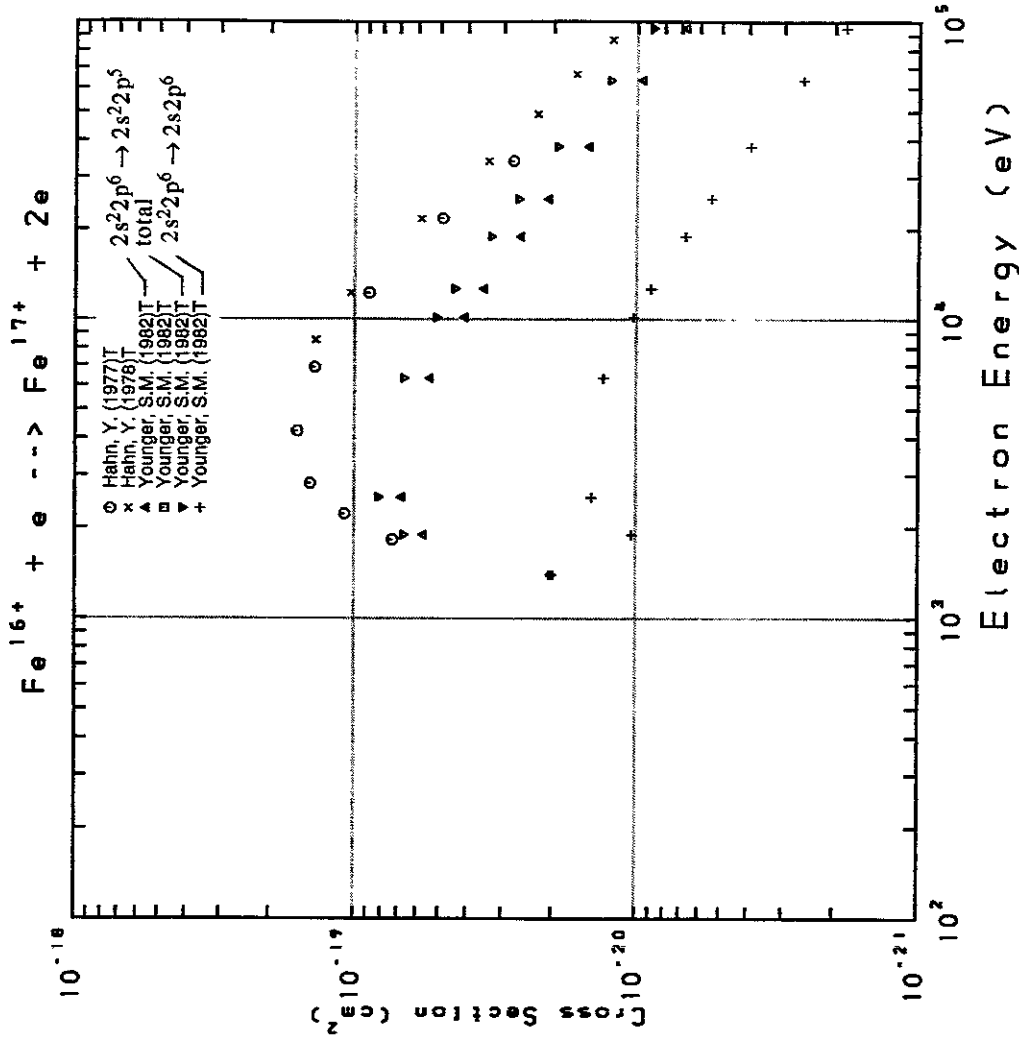


Fig. 212 $Fe^{16+} \rightarrow Fe^{17+}$

AMDIS-ION

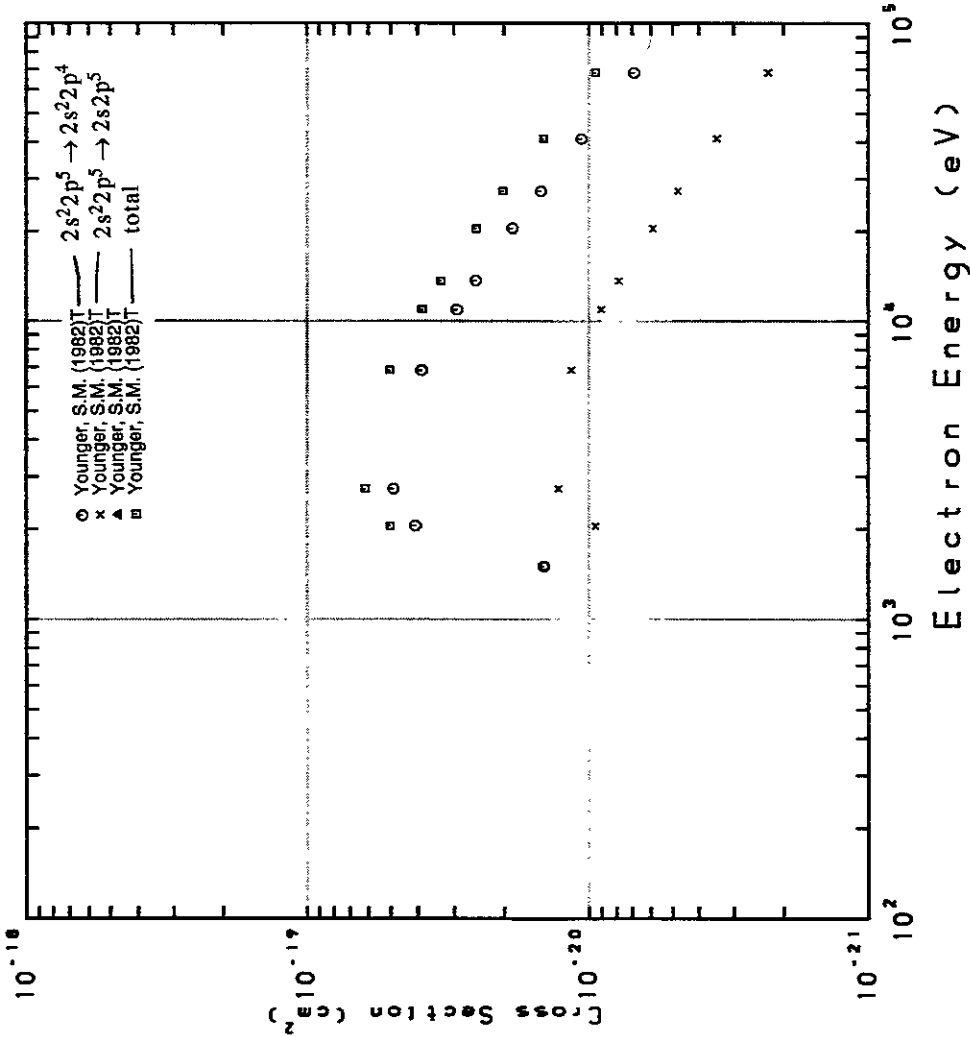
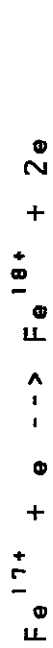


Fig. 213 $\text{Fe}^{17+} \rightarrow \text{Fe}^{18+}$

AMDIS-ION

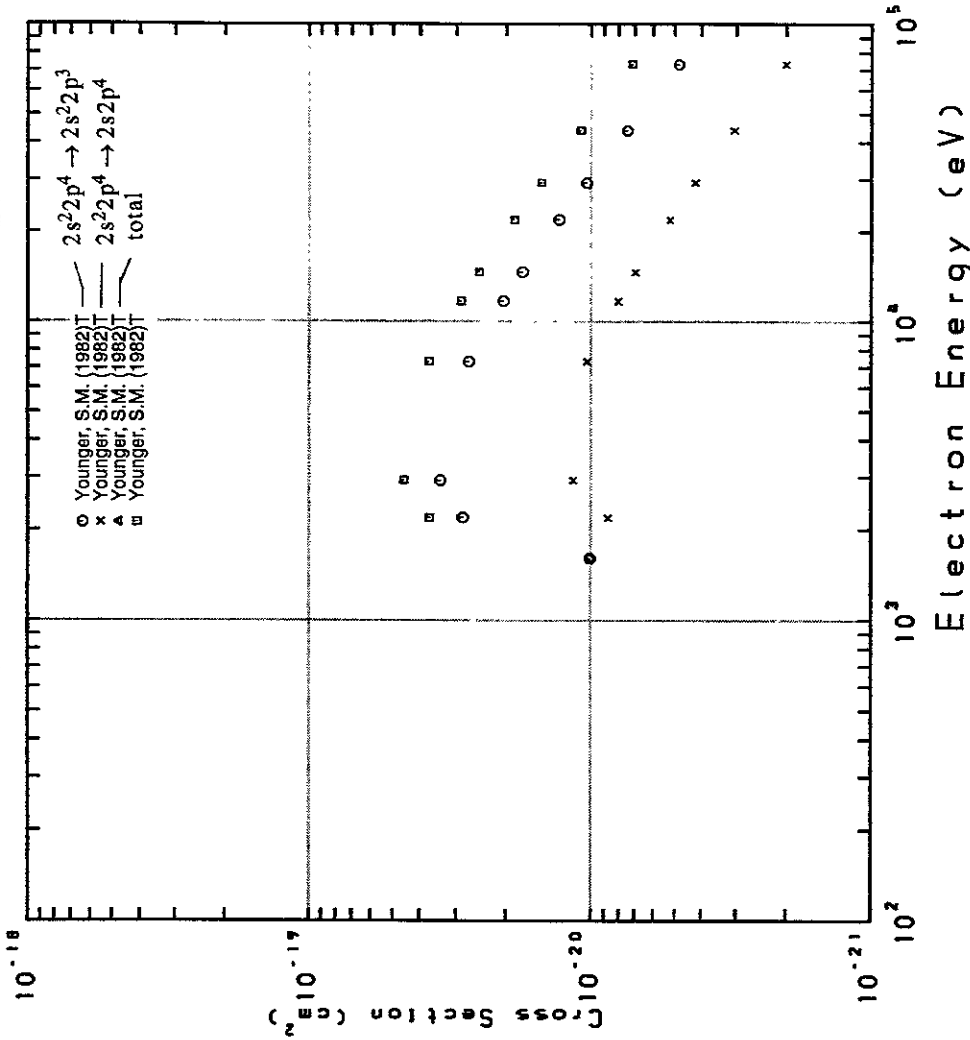
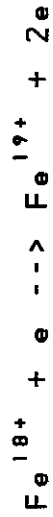


Fig. 214 $\text{Fe}^{18+} \rightarrow \text{Fe}^{19+}$

AMDIS-ION

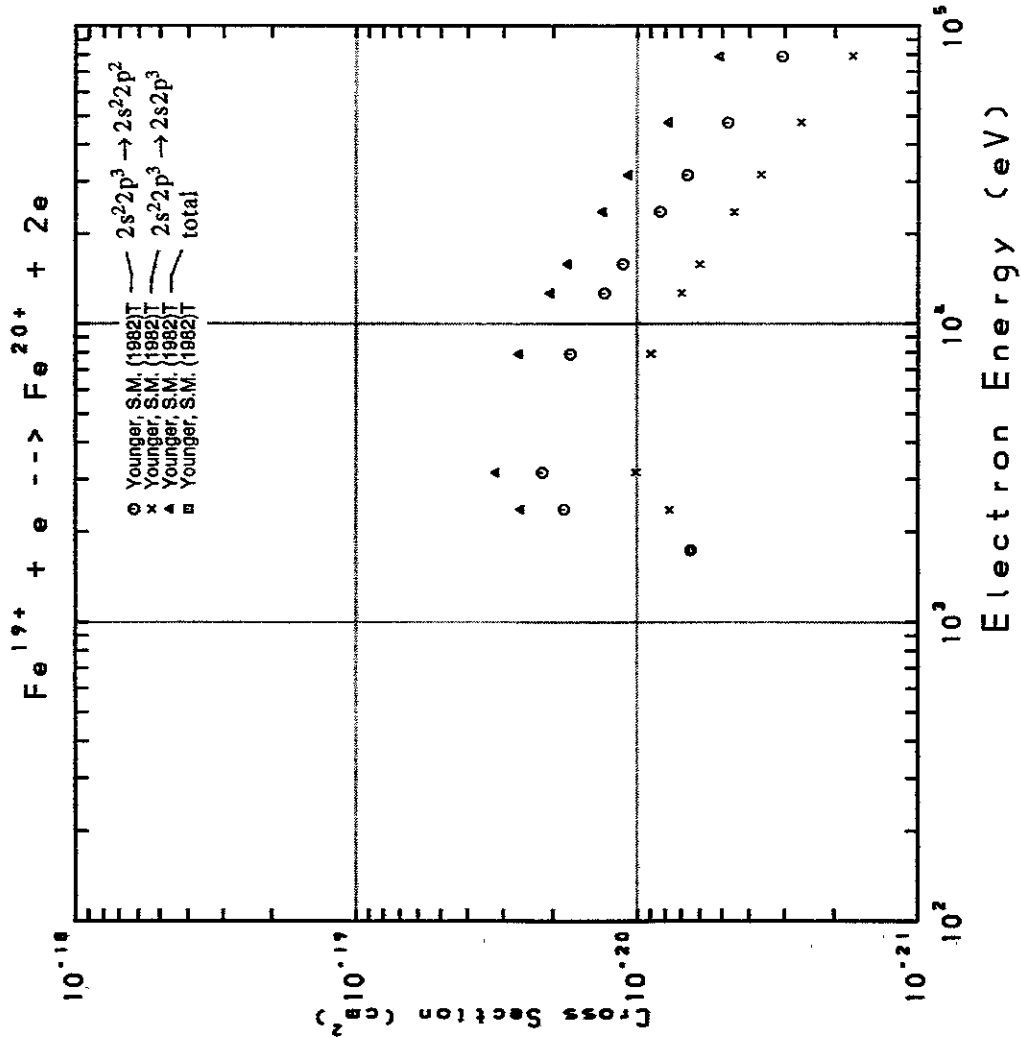


Fig. 215 $\text{Fe}^{19+} \rightarrow \text{Fe}^{20+}$

AMDIS-ION

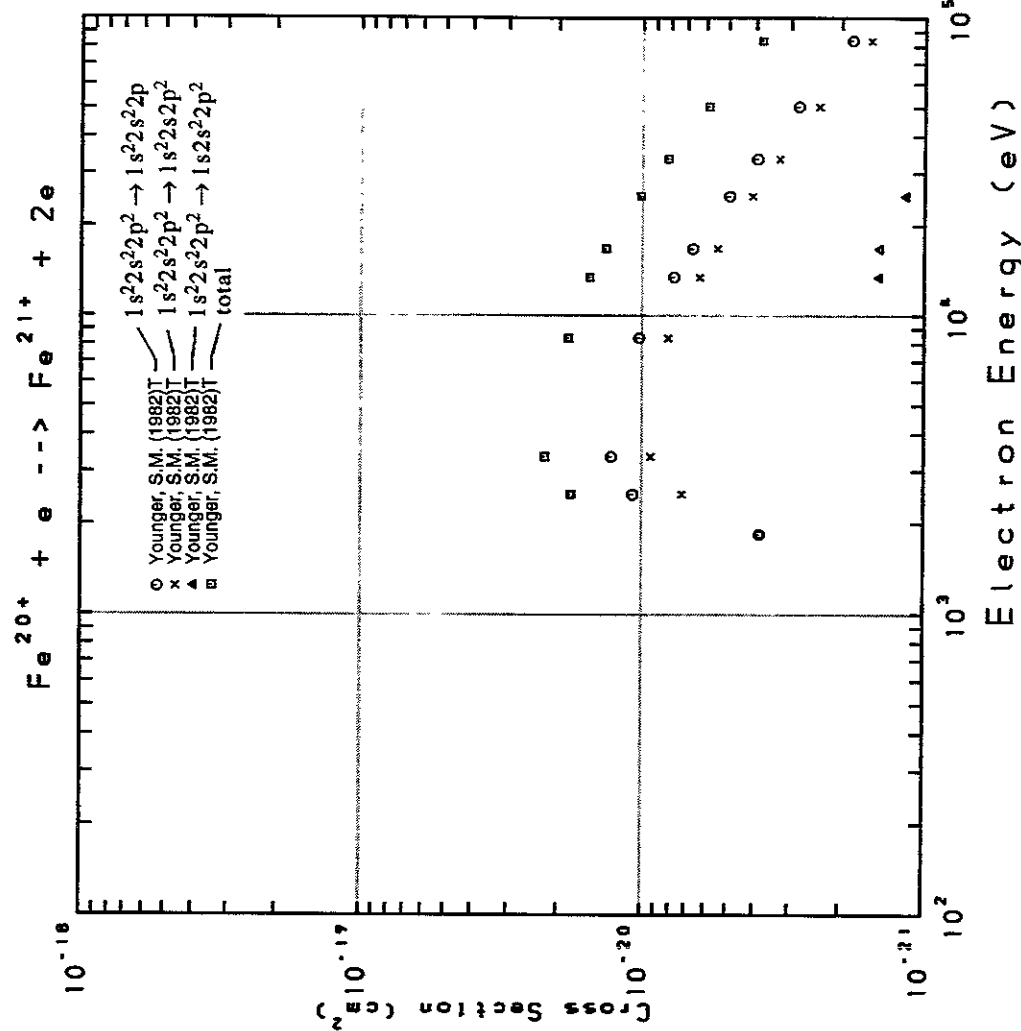


Fig. 216 $\text{Fe}^{20+} \rightarrow \text{Fe}^{21+}$

AMDIS-ION

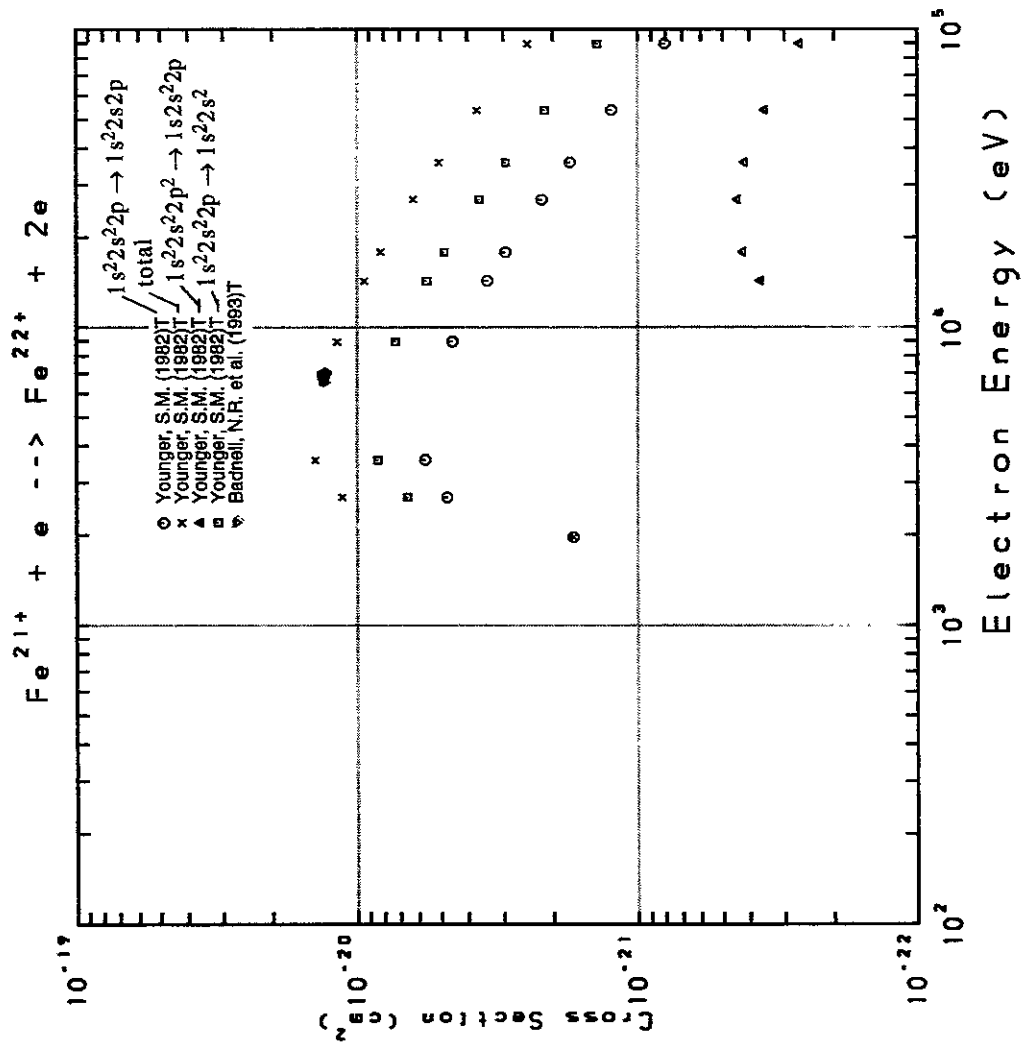


Fig. 217 $Fe^{21+} \rightarrow Fe^{22+}$

AMDIS-ION

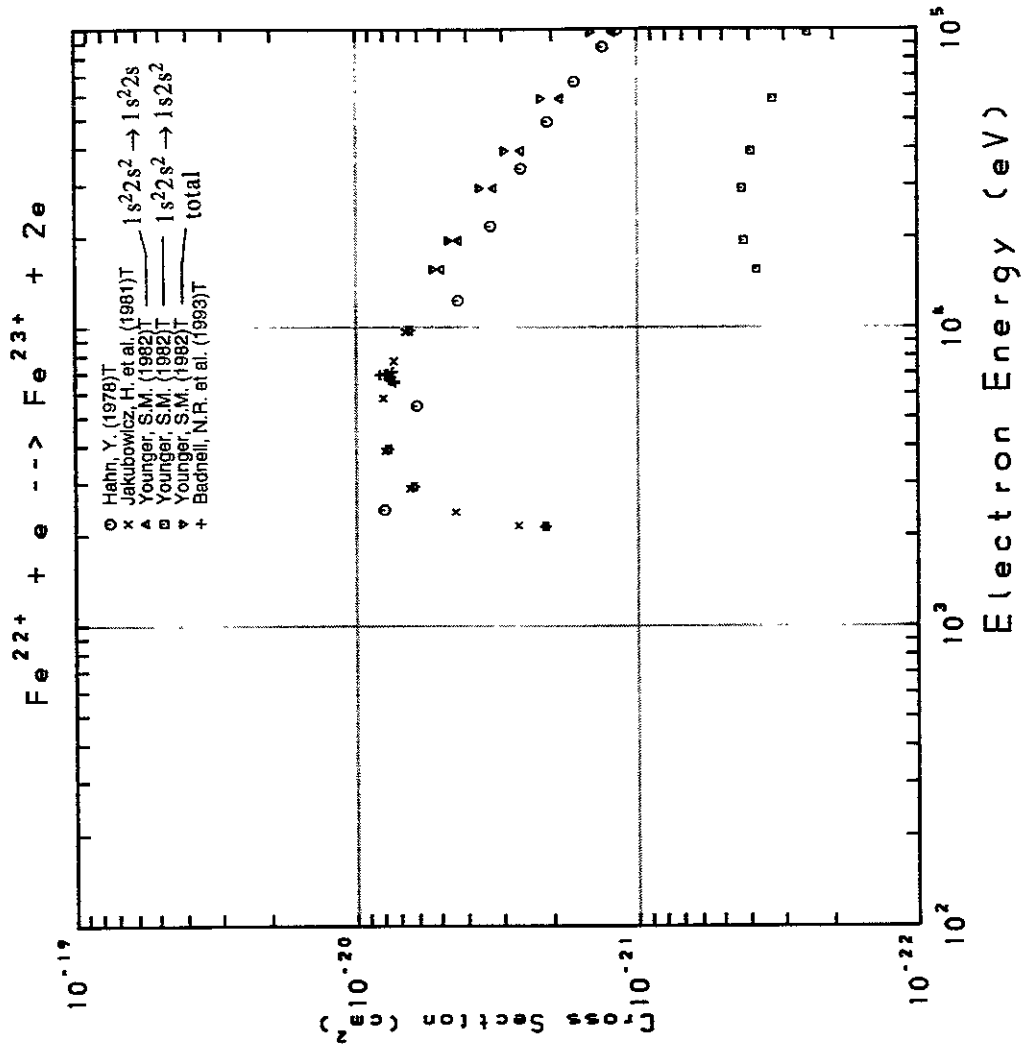


Fig. 218 $Fe^{22+} \rightarrow Fe^{23+}$

AMDIS-ION

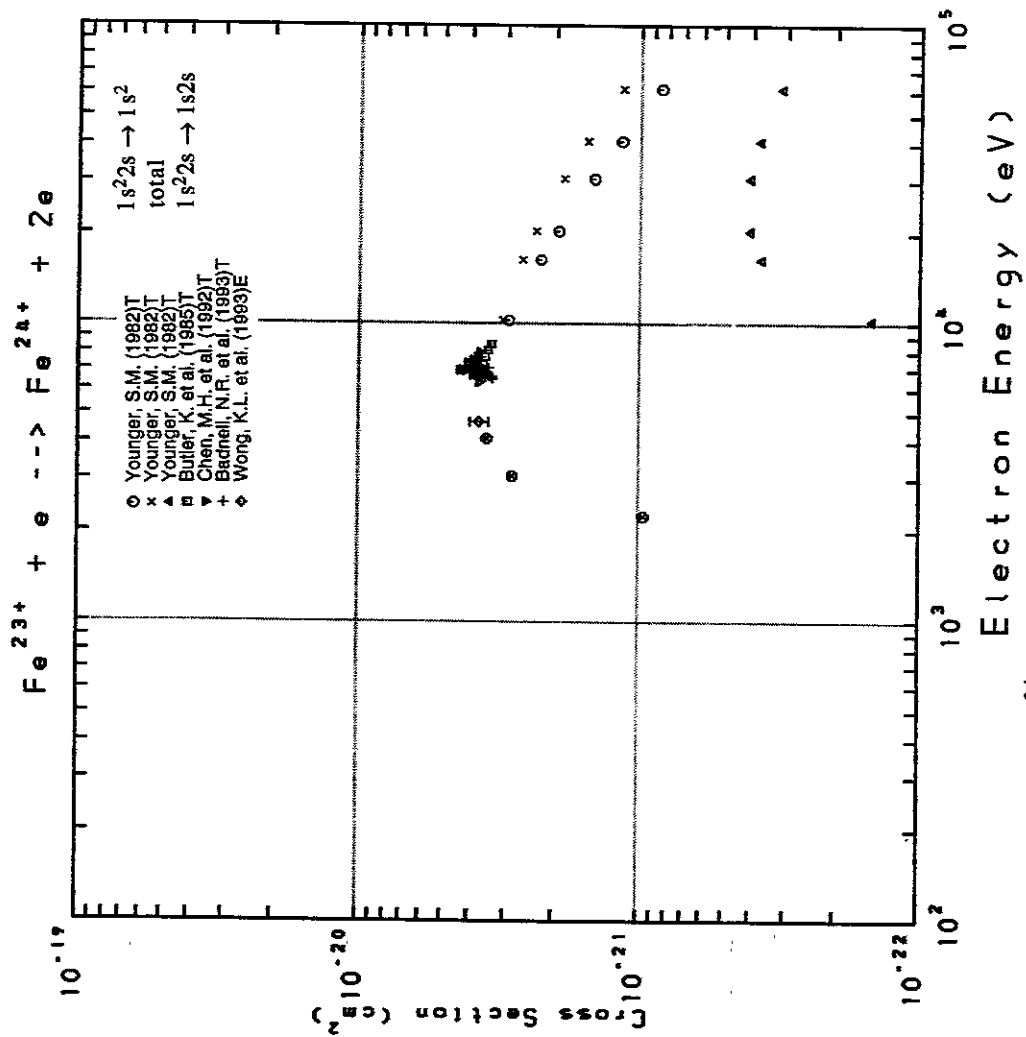


Fig. 219 $\text{Fe}^{23+} \rightarrow \text{Fe}^{24+}$

AMDIS-ION

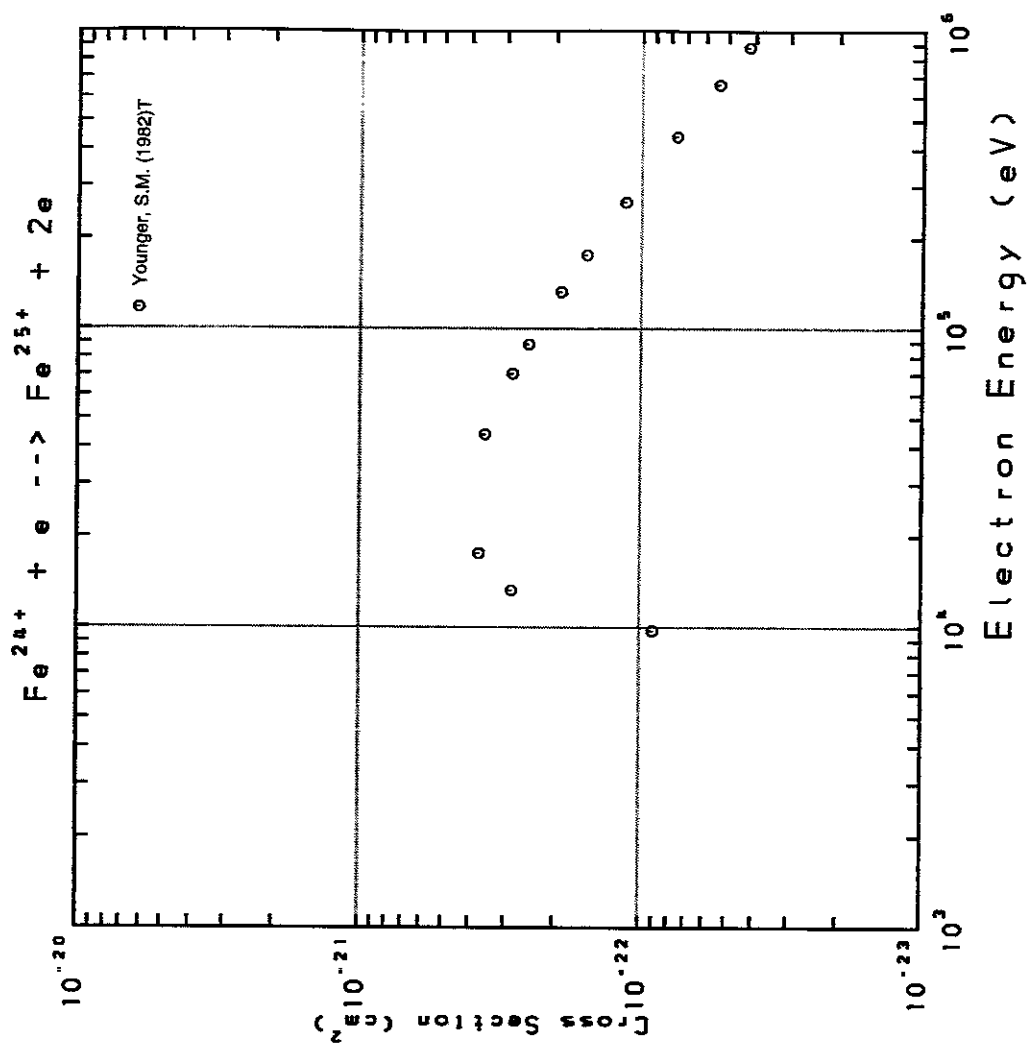


Fig. 220 $\text{Fe}^{24+} \rightarrow \text{Fe}^{25+}$

AMDIS-ION

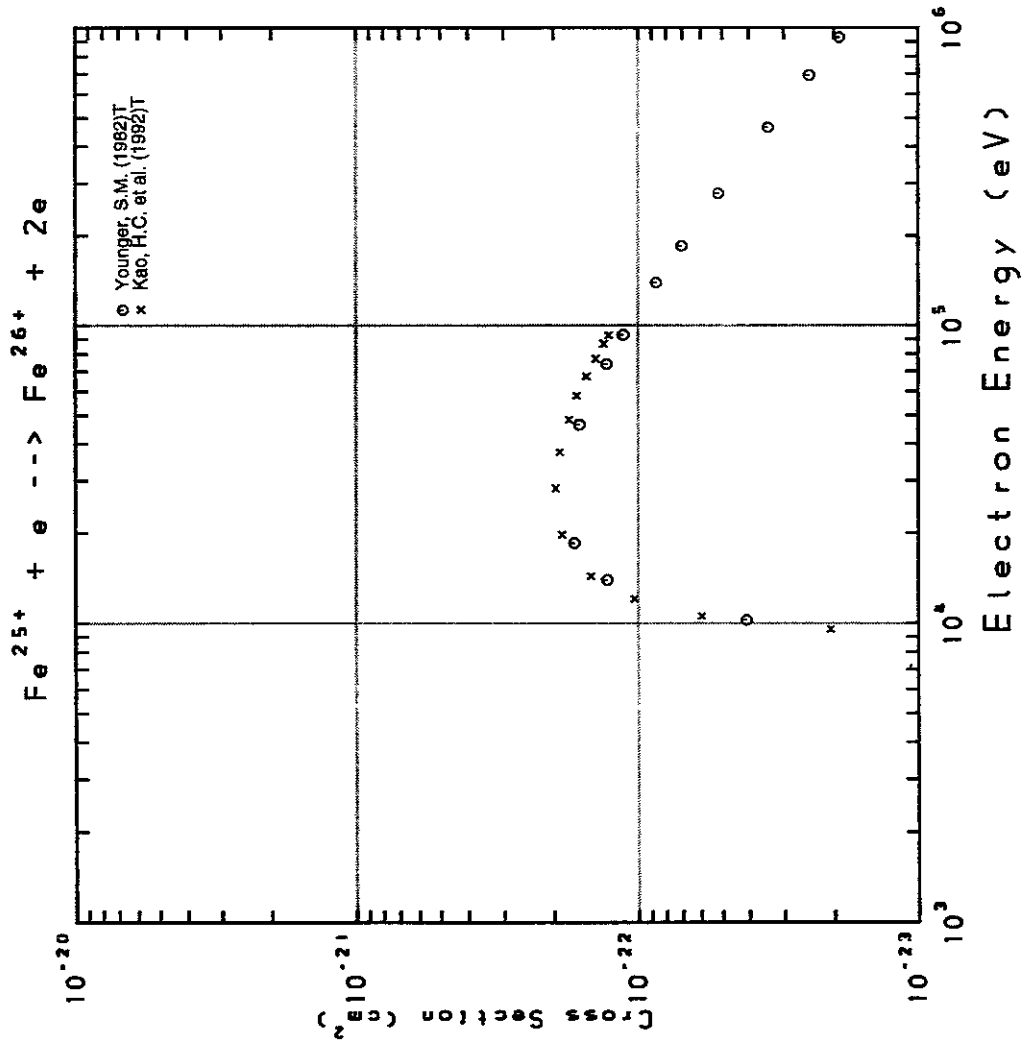


Fig. 221 $Fe^{25+} \rightarrow Fe^{26+}$

AMDIS-ION

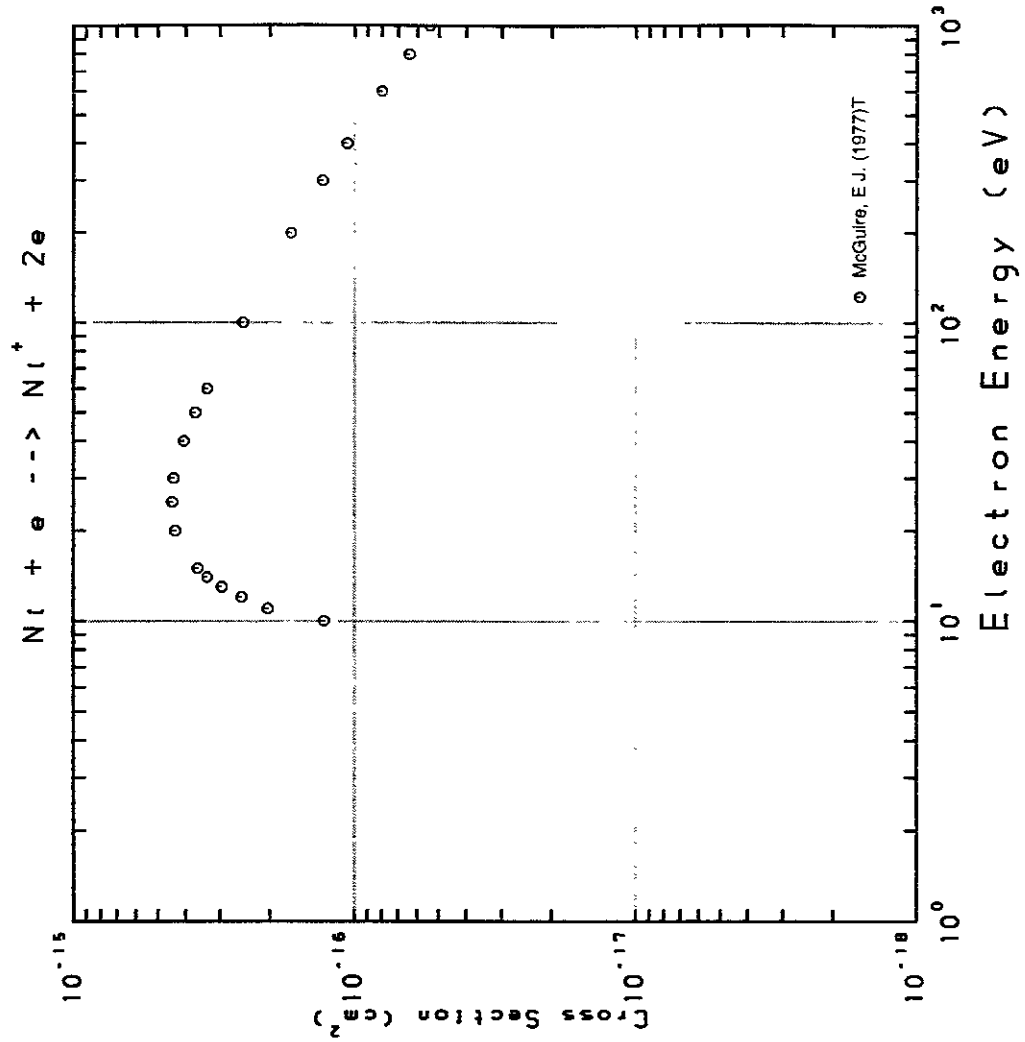


Fig. 222 $Ni \rightarrow Ni^+$

AMDIS-ION

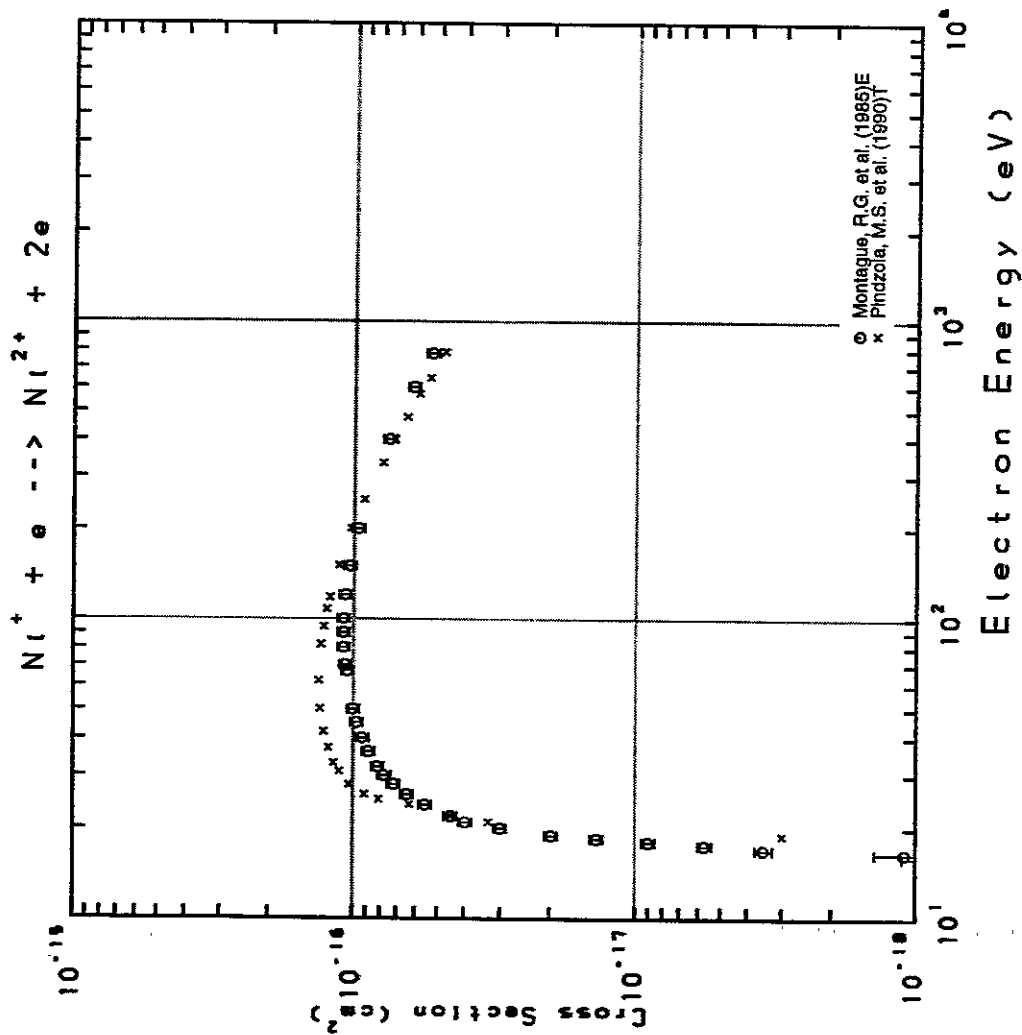


Fig. 223 $Ni^+ \rightarrow Ni^{2+}$

AMDIS-ION

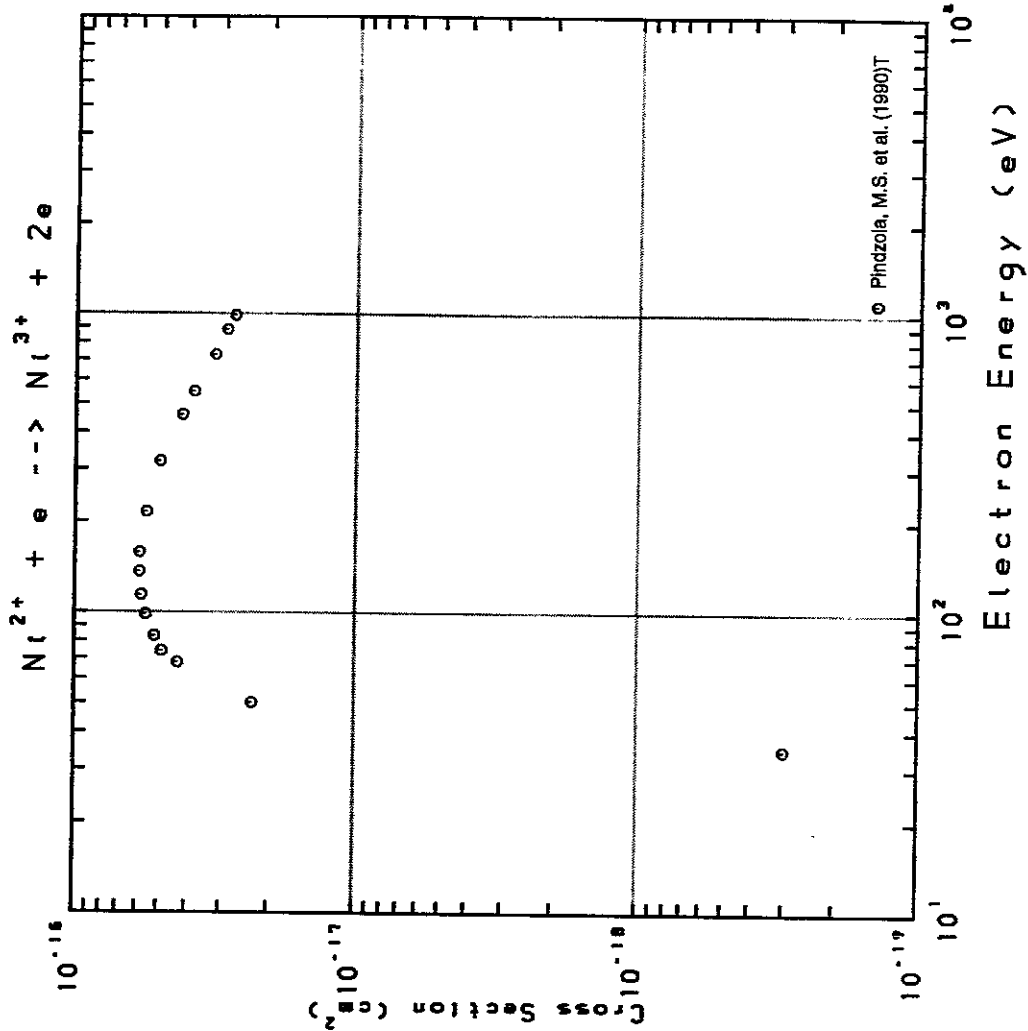


Fig. 224 $Ni^{2+} \rightarrow Ni^{3+}$

AMDIS-ION

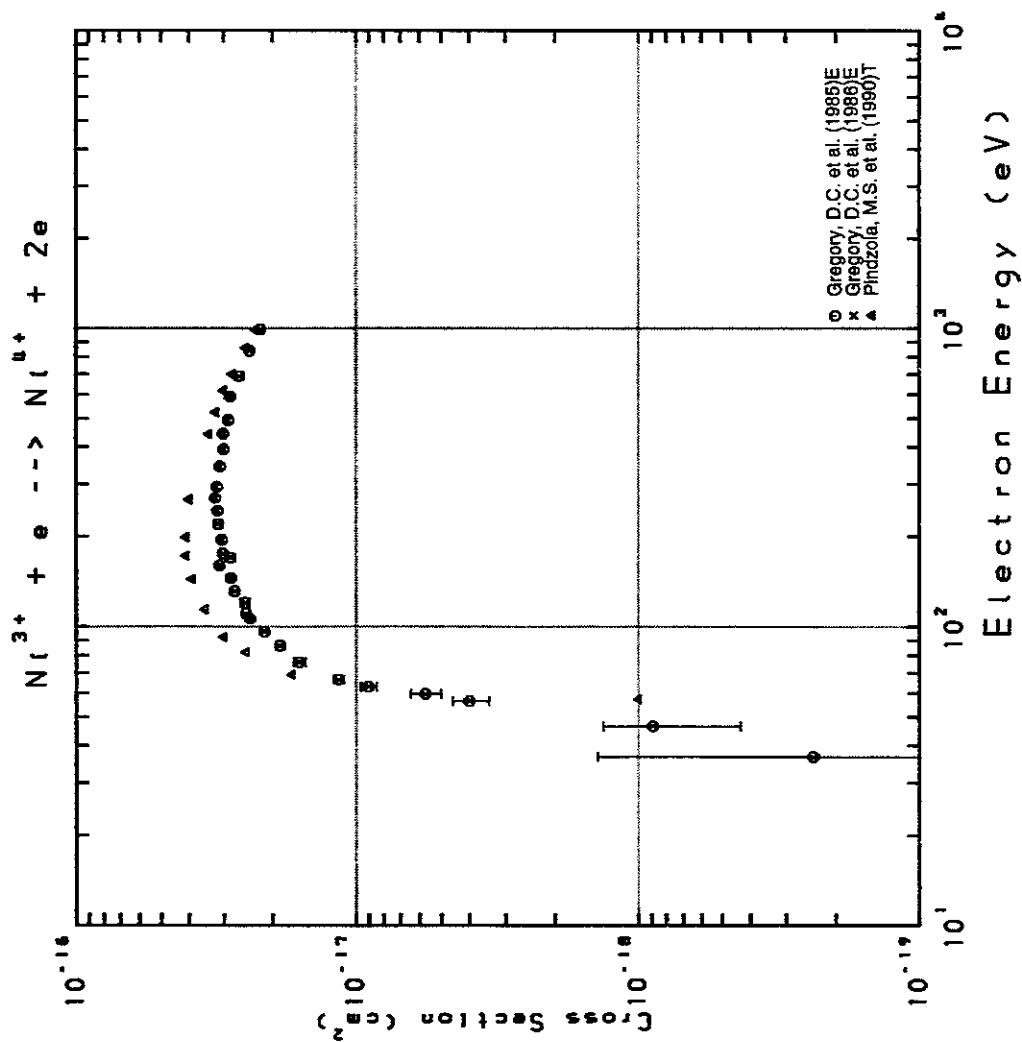


Fig. 225 $Ni^{3+} \rightarrow Ni^{2+}$

AMDIS-ION

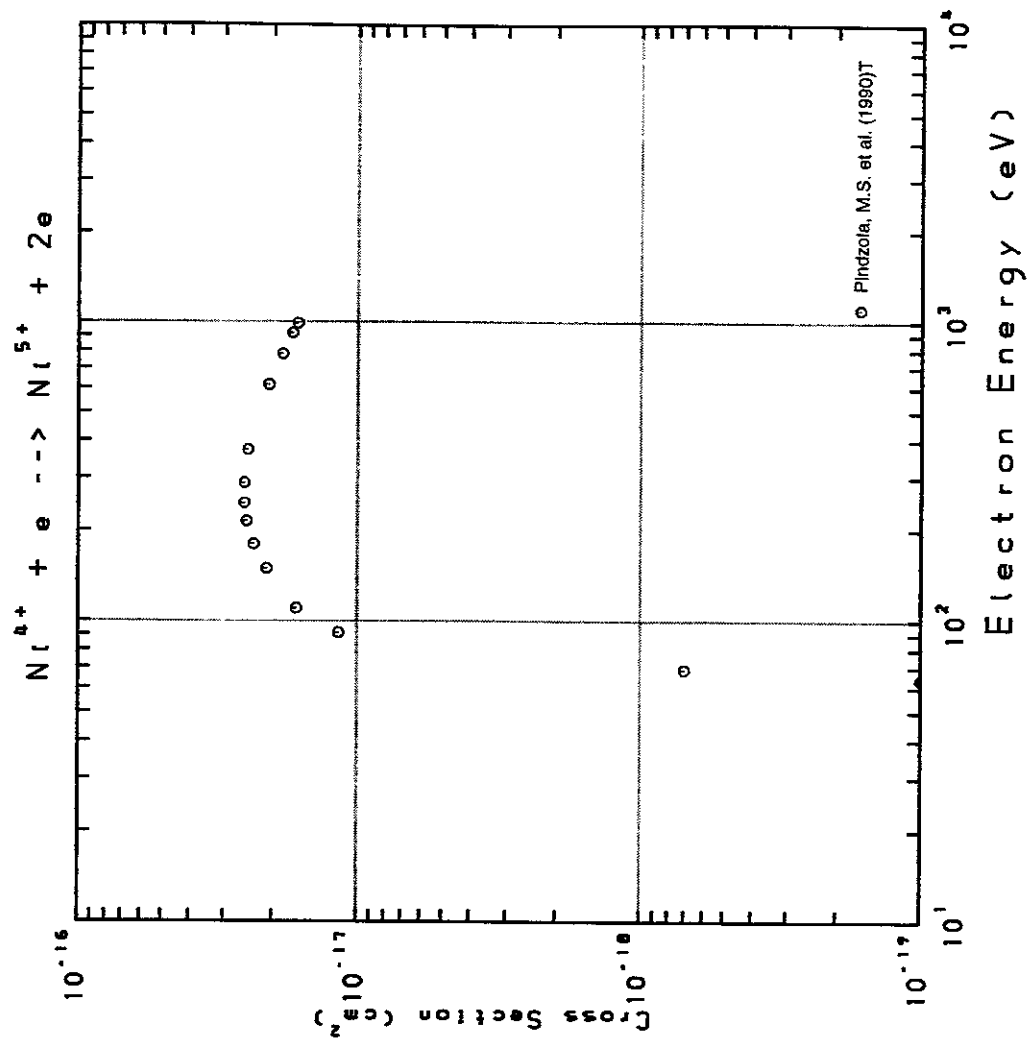


Fig. 226 $Ni^{4+} \rightarrow Ni^{3+}$

AMDIS-ION

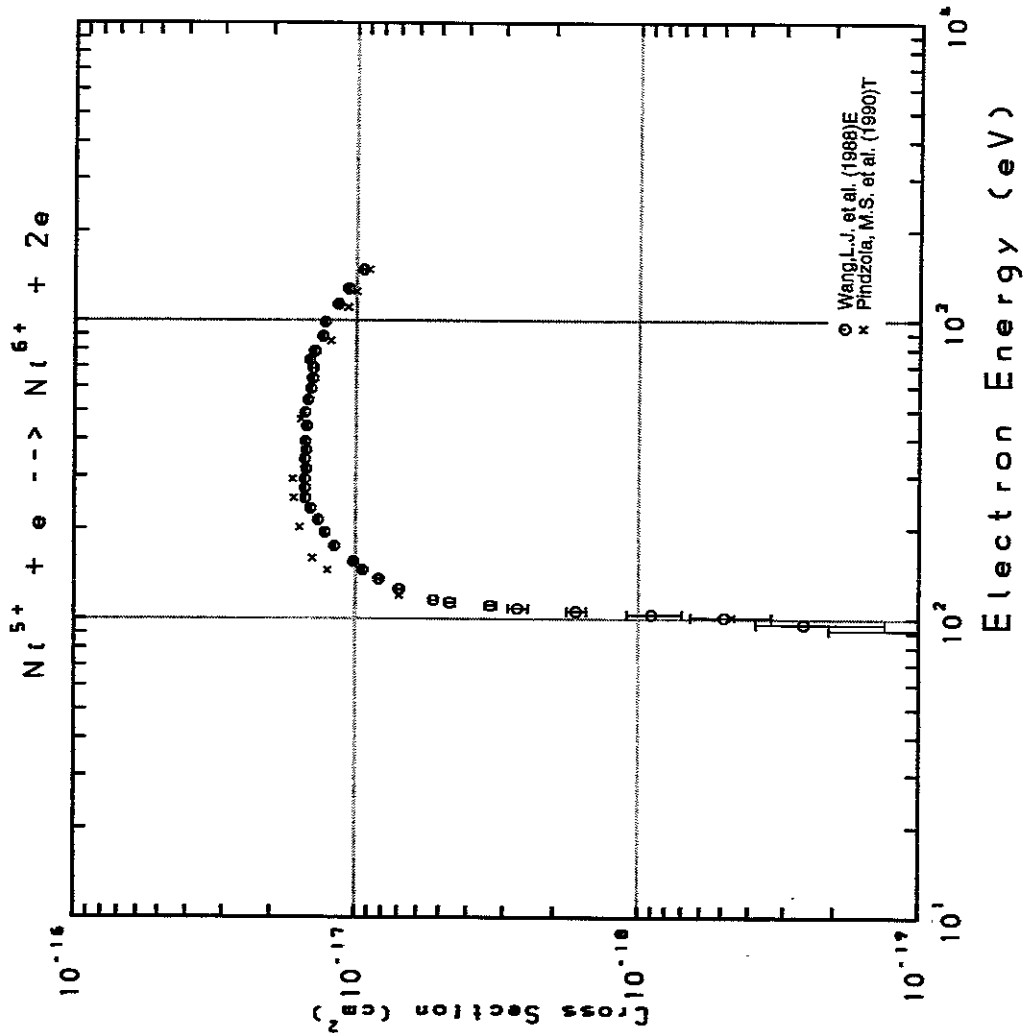


Fig. 227 $Ni^{5+} \rightarrow Ni^{6+}$

AMDIS-ION

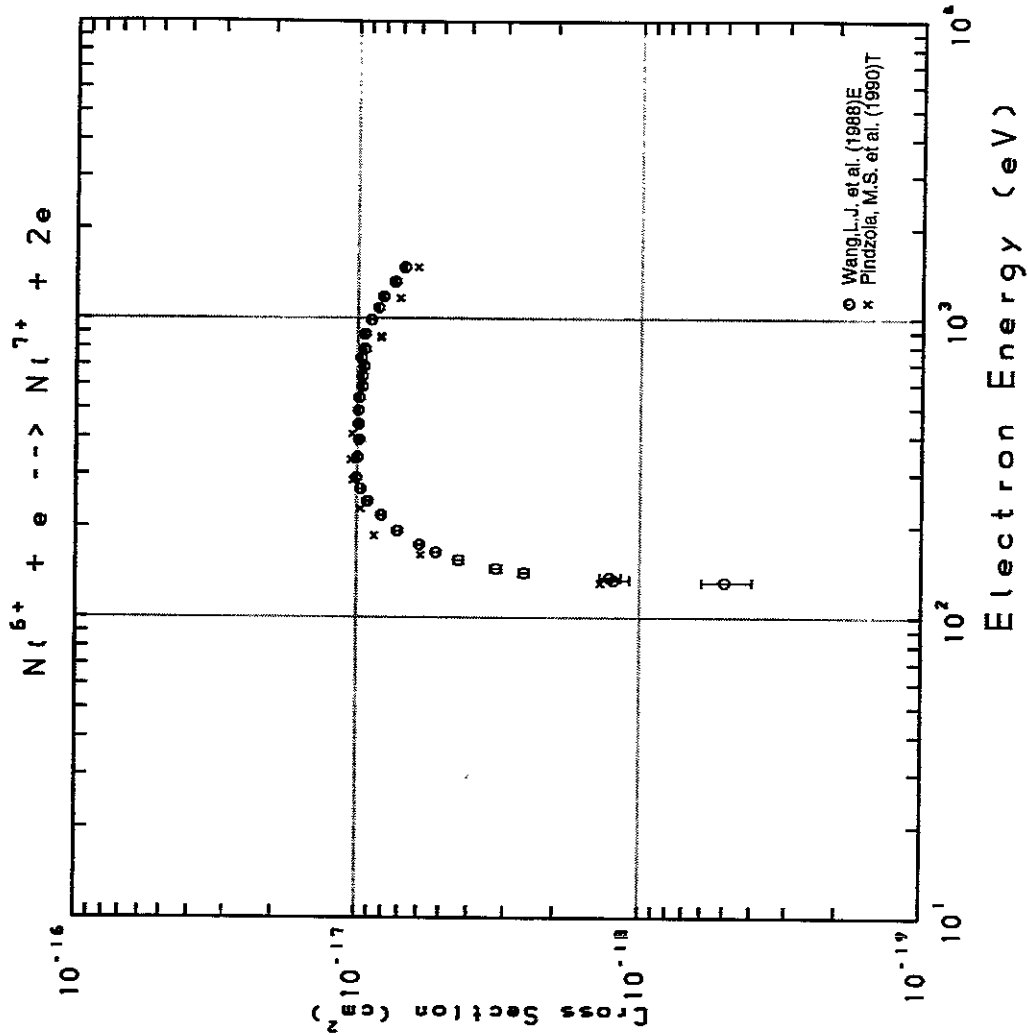


Fig. 228 $Ni^{6+} \rightarrow Ni^{7+}$

AMDIS-ION

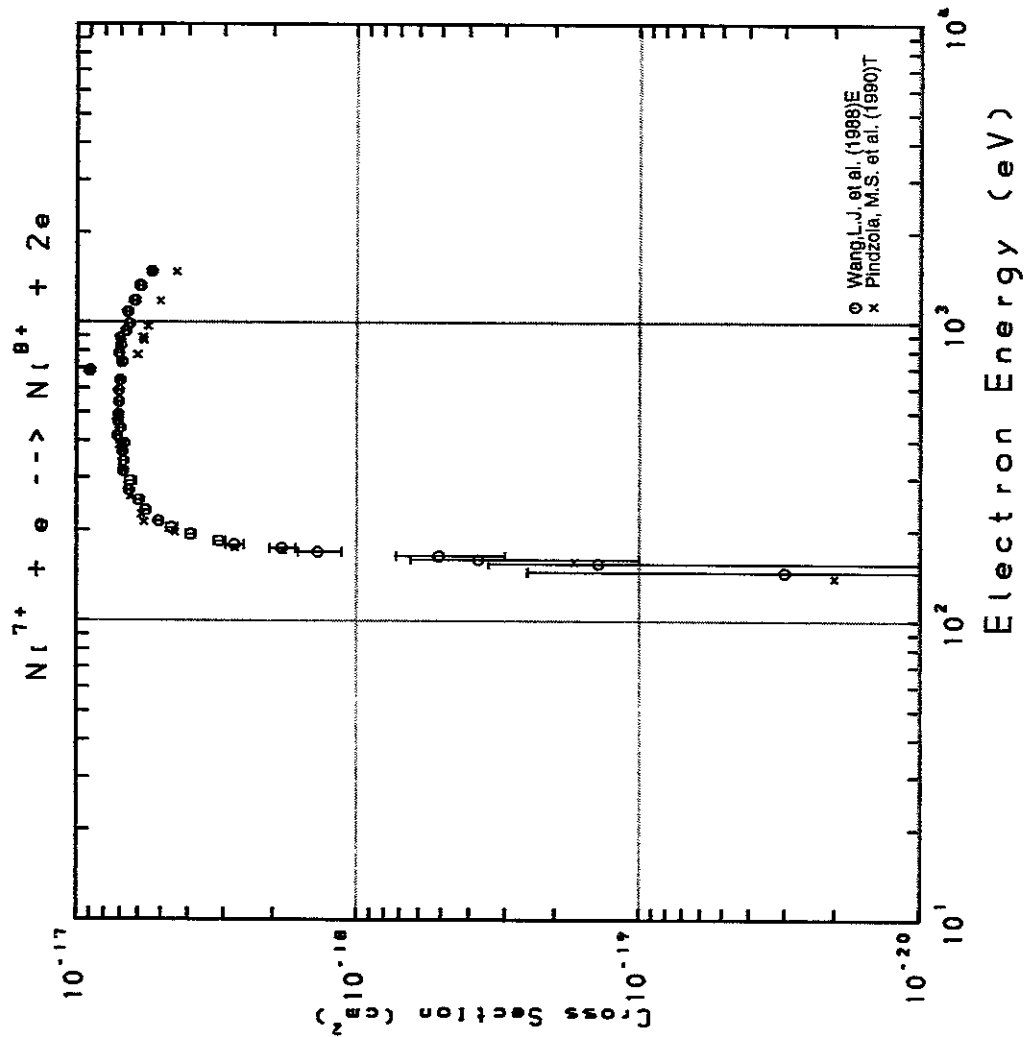


Fig. 229 $Ni^{7+} \rightarrow Ni^{8+}$

AMDIS-ION

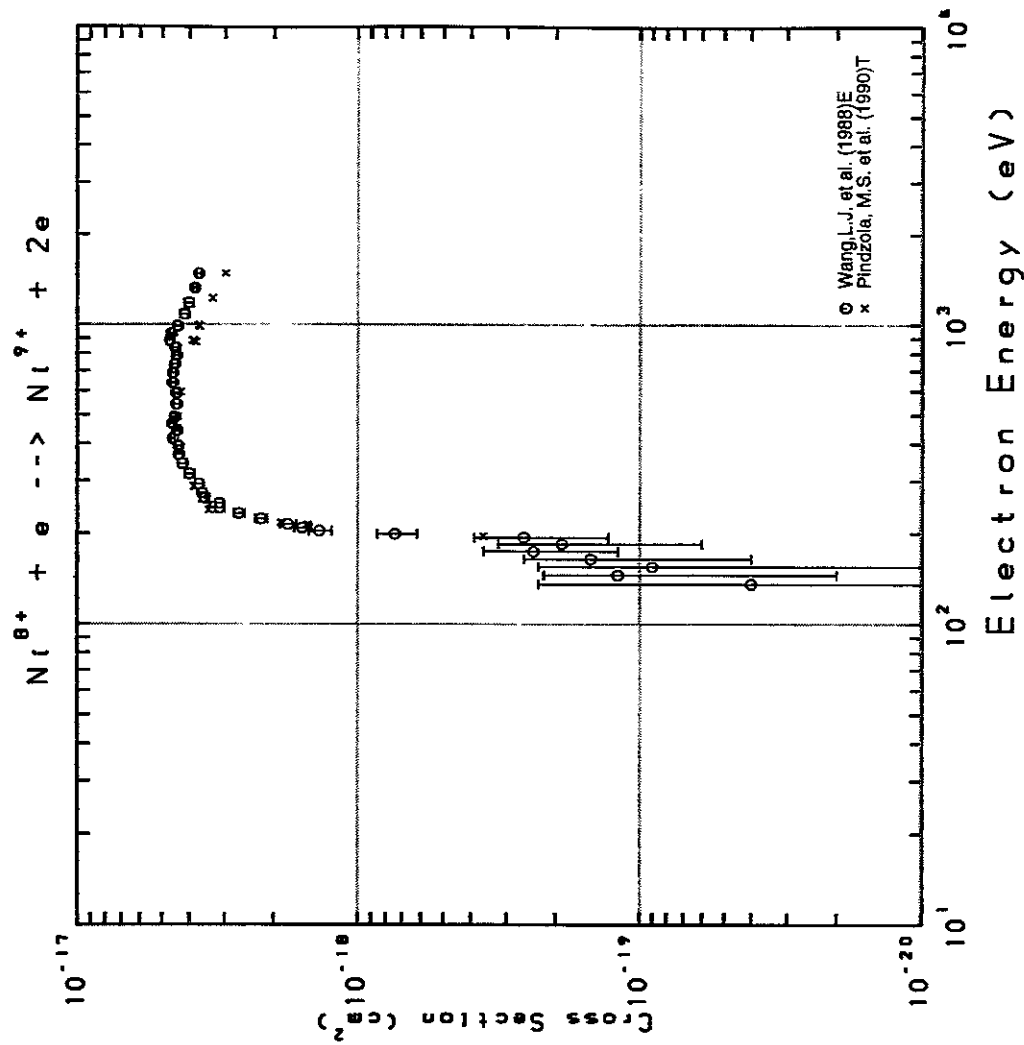


Fig. 230 $Ni^{8+} \rightarrow Ni^{9+}$

AMDIS-ION

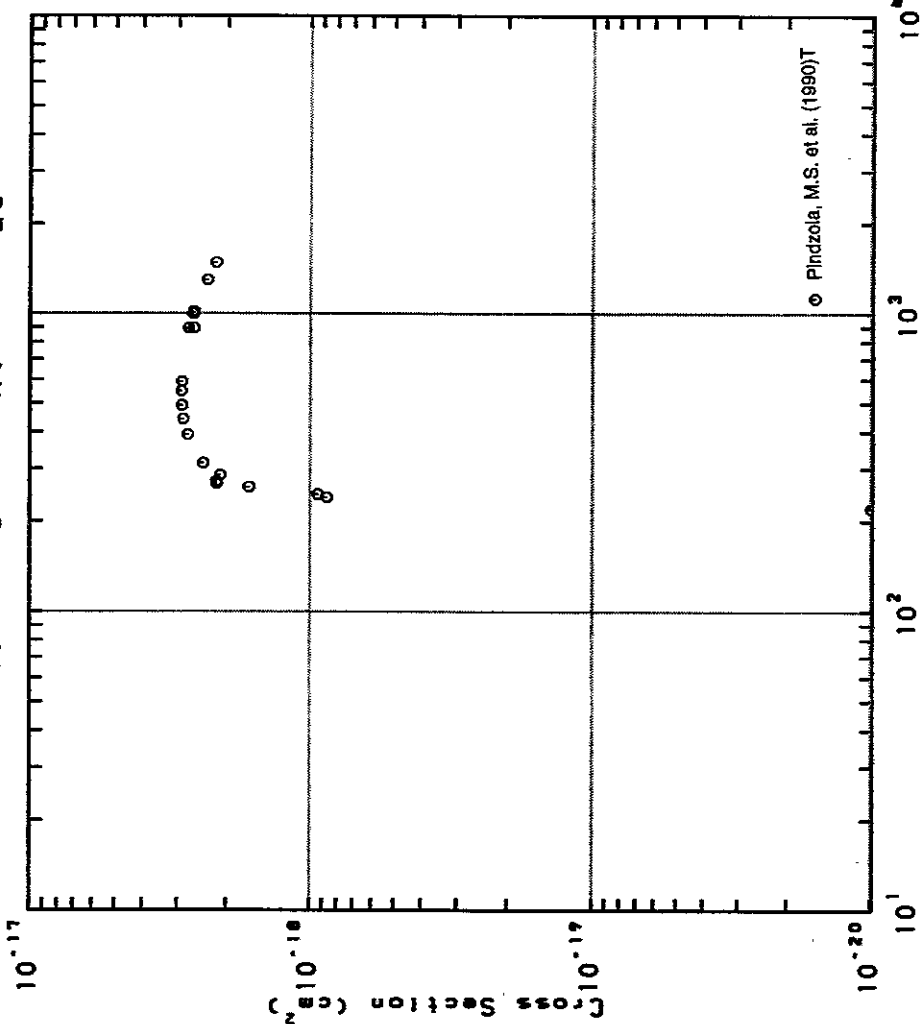


Fig. 231 $Ni^{9+} \rightarrow Ni^{10+}$

AMDIS-ION

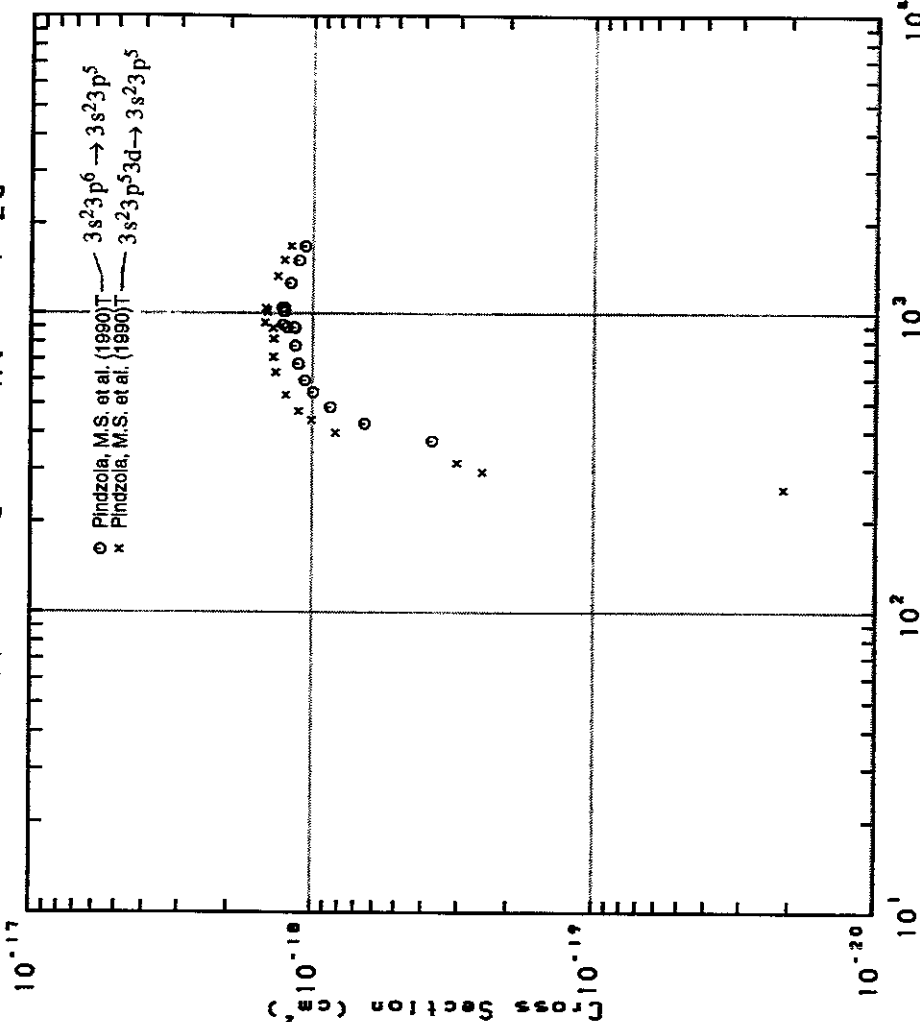
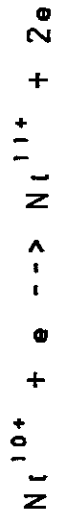


Fig. 232 $Ni^{10+} \rightarrow Ni^{11+}$

AMDIS-ION

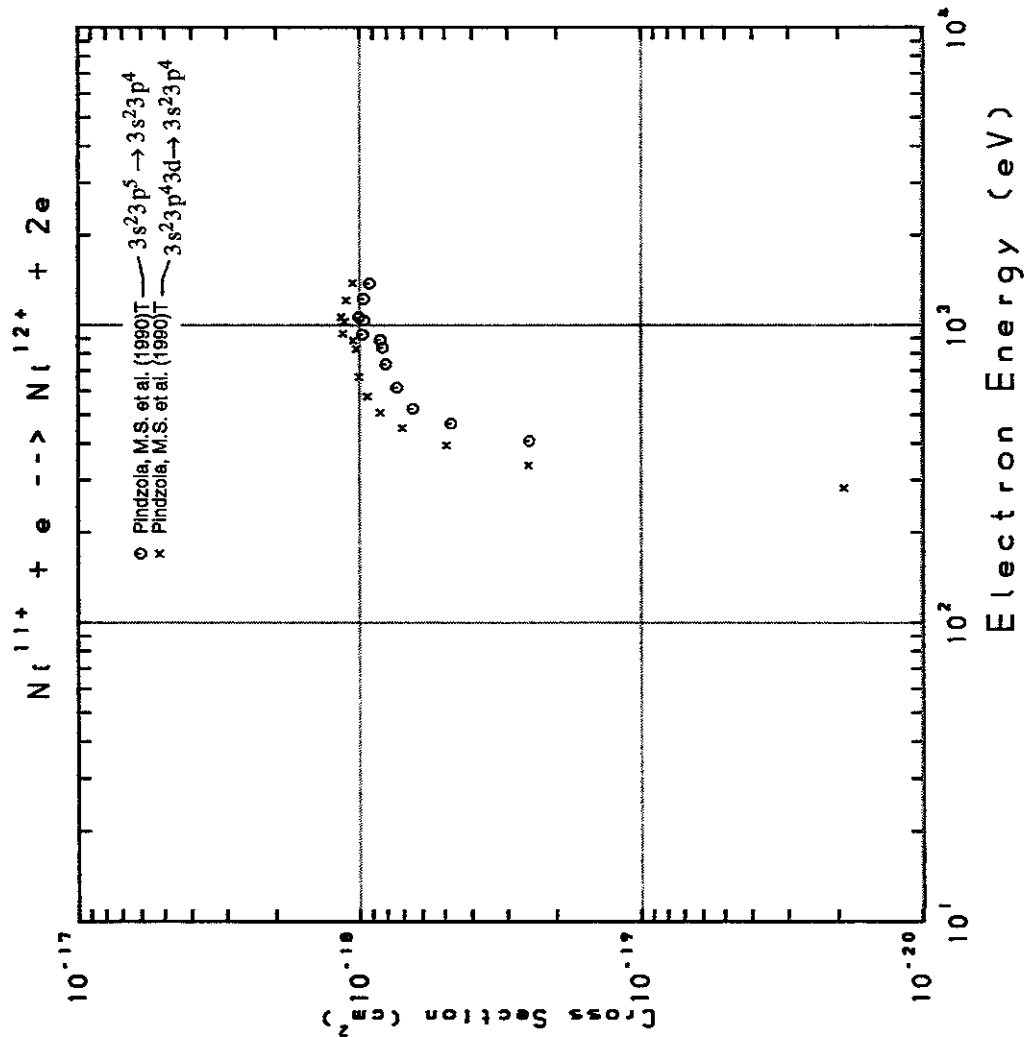


Fig. 233 $\text{Ni}^{11+} \rightarrow \text{Ni}^{12+}$

AMDIS-ION

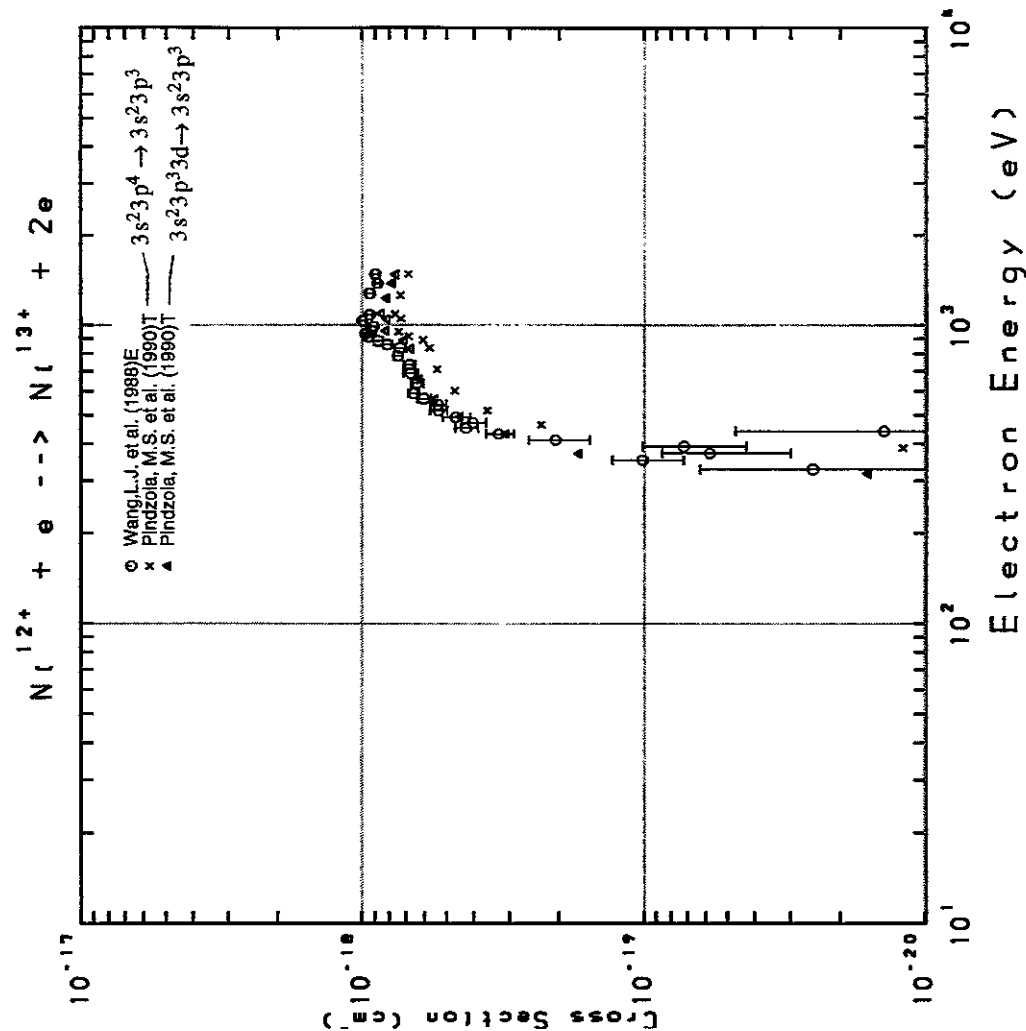


Fig. 234 $\text{Ni}^{12+} \rightarrow \text{Ni}^{13+}$

AMDIS-ION

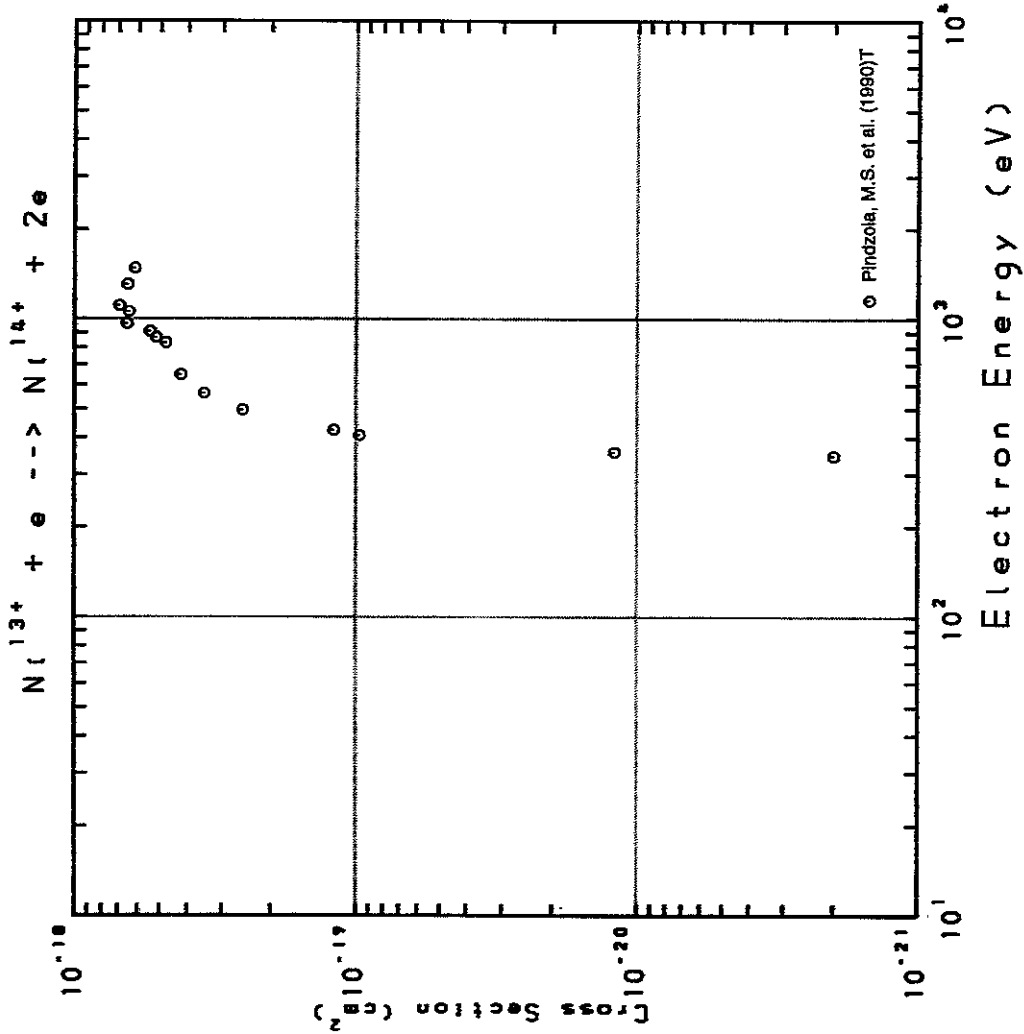


Fig. 235 $Ni^{13+} \rightarrow Ni^{14+}$

AMDIS-ION

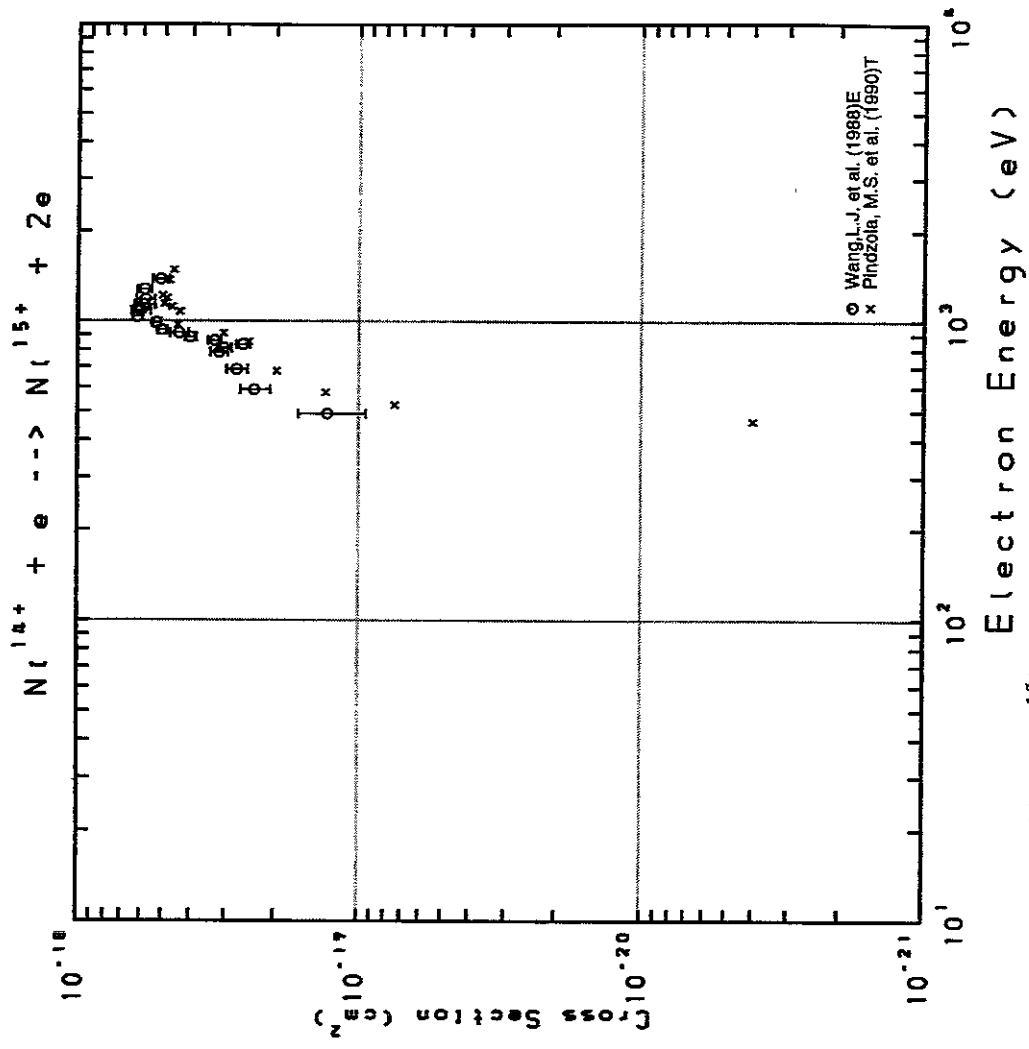


Fig. 236 $Ni^{14+} \rightarrow Ni^{15+}$

AMDIS-ION

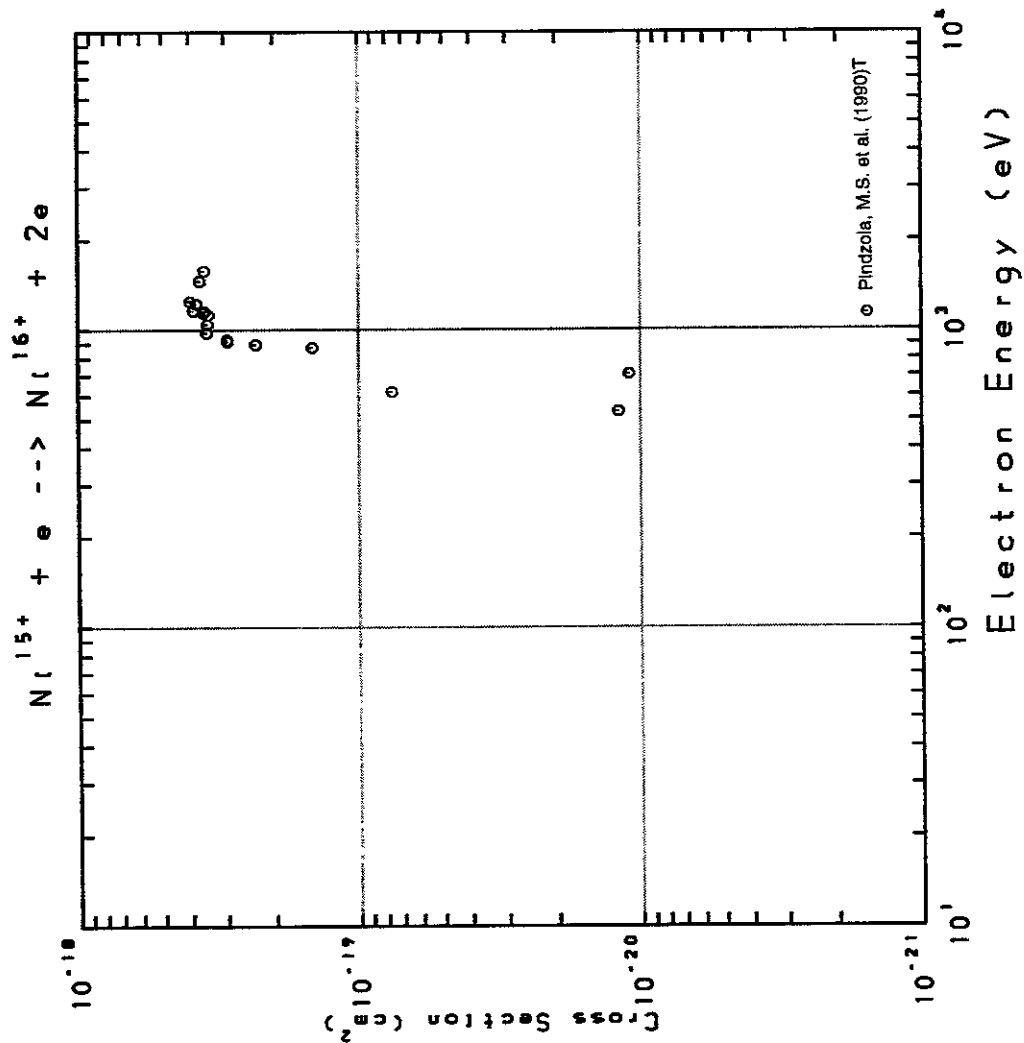


Fig. 237 $\text{Ni}^{15+} \rightarrow \text{Ni}^{16+}$

AMDIS-ION

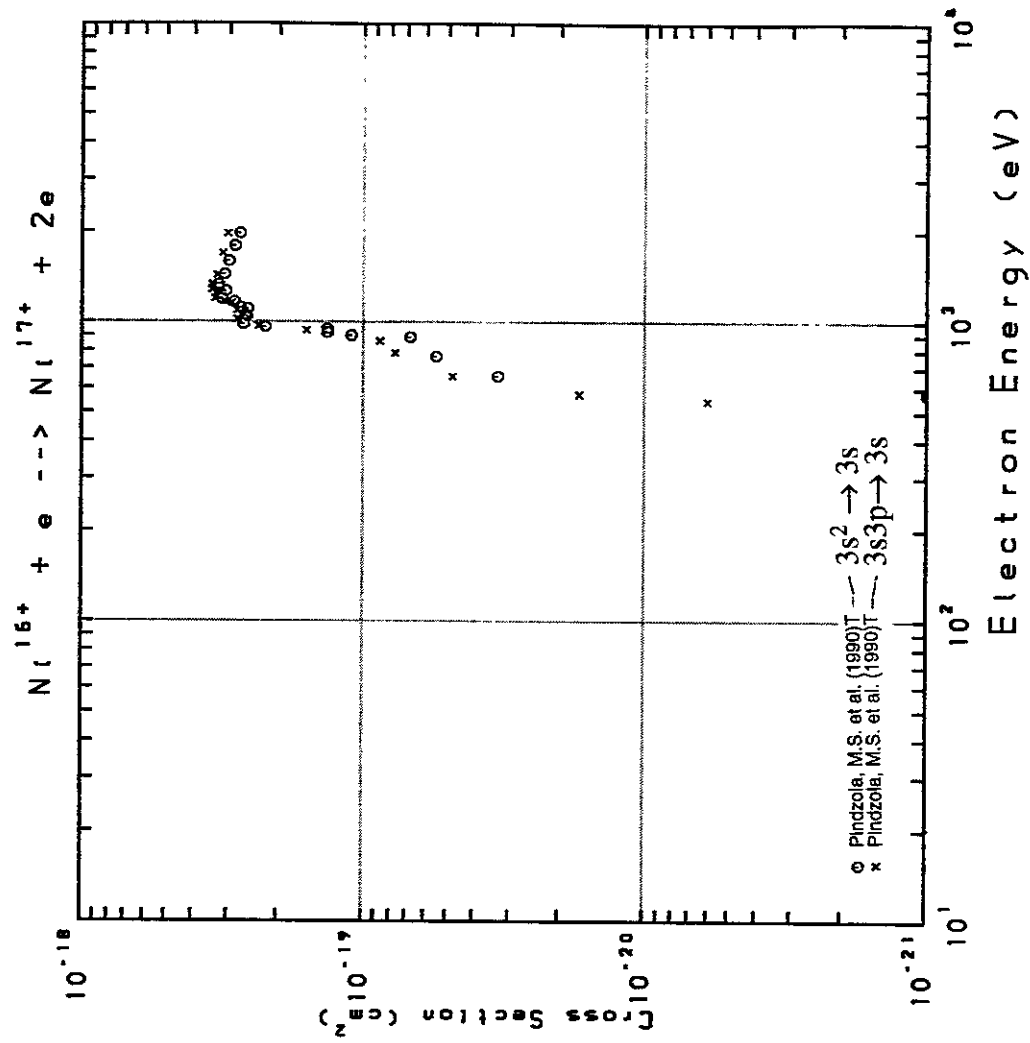


Fig. 238 $\text{Ni}^{16+} \rightarrow \text{Ni}^{17+}$

AMDIS-ION

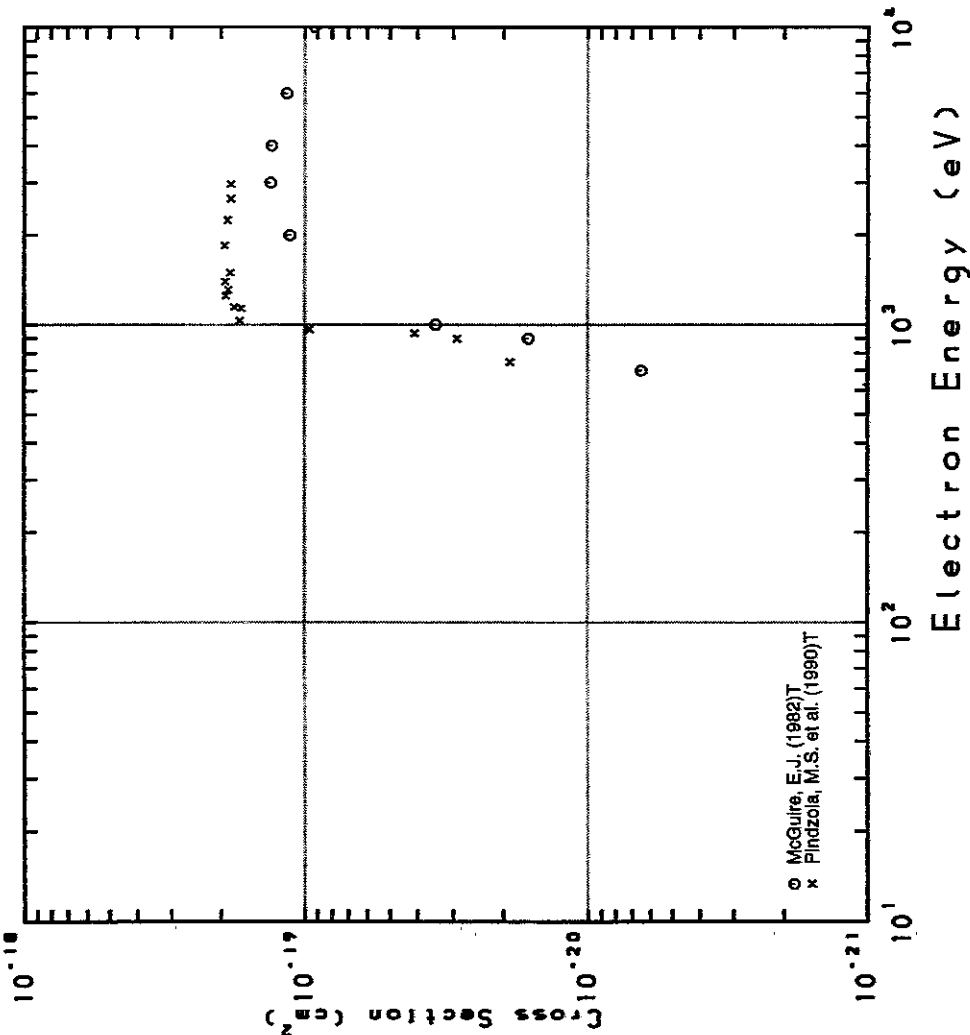


Fig. 239 Ni¹⁷⁺ → Ni¹⁸⁺

AMDIS-ION

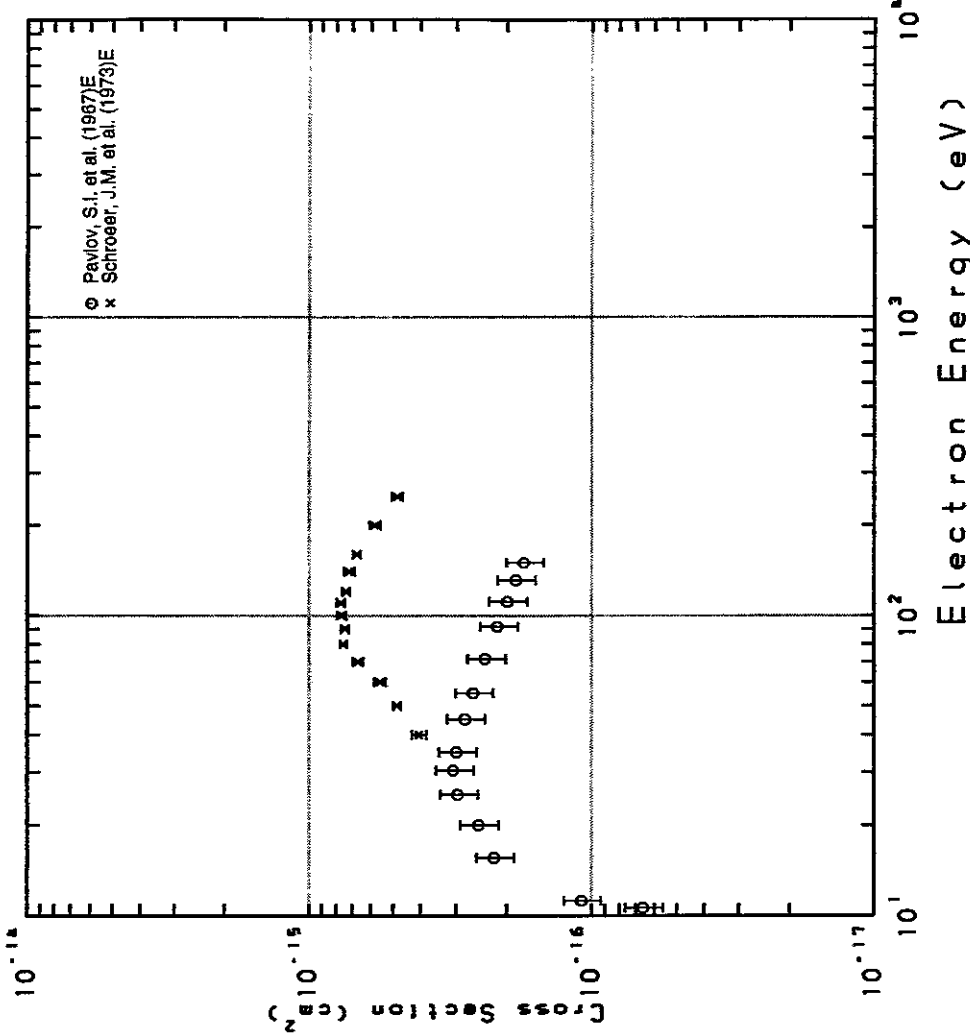


Fig. 240 Cu → ΣCuⁿ⁺

AMDIS-ION

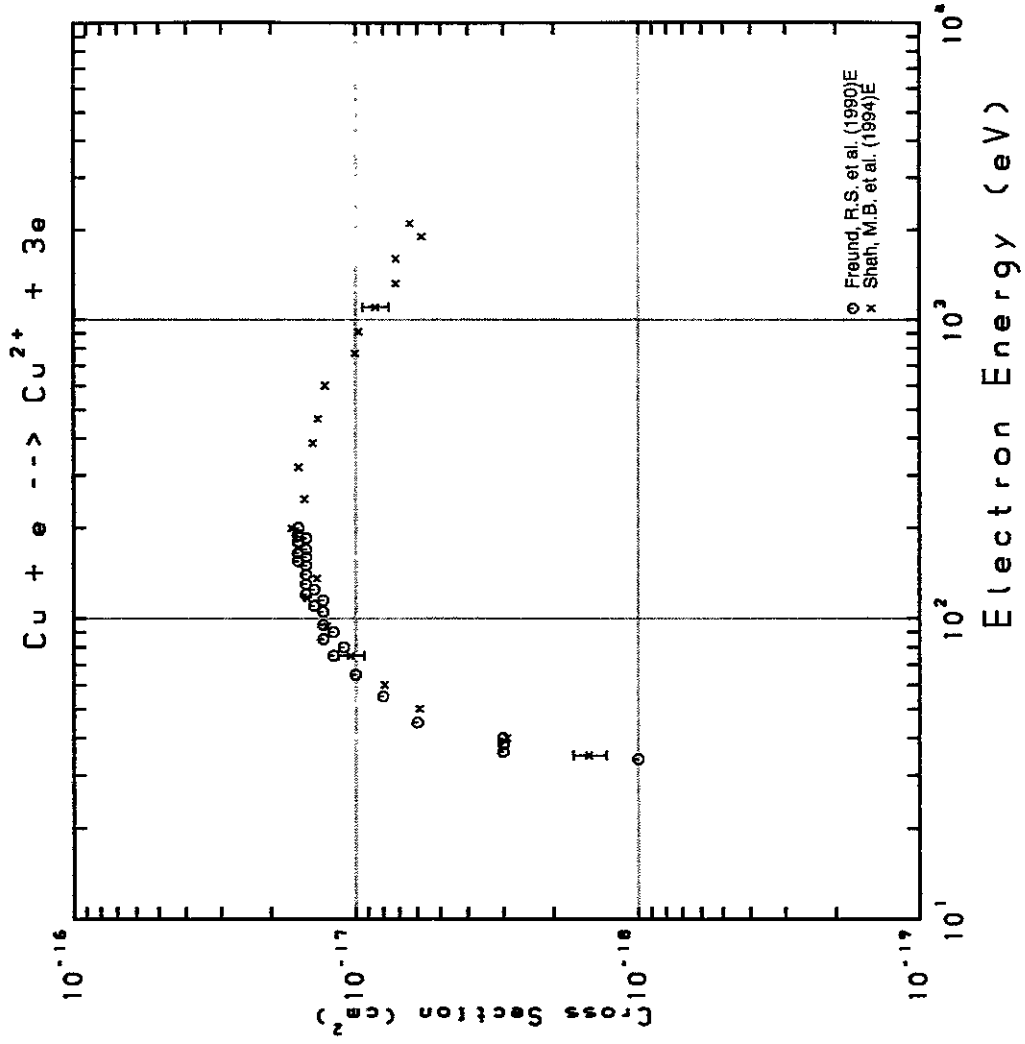


Fig. 242 $Cu \rightarrow Cu^{2+}$

AMDIS-ION

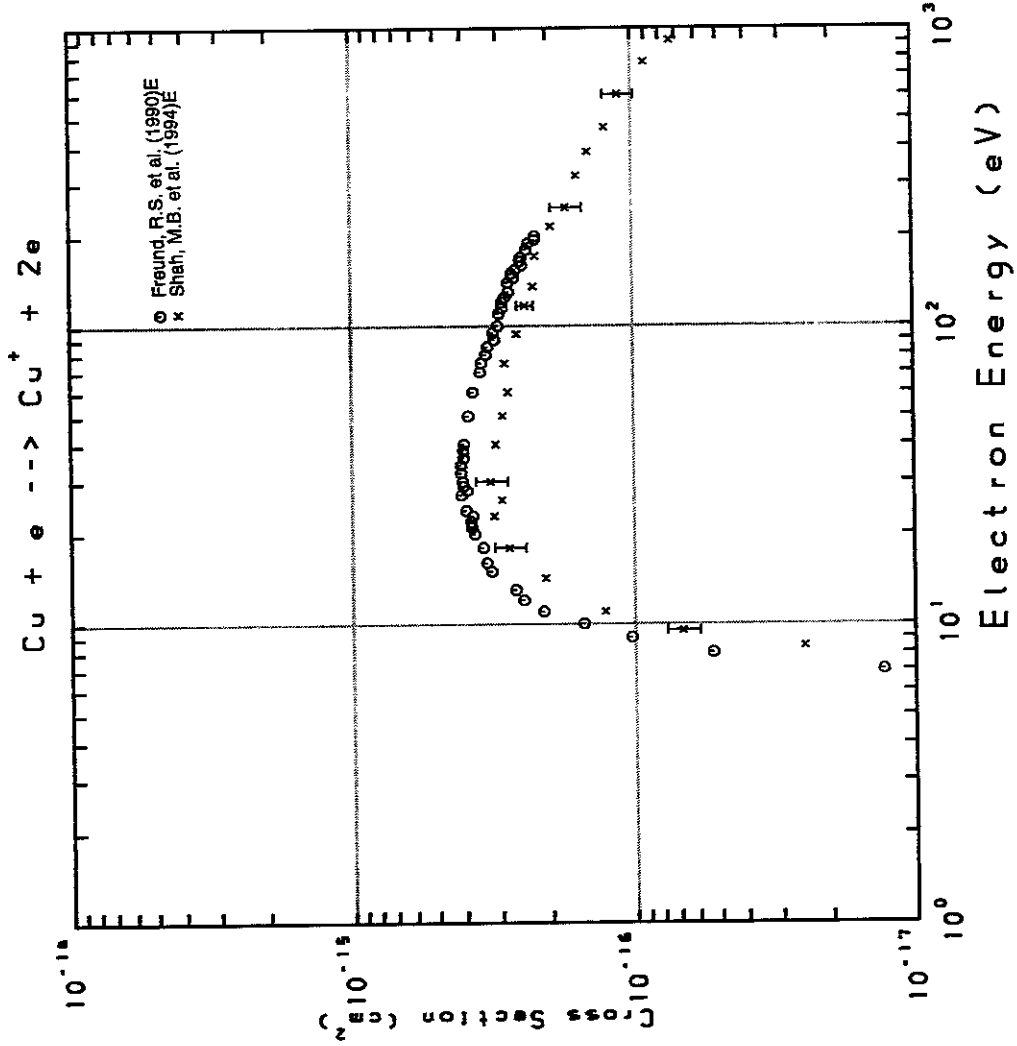


Fig. 241 $Cu \rightarrow Cu^{+}$

AMDIS-ION

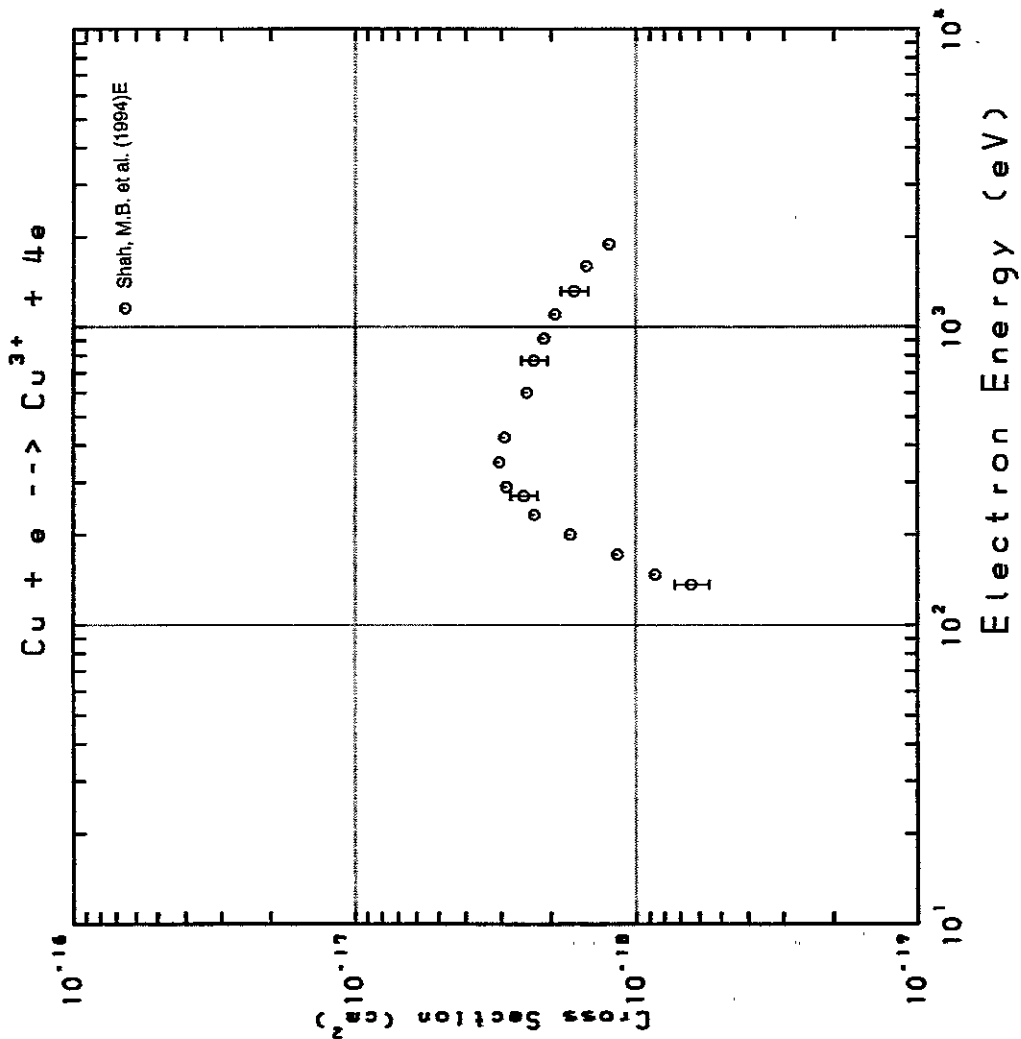


Fig. 243 Cu \rightarrow Cu³⁺

AMDIS-ION

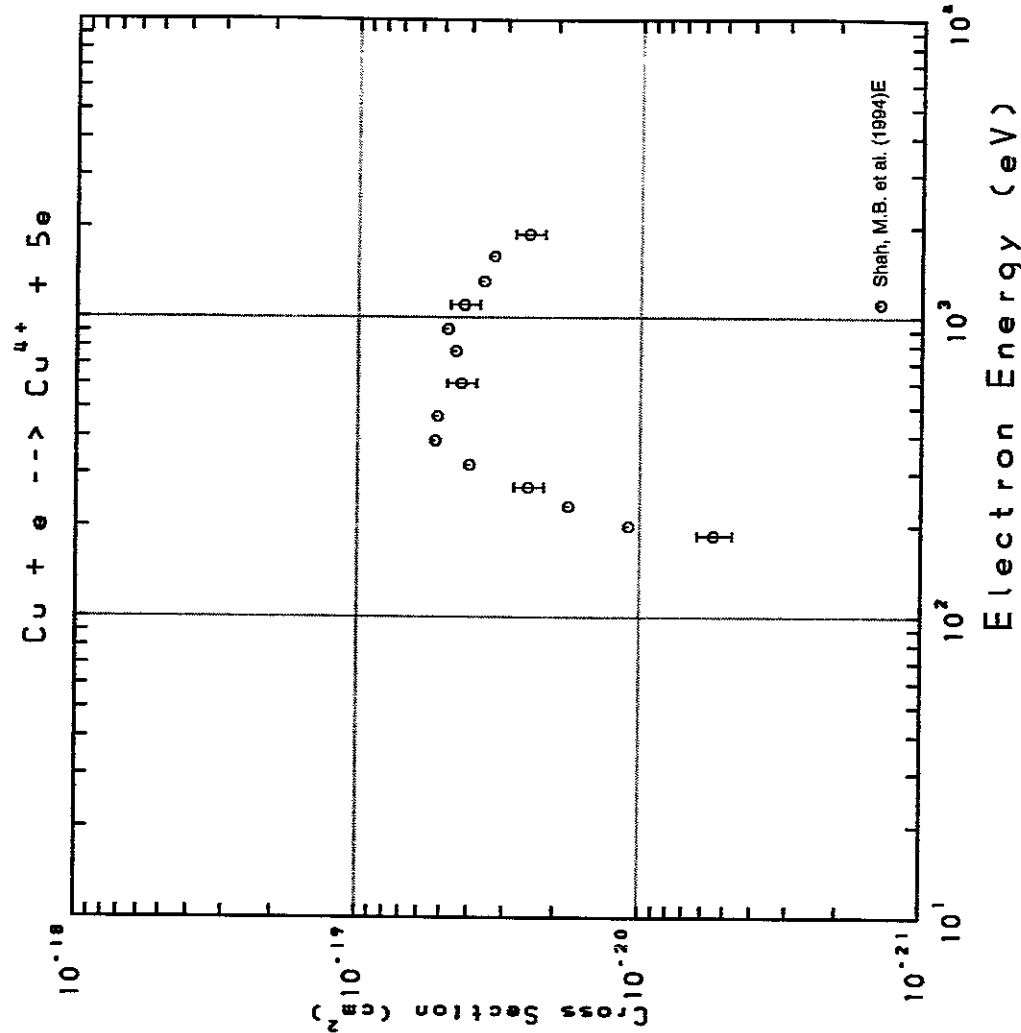


Fig. 244 Cu \rightarrow Cu⁴⁺

AMDIS-ION

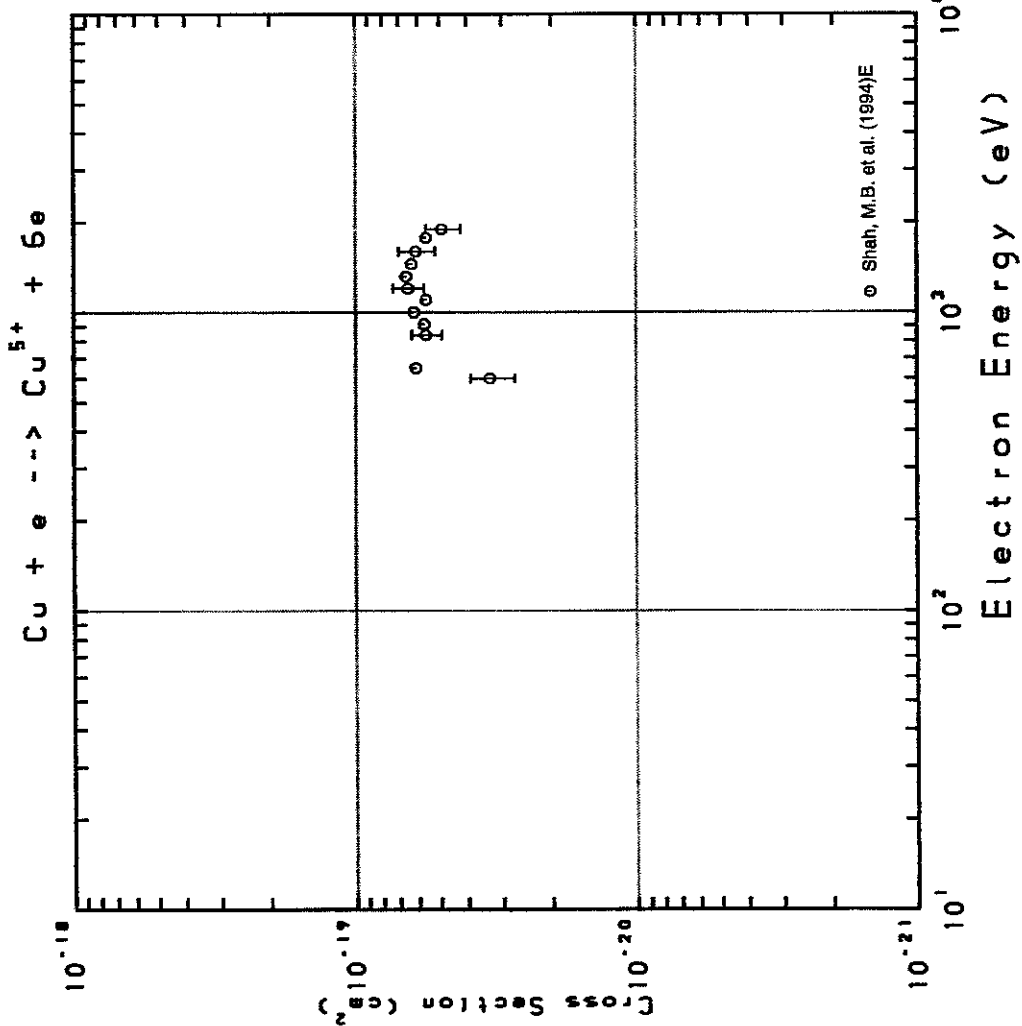


Fig. 245 $\text{Cu} \rightarrow \text{Cu}^{5+}$

AMDIS-ION

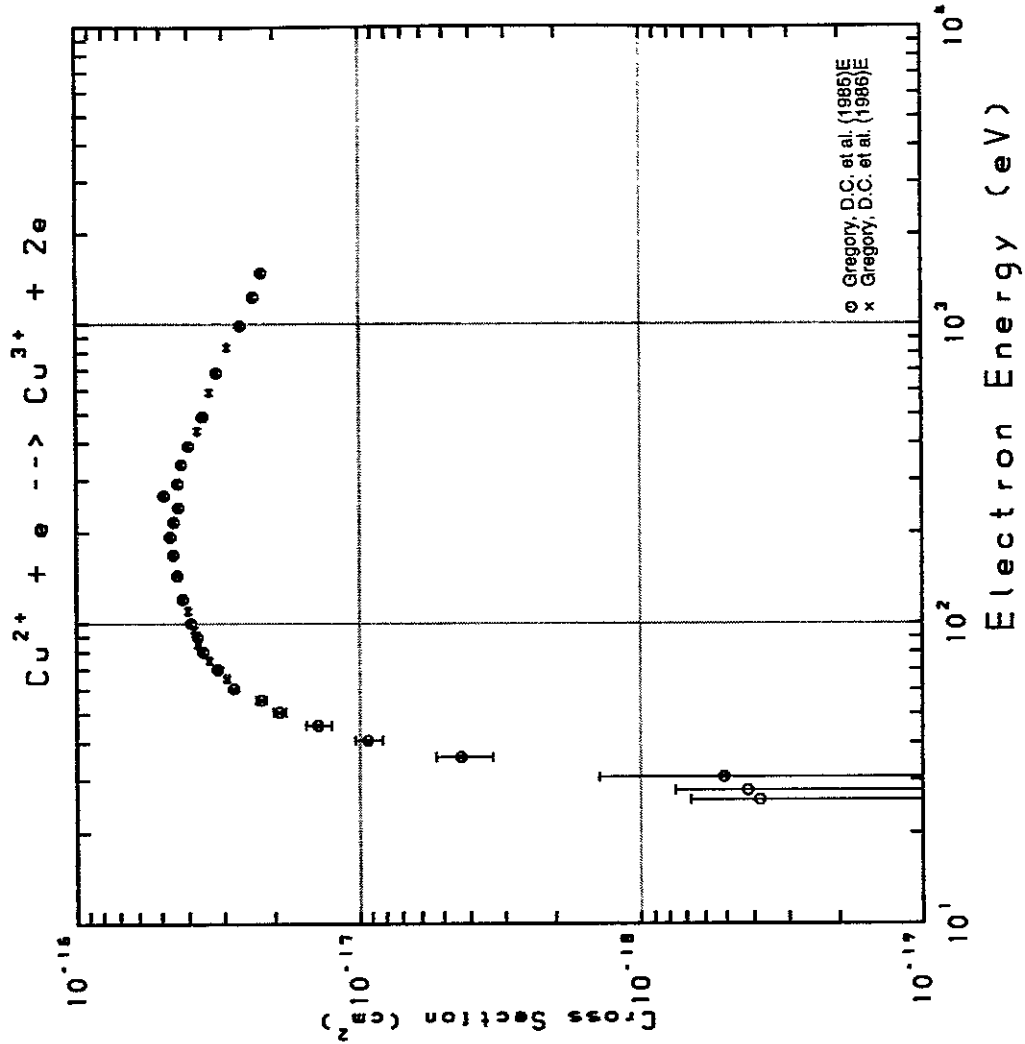


Fig. 246 $\text{Cu}^{2+} \rightarrow \text{Cu}^{3+}$

AMDIS-ION

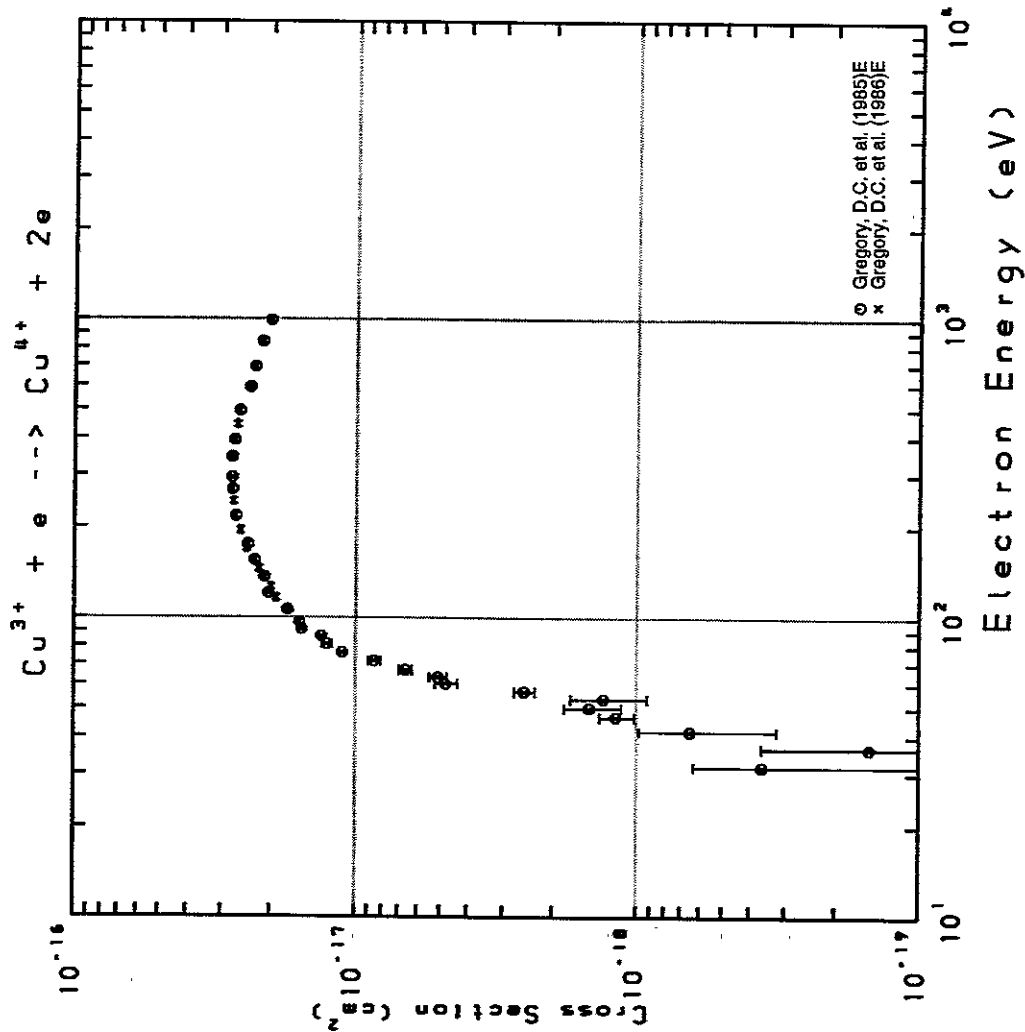


Fig. 247 $Cu^{3+} \rightarrow Cu^{4+}$

AMDIS-ION

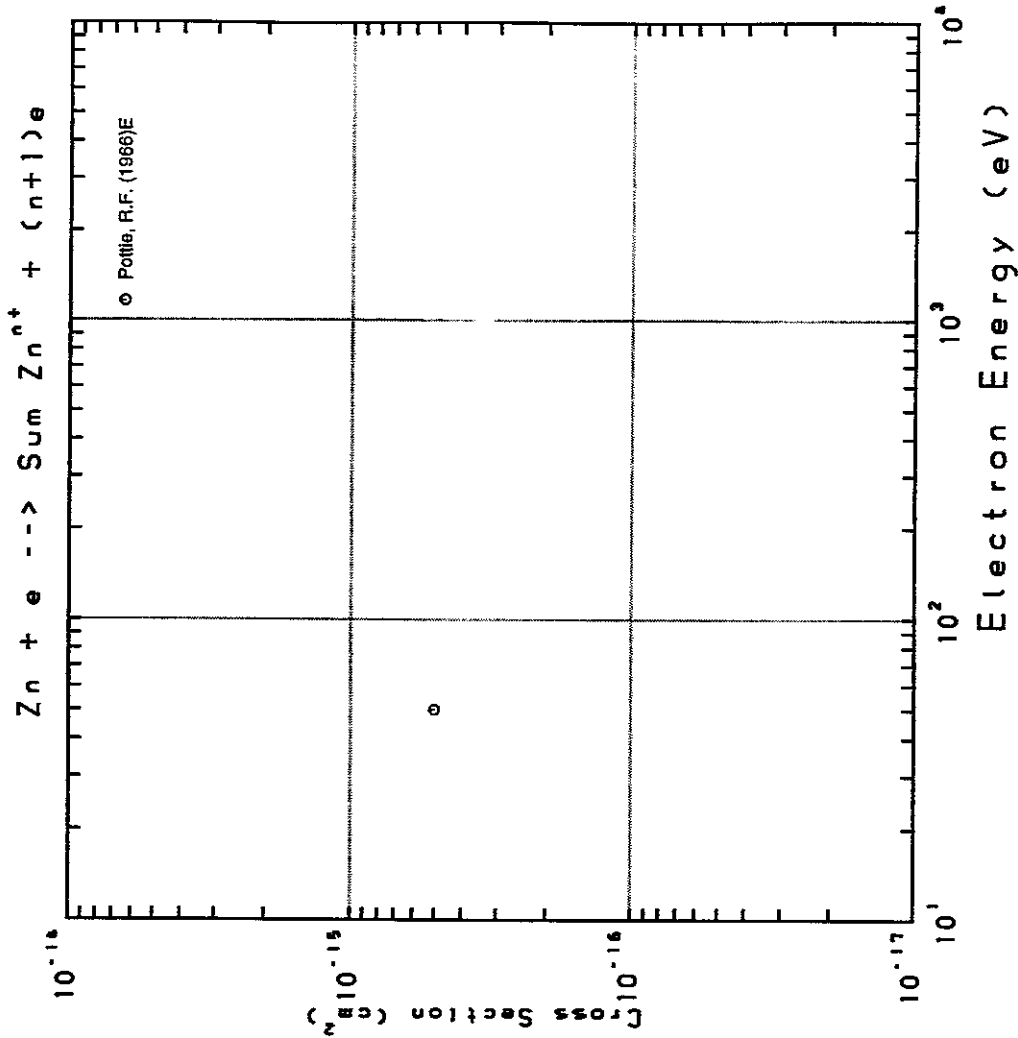


Fig. 248 $Zn \rightarrow \Sigma Zn^{n+}$

AMDIS-ION

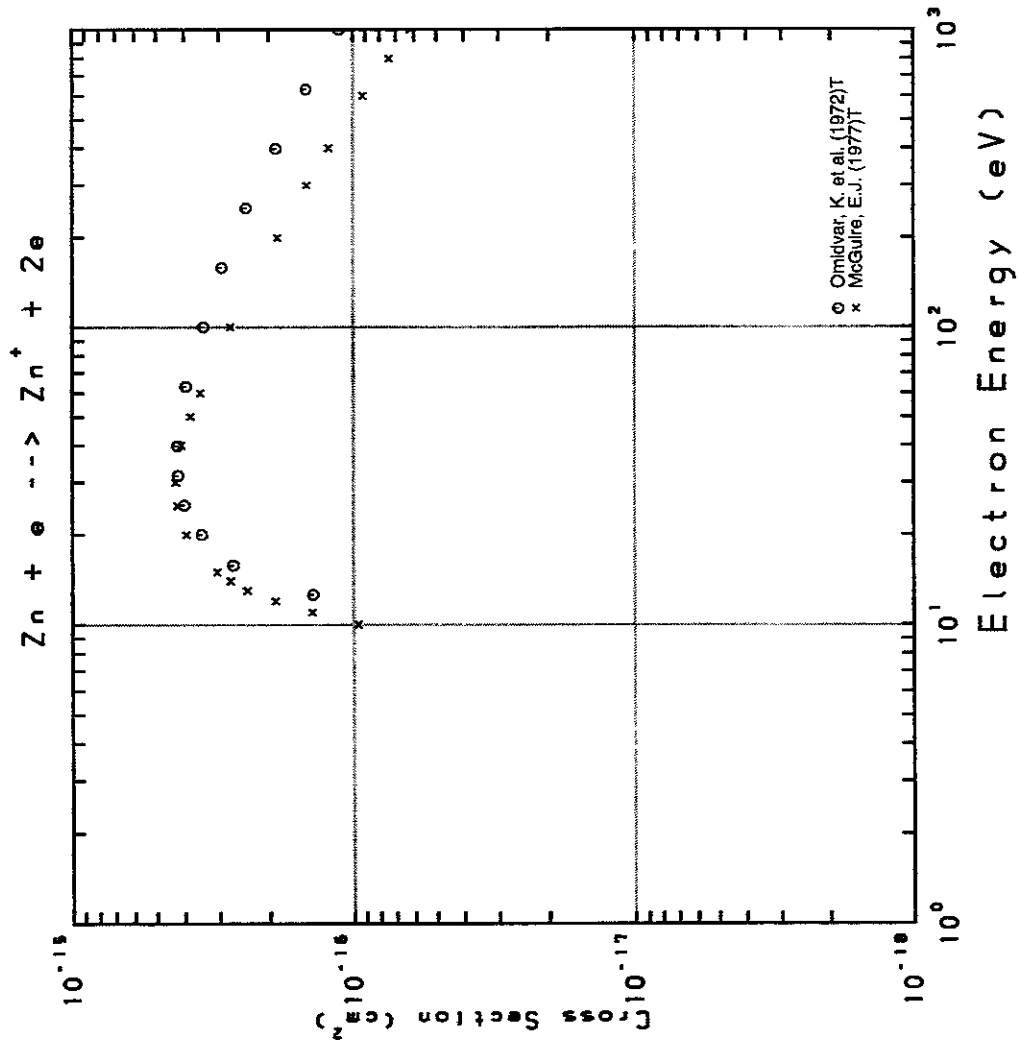


Fig. 249 $Zn \rightarrow Zn^+$

AMDIS-ION

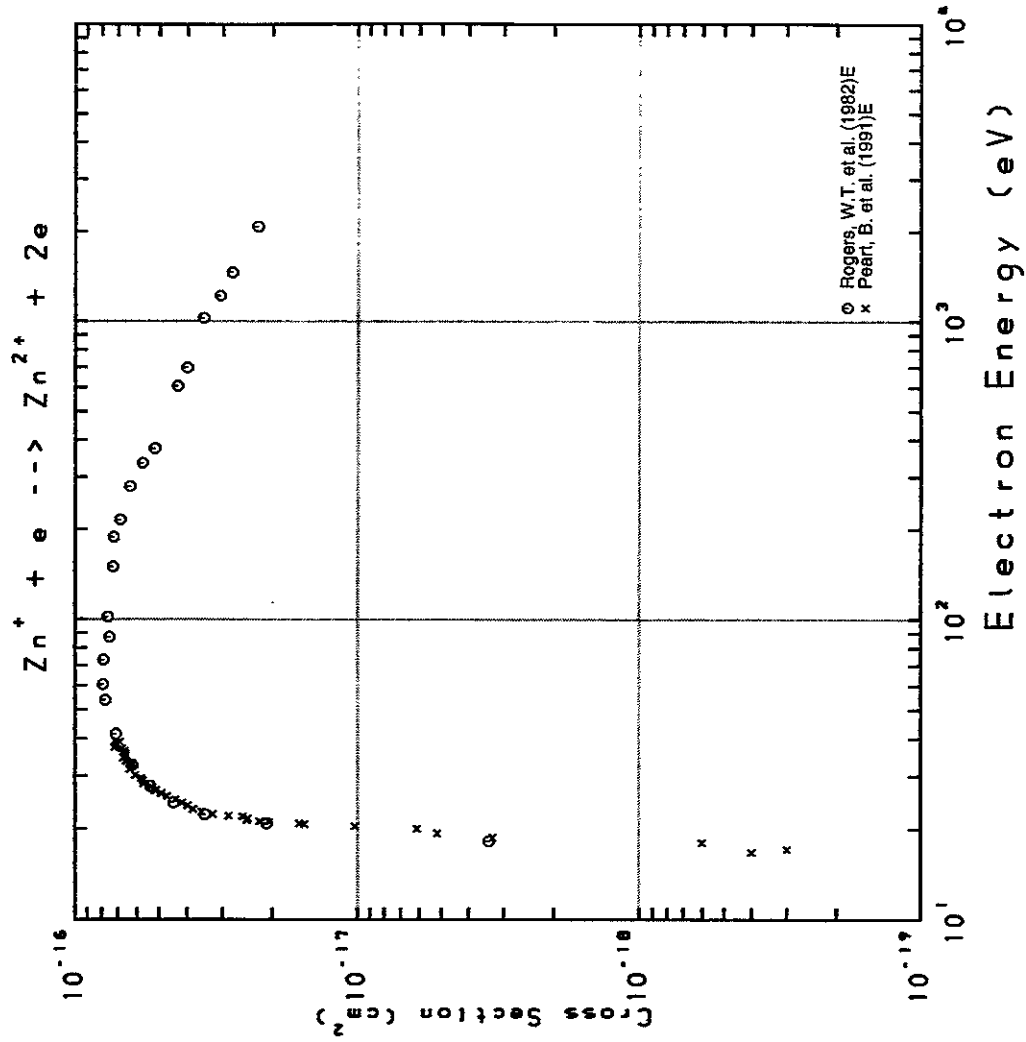


Fig. 250 $Zn^+ \rightarrow Zn^{2+}$

AMDIS-ION

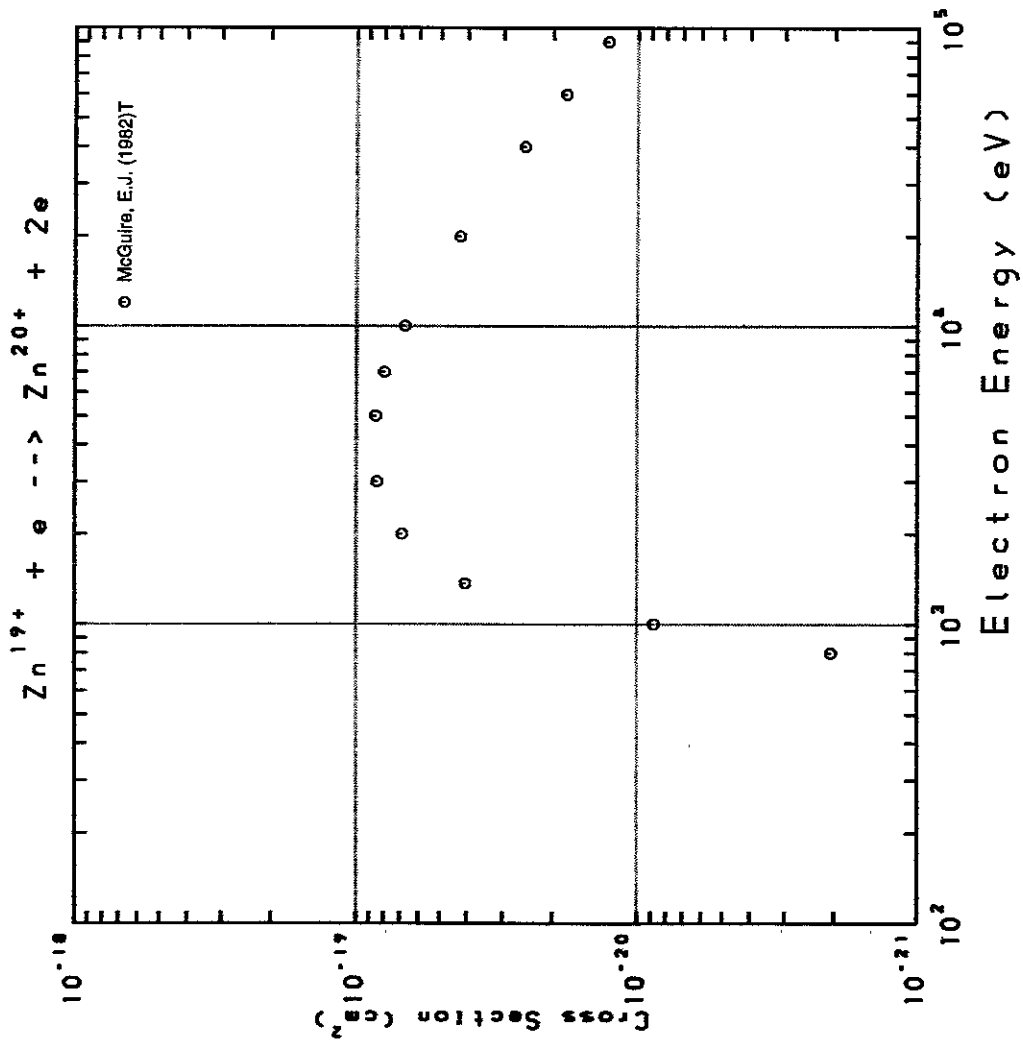


Fig. 251 $Zn^{19+} \rightarrow Zn^{20+}$

AMDIS-ION

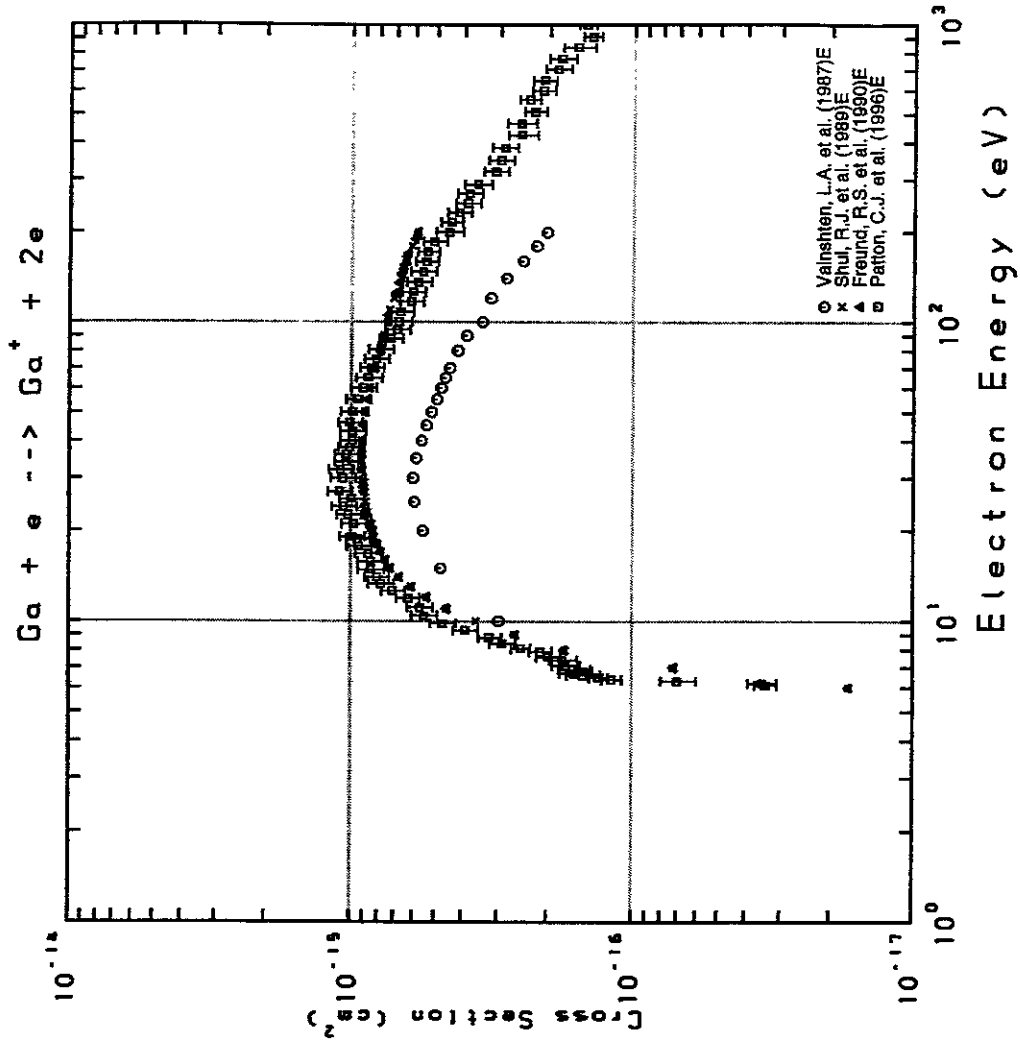


Fig. 252 $Ga \rightarrow Ga^+$

AMDIS-ION

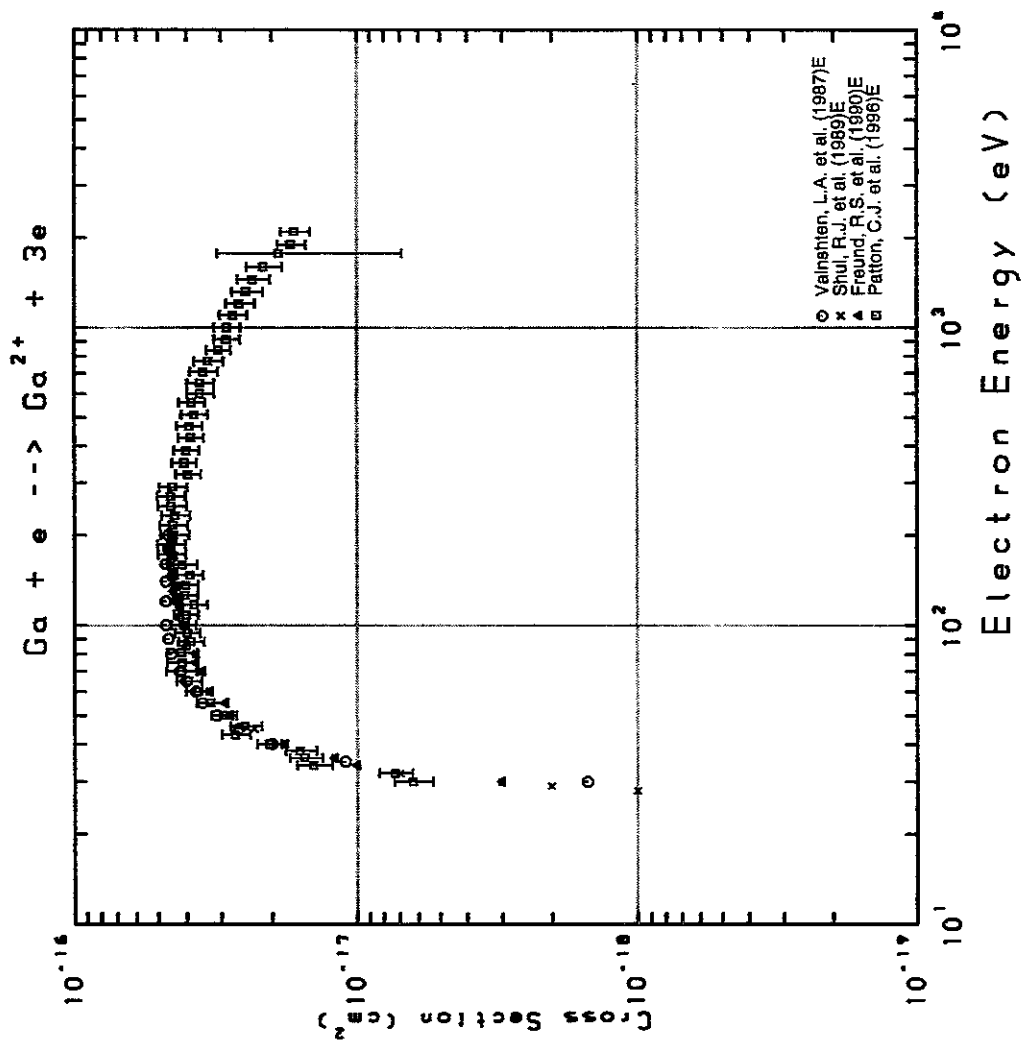


Fig. 253 Ga \rightarrow Ga²⁺

AMDIS-ION

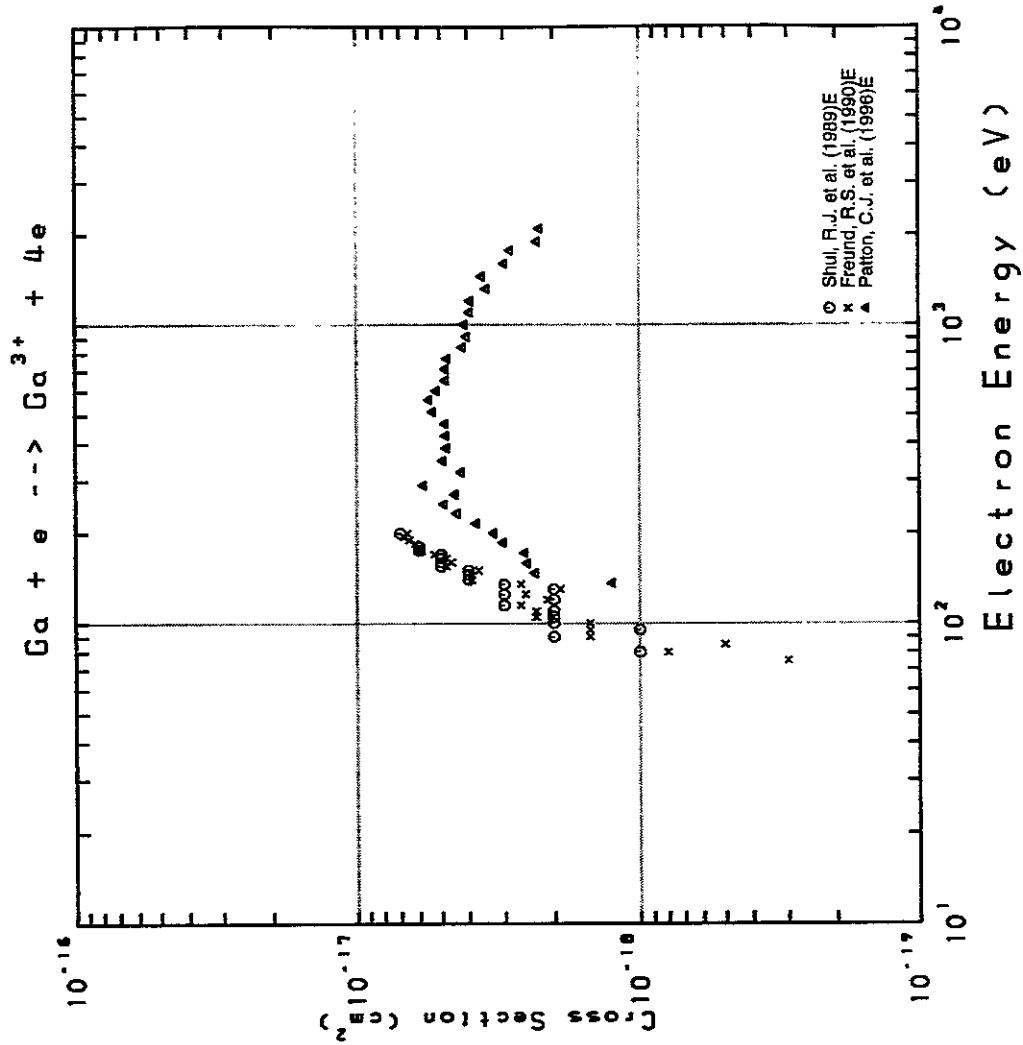


Fig. 254 Ga \rightarrow Ga³⁺

AMDIS-ION

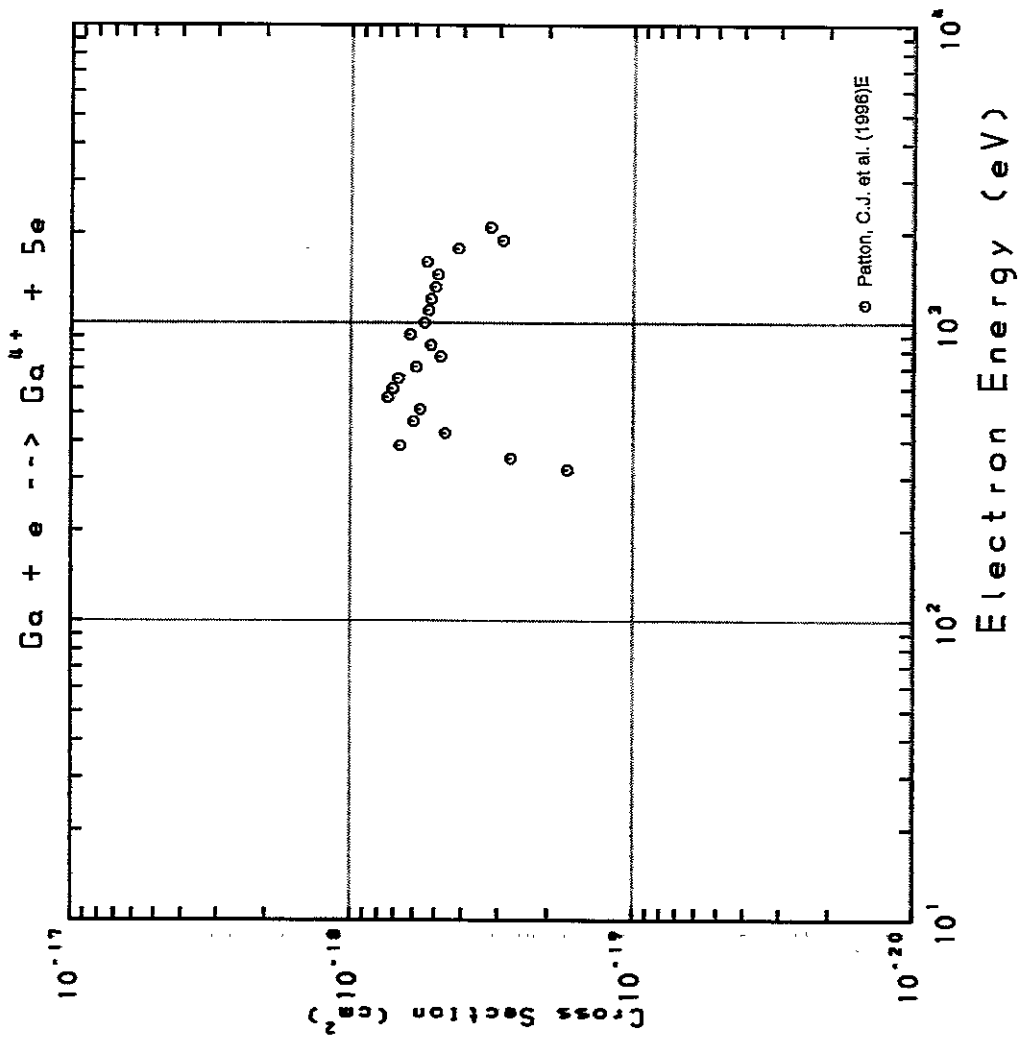


Fig. 255 $\text{Ga} \rightarrow \text{Ga}^{4+}$

AMDIS-ION

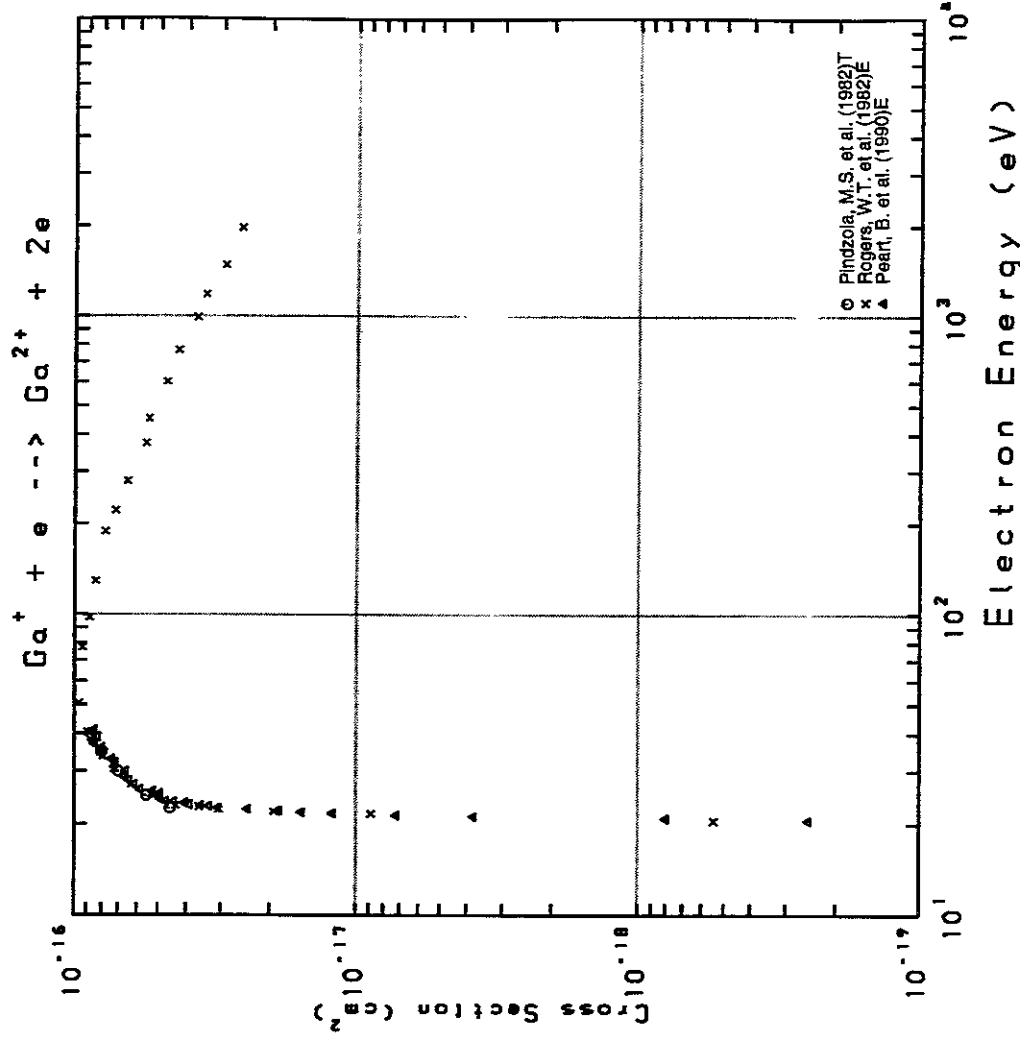


Fig. 256 $\text{Ga}^+ \rightarrow \text{Ga}^{2+}$

AMDIS-ION

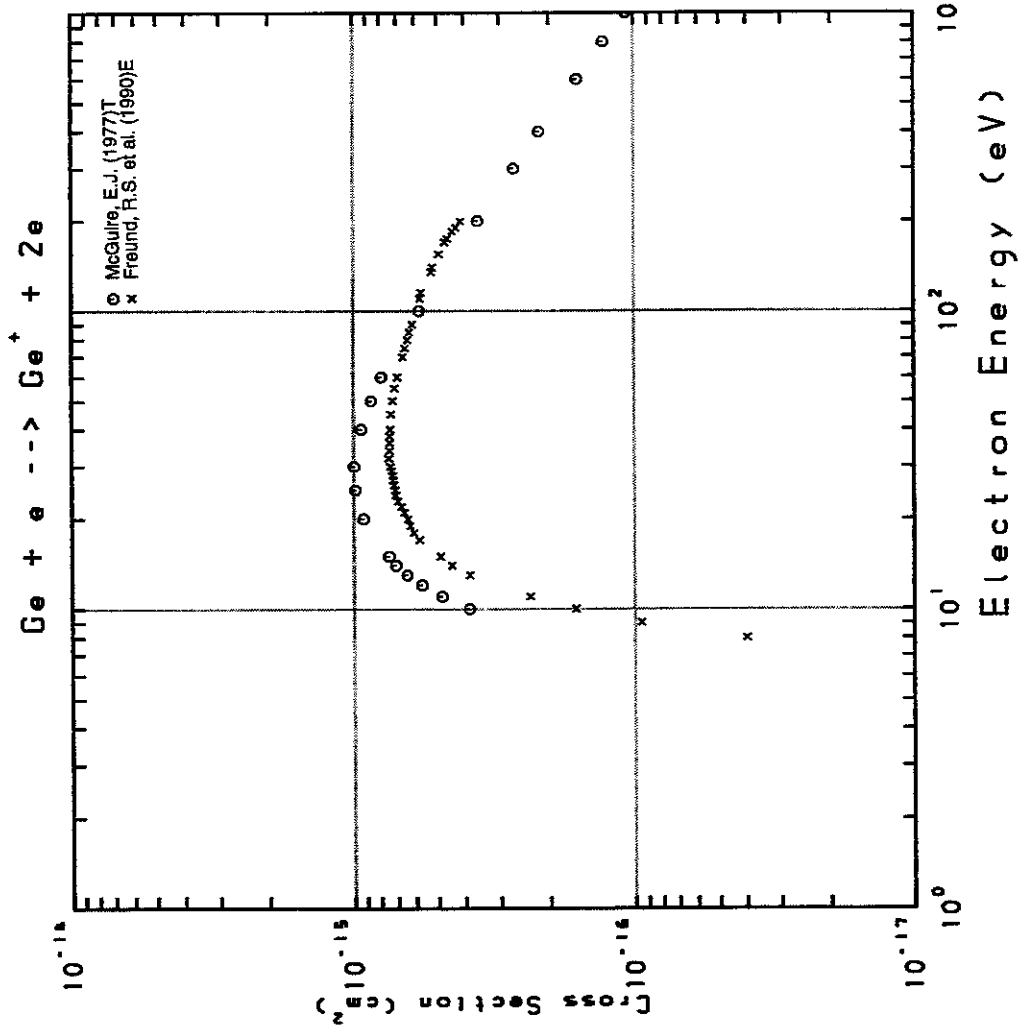


Fig. 257 $\text{Ge} \rightarrow \text{Ge}^+$

AMDIS-ION

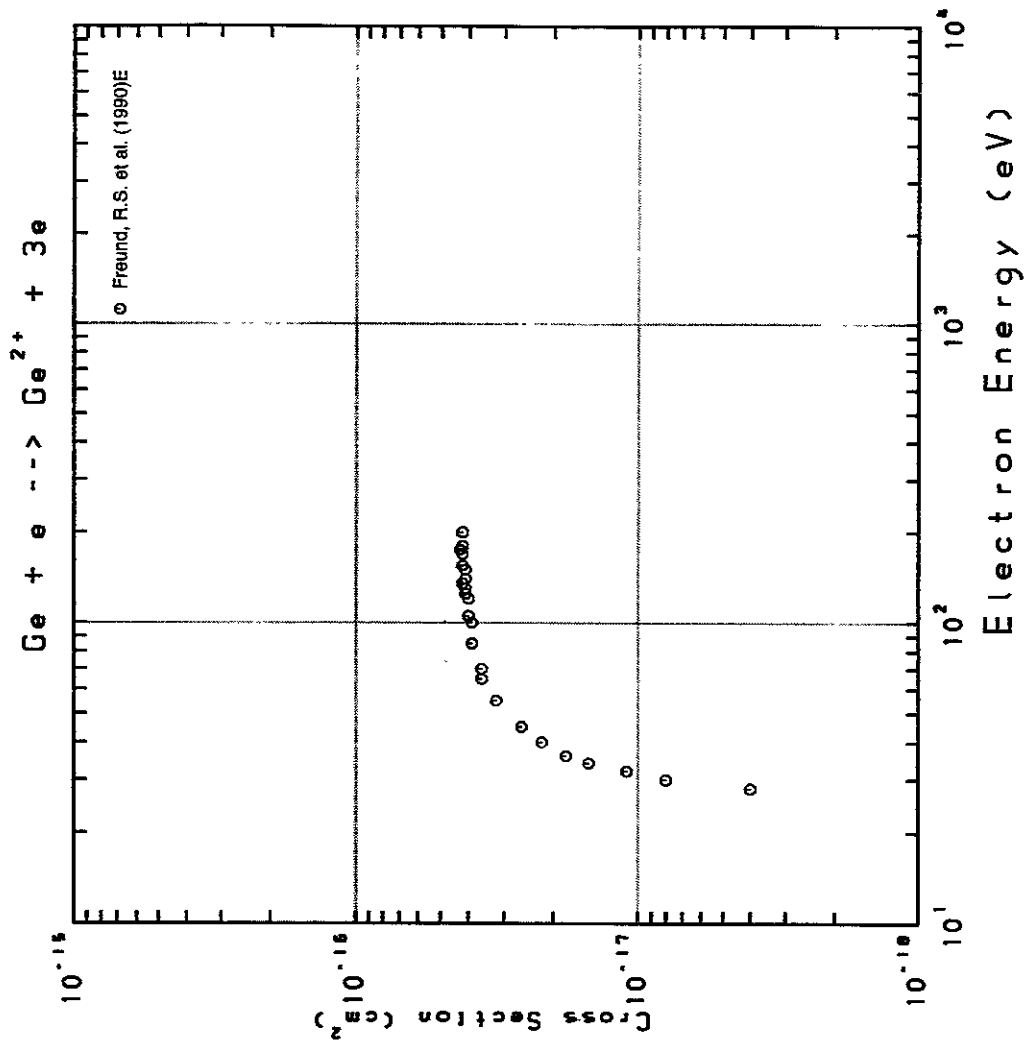


Fig. 258 $\text{Ge} \rightarrow \text{Ge}^{2+}$

AMDIS-ION

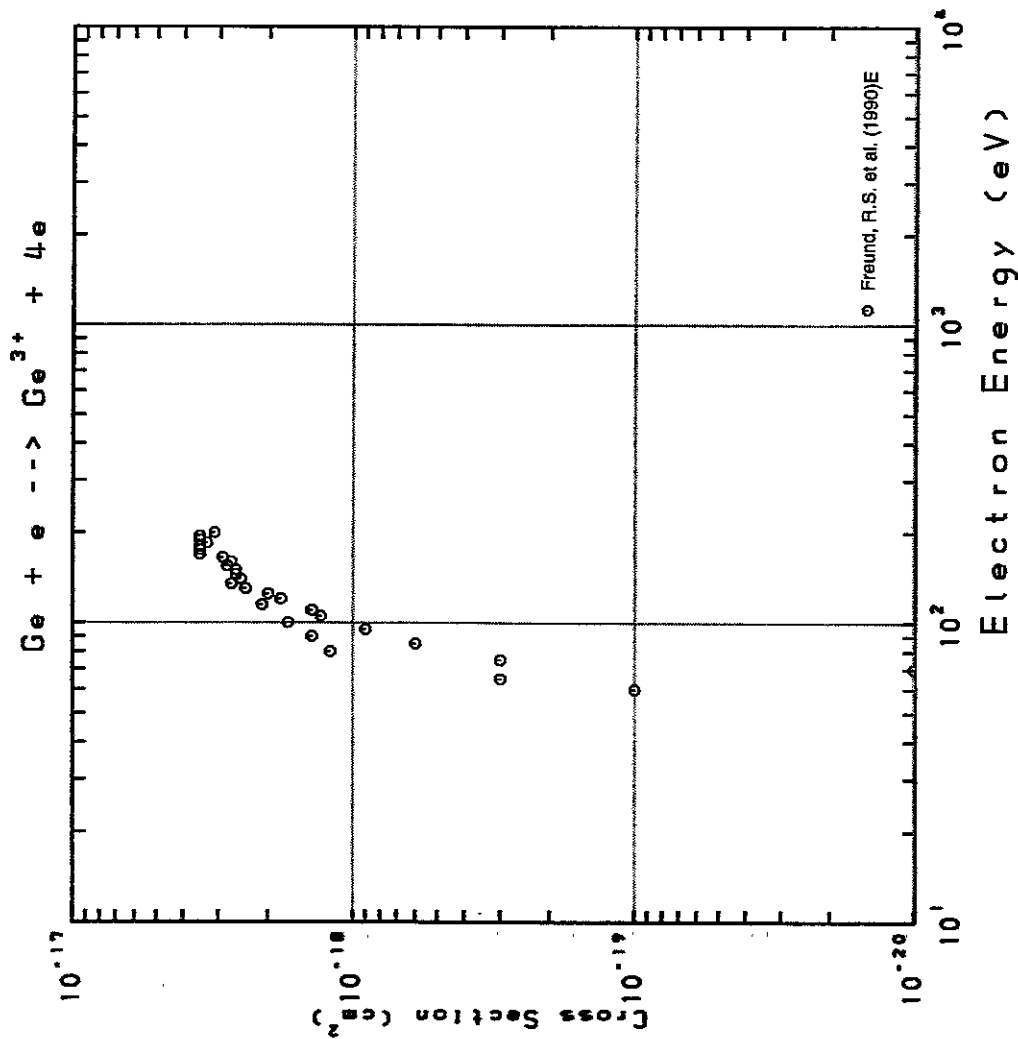


Fig. 259 Ge → Ge³⁺

AMDIS-ION

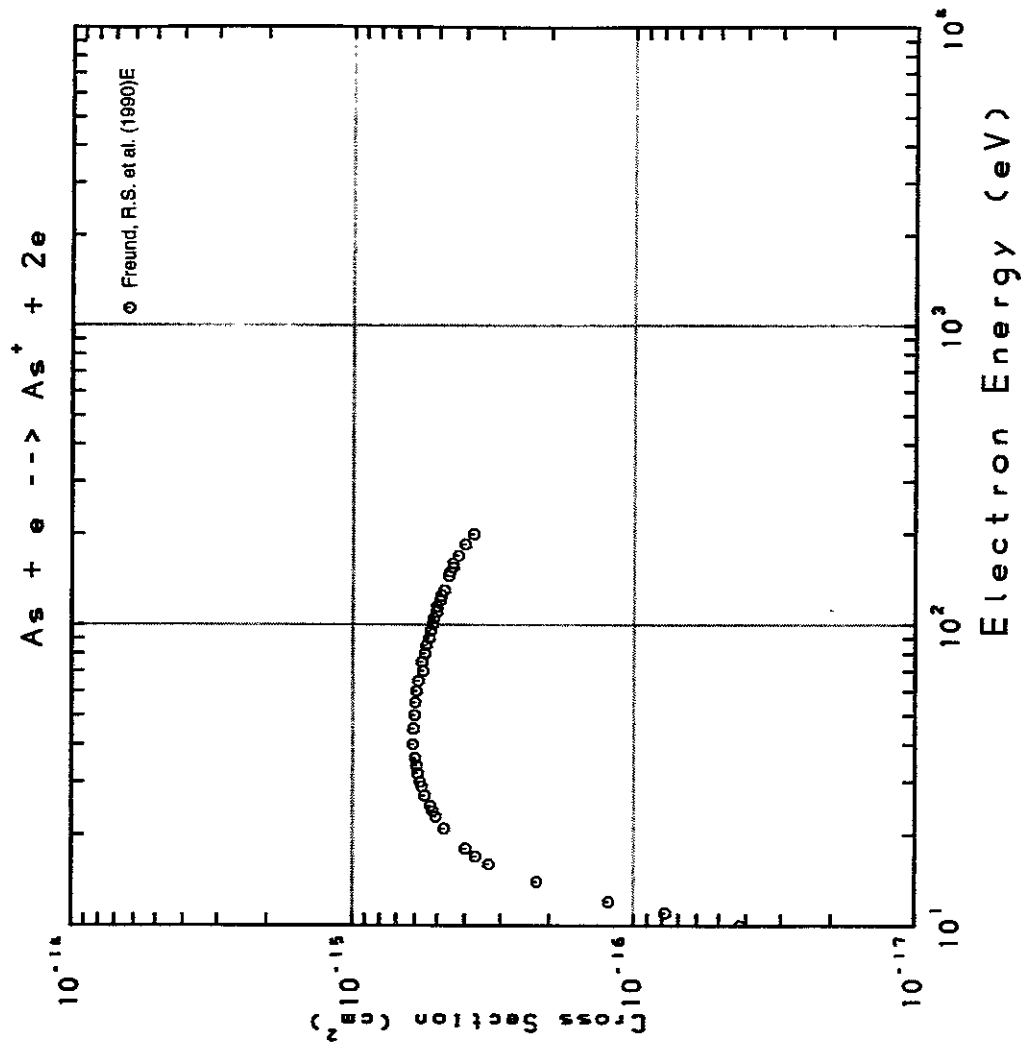


Fig. 260 As → As⁺

AMDIS-ION

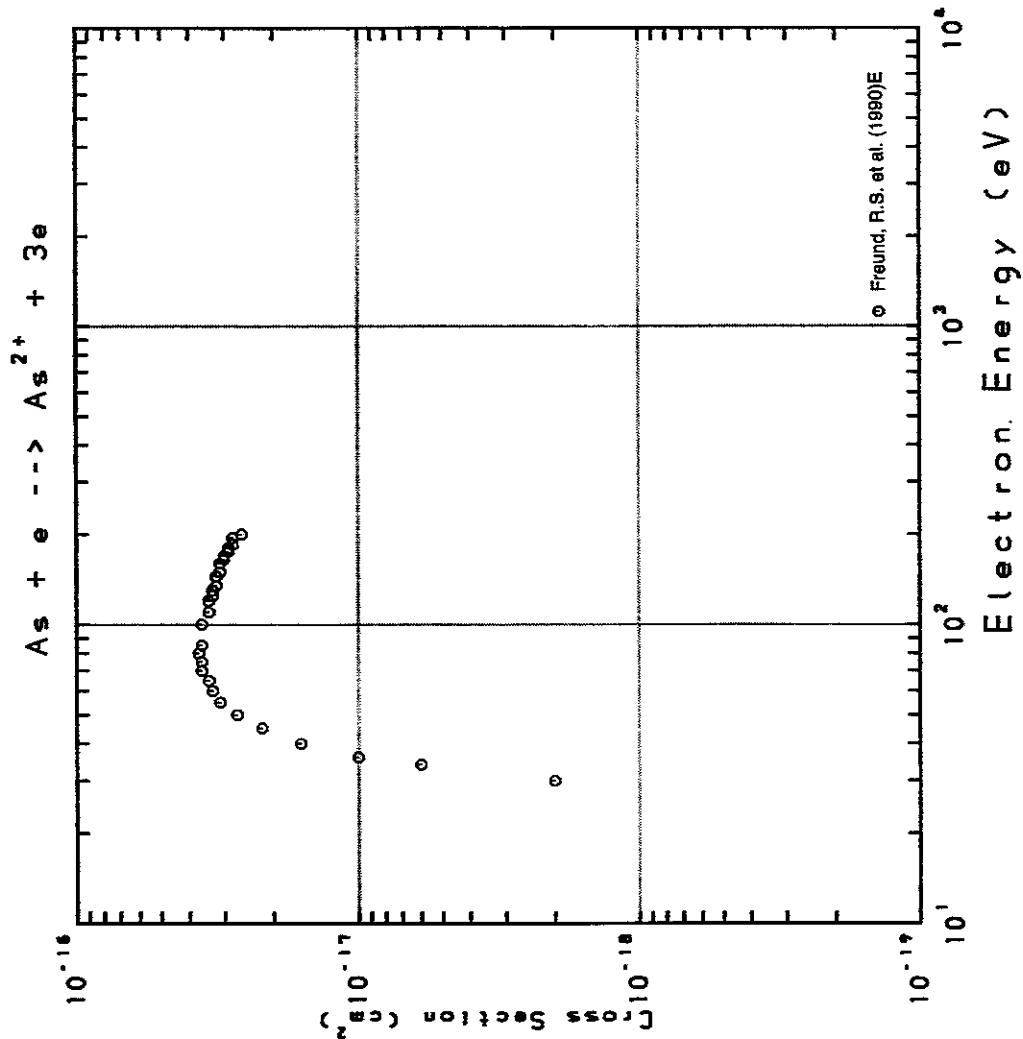


Fig. 261 $As \rightarrow As^{2+}$

AMDIS-ION

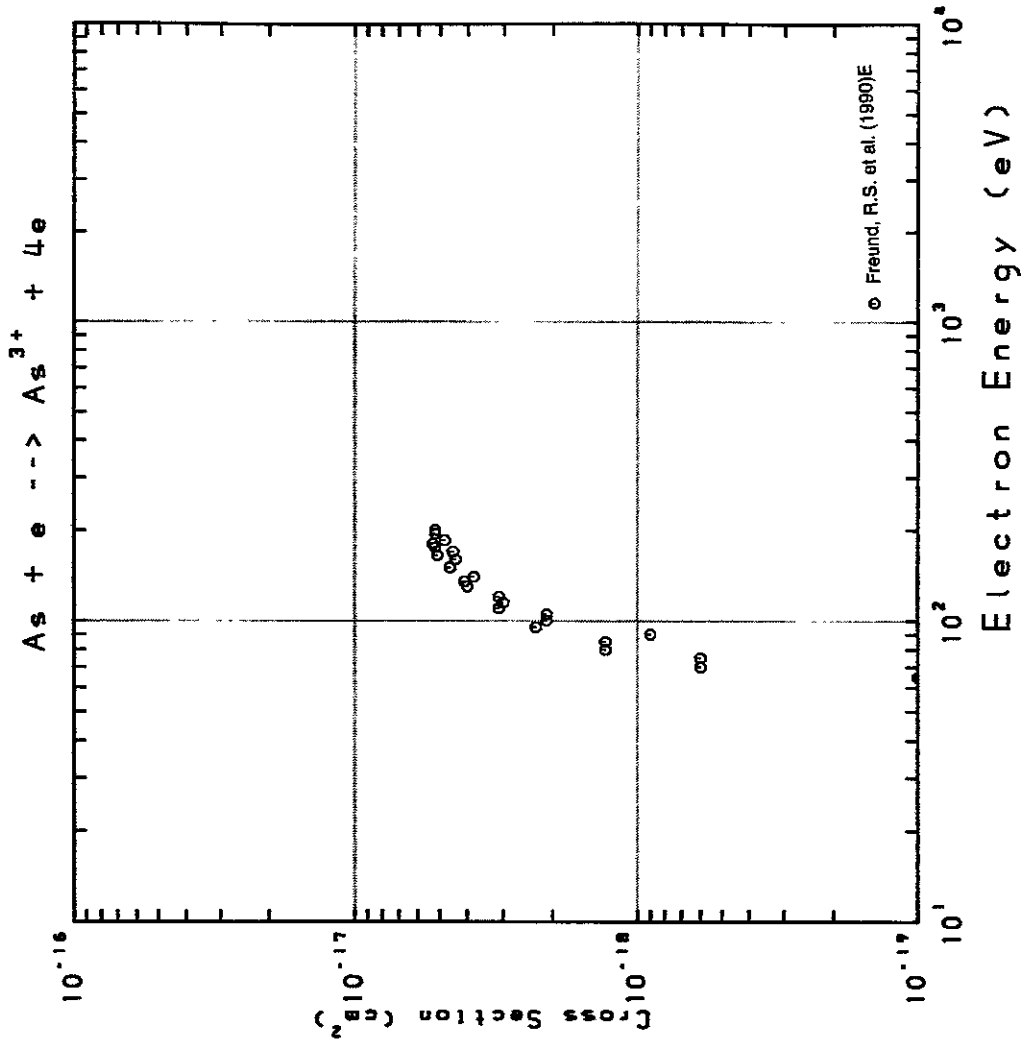


Fig. 262 $As \rightarrow As^{3+}$

AMDIS-ION

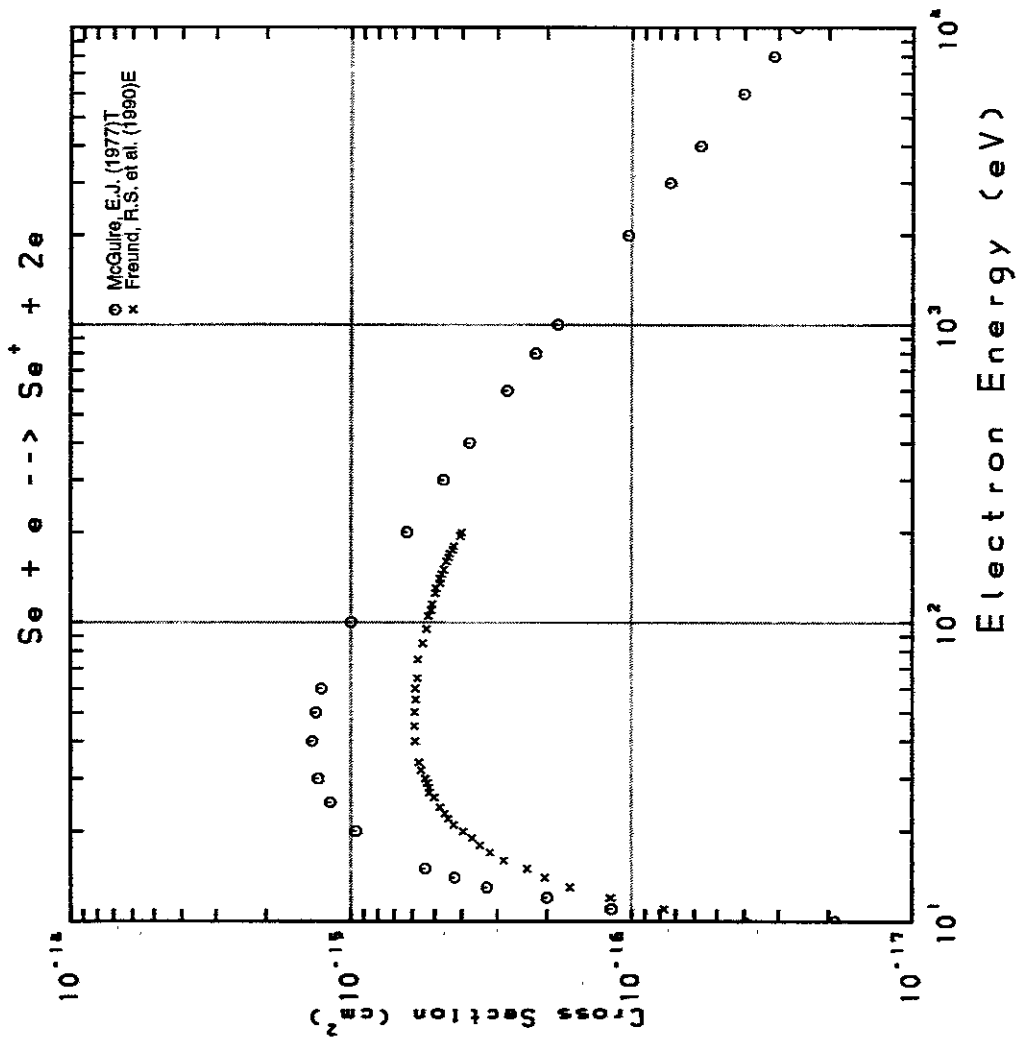


Fig. 263 Se \rightarrow Se⁺

AMDIS-ION

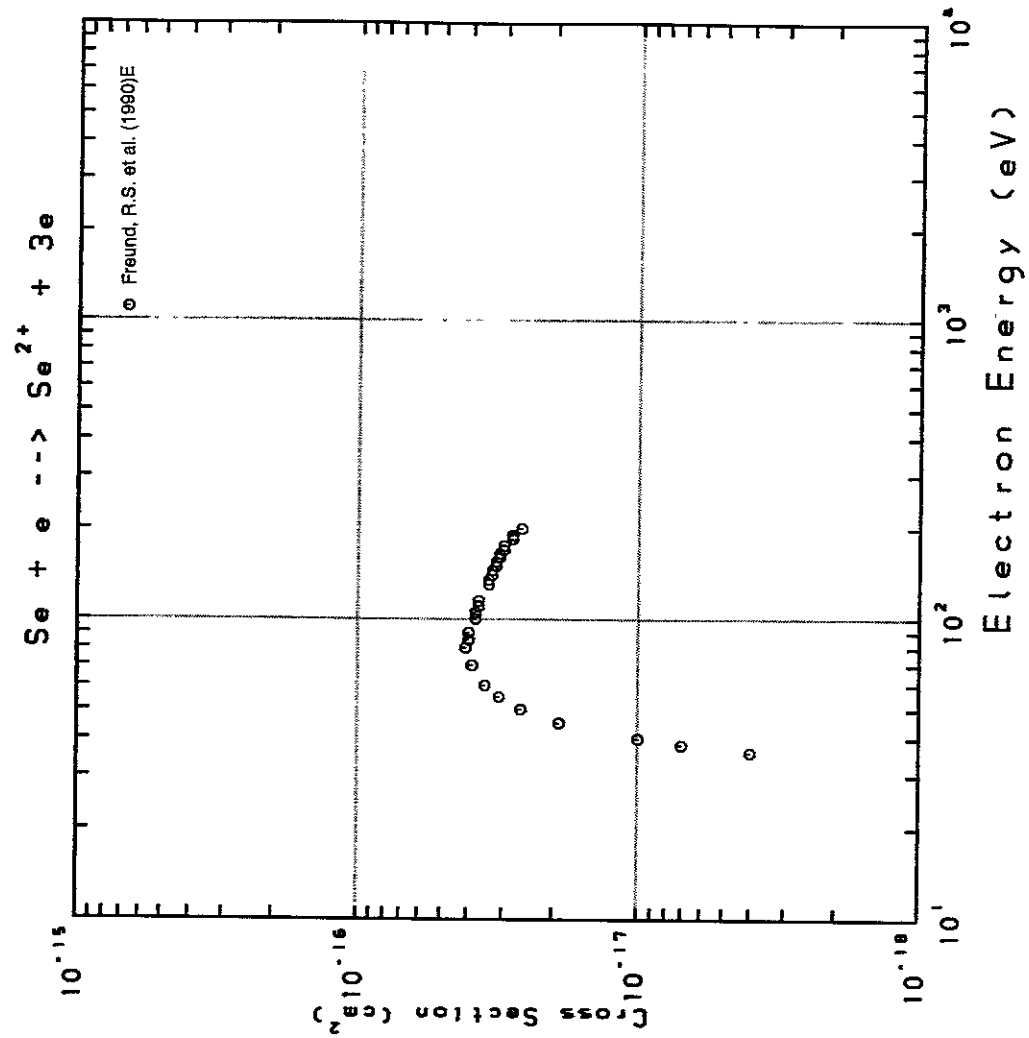


Fig. 264 Se \rightarrow Se²⁺

AMDIS-ION

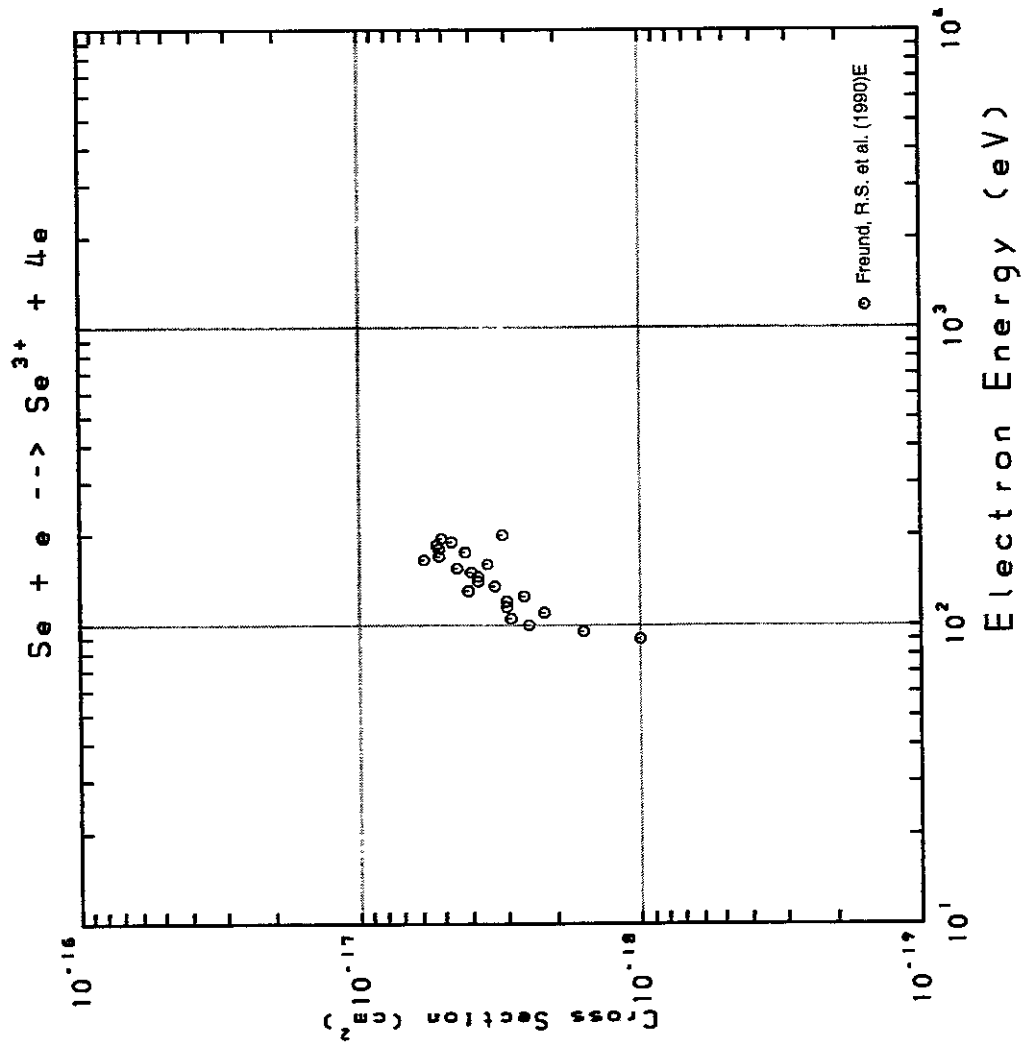


Fig. 265 $Se \rightarrow Se^{3+}$

AMDIS-ION

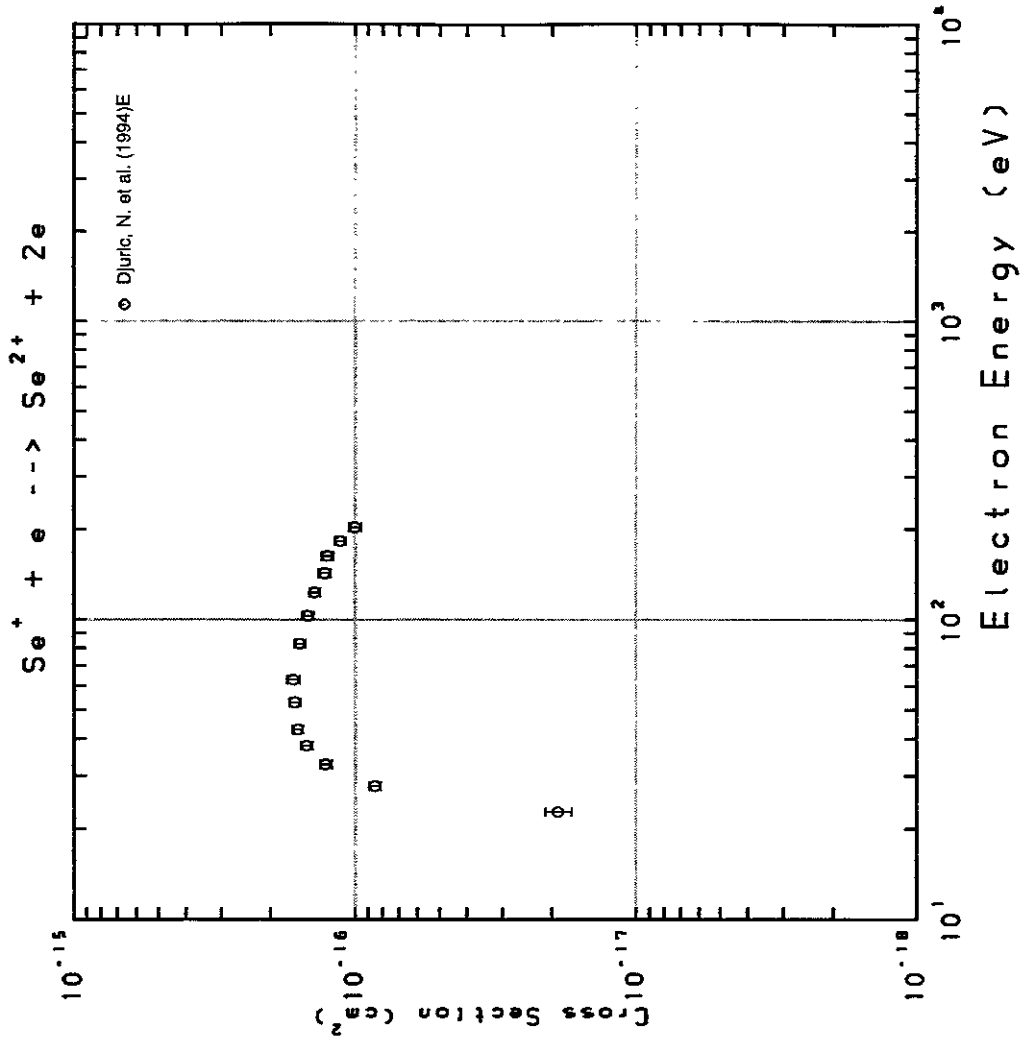


Fig. 266 $Se^+ \rightarrow Se^{2+}$

AMDIS-ION

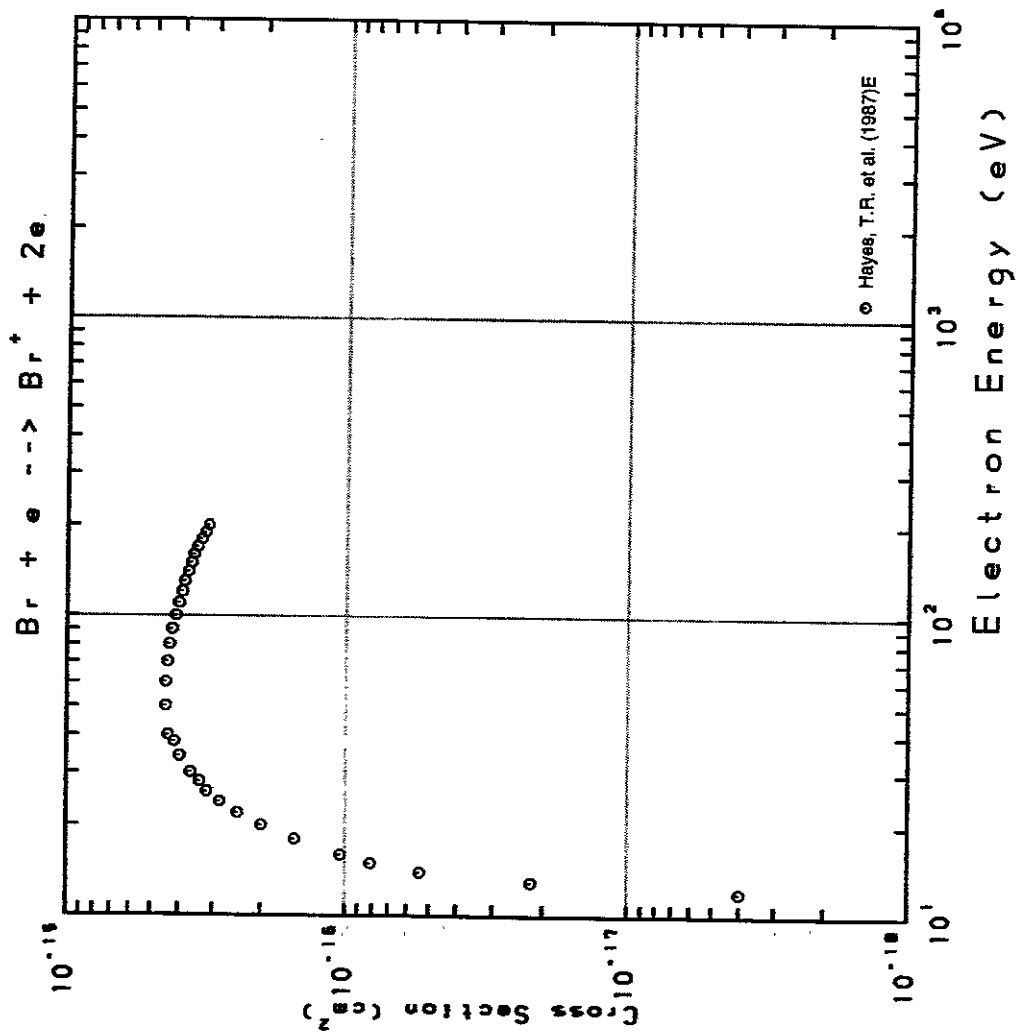


Fig. 267 $Br \rightarrow Br^+$

AMDIS-ION

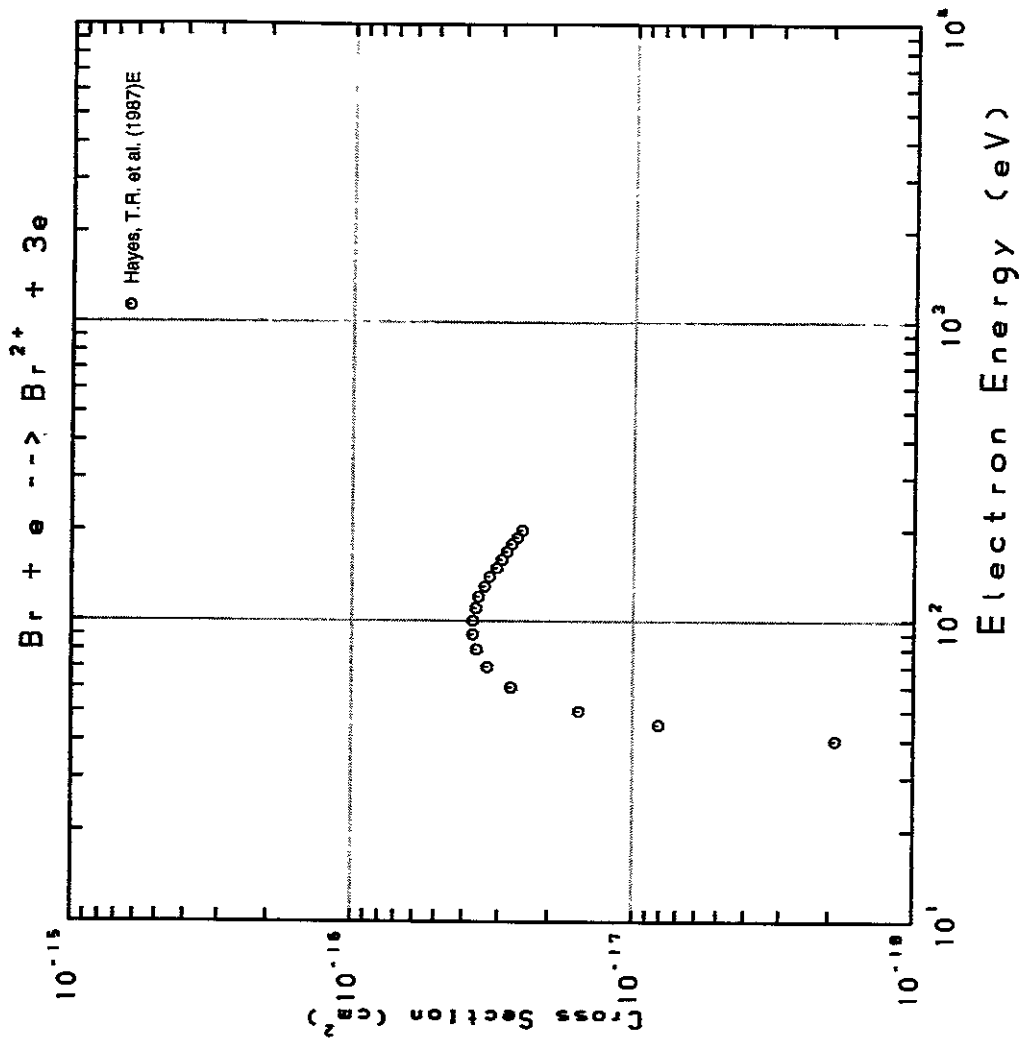


Fig. 268 $Br \rightarrow Br^{2+}$

AMDIS-ION

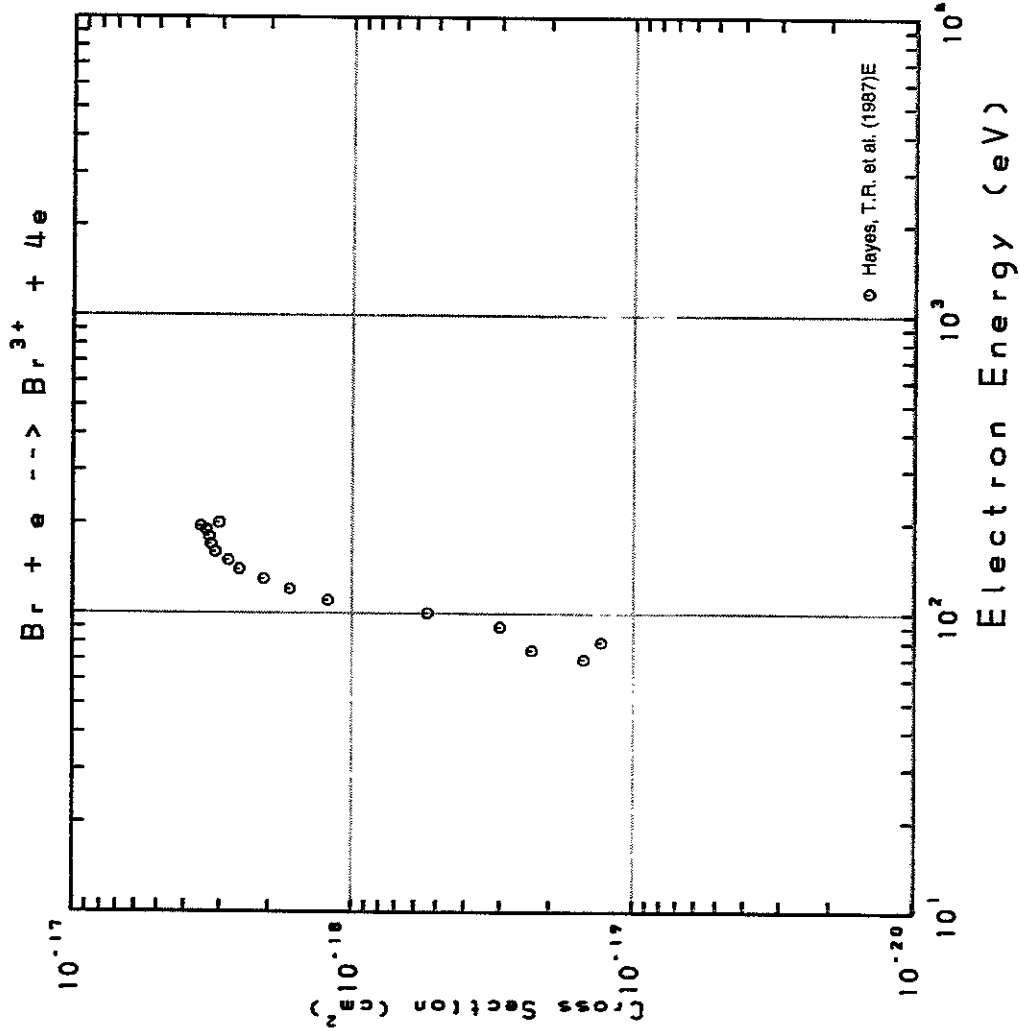


Fig. 269 $\text{Br} \rightarrow \text{Br}^{3+}$

AMDIS-ION

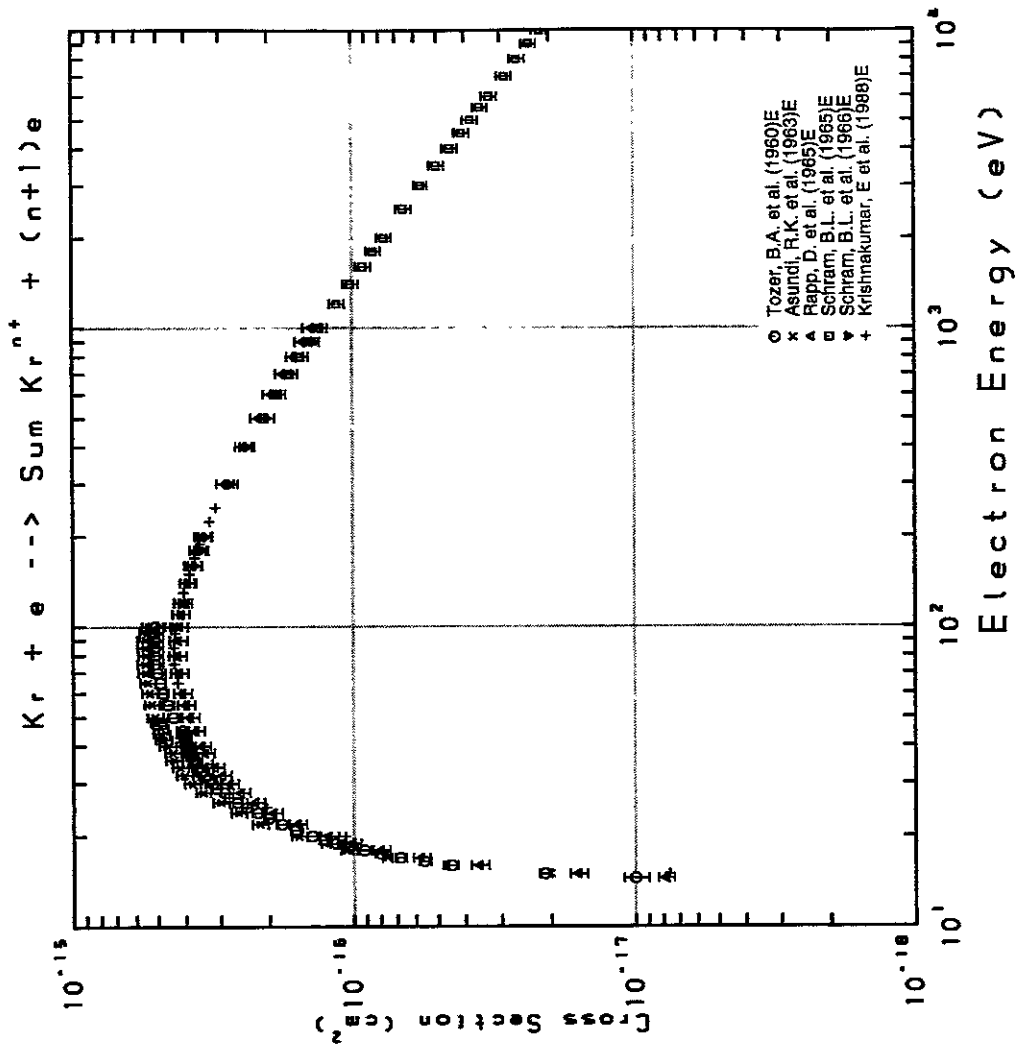


Fig. 270 $\text{Kr} \rightarrow \Sigma \text{Kr}^{n+}$

AMDIS-ION

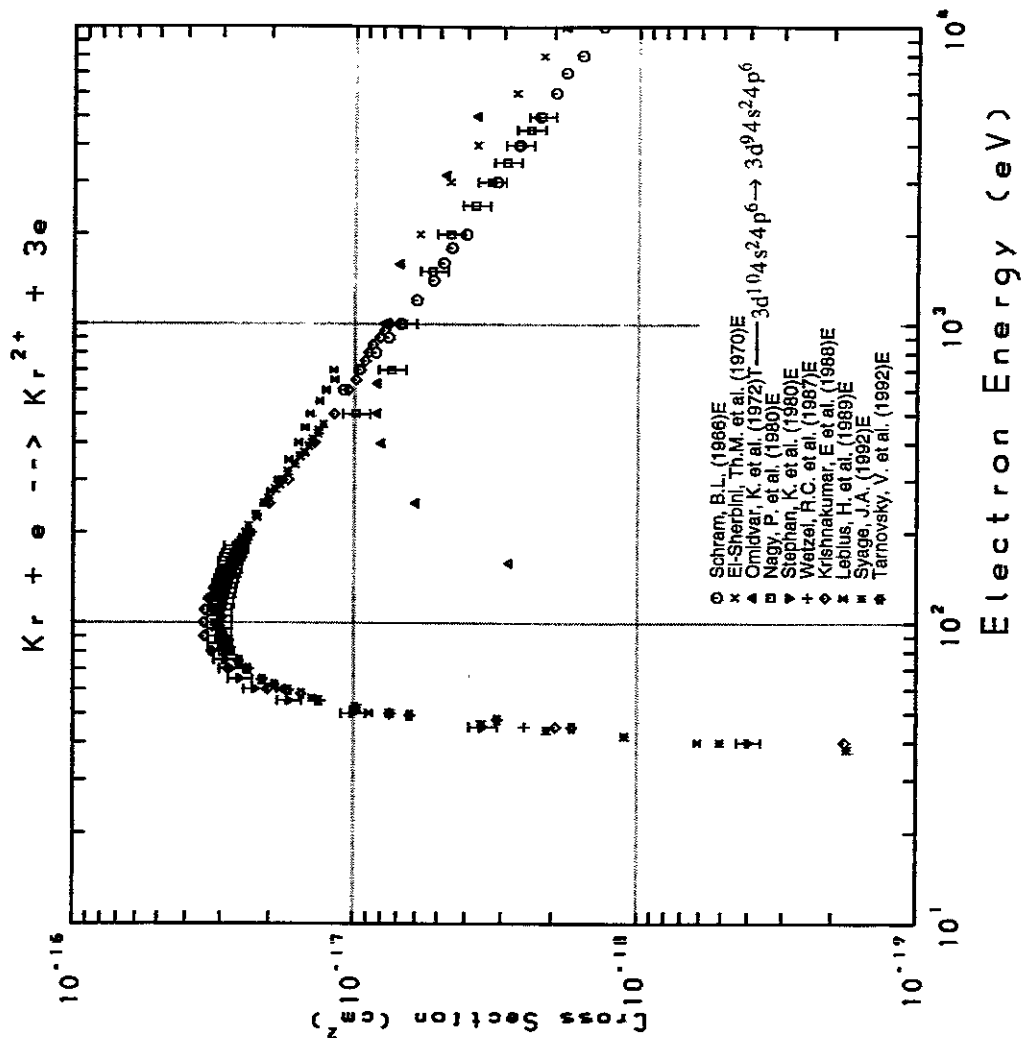


Fig. 272 $Kr \rightarrow Kr^{2+}$

AMDIS-ION

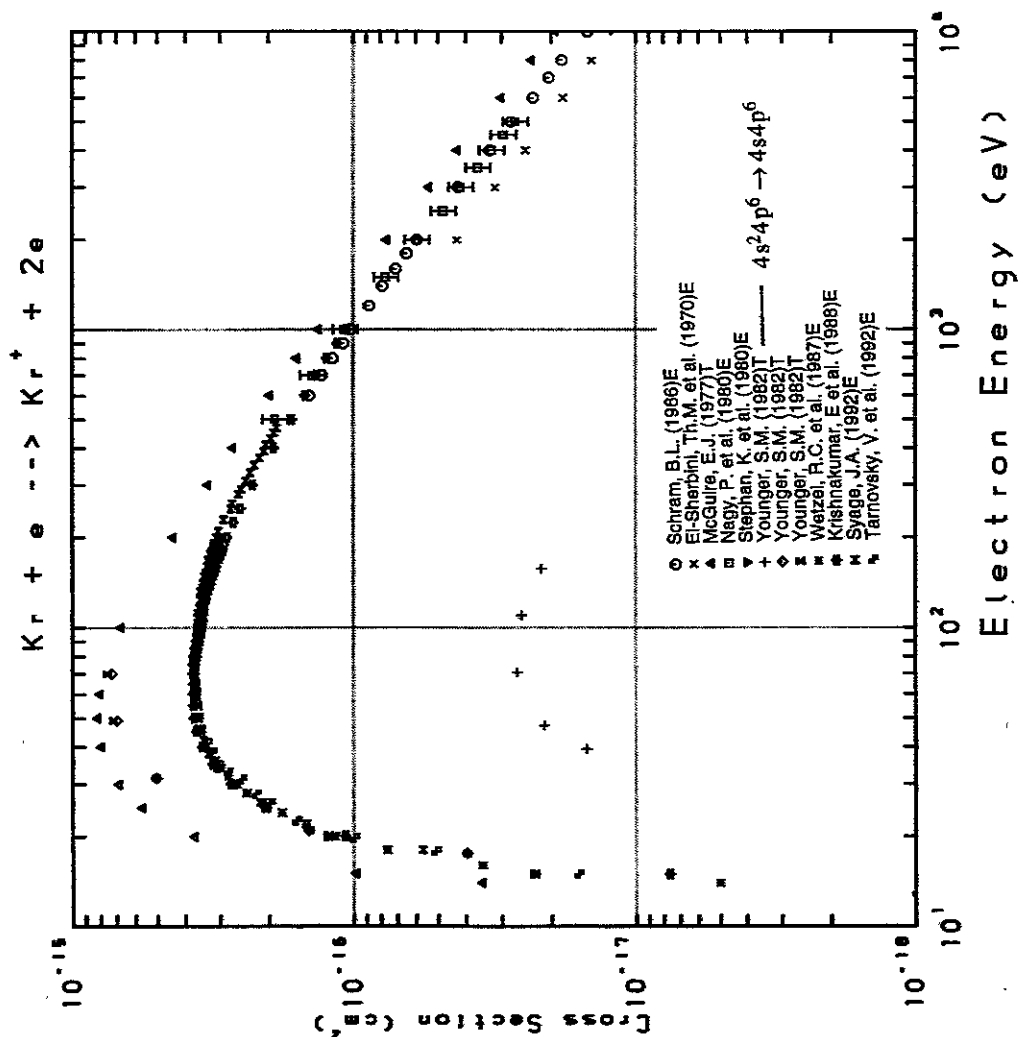


Fig. 271 $Kr \rightarrow Kr^+$

AMDIS-ION

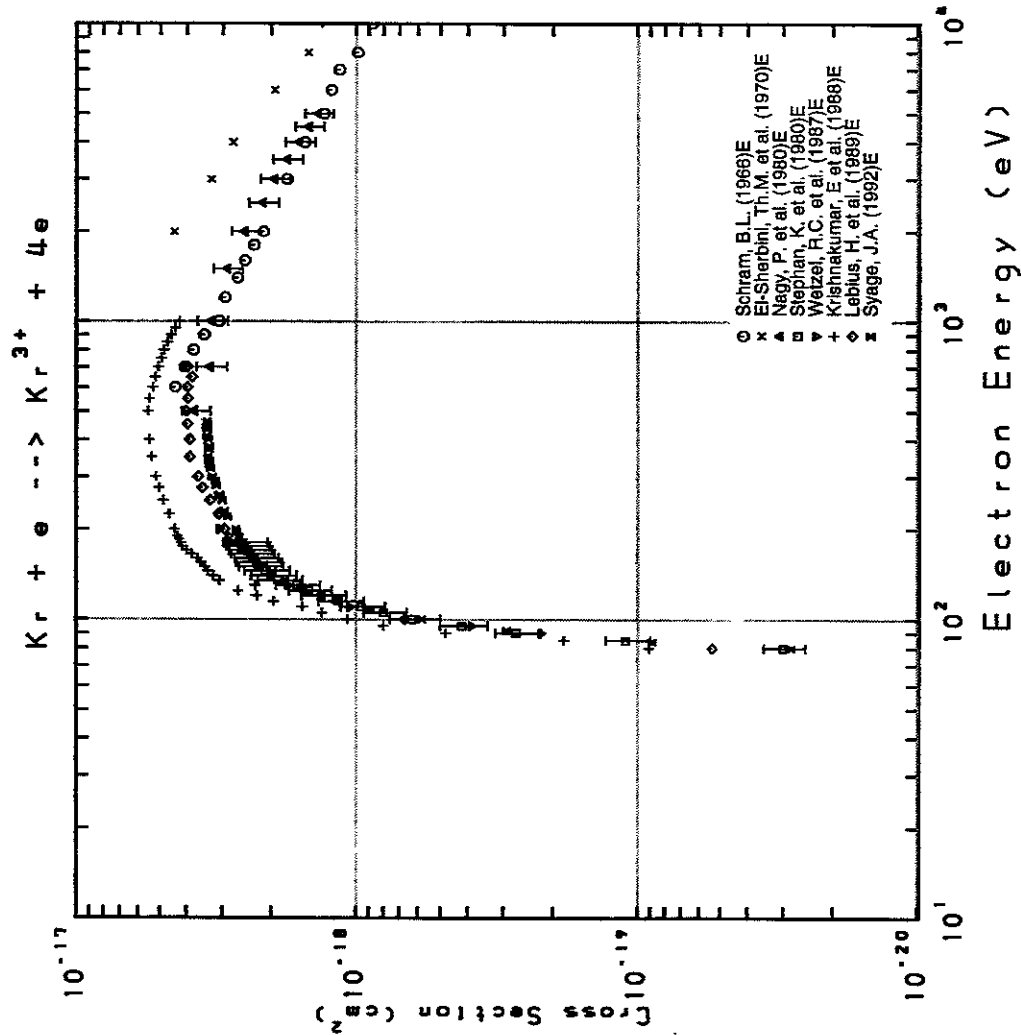


Fig. 273 $\text{Kr} \rightarrow \text{Kr}^{3+}$

AMDIS-ION

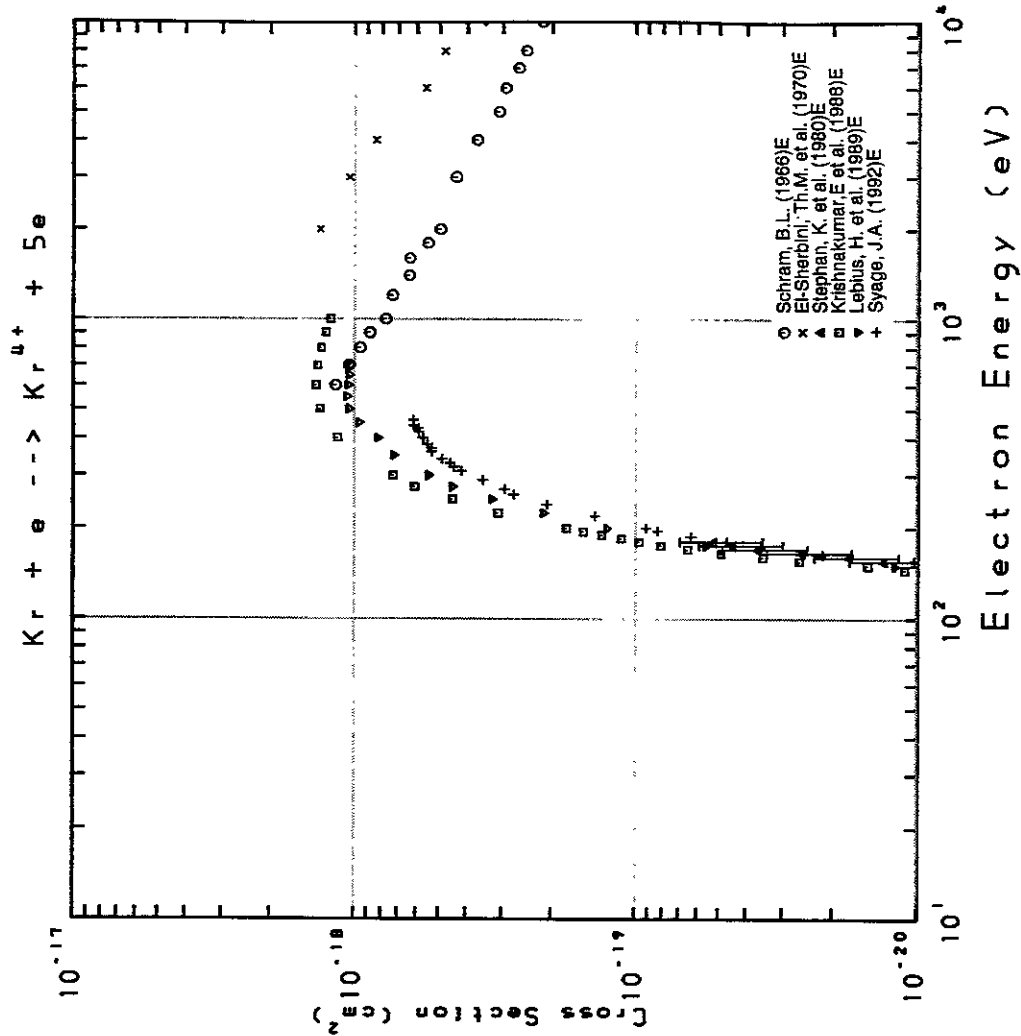


Fig. 274 $\text{Kr} \rightarrow \text{Kr}^{4+}$

AMDIS-ION

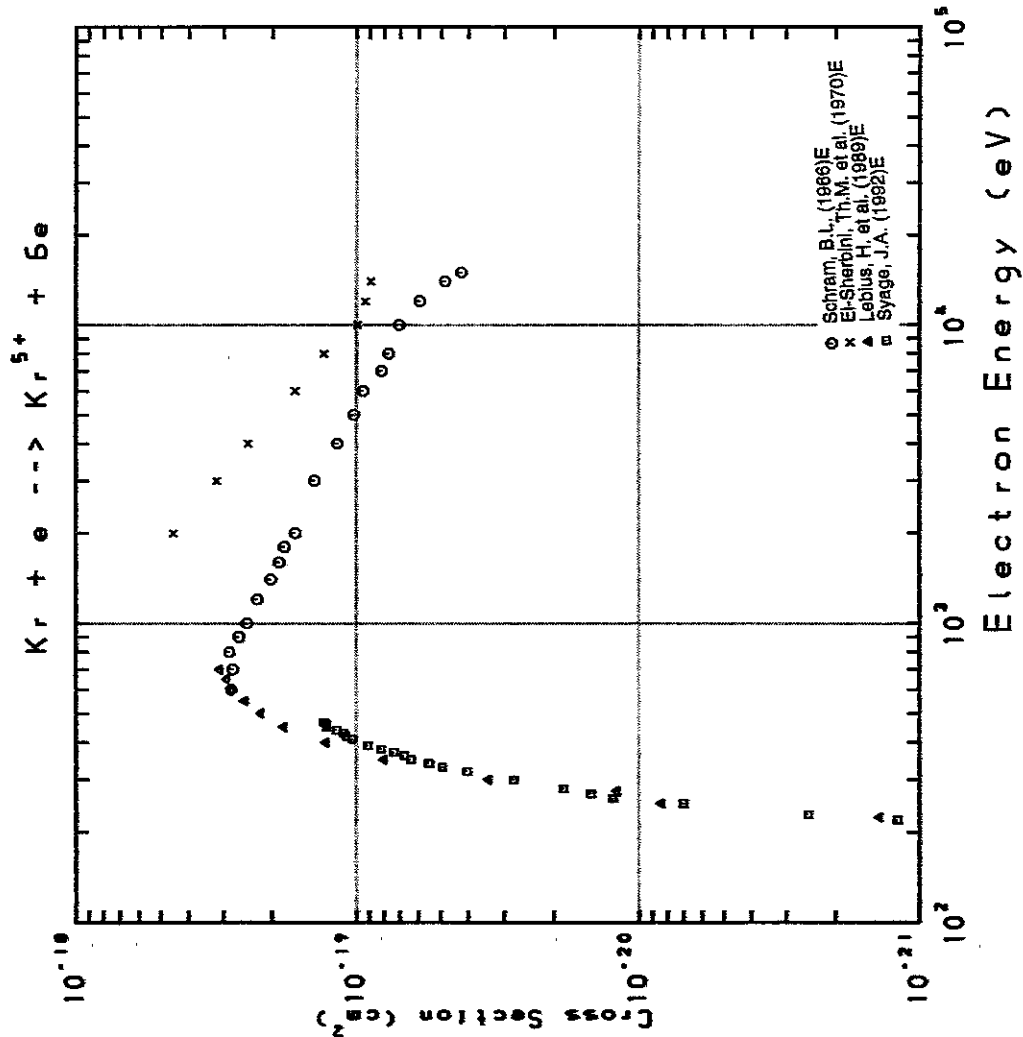


Fig. 275 $Kr \rightarrow Kr^{5+}$

AMDIS-ION

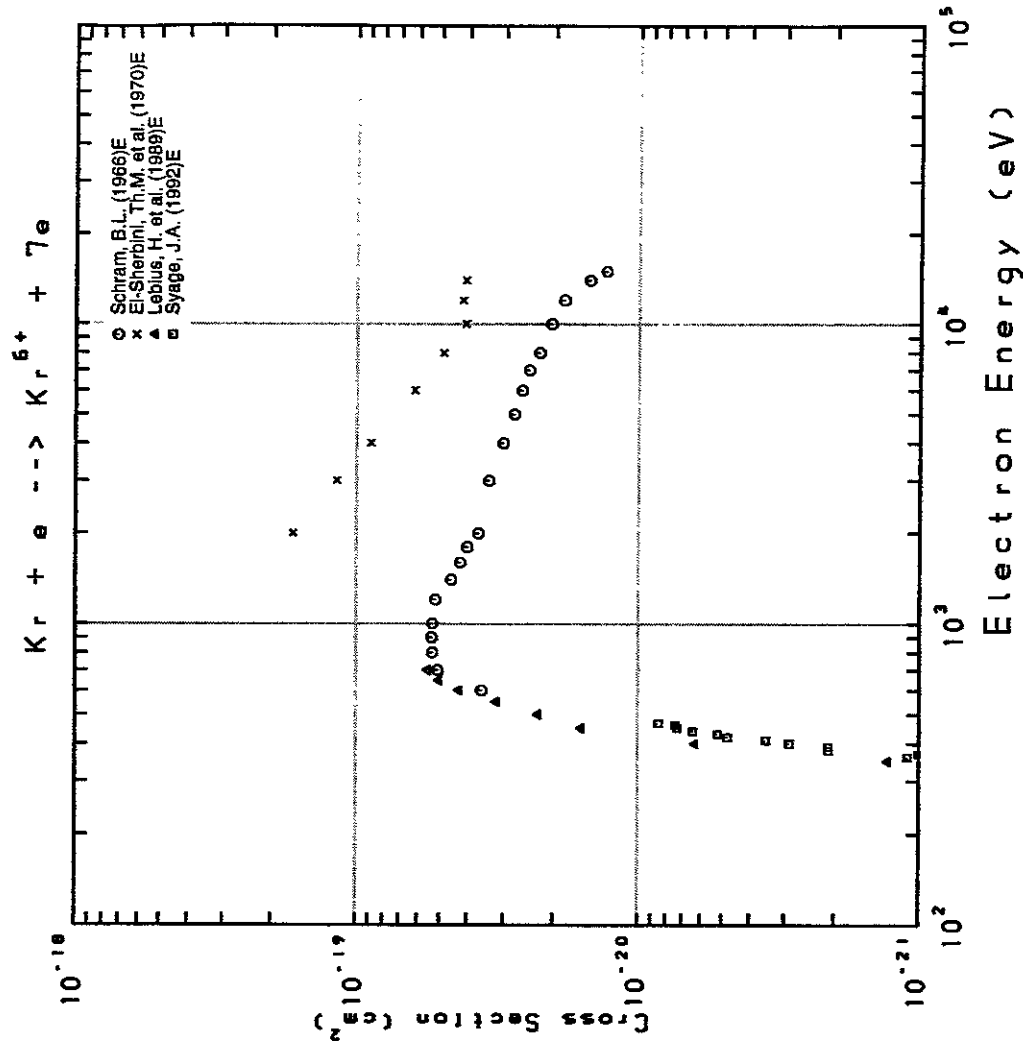


Fig. 276 $Kr \rightarrow Kr^{6+}$

AMDIS-ION

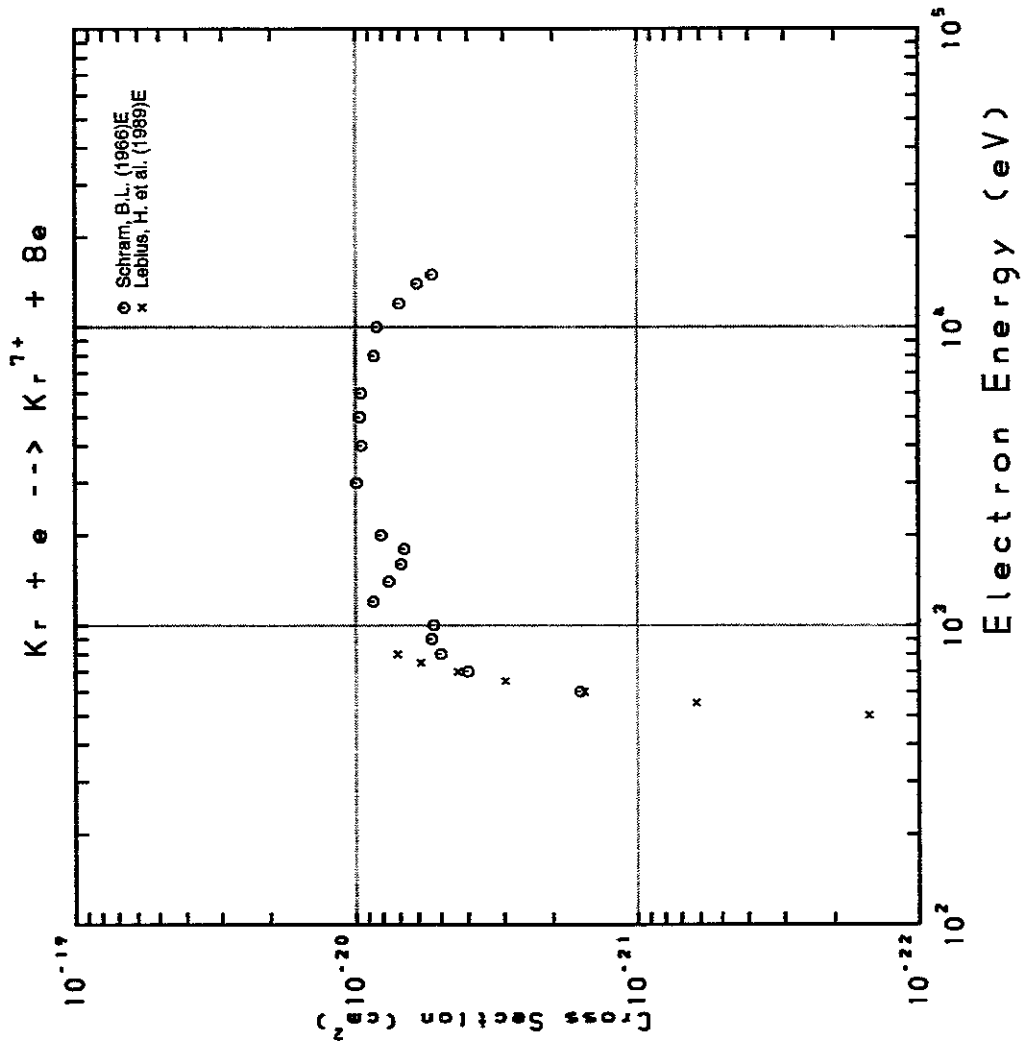


Fig. 277 $\text{Kr} \rightarrow \text{Kr}^{7+}$

AMDIS-ION

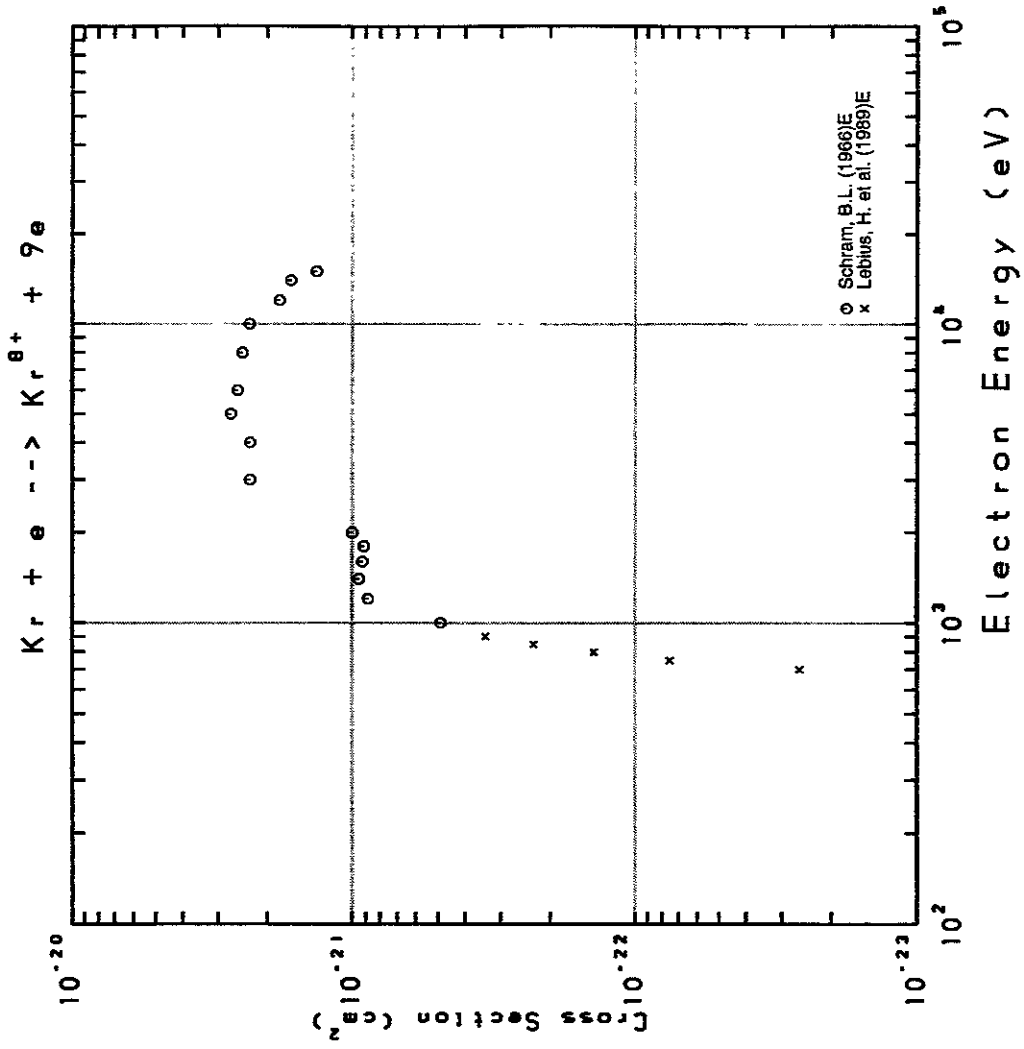


Fig. 278 $\text{Kr} \rightarrow \text{Kr}^{8+}$

AMDIS-ION

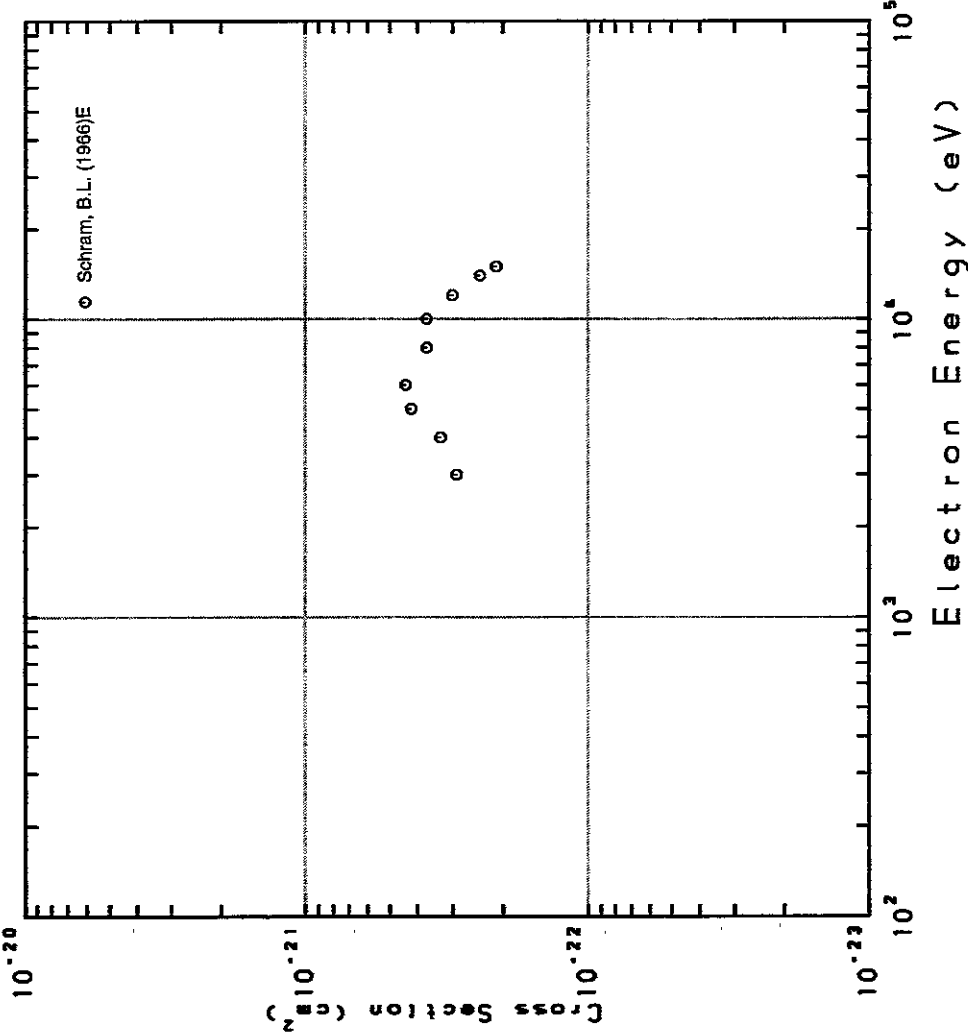


Fig. 279 Kr \rightarrow Kr⁹⁺

AMDIS-ION

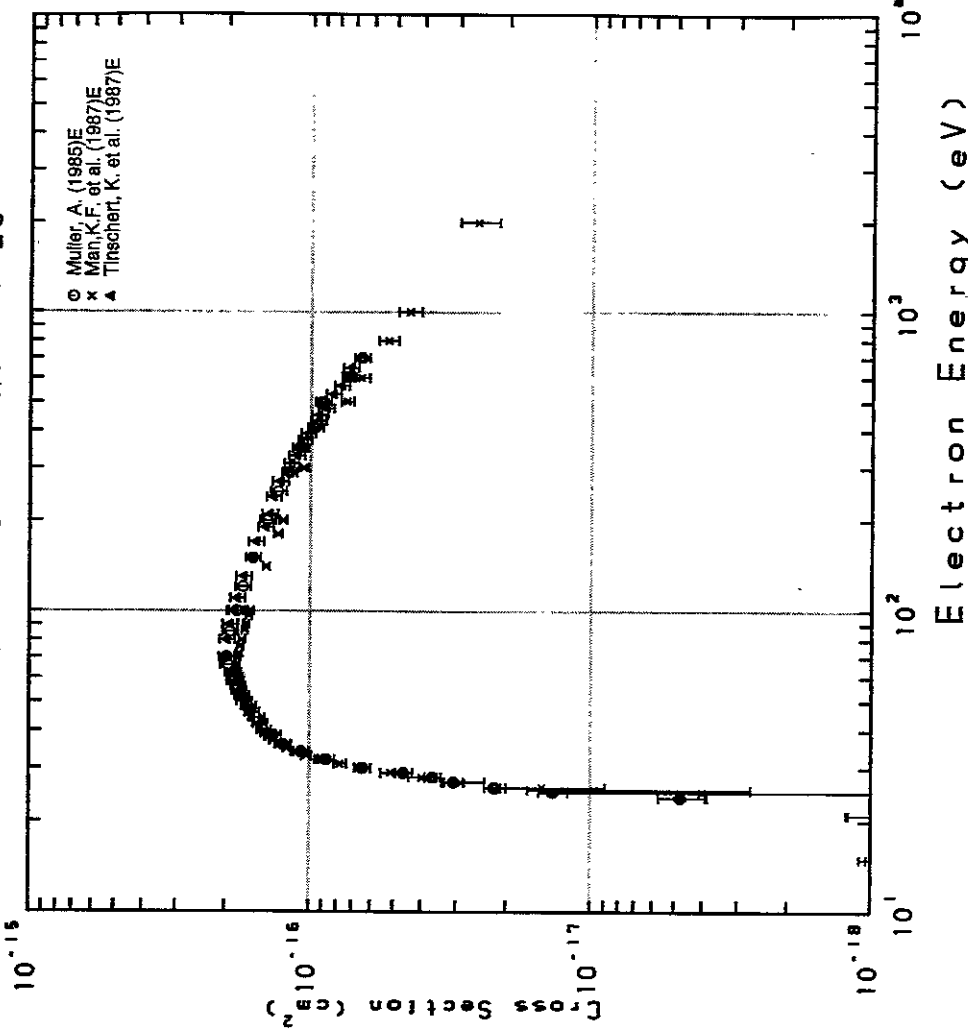


Fig. 280 Kr⁺ \rightarrow Kr²⁺

AMDIS-ION

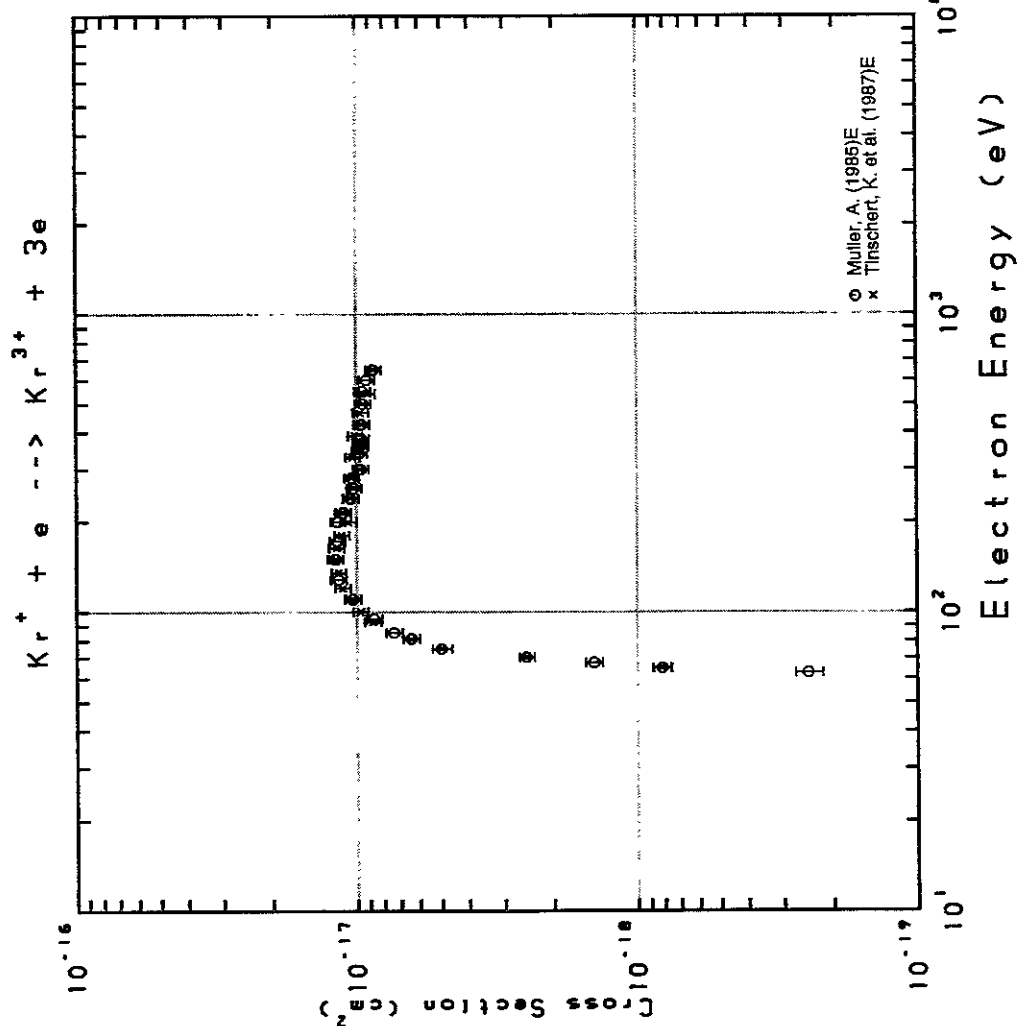


Fig. 281 $Kr^+ \rightarrow Kr^{3+}$

AMDIS-ION

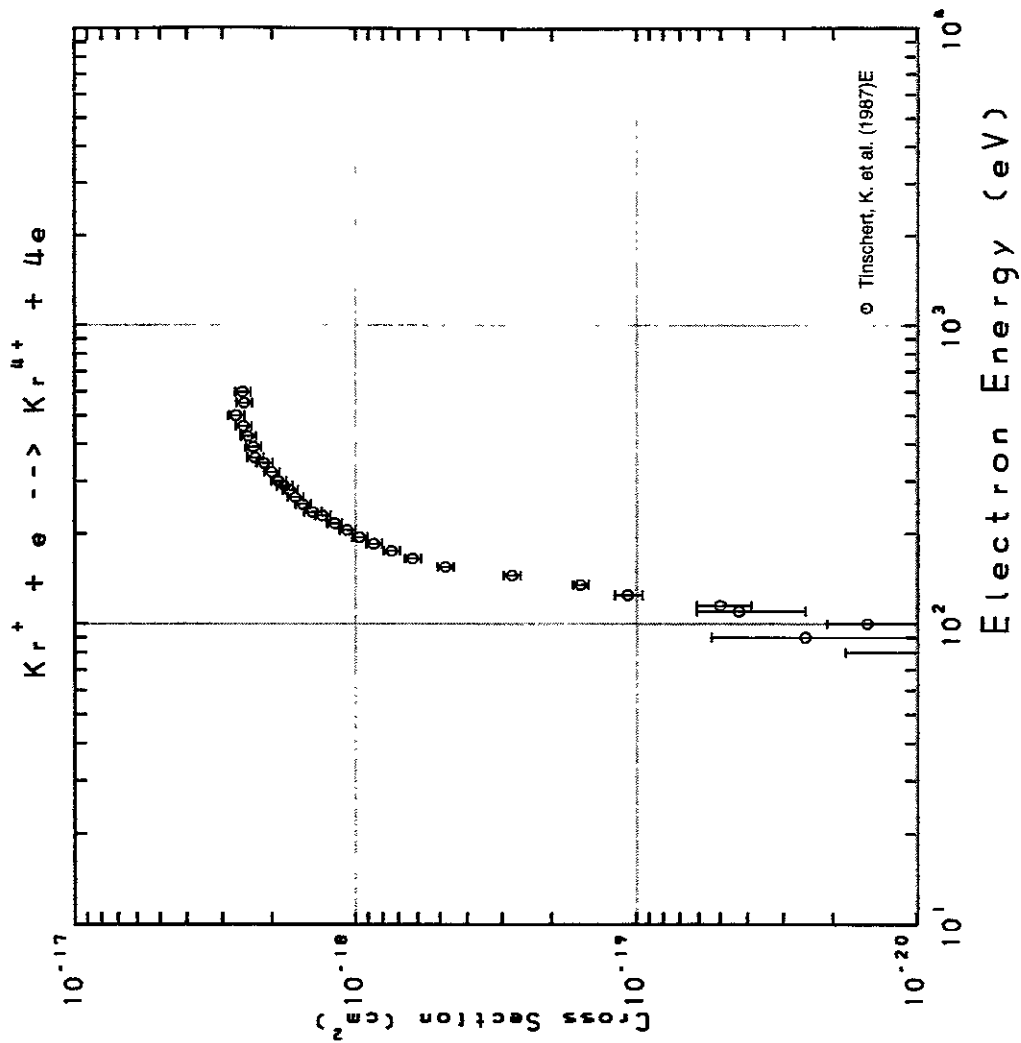


Fig. 282 $Kr^+ \rightarrow Kr^{4+}$

AMDIS-ION

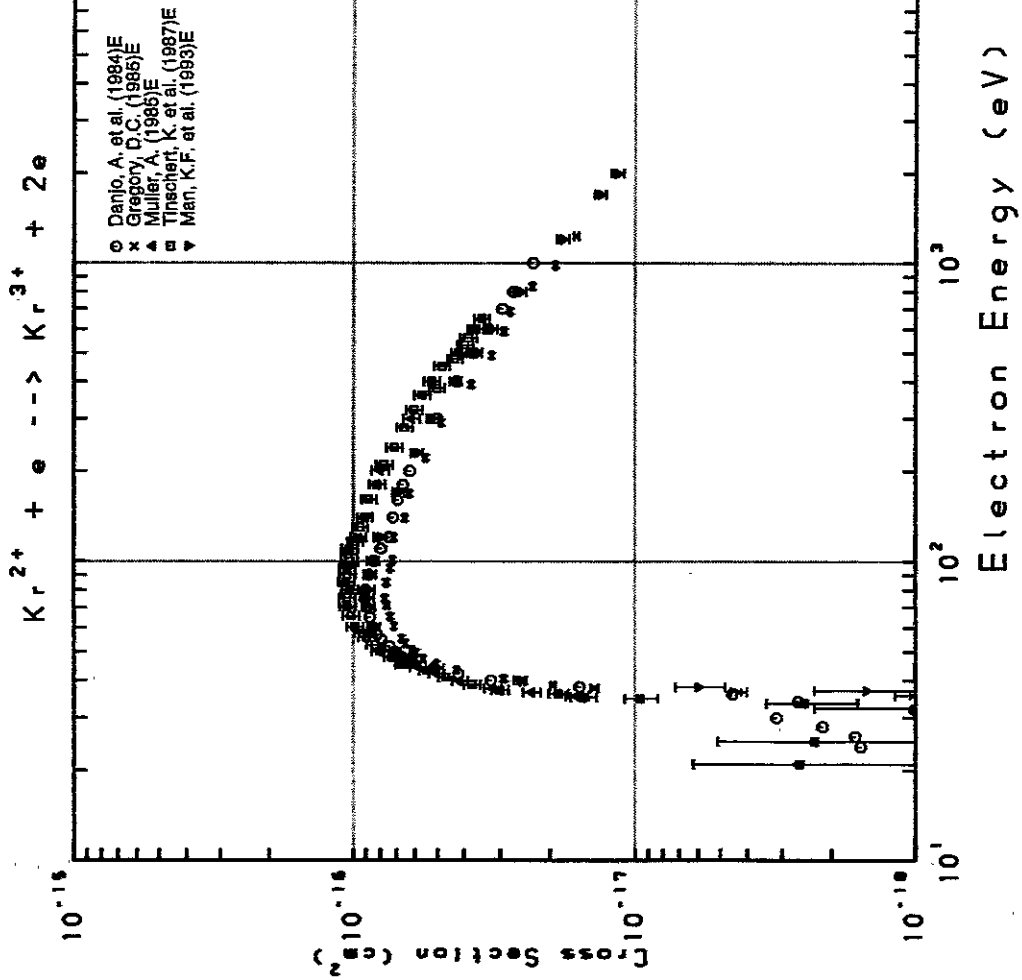


Fig. 283 $Kr^{2+} \rightarrow Kr^{3+}$

AMDIS-ION

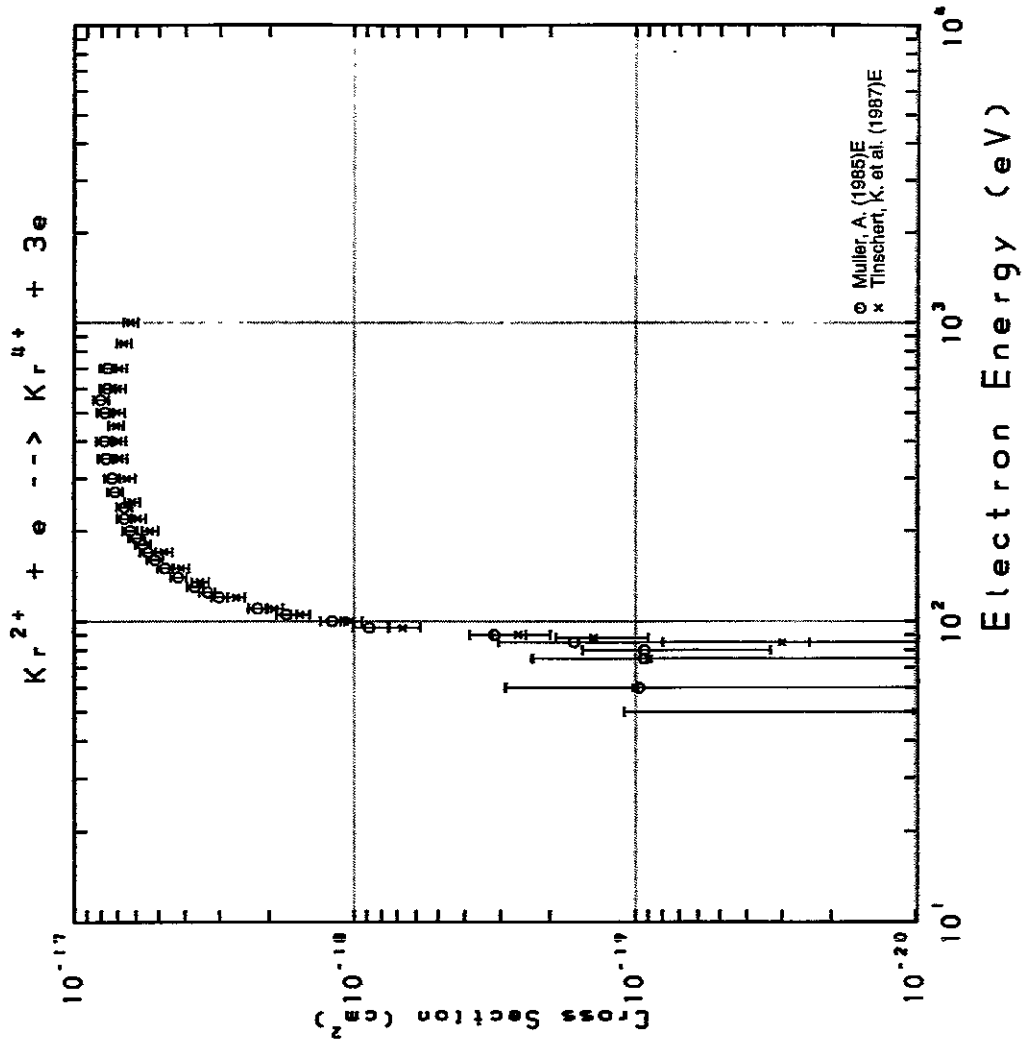


Fig. 284 $Kr^{2+} \rightarrow Kr^{4+}$

AMDIS-ION

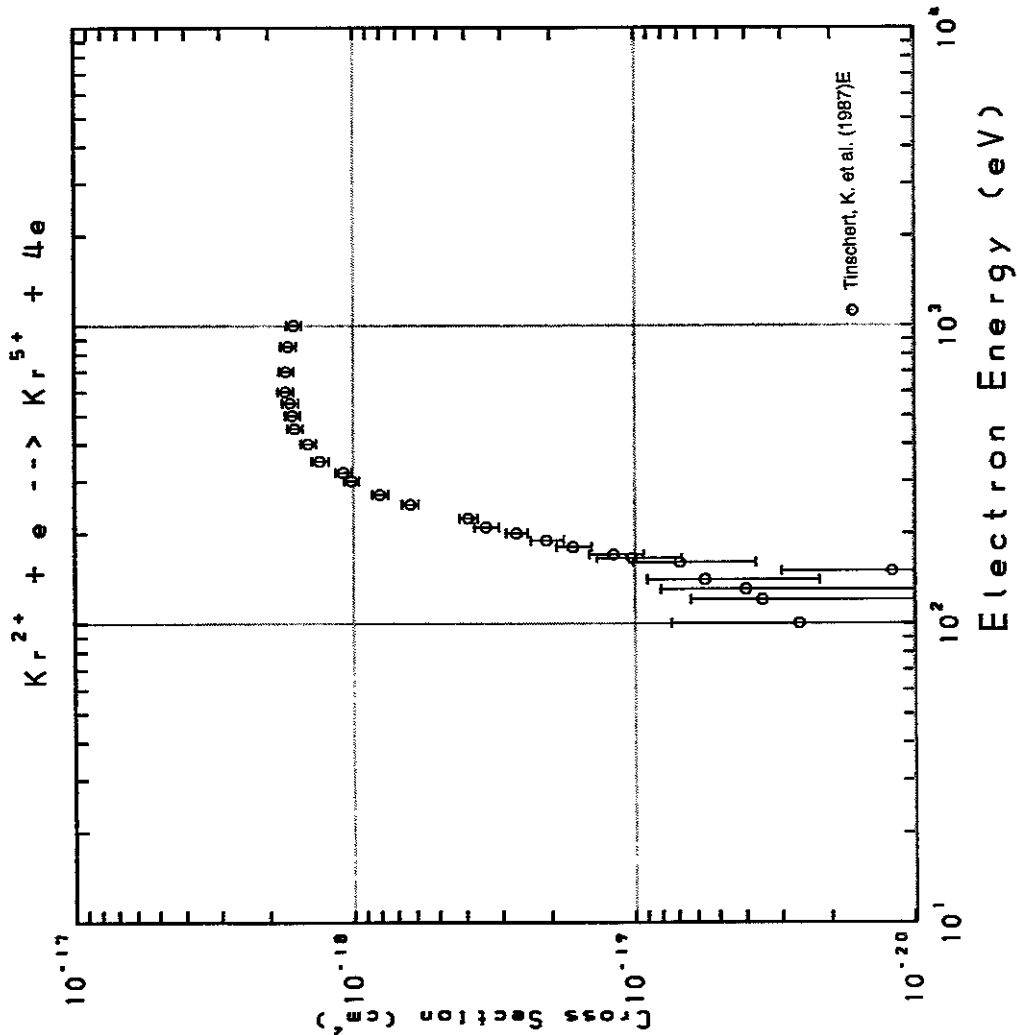


Fig. 285 $Kr^{2+} \rightarrow Kr^{5+}$

AMDIS-ION

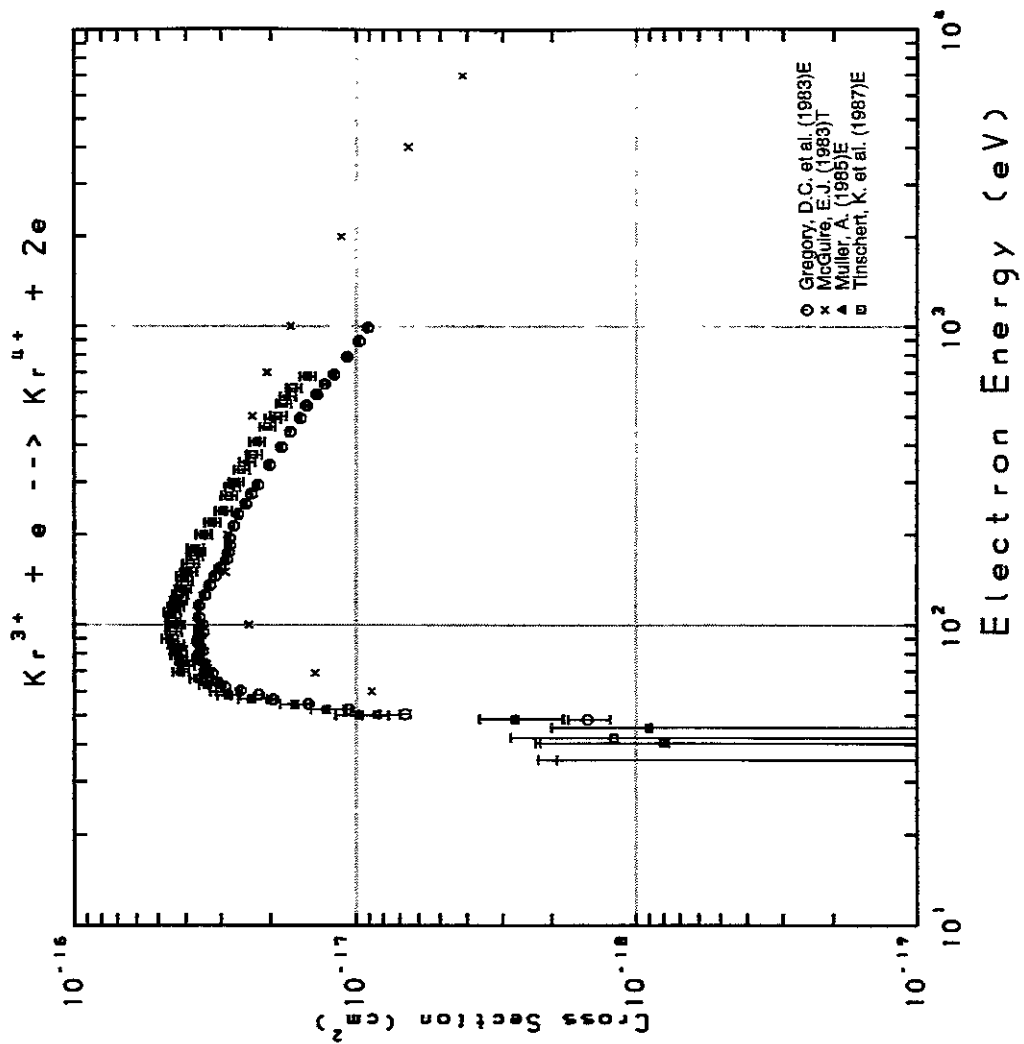


Fig. 286 $Kr^{3+} \rightarrow Kr^{4+}$

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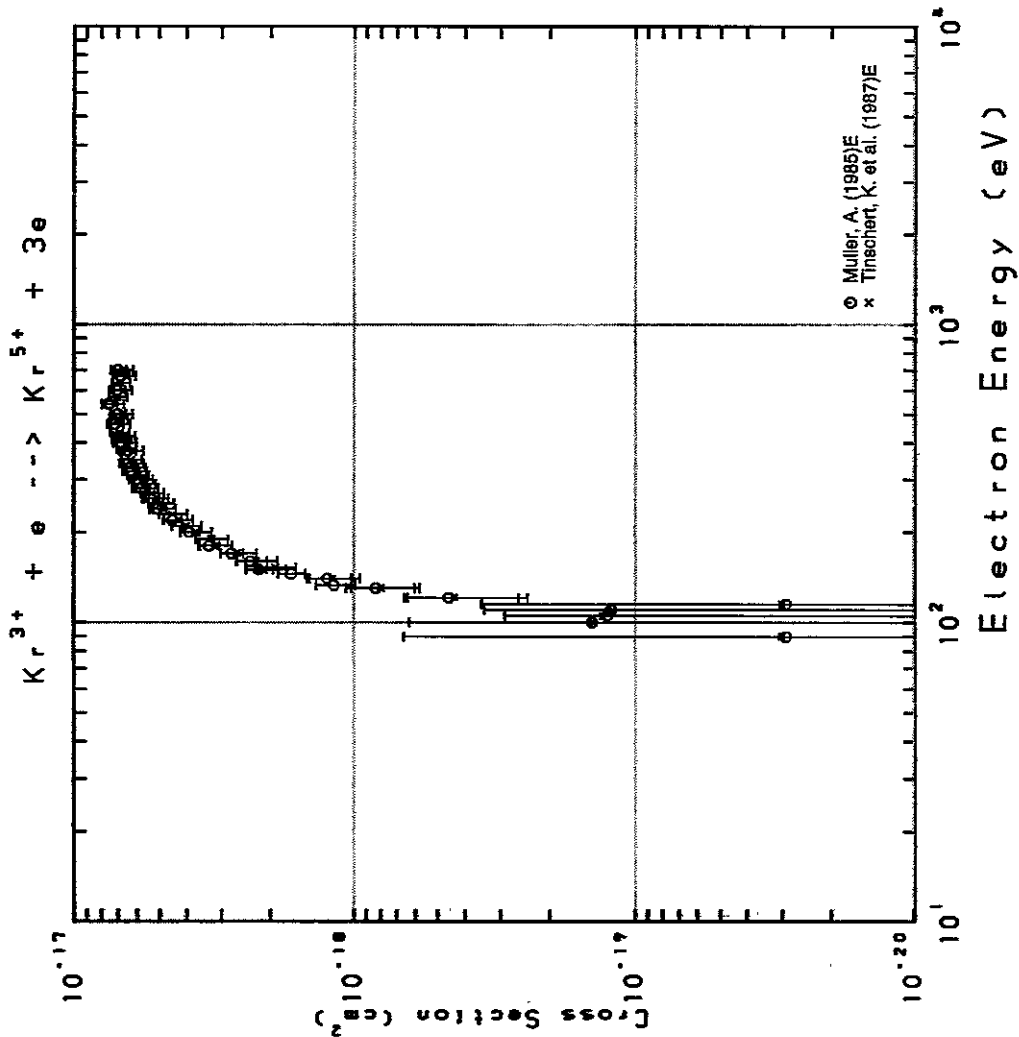


Fig. 287 $Kr^{3+} \rightarrow Kr^{5+}$

AMDIS-ION

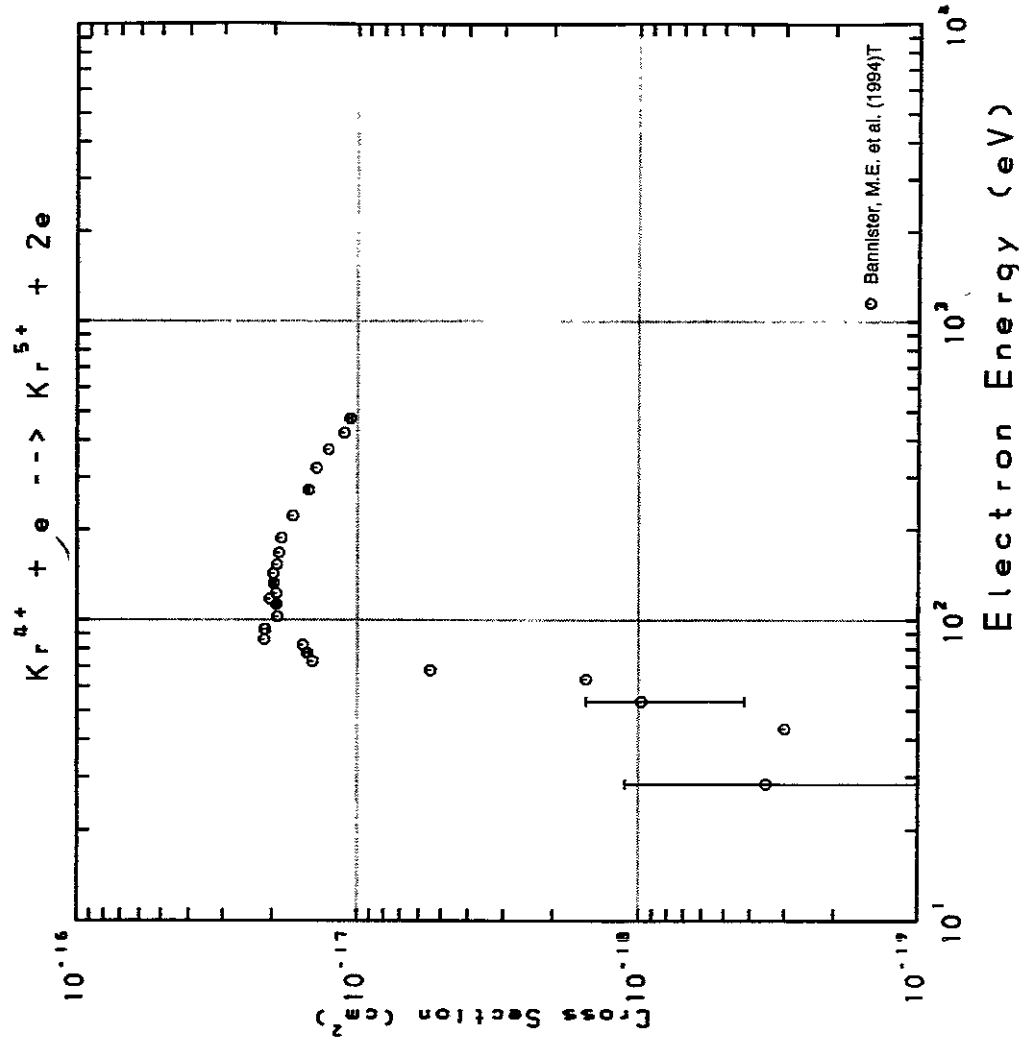


Fig. 288 $Kr^{4+} \rightarrow Kr^{5+}$

AMDIS-ION

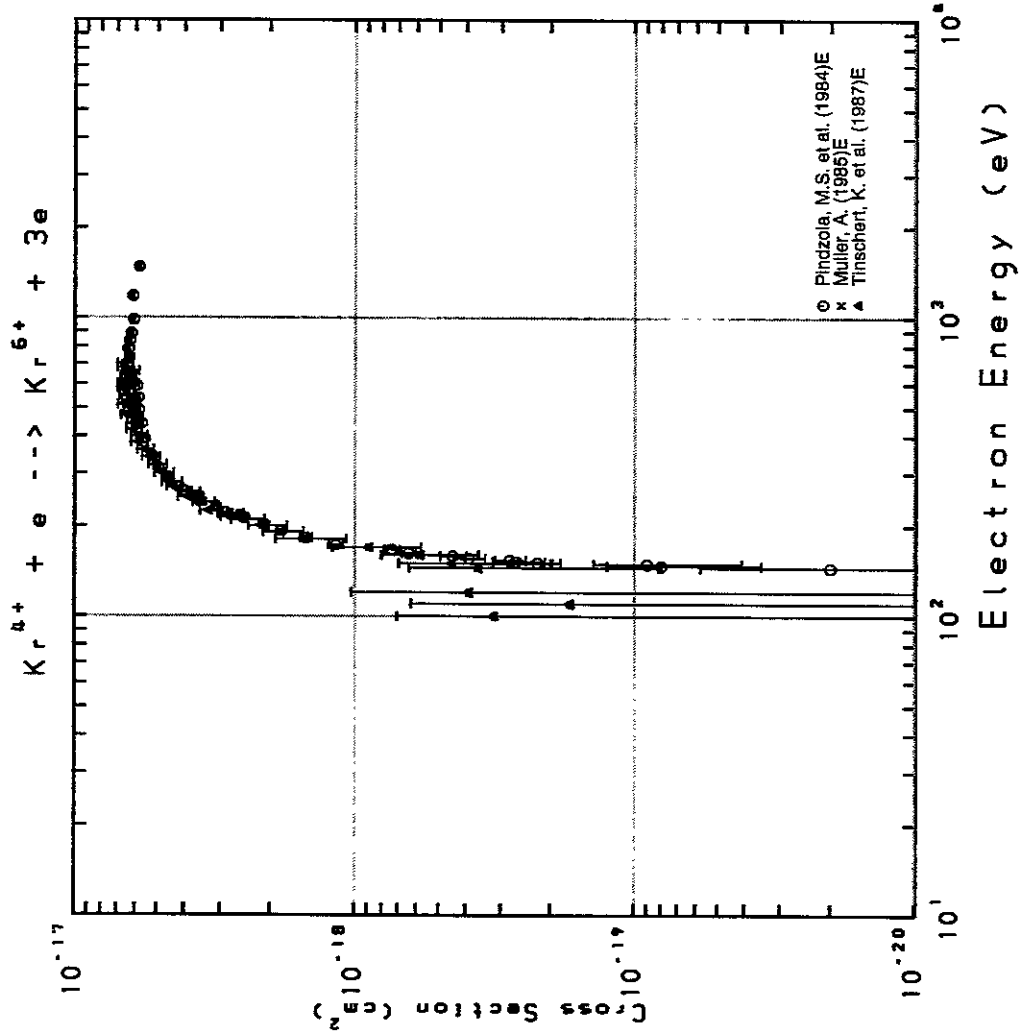


Fig. 289 $Kr^{4+} \rightarrow Kr^{6+}$

AMDIS-ION

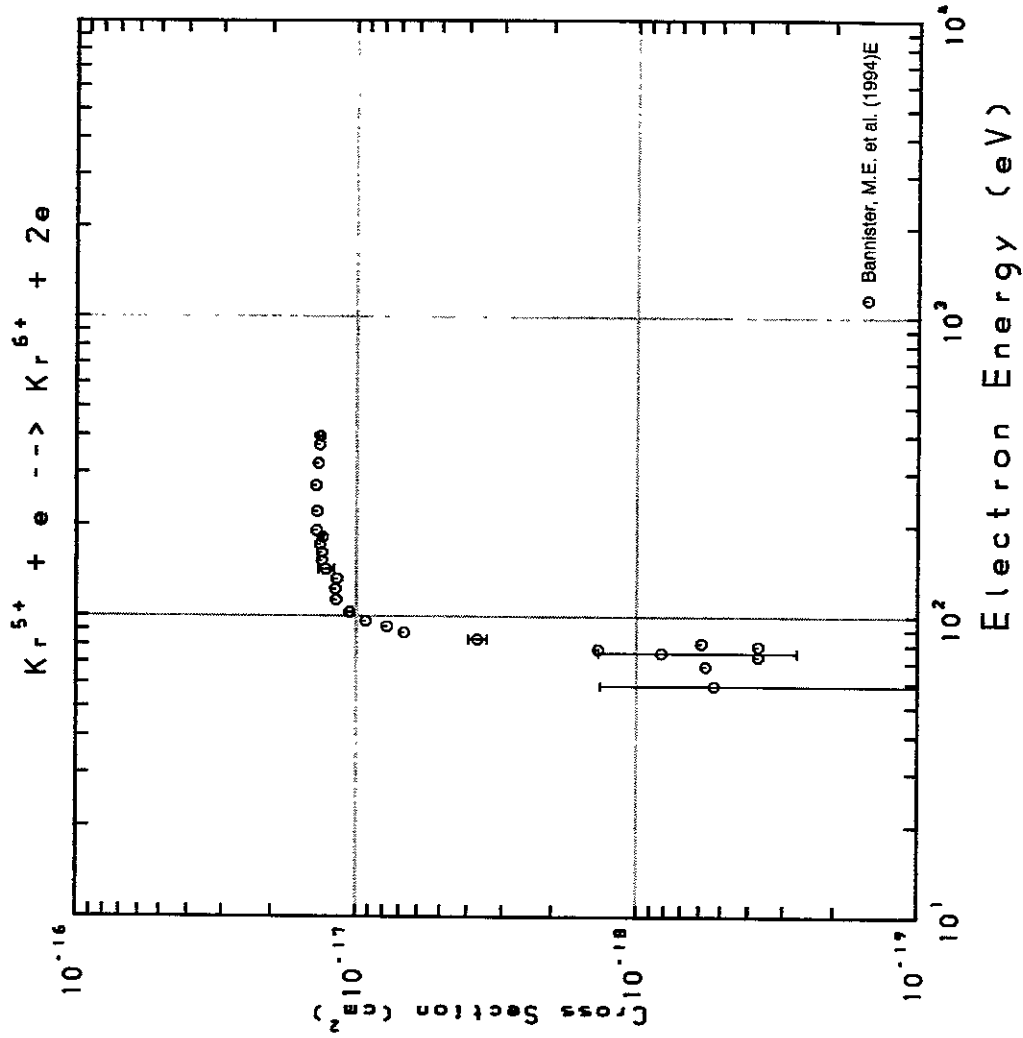


Fig. 290 $Kr^{5+} \rightarrow Kr^{6+}$

AMDIS-ION

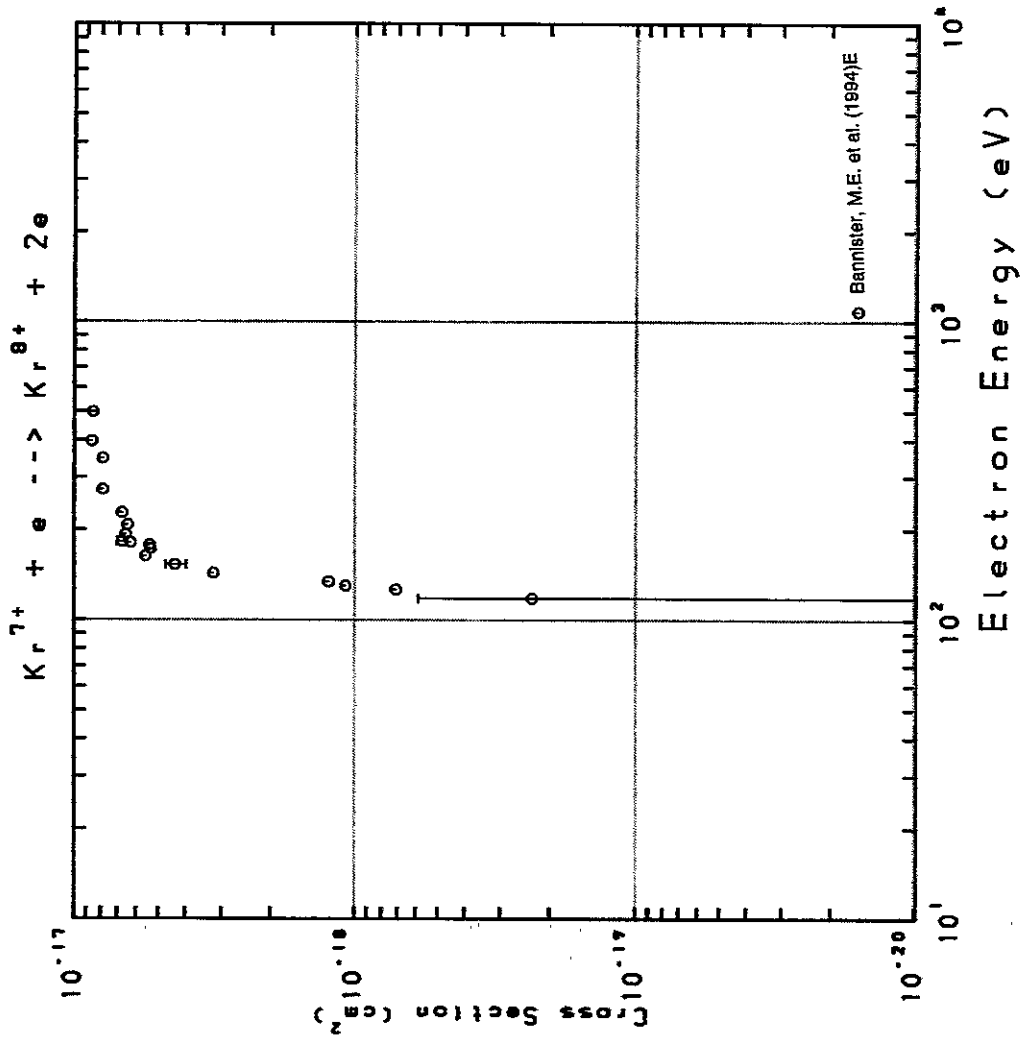


Fig. 291 $Kr^{7+} \rightarrow Kr^{8+}$

AMDIS-ION

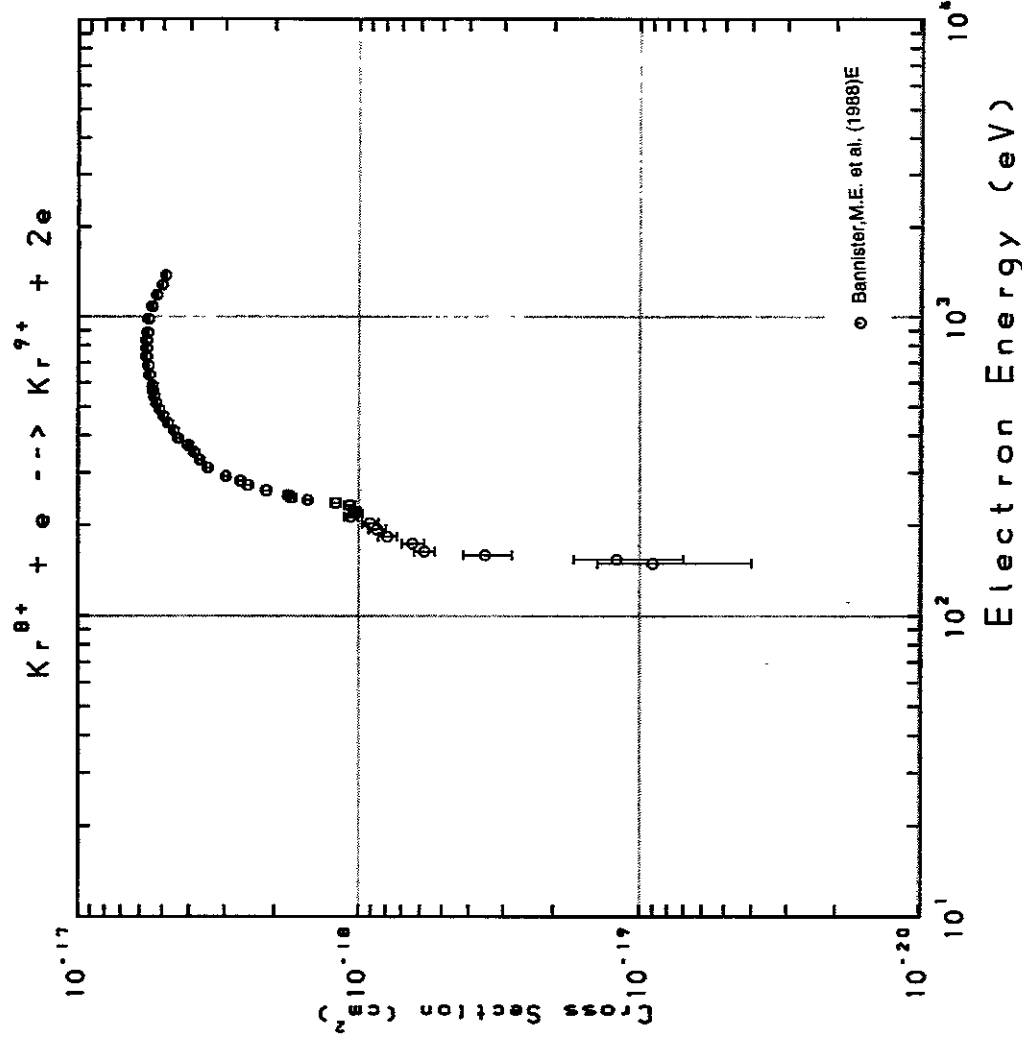


Fig. 292 $Kr^{8+} \rightarrow Kr^{9+}$

AMDIS-ION

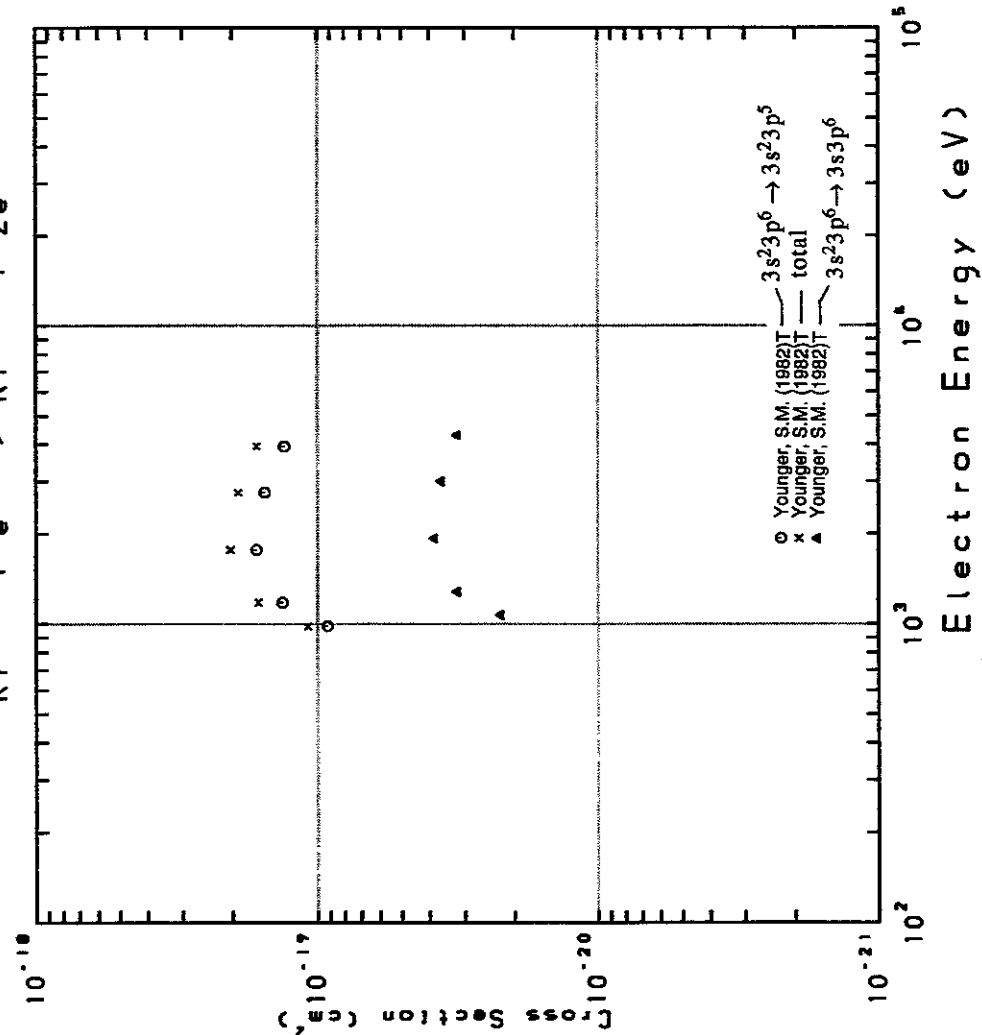
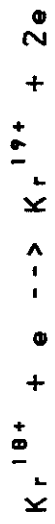


Fig. 293 $Kr^{18+} \rightarrow Kr^{19+}$

AMDIS-ION

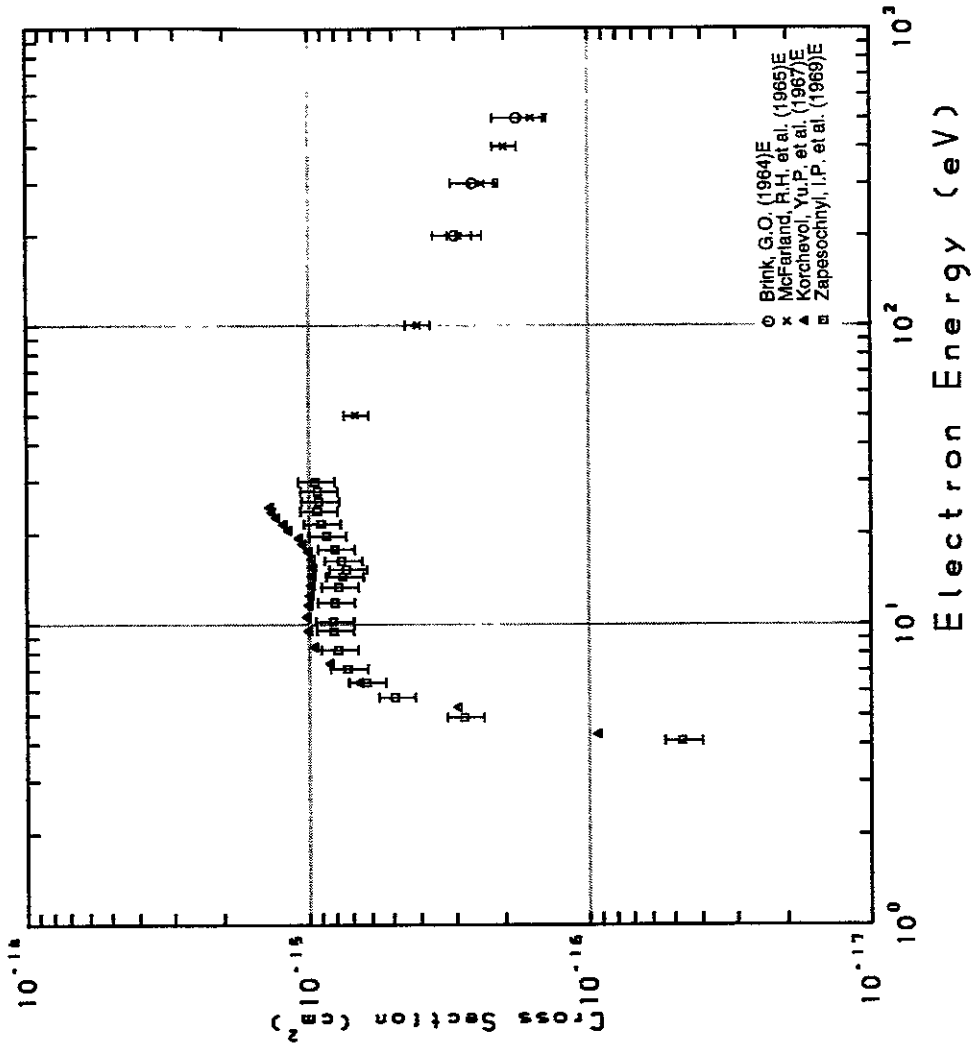
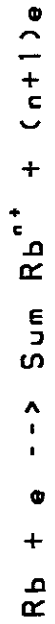


Fig. 294 $Rb \rightarrow \Sigma Rb^{n+}$

AMDIS-ION

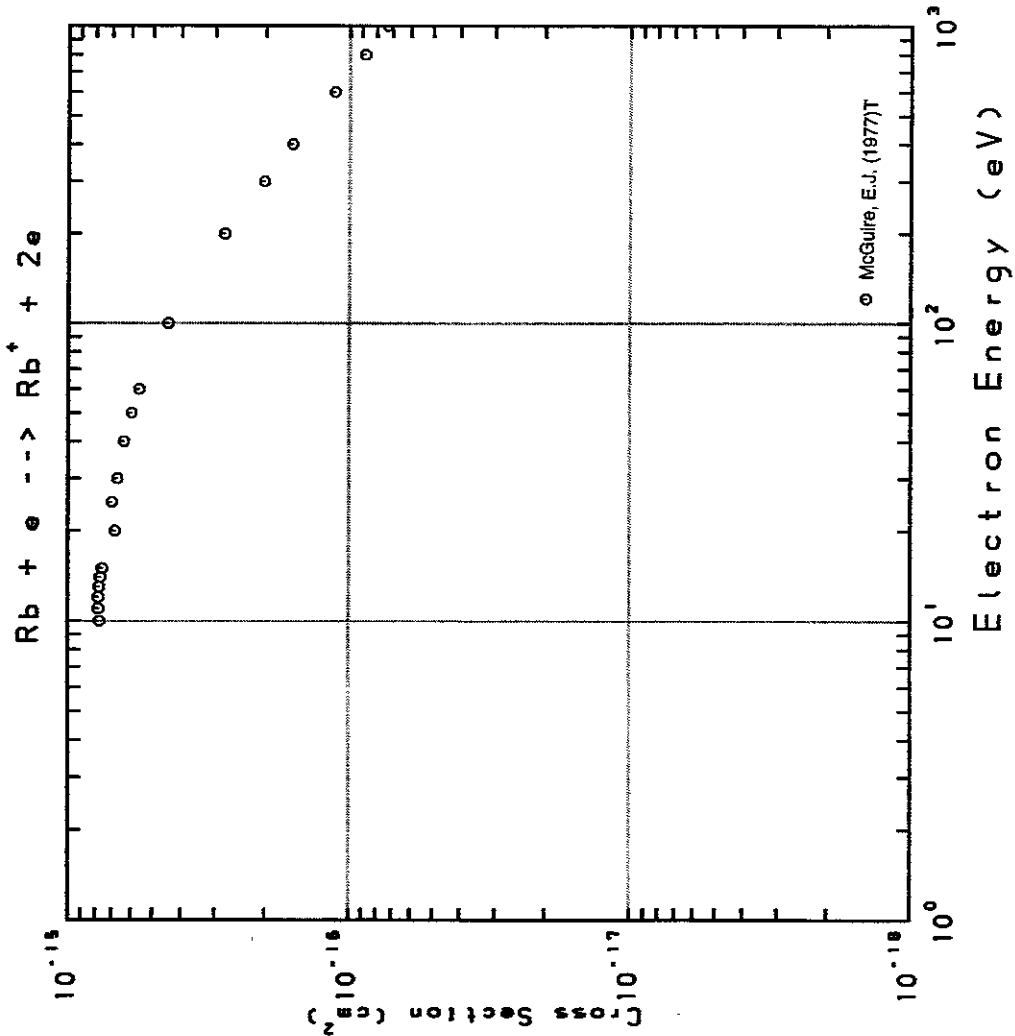


Fig. 295 $Rb \rightarrow Rb^+$

AMDIS-ION

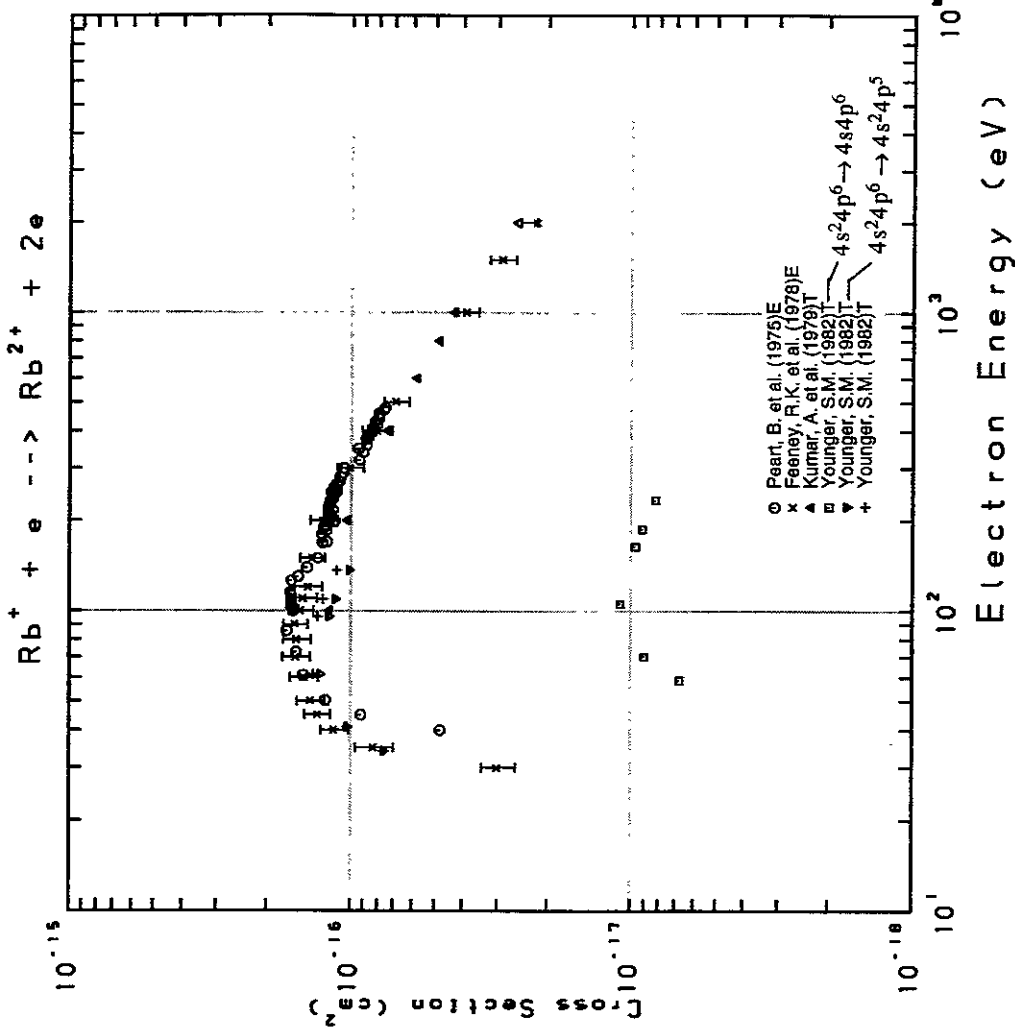


Fig. 296 $Rb^+ \rightarrow Rb^{2+}$

AMDIS-ION

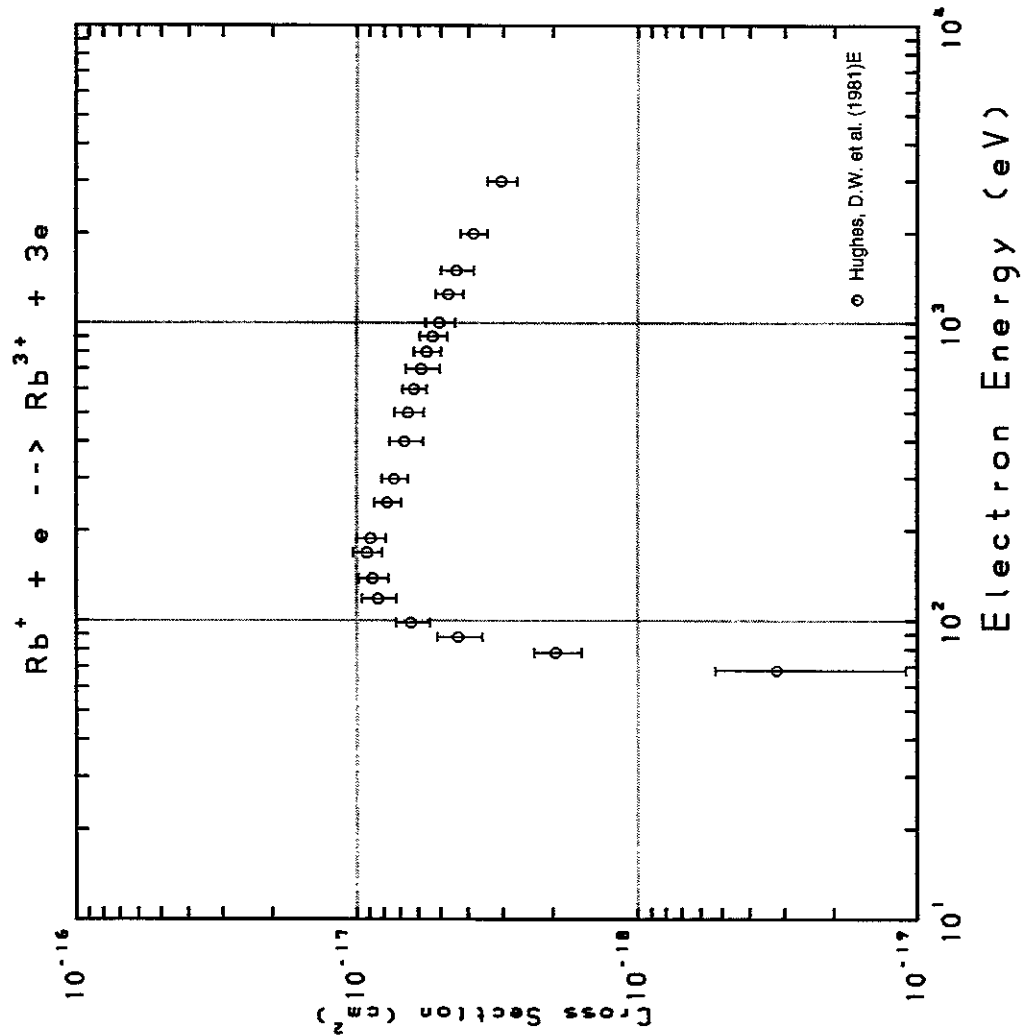


Fig. 297 $Rb^+ \rightarrow Rb^{3+}$

AMDIS-ION

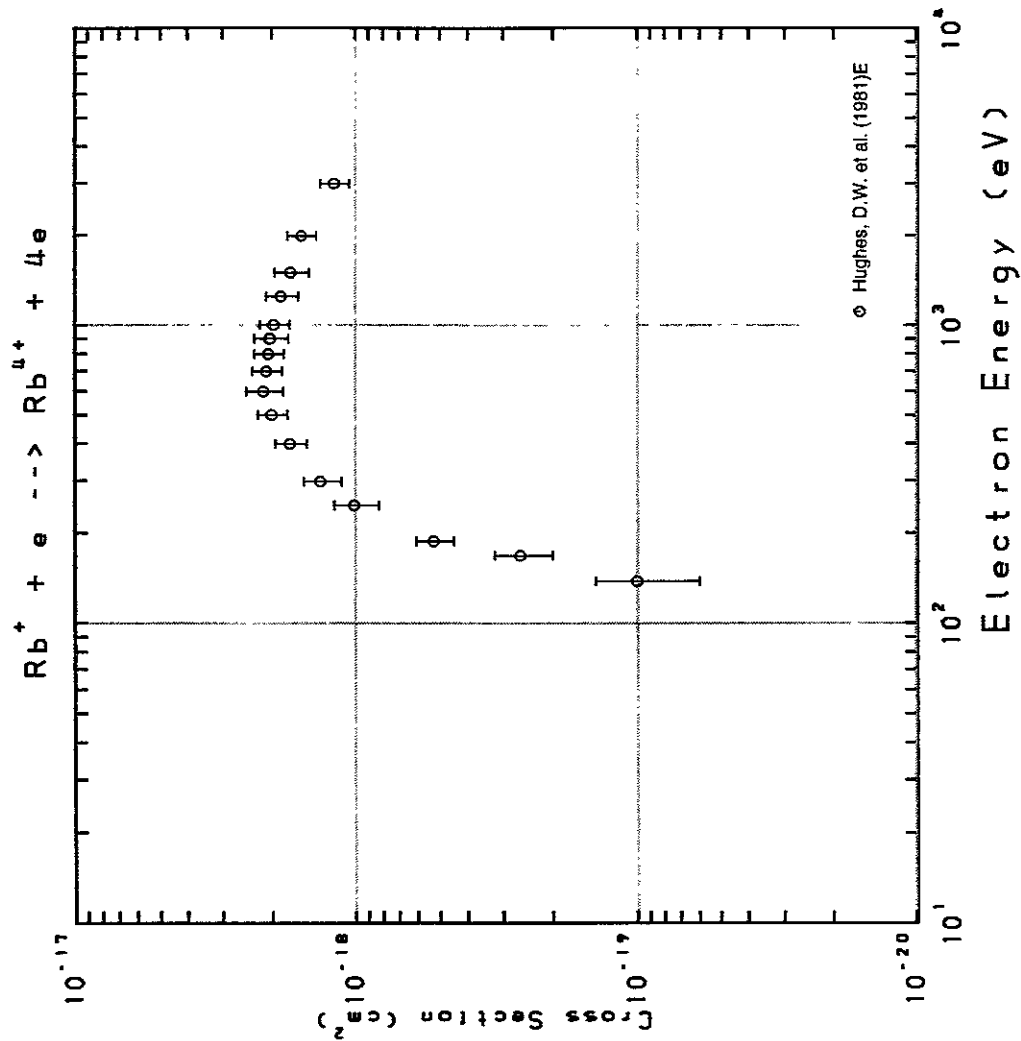


Fig. 298 $Rb^+ \rightarrow Rb^{4+}$

AMDIS-ION

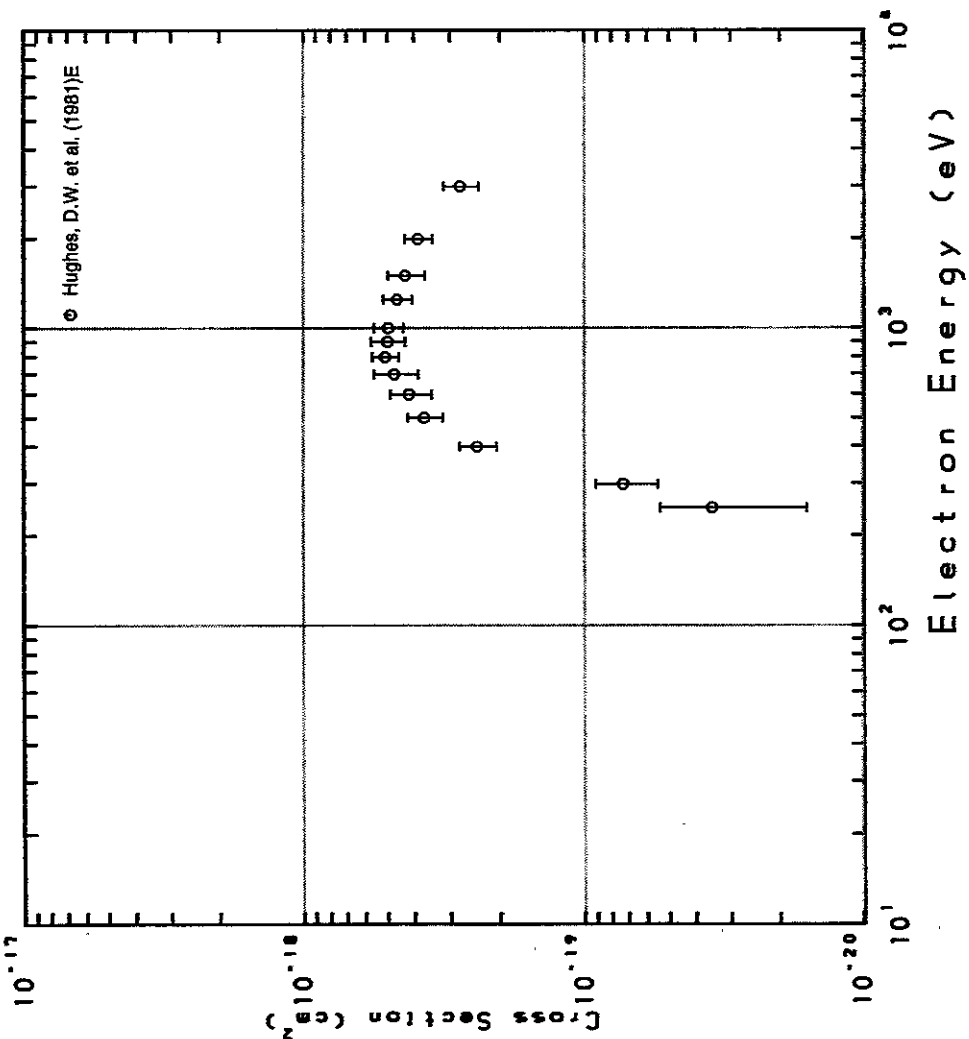


Fig. 299 $\text{Rb}^+ \rightarrow \text{Rb}^{5+}$

AMDIS-ION

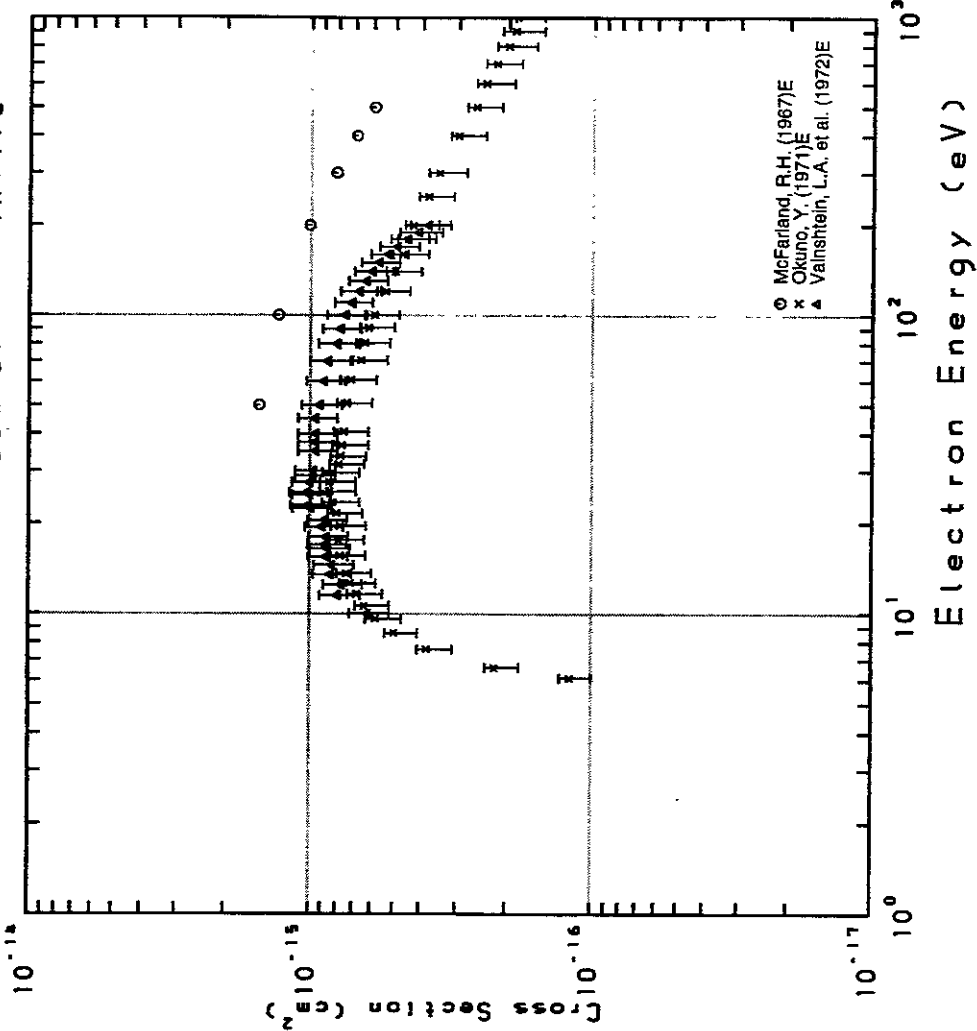
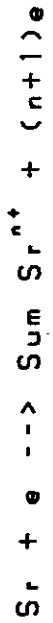


Fig. 300 $\text{Sr} \rightarrow \text{Sr}^{n+}$

AMDIS-ION

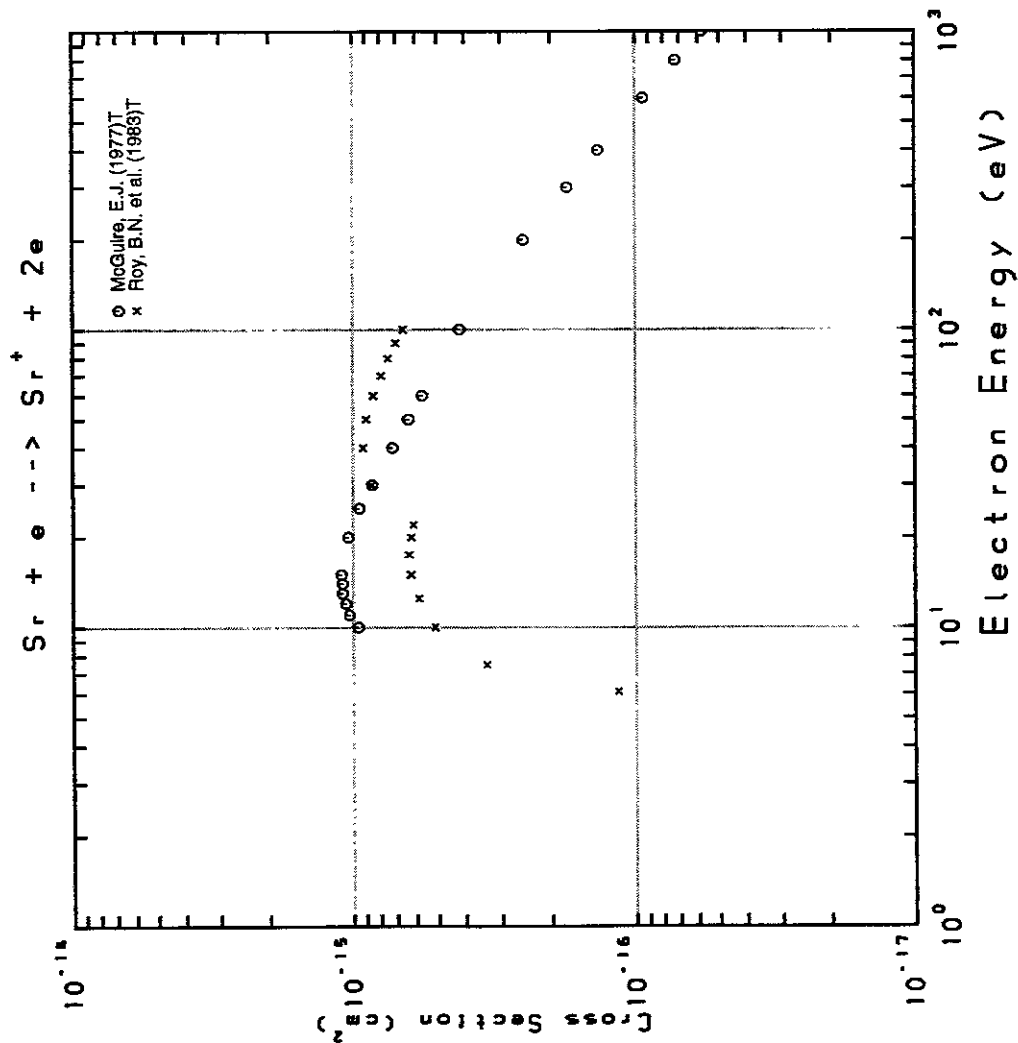


Fig. 301 $Sr \rightarrow Sr^+$

AMDIS-ION

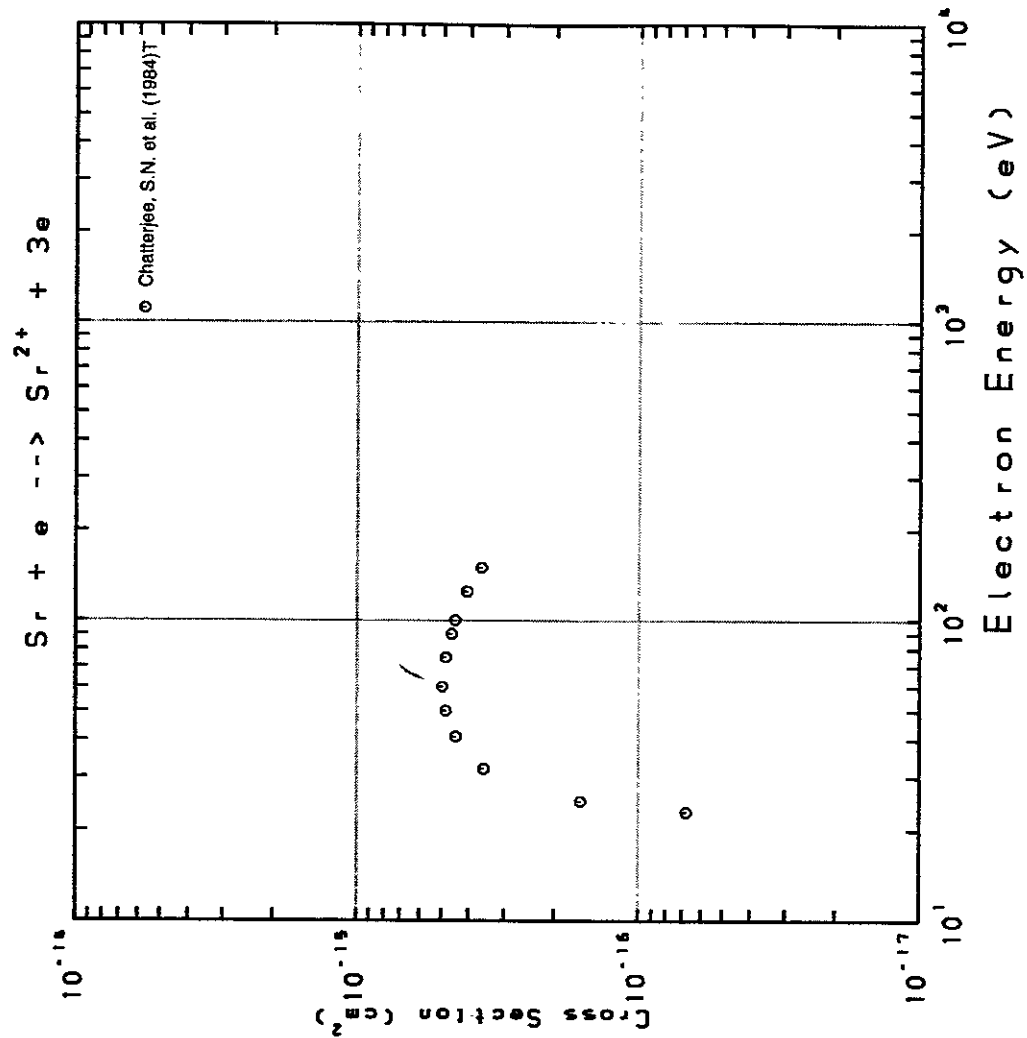
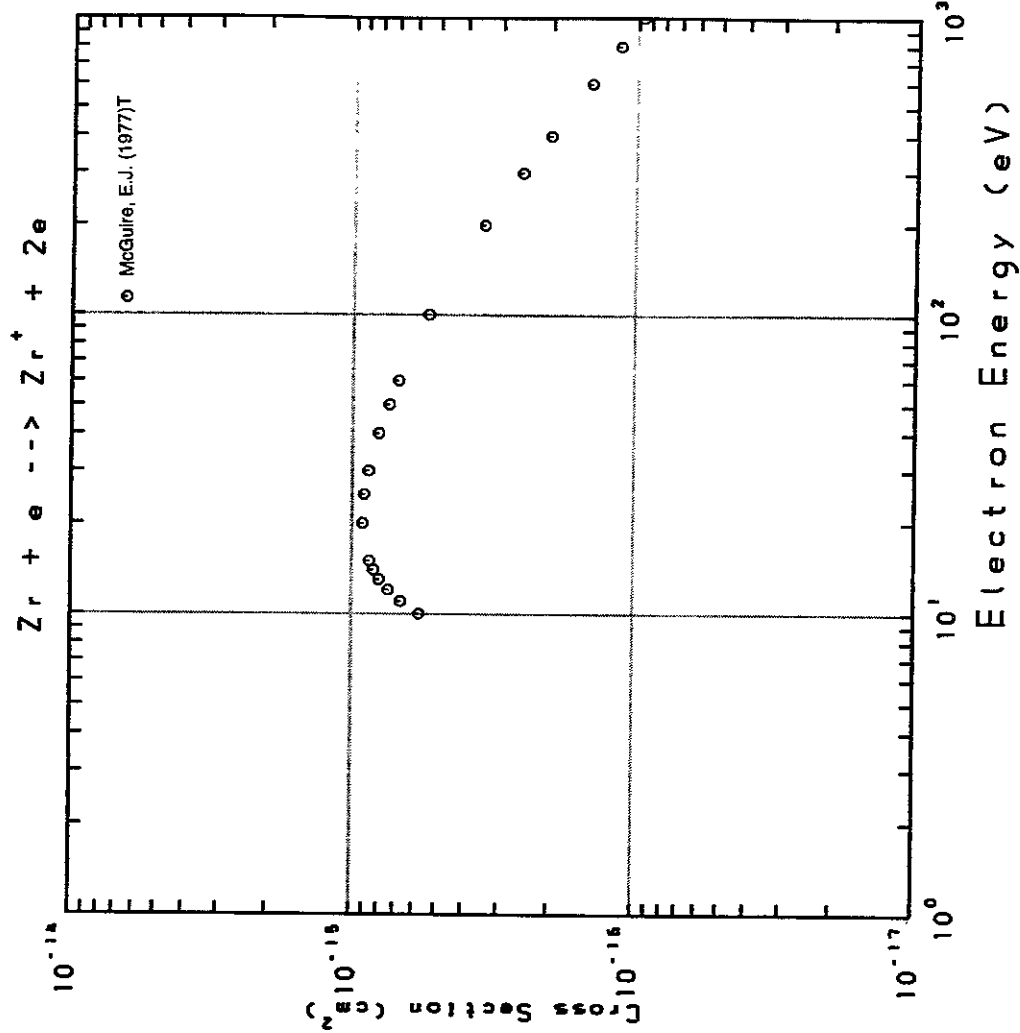


Fig. 302 $Sr \rightarrow Sr^{2+}$

AMDIS-ION



AMDIS-ION

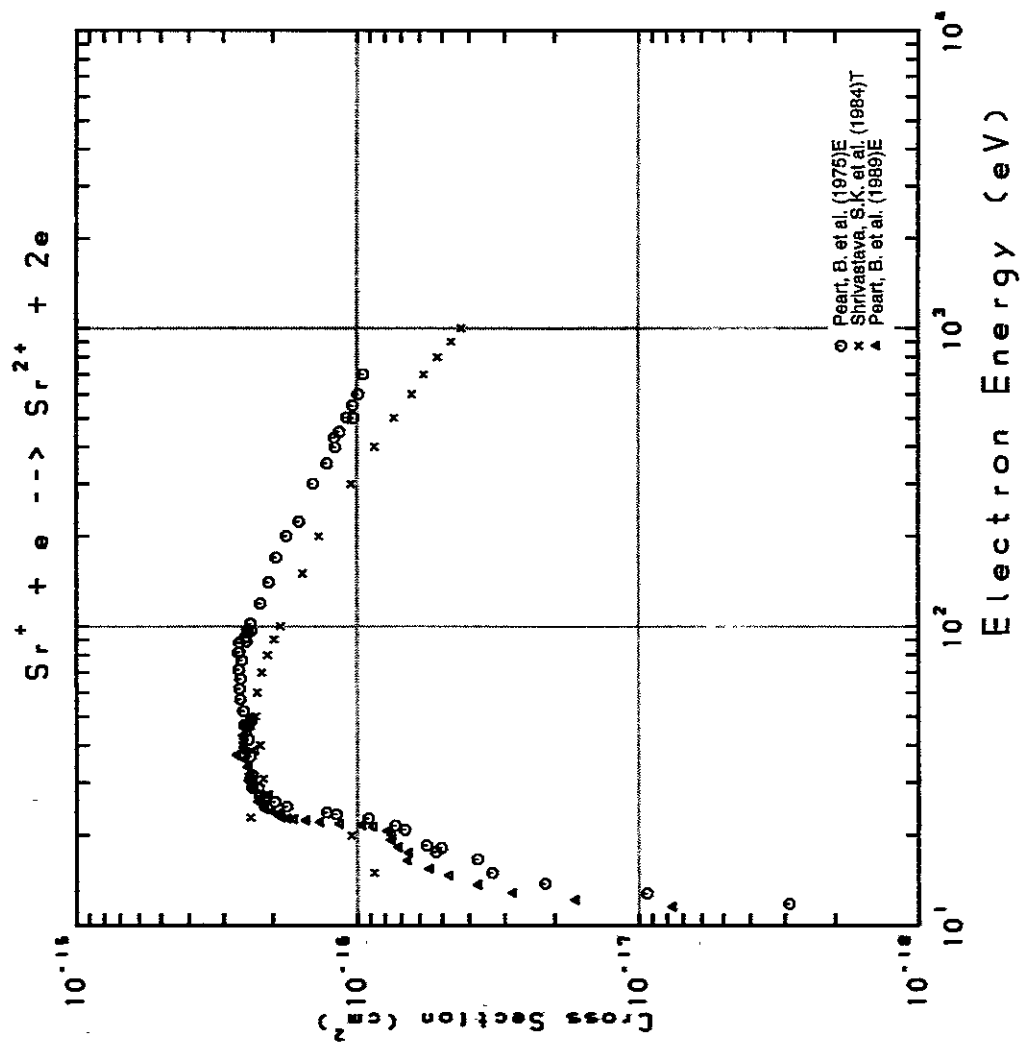


Fig. 304 Zr \rightarrow Zr⁺

Fig. 303 Sr⁺ \rightarrow Sr²⁺

AMDIS-ION

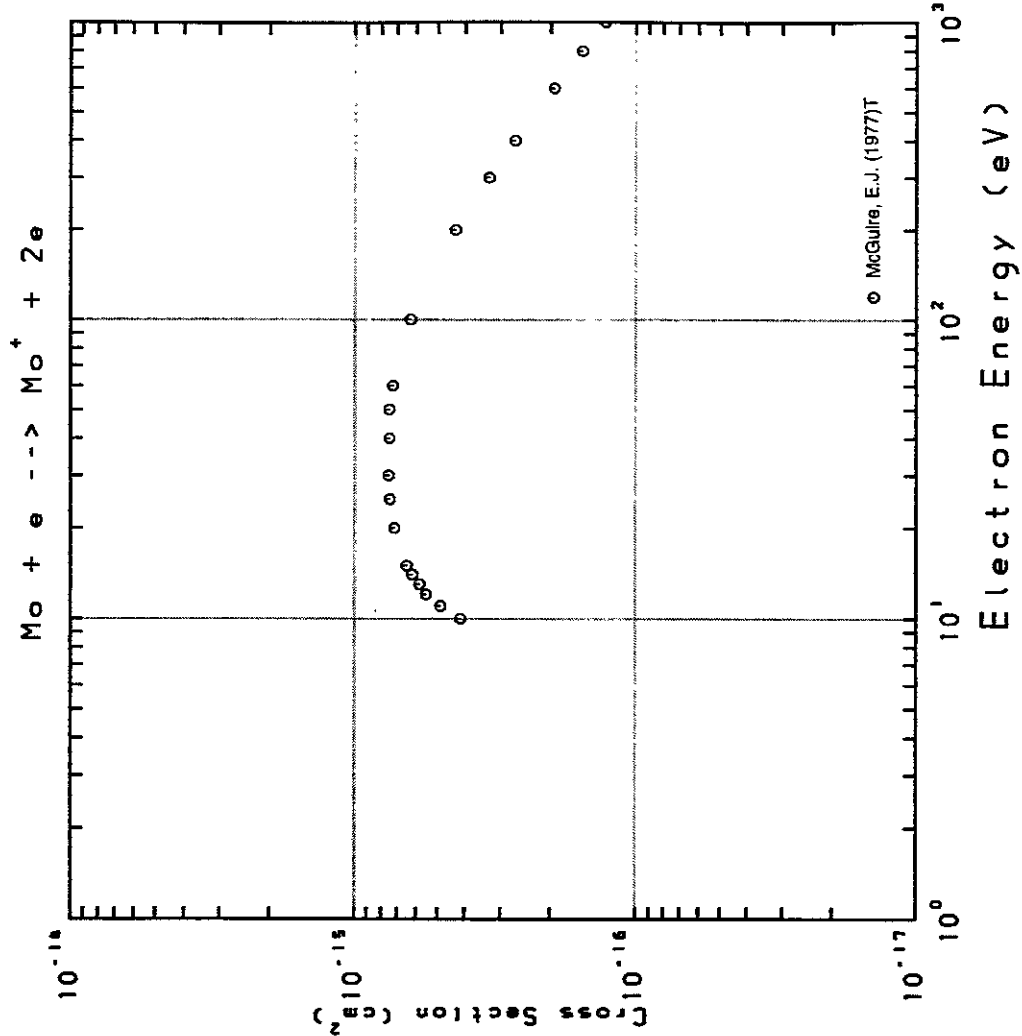


Fig. 306 $\text{Mo} \rightarrow \text{Mo}^+$

AMDIS-ION

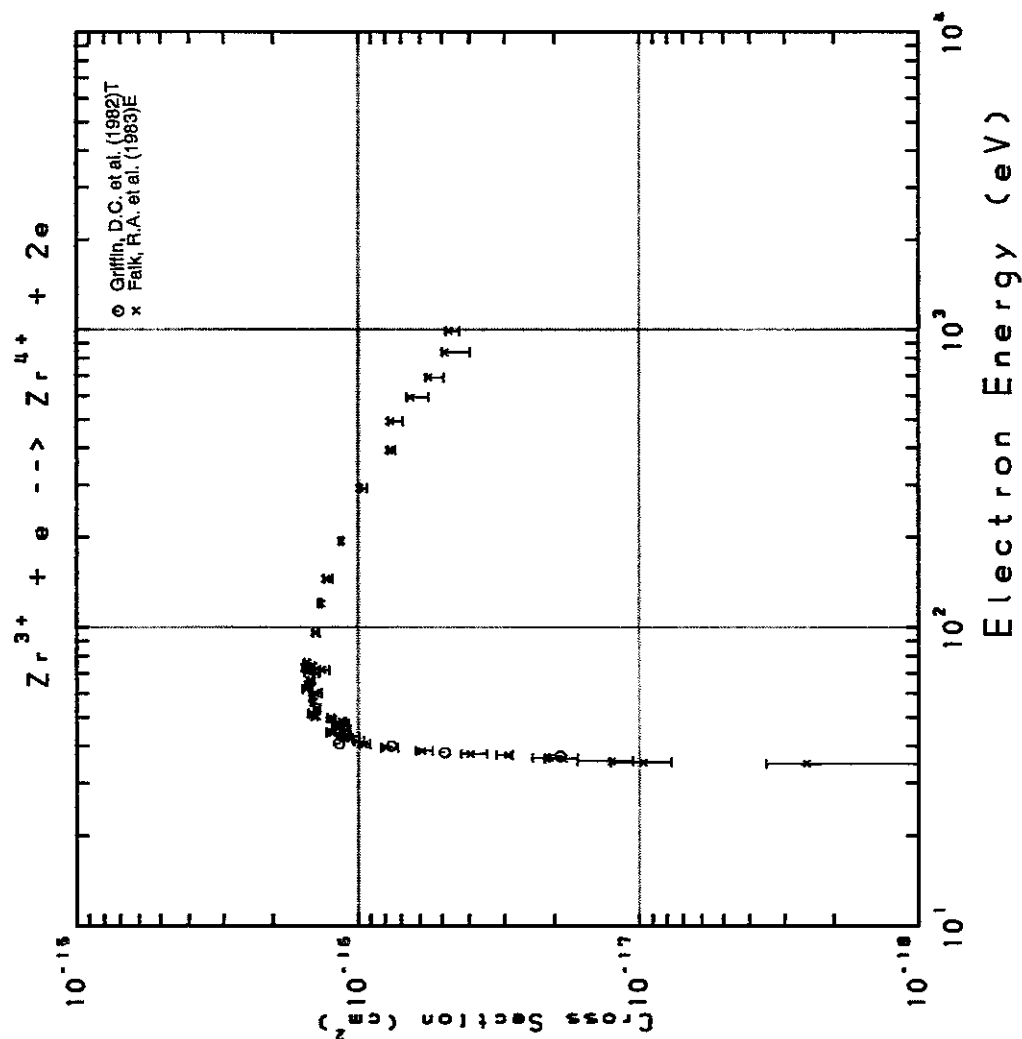


Fig. 305 $\text{Zr}^{3+} \rightarrow \text{Zr}^{4+}$

AMDIS-ION

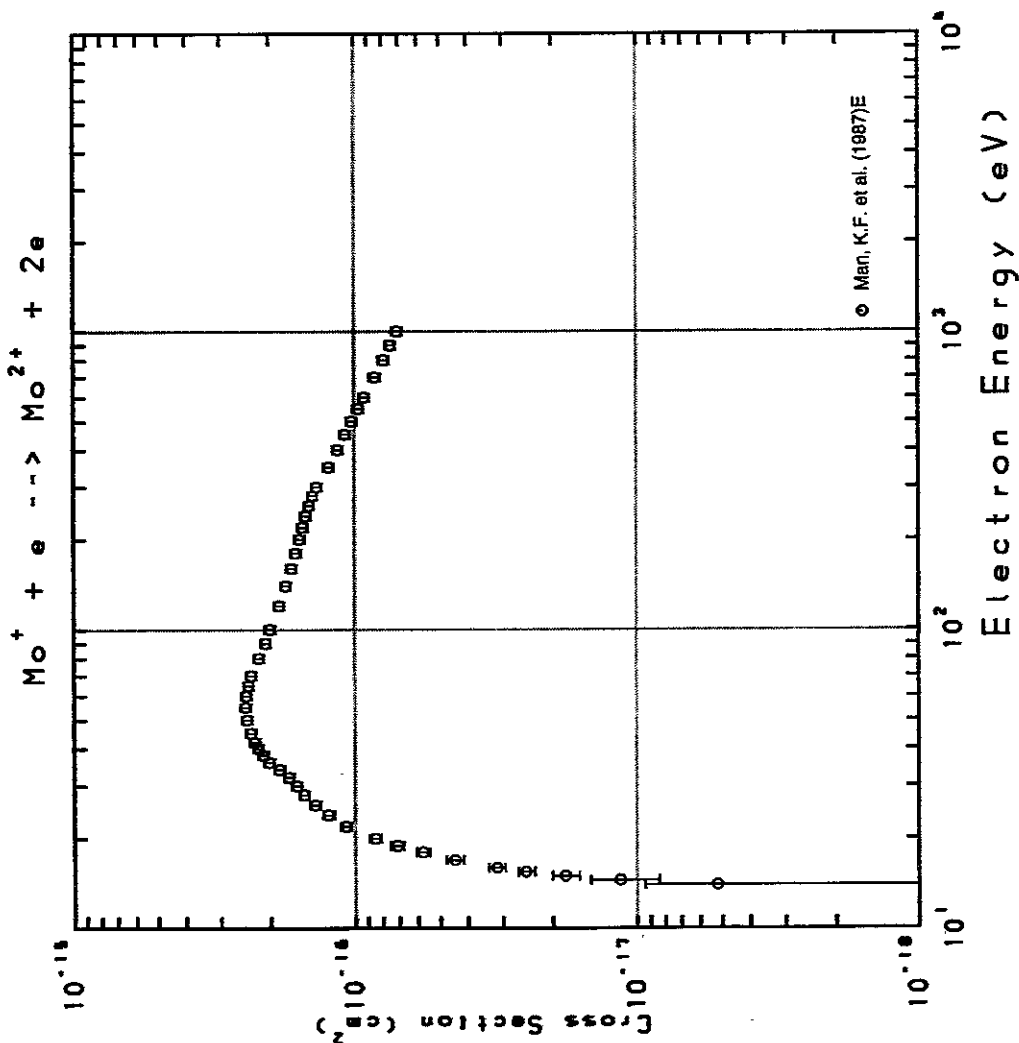


Fig. 307 $\text{Mo}^+ \rightarrow \text{Mo}^{2+}$

AMDIS-ION

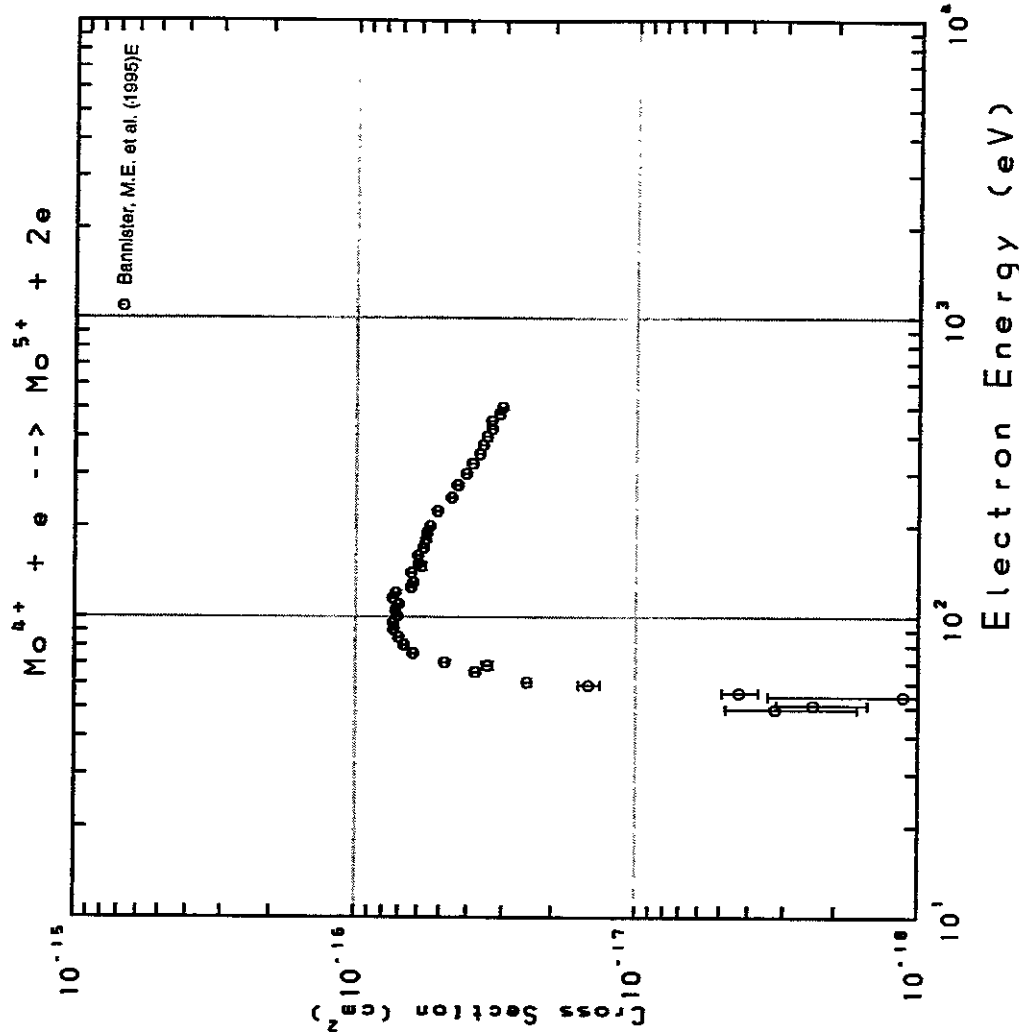


Fig. 308 $\text{Mo}^{4+} \rightarrow \text{Mo}^{5+}$

AMDIS-ION

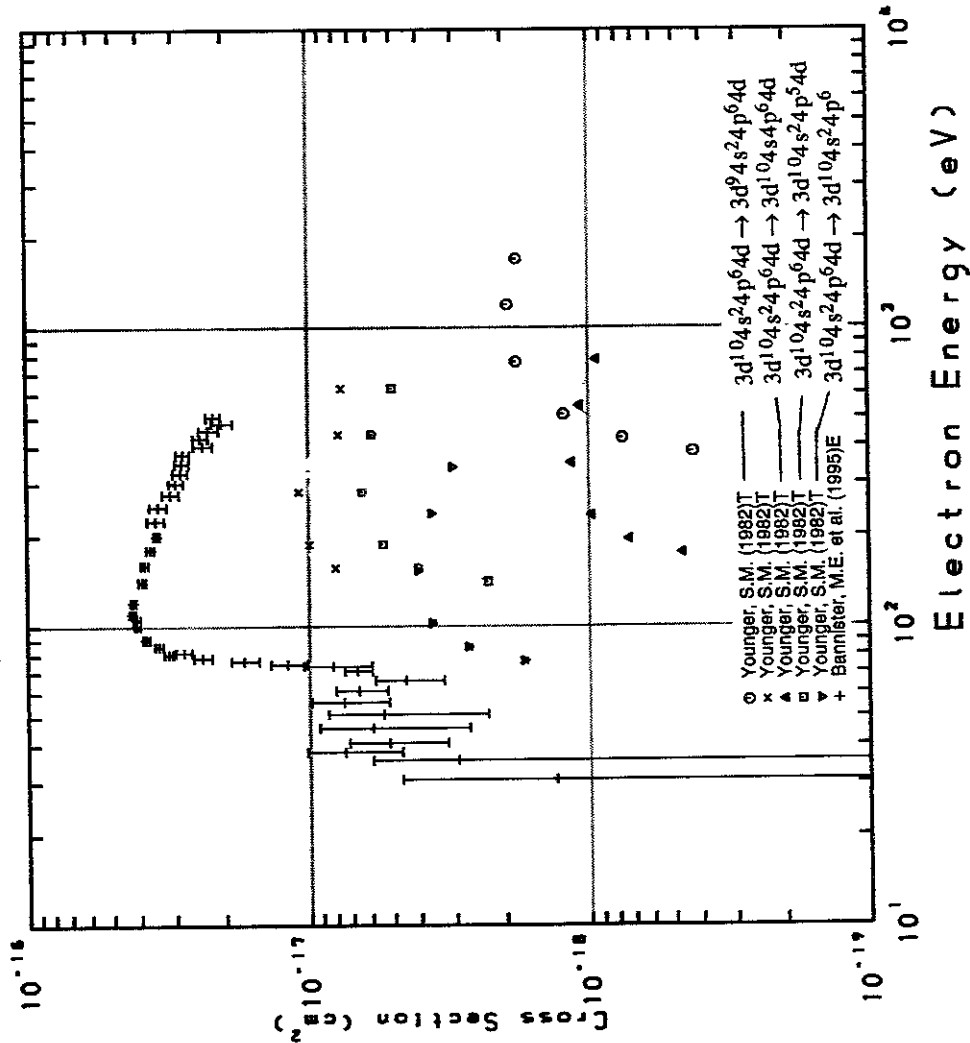


Fig. 309 $\text{Mo}^{5+} \rightarrow \text{Mo}^{6+}$

AMDIS-ION

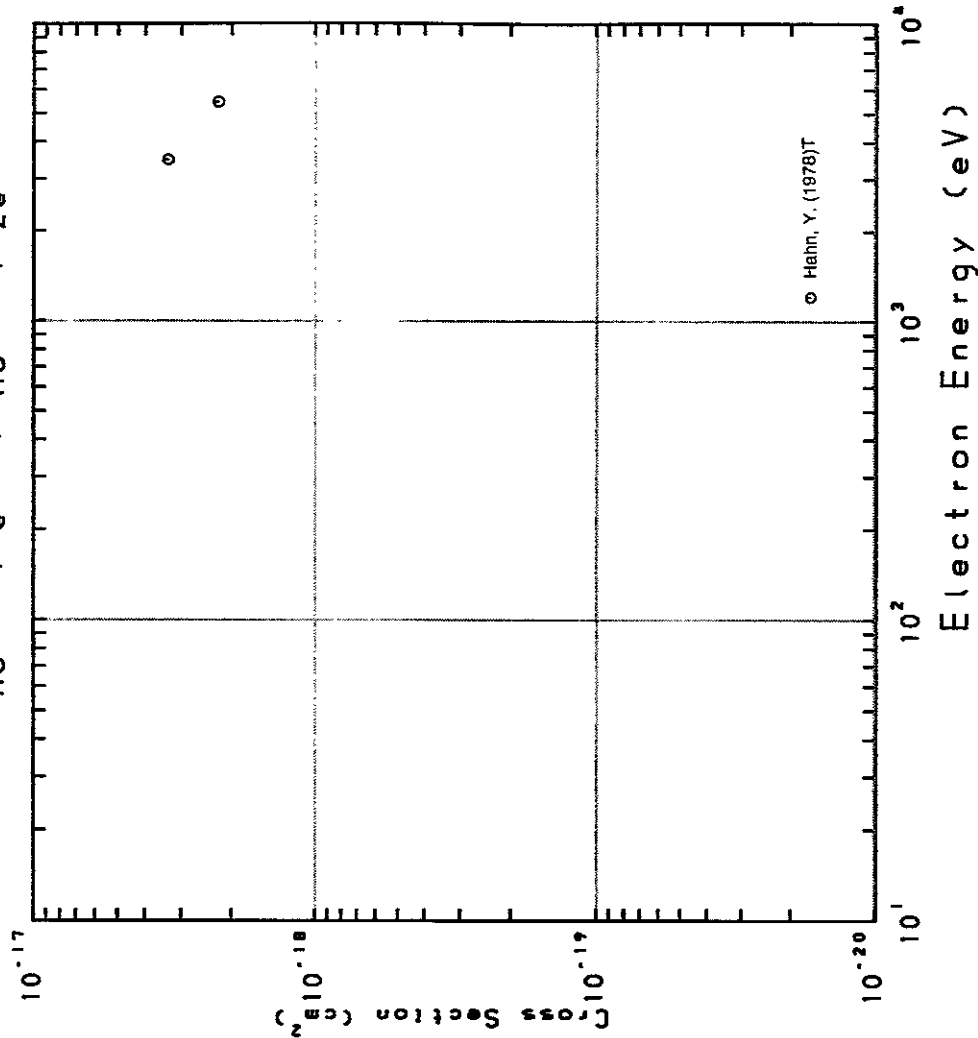
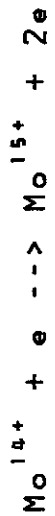


Fig. 310 $\text{Mo}^{14+} \rightarrow \text{Mo}^{15+}$

AMDIS-ION

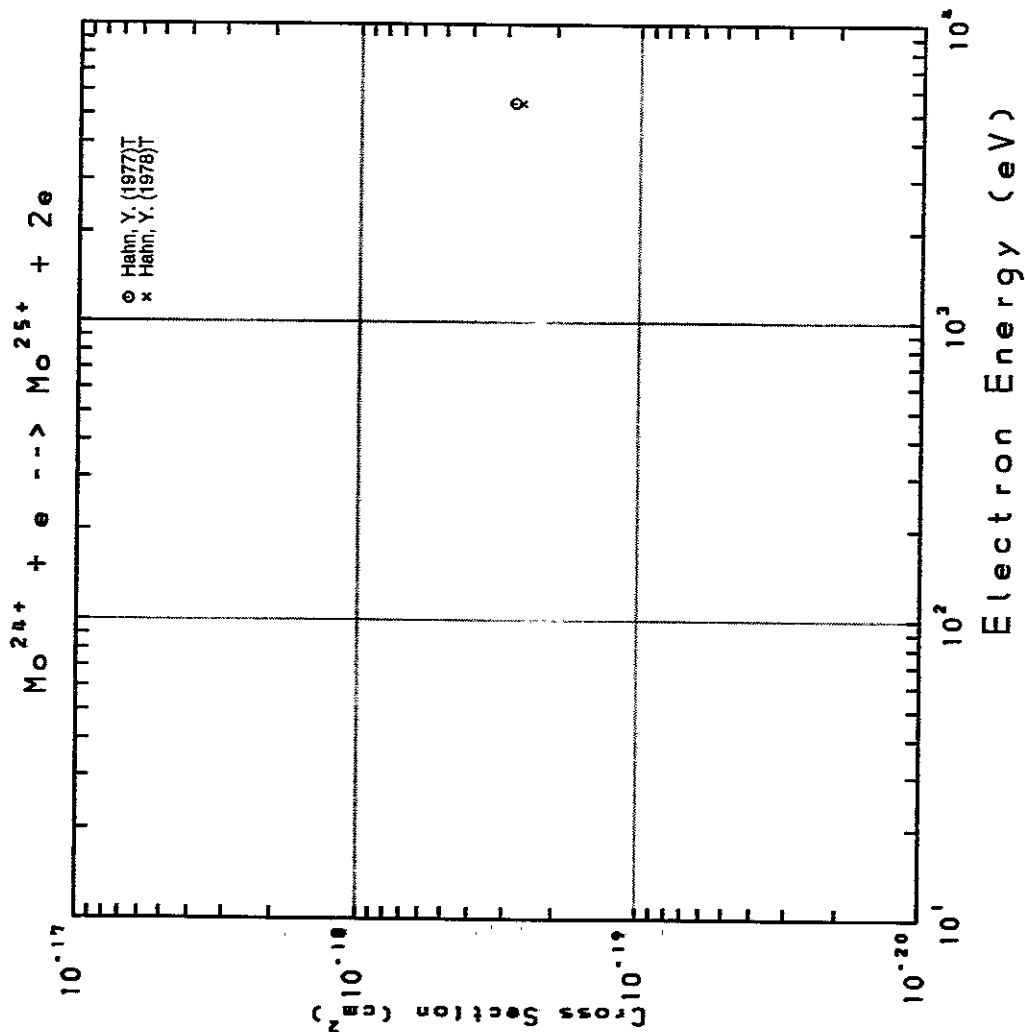


Fig. 311 $\text{Mo}^{24+} \rightarrow \text{Mo}^{25+}$

AMDIS-ION

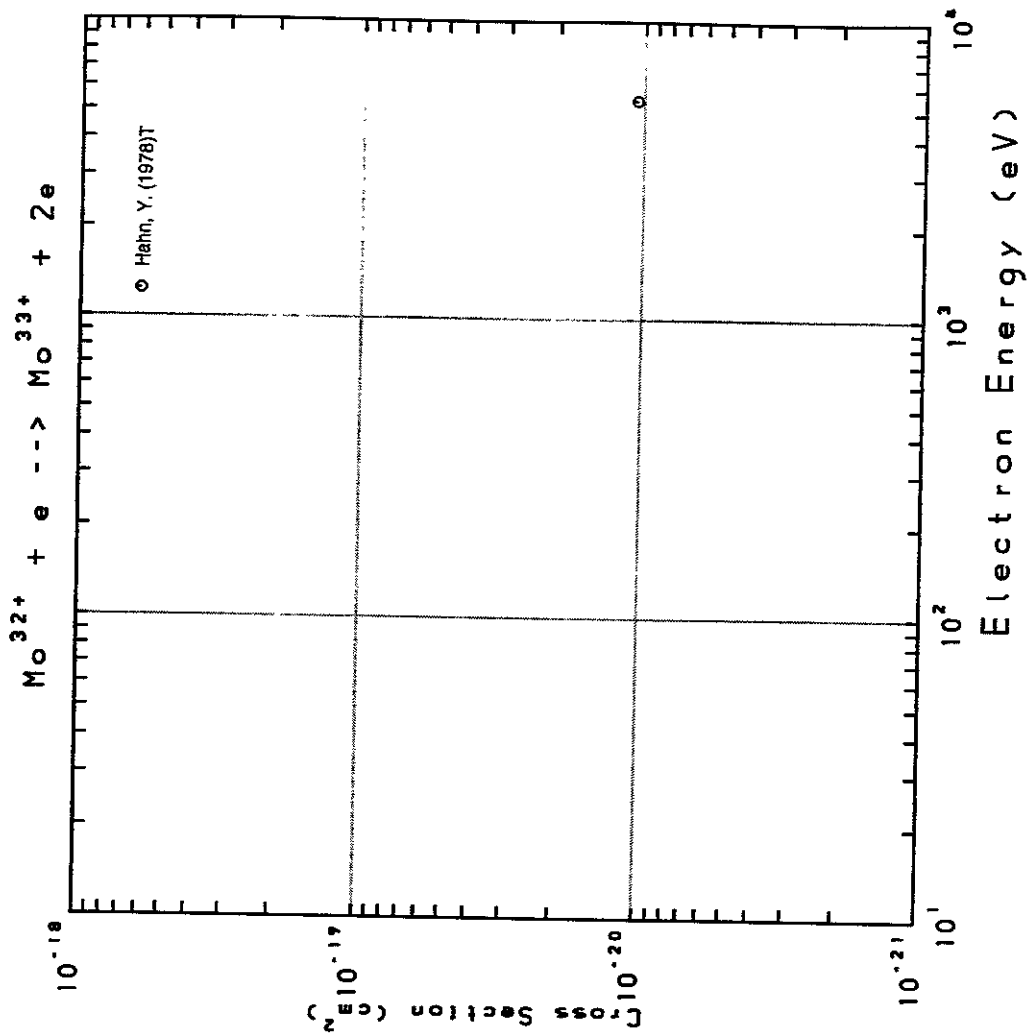


Fig. 312 $\text{Mo}^{32+} \rightarrow \text{Mo}^{33+}$

AMDIS-ION

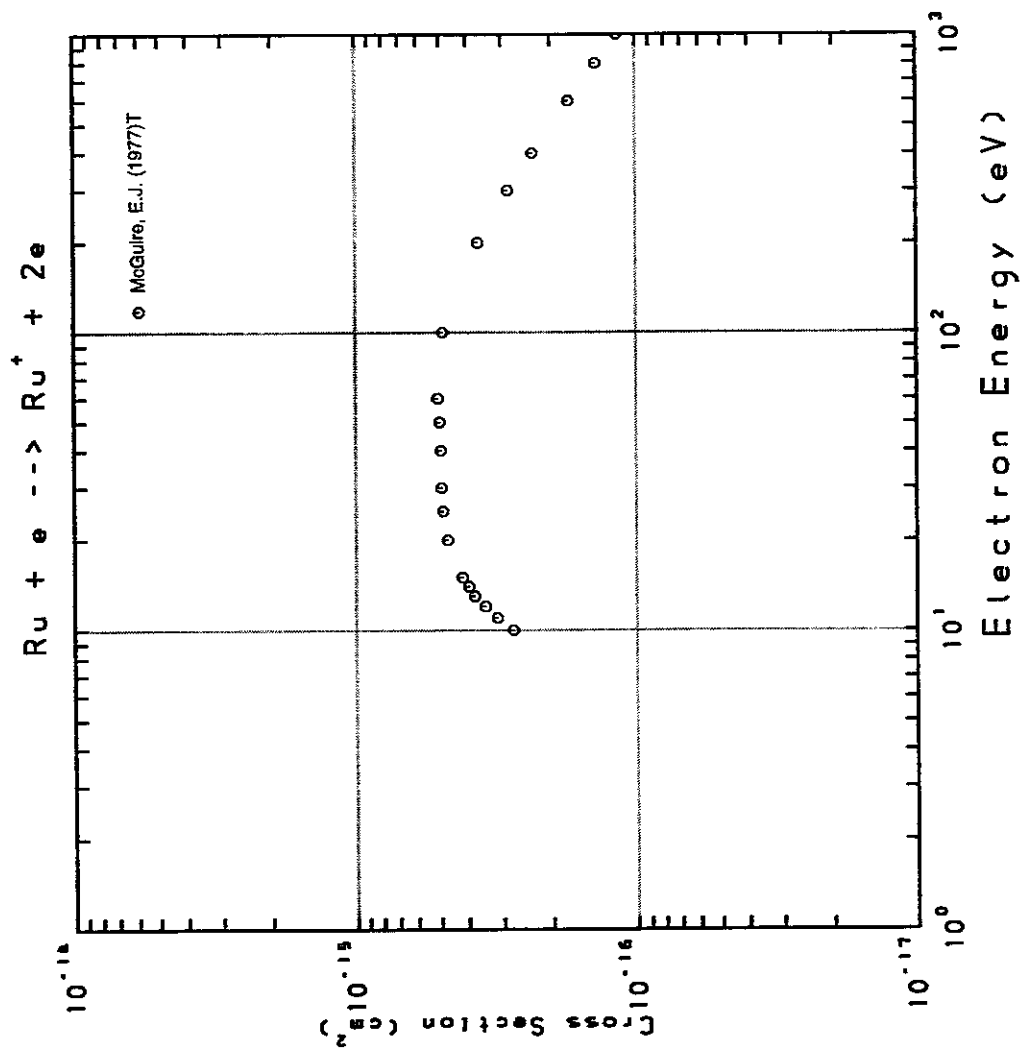


Fig. 313 Ru \rightarrow Ru⁺

AMDIS-ION

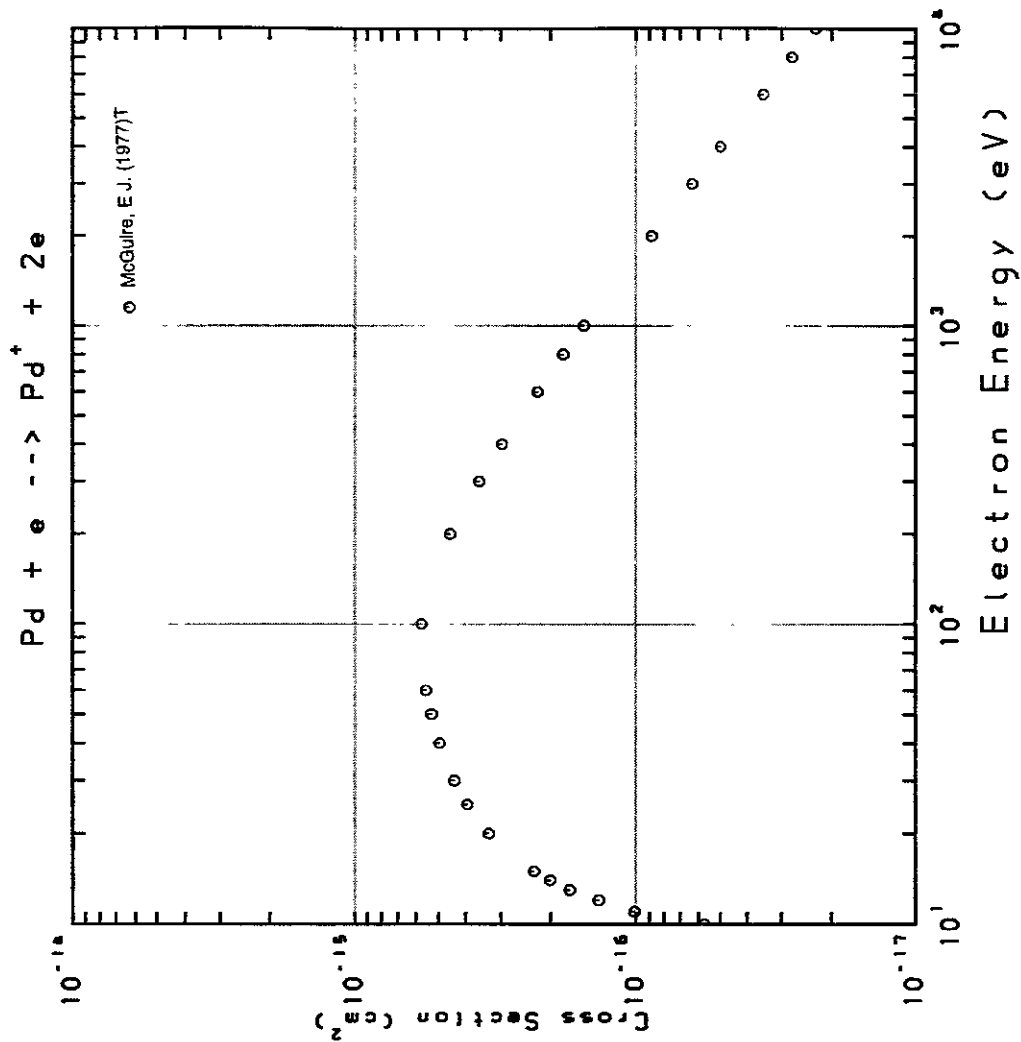


Fig. 314 Pd \rightarrow Pd⁺

AMDIS-ION

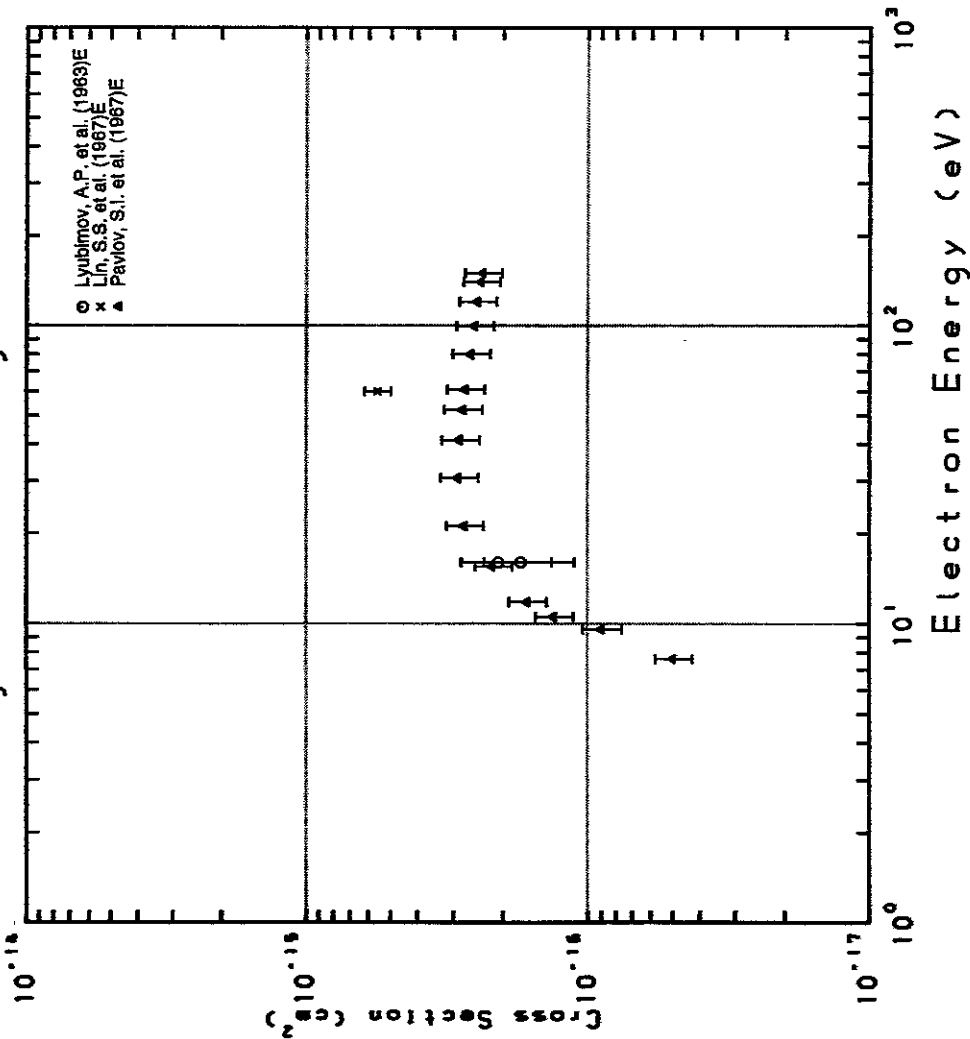
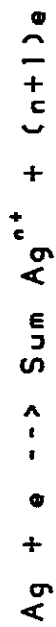


Fig. 315 $\text{Ag} \rightarrow \Sigma \text{Ag}^{n+}$

AMDIS-ION

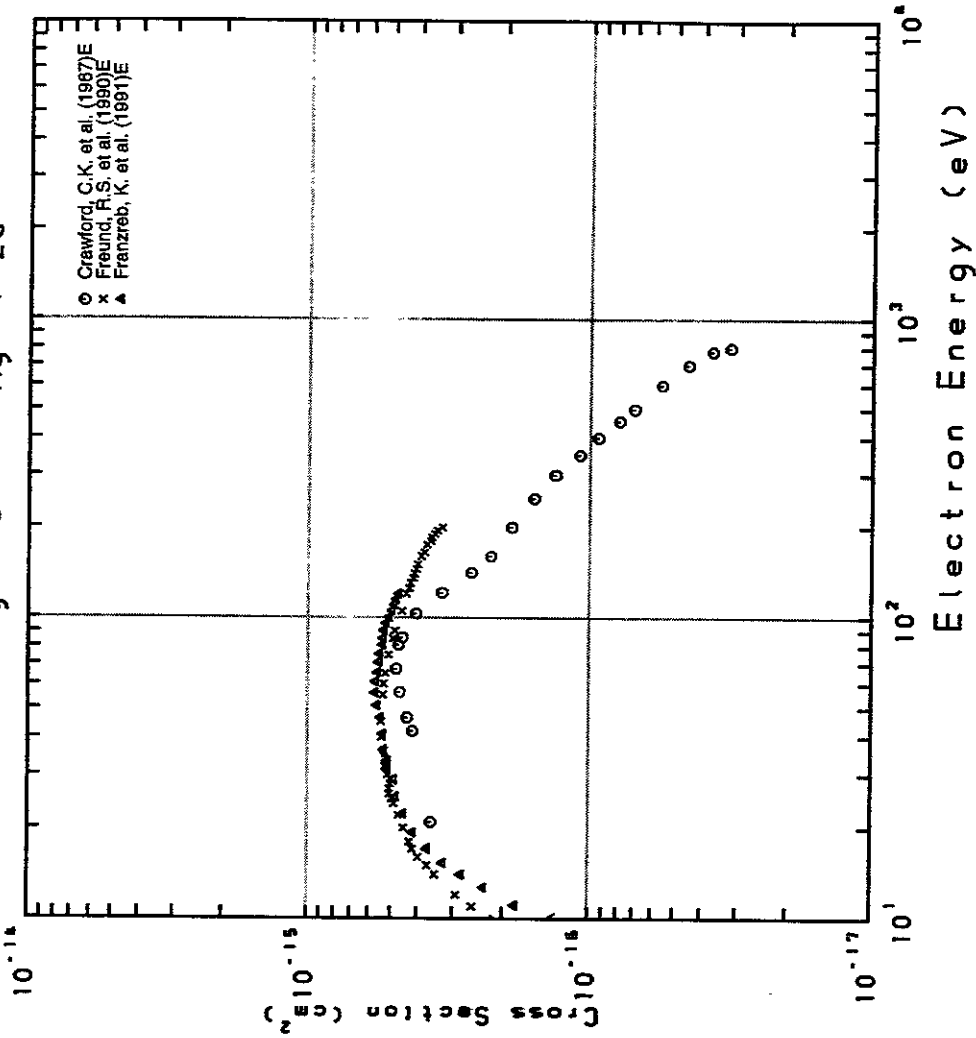


Fig. 316 $\text{Ag} \rightarrow \text{Ag}^+$

AMDIS-ION

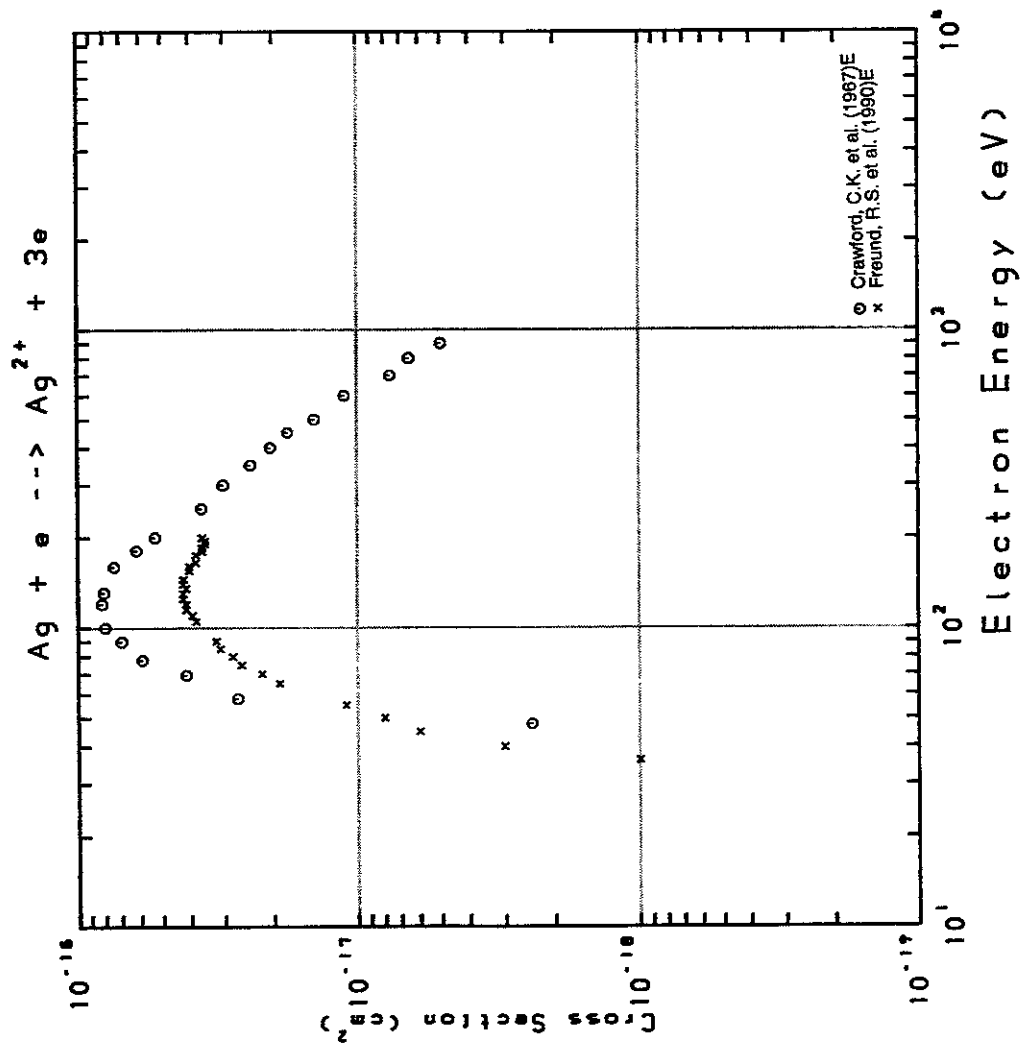


Fig. 317 Ag \rightarrow Ag²⁺

AMDIS-ION

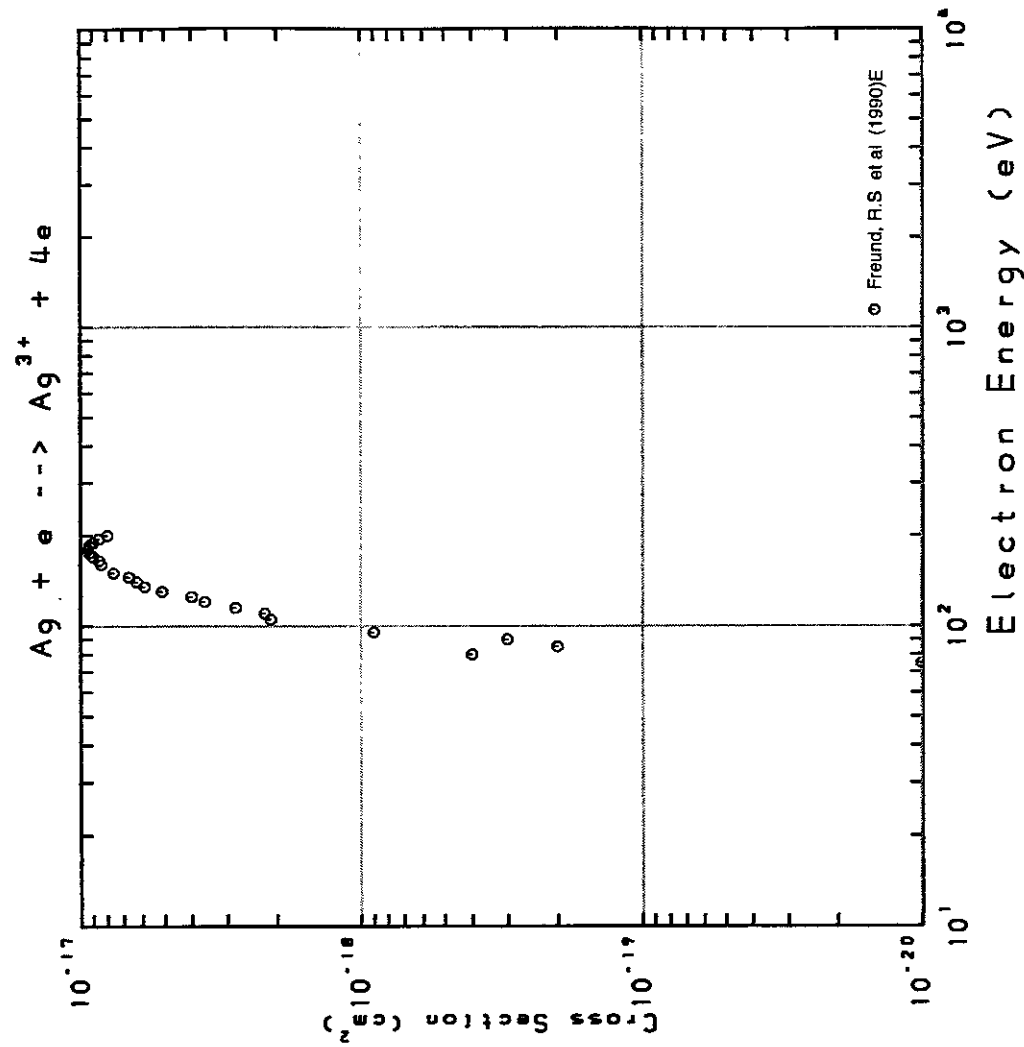


Fig. 318 Ag \rightarrow Ag³⁺

AMDIS-ION

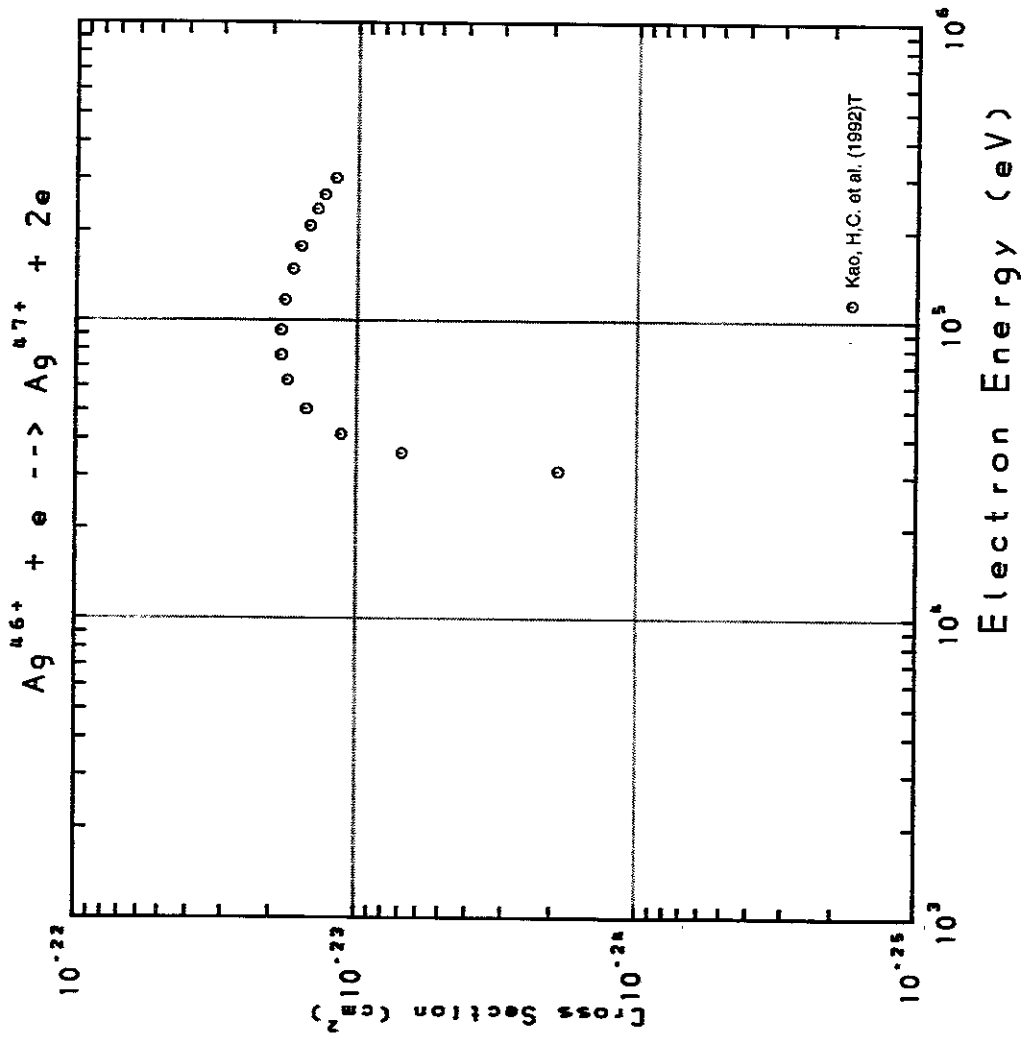


Fig. 319 $\text{Ag}^{46+} \rightarrow \text{Ag}^{47+}$

AMDIS-ION

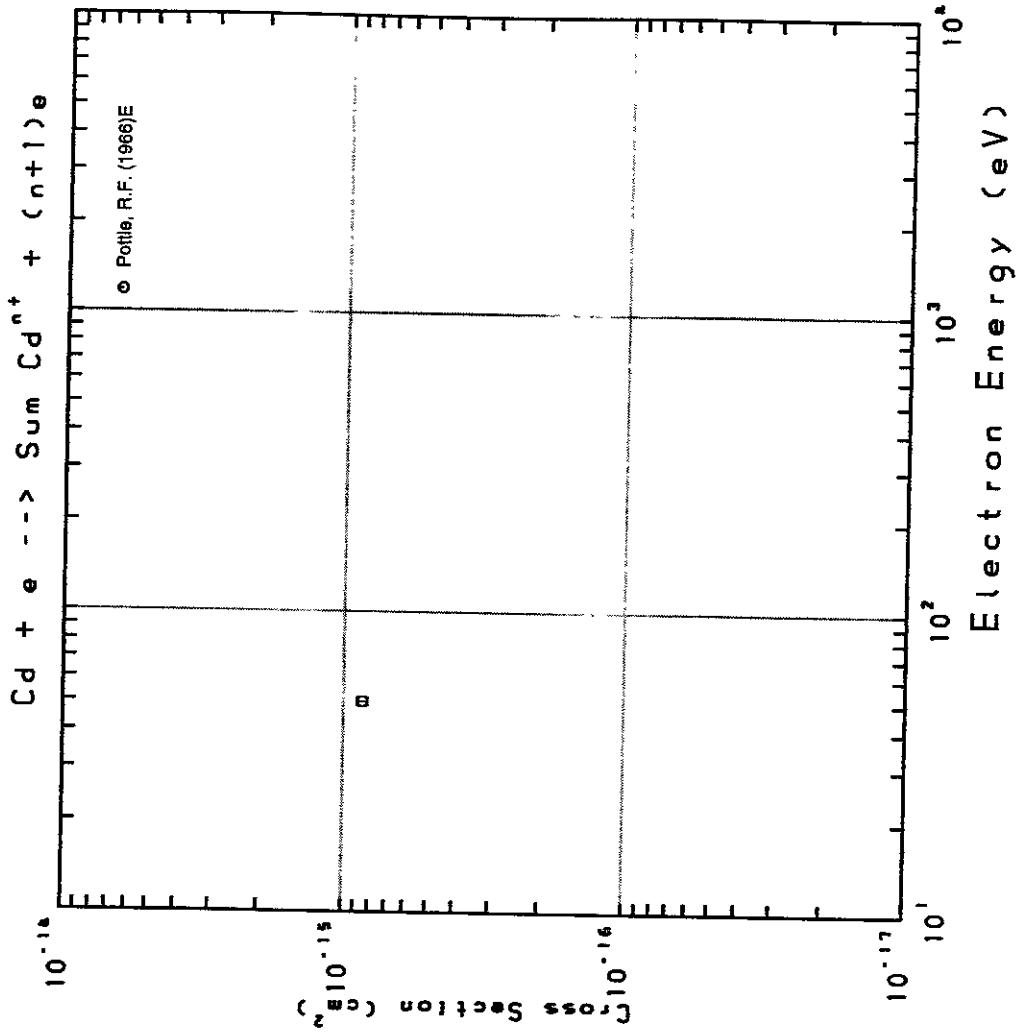


Fig. 320 $\text{Cd} \rightarrow \Sigma \text{Cd}^{n+}$

AMDIS-ION

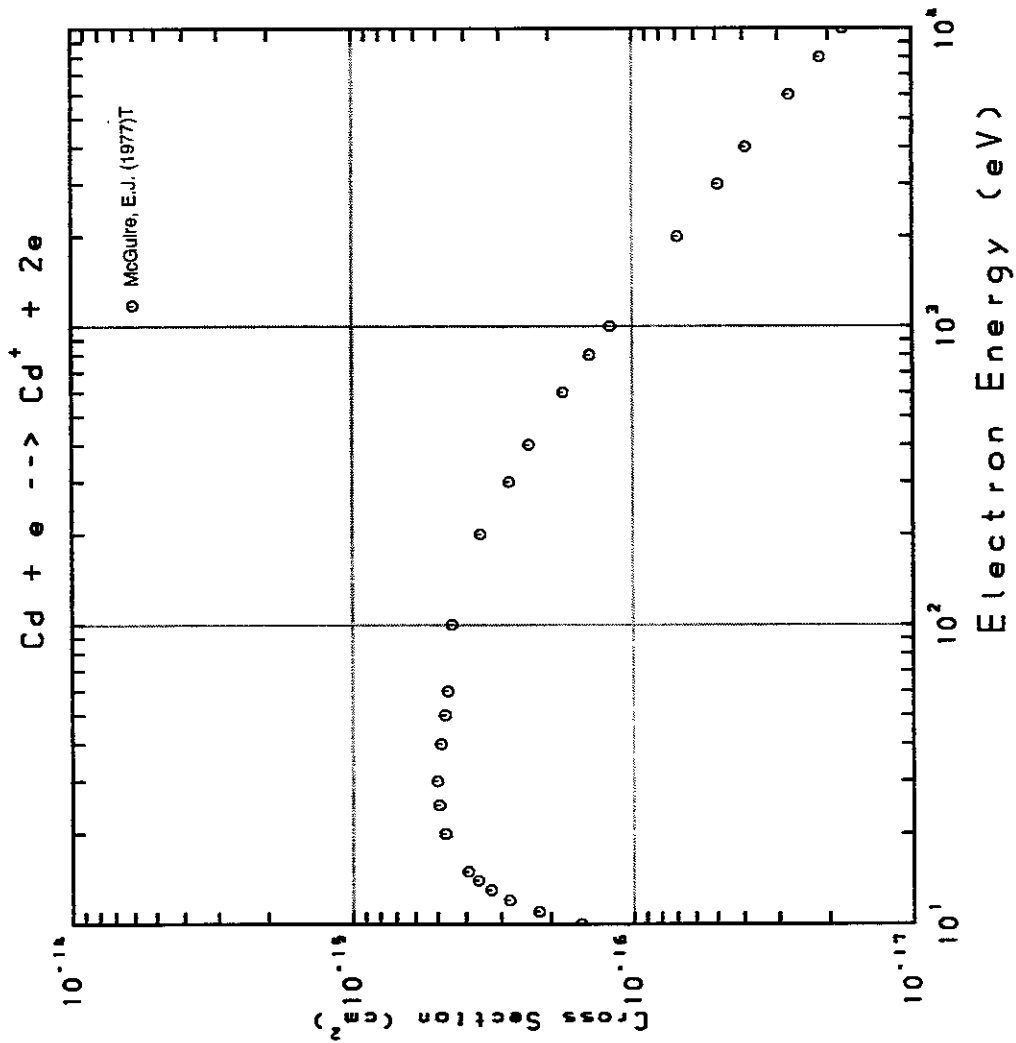


Fig. 321 $Cd \rightarrow Cd^+$

AMDIS-ION

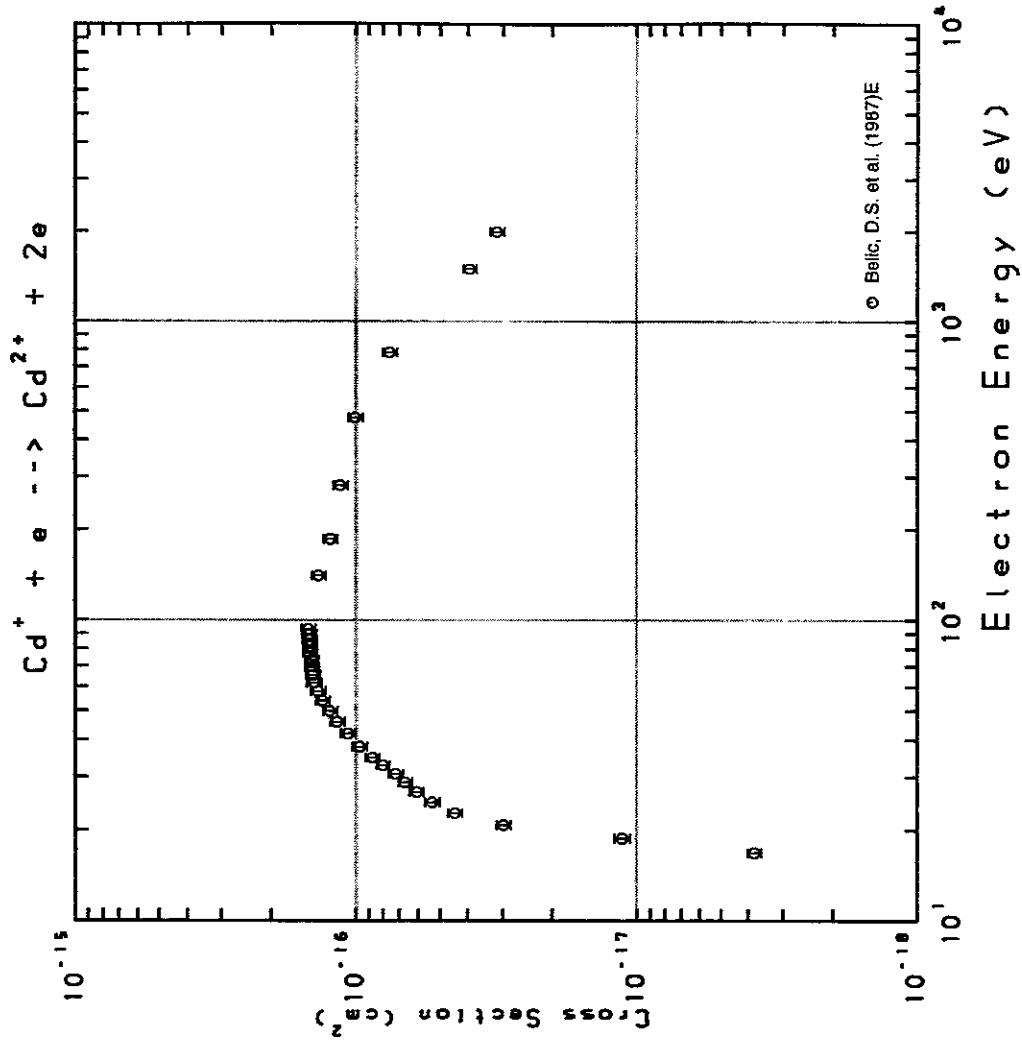


Fig. 322 $Cd^+ \rightarrow Cd^{2+}$

AMDIS-ION

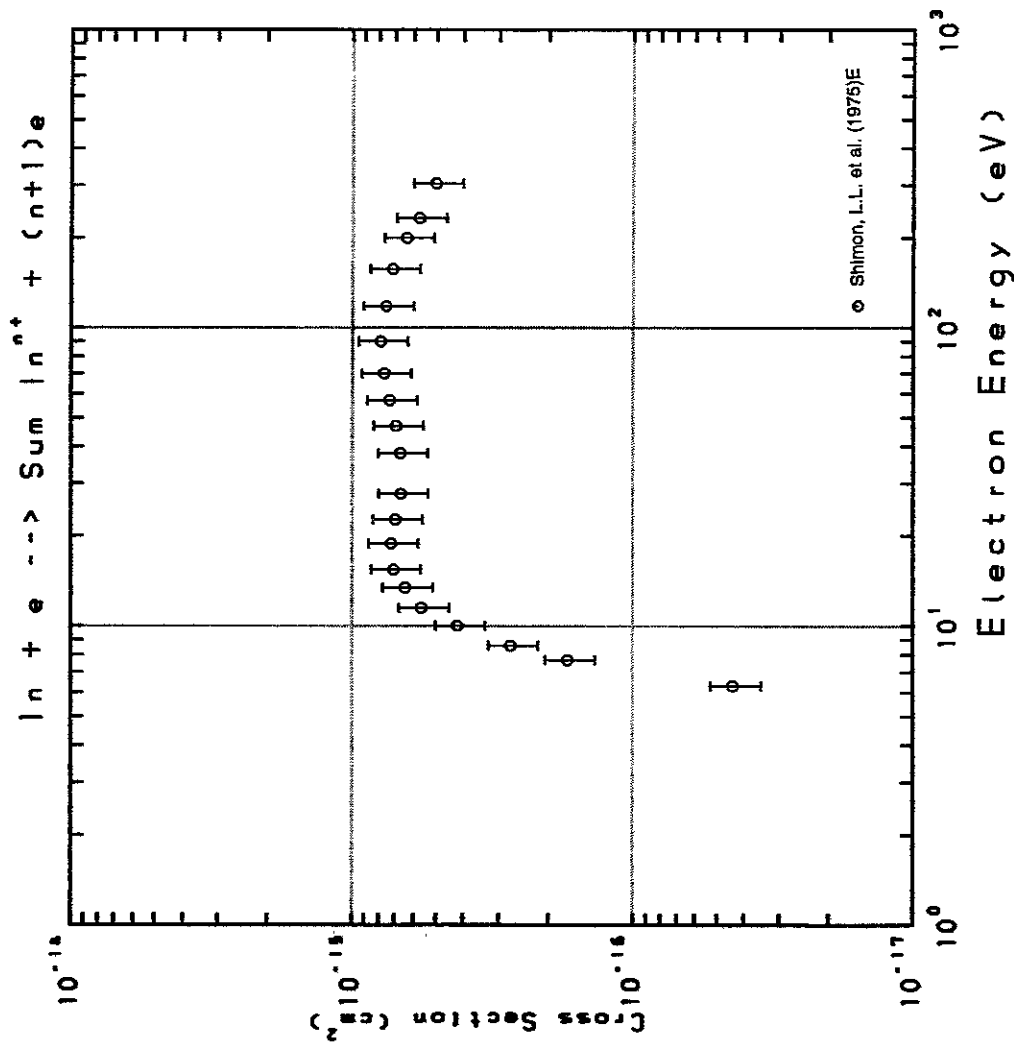


Fig. 323 In \rightarrow Σ In $^{n+}$

AMDIS-ION

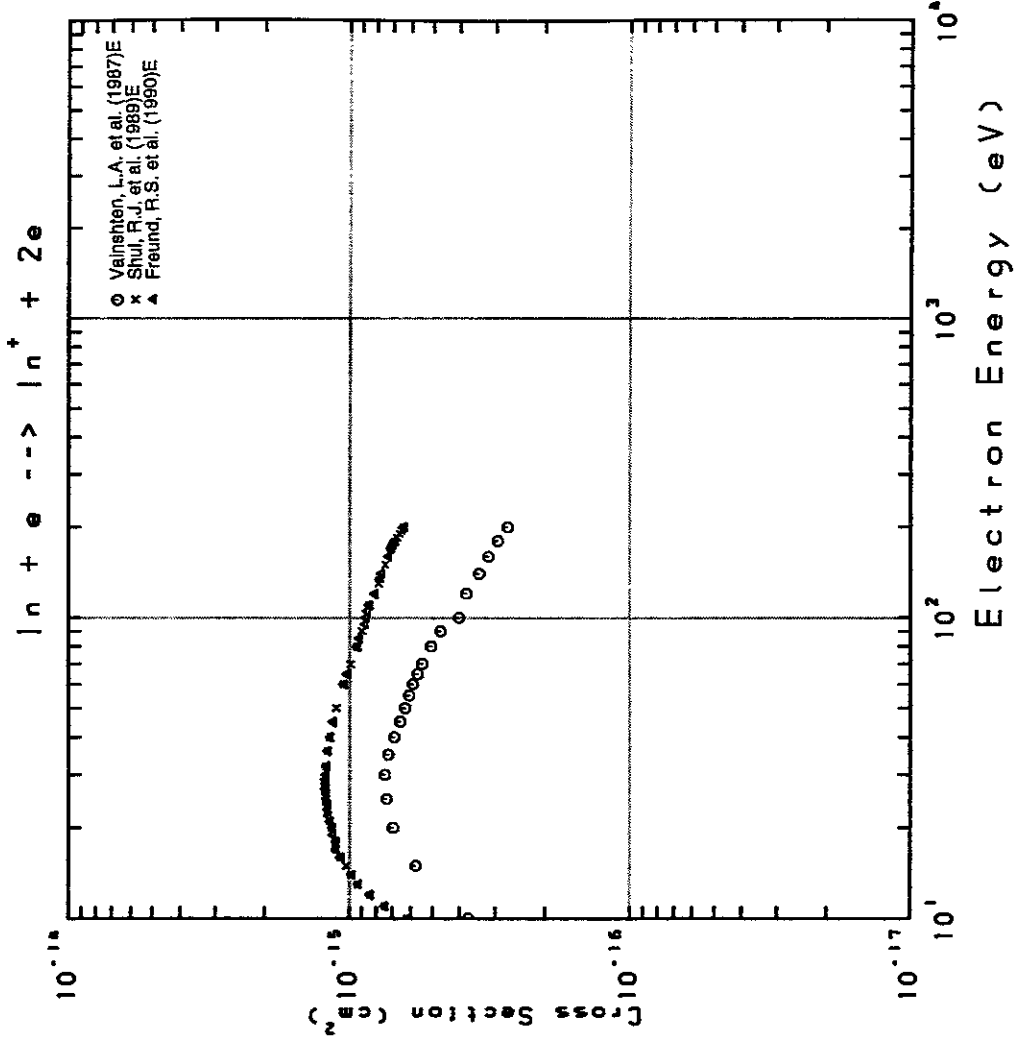


Fig. 324 In \rightarrow In $^+$

AMDIS-ION

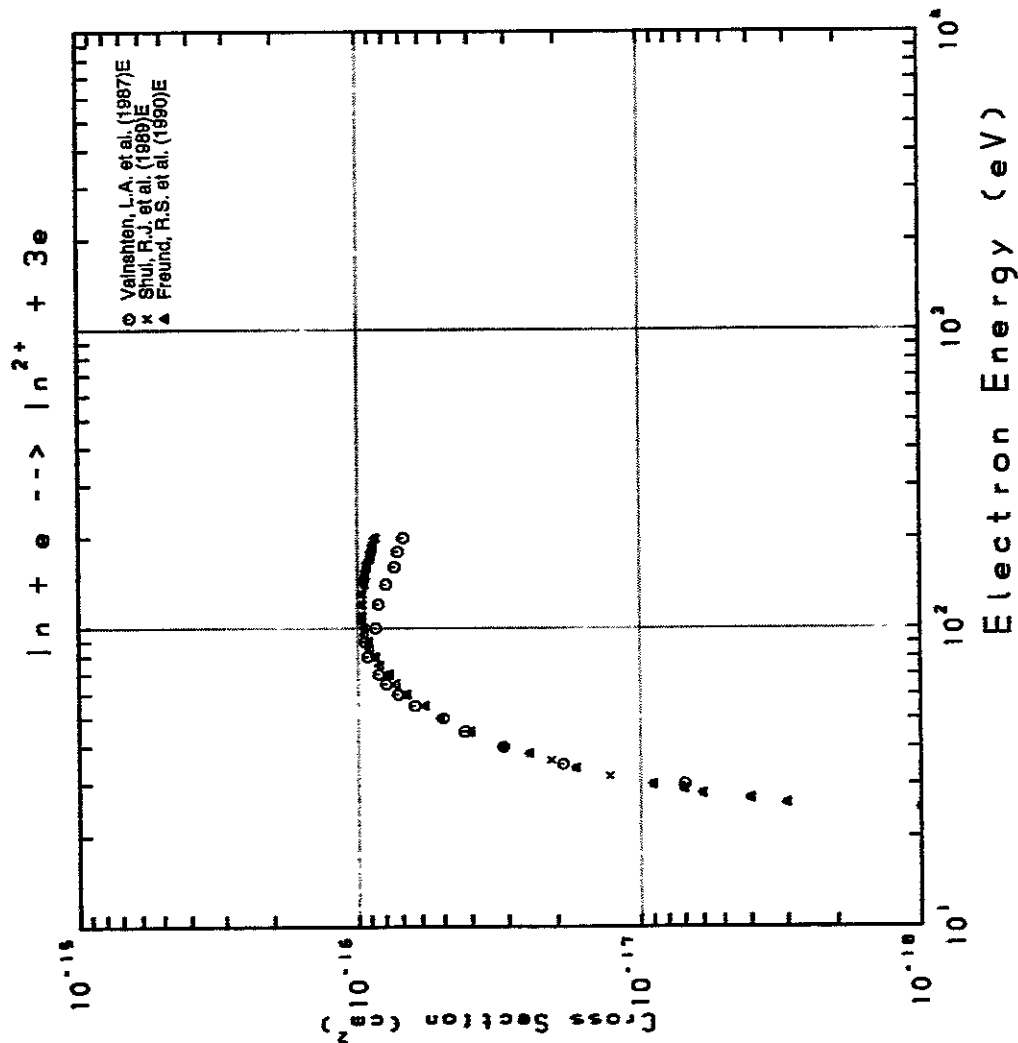


Fig. 325 $\text{In} \rightarrow \text{In}^{2+}$

AMDIS-ION

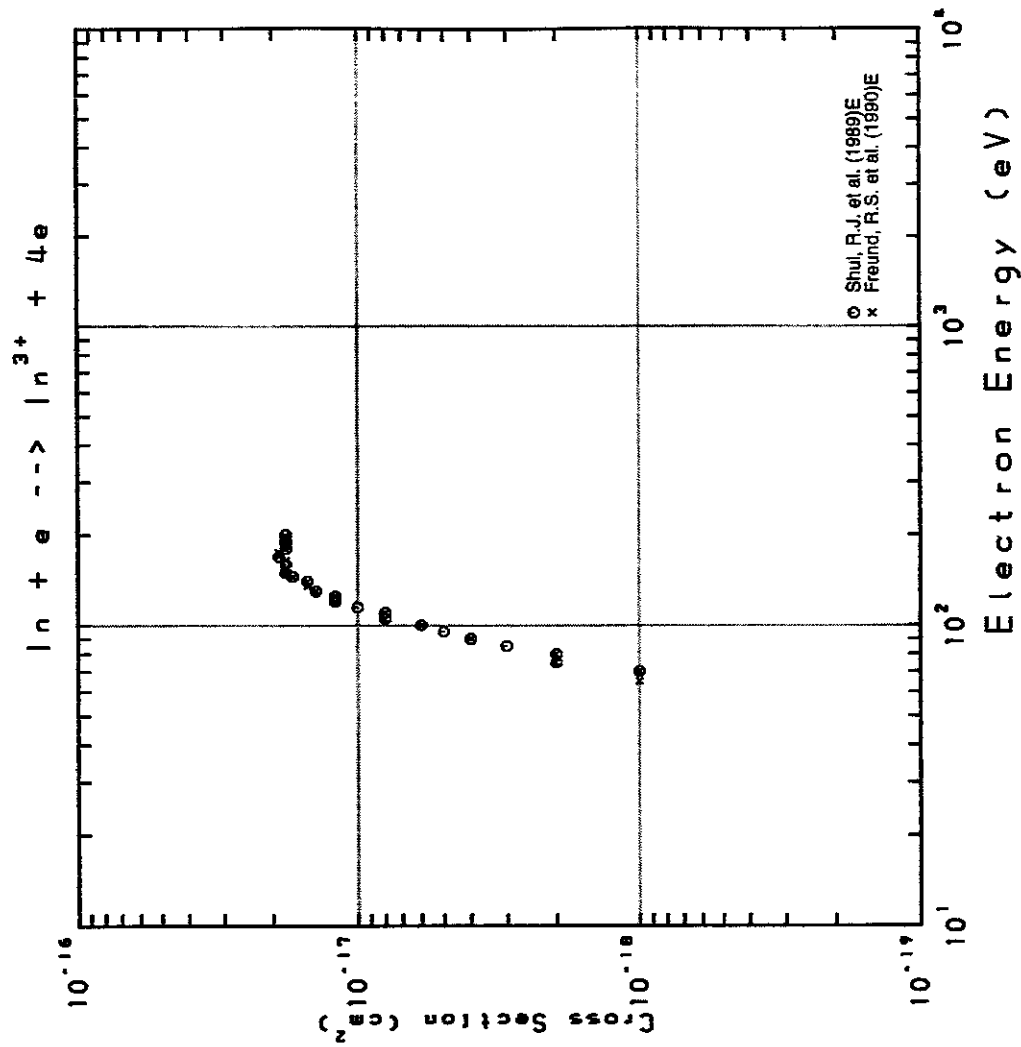


Fig. 326 $\text{In} \rightarrow \text{In}^{3+}$

AMDIS-ION

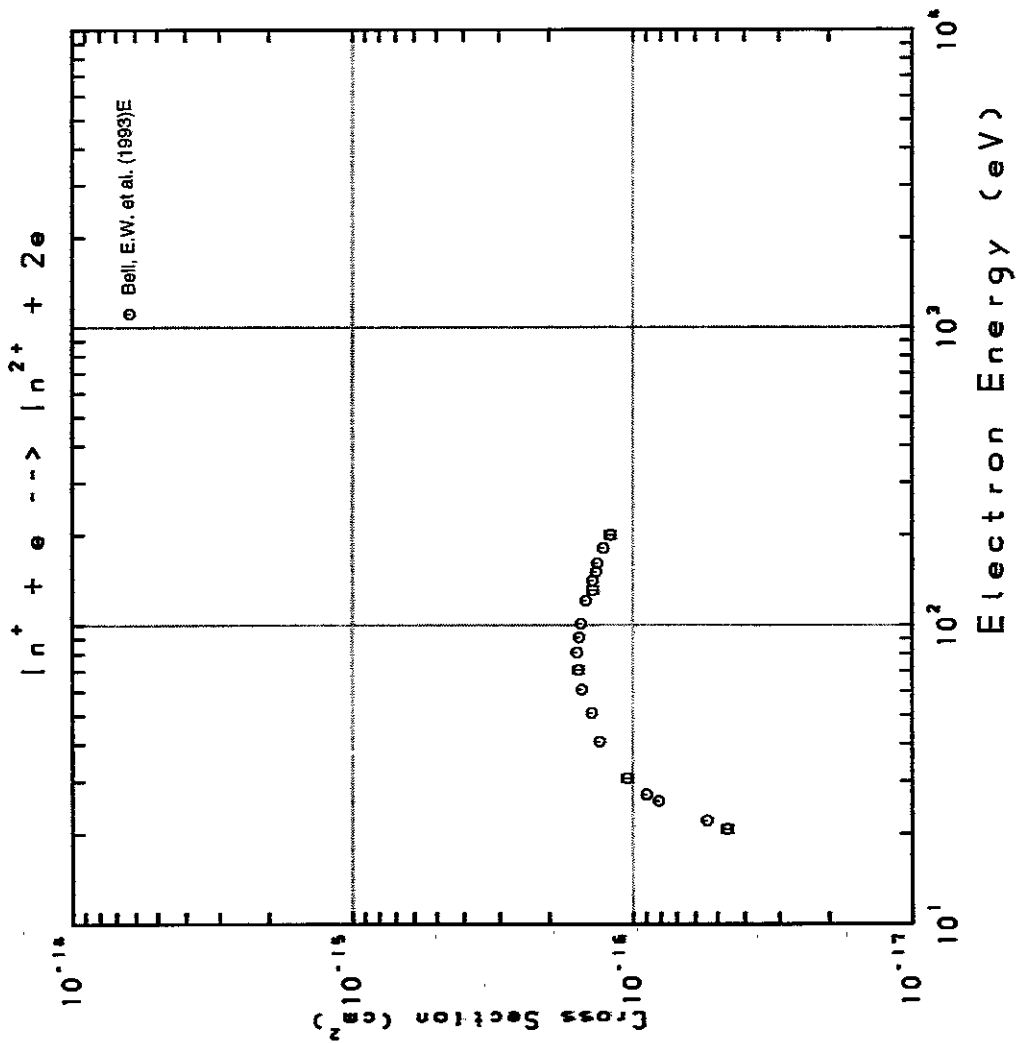


Fig. 327 $\text{In}^+ \rightarrow \text{In}^{2+}$

AMDIS-ION

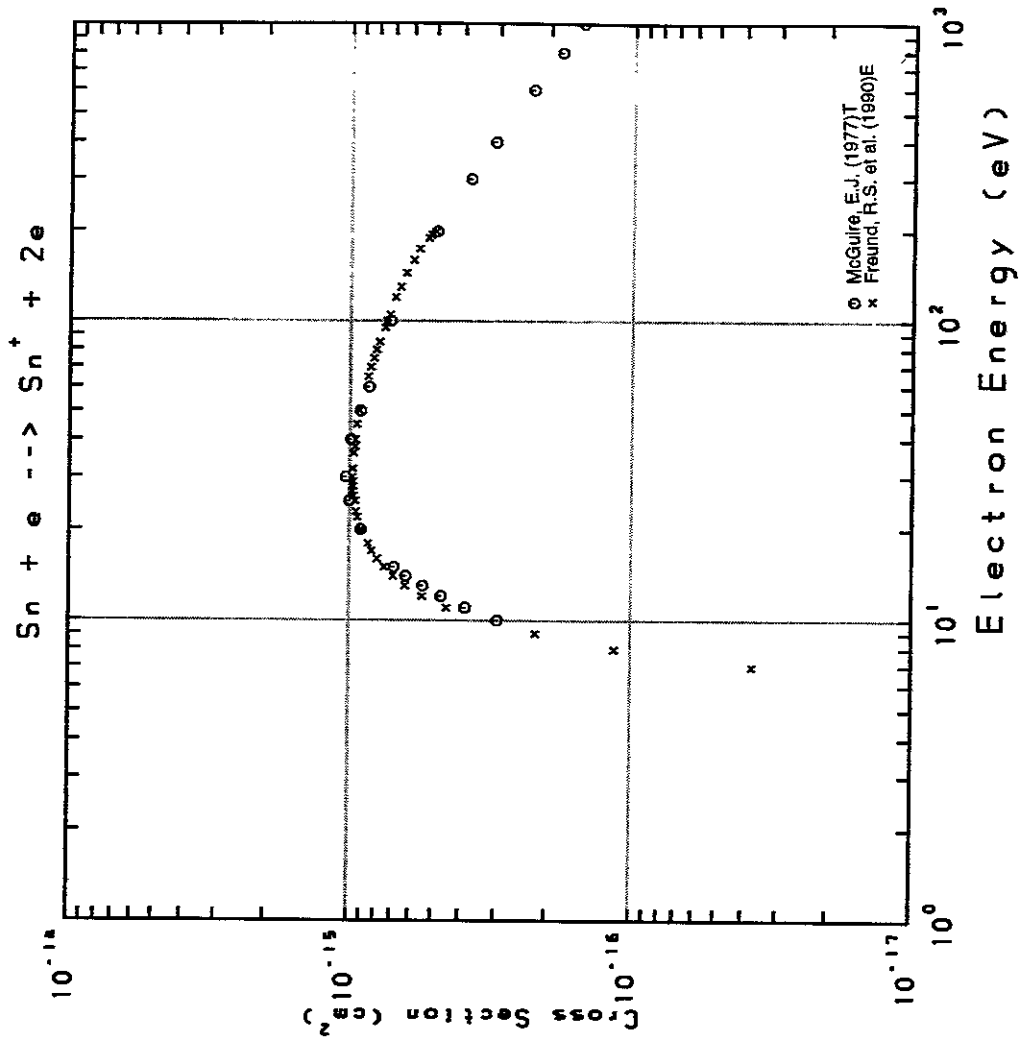


Fig. 328 $\text{Sn} \rightarrow \text{Sn}^+$

AMDIS-ION

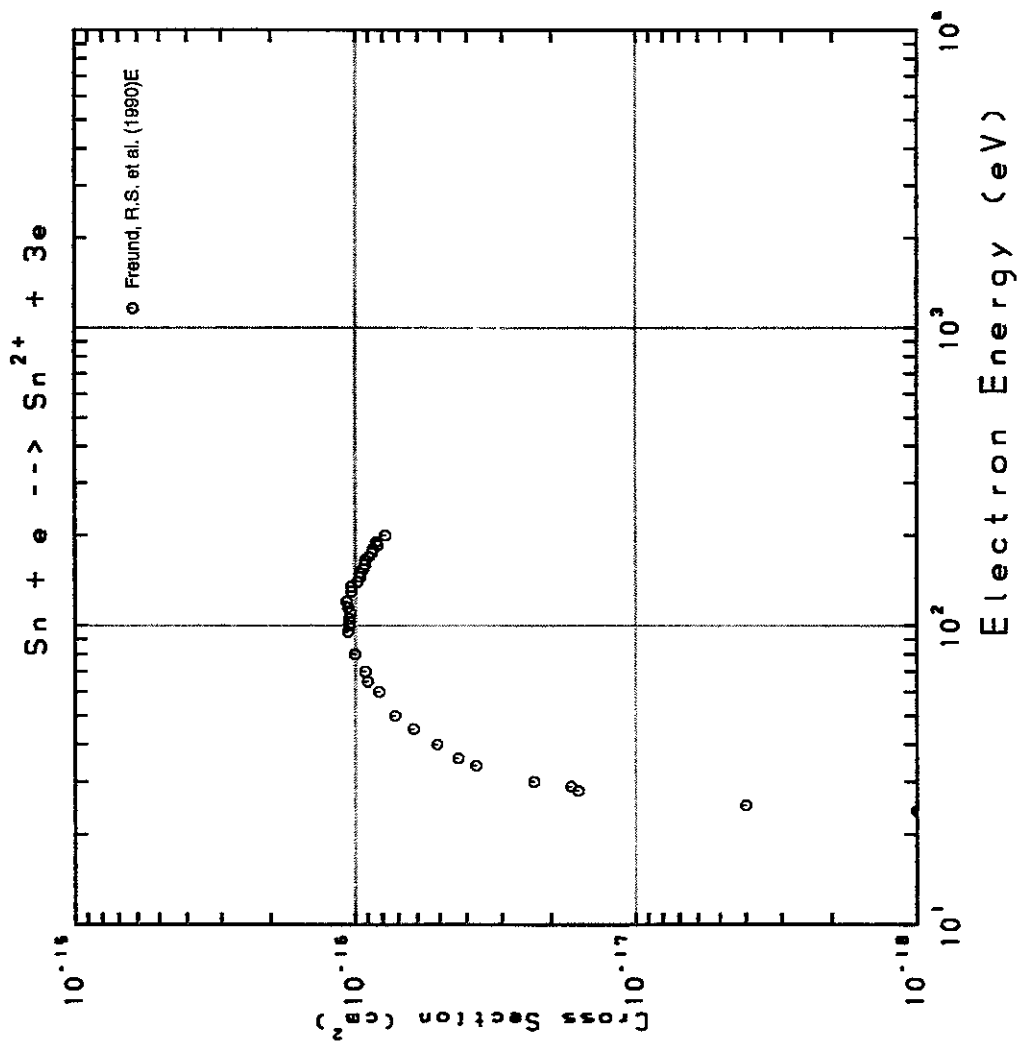


Fig. 329 Sn → Sn²⁺

AMDIS-ION

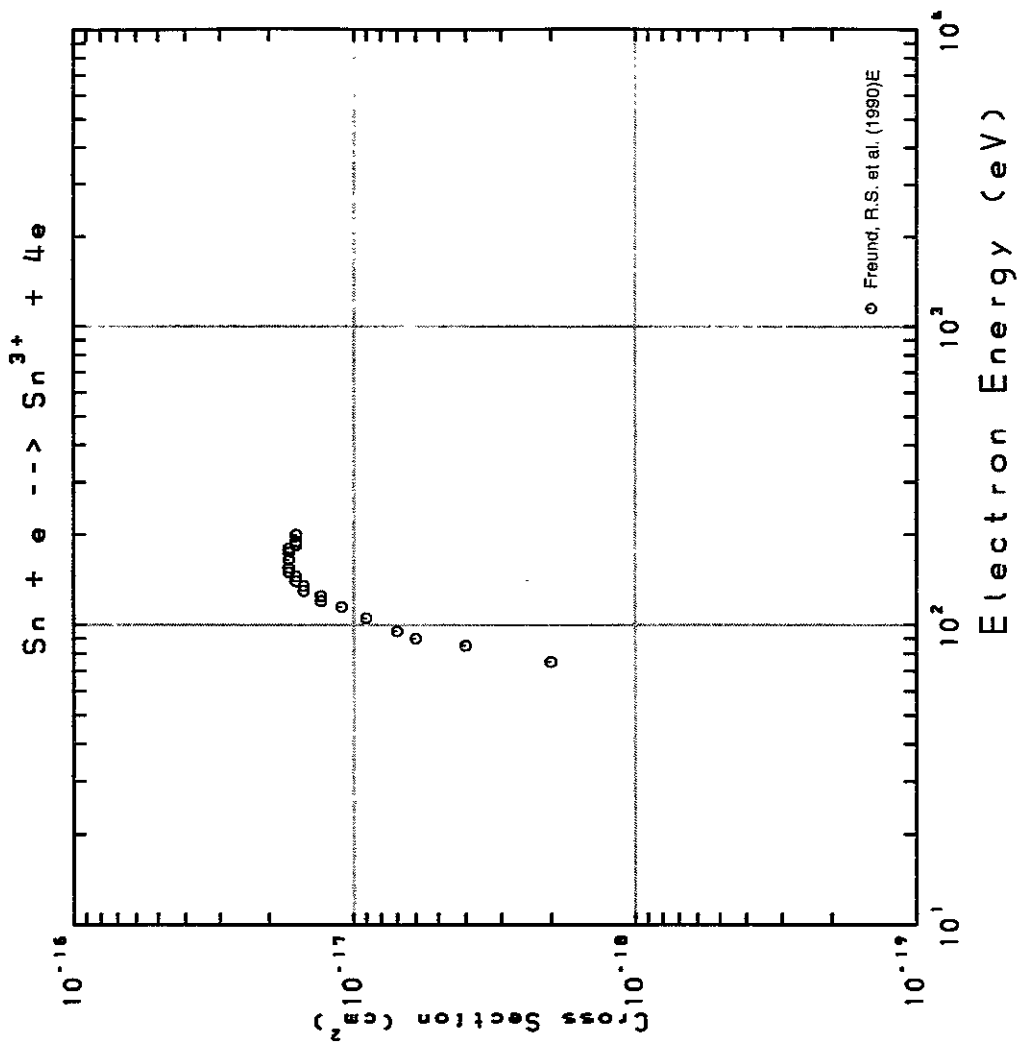


Fig. 330 Sn → Sn³⁺

AMDIS-ION

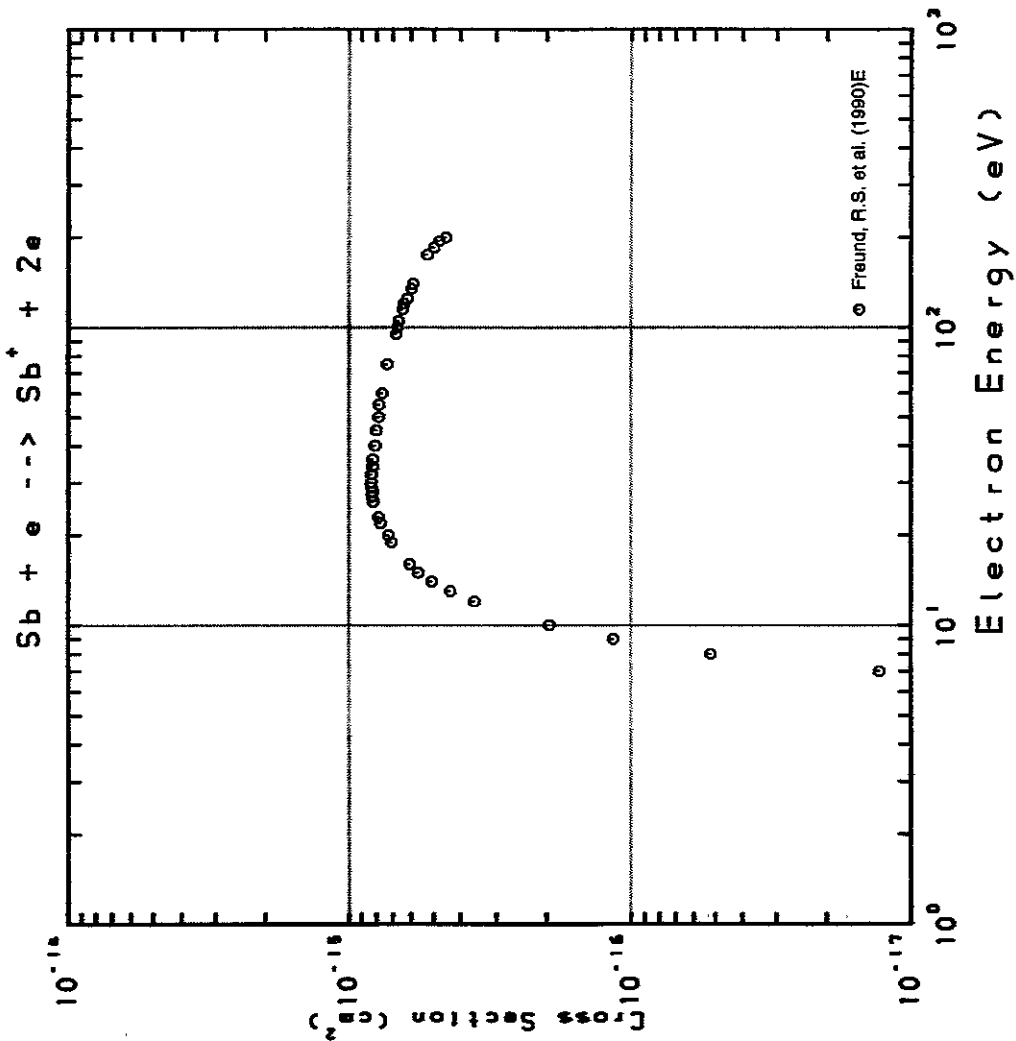


Fig. 331 $Sb \rightarrow Sb^+$

AMDIS-ION

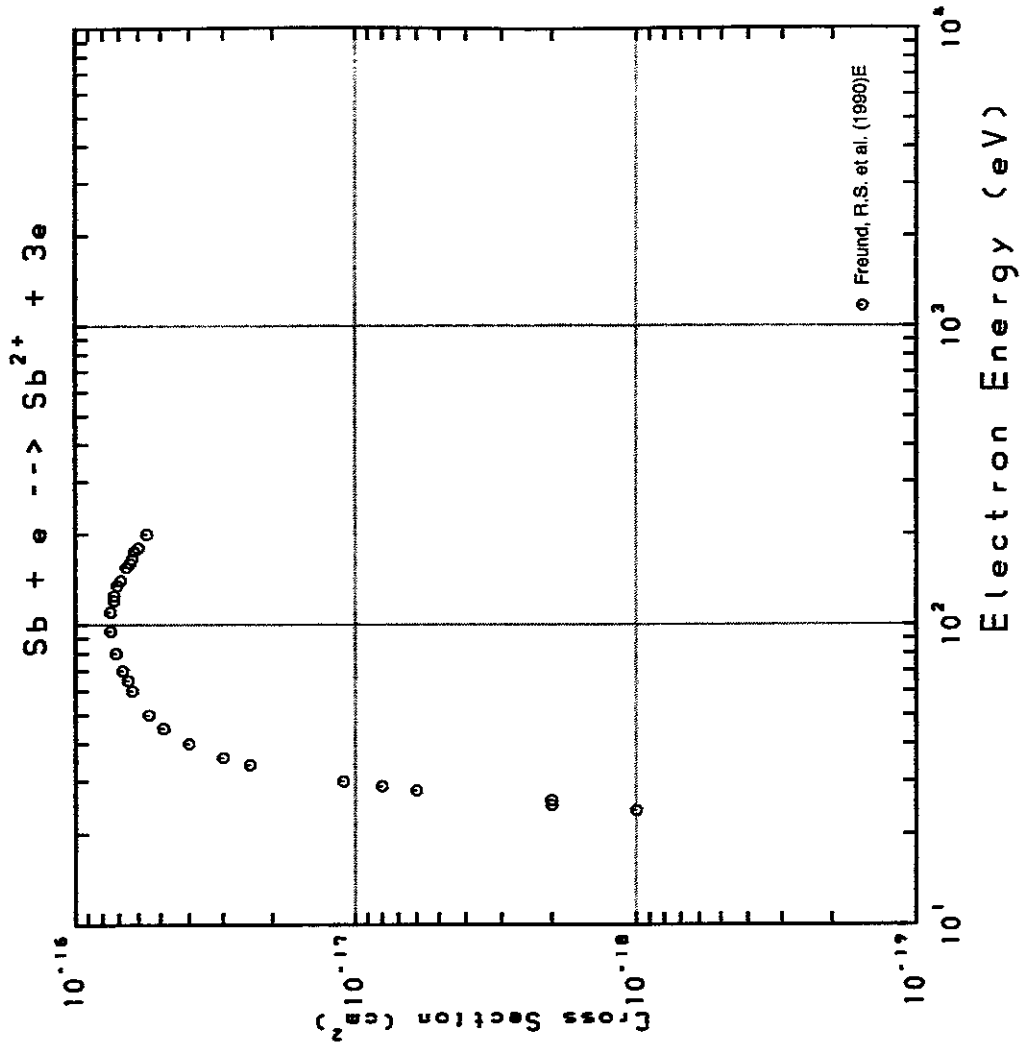


Fig. 332 $Sb \rightarrow Sb^{2+}$

AMDIS-ION

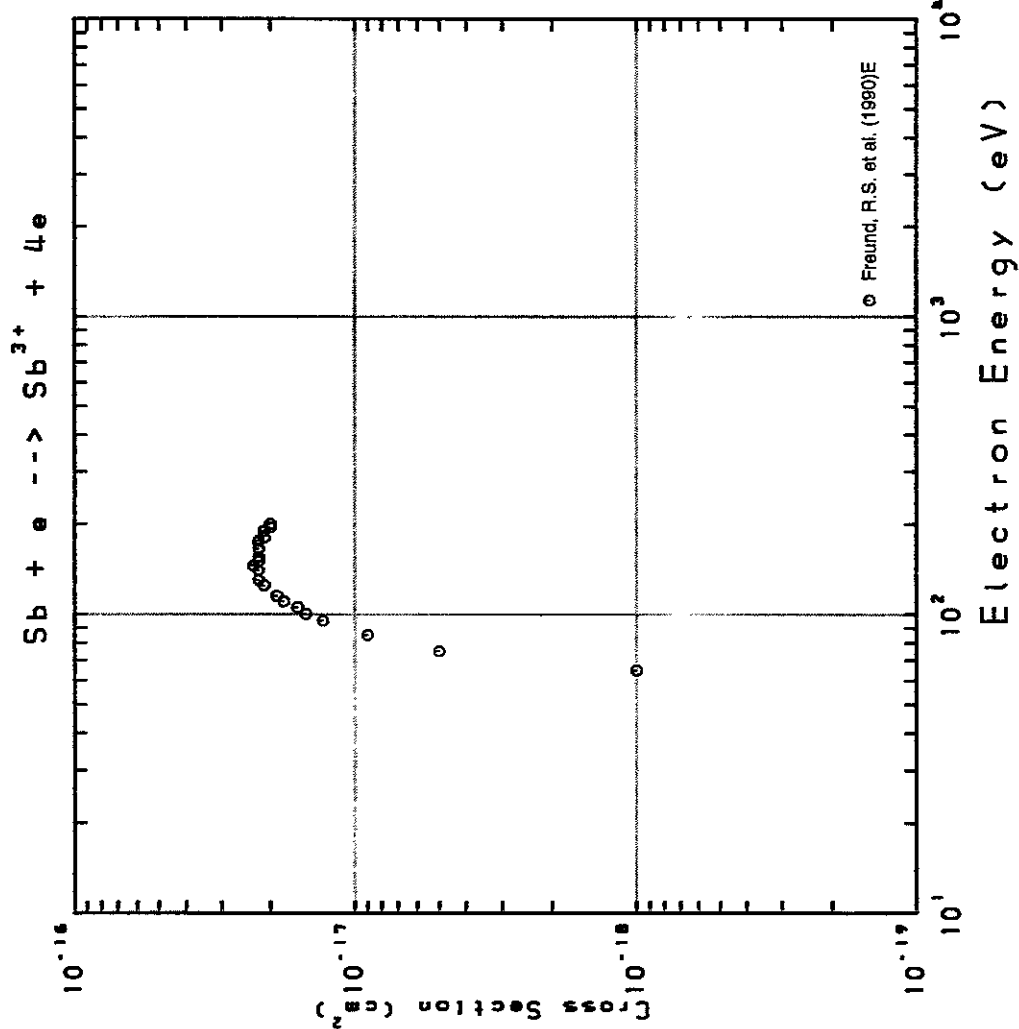


Fig. 333 $Sb \rightarrow Sb^{3+}$

AMDIS-ION

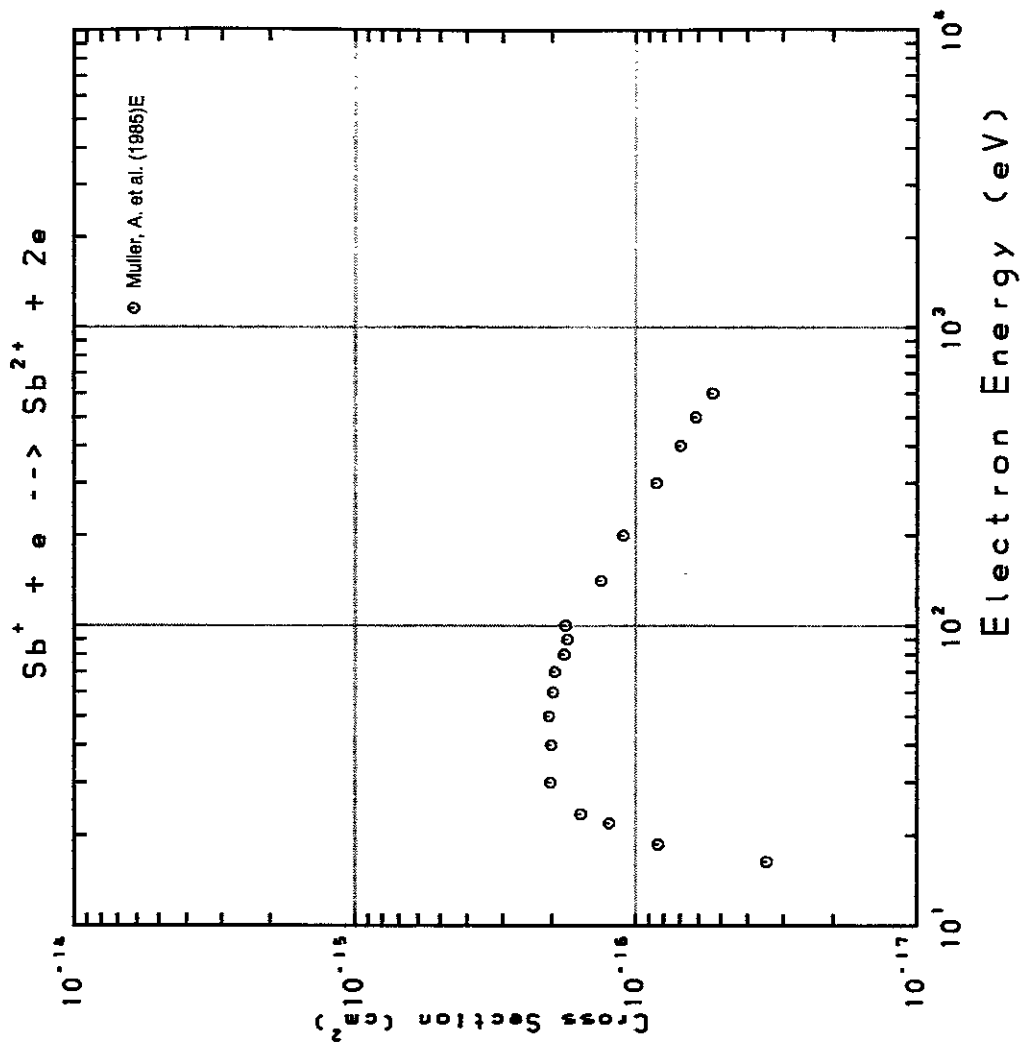


Fig. 334 $Sb^+ \rightarrow Sb^{2+}$

AMDIS-ION

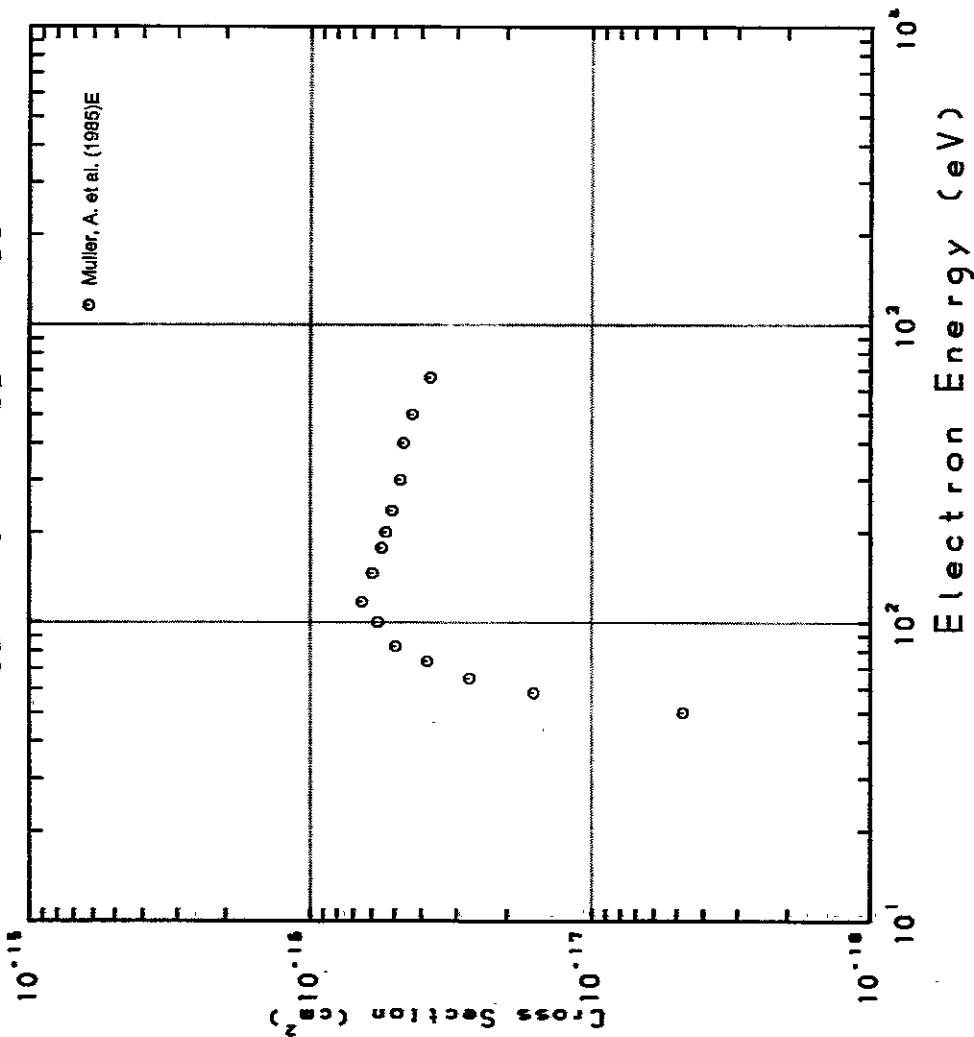


Fig. 335 $\text{Sb}^+ \rightarrow \text{Sb}^{3+}$

AMDIS-ION

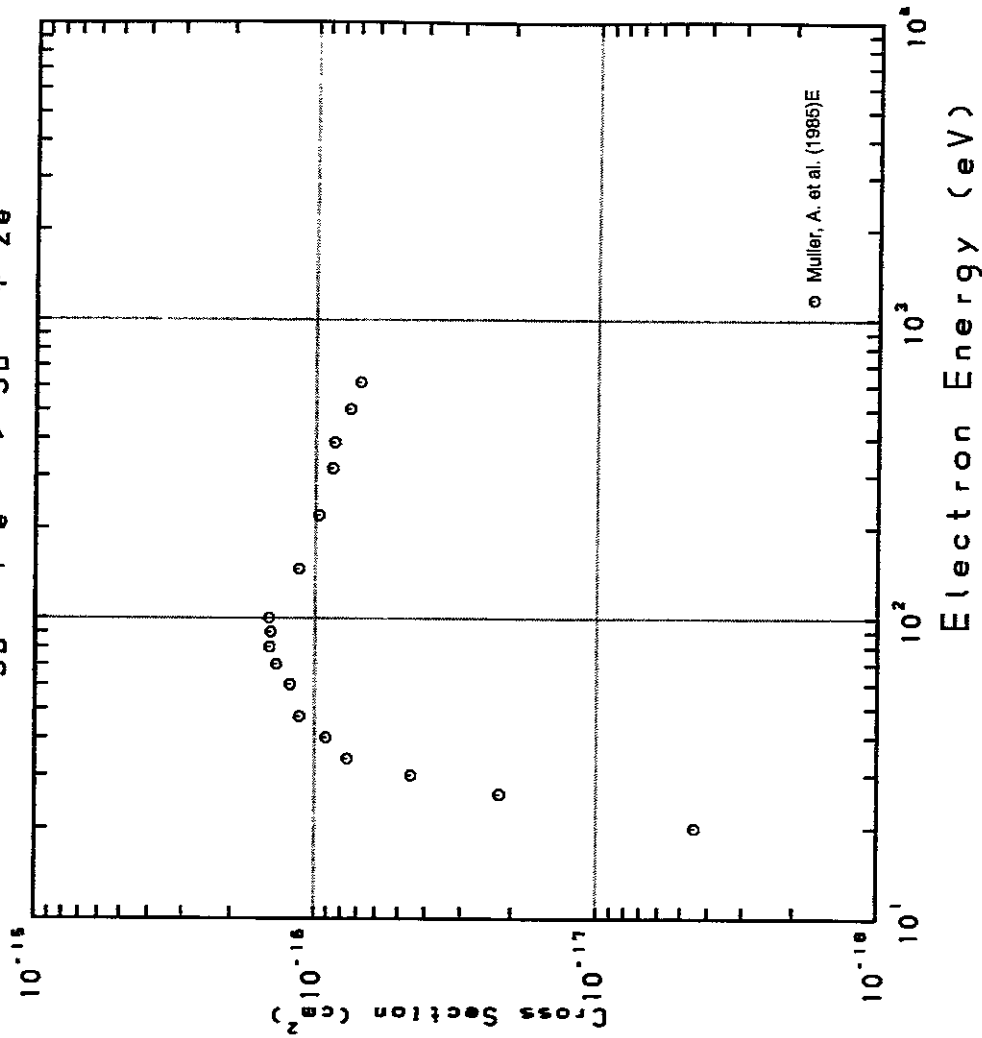


Fig. 336 $\text{Sb}^{2+} \rightarrow \text{Sb}^{3+}$

AMDIS-ION

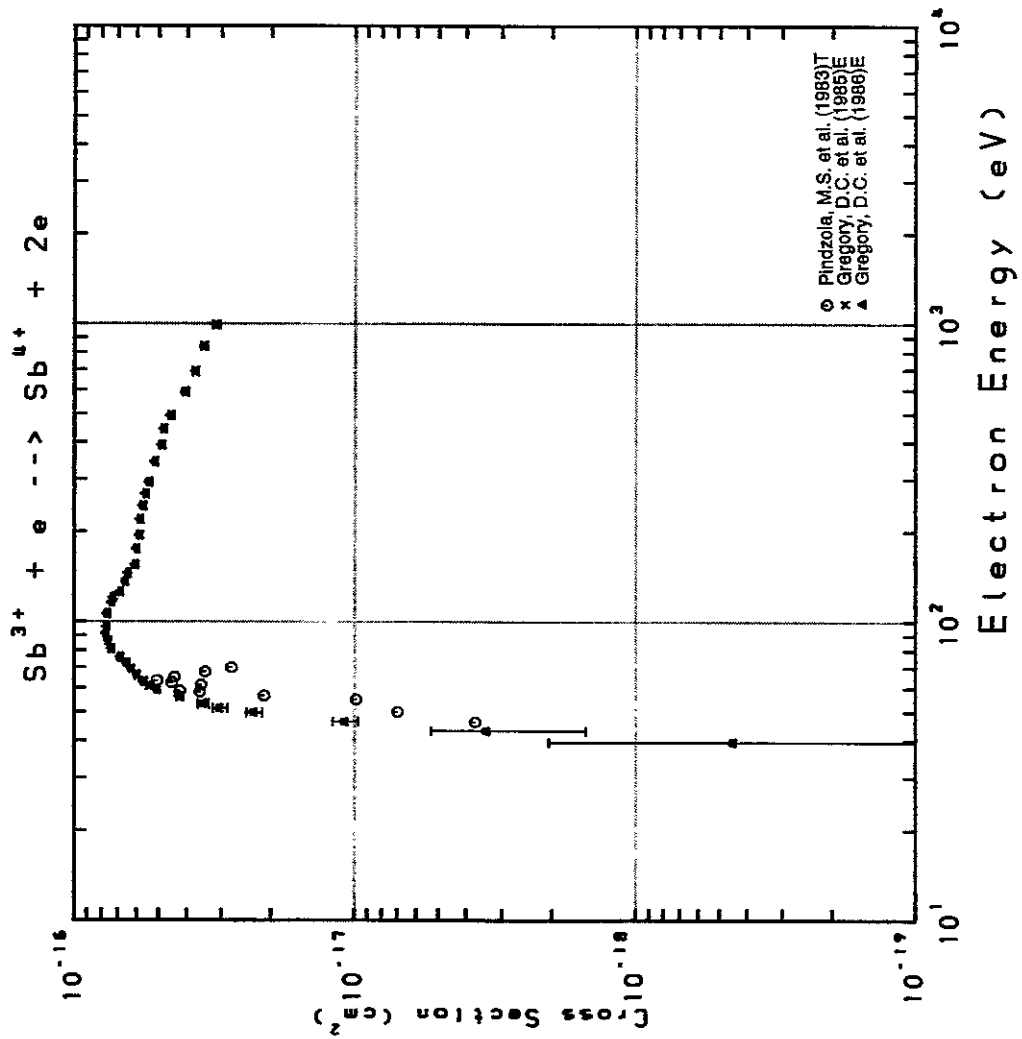


Fig. 337 $Sb^{3+} \rightarrow Sb^{4+}$

AMDIS-ION

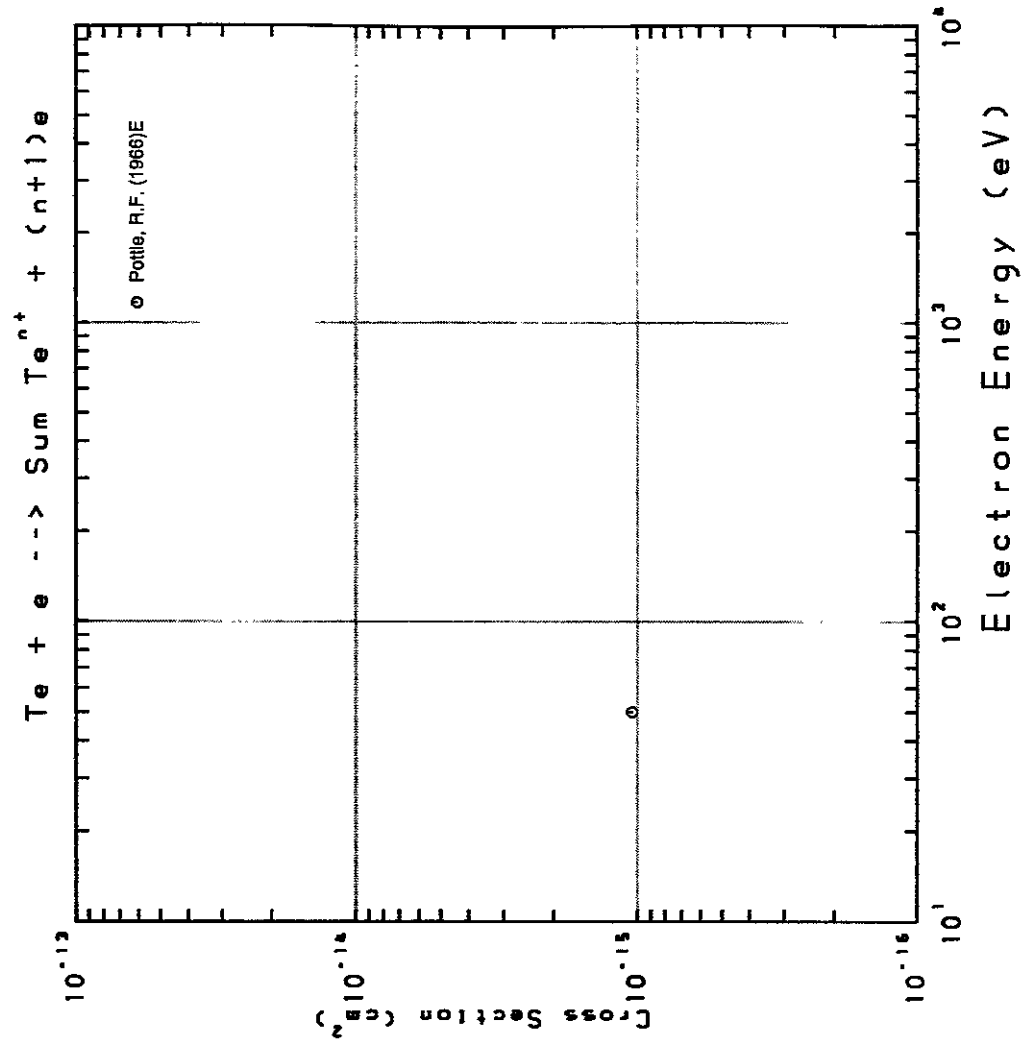


Fig. 338 $Te \rightarrow \Sigma Te^{n+}$

AMDIS-ION

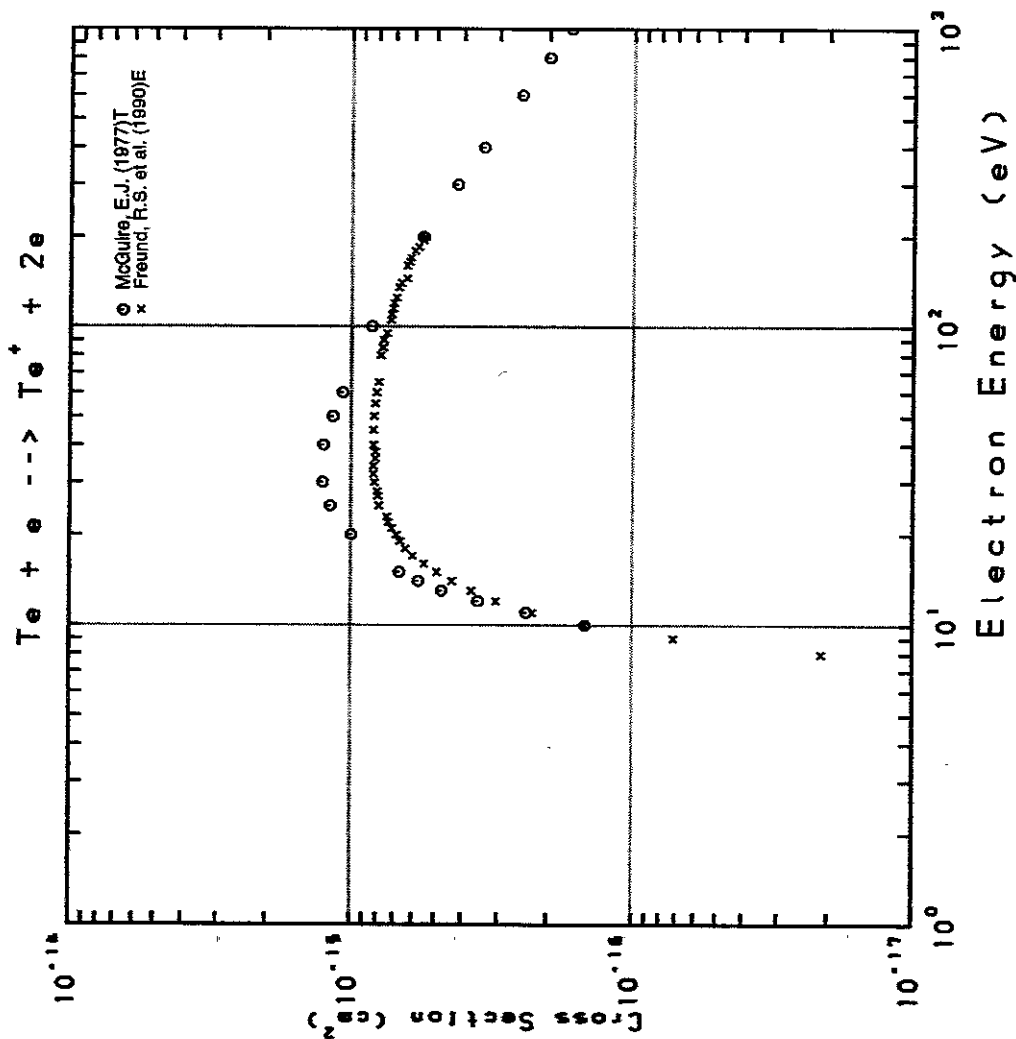


Fig. 339 Te \rightarrow Te⁺

AMDIS-ION

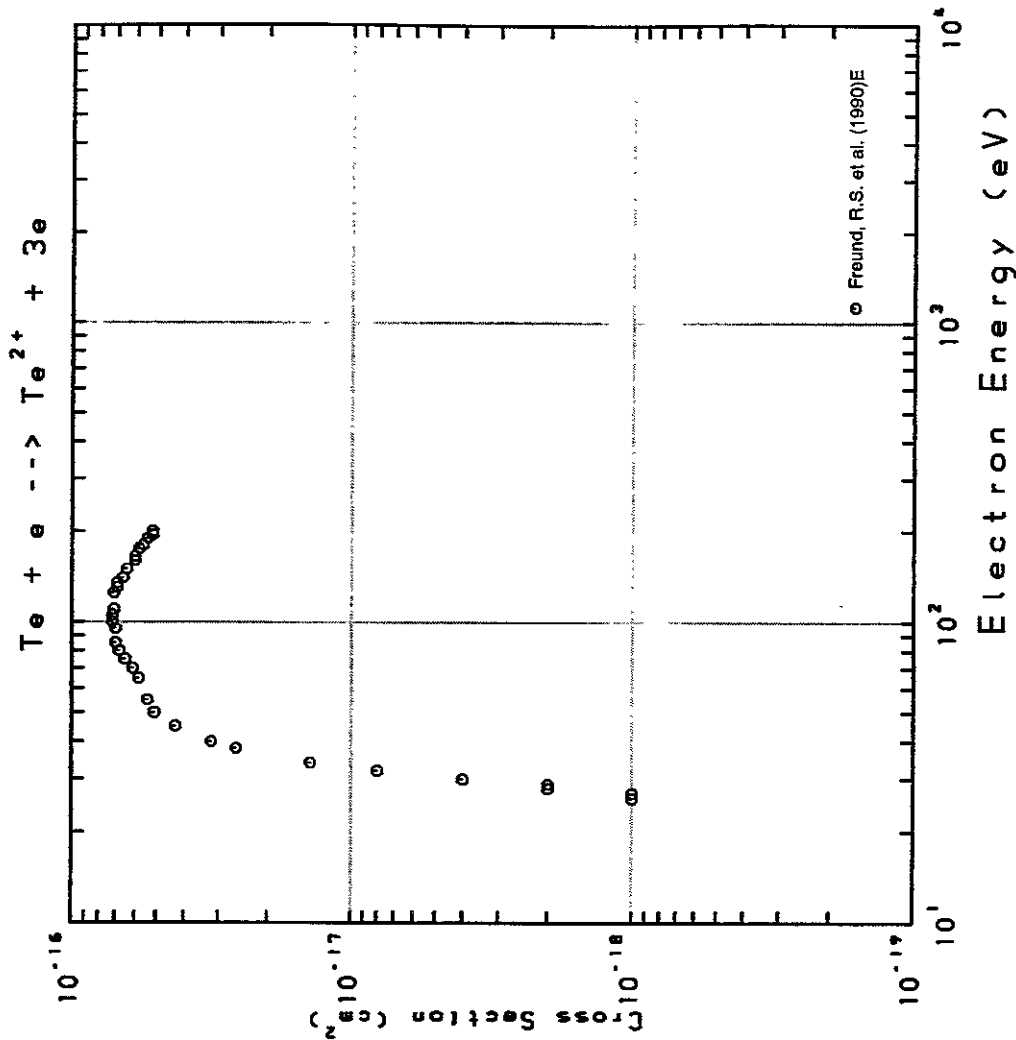


Fig. 340 Te \rightarrow Te²⁺

AMDIS-ION

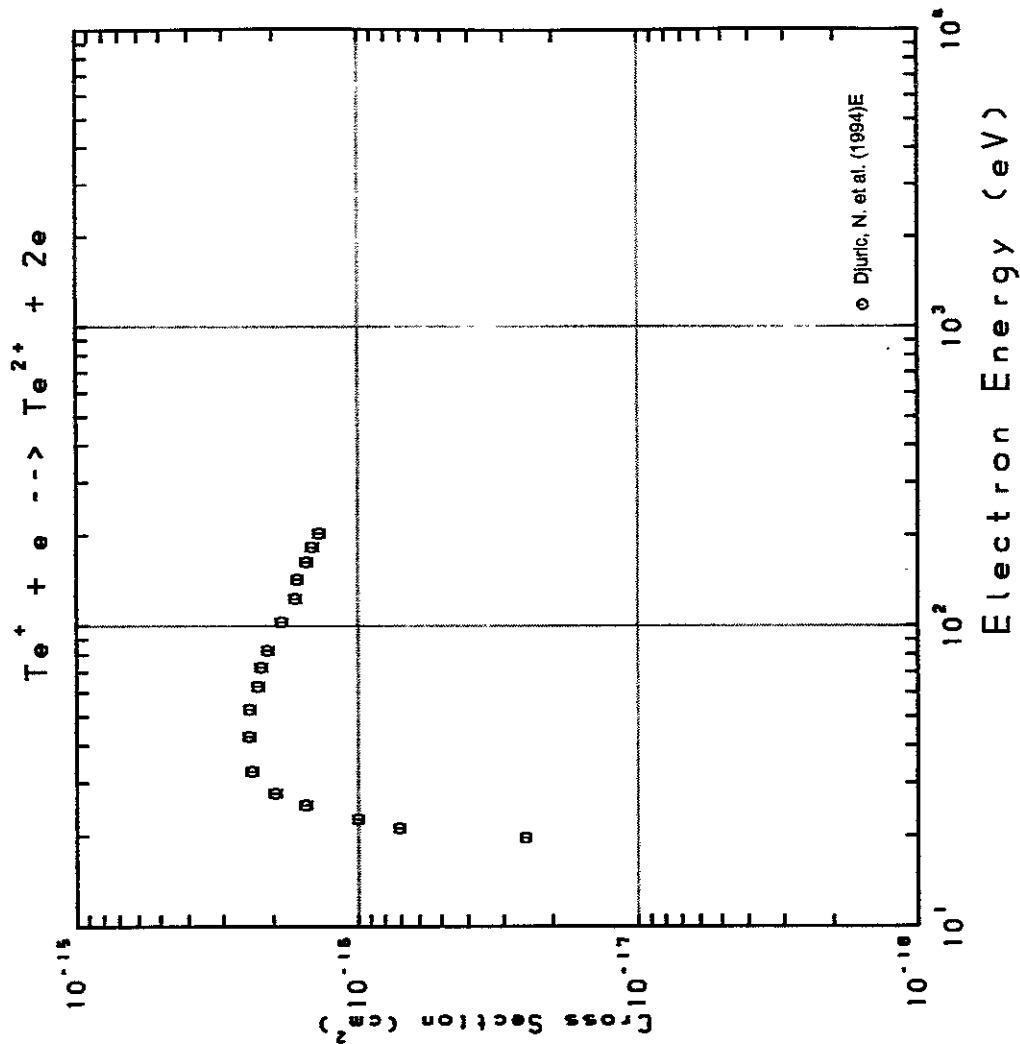


Fig. 342 $\text{Te}^+ \rightarrow \text{Te}^{2+}$

AMDIS-ION

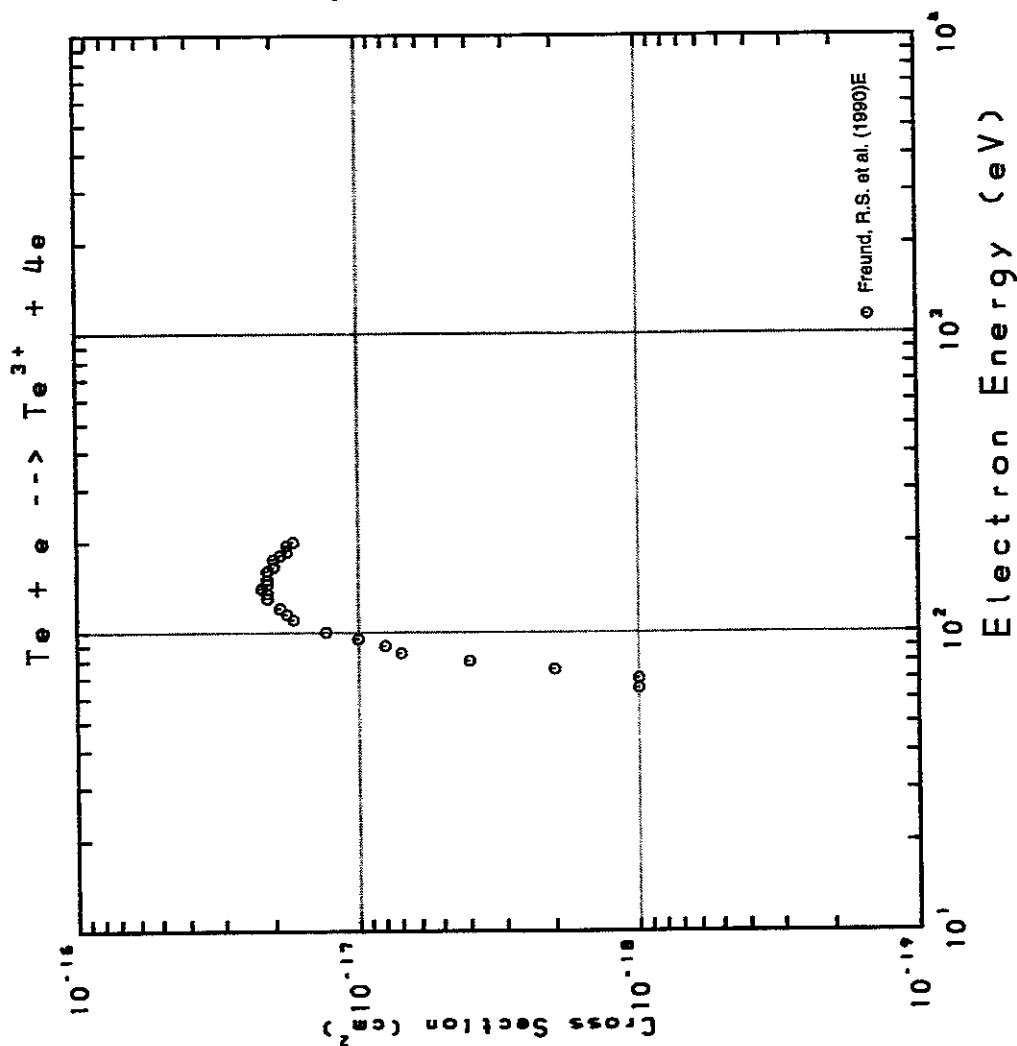


Fig. 341 $\text{Te} \rightarrow \text{Te}^{3+}$

AMDIS-ION

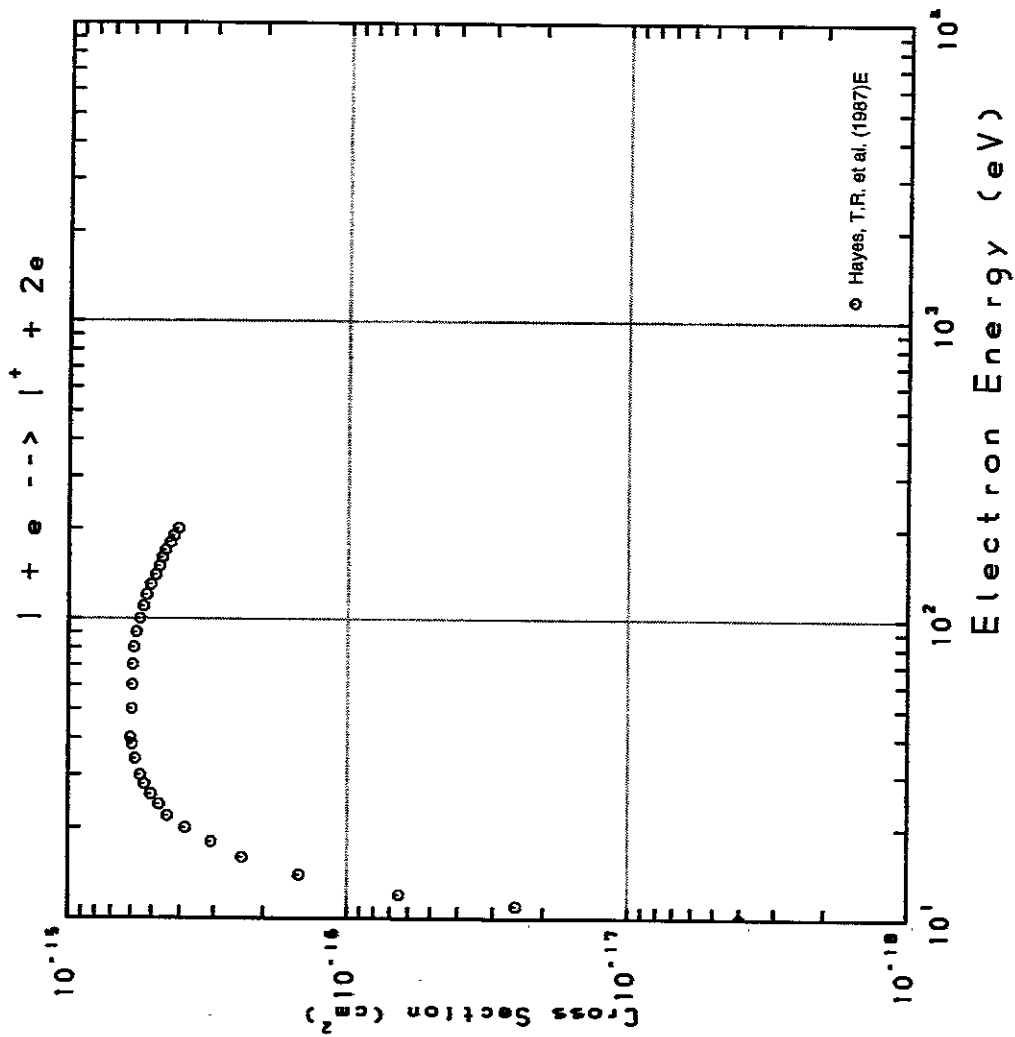


Fig. 343 I \rightarrow I⁺

AMDIS-ION

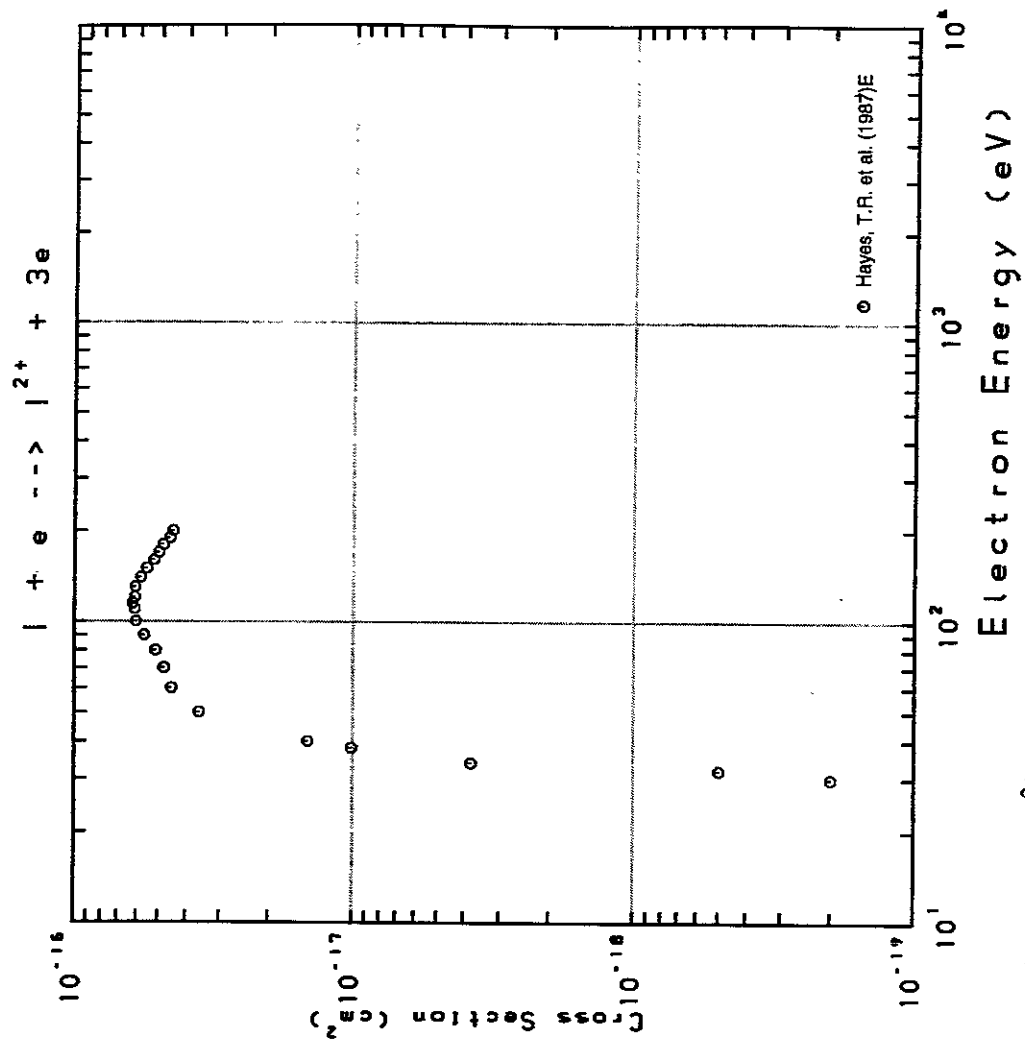


Fig. 344 I \rightarrow I²⁺

AMDIS-ION

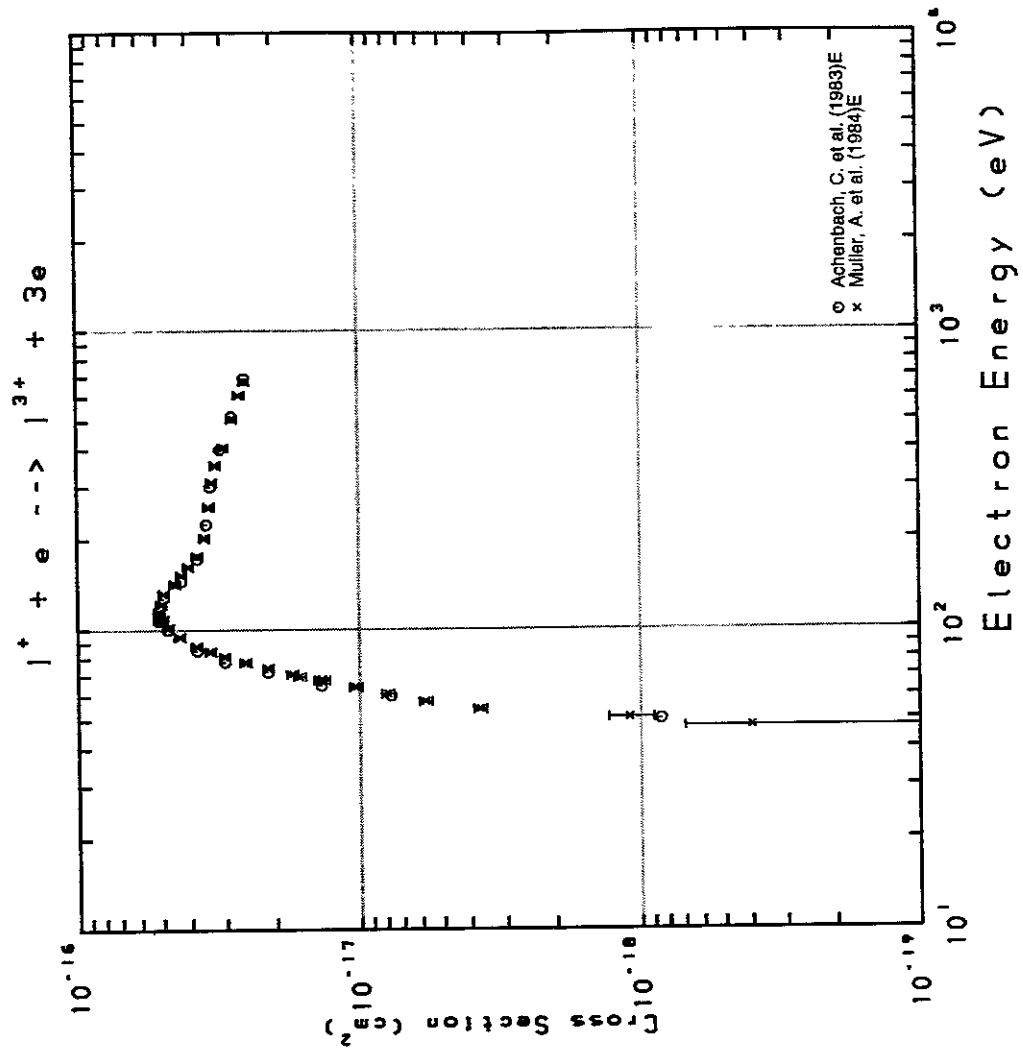


Fig. 346 $\text{I}^+ \rightarrow \text{I}^{3+}$

AMDIS-ION

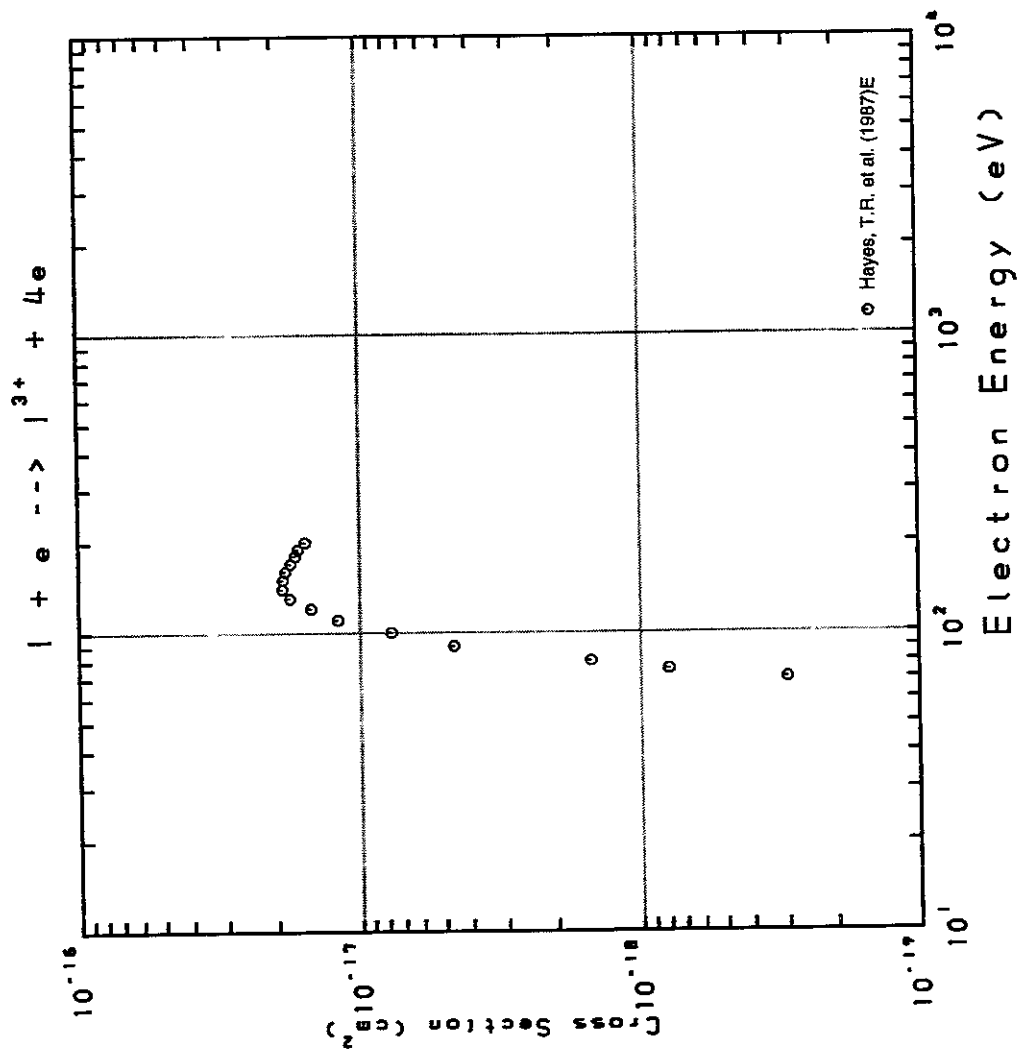


Fig. 345 $\text{I} \rightarrow \text{I}^{3+}$

AMDIS-ION

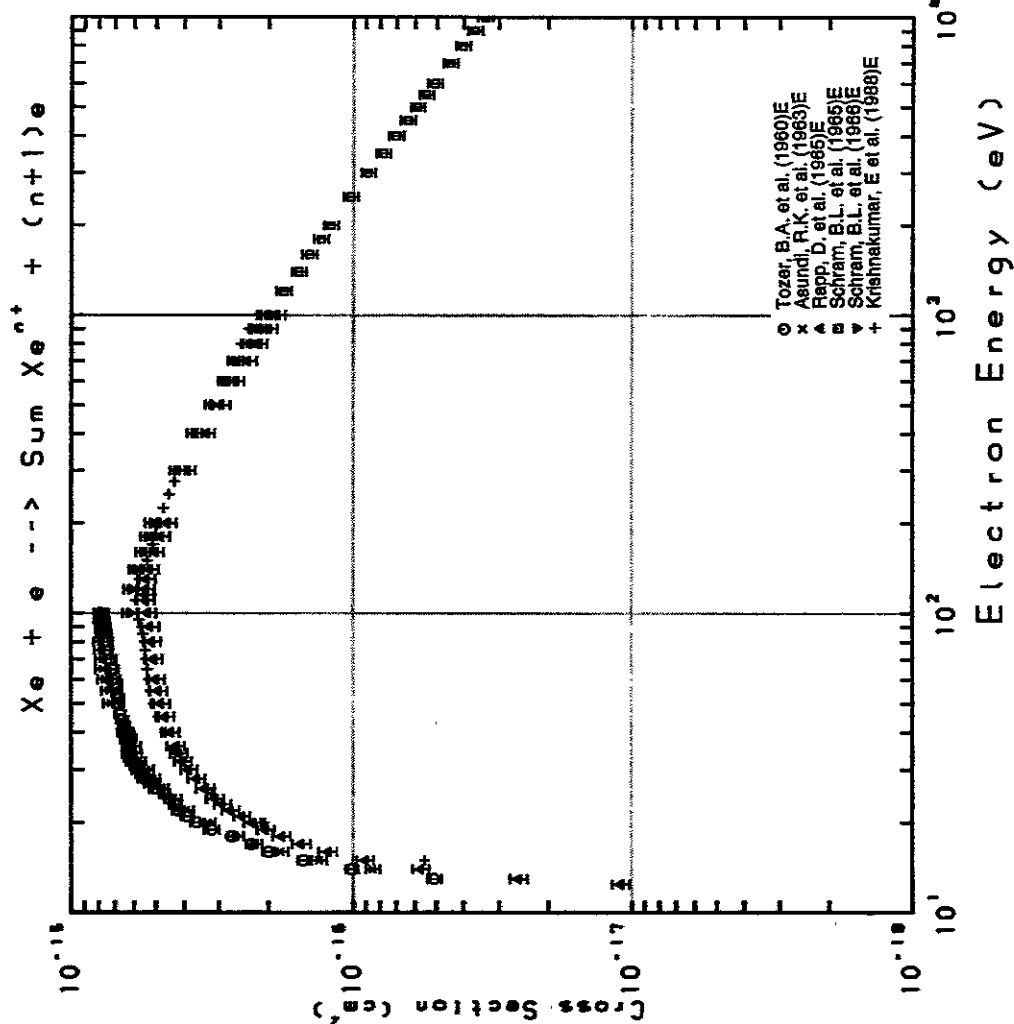


Fig. 347 $\text{Xe} \rightarrow \Sigma \text{Xe}^{n+}$

AMDIS-ION

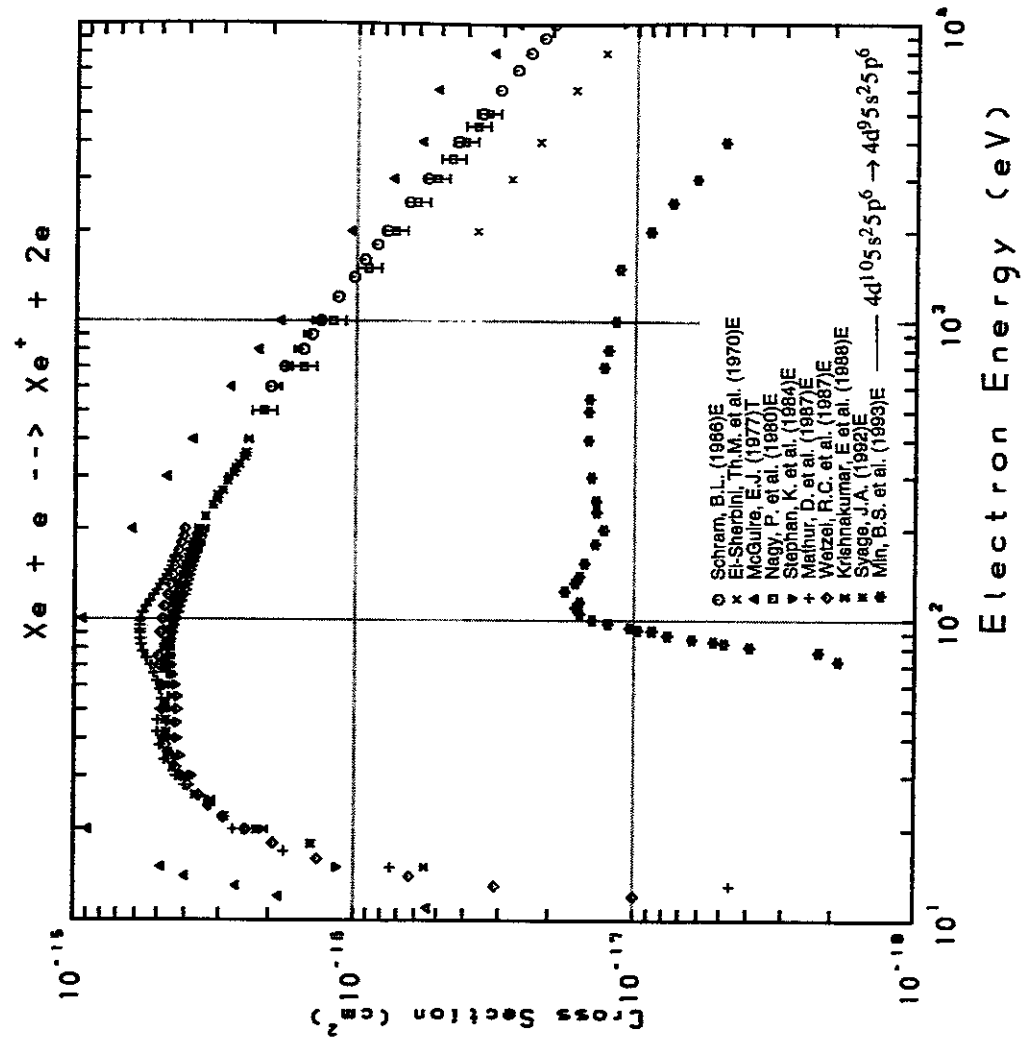


Fig. 348 $\text{Xe} \rightarrow \text{Xe}^+$

AMDIS-ION

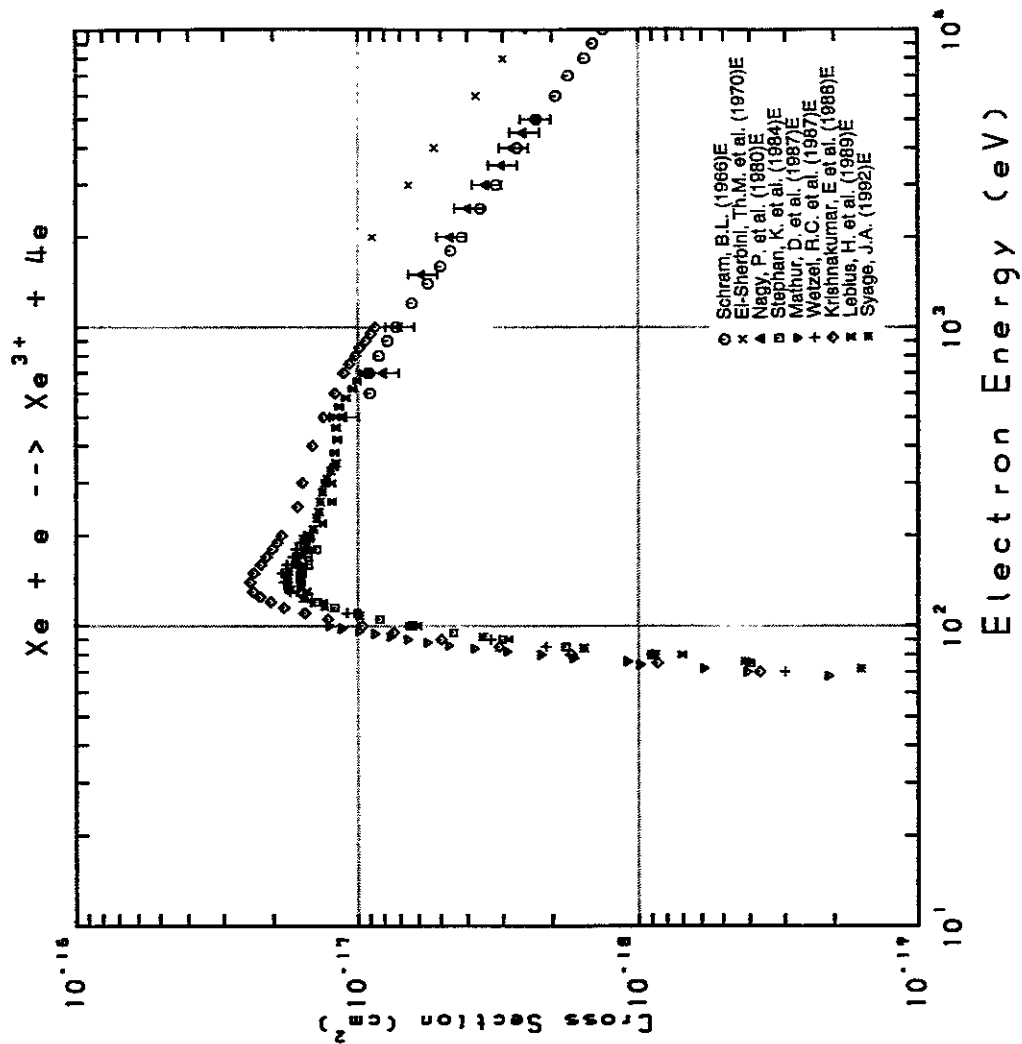


Fig. 350 $\text{Xe} \rightarrow \text{Xe}^{3+}$

AMDIS-ION

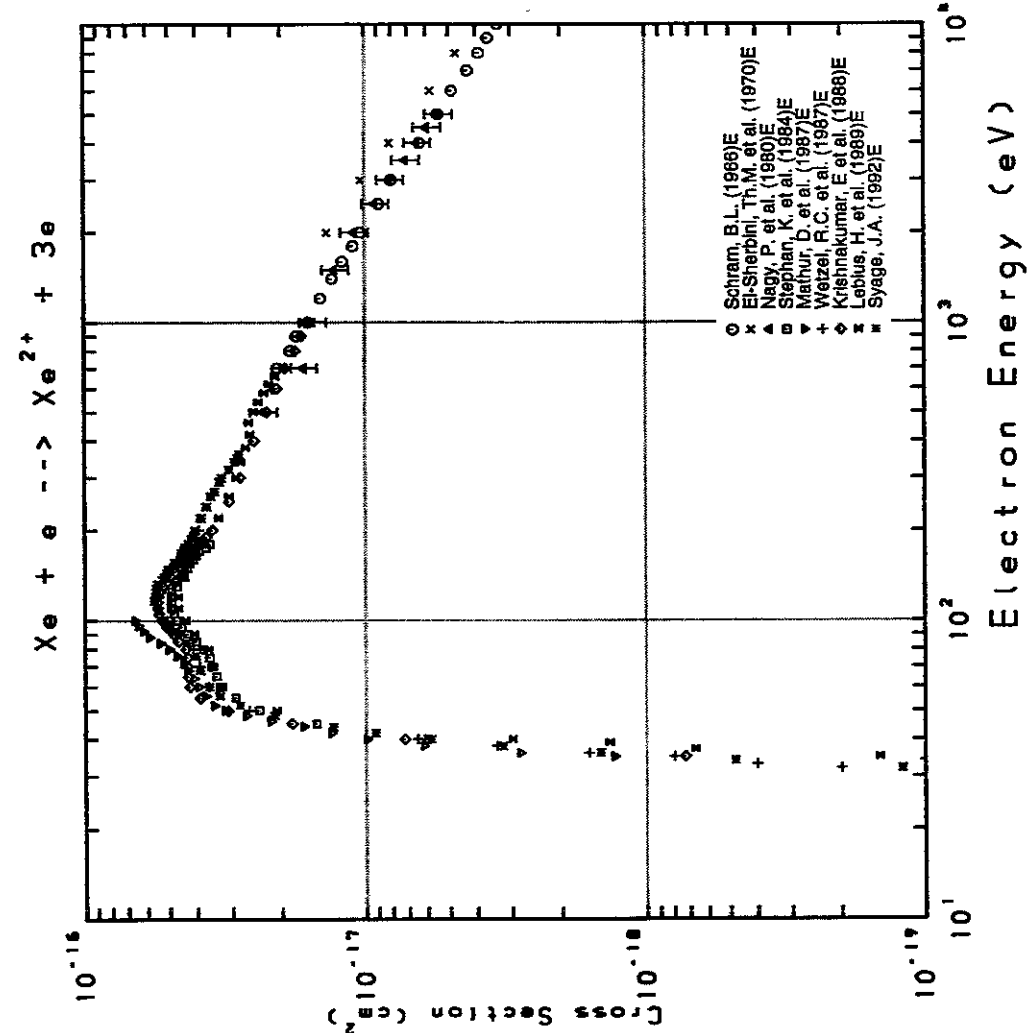


Fig. 349 $\text{Xe} \rightarrow \text{Xe}^{2+}$

AMDIS-ION

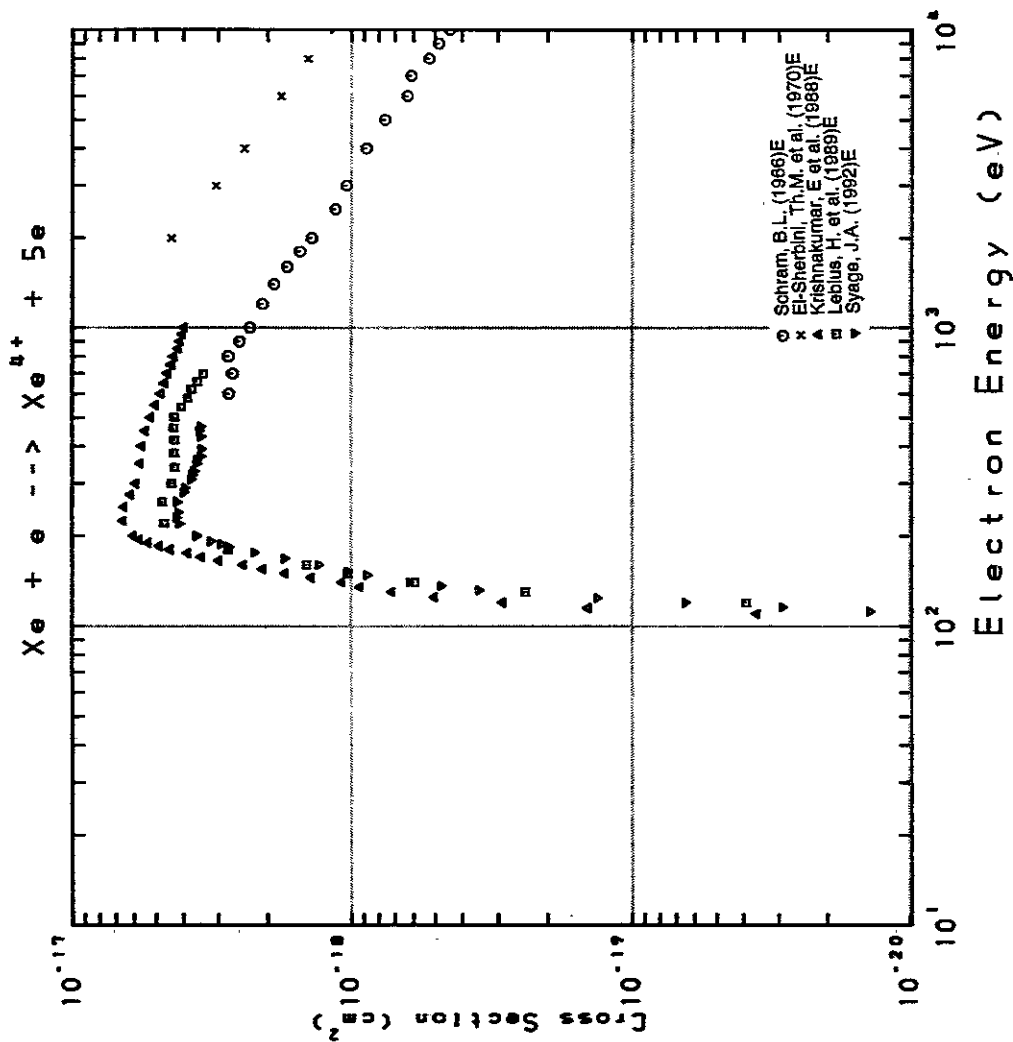


Fig. 351 Xe \rightarrow Xe⁴⁺

AMDIS-ION

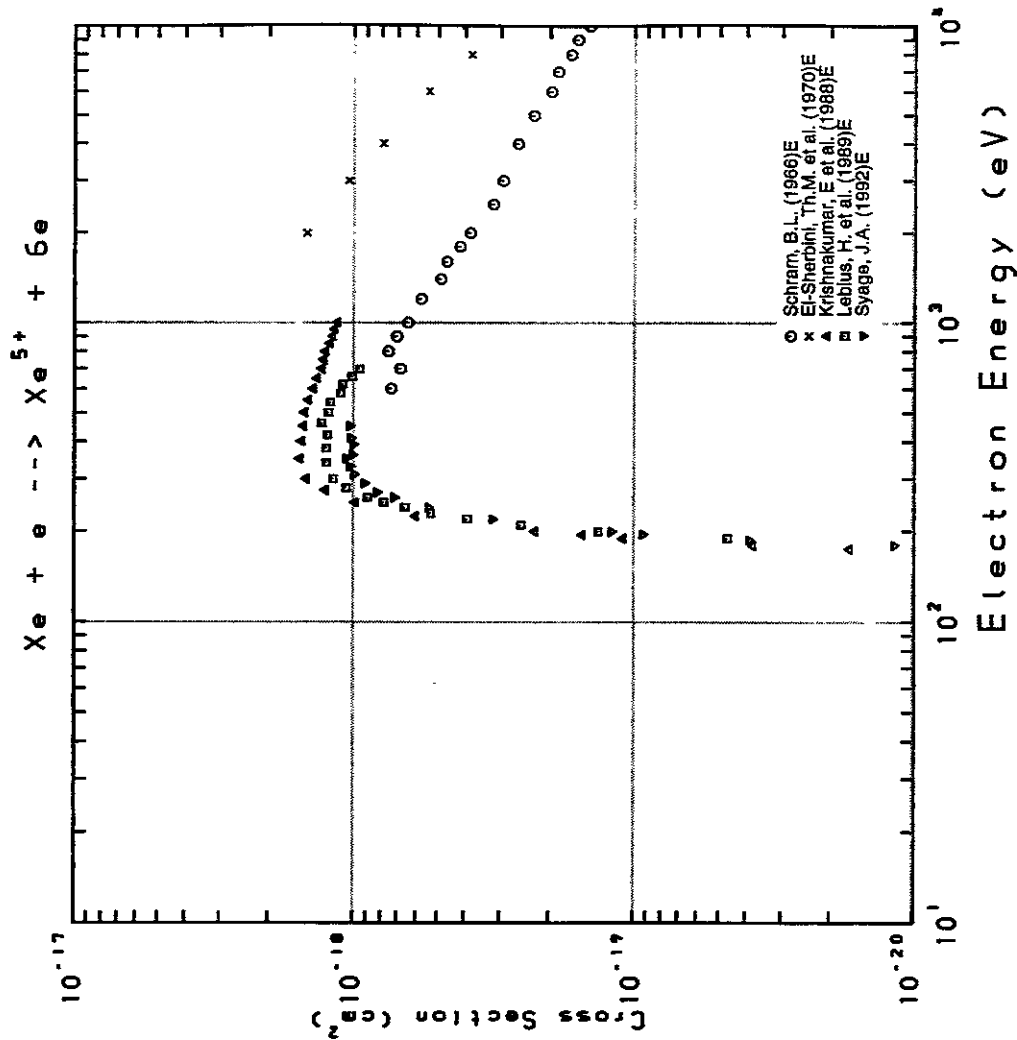


Fig. 352 Xe \rightarrow Xe⁵⁺

AMDIS-ION

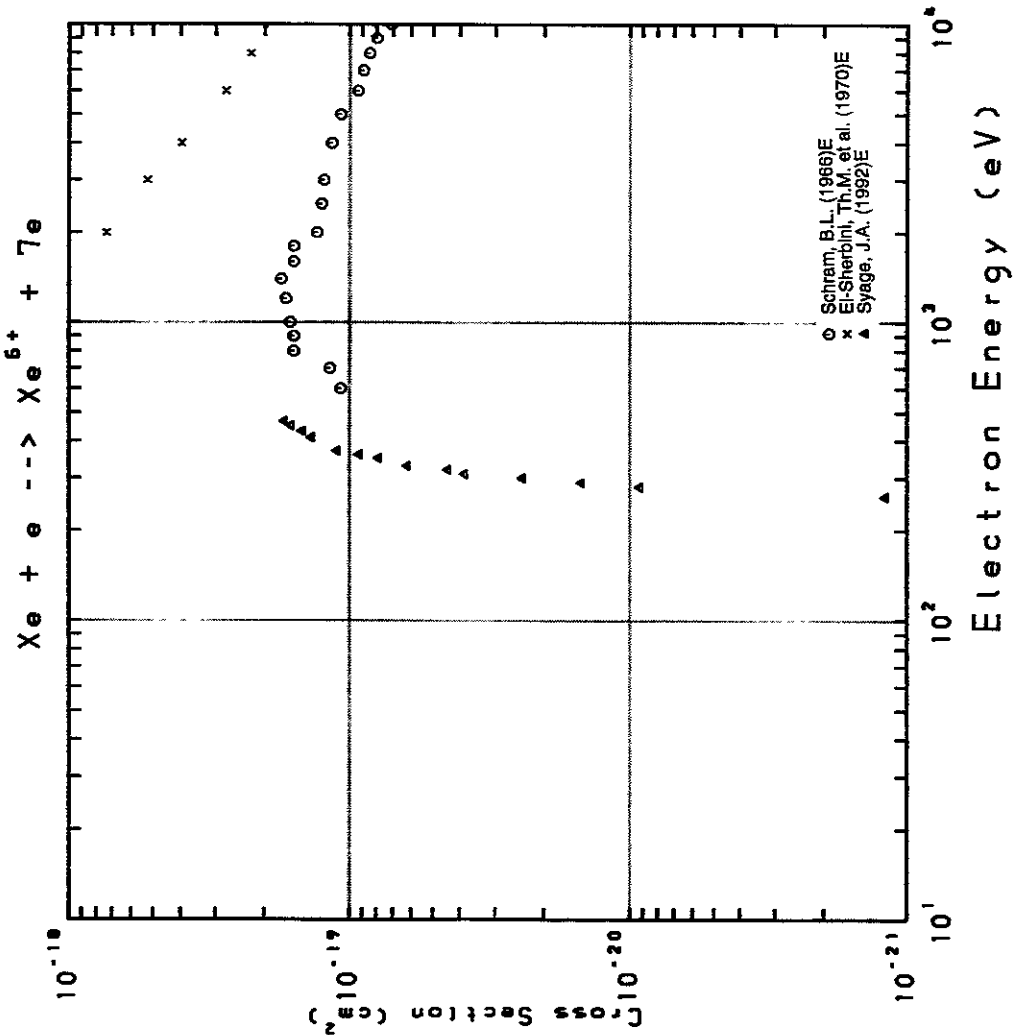


Fig. 353 Xe \rightarrow Xe⁶⁺

AMDIS-ION

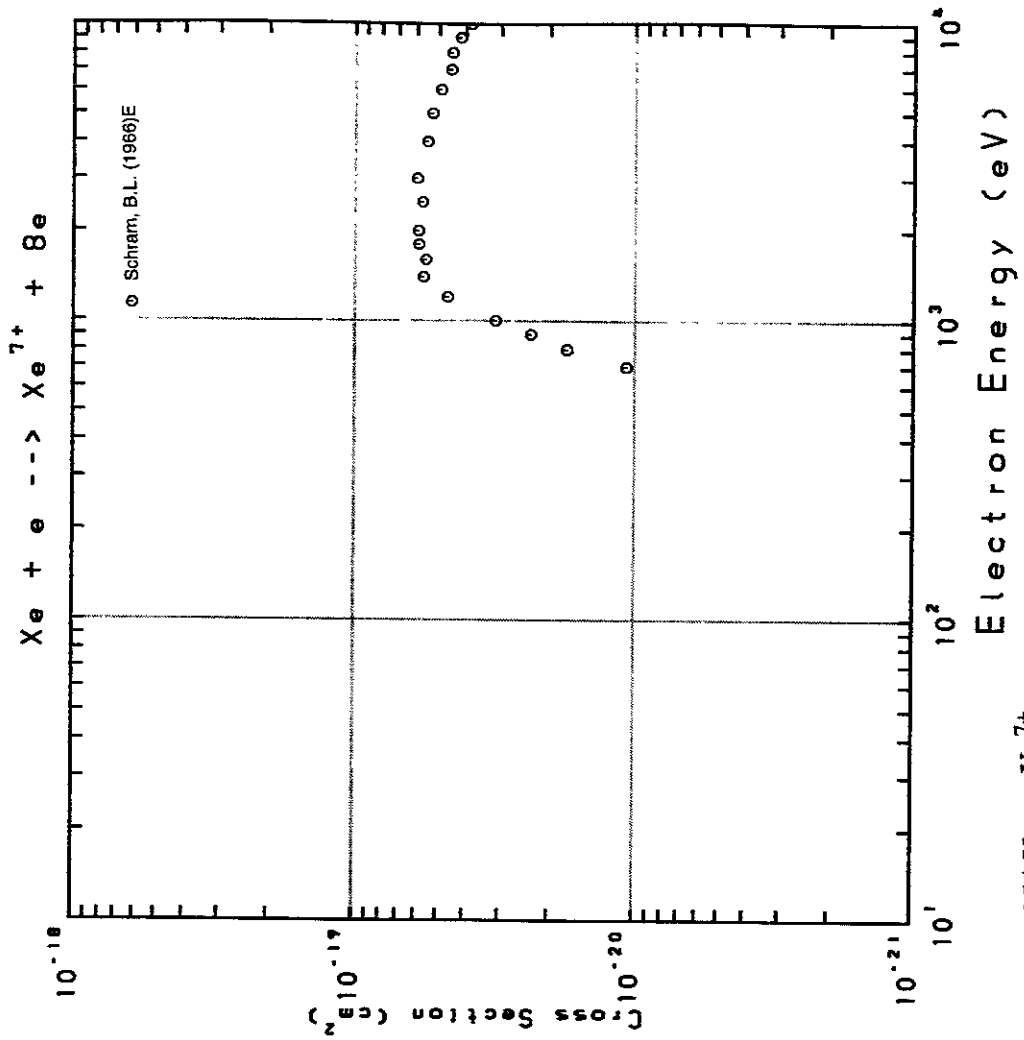


Fig. 354 Xe \rightarrow Xe⁷⁺

AMDIS-ION

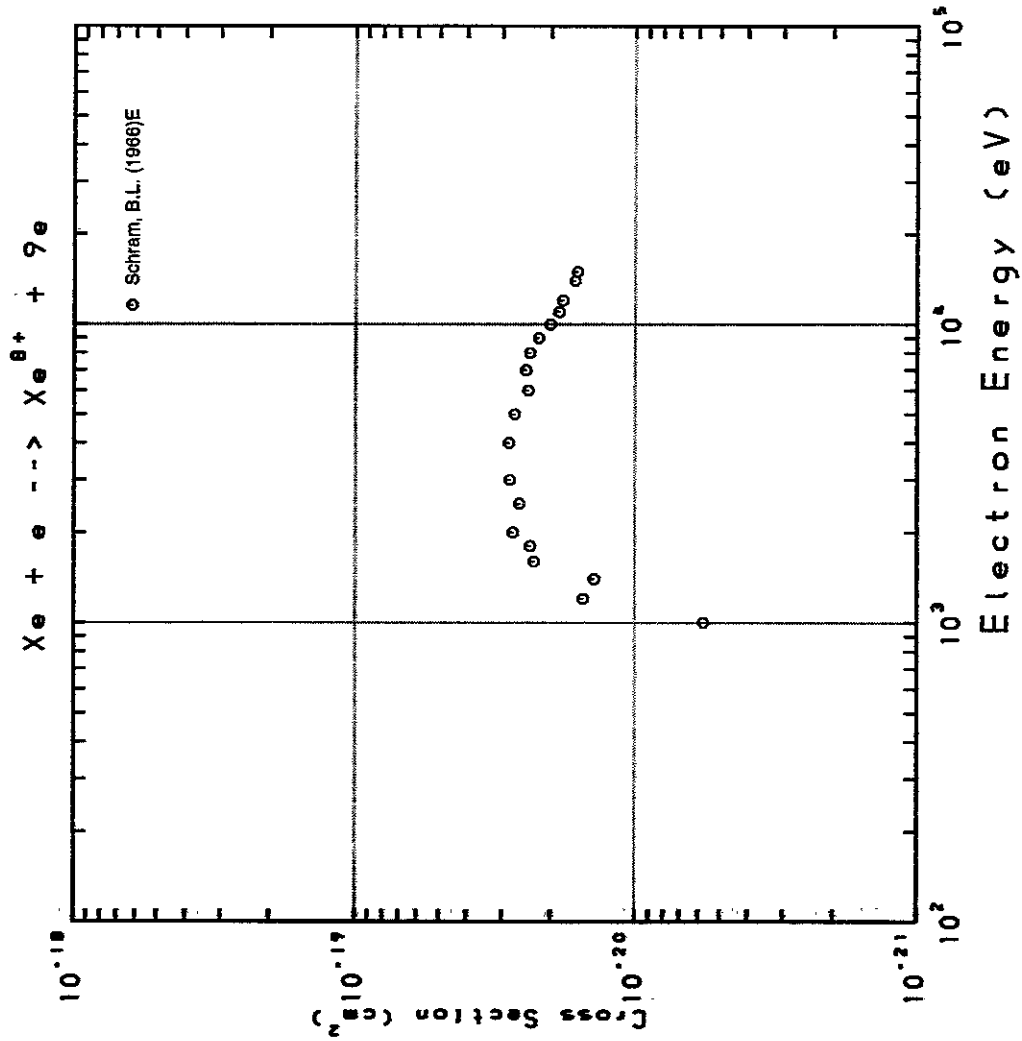


Fig. 355 $\text{Xe} \rightarrow \text{Xe}^{8+}$

AMDIS-ION

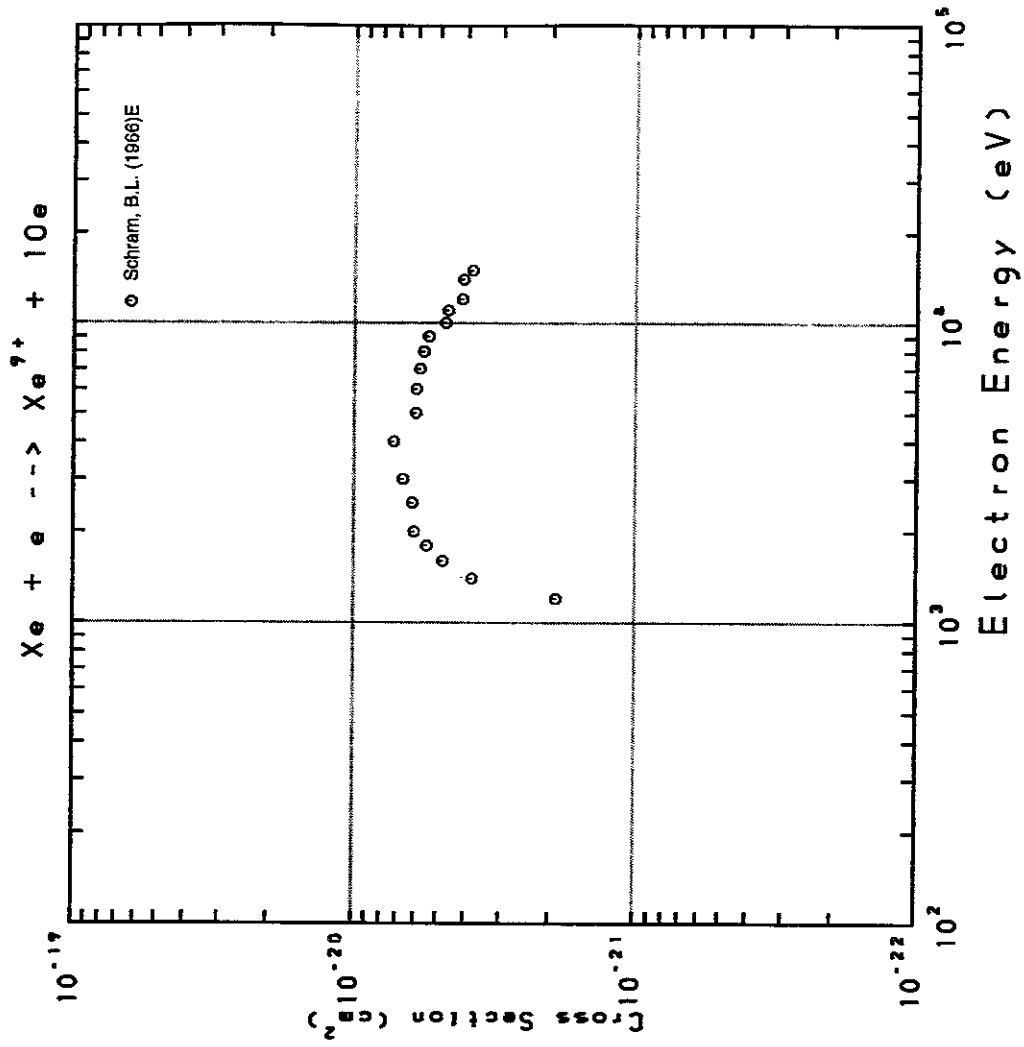


Fig. 356 $\text{Xe} \rightarrow \text{Xe}^{9+}$

AMDIS-ION

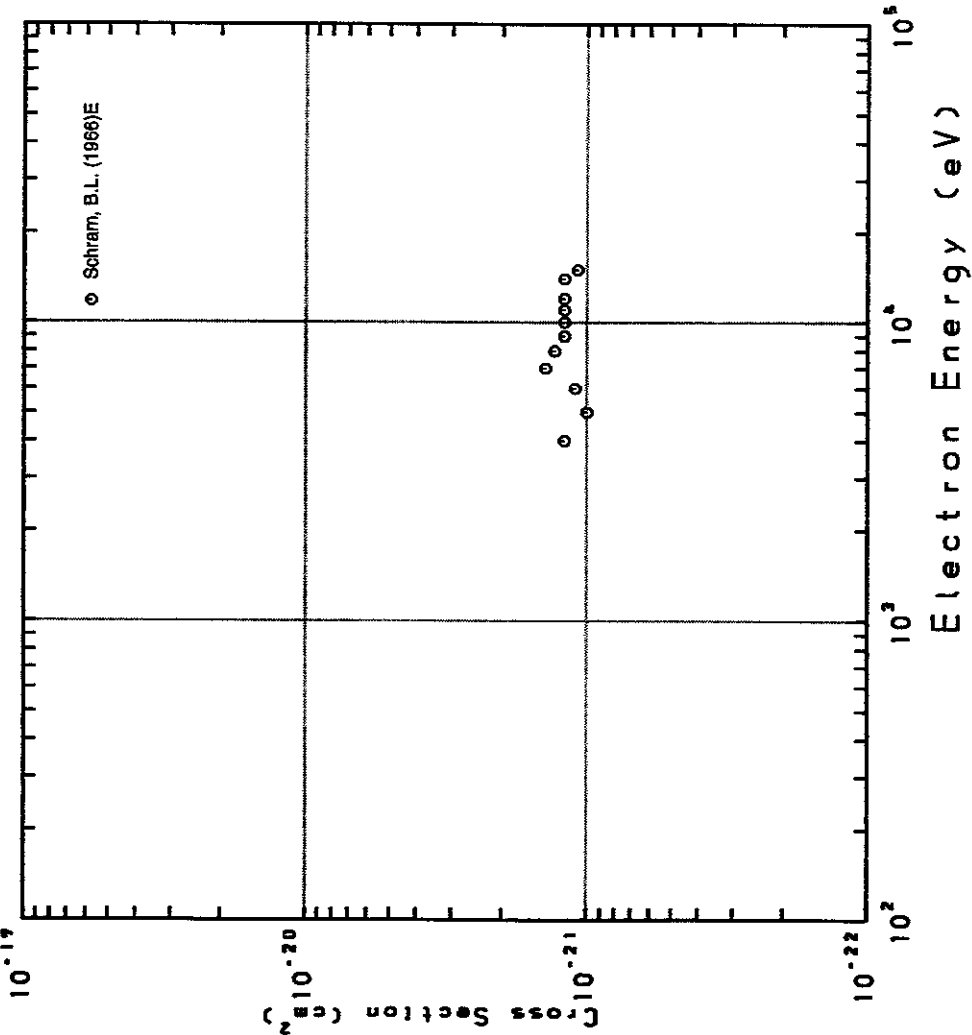


Fig. 357 $\text{Xe} \rightarrow \text{Xe}^{10+}$

AMDIS-ION

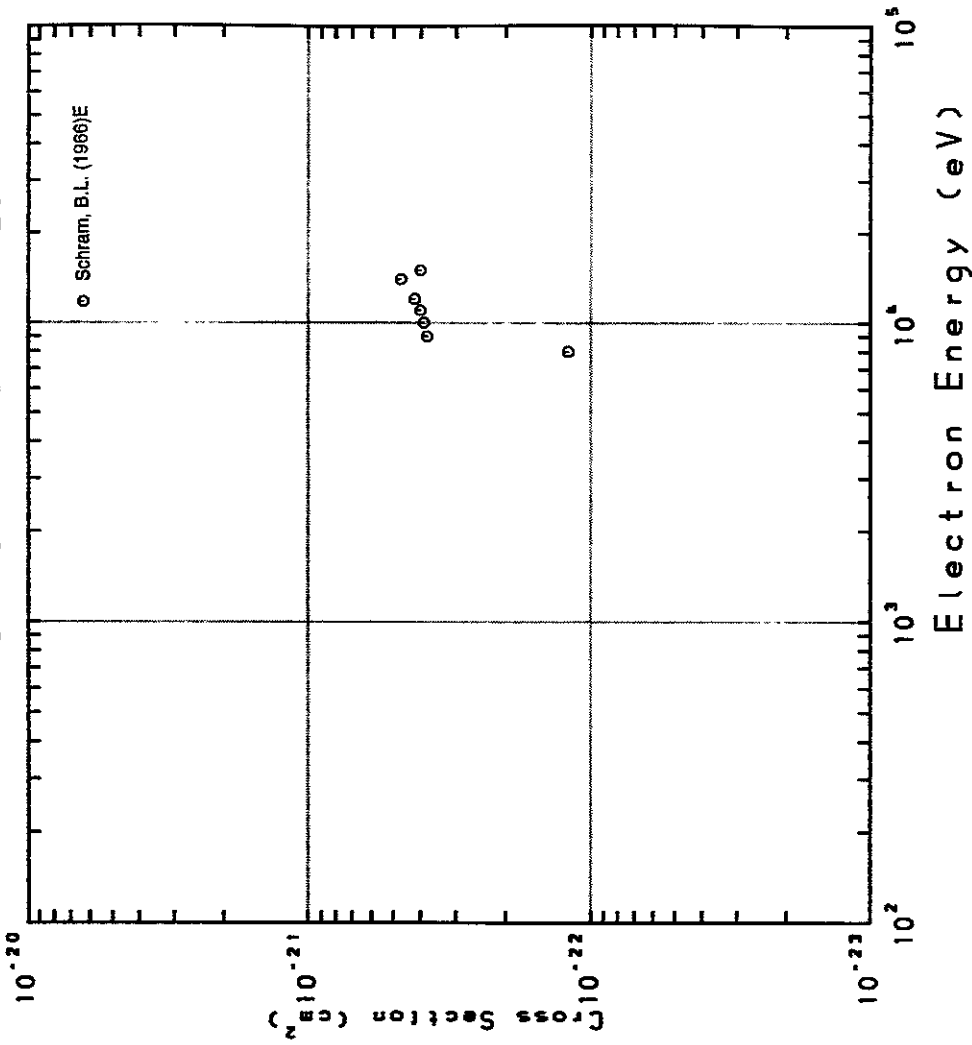
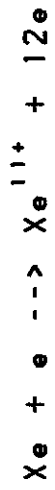


Fig. 358 $\text{Xe} \rightarrow \text{Xe}^{11+}$

AMDIS-ION

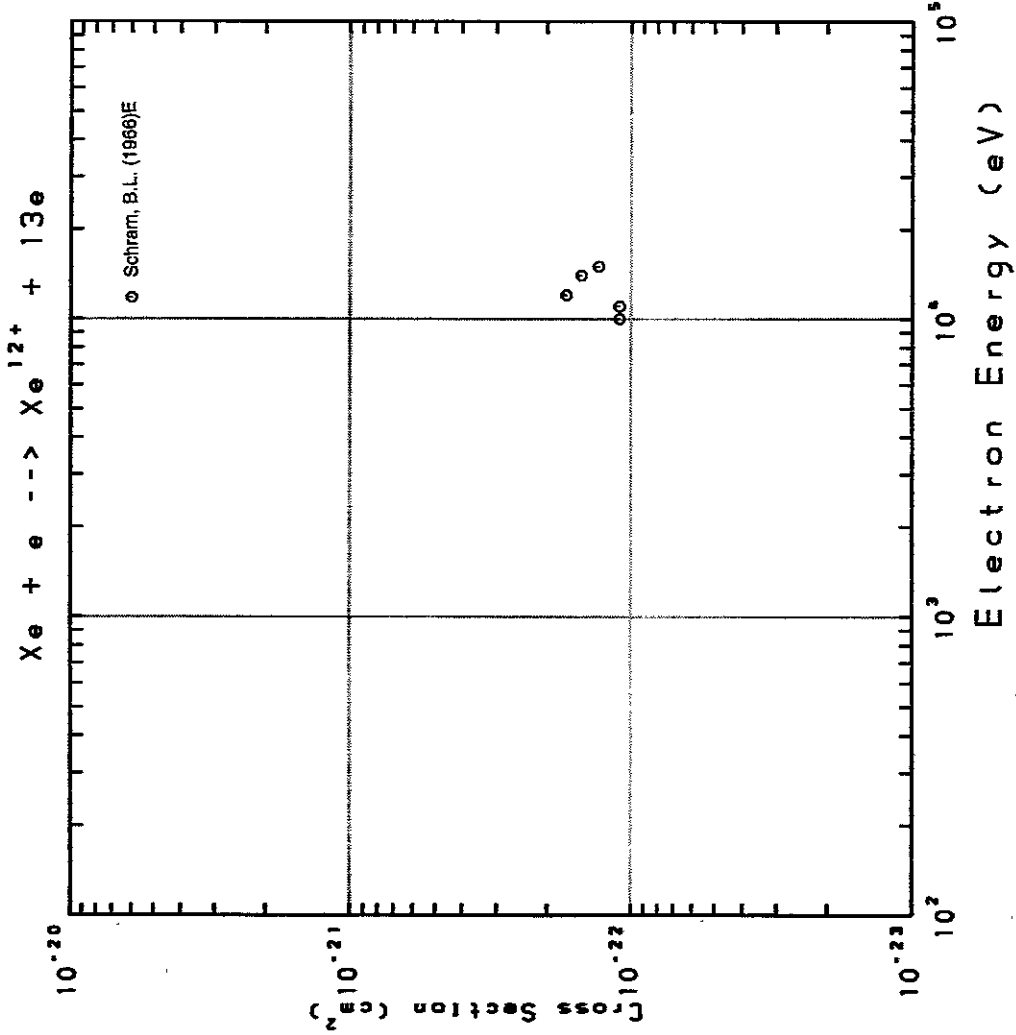


Fig. 359 Xe → Xe¹²⁺

AMDIS-ION

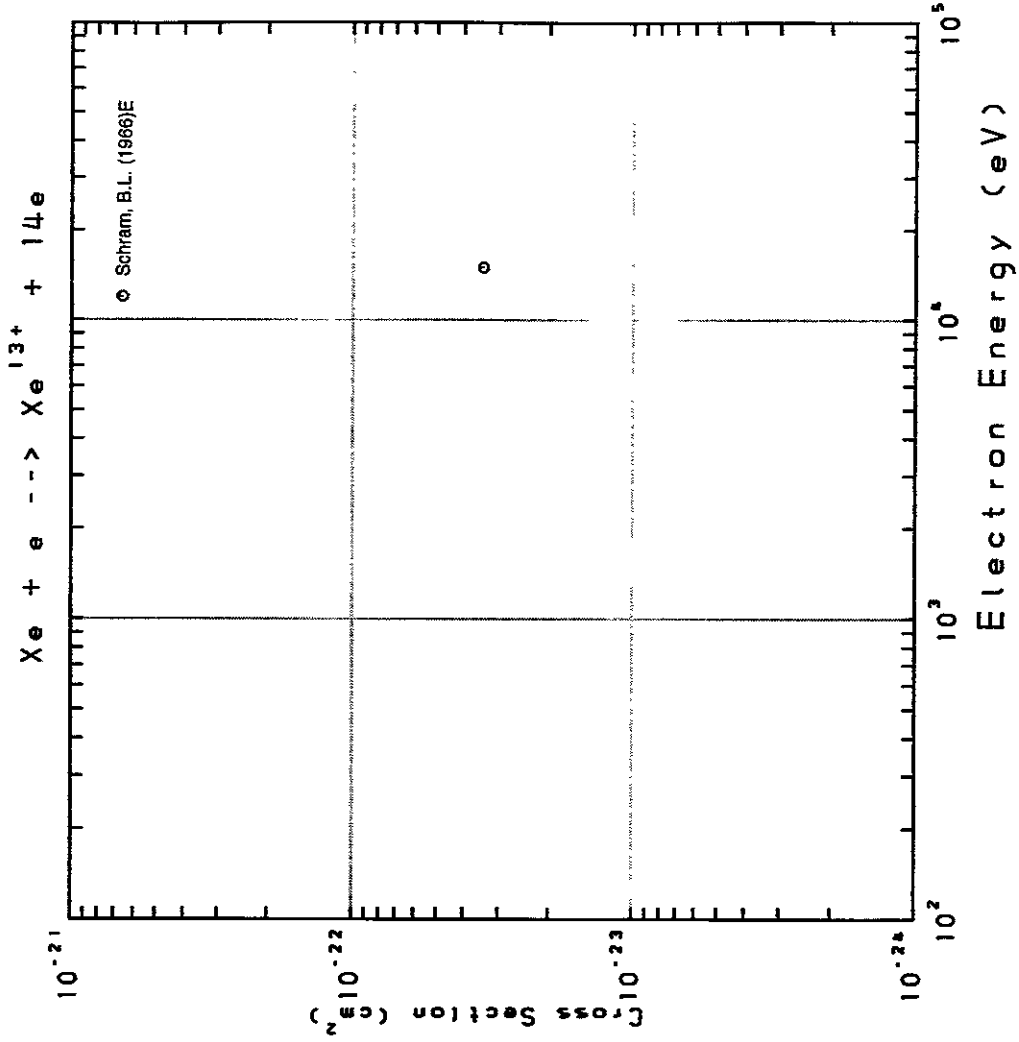
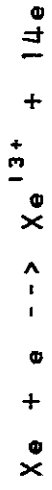


Fig. 360 Xe → Xe¹³⁺

AMDIS-ION

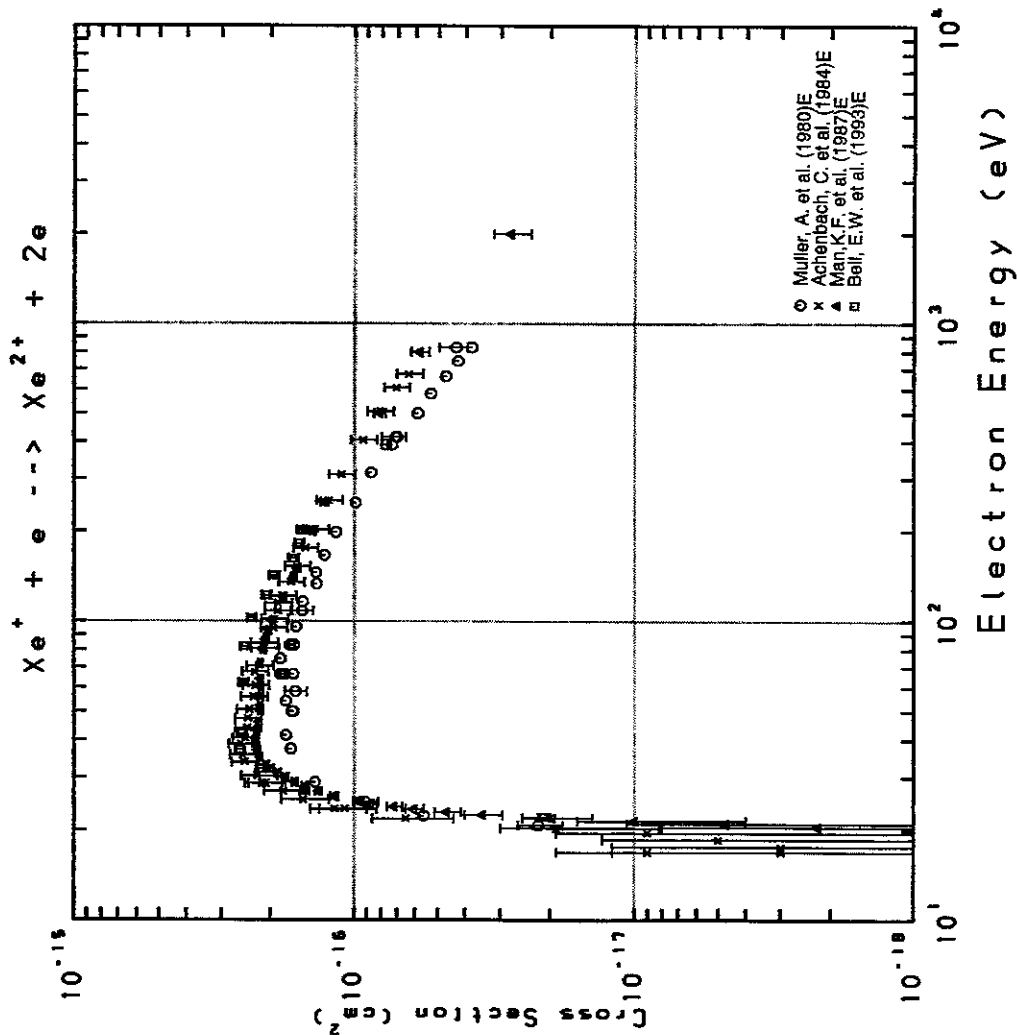


Fig. 361 $\text{Xe}^+ \rightarrow \text{Xe}^{2+}$

AMDIS-ION

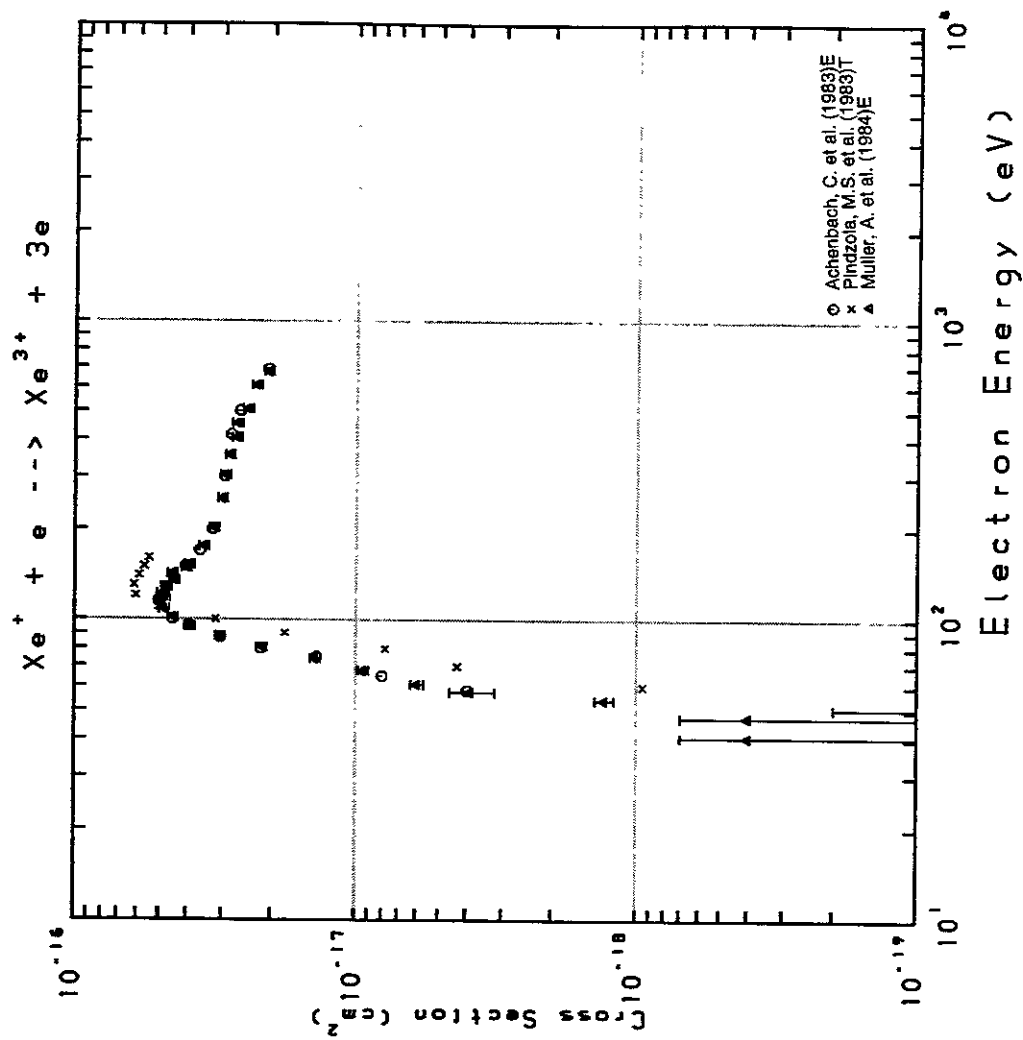


Fig. 362 $\text{Xe}^+ \rightarrow \text{Xe}^{3+}$

AMDIS-ION

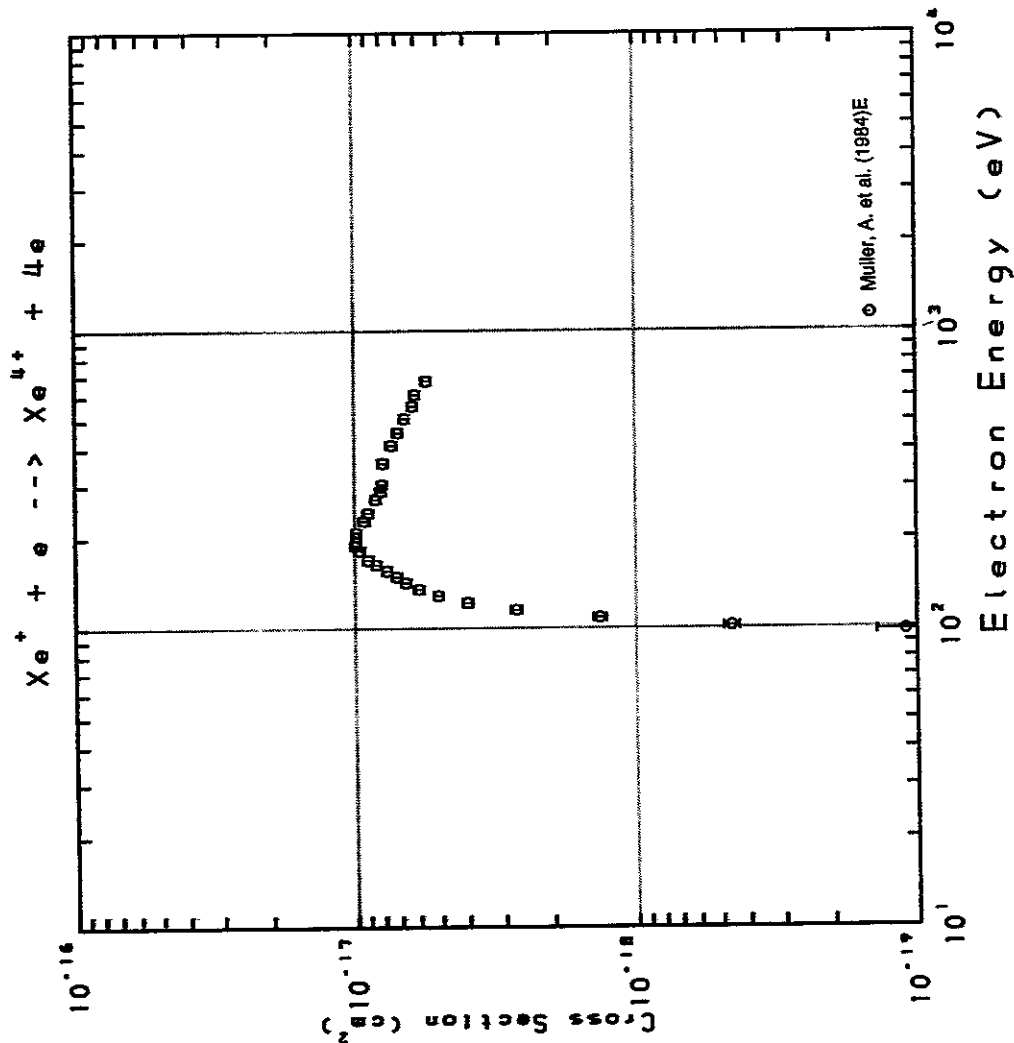


Fig. 363 $\text{Xe}^+ \rightarrow \text{Xe}^{4+}$

AMDIS-ION

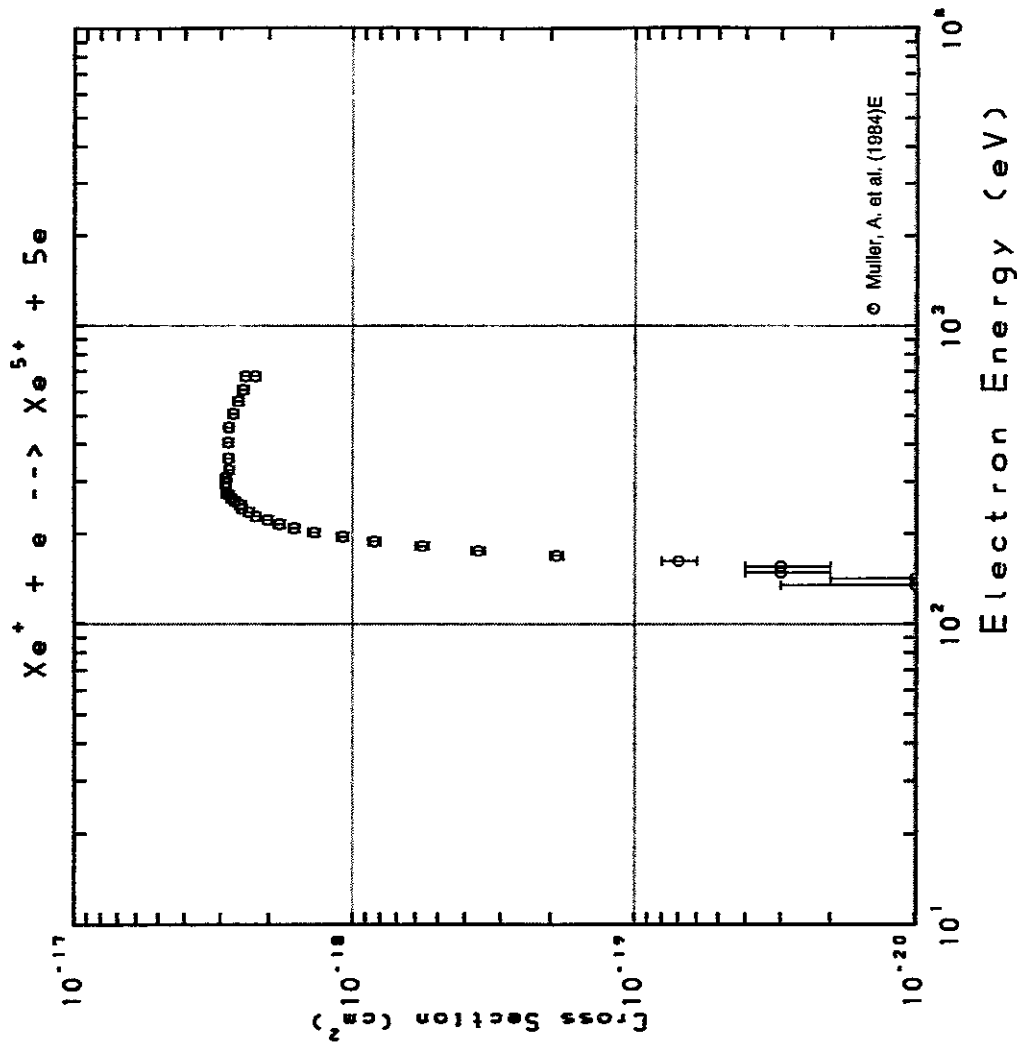


Fig. 364 $\text{Xe}^+ \rightarrow \text{Xe}^{5+}$

AMDIS-ION

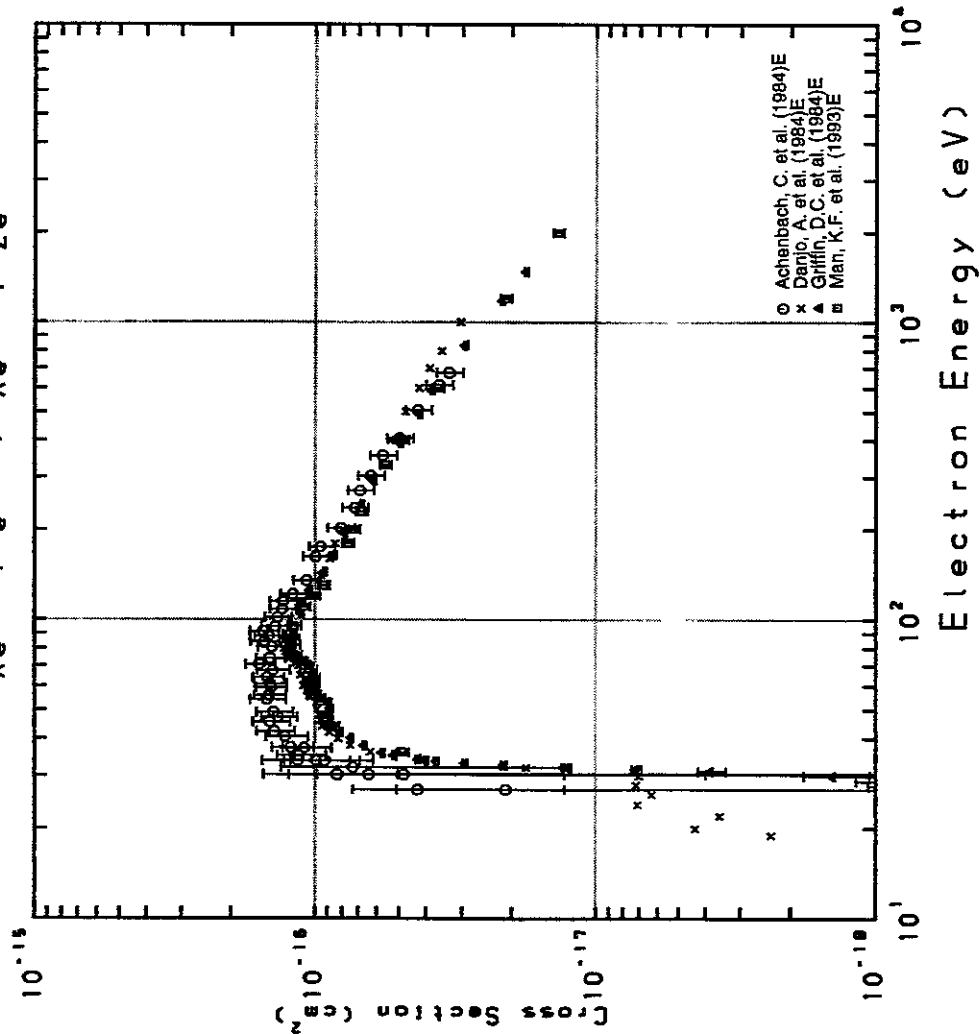


Fig. 365 Xe²⁺ → Xe³⁺

AMDIS-ION

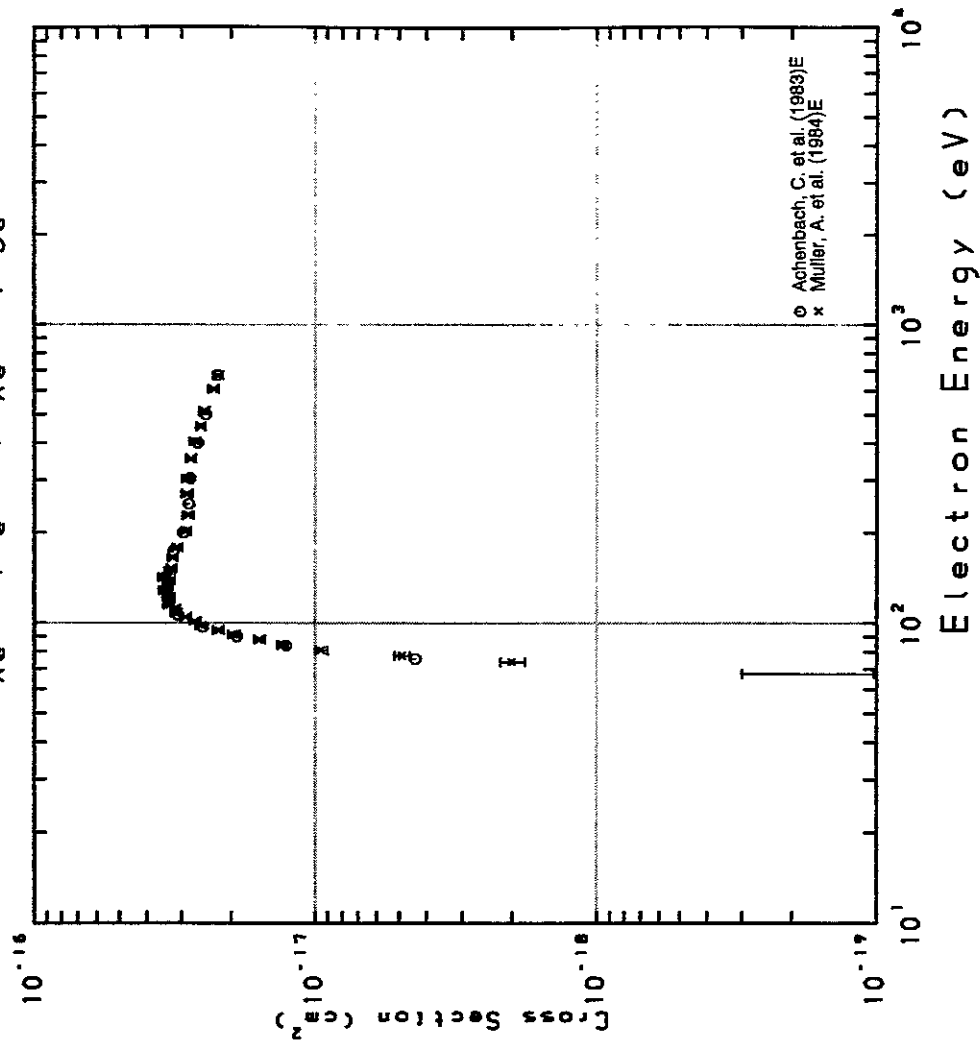
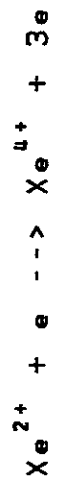


Fig. 366 Xe²⁺ → Xe⁴⁺

AMDIS-ION

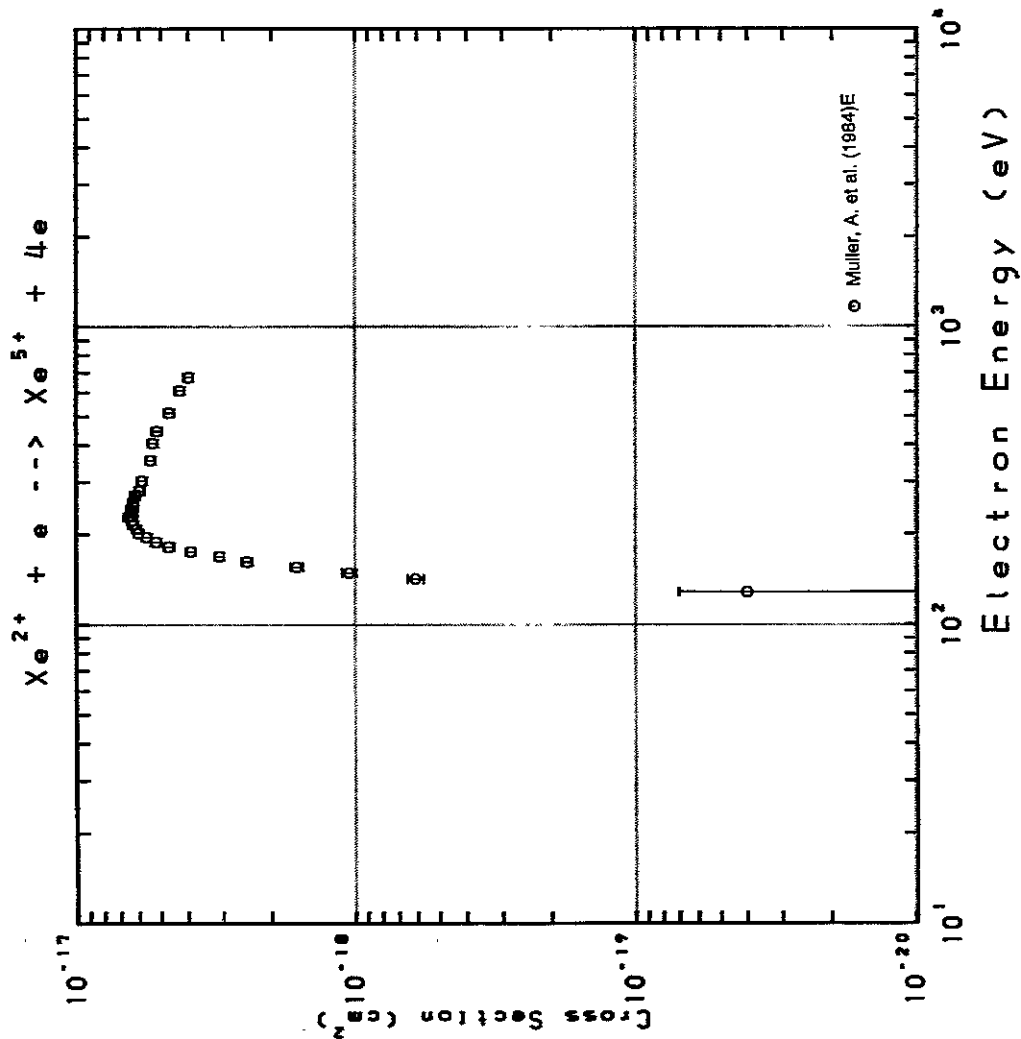


Fig. 367 $\text{Xe}^{2+} \rightarrow \text{Xe}^{5+}$

AMDIS-ION

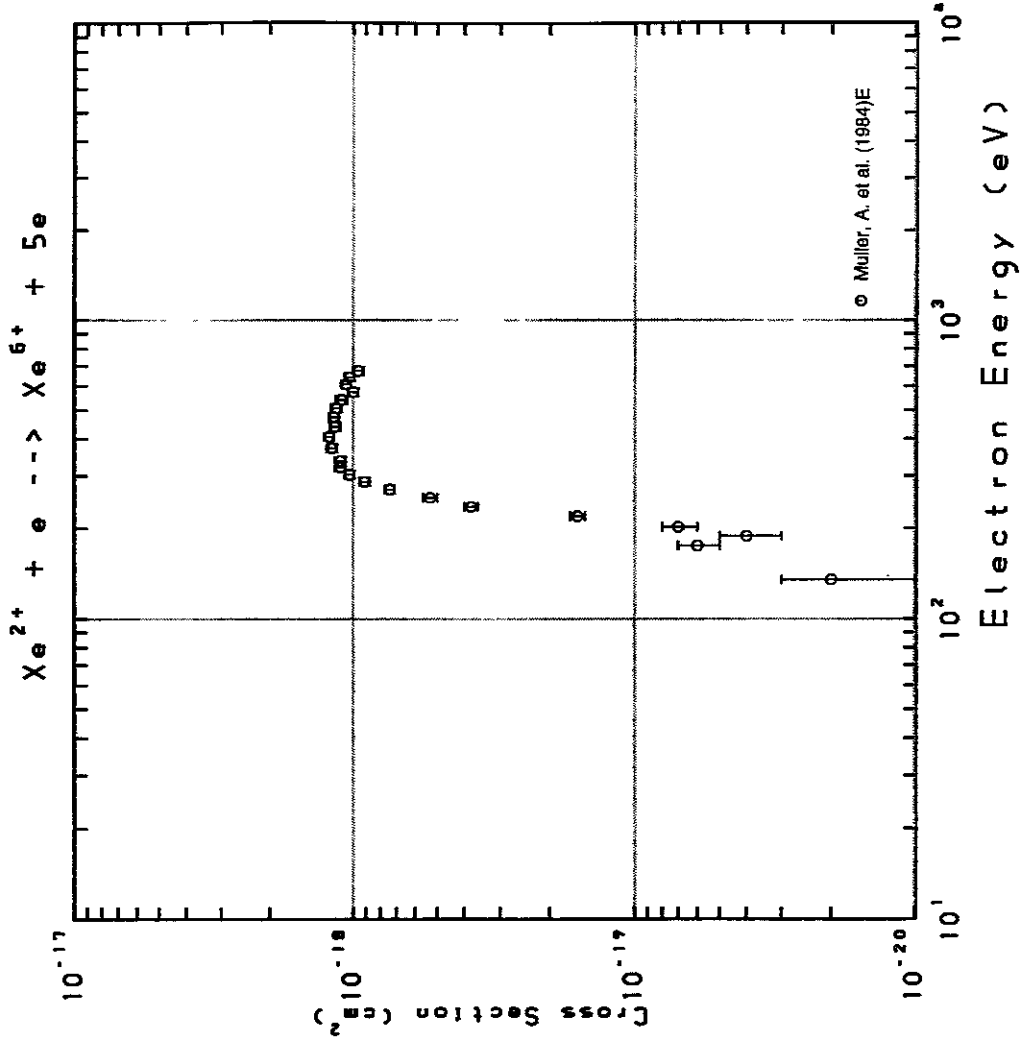


Fig. 368 $\text{Xe}^{2+} \rightarrow \text{Xe}^{6+}$

AMDIS-ION

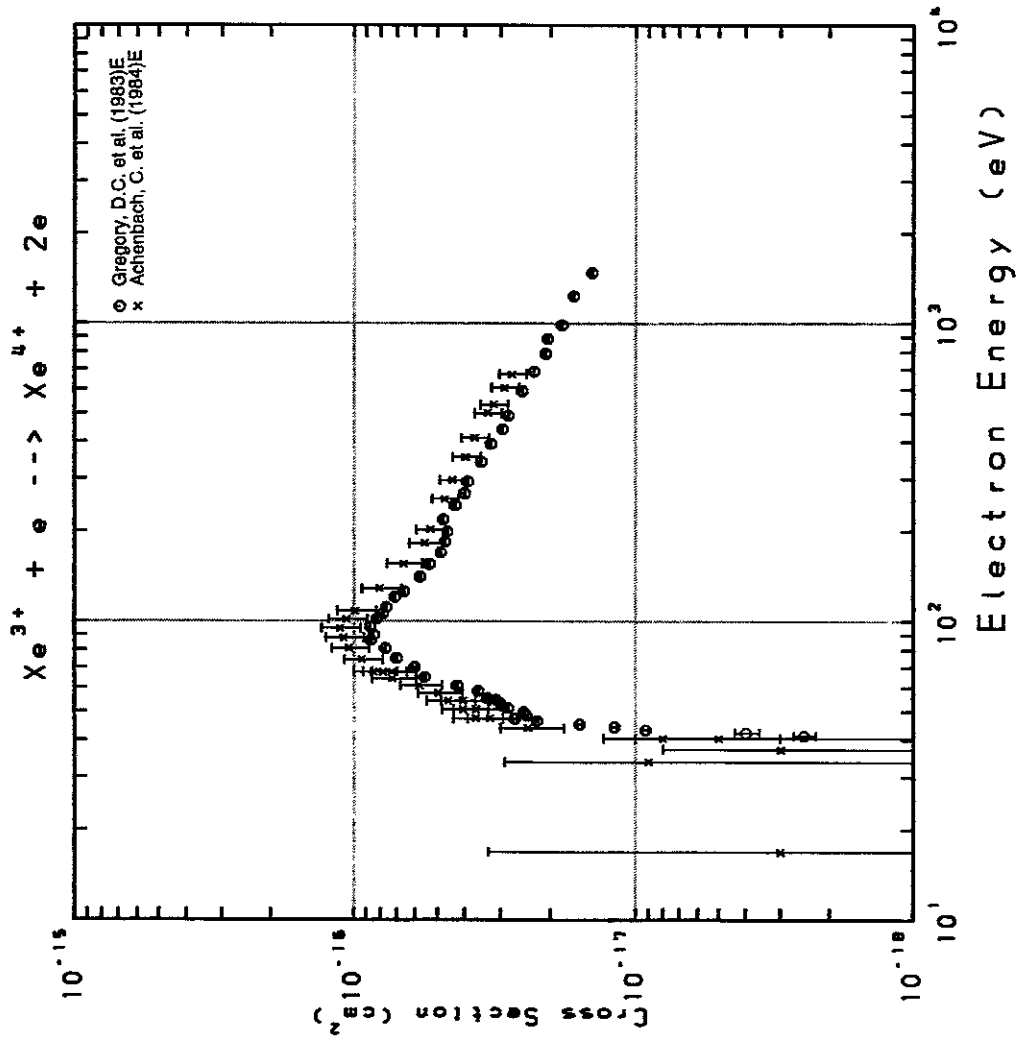


Fig. 369 $\text{Xe}^{3+} \rightarrow \text{Xe}^{4+}$

AMDIS-ION

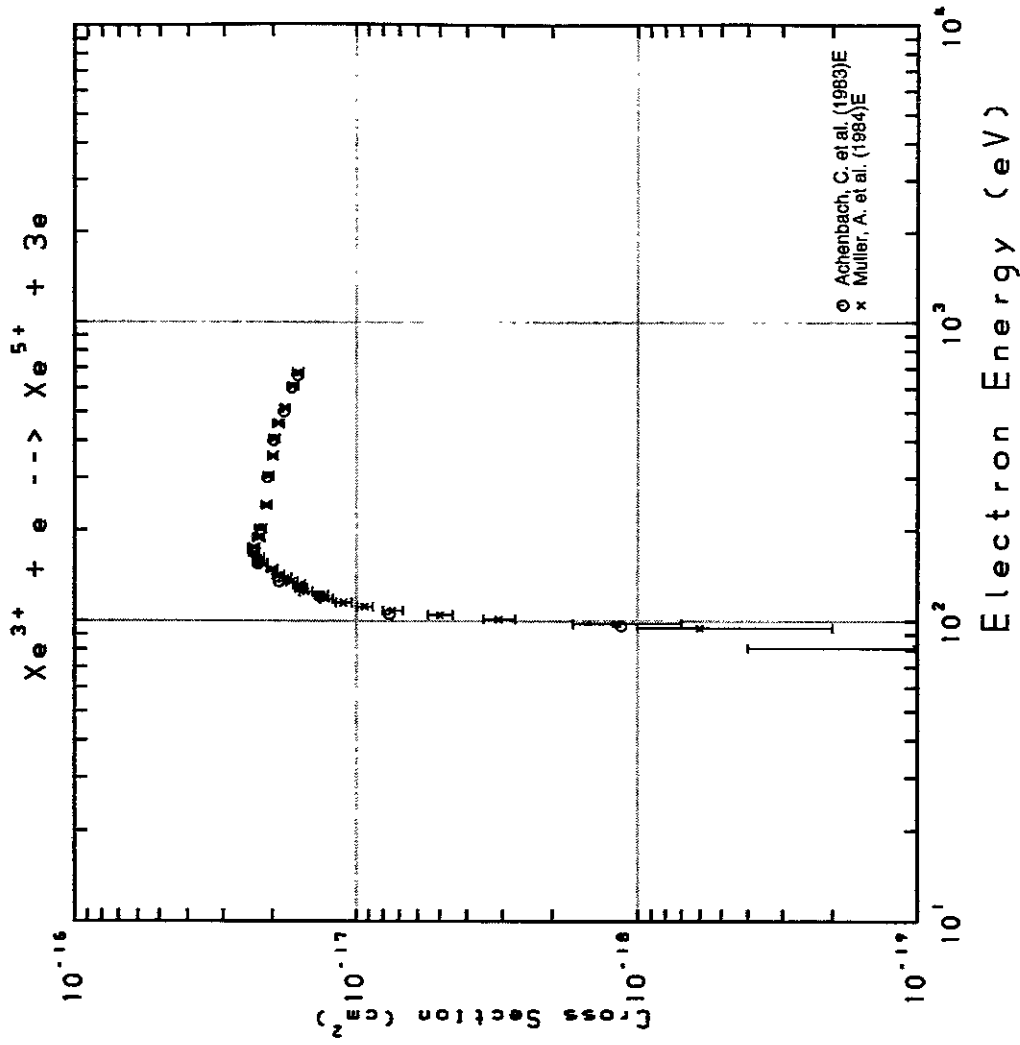


Fig. 370 $\text{Xe}^{3+} \rightarrow \text{Xe}^{5+}$

AMDIS-ION

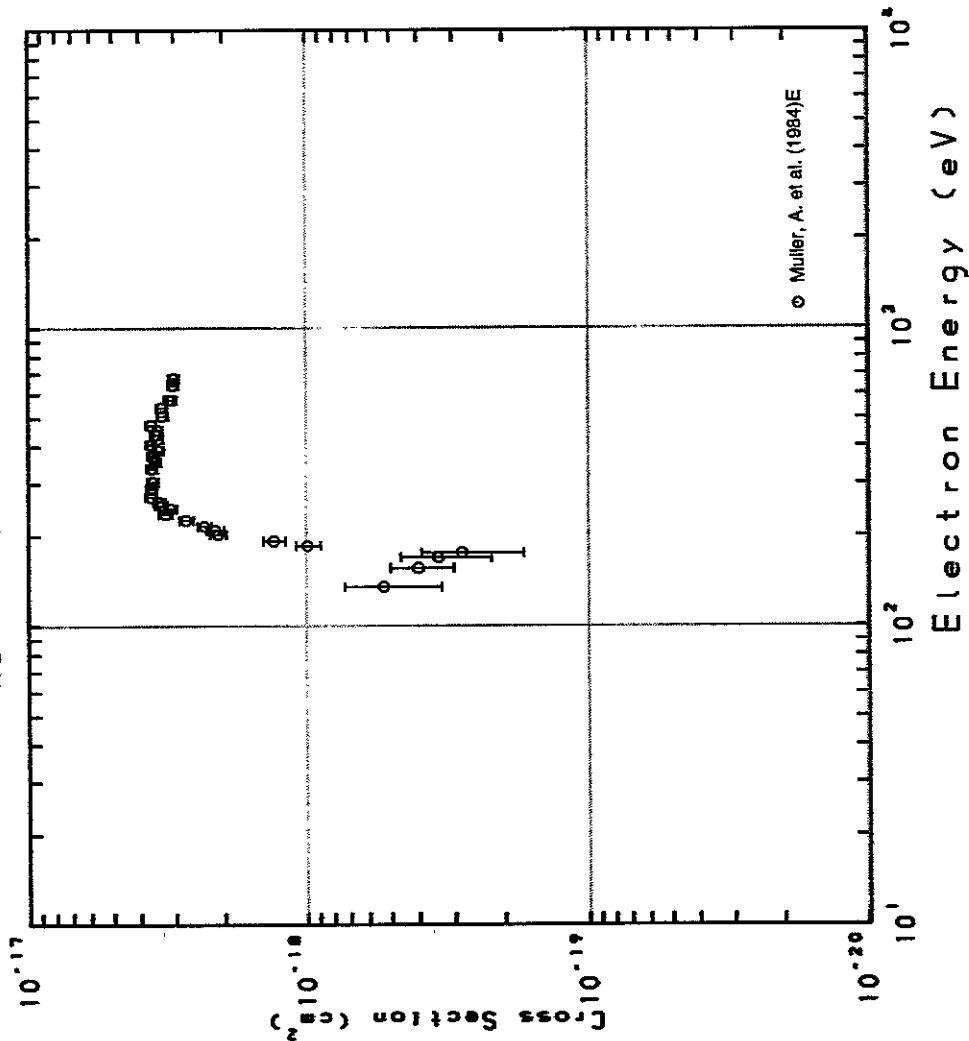


Fig. 371 Xe³⁺ → Xe⁶⁺

AMDIS-ION

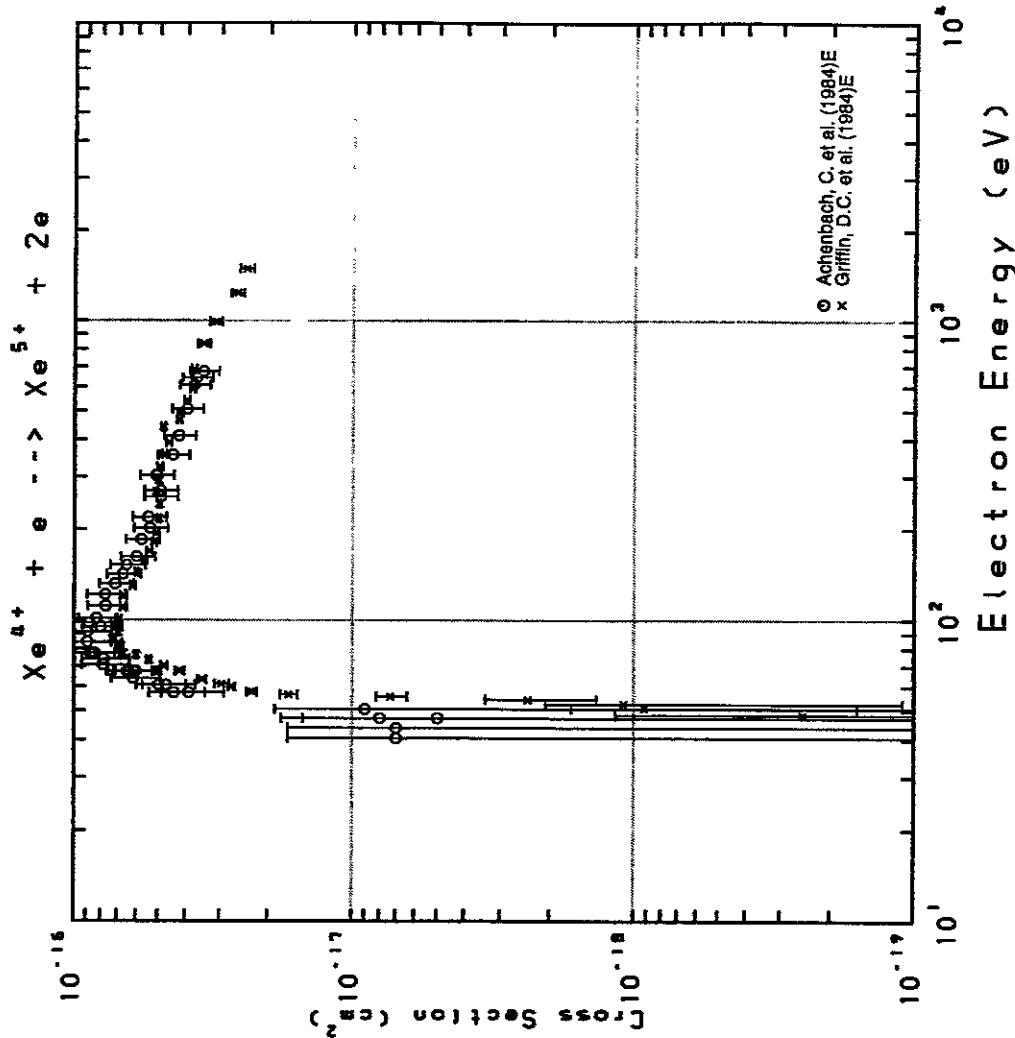


Fig. 372 Xe⁴⁺ → Xe⁵⁺

AMDIS-ION

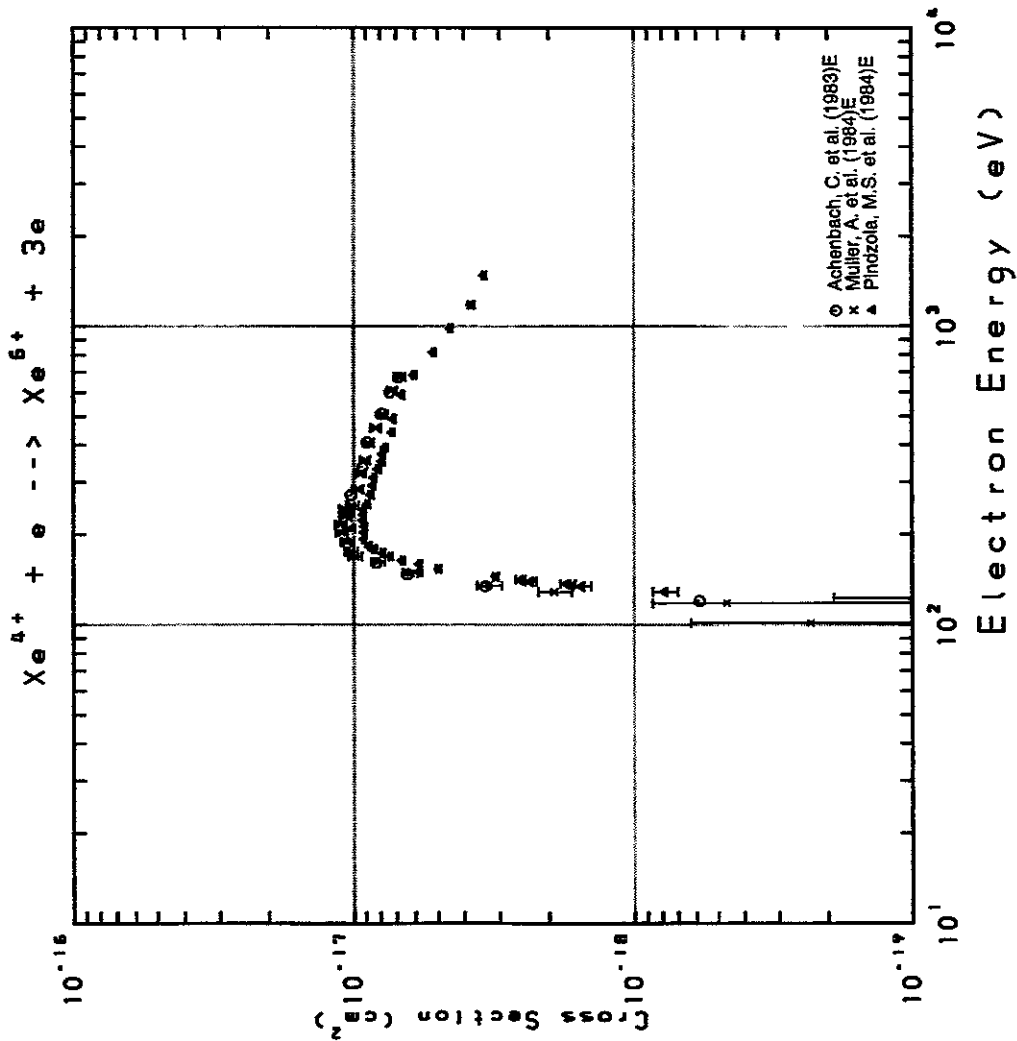


Fig. 373 $\text{Xe}^{4+} \rightarrow \text{Xe}^{6+}$

AMDIS-ION

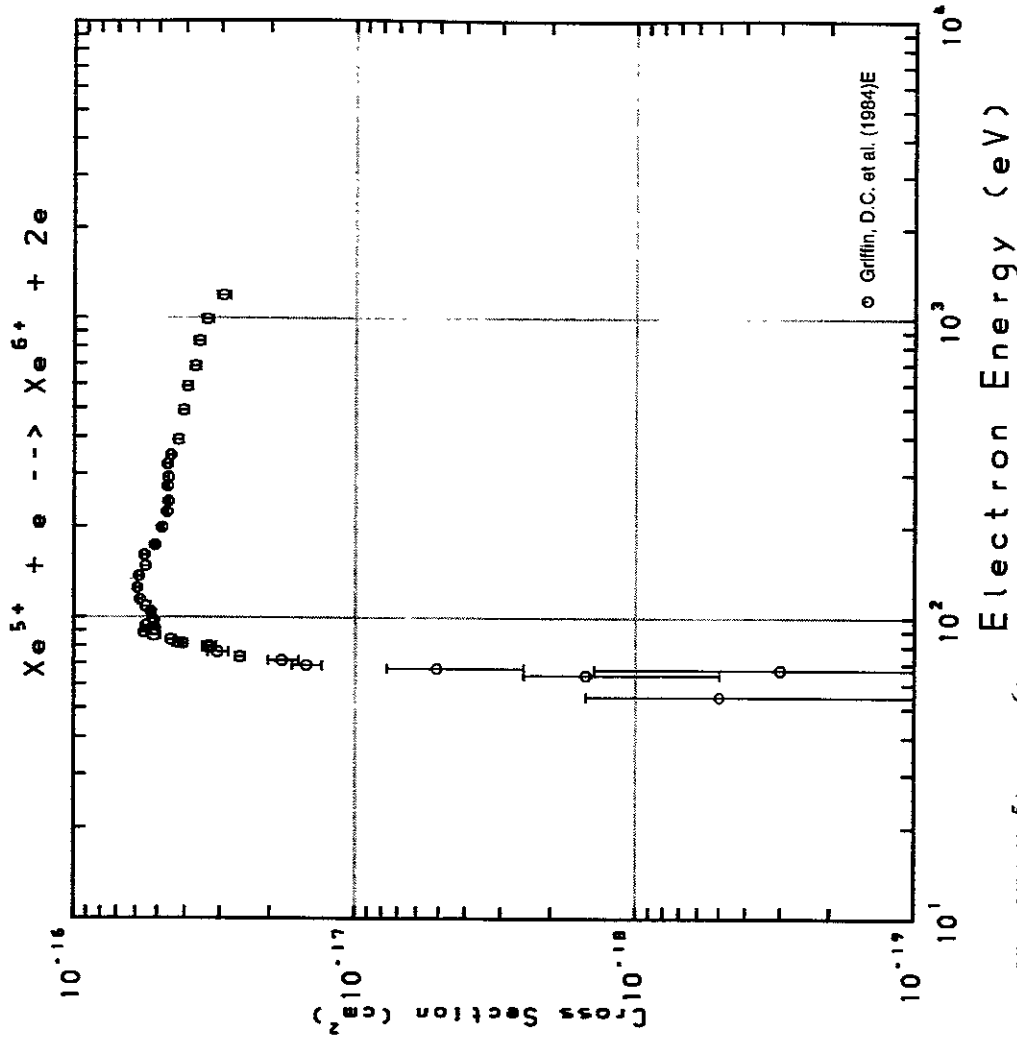


Fig. 374 $\text{Xe}^{5+} \rightarrow \text{Xe}^{6+}$

AMDIS-ION

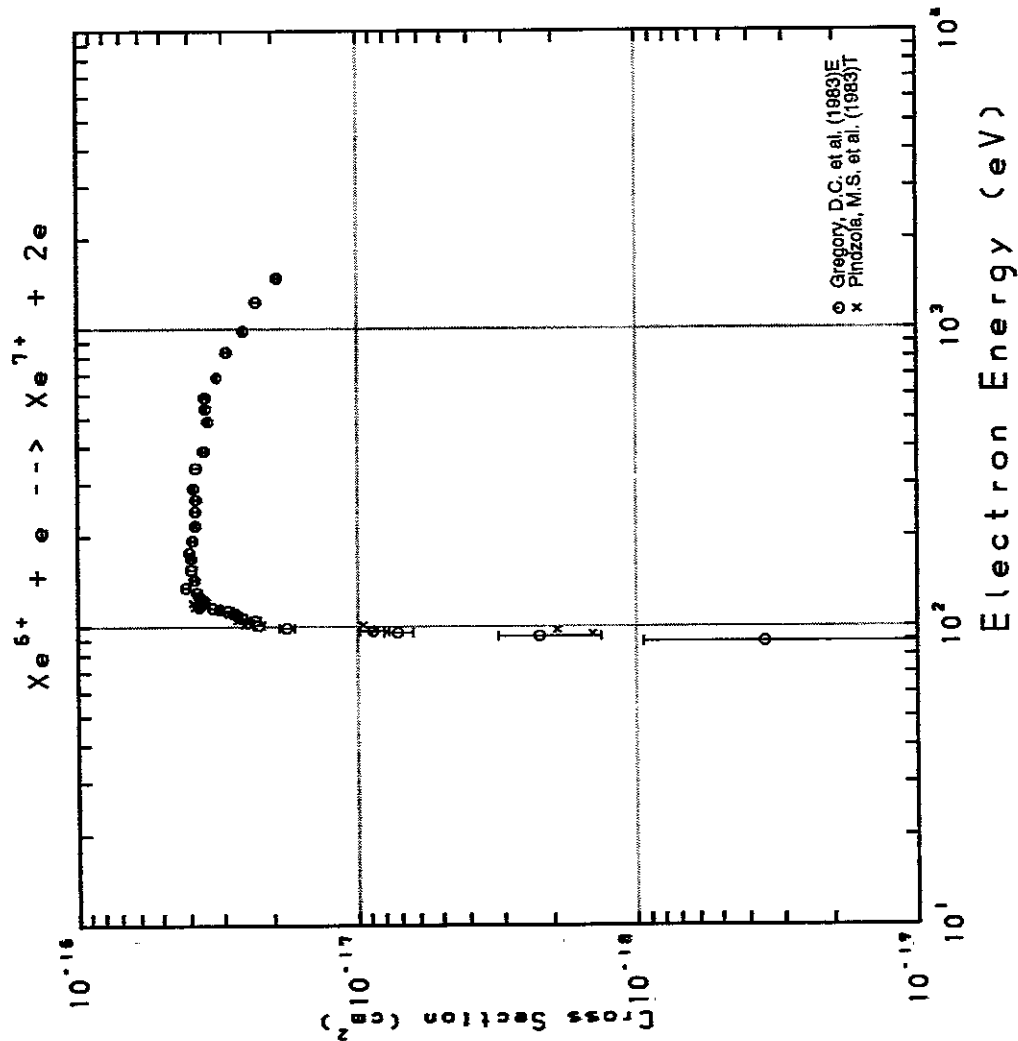


Fig. 375 $\text{Xe}^{6+} \rightarrow \text{Xe}^{7+}$

AMDIS-ION

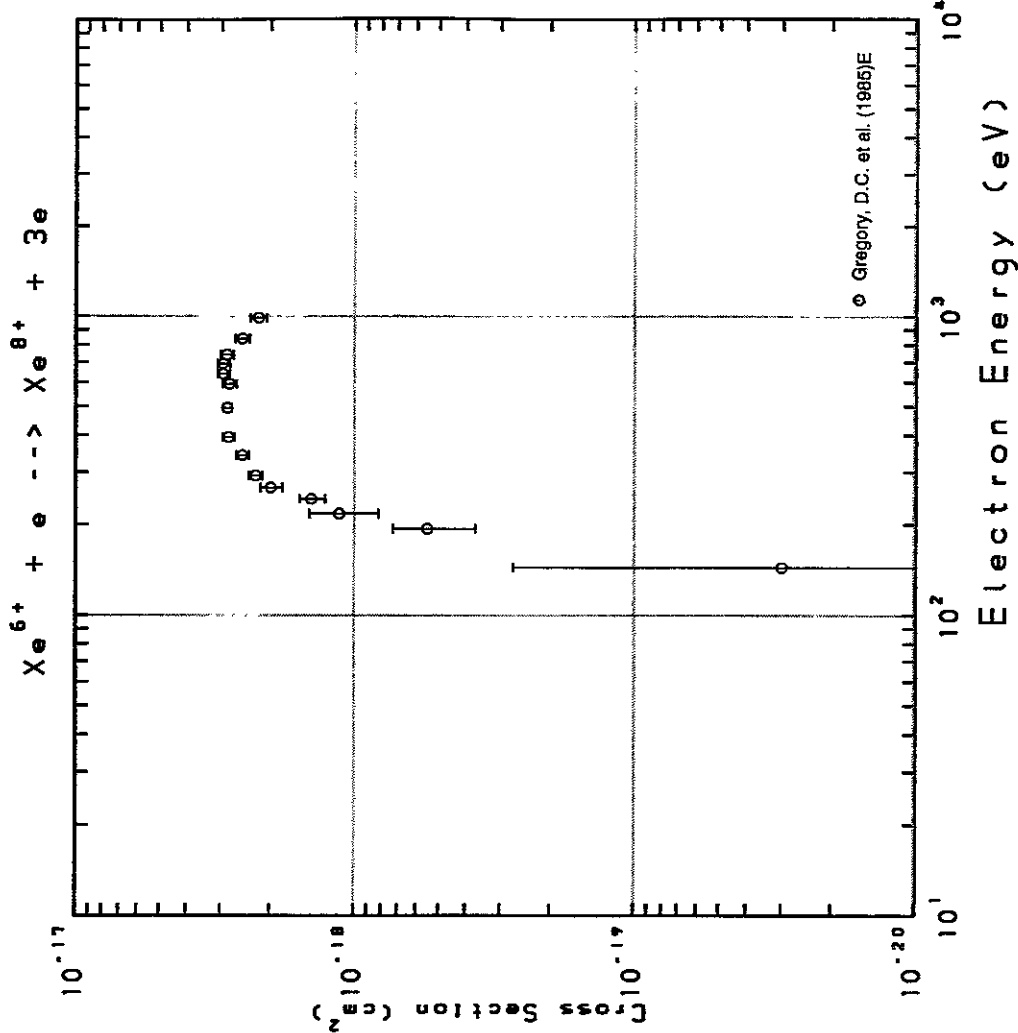


Fig. 376 $\text{Xe}^{6+} \rightarrow \text{Xe}^{8+}$

AMDIS-ION

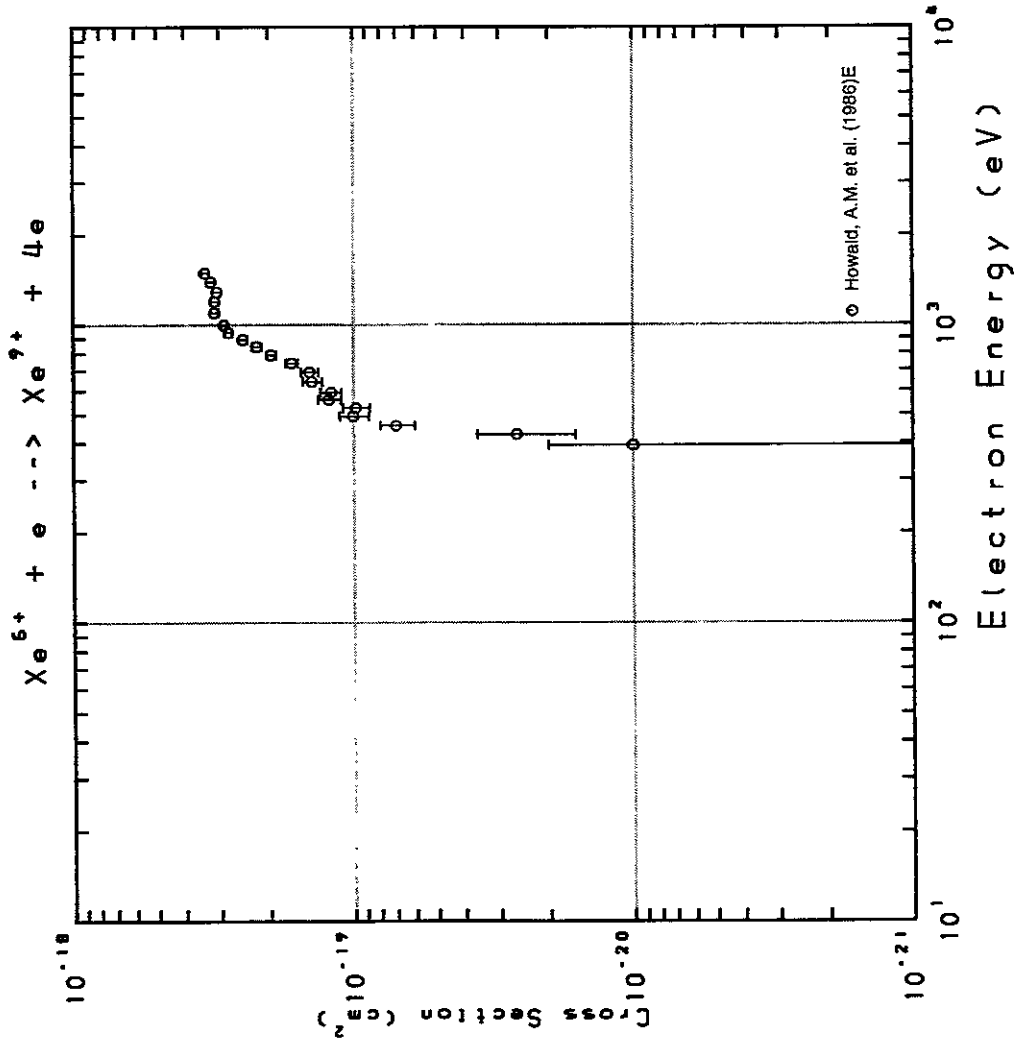


Fig. 377 $\text{Xe}^{6+} \rightarrow \text{Xe}^{9+}$

AMDIS-ION

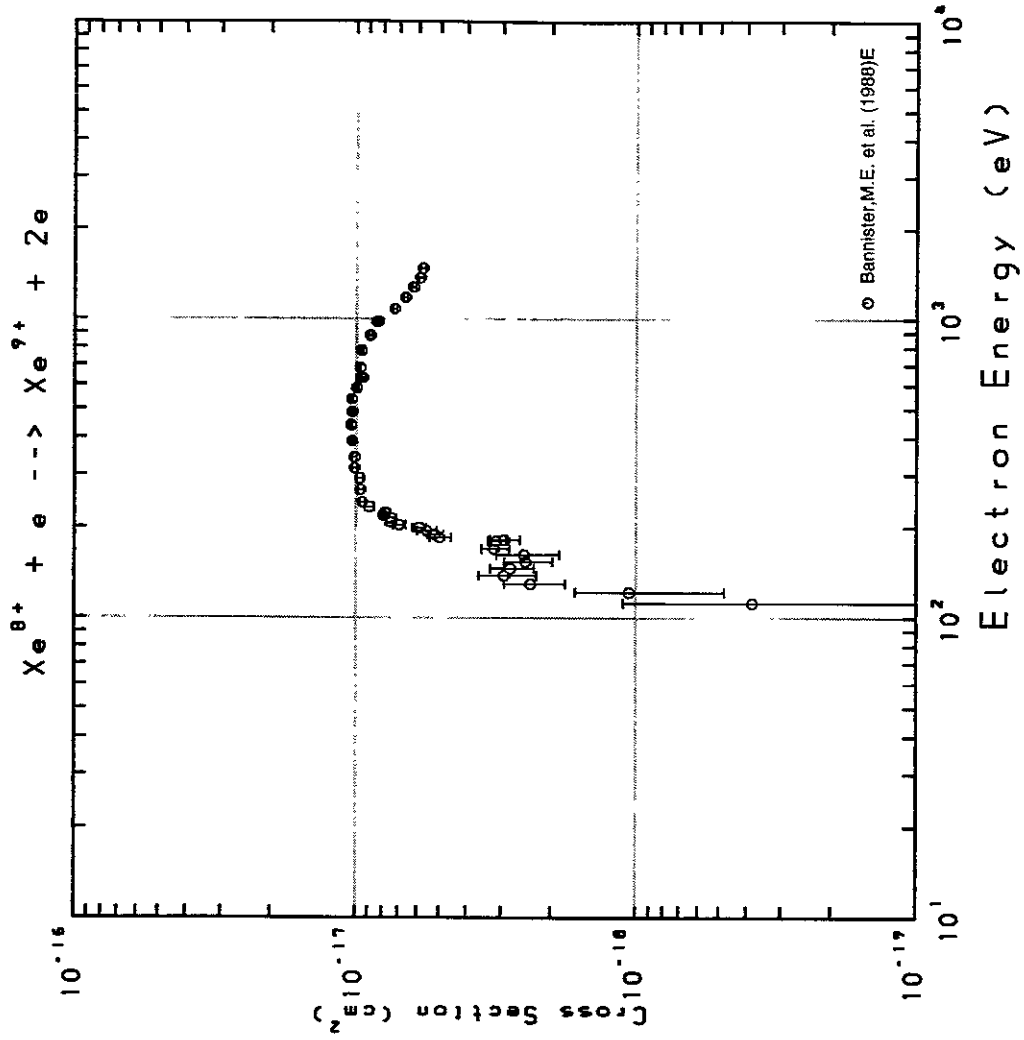


Fig. 378 $\text{Xe}^{8+} \rightarrow \text{Xe}^{9+}$

AMDIS-ION

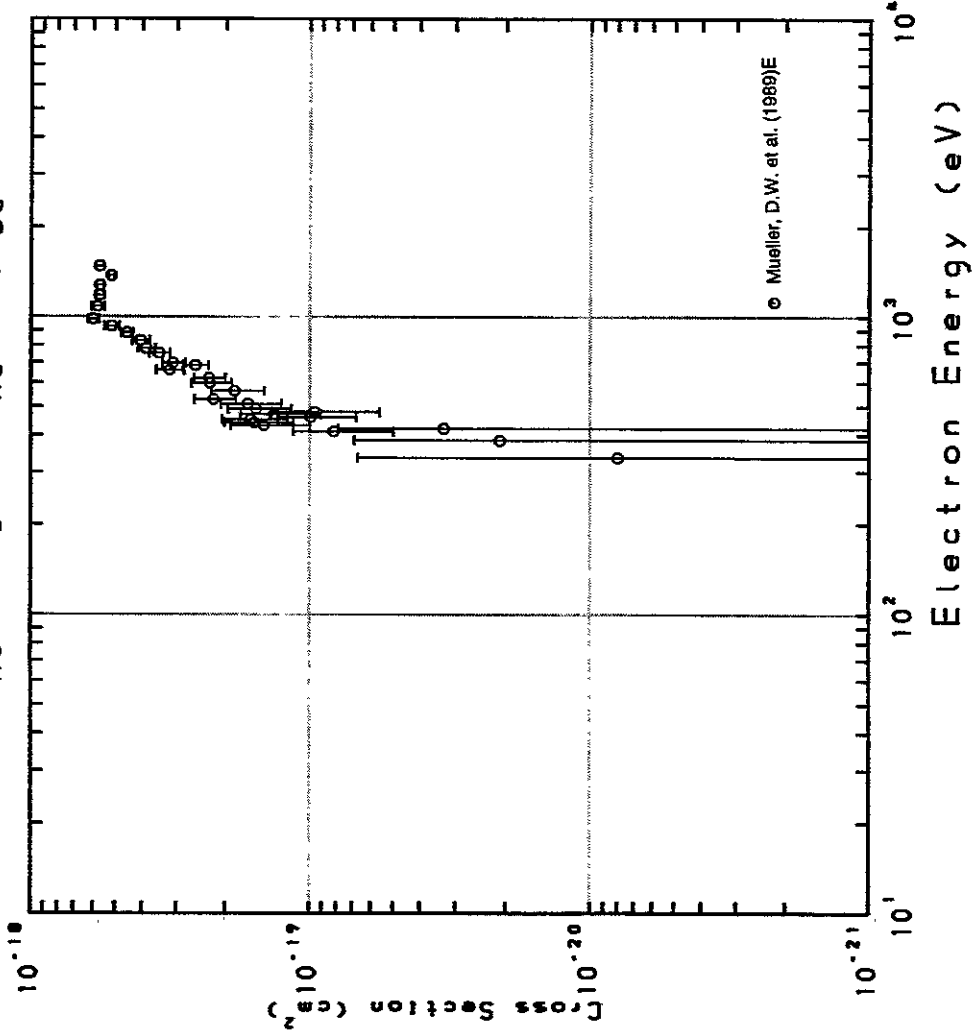


Fig. 379 $\text{Xe}^{8+} \rightarrow \text{Xe}^{10+}$

AMDIS-ION

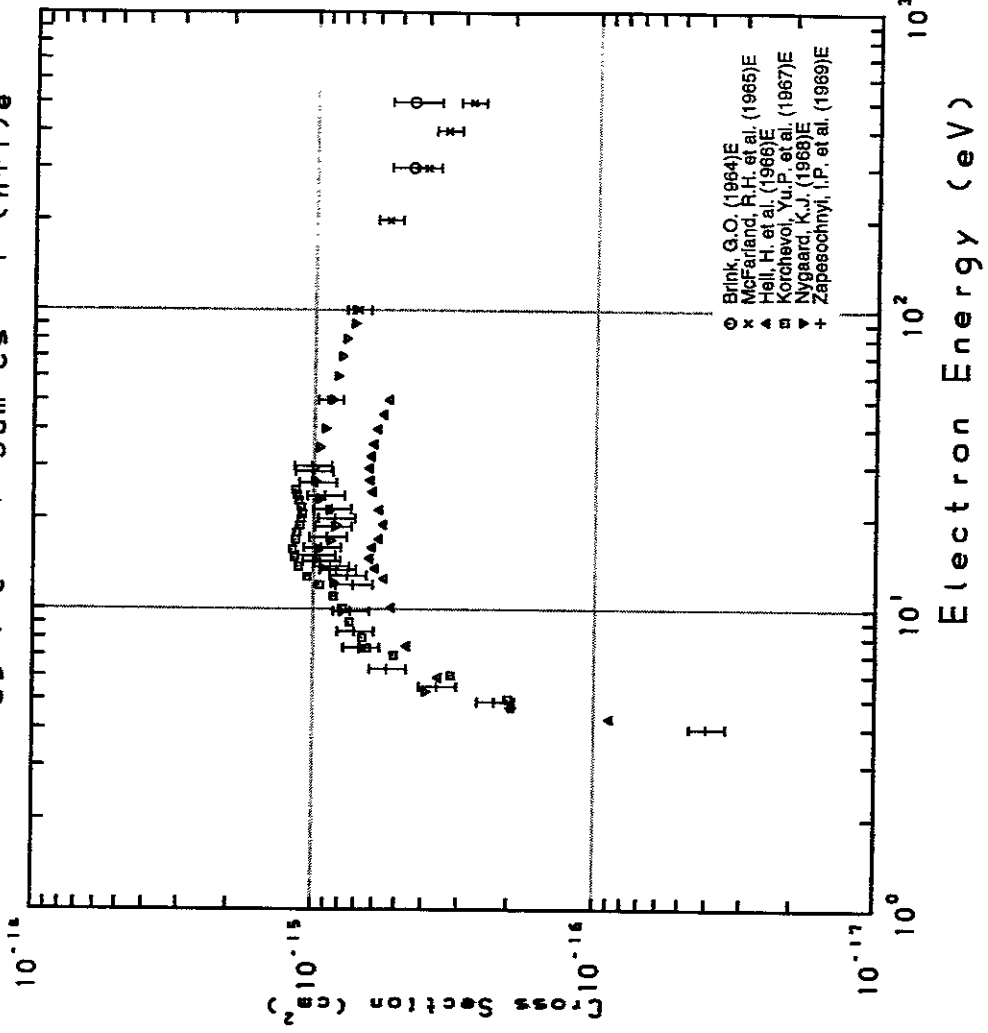
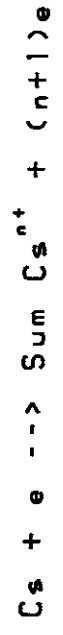


Fig. 380 $\text{Cs} \rightarrow \text{Sum Cs}^{n+}$

AMDIS-ION

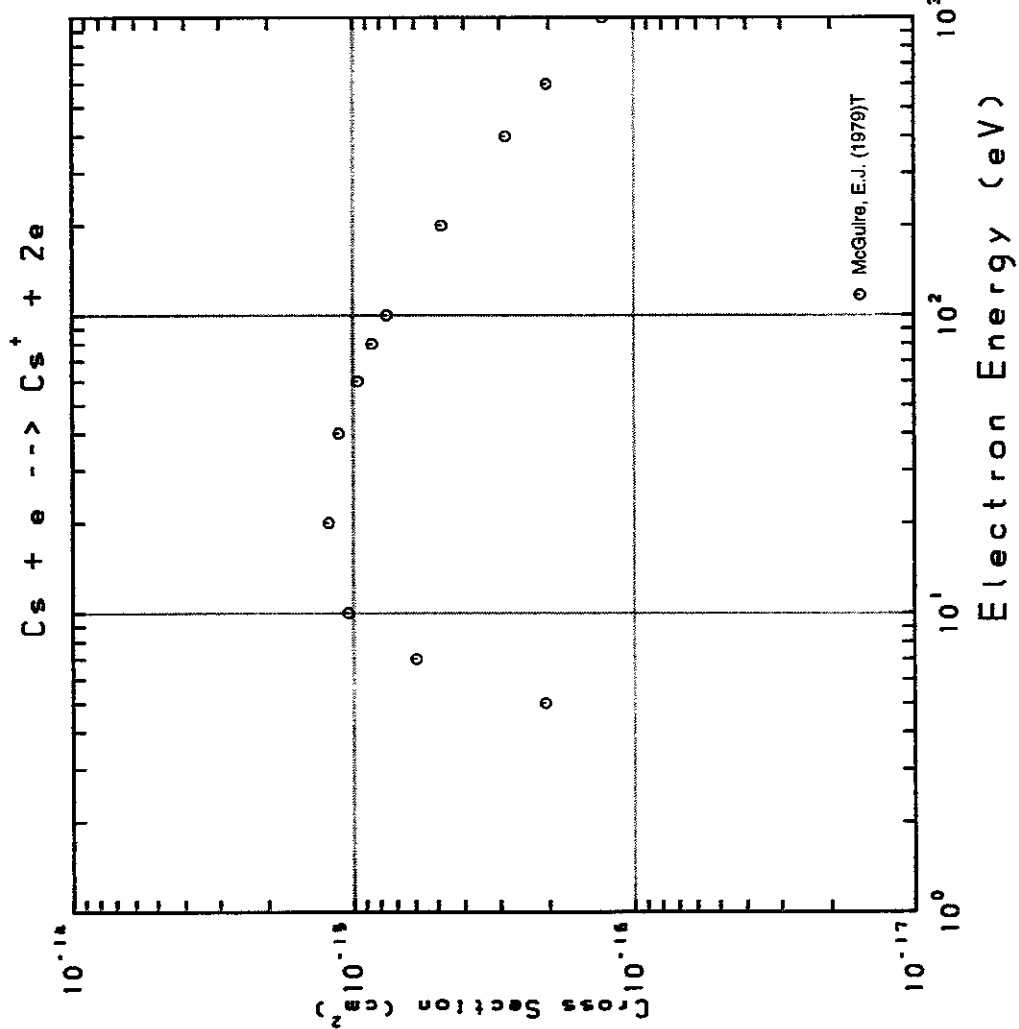


Fig. 381 $Cs \rightarrow Cs^+$

AMDIS-ION

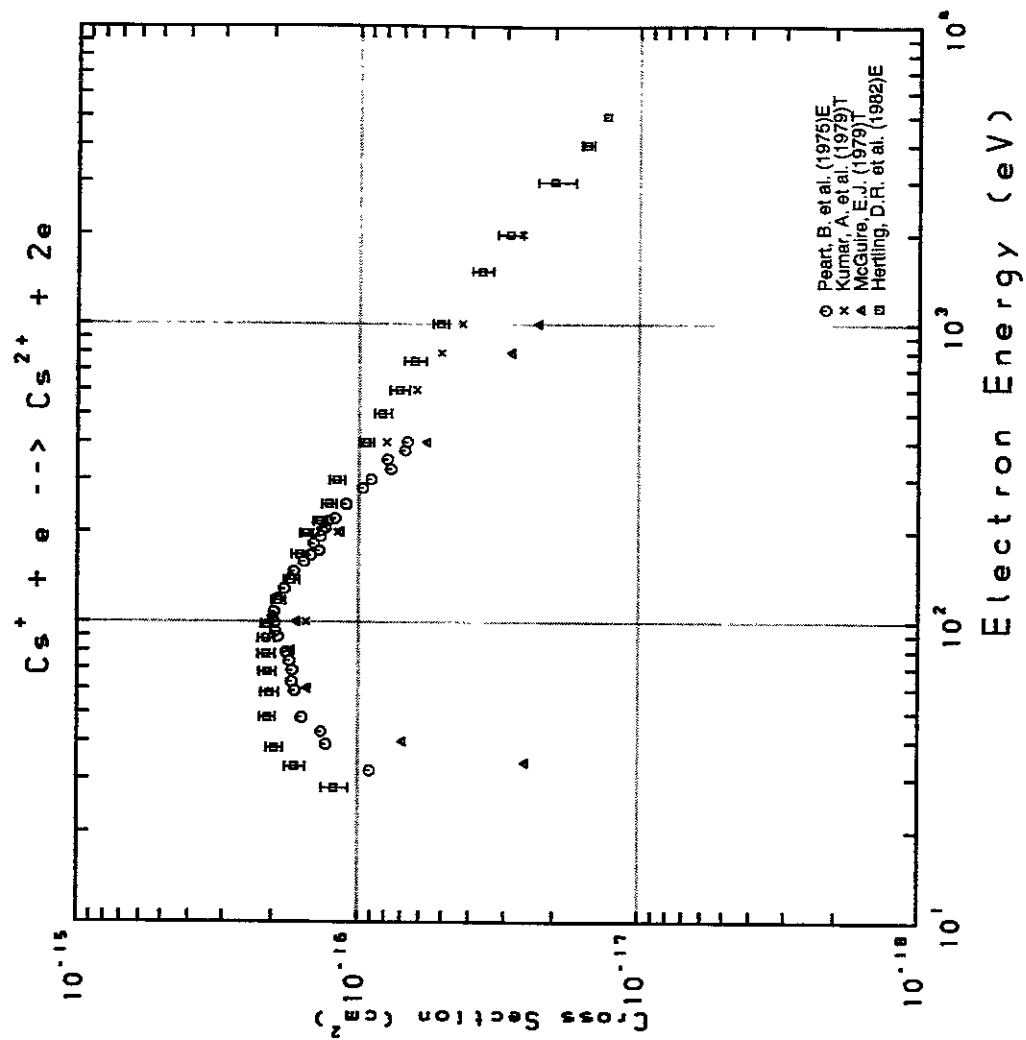


Fig. 382 $Cs^+ \rightarrow Cs^{2+}$

AMDIS-ION

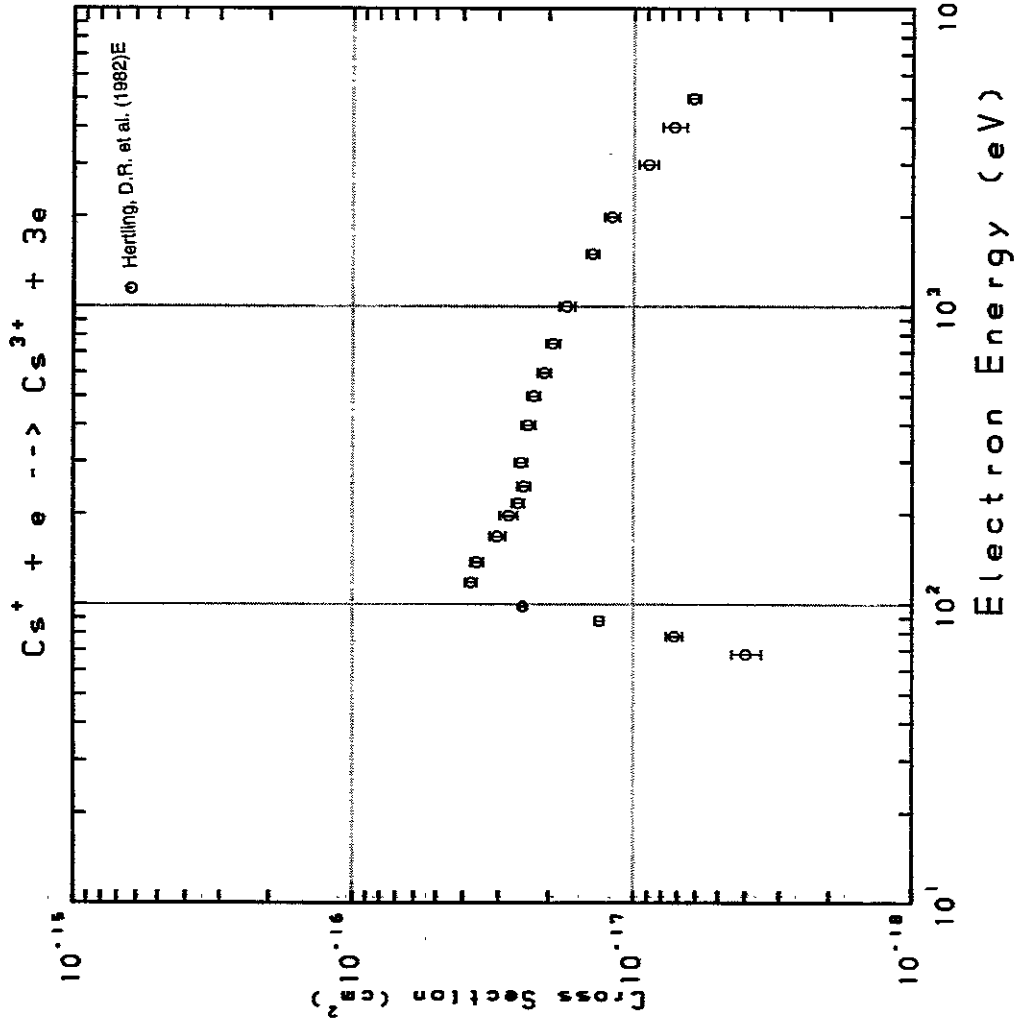


Fig. 383 $Cs^+ \rightarrow Cs^{3+}$

AMDIS-ION

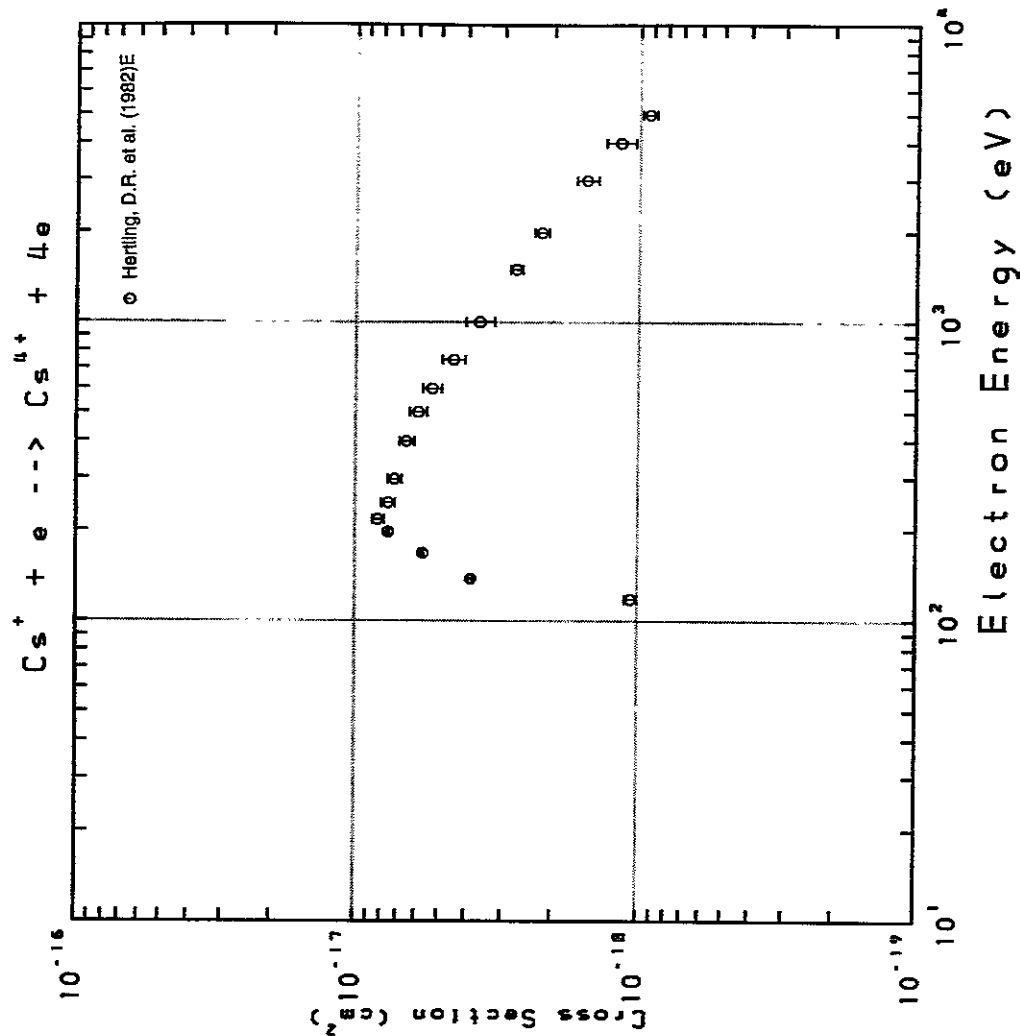


Fig. 384 $Cs^+ \rightarrow Cs^{4+}$

AMDIS-ION

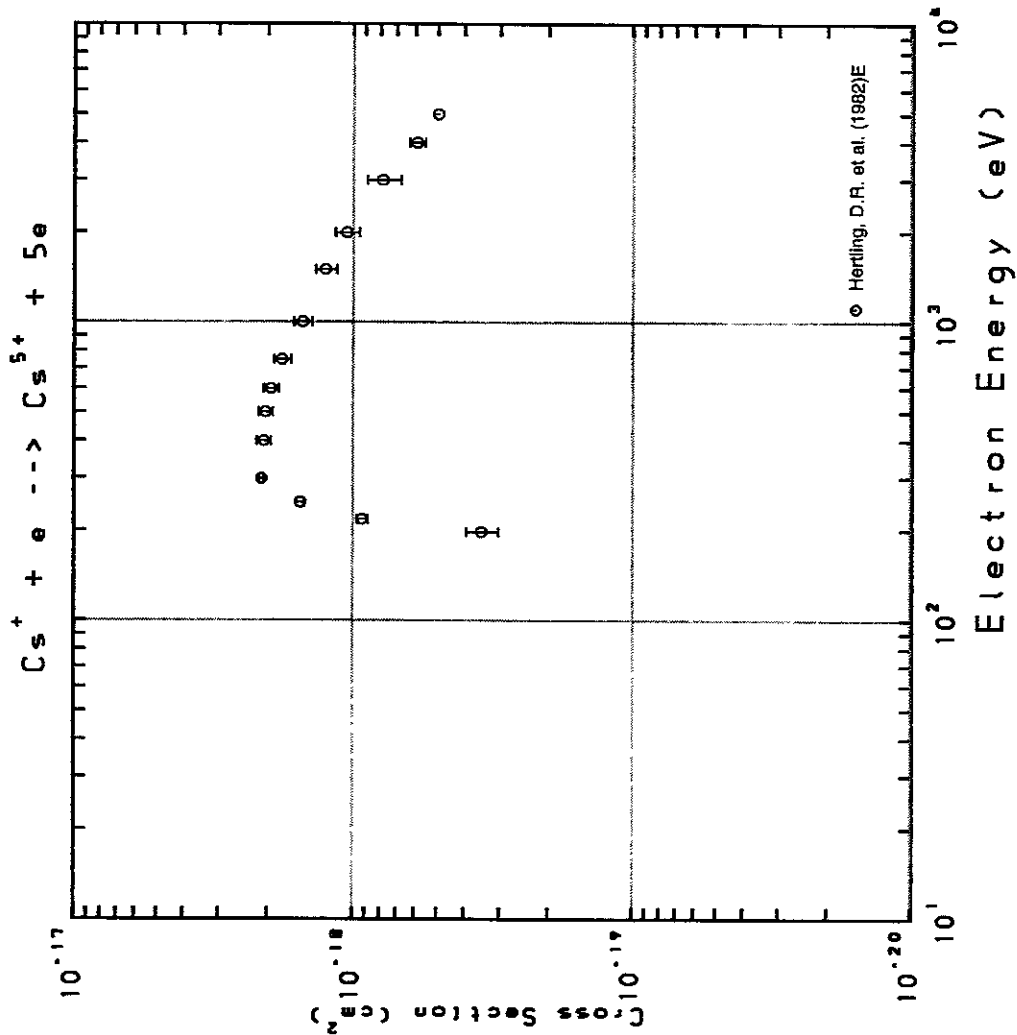


Fig. 385 $Cs^+ \rightarrow Cs^{5+}$

AMDIS-ION

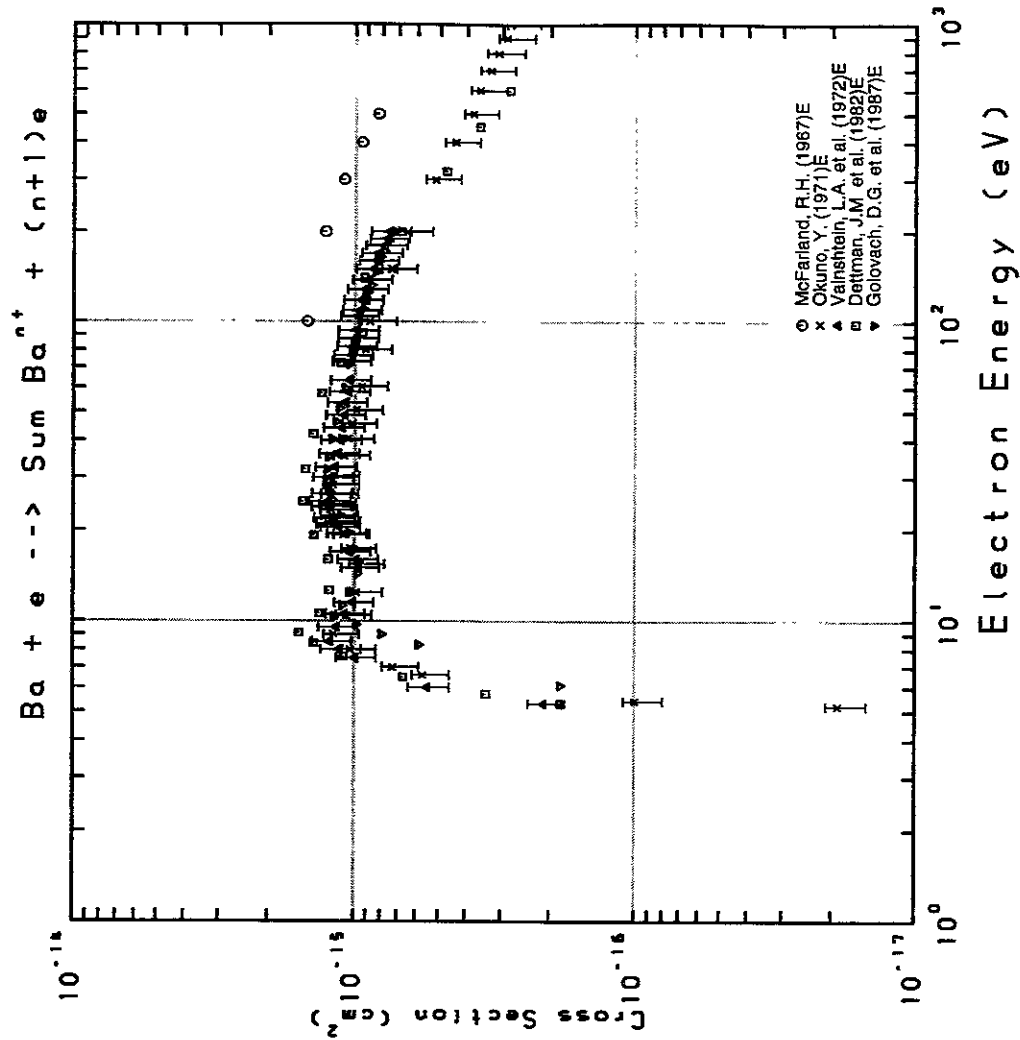


Fig. 386 $Ba^+ \rightarrow \Sigma Ba^{n+}$

AMDIS-ION

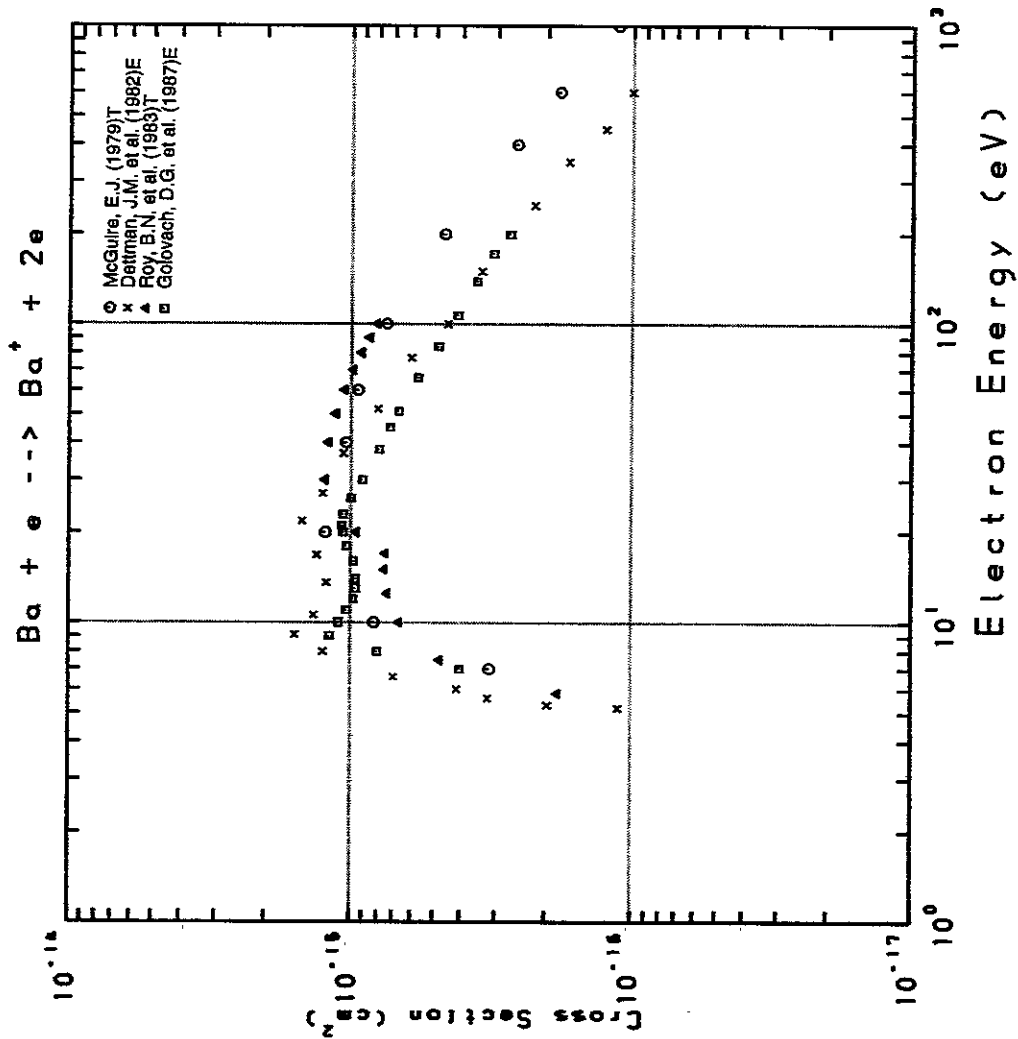


Fig. 387 Ba → Ba⁺

AMDIS-ION

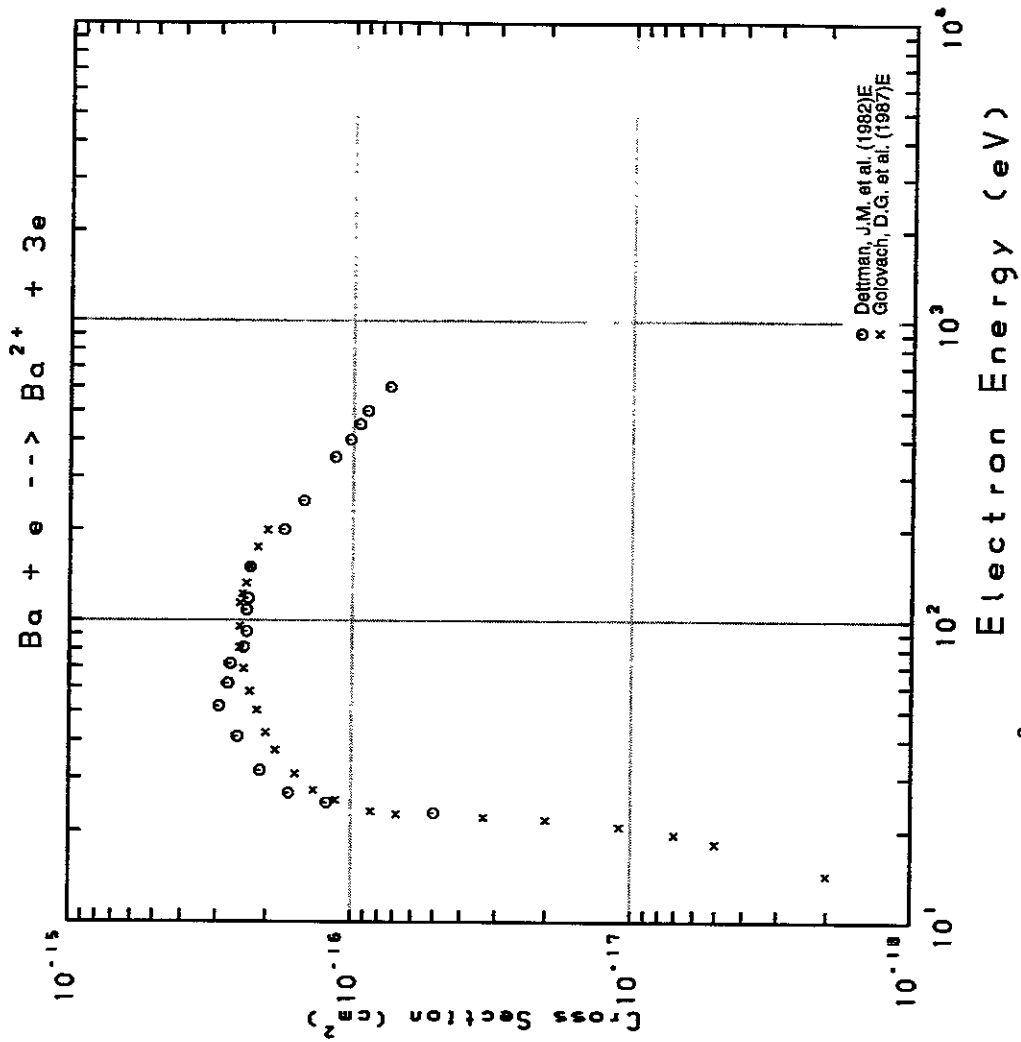


Fig. 388 Ba → Ba²⁺

AMDIS-ION

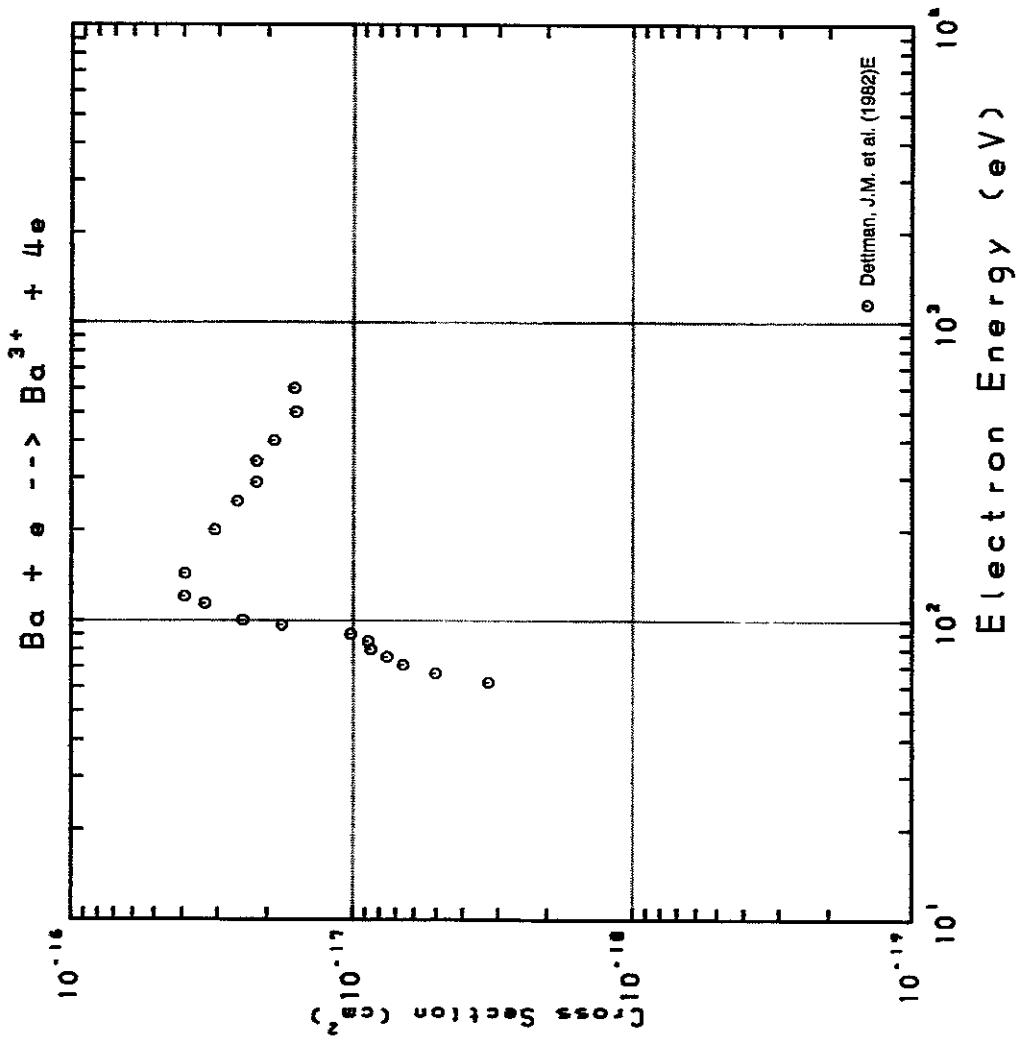


Fig. 389 Ba \rightarrow Ba³⁺

AMDIS-ION

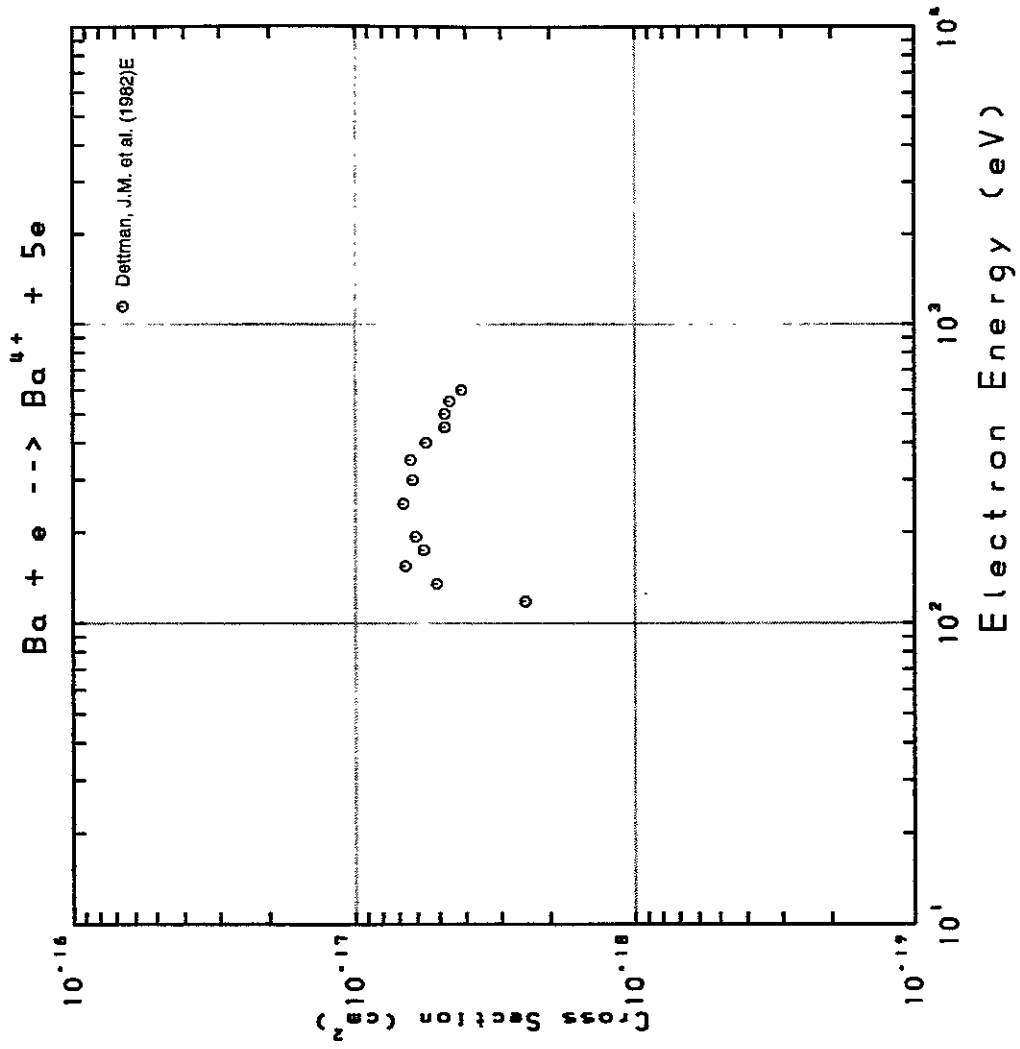


Fig. 390 Ba \rightarrow Ba⁴⁺

AMDIS-ION

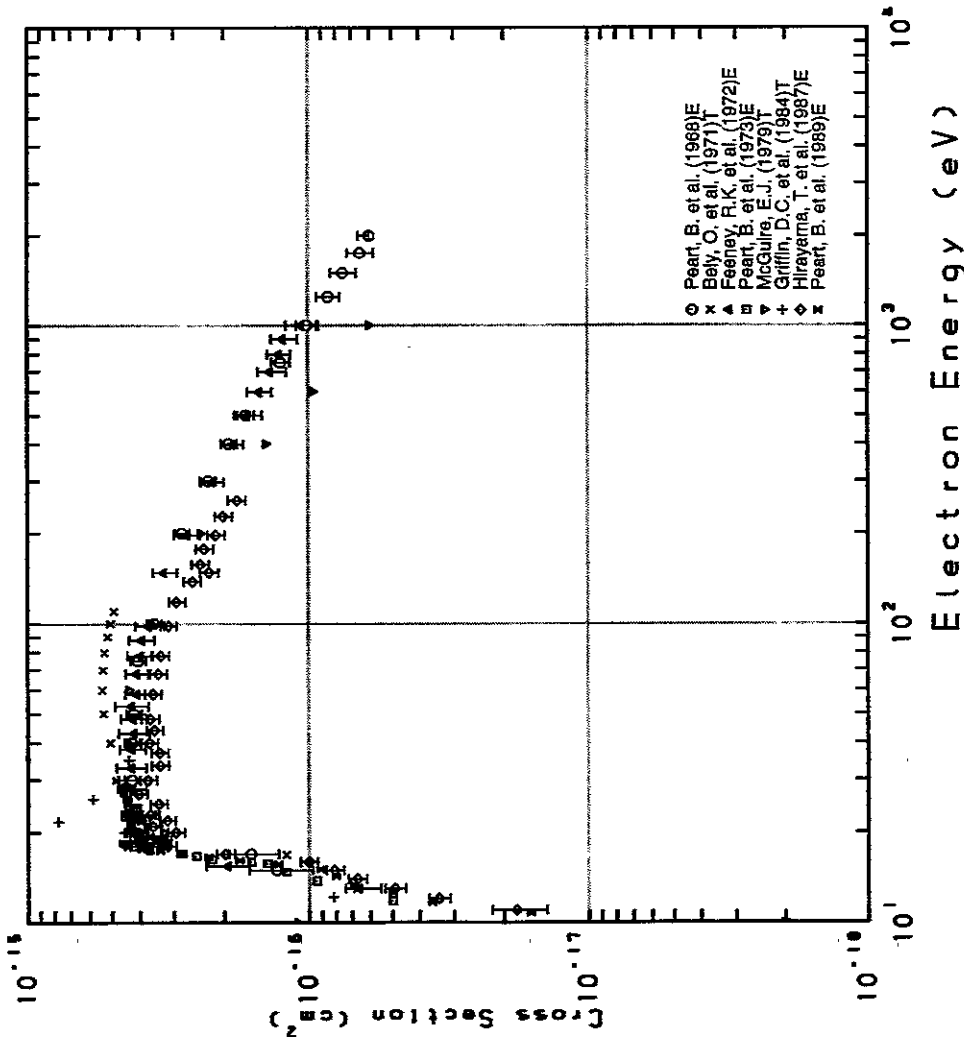


Fig. 391 $\text{Ba}^+ \rightarrow \text{Ba}^{2+}$

AMDIS-ION

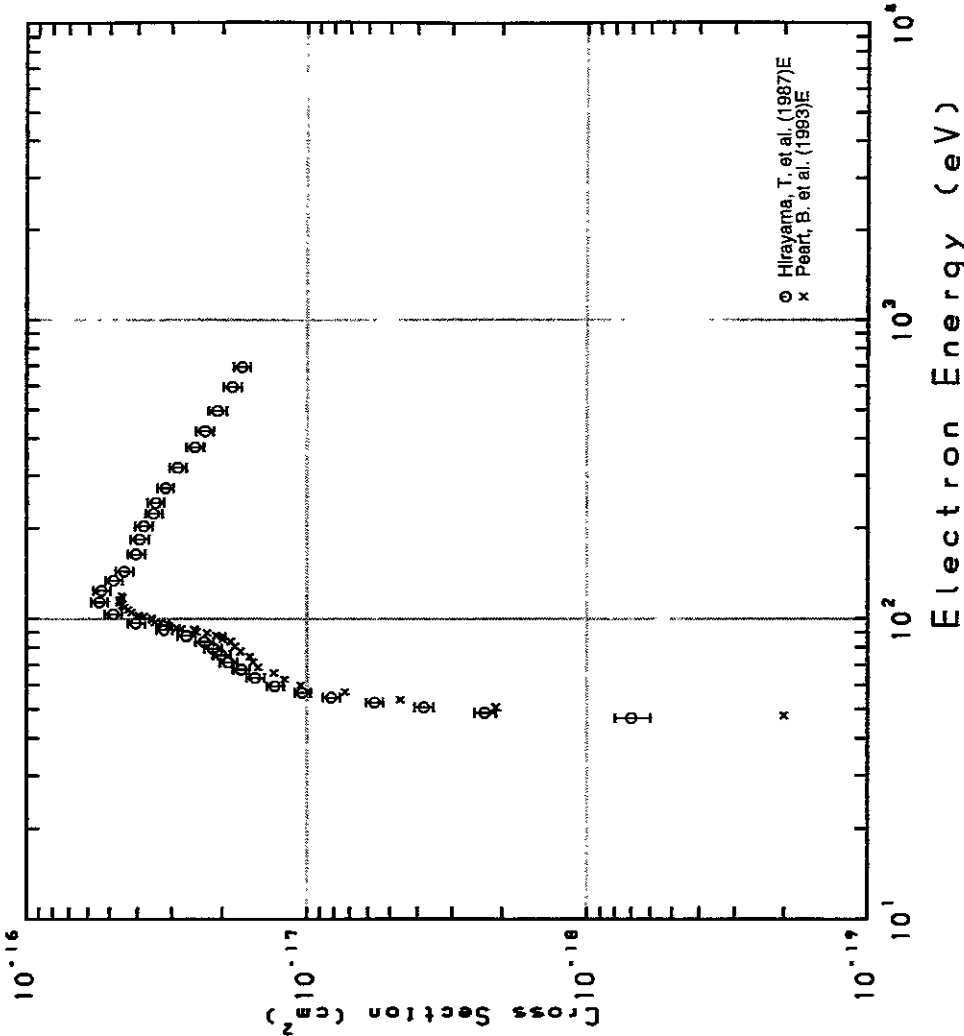


Fig. 392 $\text{Ba}^+ \rightarrow \text{Ba}^{3+}$

AMDIS-ION

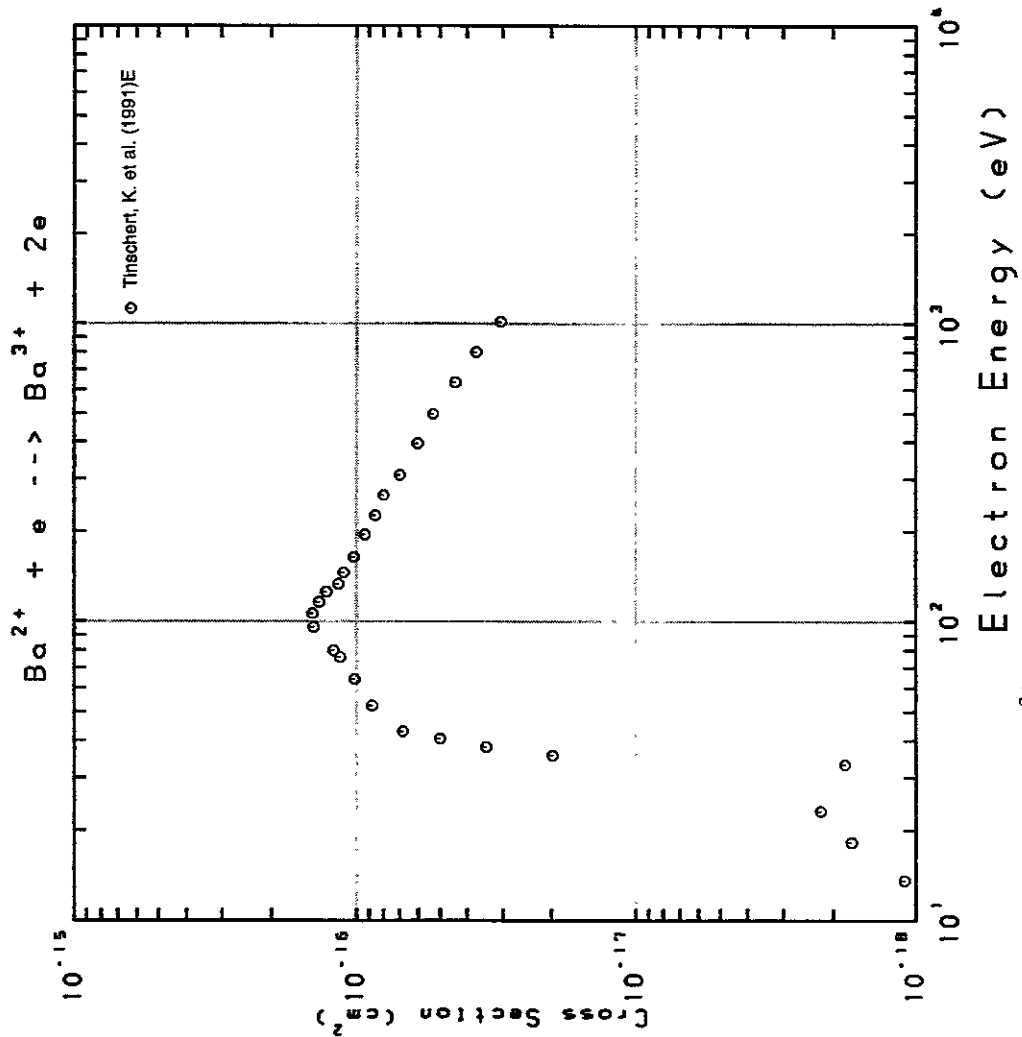


Fig. 393 $Ba^{2+} \rightarrow Ba^{3+}$

AMDIS-ION

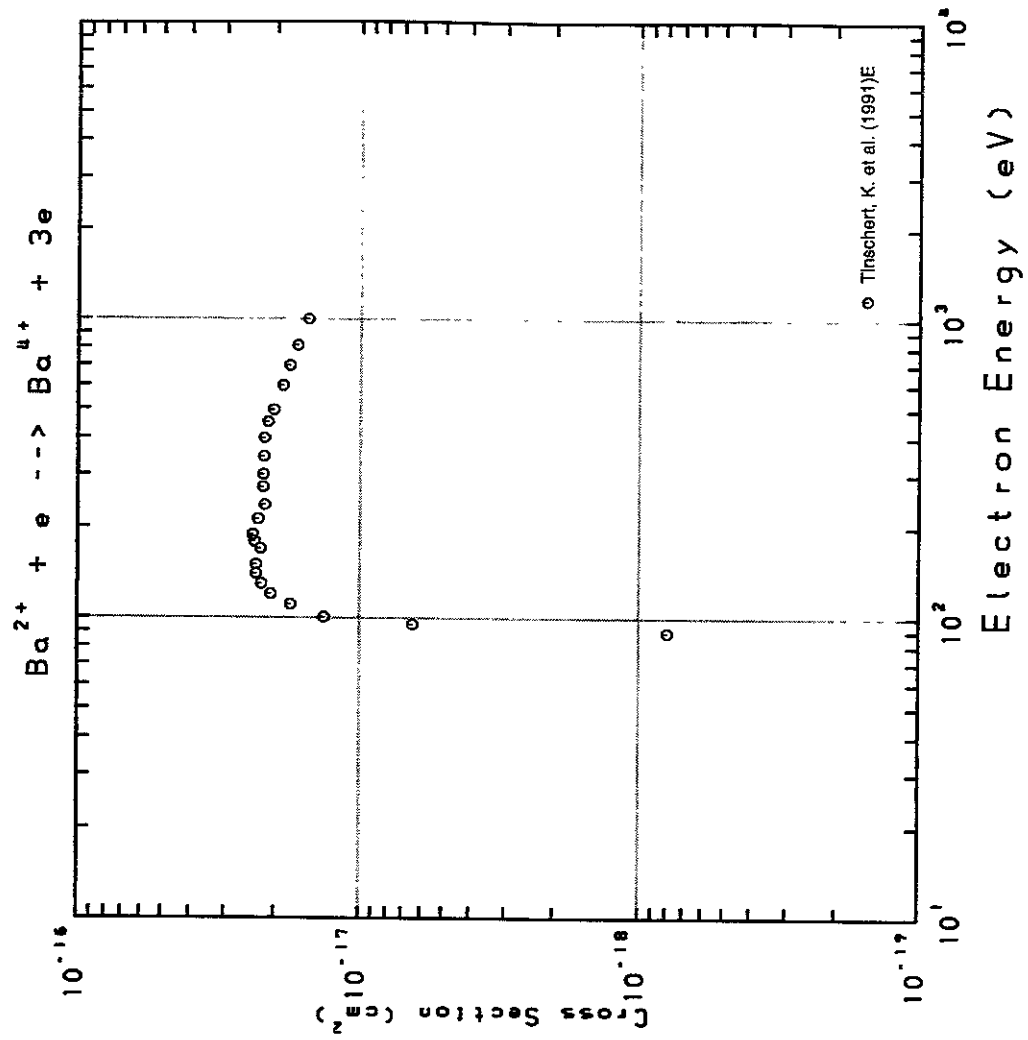


Fig. 394 $Ba^{2+} \rightarrow Ba^{4+}$

AMDIS-ION

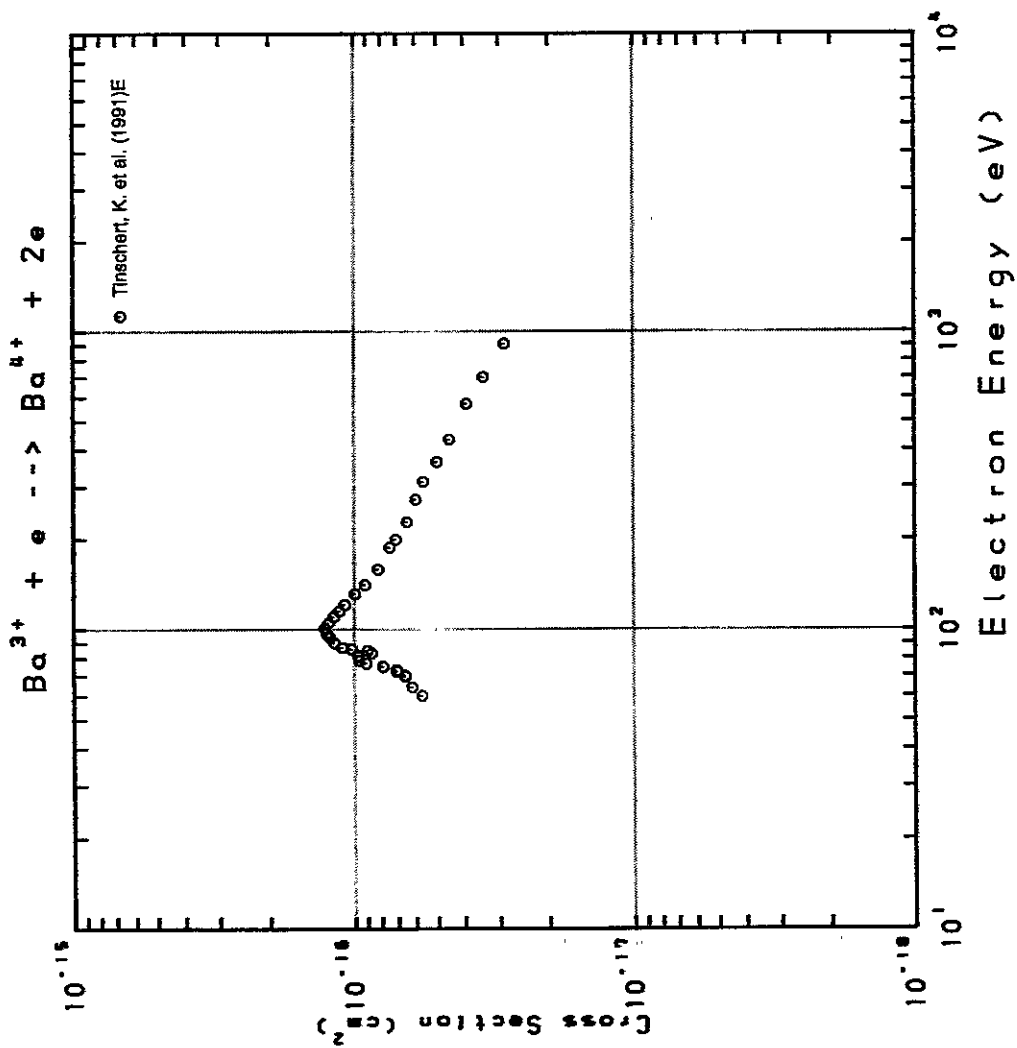


Fig. 395 $Ba^{3+} \rightarrow Ba^{4+}$

AMDIS-ION

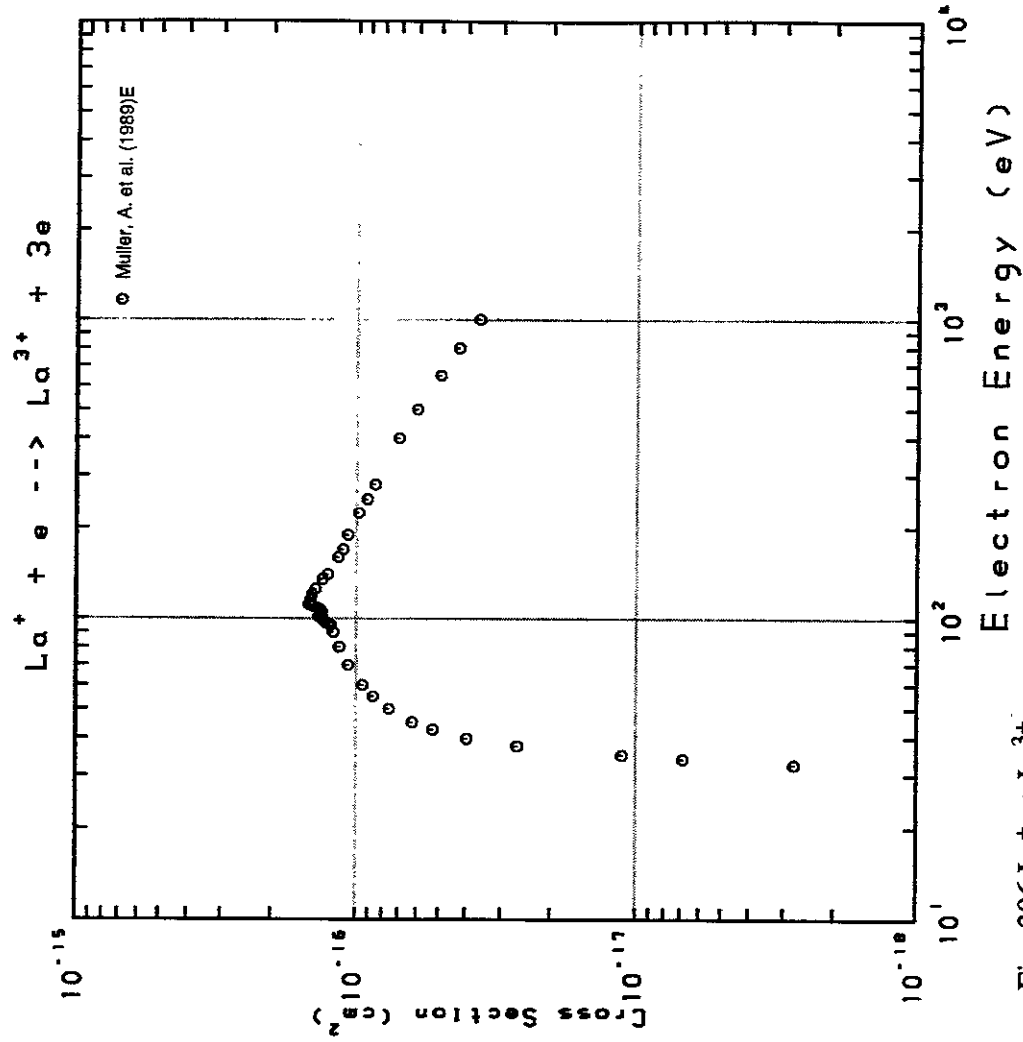


Fig. 396 $La^{3+} \rightarrow La^{3+}$

AMDIS-ION

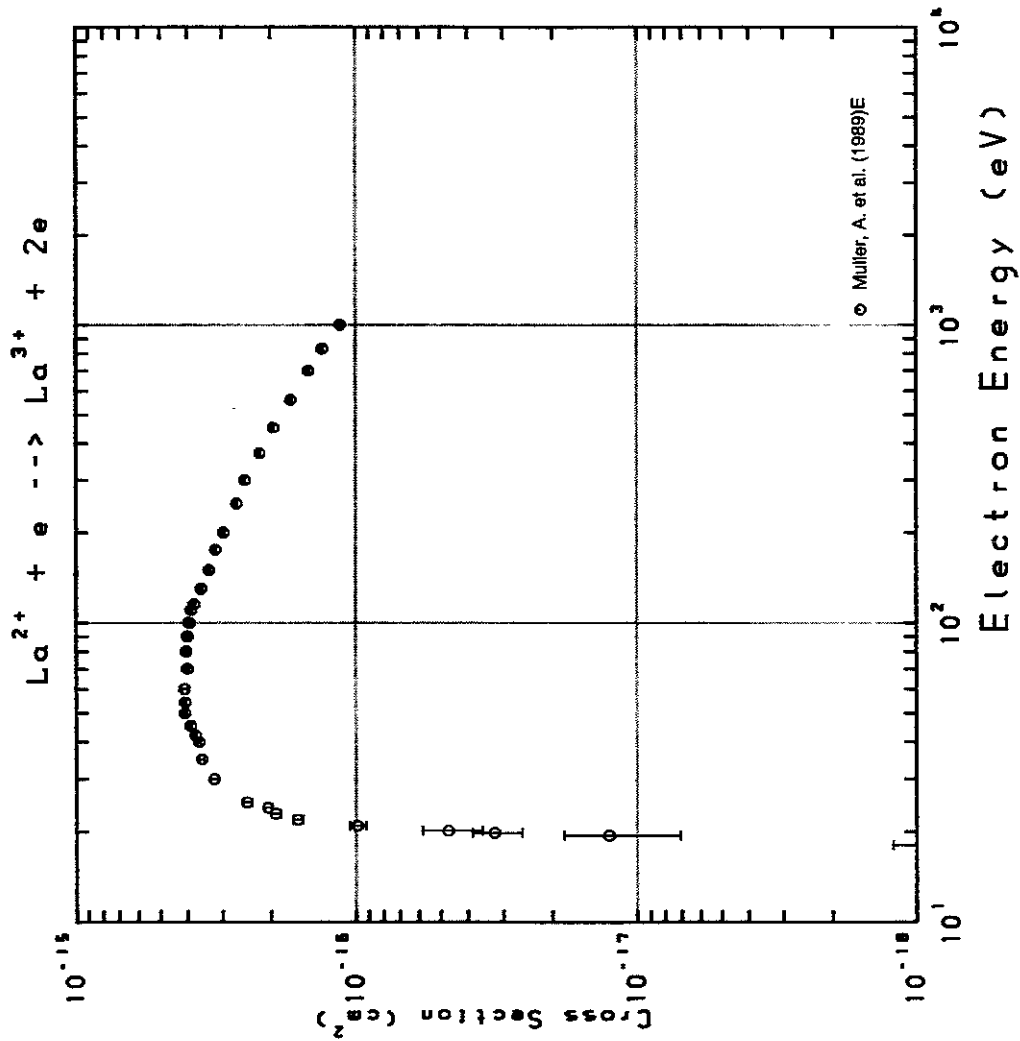


Fig. 397 $\text{La}^{2+} \rightarrow \text{La}^{3+}$

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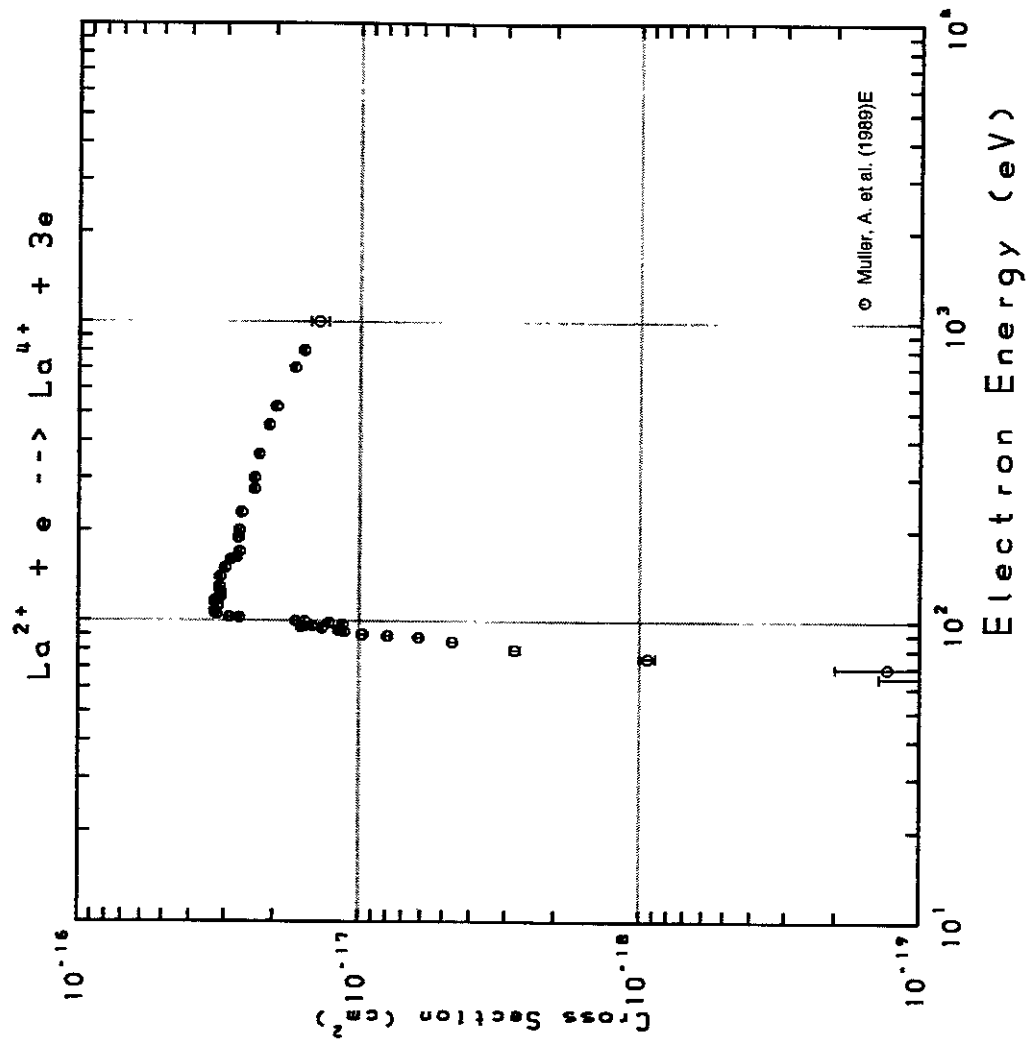


Fig. 398 $\text{La}^{2+} \rightarrow \text{La}^{4+}$

AMDIS-ION

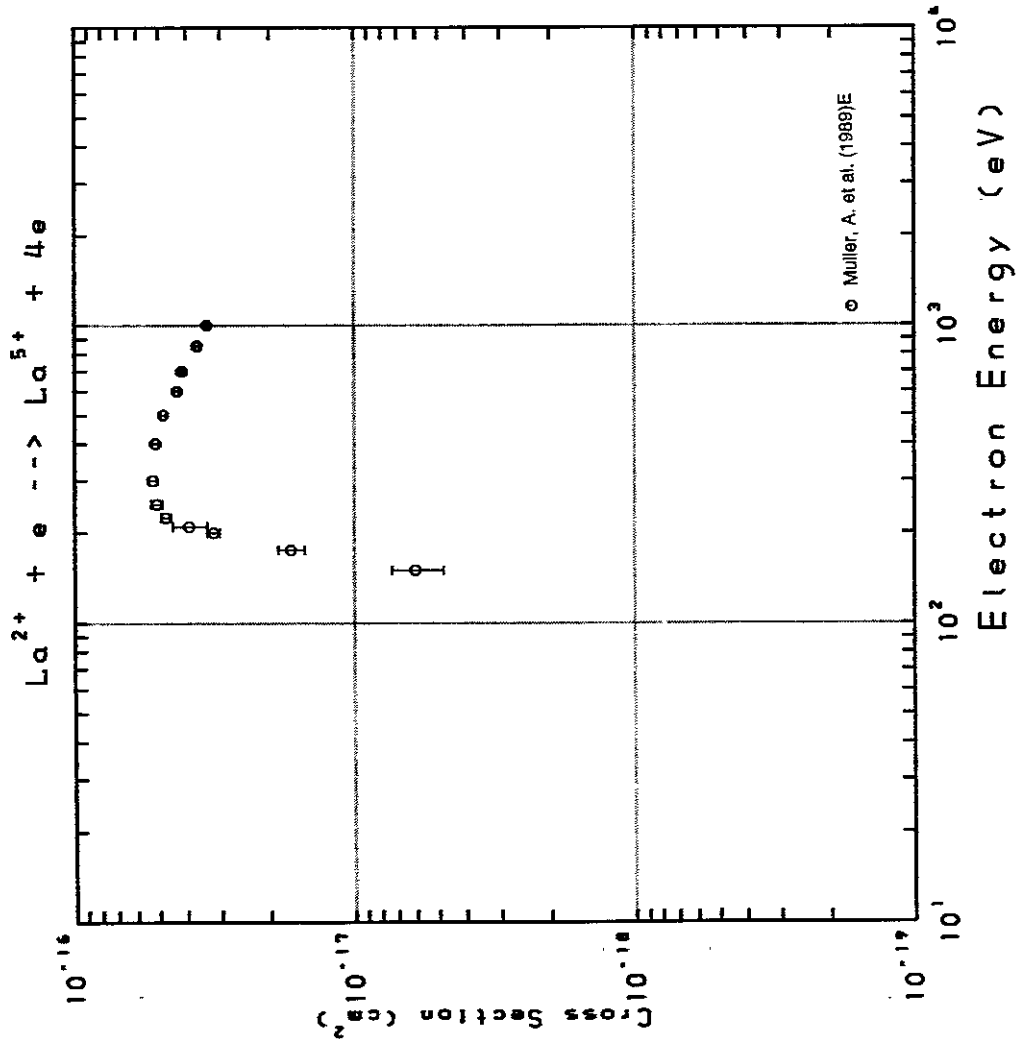


Fig. 399 $\text{La}^{2+} \rightarrow \text{La}^{5+}$

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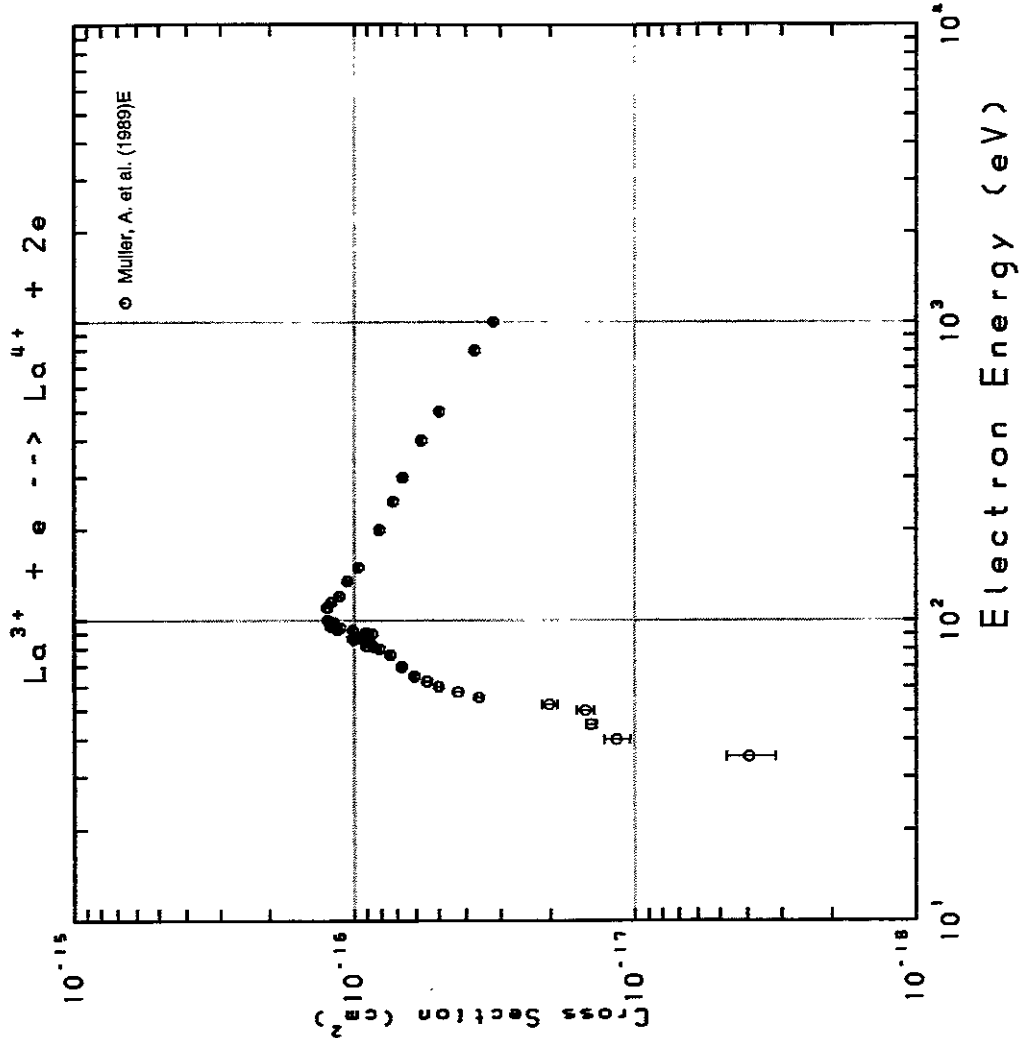


Fig. 400 $\text{La}^{3+} \rightarrow \text{La}^{4+}$

AMDIS-ION

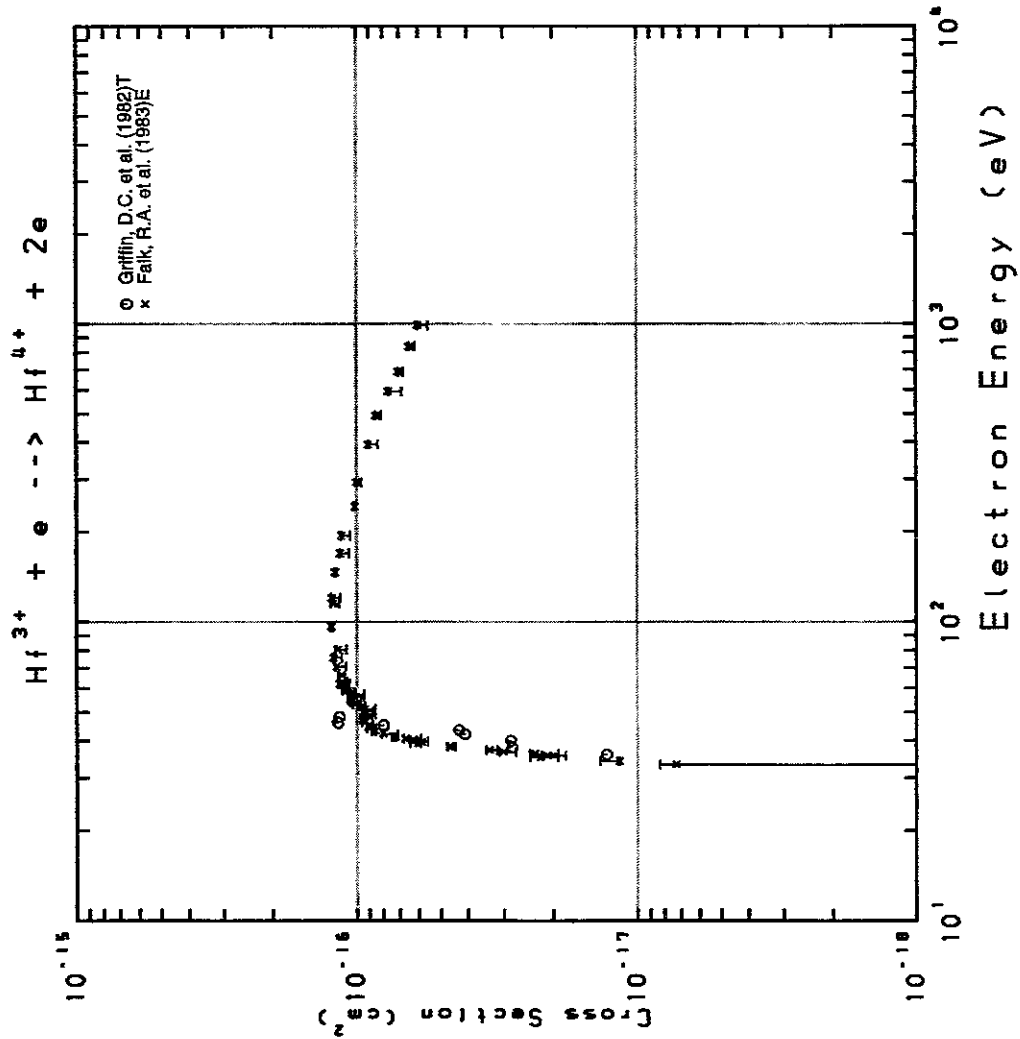


Fig. 401 $\text{Hf}^{3+} \rightarrow \text{Hf}^{4+}$

AMDIS-ION

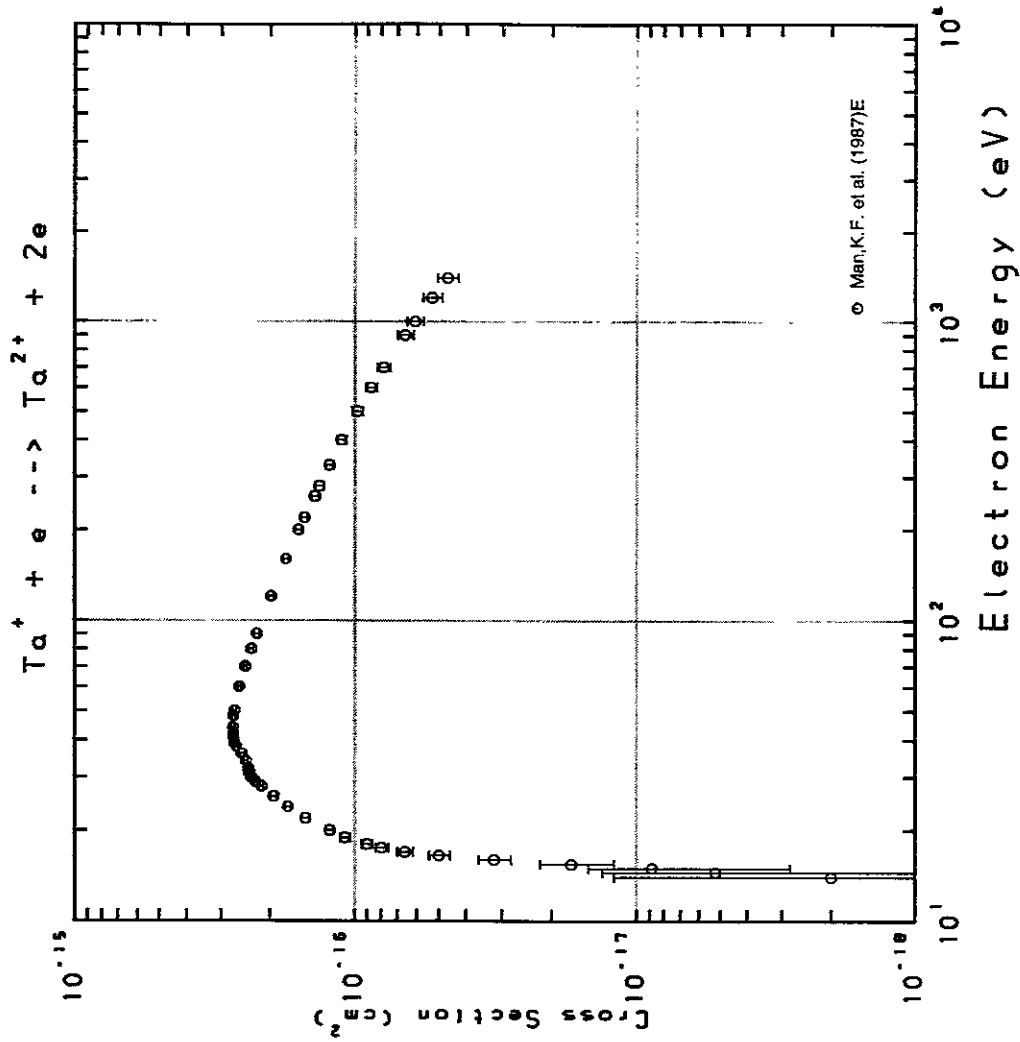


Fig. 402 $\text{Ta}^+ \rightarrow \text{Ta}^{2+}$

AMDIS-ION

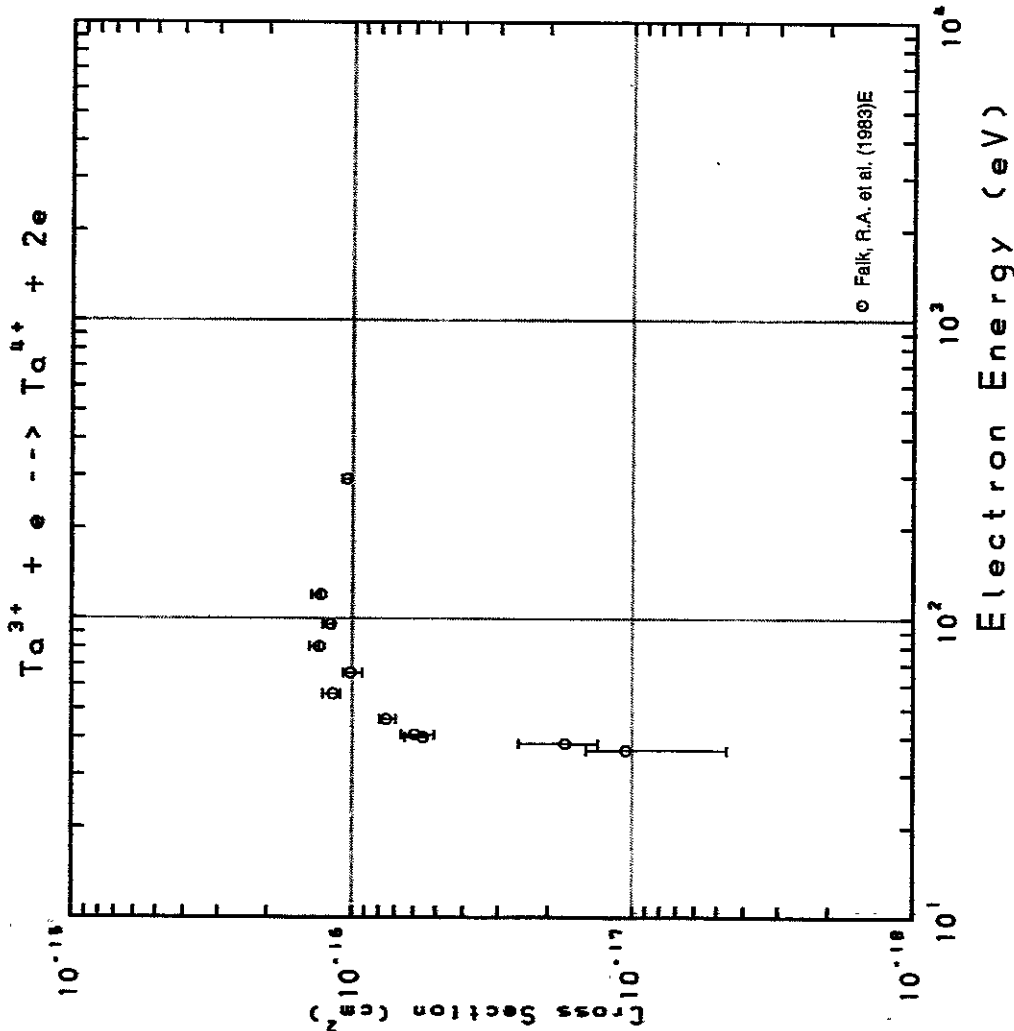


Fig. 403 $Ta^{3+} \rightarrow Ta^{4+}$

AMDIS-ION

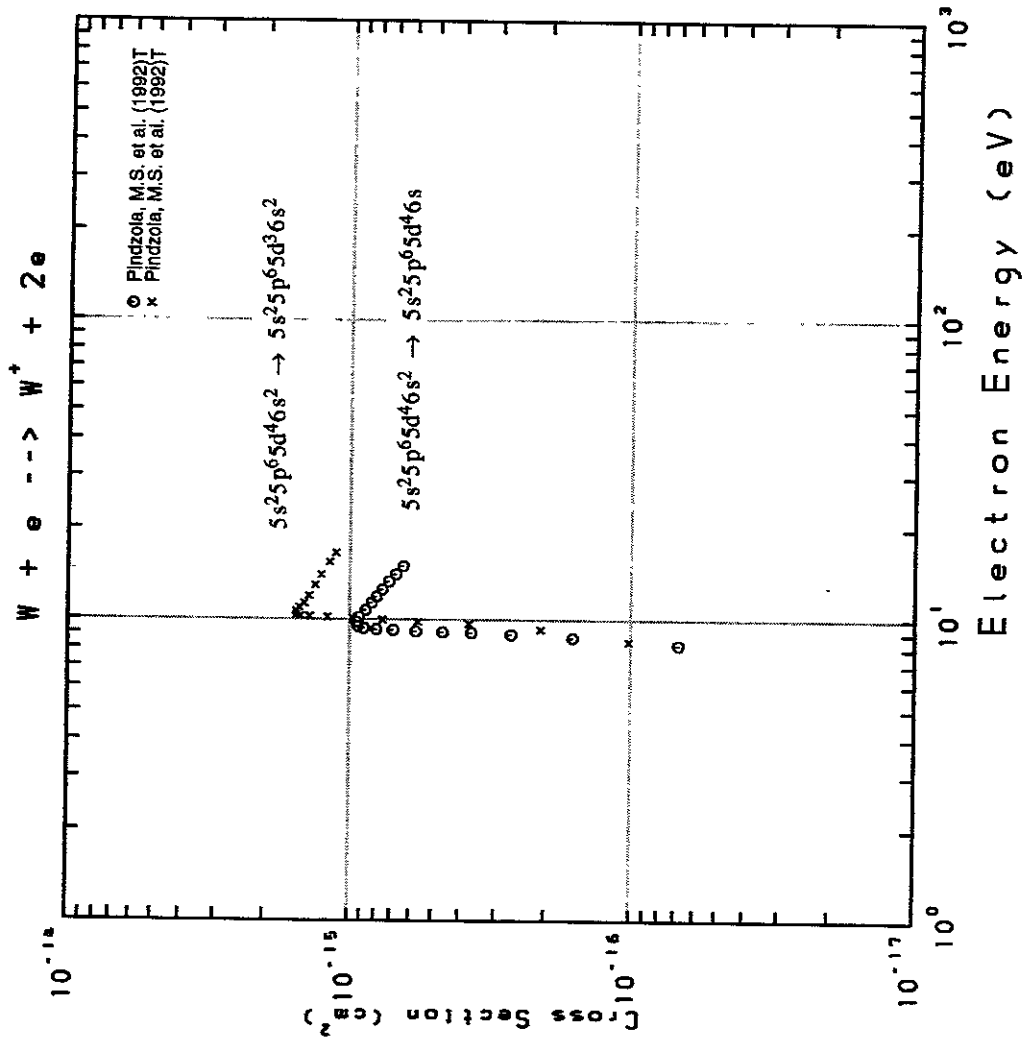


Fig. 404 $W \rightarrow W^{+}$

AMDIS-ION

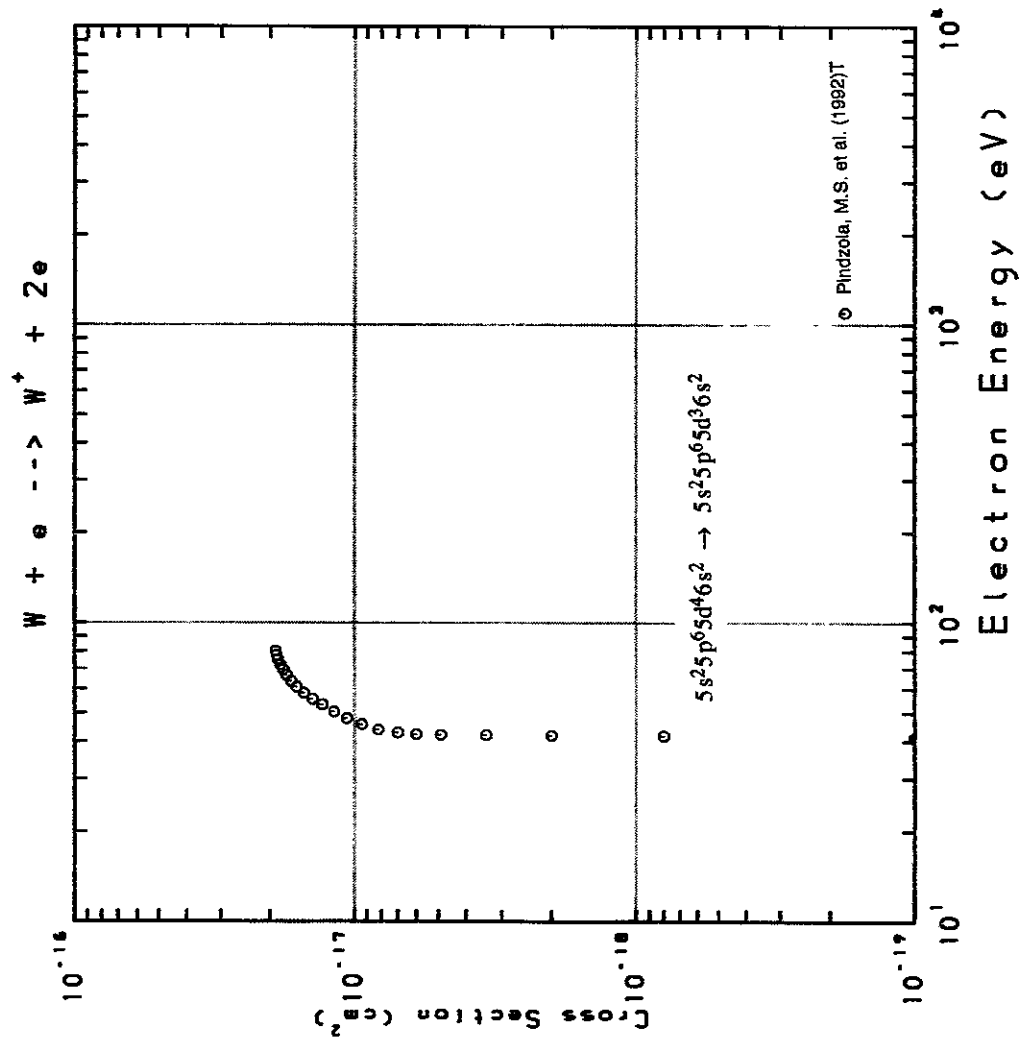


Fig. 405 $W \rightarrow W^+$

AMDIS-ION

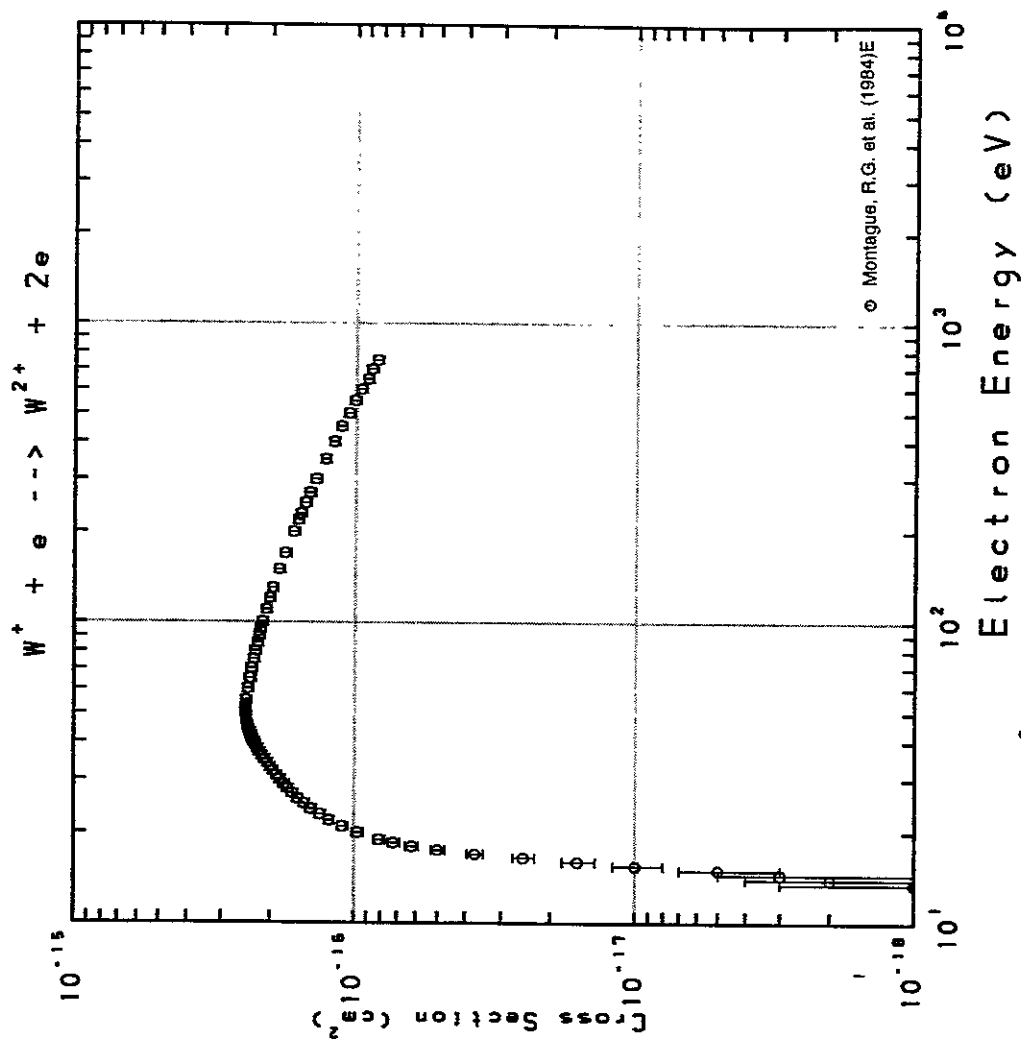


Fig. 406 $W^+ \rightarrow W^{2+}$

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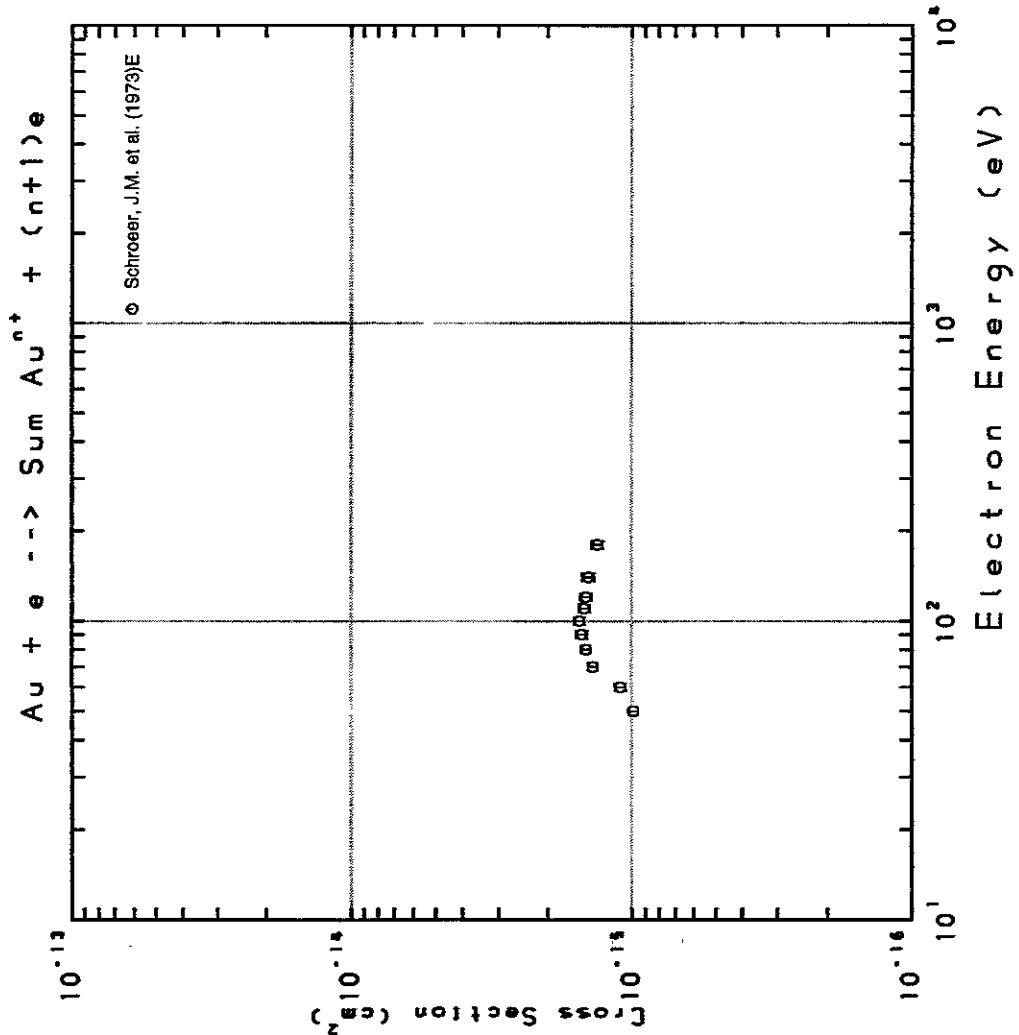


Fig. 407 Au $\rightarrow \Sigma Au^{n+}$

AMDIS-ION

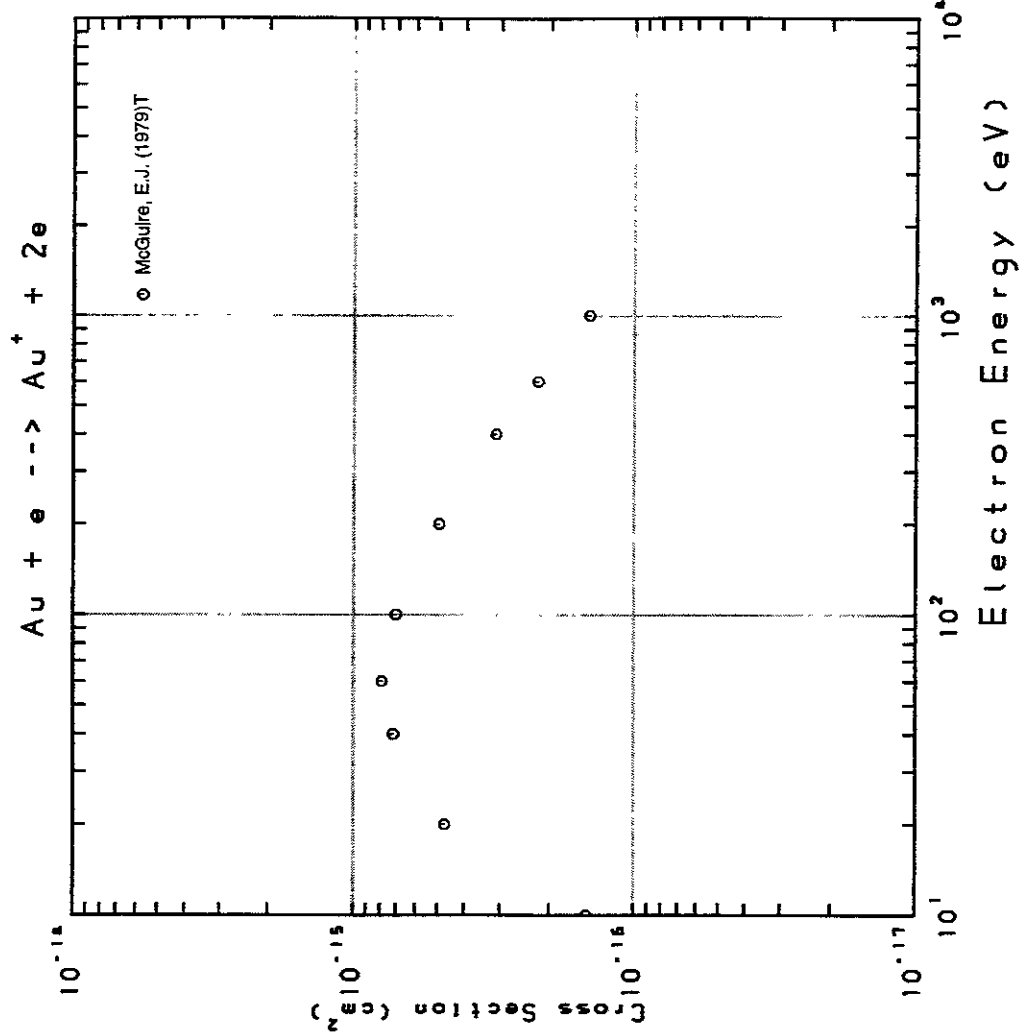


Fig. 408 Au $\rightarrow Au^+$

AMDIS-ION

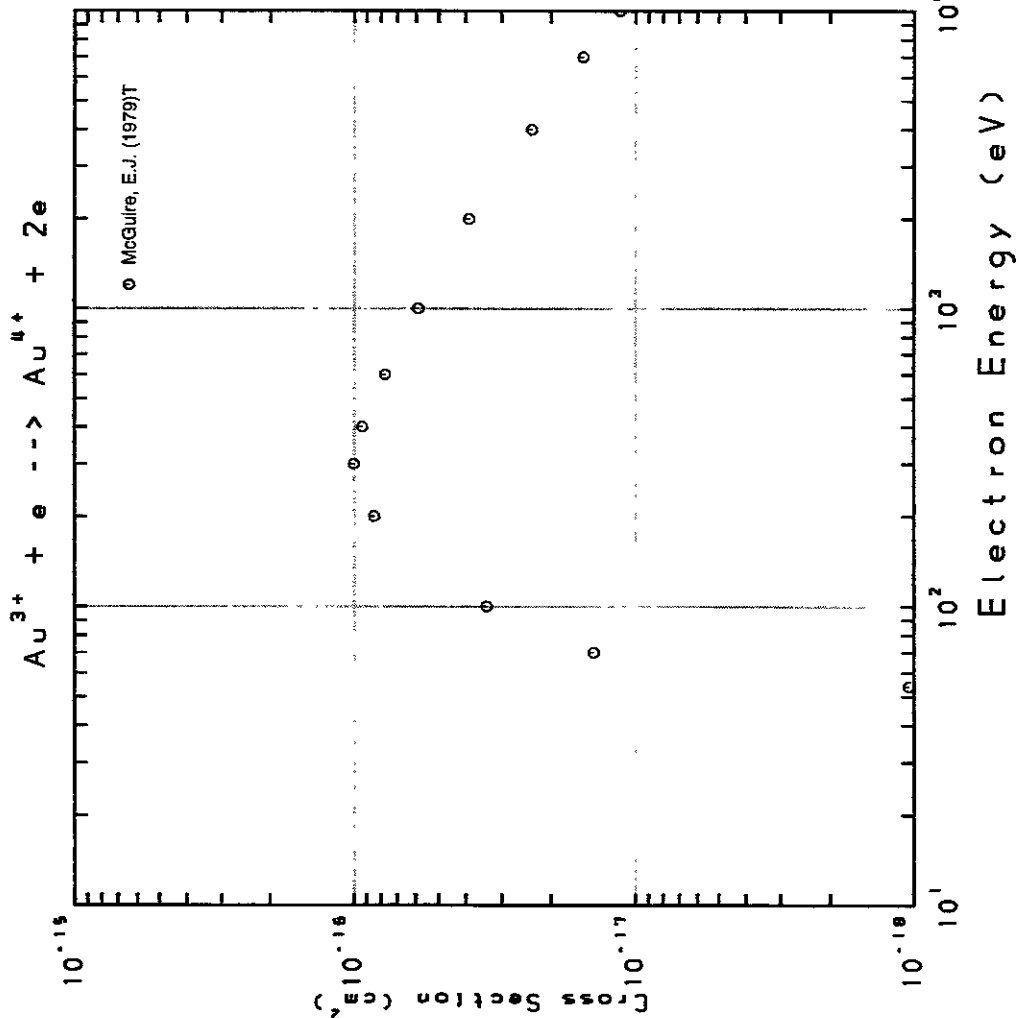


Fig. 409 $Au^{3+} \rightarrow Au^{4+}$

AMDIS-ION

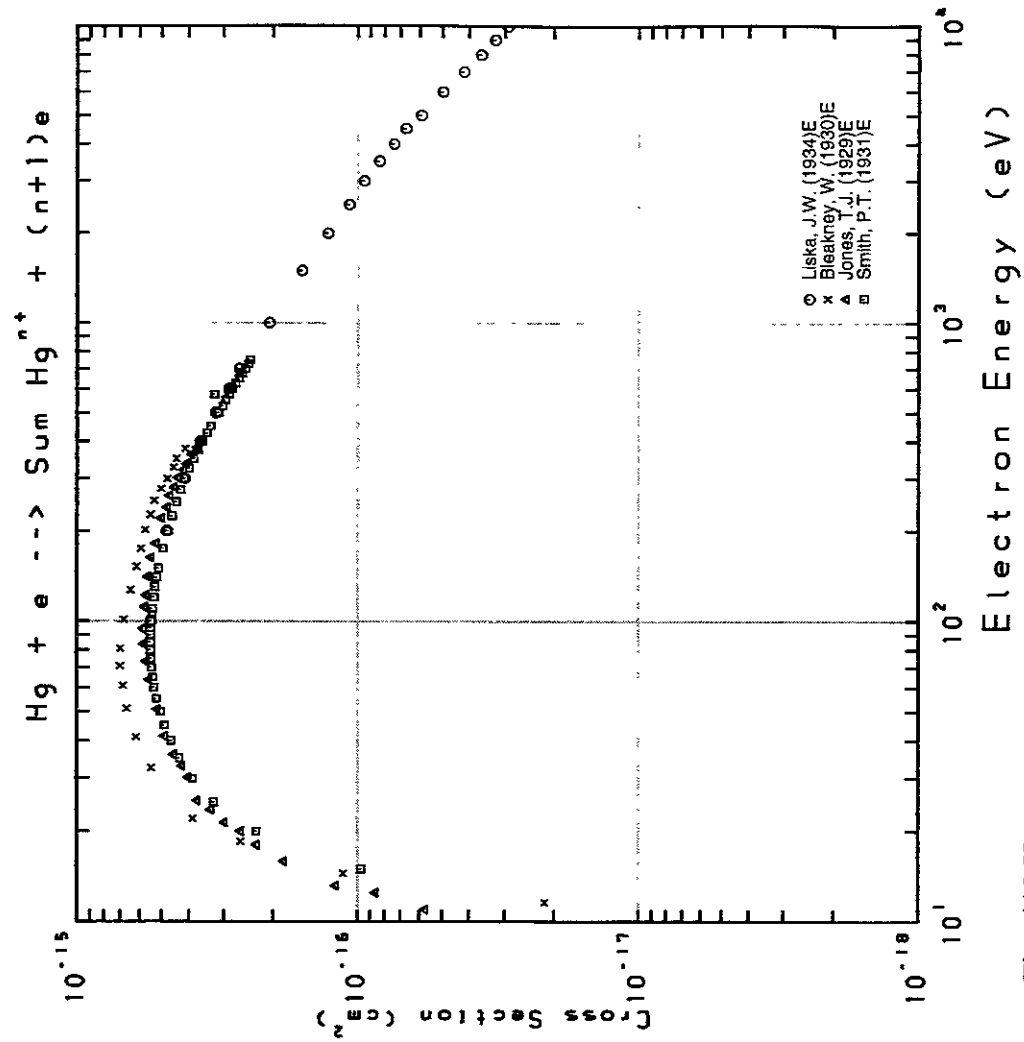


Fig. 410 $Hg \rightarrow \Sigma Hg^{n+}$

AMDIS-ION

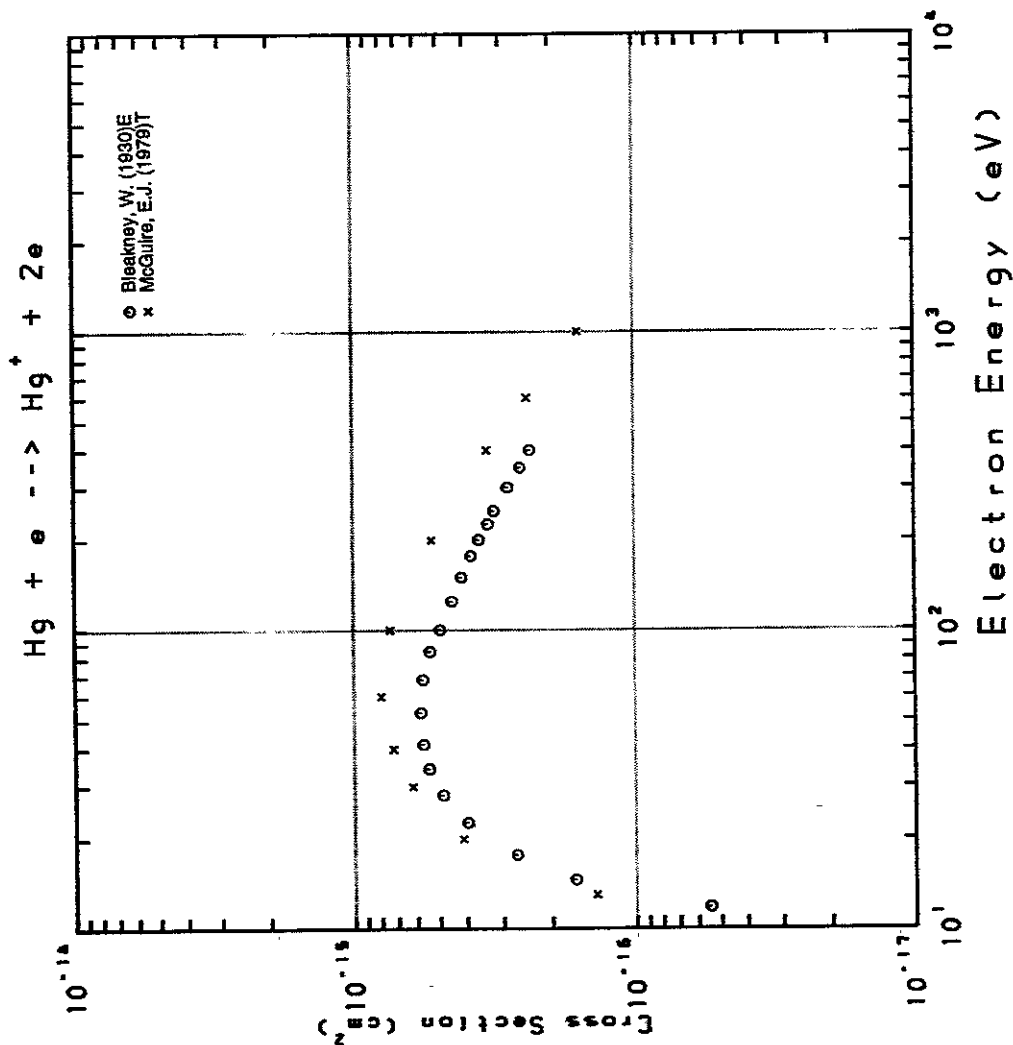


Fig. 411 $\text{Hg} \rightarrow \text{Hg}^+$

AMDIS-ION

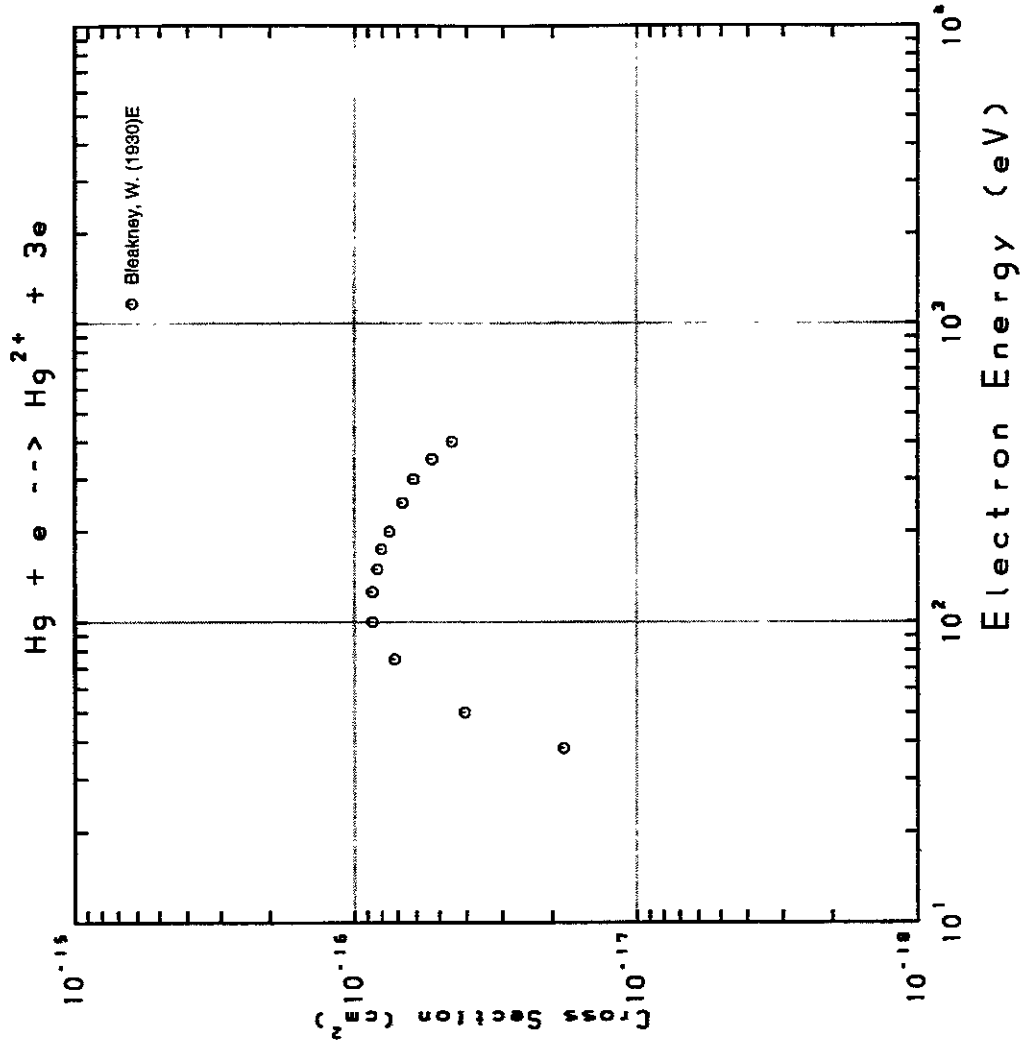


Fig. 412 $\text{Hg} \rightarrow \text{Hg}^{2+}$

AMDIS-ION

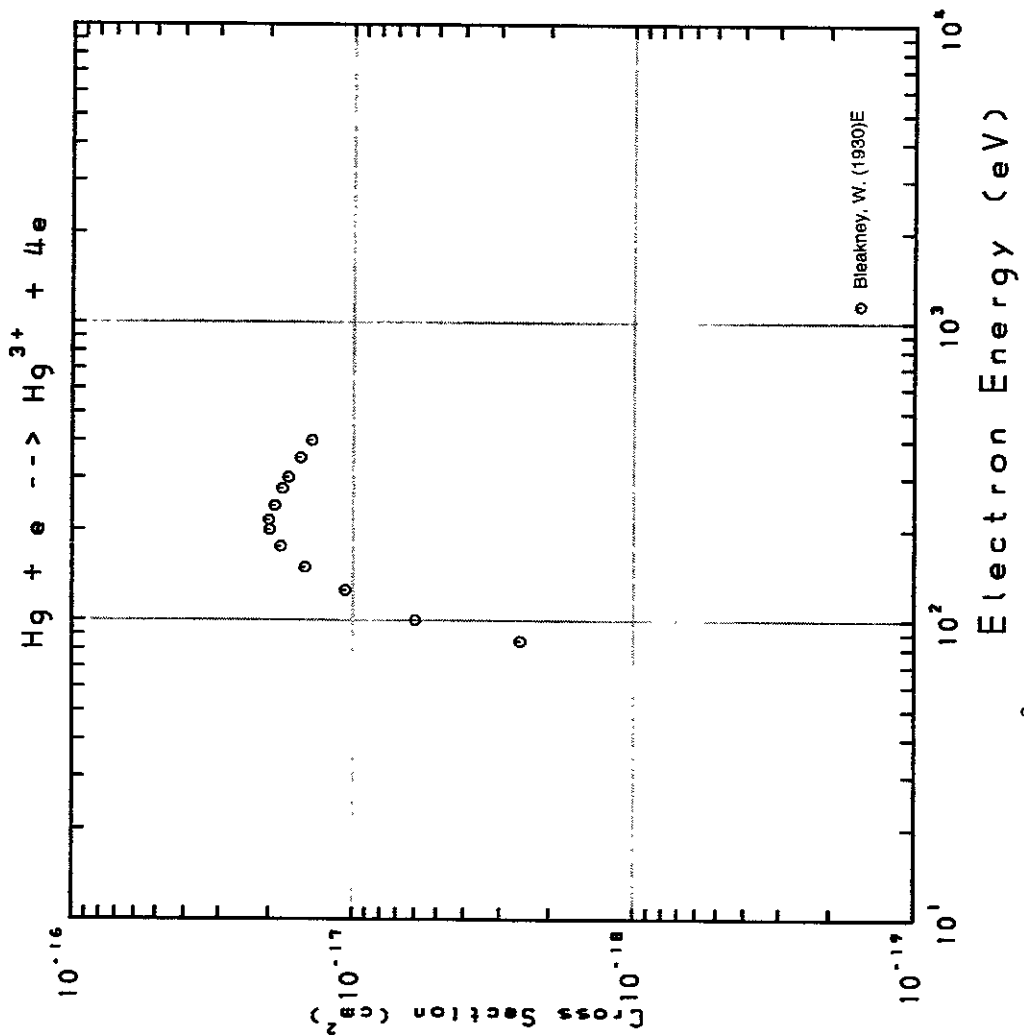


Fig. 413 $\text{Hg} \rightarrow \text{Hg}^{3+}$

AMDIS-ION

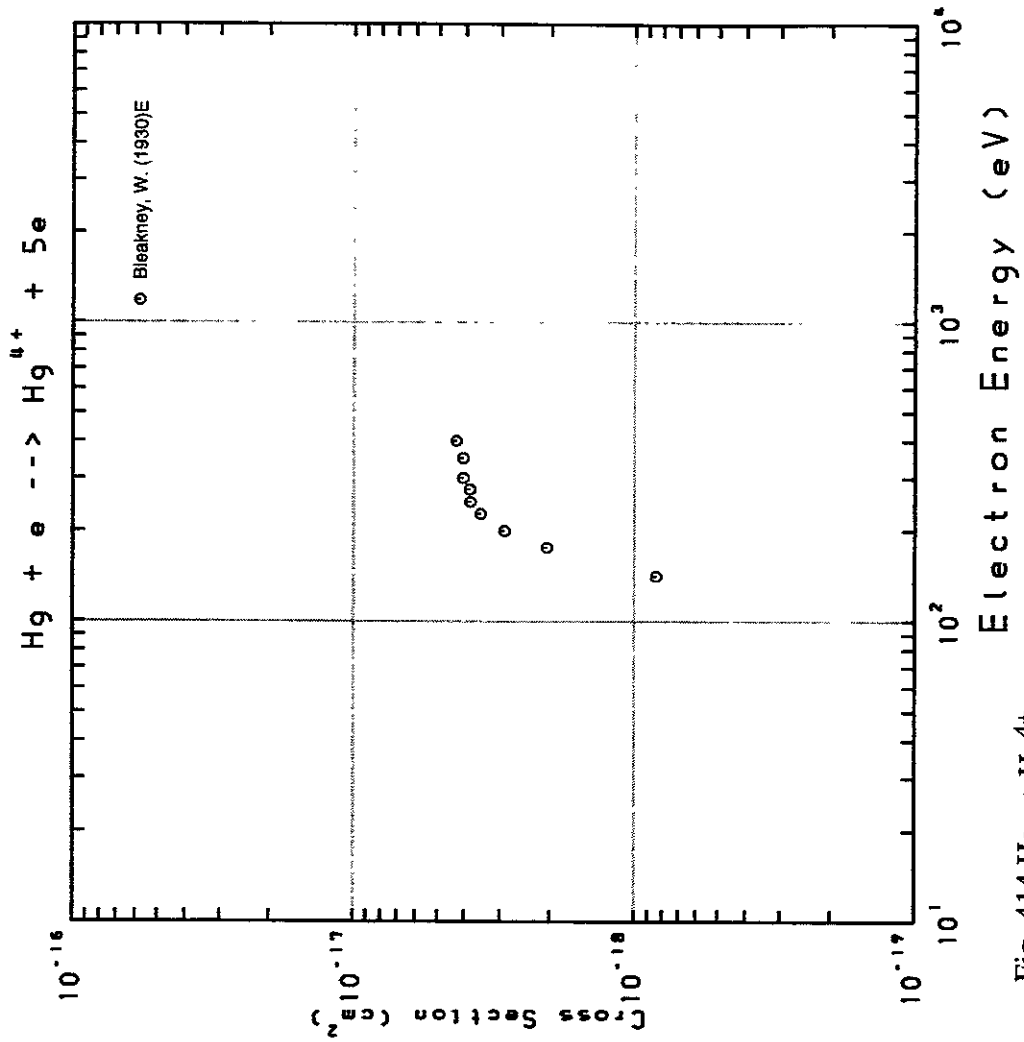


Fig. 414 $\text{Hg} \rightarrow \text{Hg}^{4+}$

AMDIS-ION

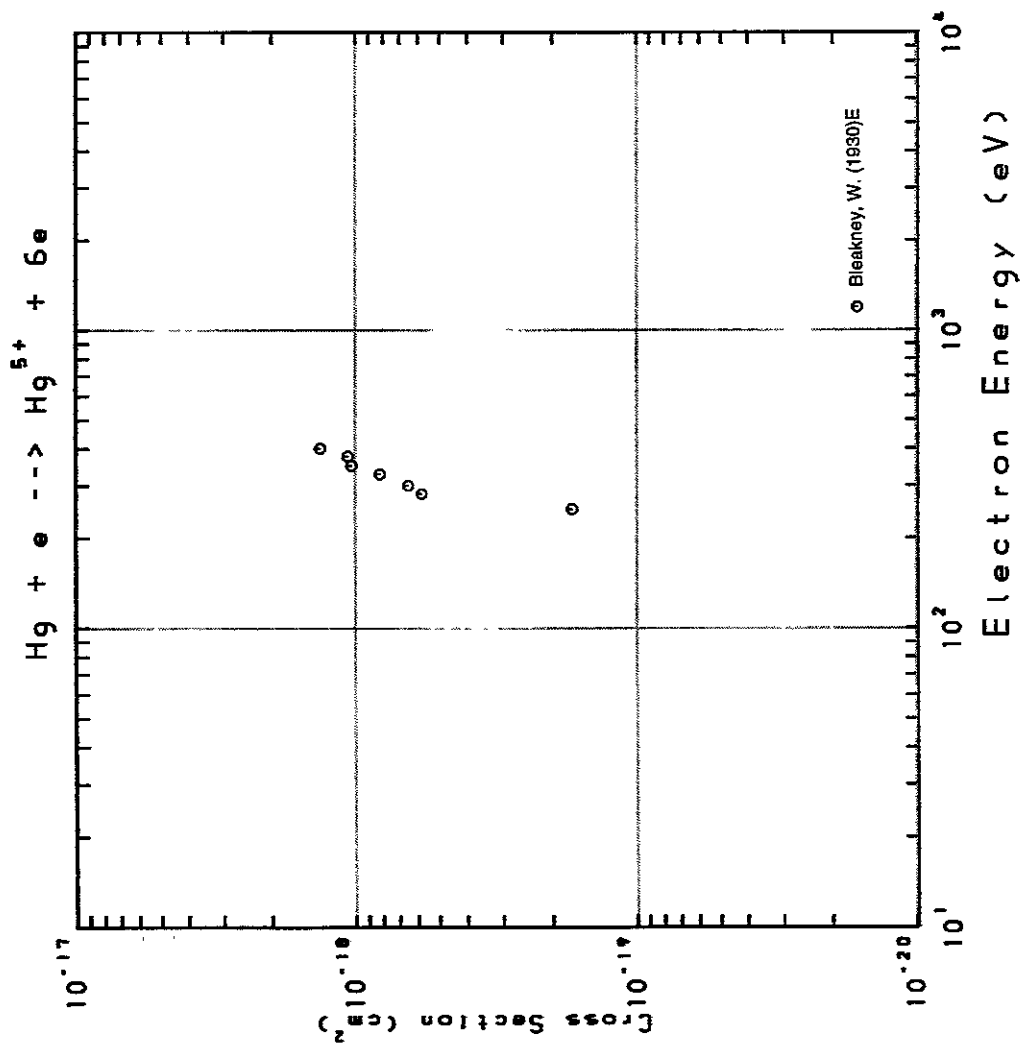


Fig. 415 $\text{Hg} \rightarrow \text{Hg}^{5+}$

AMDIS-ION

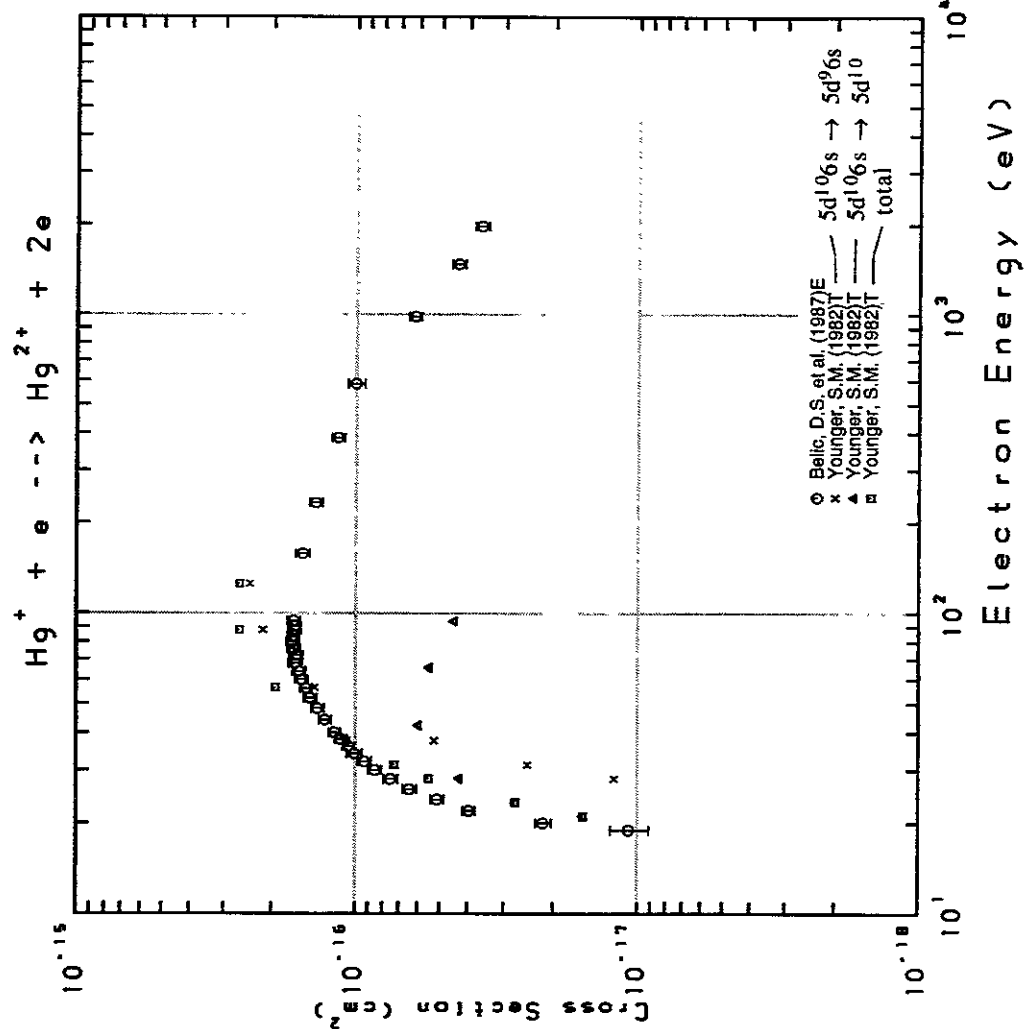


Fig. 416 $\text{Hg}^+ \rightarrow \text{Hg}^{2+}$

AMDIS-ION

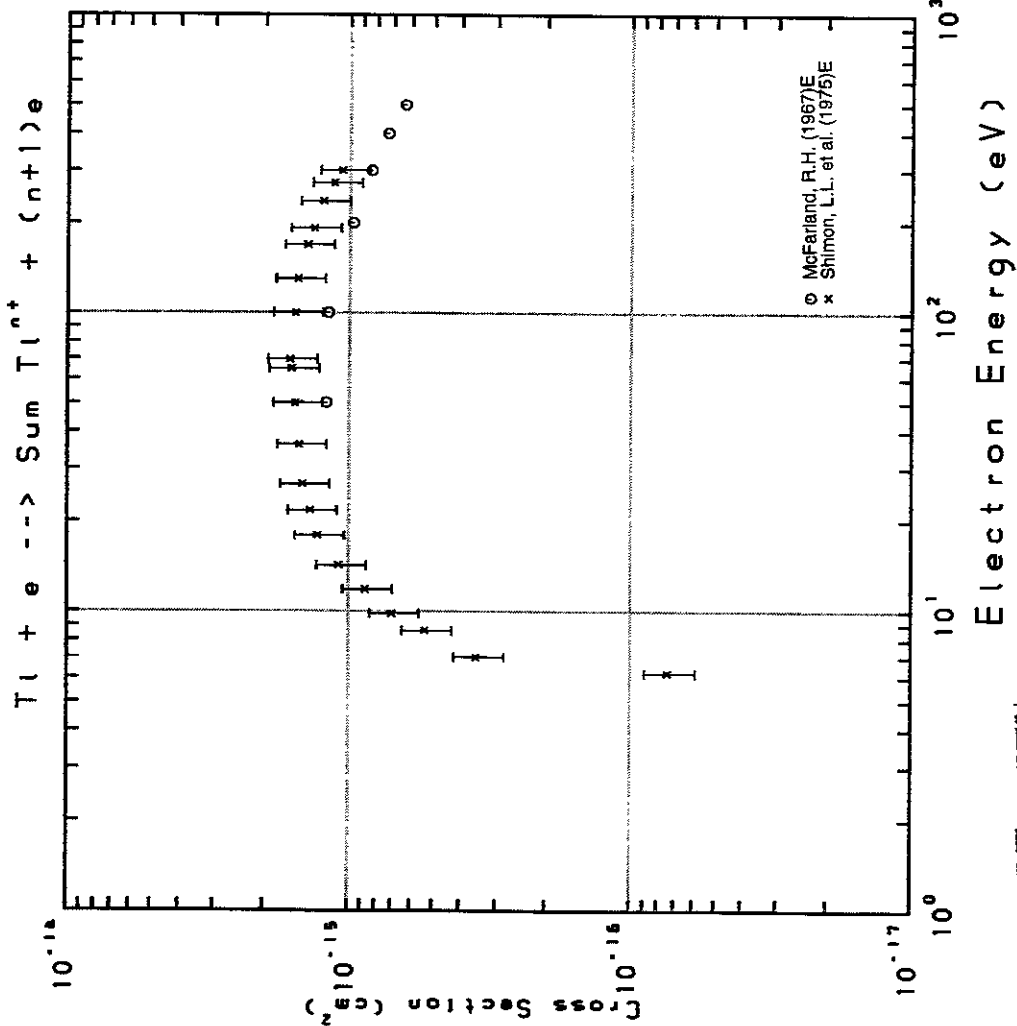


Fig. 417 Tl → ΣTlⁿ⁺

AMDIS-ION

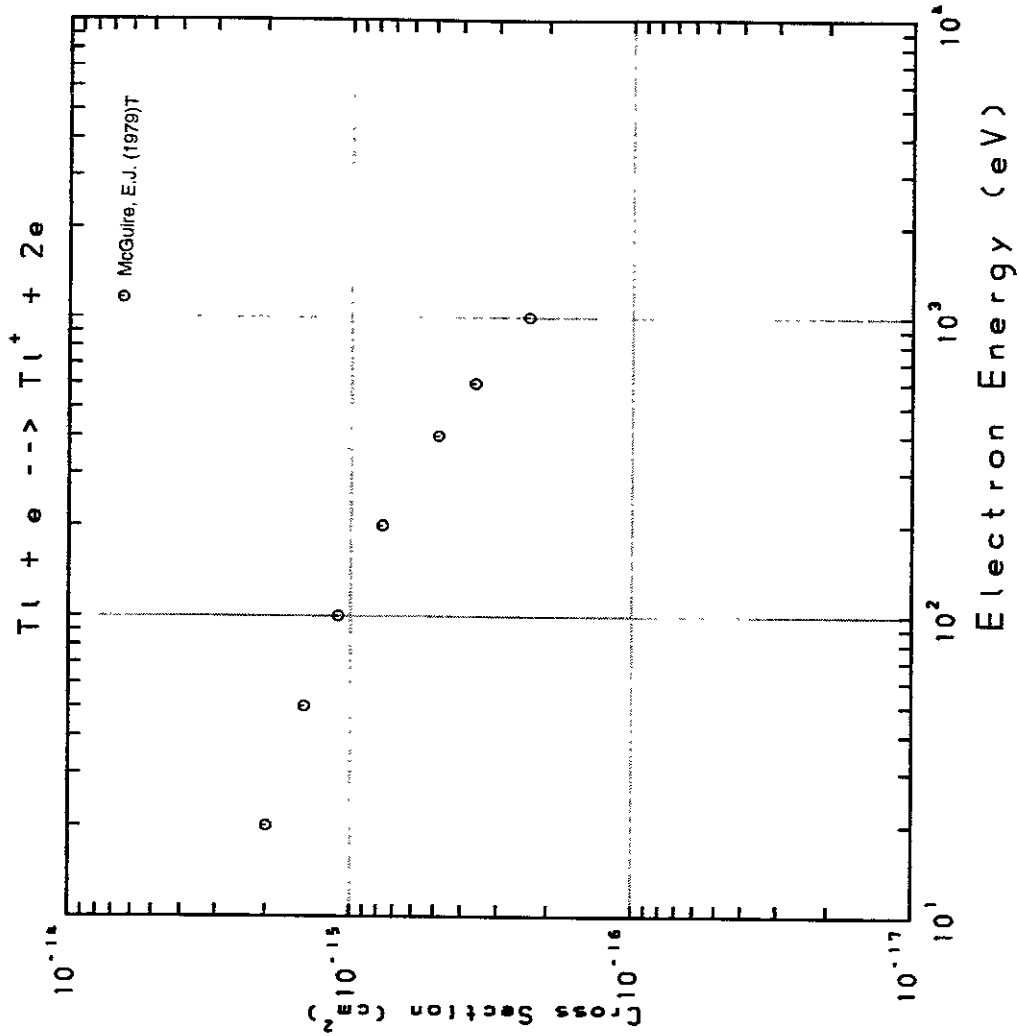


Fig. 418 Tl → Tl⁺

AMDIS-ION

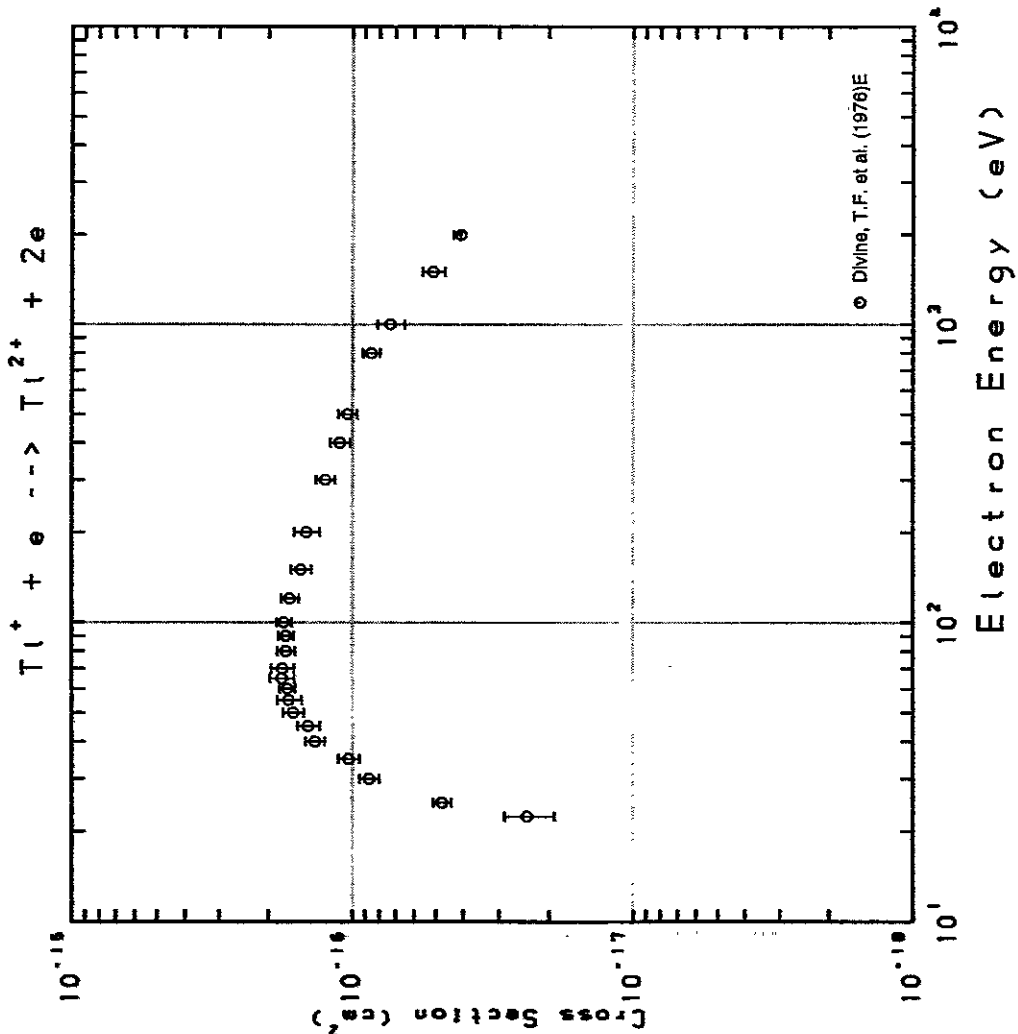


Fig. 419 $Tl^+ \rightarrow Tl^{2+}$

AMDIS-ION

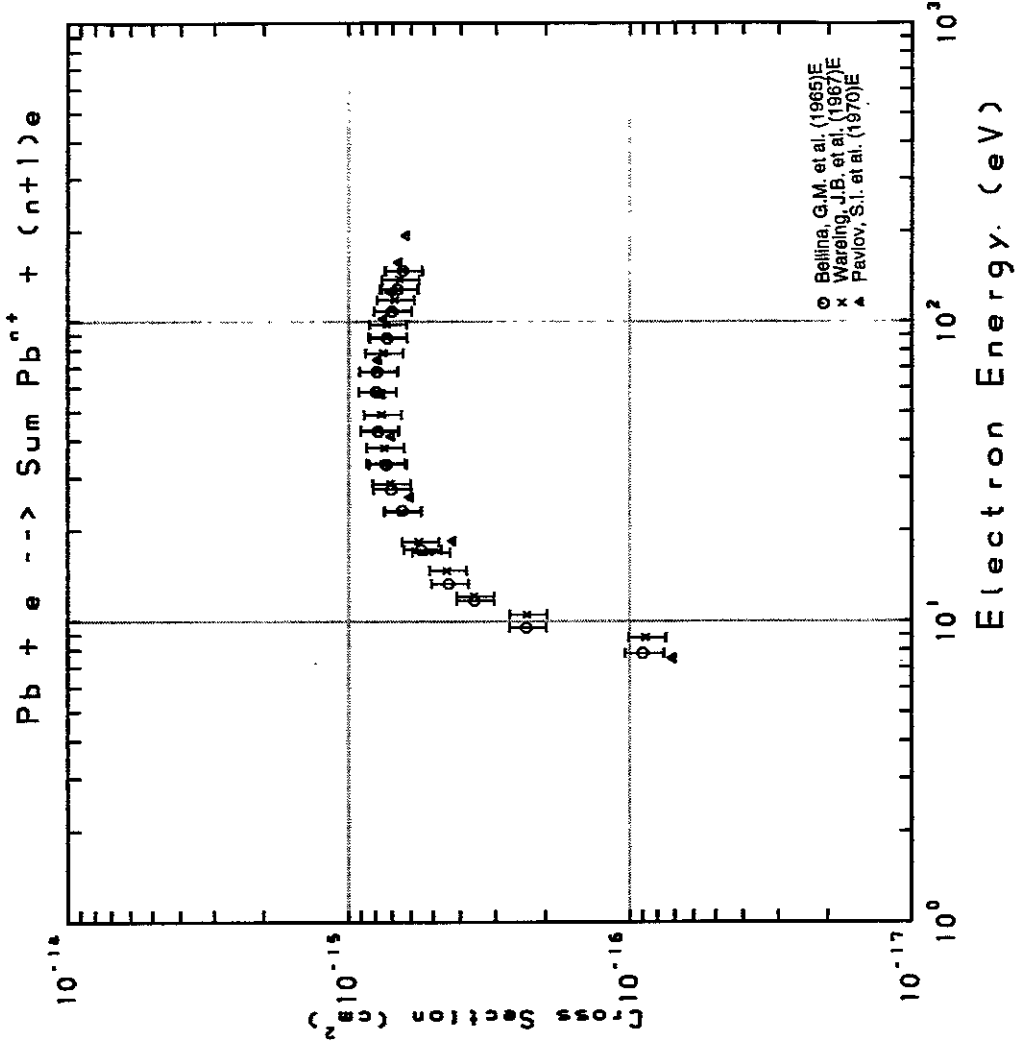


Fig. 420 $Pb \rightarrow \Sigma Pb^{n+}$

AMDIS-ION

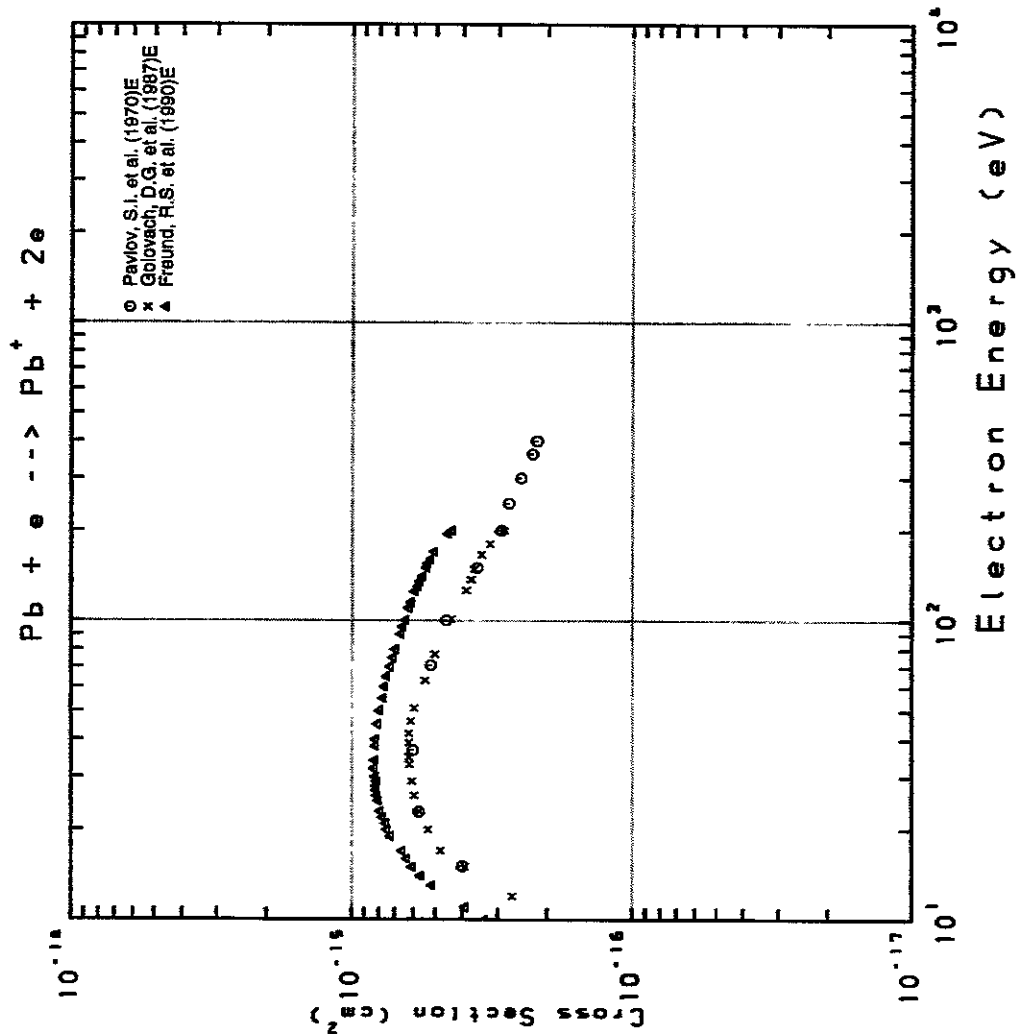


Fig. 421 $Pb \rightarrow Pb^+$

AMDIS-ION

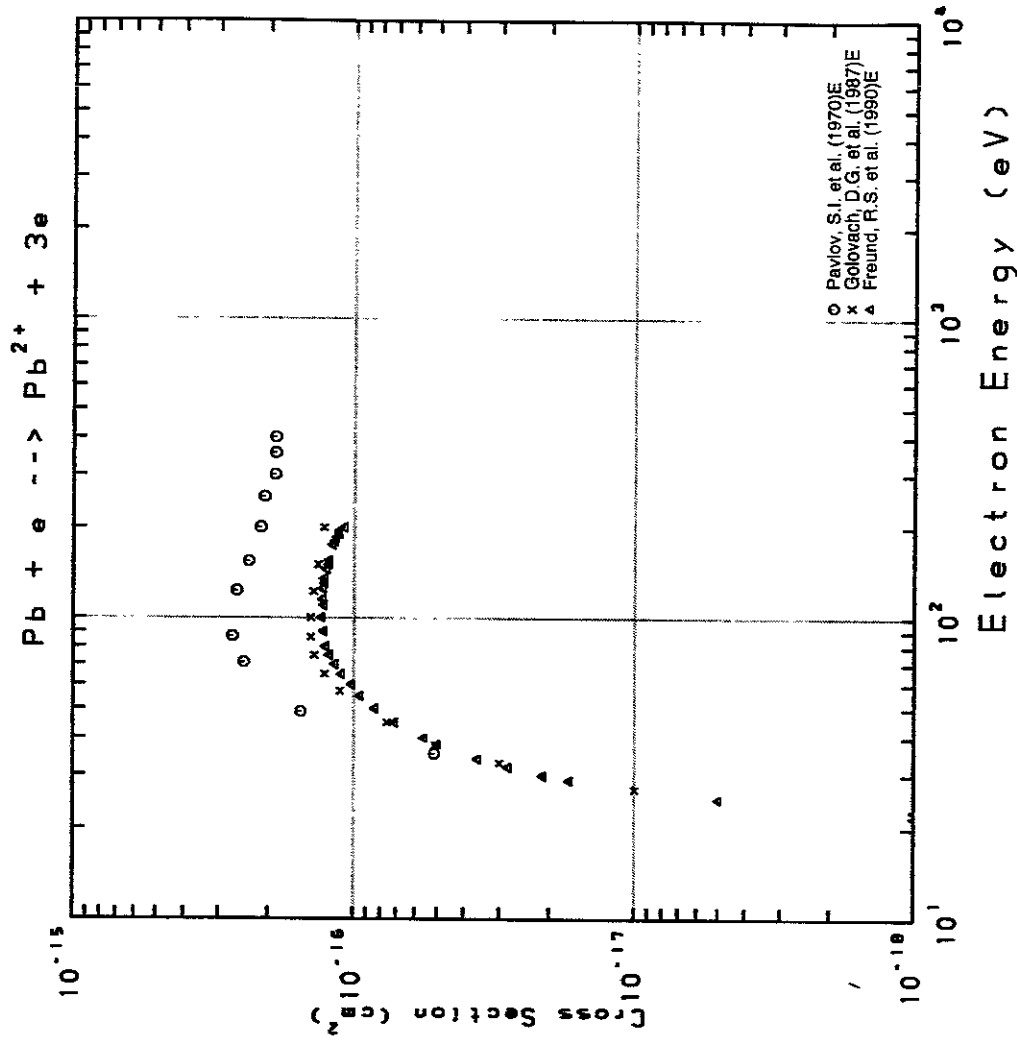


Fig. 422 $Pb \rightarrow Pb^{2+}$

AMDIS-ION

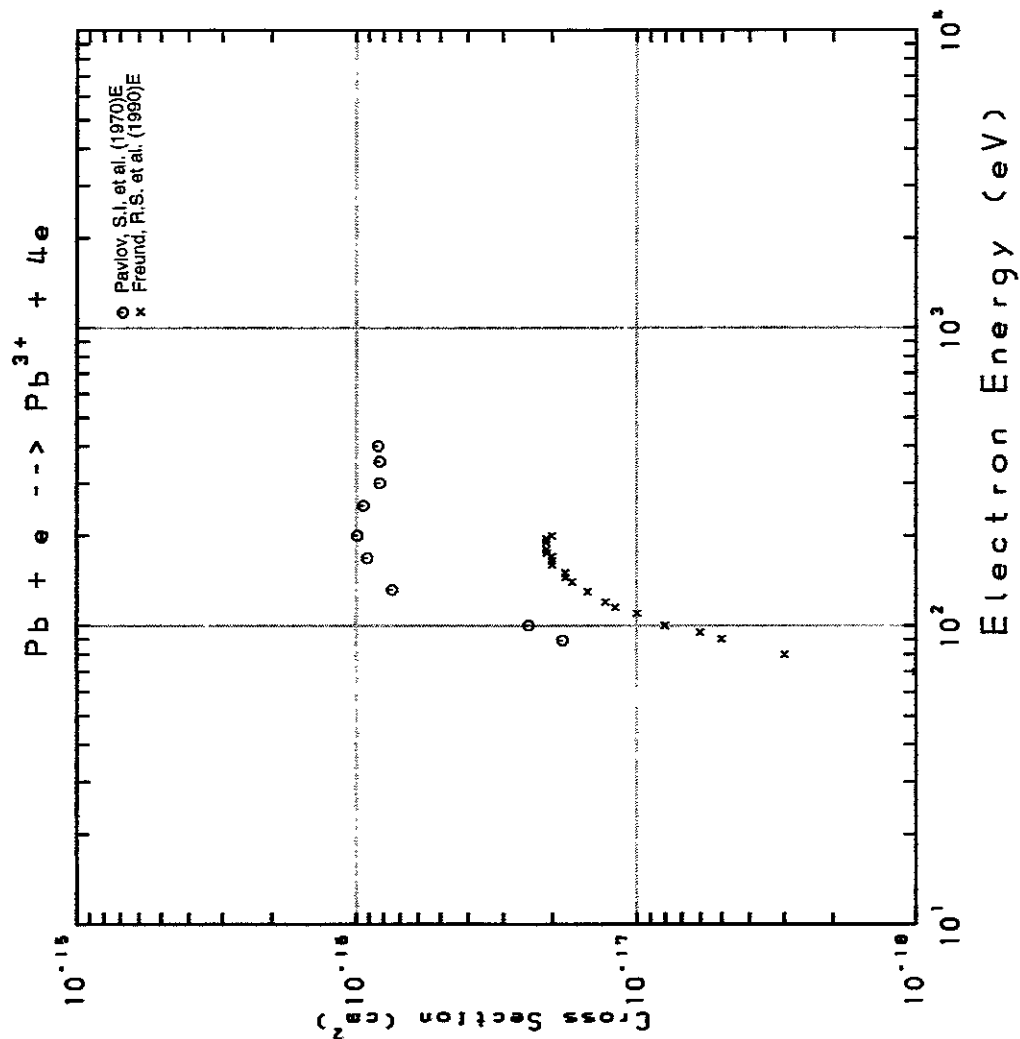


Fig. 423 Pb \rightarrow Pb³⁺

AMDIS-ION

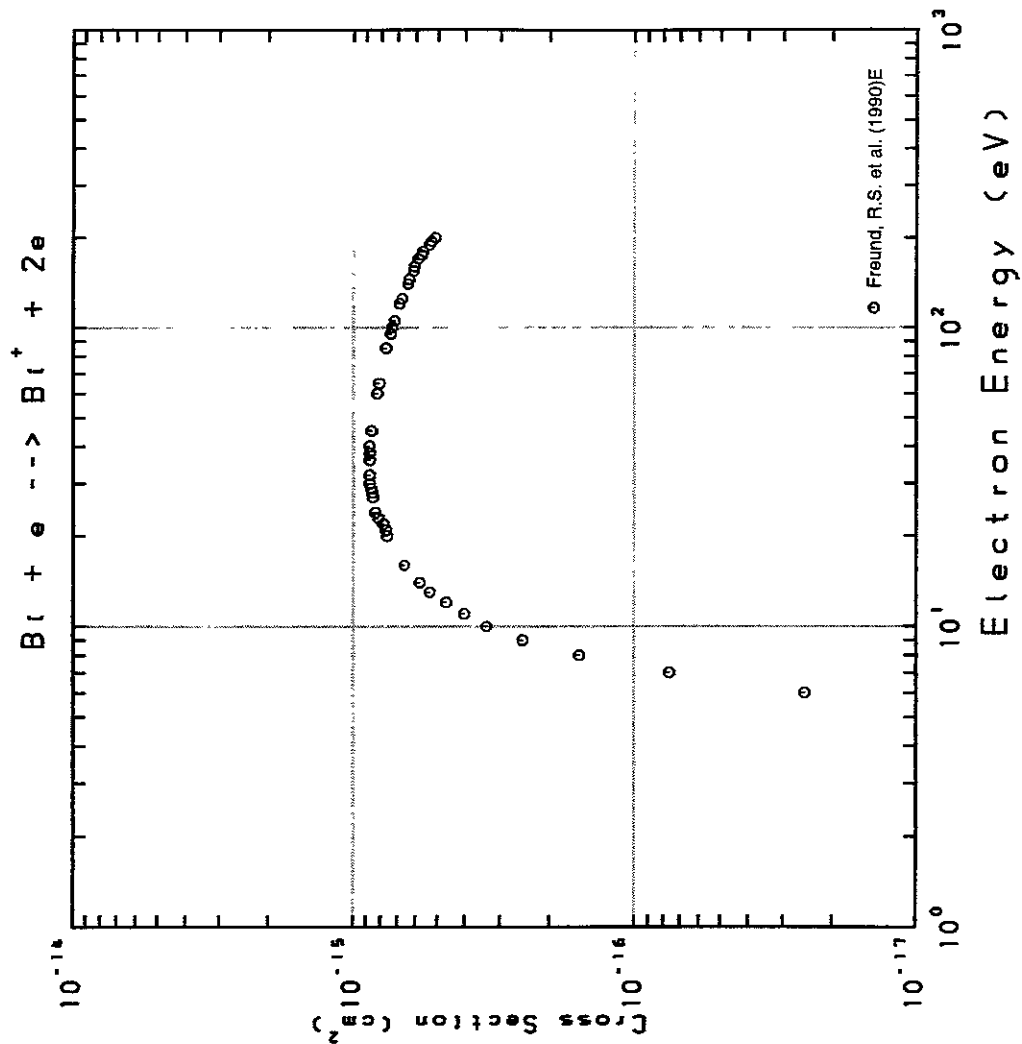


Fig. 424 Bi \rightarrow Bi⁺

AMDIS-ION

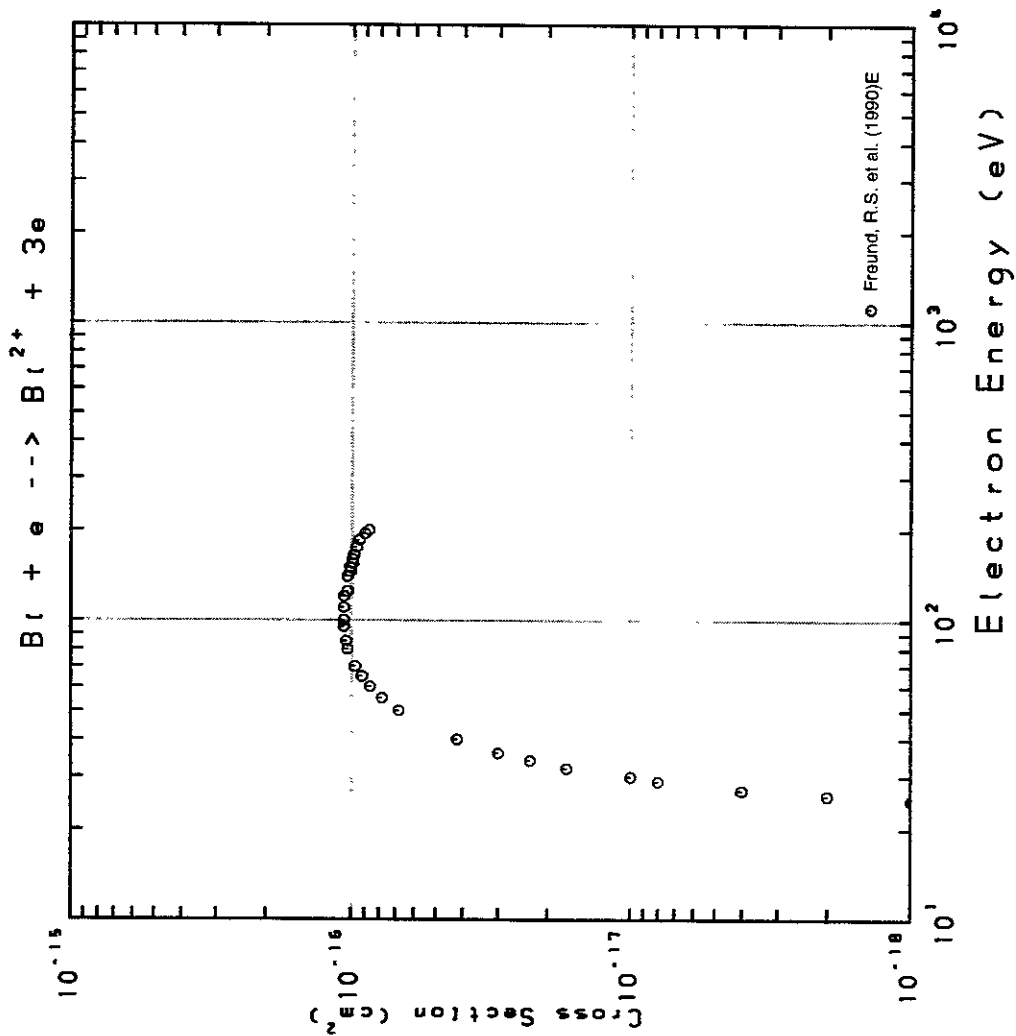


Fig. 425 Bi \rightarrow Bi²⁺

AMDIS-ION

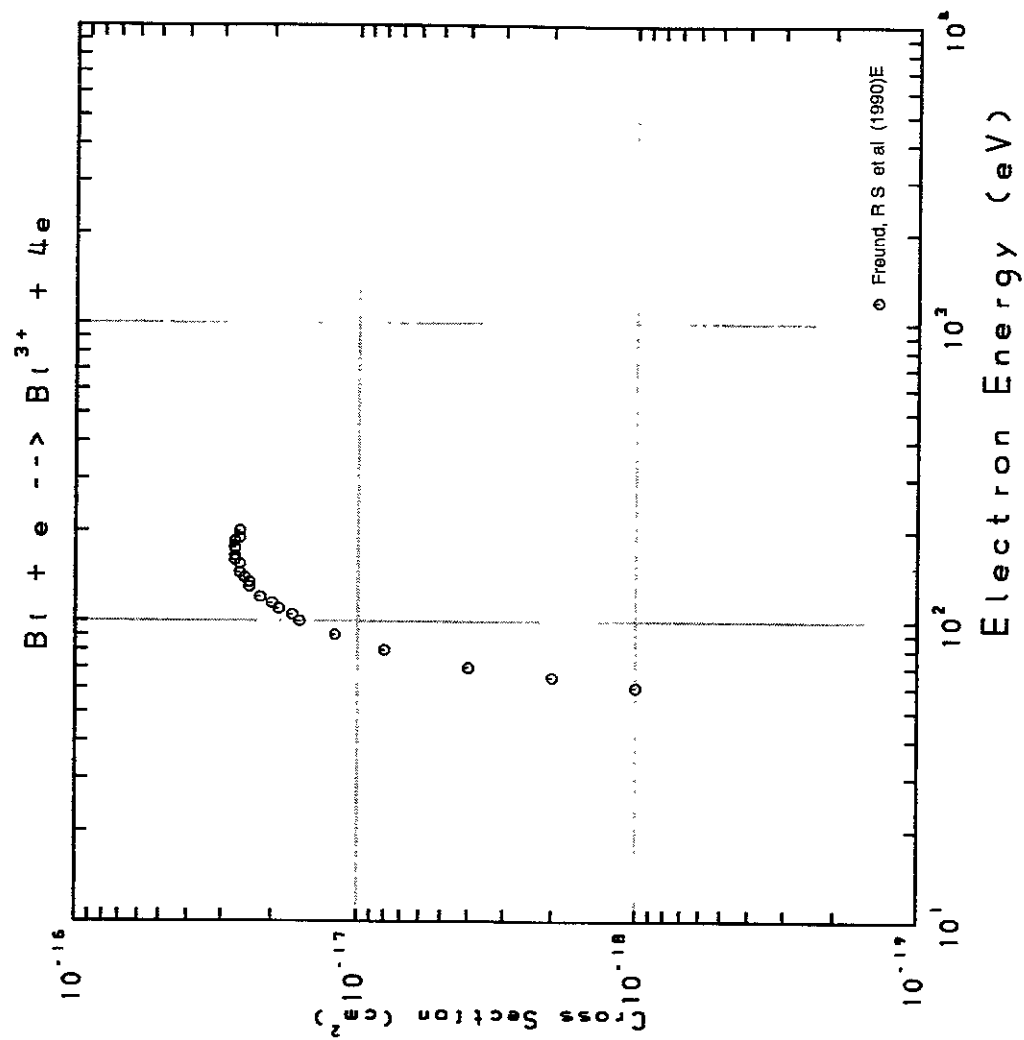


Fig. 426 Bi \rightarrow Bi³⁺

AMDIS-ION

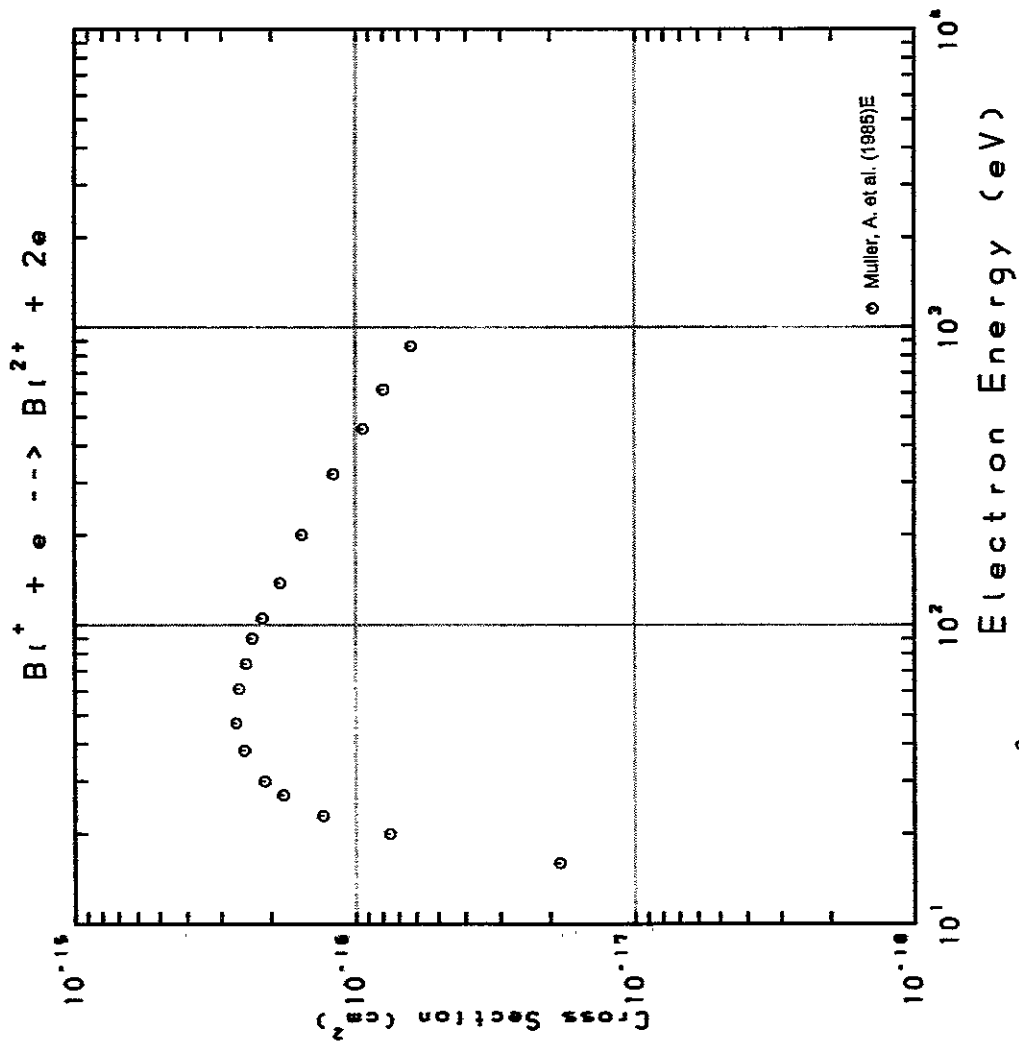


Fig. 427 $\text{Bi}^+ \rightarrow \text{Bi}^{2+}$

AMDIS-ION

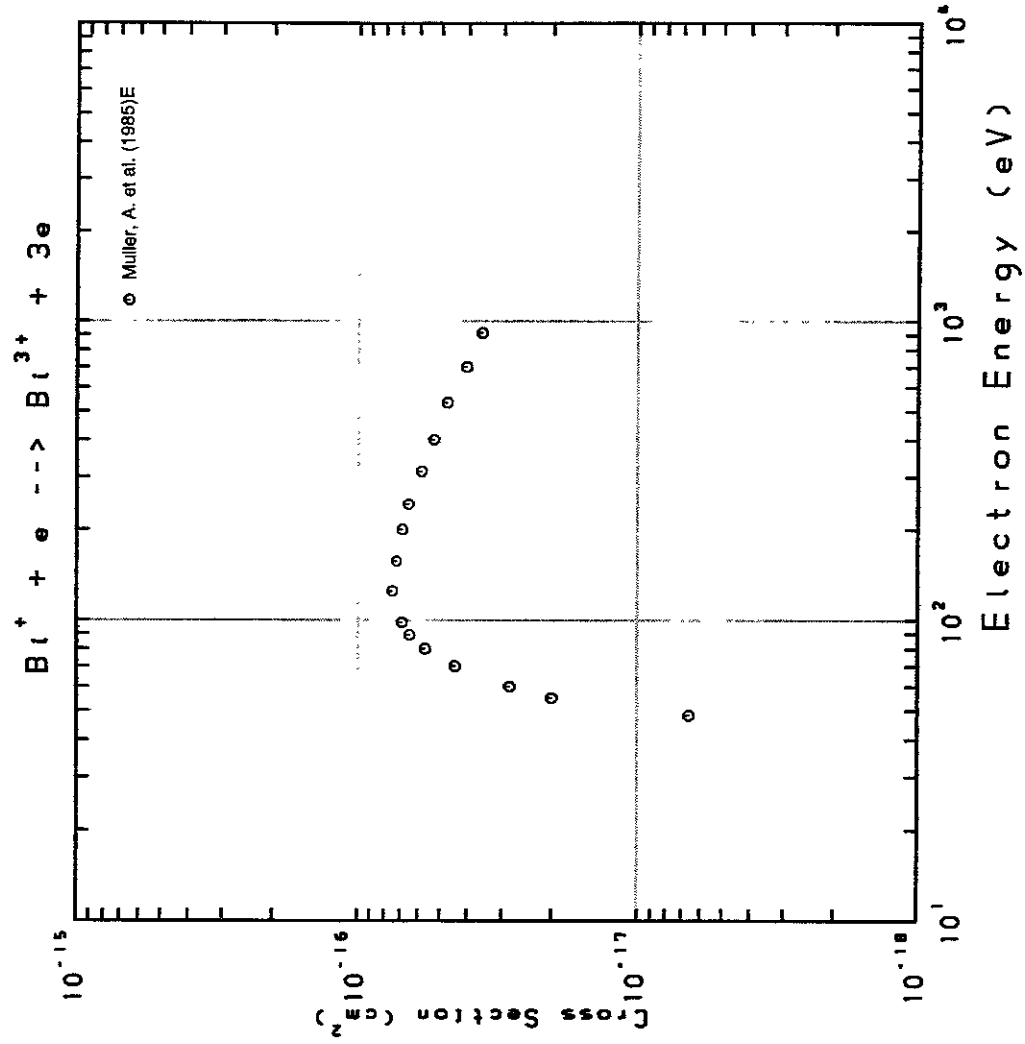


Fig. 428 $\text{Bi}^+ \rightarrow \text{Bi}^{3+}$

AMDIS-ION

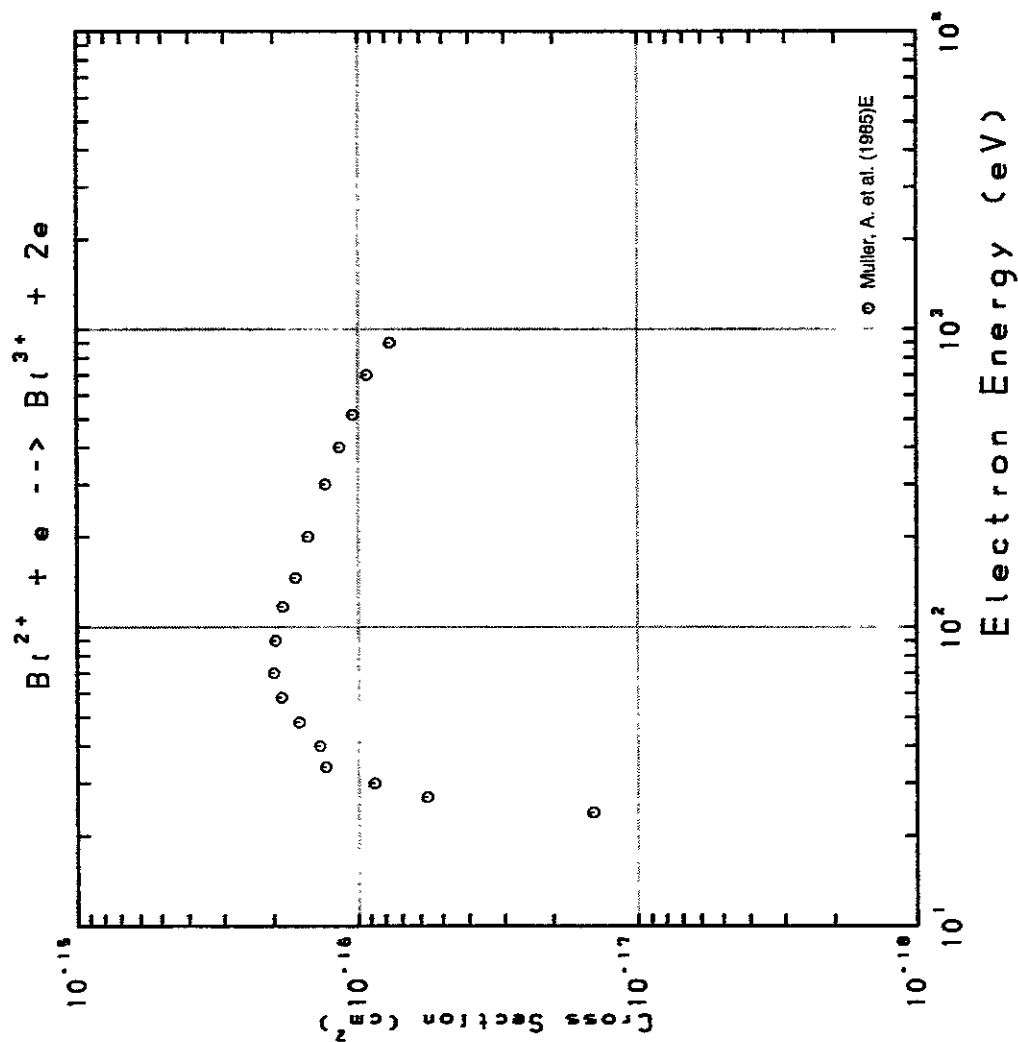


Fig. 429 $\text{Bi}^{2+} \rightarrow \text{Bi}^{3+}$

AMDIS-ION

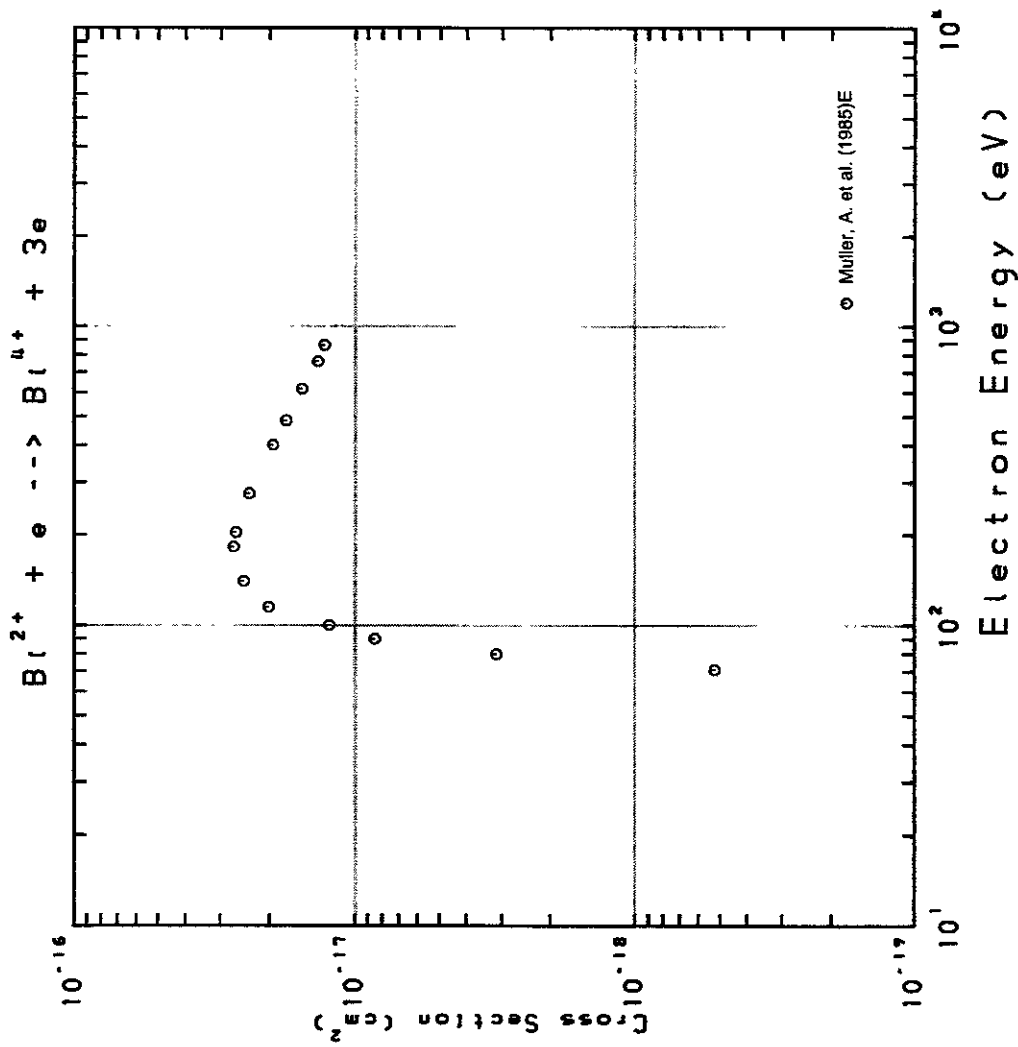


Fig. 430 $\text{Bi}^{2+} \rightarrow \text{Bi}^{4+}$

AMDIS-ION

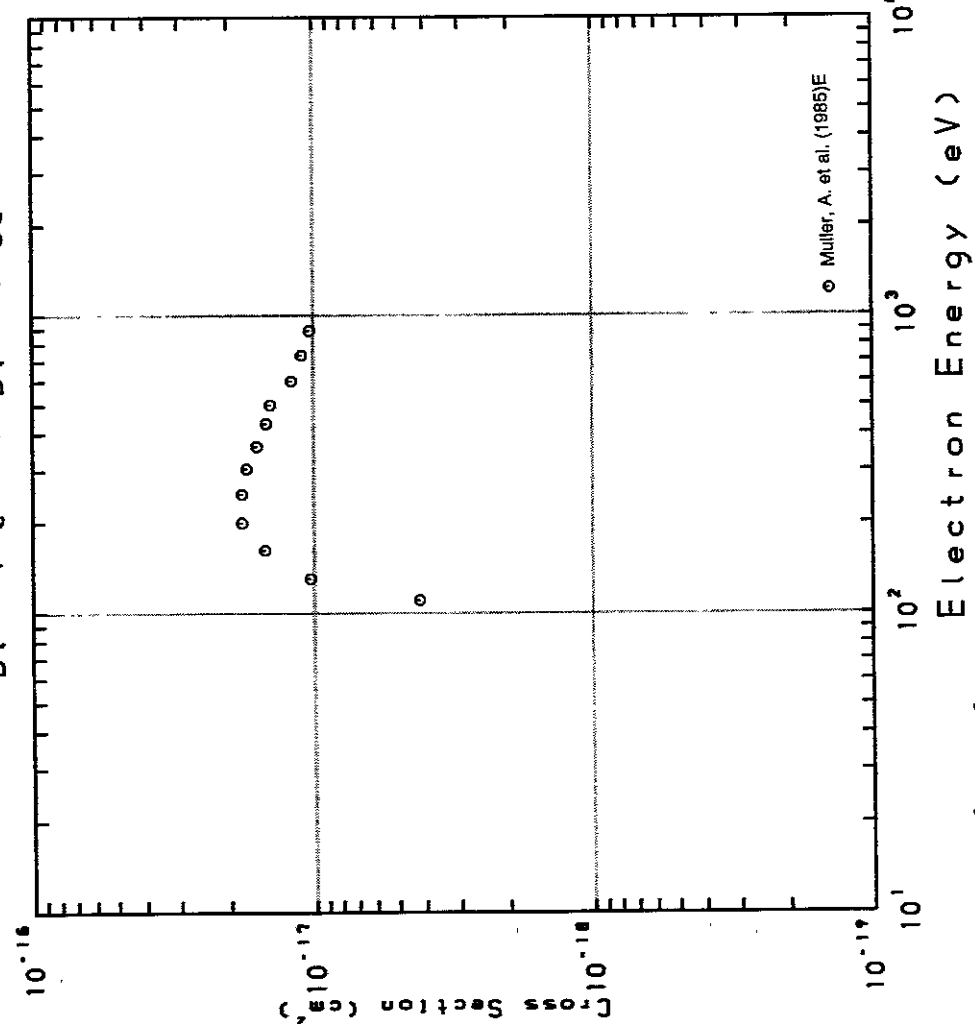
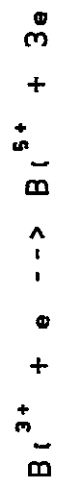


Fig. 431 $\text{Bi}^{3+} \rightarrow \text{Bi}^{5+}$

AMDIS-ION

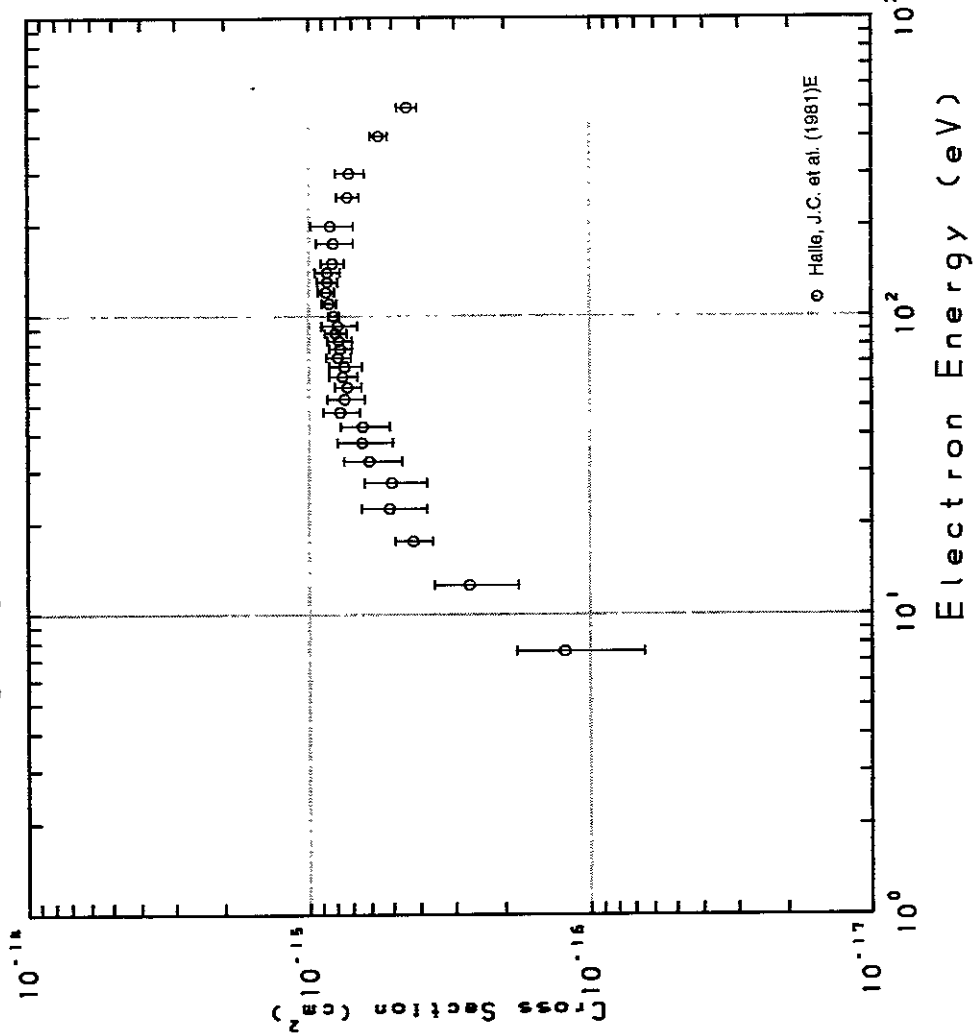
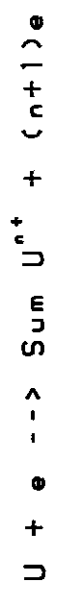


Fig. 432 $\text{U} \rightarrow \Sigma \text{U}^{n+}$

AMDIS-ION

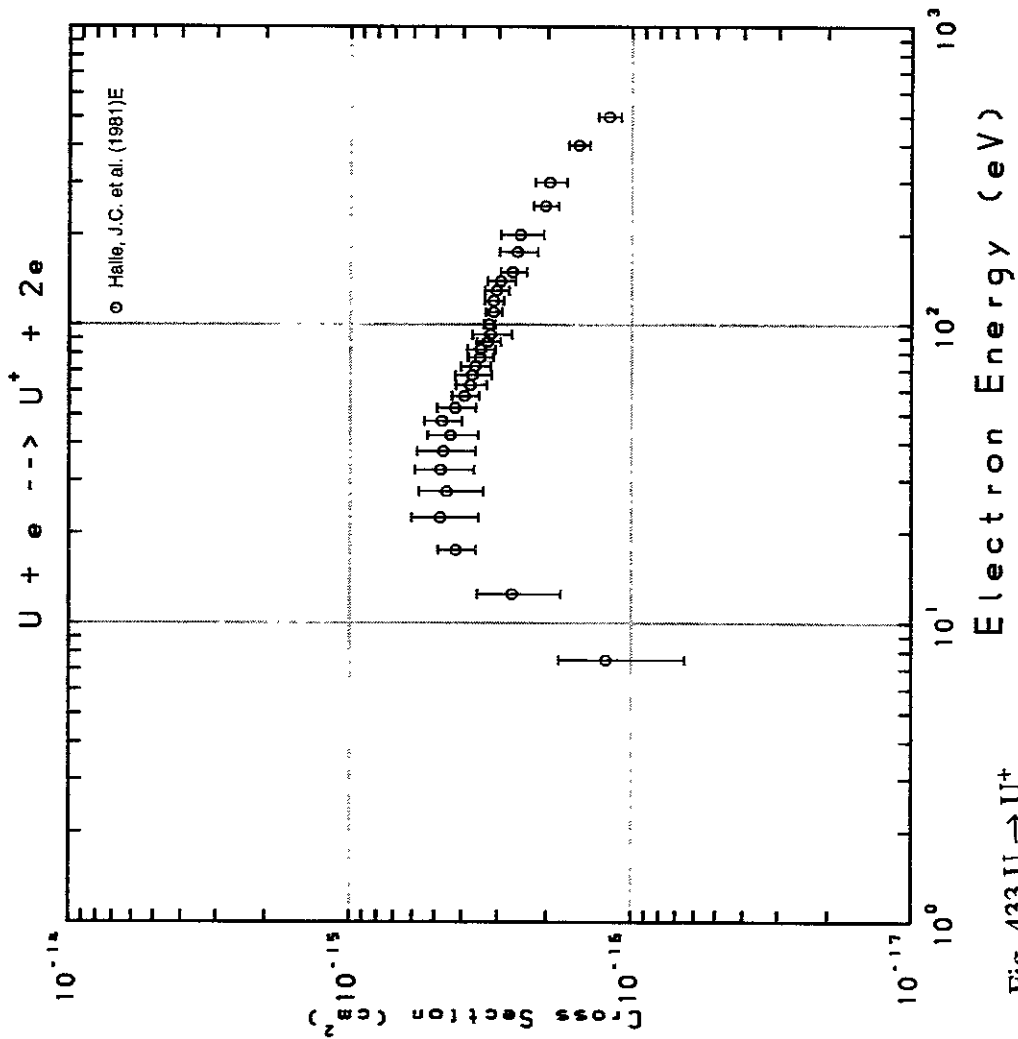


Fig. 433 U → U⁺

AMDIS-ION

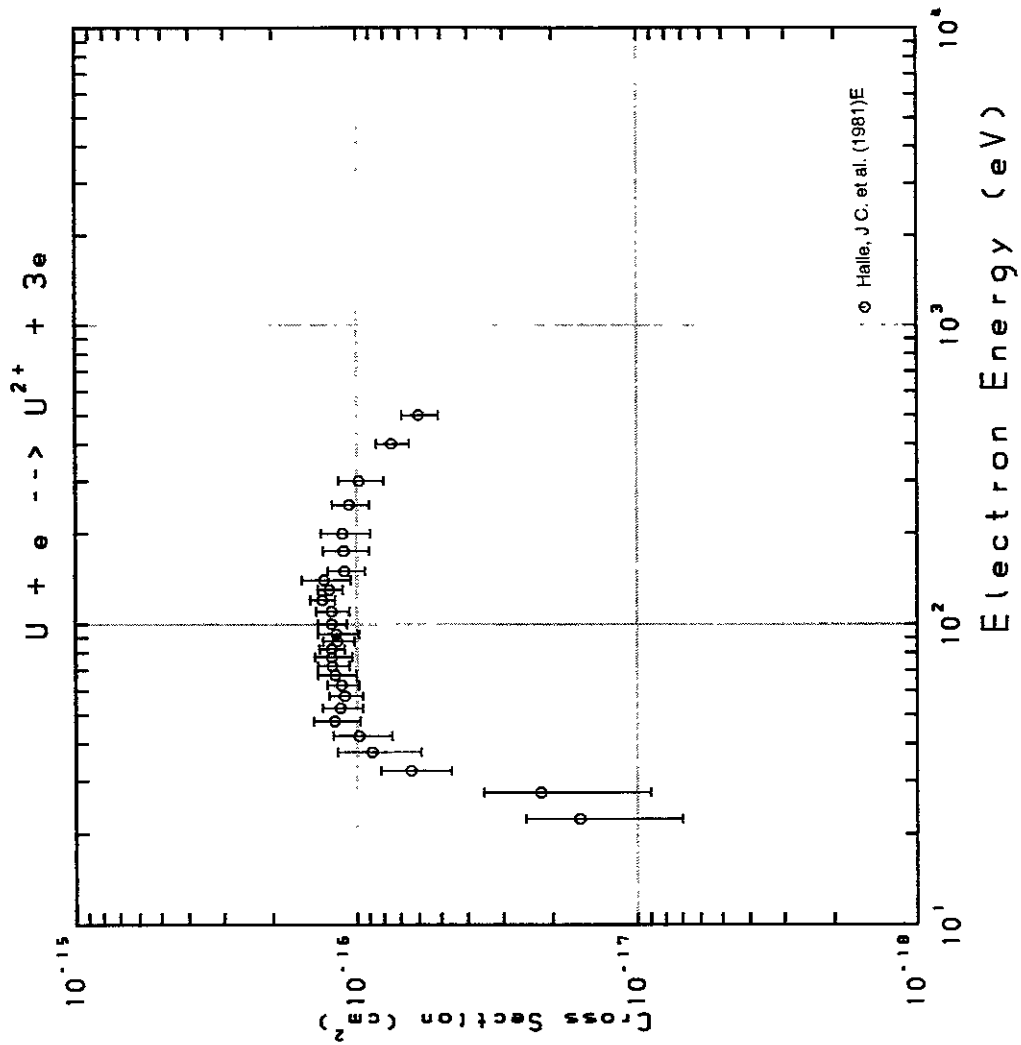


Fig. 434 U → U²⁺

AMDIS-ION

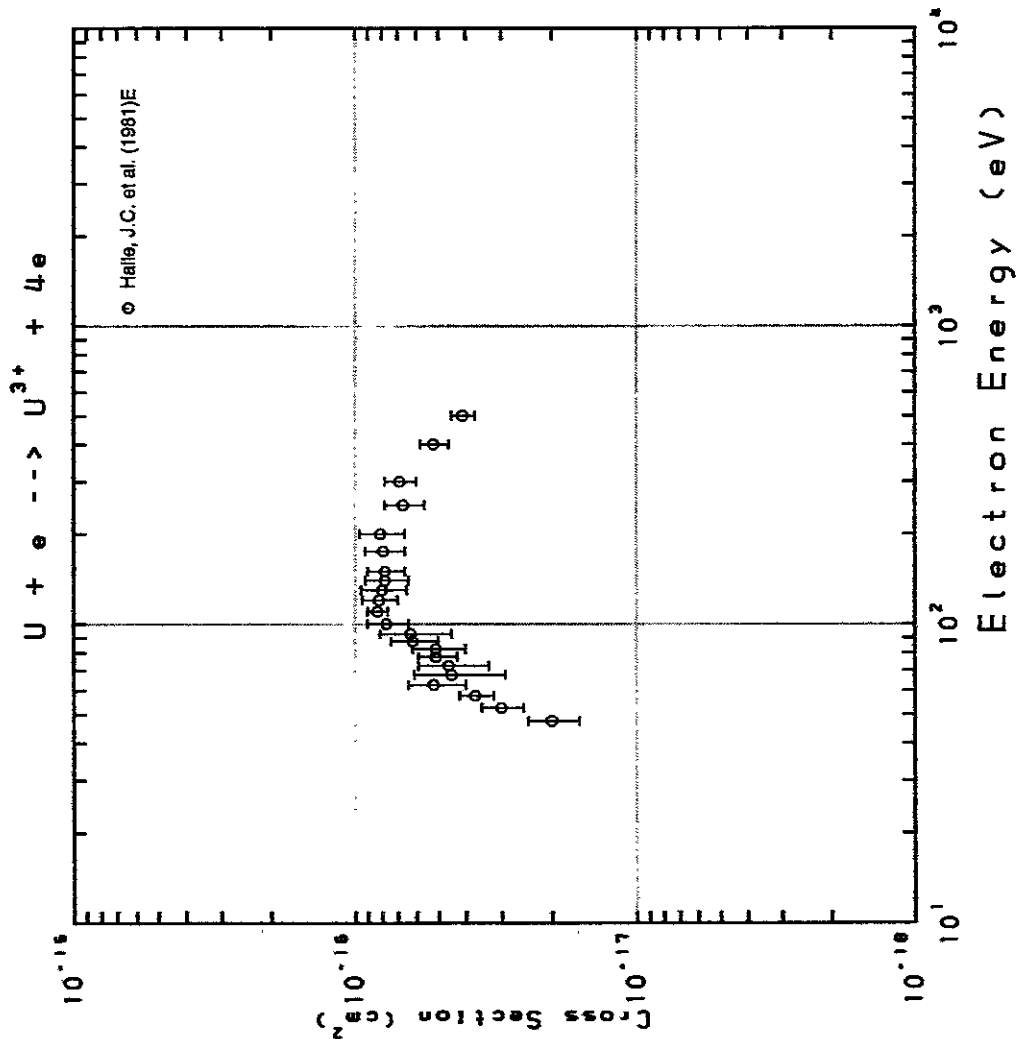


Fig. 435 U → U³⁺

AMDIS-ION

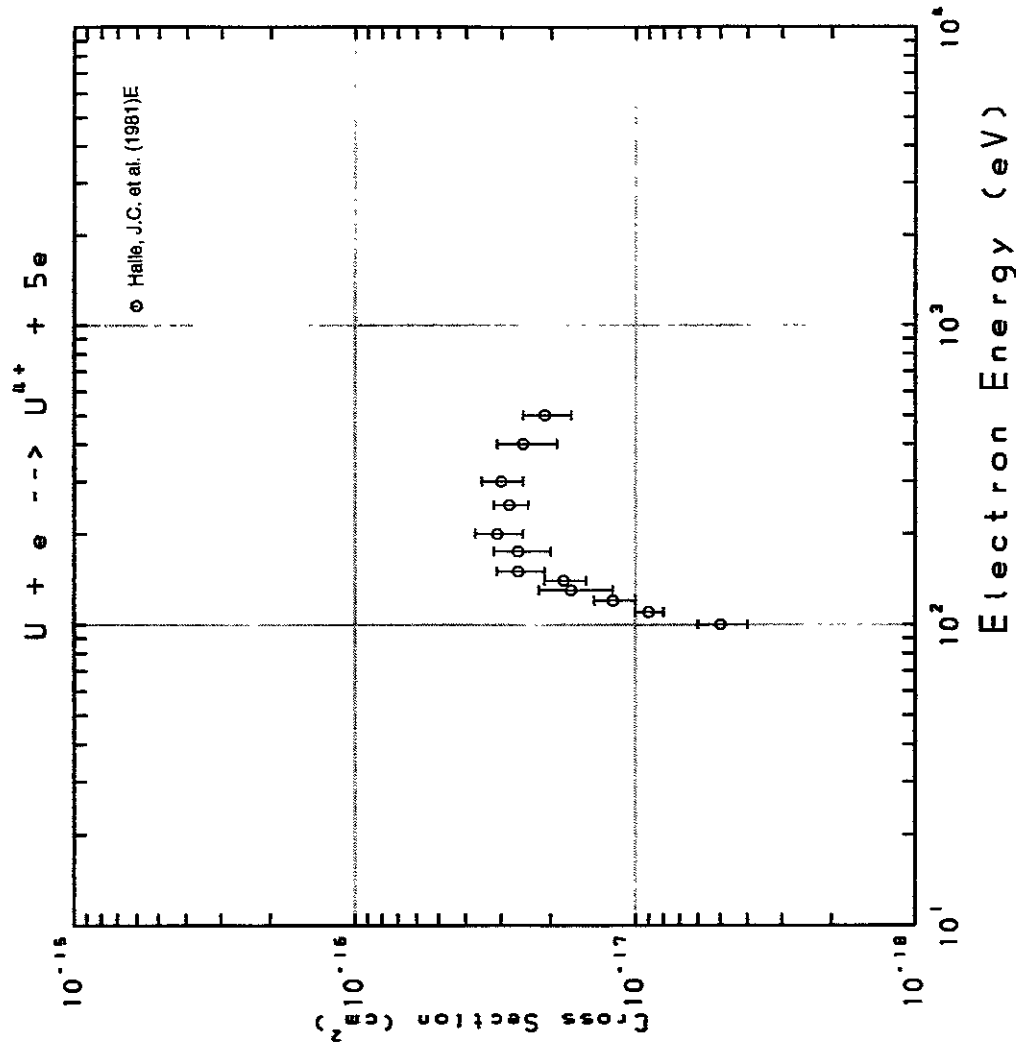


Fig. 436 U → U⁴⁺

AMDIS-ION

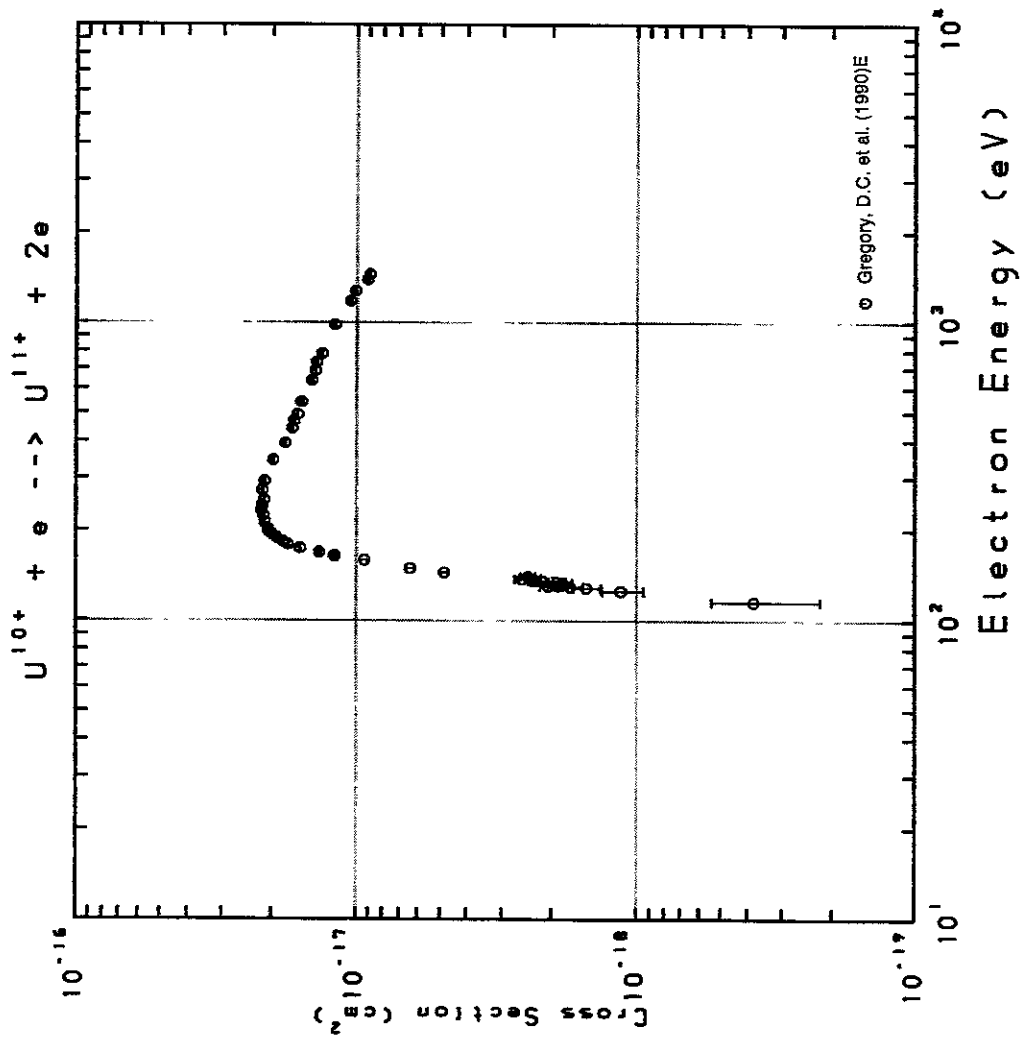


Fig. 437 U¹⁰⁺ → U¹¹⁺

AMDIS-ION

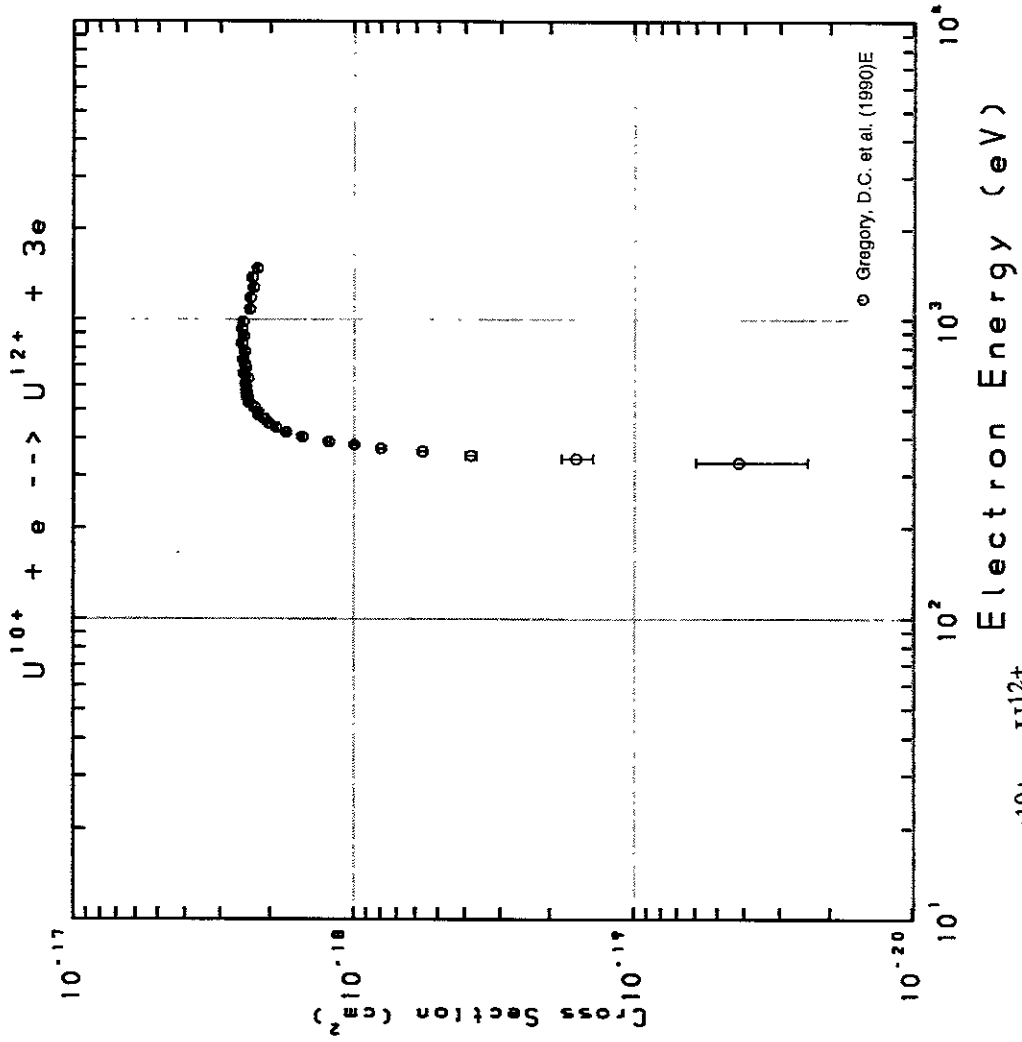


Fig. 438 U¹⁰⁺ → U¹²⁺

AMDIS-ION

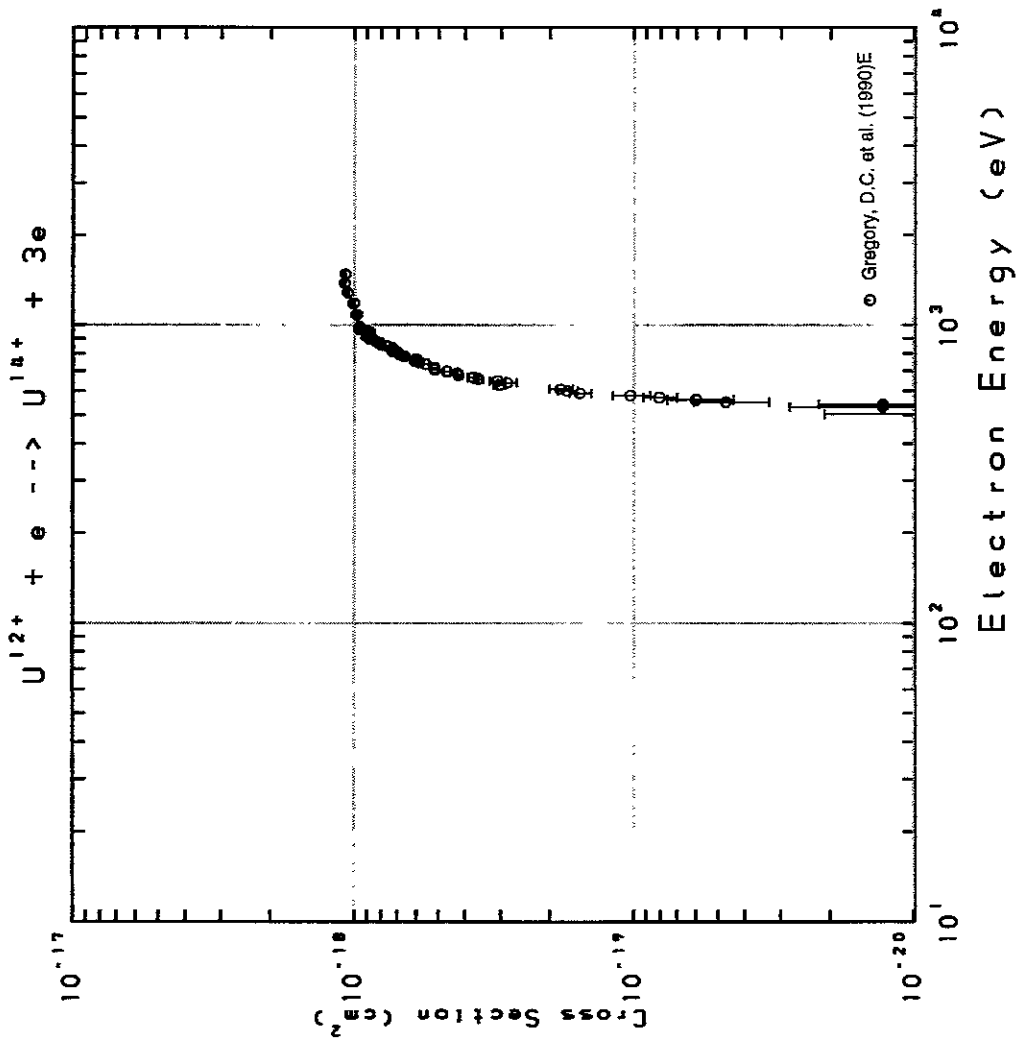


Fig. 439 $U^{12+} \rightarrow U^{14+}$

AMDIS-ION

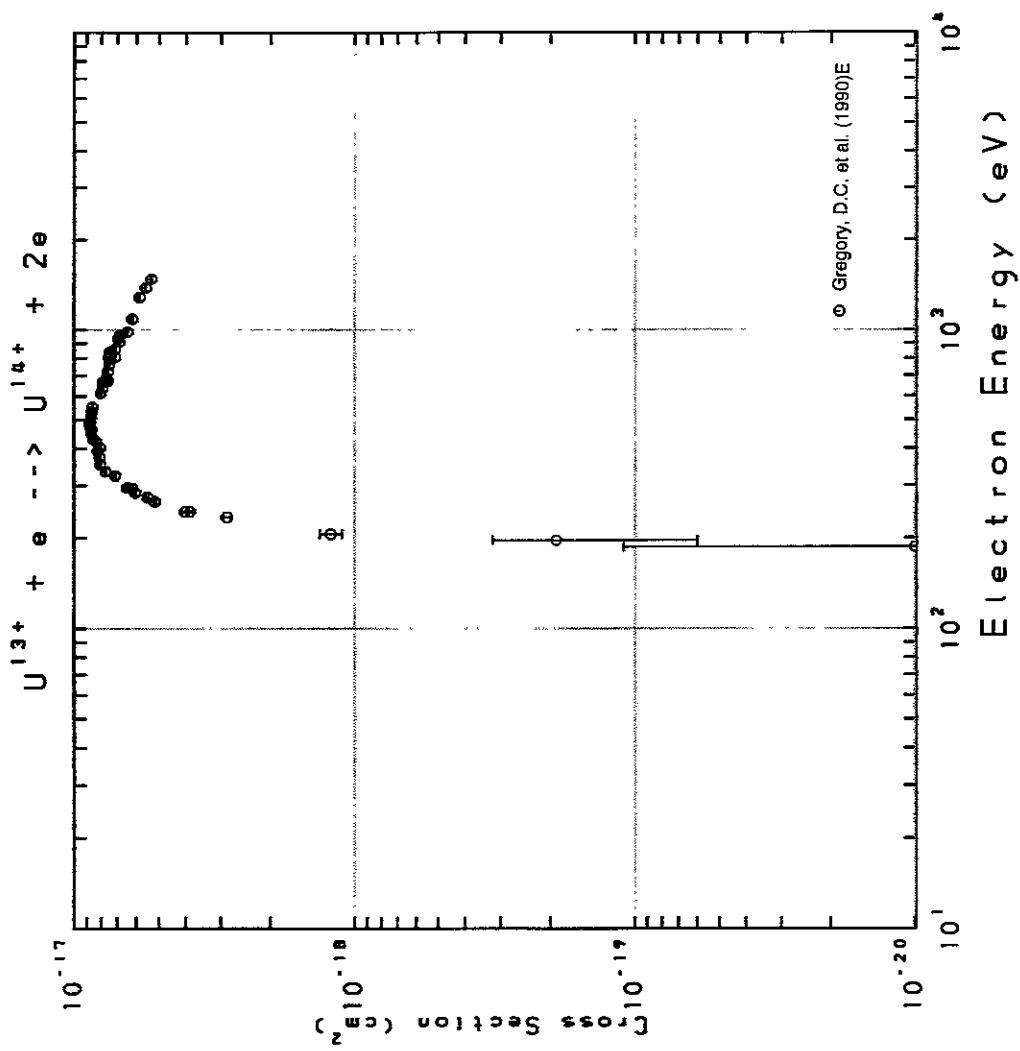


Fig. 440 $U^{13+} \rightarrow U^{14+}$

AMDIS-ION

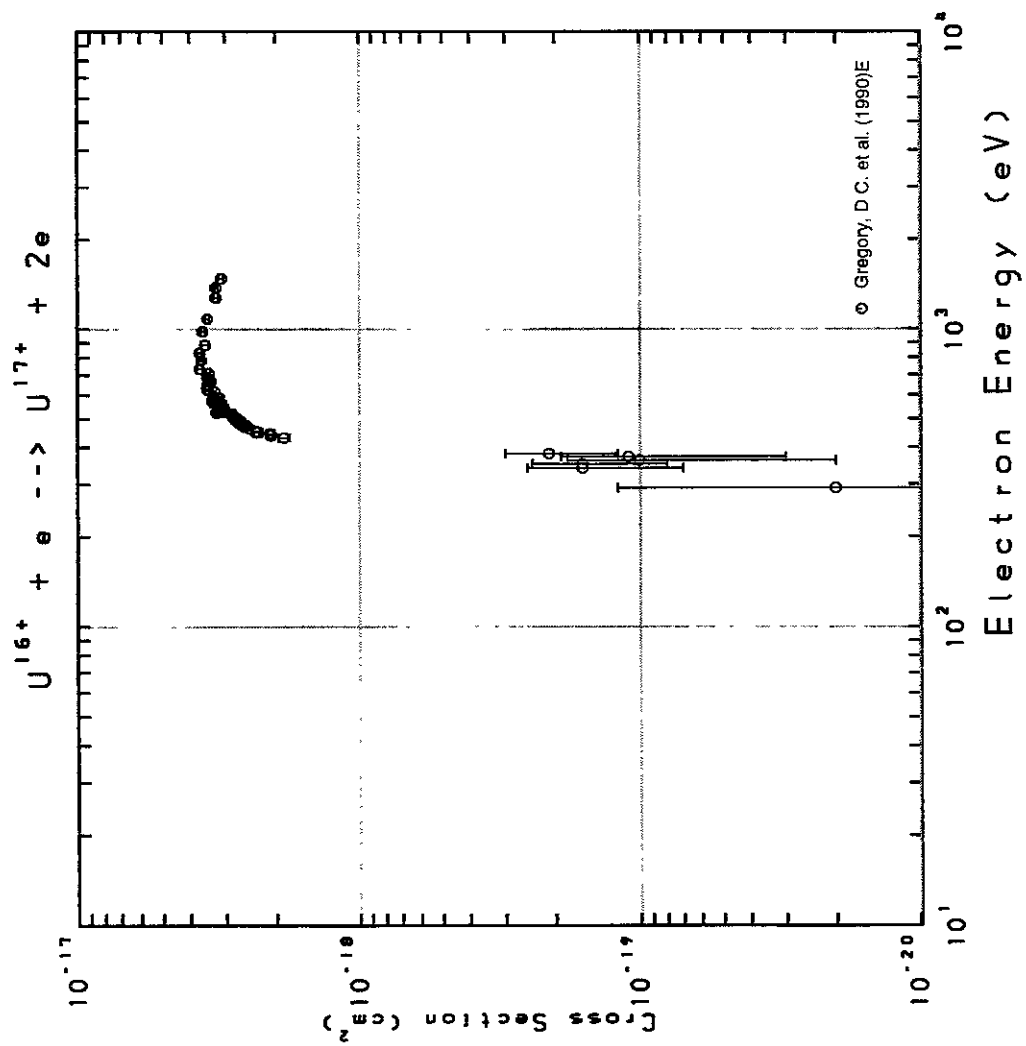


Fig. 441 $U^{16+} \rightarrow U^{17+}$

Achenbach, C.\$Muller, A.\$Salzborn, E.\$Becker, R. Phys. Rev. Lett. 50 2070 1983 Xe ⁴⁺ + e → Xe ⁶⁺ + 3e
Achenbach, C.\$Muller, A.\$Salzborn, E.\$Becker, R. Phys. Rev. Lett. 50 2070 1983 Xe ³⁺ + e → Xe ⁵⁺ + 3e
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Achenbach, C.\$Muller, A.\$Salzborn, E.\$Becker, R. J. Phys. B 17 1485 1984 Xe ²⁺ + e → Xe ³⁺ + 2e
Achenbach, C.\$Muller, A.\$Salzborn, E.\$Becker, R. J. Phys. B 17 1485 1984 Xe ⁴⁺ + e → Xe ⁵⁺ + 2e
Achenbach, C.\$Muller, A.\$Salzborn, E.\$Becker, R. J. Phys. B 17 1485 1984 Ne ⁴⁺ + e → Ne ²⁺ + 2e
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Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Electr. Spectros. and Rel. Pheno. 67 503 1994 Ar + e → Ar ³⁺ + 4e
Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Electr. Spectros. and Rel. Pheno. 67 503 1994 Ar + e → Ar ⁵⁺ + 6e

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Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Phys. B 28 3325 1995 Ne + e → Ne ³⁺ + 4e
Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Phys. B 28 3325 1995 Ne + e → Ne ⁴⁺ + 2e
Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Phys. B 28 3325 1995 Ne + e → Ne ²⁺ + 3e
Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Electr. Spectros. and Rel. Pheno. 67 503 1994 Ar + e → Ar ⁶⁺ + 7e
Almeida, D.P.\$Fontes, A.C.\$Mattos, I.S.\$Godinho, C.L. J. Phys. B 28 3325 1995 Ne + e → Ne ⁵⁺ + 6e
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Asundi, R.K.\$Kurepa, M.V. J. Electron. Control 15 41 1963 He + e → Sum[He ⁿ⁺ + (n+1)e]
Asundi, R.K.\$Kurepa, M.V. J. Electron. Control 15 41 1963 Ne + e → Sum[Ne ⁿ⁺ + (n+1)e]
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Bannister, M.E.\$Meyer, F.W.\$Chung, Y.S.\$Djuric, N.\$Dunn, G.H.\$Pinzola, M.S.\$Grif Fin, D.C. Phys. Rev. A 52 413 1995 Mo ⁴⁺ + e → Mo ⁵⁺ + 2e
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Blaha, M.Davis, J. NRL Memo. Rept. 4245 O ⁿ⁺ + e → O ⁿ⁺ + Ze	1988
Blaha, M.Davis, J. NRL Memo. Rept. 4245 Ca ⁿ⁺ + e → Ca ⁿ⁺ + Ze	1988
Blaha, M.Davis, J. NRL Memo. Rept. 4245 Mg ⁿ⁺ + e → Mg ⁿ⁺ + Ze	1988
Blaha, M.Davis, J.	

NRL Memo. Rept. 4245 Li ⁿ⁺ + e → Li ⁿ⁺ + Ze	1988
Blaha, M.Davis, J. NRL Memo. Rept. 4245 He ⁿ⁺ + e → He ⁿ⁺ + Ze	1988
Blaha, M.Davis, J. NRL Memo. Rept. 4245 Na ⁿ⁺ + e → Na ⁿ⁺ + Ze	1988
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Bleakney, W. Phys. Rev. 36 Ar + e → Ar ³⁺ + 4e	1303 1930
Bleakney, W. Phys. Rev. 36 Ar + e → Ar ²⁺ + 3e	1303 1930
Bleakney, W. Phys. Rev. 36 Ar + e → Ar ⁴⁺ + 5e	1303 1930
Bleakney, W. Phys. Rev. 36 Ne + e → Ne ⁴⁺ + 2e	1303 1930
Bleakney, W. Phys. Rev. 36 Ar + e → Ar ⁵⁺ + 2e	1303 1930
Bleakney, W. Phys. Rev. 35 Hg + e → Hg ⁵⁺ + 6e	139 1930
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Phys. Rev. 35 Hg + e → Sum[Hg ⁿ⁺ + (n+1)e]	139 1930
Bleakney, W. Phys. Rev. 35 Hg + e → Hg ⁿ⁺ + Ze	139 1930
Bleakney, W. Phys. Rev. 35 Hg + e → Hg ²⁺ + 3e	139 1930
Bleakney, W. Phys. Rev. 35 Hg + e → Hg ³⁺ + 4e	139 1930
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Bray, I.SFurso, V. J. Phys. B. 28 He + e → He ⁿ⁺ + Ze	L197 - L202 1995
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Brink, G.O. Phys. Rev. 134 Cs + e → Sum[Cs ⁿ⁺ + (n+1)e]	A345 1964
Brink, G.O.	

Phys. Rev. 134 K + e → Sum[K ⁿ⁺ + (n+1)e]	A345 1964
Brink, G.O. Phys. Rev. 134 Na + e → Sum[Na ⁿ⁺ + (n+1)e]	A345 1964
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Brook, E.Harrison, M.F.A.Smith, A.C.H. J. Phys. B 11 N + e → N ⁿ⁺ + Ze	3115 1978
Brook, E.Harrison, M.F.A.Smith, A.C.H. J. Phys. B 11 C + e → C ⁿ⁺ + Ze	3115 1978
Brook, E.Harrison, M.F.A.Smith, A.C.H. J. Phys. B 11 He + e → He ⁿ⁺ + Ze	3115 1978
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Burke, P.G.Sfon, W.C.Kingston, A.E. J. Phys. B 17 Ti ³⁺ + e → Ti ⁴⁺ + Ze	L733 1984
Burnett, T.SRountree, S.P. Phys. Rev. A 20 O + e → O ⁿ⁺ + Ze	1468 1979
Butler, K.Moore, D.L. J. Phys. B 18 Fe ²³⁺ + e → Fe ²⁴⁺ + Ze	1247 1985
Chartrenne, S.J.SGregory, D.C.SBute, M.J.SPanzola, M.S.	

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Phys. Rev. A		
41	140	1990
Ti ²³⁺ + e → Ti ²⁴⁺ + 2e		
Chatterjee, S.N.\$Roy, B.M.		
J. Phys. B		
17	2527	1984
Sr + e → Sr ²²⁺ + 3e		
Chatterjee, S.N.\$Roy, B.M.		
J. Phys. B		
17	2527	1984
Ca + e → Ca ²²⁺ + 3e		
Chen, M.H.\$Reed, K.J.		
Phys. Rev. A		
45	4525	1992
Fe ²³⁺ + e → Fe ²⁴⁺ + 2e		
Chidichimo, M.C.		
J. Phys. B		
15	3333	1982
Na ²⁺ + e → Na ³⁺ + 2e		
Cowling, I.R.\$Fletcher, J.		
J. Phys. B		
6	665	1973
DW ²⁺ + e → Sum		
Cowling, I.R.\$Fletcher, J.		
J. Phys. B		
6	665	1973
HW ²⁺ + e → Sum		
Crandall, D.H.\$Phaneuf, R.A.\$Falk, R.A.\$Belic, D.S.\$Dunn, G.H.		
Phys. Rev. A		
25	143	1982
Si ¹³⁺ + e → Si ¹⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
Na ⁵⁺ + e → Na ⁶⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
Ca ⁴⁺ + e → Ca ⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Hasselquist, B.E.\$Gregory, D.C.		
J. Phys. B		
12	L249	1979
O ⁴⁵⁺ + e → O ⁴⁶⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
B ³⁺ + e → B ⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Taylor, P.O.		

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Phys. Rev. A		
18	1911	1978
Ca ³⁺ + e → Ca ⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Hasselquist, B.E.\$Gregory, D.C.		
J. Phys. B		
12	L249	1979
Ca ³⁺ + e → Ca ⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Taylor, P.O.		
Phys. Rev. A		
18	1911	1978
Na ⁴⁺ + e → Na ⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Hasselquist, B.E.\$Gregory, D.C.		
J. Phys. B		
12	L249	1979
Na ⁴⁺ + e → Na ⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
Na ³⁺ + e → Na ⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
O ⁴³⁺ + e → O ⁴⁴⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Falk, R.A.\$Belic, D.S.\$Dunn, G.H.		
Phys. Rev. A		
25	143	1982
Al ²⁺ + e → Al ³⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
Ar ⁴⁺ + e → Ar ⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.		
ORNL/TM		
7820		1979
O ⁴⁴⁺ + e → O ⁴⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Falk, R.A.\$Belic, D.S.\$Dunn, G.H.		
Phys. Rev. A		
25	143	1982
Mg ⁴⁺ + e → Mg ⁵⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.\$Howald, A.M.		
Phys. Rev. A		
34	1757	1986
O ⁴⁵⁺ + e → O ⁴⁶⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.\$Howald, A.M.		
Phys. Rev. A		
34	1757	1986
B ²⁺ + e → B ³⁺ + 2e		
Crandall, D.H.\$Phaneuf, R.A.\$Gregory, D.C.\$Howald, A.M.\$Mueller, D.W.\$Morgan, T.		

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1998年 10月 12日 (月)		10:22:34 AM
J.\$Dunn, G.H.\$Griffin, D.C.\$Henry, R.J.W.		
Phys. Rev. A		
34	1757	1986
O ⁴⁵⁺ + e → O ⁴⁶⁺ + 2e		
Crawford, C.K.\$Wang, K.I.		
J. Chem. Phys.		
47	4667	1967
Ag + e → Ag ²⁺ + 3e		
Crawford, C.K.\$Wang, K.I.		
J. Chem. Phys.		
47	4667	1967
Ag + e → Ag ⁺ + 2e		
Crowe, A.\$McConkey, J.W.		
J. Phys. B		
6	2108	1973
NW ²⁺ + e → NW ²⁺ + 2e		
Crowe, A.\$McConkey, J.W.		
J. Phys. B		
6	2088	1973
NW ²⁺ + e → NW ²⁺ + 2e		
Daly, M.R.\$Powell, R.E.		
Proc. Phys. Soc.		
89	273	1966
NW ²⁺ + e → NW ²⁺ + 3e		
Dance, D.F.\$Harrison, M.F.A.\$Rundel, R.D.		
Proc. R. Soc. London A		
299	525	1967
H ¹⁺ + e → H + 2e		
Danjo, A.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Tawara, H.\$Wakiya, K.\$Yoshino, M.		
J. Phys. Soc. Jpn.		
53	4091	1984
Xe ²⁺ + e → Xe ³⁺ + 2e		
Danjo, A.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Tawara, H.\$Wakiya, K.\$Yoshino, M.		
J. Phys. Soc. Jpn.		
53	4091	1984
Kr ²⁺ + e → Kr ³⁺ + 2e		
Danjo, A.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Tawara, H.\$Wakiya, K.\$Yoshino, M.		
J. Phys. Soc. Jpn.		
53	4091	1984
Ne ²⁺ + e → Ne ³⁺ + 2e		
Danjo, A.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Tawara, H.\$Wakiya, K.\$Yoshino, M.		
J. Phys. Soc. Jpn.		
53	4091	1984
Ar ²⁺ + e → Ar ³⁺ + 2e		
Defrance, P.\$Claeys, W.\$Cornet, A.\$Poulaert, G.		
J. Phys. B		
14	111	1981
H + e → H ⁺ + 2e		

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1998年 10月 12日 (月)		10:22:34 AM
Defrance, P.\$Braulard, F.\$Claeys, W.\$van Massenhove, G.		
J. Phys. B		
14	103	1981
He ⁺ + e → He ²⁺ + 2e		
Defrance, P.\$Chantrenne, S.\$Rachafi, S.\$Belic, D.S.\$Jureta, J.\$Gregory, D.\$Broui		
llard, F.		
J. Phys. B		
23	2333	1990
Ne ⁷⁺ + e → Ne ⁸⁺ + 2e		
Defrance, P.\$Chantrenne, S.\$Rachafi, S.\$Belic, D.S.\$Jureta, J.\$Gregory, D.\$Broui		
llard, F.		
J. Phys. B		
23	2333	1990
O ⁴⁵⁺ + e → O ⁴⁶⁺ + 2e		
Defrance, P.\$Rachafi, S.\$Jureta, J.\$Meyer, F.\$Chantrenne, S.		
Nucl. Instrum. & Methods		
823	265	1987
Ar ⁸⁺ + e → Ar ⁹⁺ + 2e		
Defrance, P.\$Chantrenne, S.\$Rachafi, S.\$Belic, D.S.\$Jureta, J.\$Gregory, D.\$Broui		
llard, F.		
J. Phys. B		
23	2333	1990
Na ⁴⁺ + e → Na ⁵⁺ + 2e		
Dettaan, J.M.\$Karstensen, F.		
J. Phys. B		
15	287	1982
Ba + e → Ba ⁴⁺ + 5e		
Dettaan, J.M.\$Karstensen, F.		
J. Phys. B		
15	287	1982
Ba + e → Sum(Ba ⁿ⁺ + (n+1)e)		
Dettaan, J.M.\$Karstensen, F.		
J. Phys. B		
15	287	1982
Ba + e → Ba ⁺ + 2e		
Dettaan, J.M.\$Karstensen, F.		
J. Phys. B		
15	287	1982
Ba + e → Ba ³⁺ + 4e		
Diserens, M.J.\$Harrison, M.F.A.\$Smith, A.C.H.		
J. Phys. B		
17	L621	1984
He ⁺ + e → He ²⁺ + 2e		
Diserens, M.J.\$Smith, A.C.H.\$Harrison, M.F.A.		

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1998年 10月 12日 (月)		10:22:34 AM
21	2129	1988
$Ti^{2+} + e \rightarrow Ti^{3+} + 2e$		
Diserens, M. J. Smith, A. C. H. Harrison, M. F. A.		
21	2129	1988
$Ar^{2+} + e \rightarrow Ar^{3+} + 2e$		
Diserens, M. J. Smith, A. C. H. Harrison, M. F. A.		
21	2129	1988
$Ti^{4+} + e \rightarrow Ti^{2+} + 2e$		
Divine, T. F. Feeney, R. F. Sayle, II, W. E. Hooper, J. W.		
13	54	1976
$Ti^{4+} + e \rightarrow Ti^{2+} + 2e$		
Dixon, A. J. Harrison, M. F. A. Smith, A. C. H.		
9	2617	1976
$He + e \rightarrow He^{4+} + 2e$		
Dixon, A. J. von Engel, A. Harrison, M. F. A.		
343	333	1975
$H + e \rightarrow H^{+} + 2e$		
Djuric, N. Bell, E. W. Dunn, G. H.		
135	287	1994
$Te^{4+} + e \rightarrow Te^{2+} + 2e$		
Djuric, N. Bell, E. W. Dunn, G. H.		
123	187-191	1993
$SA^{+} + e \rightarrow SA^{2+} + 2e$		
Djuric, N. Bell, E. W. Guo, X. Q. Dunn, G. H. Phoneut, R. A. Banmsten, M. E. Spindzoi		
47	4786	1993
$Si^{2+} + e \rightarrow Si^{3+} + 2e$		
Djuric, N. Bell, E. W. Guo, X. Q. Dunn, G. H. Phoneut, R. A. Banmsten, M. E. Spindzoi		
47	4786	1993
$Si^{+} + e \rightarrow Si^{2+} + 2e$		
Djuric, N. Bell, E. W. Daniel, E. Dunn, G. H.		
46	278	1992
$Cl^{+} + e \rightarrow Cl^{2+} + 2e$		

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Djuric, N. Bell, E. W. Dunn, G. H.		
123	187	1993
$SA^{+} + e \rightarrow SA^{2+} + 2e$		
Dolder, K. T. Harrison, M. F. A. Thonemann, P. C.		
274	546	1963
$Ne^{4+} + e \rightarrow Ne^{2+} + 2e$		
Dolder, K. T. Harrison, M. F. A. Thonemann, P. C.		
264	367	1961
$He^{4+} + e \rightarrow He^{2+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ar^{17+} + e \rightarrow Ar^{18+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ca^{+} + e \rightarrow Ca^{2+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ar^{15+} + e \rightarrow Ar^{16+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ca^{2+} + e \rightarrow Ca^{3+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ca^{4+} + e \rightarrow Ca^{5+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{+} + e \rightarrow Na^{2+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{3+} + e \rightarrow Na^{4+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{5+} + e \rightarrow Na^{6+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{4+} + e \rightarrow Na^{5+} + 2e$		

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Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{4+} + e \rightarrow Ne^{2+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{7+} + e \rightarrow O^{8+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{6+} + e \rightarrow O^{7+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{5+} + e \rightarrow O^{6+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{4+} + e \rightarrow O^{5+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{3+} + e \rightarrow O^{4+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{2+} + e \rightarrow O^{3+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$O^{+} + e \rightarrow O^{2+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{9+} + e \rightarrow Ne^{10+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{8+} + e \rightarrow Ne^{9+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{7+} + e \rightarrow Ne^{8+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{6+} + e \rightarrow Ne^{7+} + 2e$		

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Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{5+} + e \rightarrow Ne^{6+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{3+} + e \rightarrow Ne^{4+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ne^{2+} + e \rightarrow Ne^{3+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{6+} + e \rightarrow Na^{7+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Na^{2+} + e \rightarrow Na^{3+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ca^{5+} + e \rightarrow Ca^{6+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ca^{3+} + e \rightarrow Ca^{4+} + 2e$		
Donets, E. D. Svyannikov, V. P.		
53	466	1981
$Ar^{16+} + e \rightarrow Ar^{17+} + 2e$		
Edwards, A. K. Wood, R. M. Beard, A. S. Ezell, R. L.		
37	3780	1988
$HV^{2+} + e \rightarrow HV^{2+} + 3e$		
Edwards, A. K. Wood, R. M. Beard, A. S. Ezell, R. L.		
37	3780	1988
$HV^{2+} + e \rightarrow HV^{2+} + 2e$		
El-Sherbini, Th. M. Van der Wiel, M. J. de Heer, F. J.		
48	157	1978
$Xe + e \rightarrow Xe^{6+} + 7e$		
El-Sherbini, Th. M. Van der Wiel, M. J. de Heer, F. J.		
48	157	1978
$Xe + e \rightarrow Xe^{5+} + 6e$		

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1998年 10月 12日 (月)	10:22:34 AM
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Xe + e --> Xe ³⁺ + 4e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Xe + e --> Xe ⁴⁺ + 2e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Xe + e --> Xe ²⁺ + 3e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ⁴⁺ + 2e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ²⁺ + 3e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ³⁺ + 4e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ⁴⁺ + 5e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ⁵⁺ + 6e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Kr + e --> Kr ⁶⁺ + 7e	
El-Sherbini, Th.M.SVan der Wiel, M.J.Sde Heer, F.J. Physica 48 157 1970 Xe + e --> Xe ⁴⁺ + 5e	
Falk, R.A.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Pheuef, R.A.\$Gregory, D.C.\$Cran dall, D.H. Phys. Rev. A 28 91 1983 O ⁴⁺ + e --> O ⁵⁺ + 2e	
Falk, R.A.\$Dunn, G.H.\$Gregory, D.C.\$Crandall, D.H. Phys. Rev. A 27 762 1983 Ti ³⁺ + e --> Ti ⁴⁺ + 2e	

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Falk, R.A.\$Dunn, G.H.\$Gregory, D.C.\$Crandall, D.H. Phys. Rev. A 27 762 1983 Zr ³⁺ + e --> Zr ⁴⁺ + 2e	
Falk, R.A.\$Dunn, G.H.\$Gregory, D.C.\$Crandall, D.H. Phys. Rev. A 27 762 1983 Hf ³⁺ + e --> Hf ⁴⁺ + 2e	
Falk, R.A.\$Dunn, G.H.\$Gregory, D.C.\$Crandall, D.H. Phys. Rev. A 27 762 1983 Ta ³⁺ + e --> Ta ⁴⁺ + 2e	
Falk, R.A.\$Dunn, G.H. Phys. Rev. A 27 754 1983 Be ⁴⁺ + e --> Be ²⁺ + 2e	
Falk, R.A.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Pheuef, R.A.\$Gregory, D.C.\$Cran dall, D.H. Phys. Rev. A 28 91 1983 Ba ²⁺ + e --> Ba ²⁺ + 2e	
Falk, R.A.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Pheuef, R.A.\$Gregory, D.C.\$Cran dall, D.H. Phys. Rev. A 28 91 1983 M ³⁺ + e --> M ⁴⁺ + 2e	
Falk, R.A.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Pheuef, R.A.\$Gregory, D.C.\$Cran dall, D.H. Phys. Rev. A 28 91 1983 Ca ²⁺ + e --> Ca ³⁺ + 2e	
Feeney, R.K.\$Hooper, J.W.\$Eldford, M.T. Phys. Rev. A 6 1469 1972 Ba ⁴⁺ + e --> Ba ²⁺ + 2e	
Feeney, R.K.\$Soyle, II, W.E.\$Divine, T.F. Phys. Rev. A 18 82 1978 Rb ⁴⁺ + e --> Rb ²⁺ + 2e	
Fite, W.L.\$Brackmann, R.T. Phys. Rev. 113 815 1959 O ²⁺ + e --> O ²⁺ + 2e	
Fite, W.L.\$Brackmann, R.T. Phys. Rev. 112 1141 1958 H + e --> H ⁺ + 2e	
Fite, W.L.\$Brackmann, R.T.	

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1998年 10月 12日 (月)	10:22:34 AM
Phys. Rev. 115 815 1959 O + e --> O ⁺ + 2e	
Fite, W.L.\$Brackmann, R.T. Phys. Rev. 113 815 1959 O ²⁺ + e --> Sum	
Fletcher, J.\$Cowling, I.R. J. Phys. B 6 L258 1973 Ar + e --> Sum(Ar ⁿ⁺ + (n+1)e)	
Fletcher, J.\$Cowling, I.R. J. Phys. B 6 L258 1973 Ne + e --> Sum(Ne ⁿ⁺ + (n+1)e)	
Franzreb, K.\$Muecher, A.\$Oechsner, H. Z. Phys. D 19 77 1991 Ag + e --> Ag ⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Bi + e --> Bi ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Bi + e --> Bi ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Pb + e --> Pb ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Pb + e --> Pb ⁴⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Te + e --> Te ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Sb + e --> Sb ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Sb + e --> Sb ⁴⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R.	

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1998年 10月 12日 (月)	10:22:34 AM
Phys. Rev. A 41 3575 1990 Sb + e --> Sb ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Ag + e --> Ag ⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Ag + e --> Ag ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Ag + e --> Ag ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 In + e --> In ⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 In + e --> In ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 In + e --> In ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Sn + e --> Sn ⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Sn + e --> Sn ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Ge + e --> Ge ²⁺ + 3e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 Ge + e --> Ge ³⁺ + 4e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R. Phys. Rev. A 41 3575 1990 As + e --> As ⁺ + 2e	
Freund, R.S.\$Wetzel, R.C.\$Shul, R.J.\$Hayes, T.R.	

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Phys. Rev. A	3575	1990
41		
As + e → As ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
As + e → As ³⁺ + 4e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Se + e → Se ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Se + e → Se ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Se + e → Se ³⁺ + 4e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Al + e → Al ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Si + e → Si ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Si + e → Si ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
P + e → P ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
P + e → P ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
S + e → S ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
S + e → S ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		

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1998年 10月 12日 (月)		10:22:34 AM
Phys. Rev. A	3575	1990
41		
Cl + e → Cl ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Mg + e → Mg ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Fe + e → Fe ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Fe + e → Fe ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Cu + e → Cu ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Cu + e → Cu ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Ga + e → Ga ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Ga + e → Ga ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Ga + e → Ga ³⁺ + 4e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Ge + e → Ge ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Ge + e → Ge ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Sn + e → Sn ³⁺ + 4e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Te + e → Te ⁺ + 2e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		

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1998年 10月 12日 (月)		10:22:34 AM
Phys. Rev. A	3575	1990
41		
Te + e → Te ³⁺ + 4e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Pb + e → Pb ²⁺ + 3e		
Freund, R.S.\$metzel, R.C.\$shul, R.J.\$hoyes, T.R.		
Phys. Rev. A	3575	1990
41		
Bi + e → Bi ⁺ + 2e		
Ganas, P.S.\$green, A.E.S.		
J. Quant. Spectrosc. & Radiat. Transfer	265	1981
25		
O ⁴⁺ + e → O ⁵⁺ + 2e		
Ganas, P.S.\$green, A.E.S.		
J. Quant. Spectrosc. & Radiat. Transfer	265	1981
25		
O ²⁺ + e → O ³⁺ + 2e		
Ganas, P.S.\$green, A.E.S.		
J. Quant. Spectrosc. & Radiat. Transfer	265	1981
25		
O + e → O ⁺ + 2e		
Ganas, P.S.\$green, A.E.S.		
J. Quant. Spectrosc. & Radiat. Transfer	265	1981
25		
O ⁺ + e → O ²⁺ + 2e		
Ganas, P.S.\$green, A.E.S.		
J. Quant. Spectrosc. & Radiat. Transfer	265	1981
25		
O ³⁺ + e → O ⁴⁺ + 2e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Cv ² HW ² + e → Cv ² HW ² + + 2e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Cv ² HW ² + e → Cv ² HW ² + 1e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Cv ² HW ² + e → Cv ² HW ² A ²⁺ + 3e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ar + e → Ar ⁵⁺ + 6e		
Gaudin, A.\$hogemann, R.		

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1998年 10月 12日 (月)		10:22:34 AM
J. Chim. Phys.	1209	1967
64		
Ar + e → Ar ³⁺ + 4e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ar + e → Ar ⁴⁺ + 2e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ne + e → Ne ⁴⁺ + 5e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ar + e → Sum(Ar ⁿ⁺ + (n+1)e)		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
He + e → Sum(He ⁿ⁺ + (n+1)e)		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
He + e → He ⁺ + 2e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
He + e → He ²⁺ + 3e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ne + e → Sum(Ne ⁿ⁺ + (n+1)e)		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ne + e → Ne ⁺ + 2e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ne + e → Ne ²⁺ + 3e		
Gaudin, A.\$hogemann, R.		
J. Chim. Phys.	1209	1967
64		
Ne + e → Ne ³⁺ + 4e		
Gaudin, A.\$hogemann, R.		

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1996年 10月 12日 (月)	10:22:34 AM
J. Chia. Phys.	
64 1289	1967
Ar + e -> Ar ⁴⁺ + 5e	
Golovach, D.G.\$Rakhovskii, V.I.\$Shustriyakov, V.M.	
Instr.Exp.Tech.	
29 1396	1987
Ba + e -> Sum(Ba ⁿ⁺ + (n-1)e)	
Golovach, D.G.\$Drozov, A.N.\$Rakhovskii, V.I.\$Shustriyakov, V.M.	
Measuring Technique	
38 587	1987
Al + e -> Sum(Al ⁿ⁺ + (n-1)e)	
Golovach, D.G.\$Rakhovskii, V.I.\$Shustriyakov, V.M.	
Instr.Exp.Tech.	
29 1396	1987
Ba + e -> Ba ²⁺ + 3e	
Golovach, D.G.\$Rakhovskii, V.I.\$Shustriyakov, V.M.	
Instr.Exp.Tech.	
29 1396	1987
Pb + e -> Pb ²⁺ + 3e	
Golovach, D.G.\$Rakhovskii, V.I.\$Shustriyakov, V.M.	
Instr.Exp.Tech.	
29 1396	1987
Ba + e -> Ba ⁴⁺ + 2e	
Gregory, D.C.\$Wang, L.J.\$Swenson, D.R.\$Sataka, M.\$Chantrenne, S.J.	
Phys. Rev. A	
41 6512	1990
Cr ¹³⁺ + e -> Cr ¹⁴⁺ + 2e	
Gregory, D.C.\$Huq, M.S.\$Meyer, F.W.\$Swenson, D.R.\$Sataka, M.\$Chantrenne, S.	
Phys. Rev. A	
41 106	1990
U ¹⁰⁺ + e -> U ¹²⁺ + 3e	
Gregory, D.C.\$Huq, M.S.\$Meyer, F.W.\$Swenson, D.R.\$Sataka, M.\$Chantrenne, S.	
Phys. Rev. A	
41 106	1990
U ¹⁰⁺ + e -> U ¹¹⁺ + 2e	
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Phys. Rev. A	
41 106	1990
U ¹⁶⁺ + e -> U ¹⁷⁺ + 2e	
Gregory, D.C.\$Wang, L.J.\$Meyer, F.W.\$Rinn, K.	
Phys. Rev. A	
35 3256	1987
Fe ¹³⁺ + e -> Fe ¹⁴⁺ + 2e	
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1996年 10月 12日 (月)	10:22:34 AM
Elys. Rev. A	
35 3256	1987
Fe ¹⁵⁺ + e -> Fe ¹⁶⁺ + 2e	
Gregory, D.C.\$Howald, A.M.	
Phys. Rev. A	
34 97	1986
Ni ¹³⁺ + e -> Ni ¹⁴⁺ + 2e	
Gregory, D.C.\$Howald, A.M.	
Phys. Rev. A	
34 97	1986
Cu ¹²⁺ + e -> Cu ¹³⁺ + 2e	
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34 97	1986
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34 97	1986
Sb ¹³⁺ + e -> Sb ¹⁴⁺ + 2e	
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Phys. Rev. A	
34 3657	1986
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Phys. Rev. A	
34 3657	1986
Fe ¹⁶⁺ + e -> Fe ¹⁷⁺ + 2e	
Gregory, D.C.\$Meyer, F.W.\$Muller, A.\$Defrance, P.	
Phys. Rev. A	
34 3657	1986
Fe ¹⁹⁺ + e -> Fe ¹⁸⁺ + 2e	
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35 3256	1987
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41 106	1990
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41 6512	1990
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41 106	1990
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Gregory, D.C.\$Crandall, D.H.\$Phaneuf, R.A.\$Howald, A.M.\$Dunn, G.H.\$Falk, R.A.\$Mu	

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Cu ²⁺ + e -> Cu ³⁺ + 2e	
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27 724	1983
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27 724	1983
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27 724	1983

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27 724	1983
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27 2338	1983
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Ni ³⁺ + e -> Ni ⁴⁺ + 2e	
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Nucl. Instrum. & Methods	
B10/11 87	1985
Kr ²⁺ + e -> Kr ³⁺ + 2e	
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J. Phys. B	
17 3183	1984
Ba ⁴⁺ + e -> Ba ²⁺ + 2e	
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25 154	1982
Si ³⁺ + e -> Si ⁴⁺ + 2e	
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25 154	1982
Mg ⁴⁺ + e -> Mg ²⁺ + 2e	
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25 154	1982
Al ²⁺ + e -> Al ³⁺ + 2e	
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J. Phys. B	
17 3183	1984
Ca ⁴⁺ + e -> Ca ²⁺ + 2e	

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Hayes, T.R.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A 35 578 1987 $Br + e \rightarrow Br^{4+} + 2e$
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J. Appl. Phys.		
53	5427	1982
$Cs^{+} + e \rightarrow Cs^{+} + 2e$		
Hertling, D.R.\$Feeney, R.K.\$Hughes, D.W.\$Soyle II, W.E.		
J. Appl. Phys.		
53	5427	1982
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Hirayama, T.\$Kobayashi, S.\$Matsumoto, A.\$Ohtani, S.\$Takayanagi, T.\$Wakita, K.\$Suzuki, H.		
J. Phys. Soc. Jpn.		
56	851	1987
$Ba^{+} + e \rightarrow Ba^{+} + 3e$		
Hirayama, T.\$Soda, K.\$Morikawa, Y.\$Ono, T.\$Ikezaki, Y.\$Takayanagi, T.\$Wakita, K.\$Suzuki, H.		
J. Phys. Soc. Jpn.		
55	1411	1986
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Hirayama, T.\$Soda, K.\$Morikawa, Y.\$Ono, T.\$Ikezaki, Y.\$Takayanagi, T.\$Wakita, K.\$Suzuki, H.		
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J. Phys. Soc. Jpn.		
55	1411	1986
$K^{+} + e \rightarrow K^{+} + 3e$		
Hooper, J.W.\$Lineberger, W.C.\$Bacon, F.M.		
Phys. Rev.		
141	165	1966
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Hooper, J.W.\$Lineberger, W.C.\$Bacon, F.M.		
Phys. Rev.		
141	165	1966
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Howald, A.M.\$Gregory, D.C.\$Phaneuf, R.A.\$Randall, D.H.\$Pindzola, M.S.		

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Phys. Rev. Lett.		
56	1675	1986
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Howald, A.M.\$Gregory, D.C.\$Meyer, F.W.\$Phaneuf, R.A.\$Muller, A.\$Djuric, N.\$Dunn, G.H.		
Phys. Rev. A		
33	3779	1986
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Howald, A.M.\$Gregory, D.C.\$Meyer, F.W.\$Phaneuf, R.A.\$Muller, A.\$Djuric, N.\$Dunn, G.H.		
Phys. Rev. A		
33	3779	1986
$ClA^{+} + e \rightarrow ClA^{+} + 2e$		
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Phys. Rev. A		
33	3779	1986
$Ar^{+} + e \rightarrow Ar^{+} + 2e$		
Hughes, D.W.\$Feeney, R.K.		
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23	2241	1981
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J. Phys. B		
14	3733	1981
$Ca^{+} + e \rightarrow Ca^{+} + 2e$		
Jakubowicz, H.\$Moore, D.L.		
J. Phys. B		
14	3733	1981
$Mg^{+} + e \rightarrow Mg^{+} + 2e$		
Jalin, R.\$Hogeman, R.\$Botter, R.		
J. Chem. Phys.		
59	952	1973
$Li + e \rightarrow Li^{+} + 3e$		
Jalin, R.\$Hogeman, R.\$Botter, R.		
J. Chem. Phys.		
59	952	1973
$Li + e \rightarrow Li^{+} + 2e$		
Jones, T.J.		
Phys. Rev.		
29	822	1929
$Hg + e \rightarrow \text{Sum}[Hg^{n+}] + (n+1)e$		
Kao, H.C.\$Kuo, T.Y.\$Yen, H.P.\$Wei, C.M.\$Shuang, K.N.		
Phys. Rev. A		
45	4646	1992
$Ag^{+} + e \rightarrow Ag^{+} + 2e$		
Kao, H.C.\$Kuo, T.Y.\$Yen, H.P.\$Wei, C.M.\$Shuang, K.N.		
Phys. Rev. A		
45	4646	1992
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Phys. Rev. A		
45	4646	1992
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Phys. Rev. A		
45	4646	1992
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45	4646	1992

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Phys. Rev. A		
45	4646	1992
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Karstensen, F.\$Schneider, M.		
J. Phys. B		
11	167	1978
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Karstensen, F.\$Schneider, M.		
Z. Phys. A		
273	321	1975
$Mg + e \rightarrow Mg^{+} + 2e$		
Karstensen, F.\$Schneider, M.		
J. Phys. B		
11	167	1978
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Korchevoi, Yu.P.\$Przanski, A.M.		
Sov. Phys.-JETP		
24	1889	1967
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24	1889	1967
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Sov. Phys.-JETP		
24	1889	1967
$Cs + e \rightarrow \text{Sum}[Cs^{n+}] + (n+1)e$		
Kosiowski, H.R.\$Binger, J.\$Huber, B.\$Wiesemann, K.		
J. Phys. B		
28	5907	1987
$Ar + e \rightarrow Ar^{+} + 7e$		
Kosiowski, H.R.\$Binger, J.\$Huber, B.\$Wiesemann, K.		
J. Phys. B		
28	5907	1987
$Ar + e \rightarrow Ar^{+} + 6e$		
Kosiowski, H.R.\$Binger, J.\$Huber, B.\$Wiesemann, K.		
J. Phys. B		
28	5907	1987
$Ar + e \rightarrow Ar^{+} + 5e$		
Kosiowski, H.R.\$Binger, J.\$Huber, B.\$Wiesemann, K.		
J. Phys. B		
28	5907	1987
$Ar + e \rightarrow Ar^{+} + 4e$		
Kreberle, P.\$Godbole, E.W.		
J. Chem. Phys.		
36	382	1962

Ar + e → Sum[Ar ⁿ⁺ + (n+1)e]		
Krebarle, P. Godbole, E.W. J. Chem. Phys. 36 302	1962	
Ne + e → Sum[Ne ⁿ⁺ + (n+1)e]		
Krebarle, P. Godbole, E.W. J. Chem. Phys. 36 302	1962	
He + e → Sum[He ⁿ⁺ + (n+1)e]		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Xe + e → Sum[Xe ⁿ⁺ + (n+1)e]		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Xe + e → Xe ⁴⁺ + 5e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Xe + e → Xe ²⁺ + 3e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Kr + e → Sum[Kr ⁿ⁺ + (n+1)e]		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Xe + e → Xe ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ar + e → Sum[Ar ⁿ⁺ + (n+1)e]		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Kr + e → Kr ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Kr + e → Kr ²⁺ + 3e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Kr + e → Kr ³⁺ + 4e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	

Xe + e → Xe ³⁺ + 4e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Xe + e → Xe ⁵⁺ + 6e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
He + e → He ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
He + e → He ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Kr + e → Kr ⁴⁺ + 5e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ar + e → Ar ³⁺ + 4e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ar + e → Ar ²⁺ + 3e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
He + e → Sum[He ⁿ⁺ + (n+1)e]		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ne + e → Ne ²⁺ + 3e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
He + e → He ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ne + e → Ne ⁴⁺ + 2e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	
Ne + e → Ne ³⁺ + 4e		
Krishnakumar, E.Srivastava, S.K. J. Phys. B 21 1055	1988	

Ar + e → Ar ⁴⁺ + 2e		
Kumar, A. Sroy, B.N. J. Phys. B 12 3979	1979	
Rb ⁴⁺ + e → Rb ²⁺ + 2e		
Kumar, A. Sroy, B.N. J. Phys. B 12 3979	1979	
Li ⁴⁺ + e → Li ²⁺ + 2e		
Kumar, A. Sroy, B.N. J. Phys. B 12 3979	1979	
Na ⁴⁺ + e → Na ²⁺ + 2e		
Kumar, A. Sroy, B.N. J. Phys. B 12 3979	1979	
Cs ⁴⁺ + e → Cs ²⁺ + 2e		
Kumar, A. Sroy, B.N. J. Phys. B 12 3979	1979	
K ⁴⁺ + e → K ²⁺ + 2e		
Kumar, A. Sroy, B.N. Phys. Lett. A 66 362	1978	
Na ²⁺ + e → Na ³⁺ + 2e		
Kumar, A. Sroy, B.N. Phys. Lett. A 66 362	1978	
O ²⁺ + e → O ³⁺ + 2e		
Kumar, A. Sroy, B.N. Phys. Lett. A 66 362	1978	
Ca ⁴⁺ + e → Ca ²⁺ + 2e		
Kumar, A. Sroy, B.N. Phys. Lett. A 66 362	1978	
Na ⁴⁺ + e → Na ²⁺ + 2e		
Kumar, A. Sroy, B.N. Phys. Lett. A 66 362	1978	
O ⁴⁺ + e → O ²⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	
Ne ⁹⁺ + e → Ne ¹⁰⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	

Ca ³⁺ + e → Ca ⁴⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	
Na ⁴⁺ + e → Na ⁵⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	
O ⁵⁺ + e → O ⁶⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	
Ne ⁷⁺ + e → Ne ⁸⁺ + 2e		
Kunc, J.A. J. Phys. B 13 587	1980	
Li ²⁺ + e → Li ³⁺ + 2e		
LoGuttata, K.J. Shahn, Y. Phys. Rev. A 24 2273	1981	
Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Ne + e → Ne ³⁺ + 4e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Ne + e → Ne ³⁺ + 4e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Ne + e → Ne ³⁺ + 4e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Ne + e → Ne ³⁺ + 4e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Ne + e → Ne ⁴⁺ + 5e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	
Xe + e → Xe ²⁺ + 3e		
Lebius, H. Sinder, J. Skosowski, H.R. Wieseemann, K. Huber, A. J. Phys. B 22 83	1989	

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Xe + e -> XeA3+ + 4e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Xe + e -> XeA4+ + 5e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Xe + e -> XeA5+ + 6e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Ne + e -> NeA2+ + 3e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Ne + e -> NeA2+ + 3e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA2+ + 3e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA3+ + 4e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA4+ + 5e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA5+ + 6e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA6+ + 7e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA7+ + 8e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Kr + e -> KrA8+ + 9e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989

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Ne + e -> NeA2+ + 3e	
Lebius, H.\$Binder, J.\$Koslowski, H.R.\$Wiesemann, K.\$Huber, A. J. Phys. B	83 1989
Ne + e -> NeA2+ + 3e	
Li, G.P.\$Takayanagi, T.\$Iwakura, K.\$Suzuki, H. Phys. Rev. A	38 1836 1988
Ar + e -> ArA+ + Ze	
Lin, S.S.\$Stafford, F.E. J. Chem. Phys.	47 4664 1967
Ag + e -> Sum[AgAn+ + (n+1)e]	
Lineberger, W.C.\$Hooper, J.W.\$McDaniel, E.W. Phys. Rev.	141 151 1966
LiA+ + e -> LiA2+ + Ze	
Liska, J.W. Phys. Rev.	46 169 1934
Hg + e -> Sum[HgAn+ + (n+1)e]	
Liska, J.W. Phys. Rev.	46 169 1934
He + e -> Sum[HeAn+ + (n+1)e]	
Long, D.R.\$Geballe, R. Phys. Rev. A	1 268 1970
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Ag + e -> Sum[AgAn+ + (n+1)e]	
Ma, C.\$Sporleder, C.R.\$Bonham, R.A. Rev. Sci. Instrum.	62 909 1991
Ar + e -> ArA3+ + 4e	
Ma, C.\$Sporleder, C.R.\$Bonham, R.A. Rev. Sci. Instrum.	62 909 1991
Ar + e -> ArA+ + Ze	
Ma, C.\$Sporleder, C.R.\$Bonham, R.A. Rev. Sci. Instrum.	62 909 1991
Ar + e -> ArA2+ + 3e	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	26 1365 1993

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XeA2+ + e -> XeA3+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	26 1365 1993
KrA2+ + e -> KrA3+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	29 2571 1987
CrA+ + e -> CrA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	20 1351 1987
MoA+ + e -> MoA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	26 1365 1993
ArA2+ + e -> ArA3+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	20 5869 1987
XeA+ + e -> XeA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	28 5869 1987
NeA+ + e -> NeA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	20 4895 1987
TaA+ + e -> TaA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	28 5869 1987
KrA+ + e -> KrA2+ + Ze	
Man, K.F.\$Smith, A.C.H.\$Harrison, M.F.A. J. Phys. B	20 5869 1987
ArA+ + e -> ArA2+ + Ze	
Mark, T.D. J. Chem. Phys.	63 3731 1975
OV2+ + e -> OV2+A2+ + 3e	
Mark, T.D. J. Chem. Phys.	63 3731 1975
NV2+ + e -> NV2+A+ + 2e	
Mark, T.D. J. Chem. Phys.	63 3731 1975

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NV2+ + e -> NV2+A2+ + 3e	
Mark, T.D. J. Chem. Phys.	63 3731 1975
OV2+ + e -> OV2+A+ + Ze	
Martin, S.O.\$Peart, B.\$Dolder, K.T. J. Phys. B	1 537 1968
MgA+ + e -> MgA2+ + Ze	
Mathur, D.\$Badrinathan, C. Phys. Rev. A	35 1033 1987
Xe + e -> XeA3+ + 4e	
Mathur, D.\$Badrinathan, C. Phys. Rev. A	35 1033 1987
Xe + e -> XeA+ + Ze	
Mathur, D.\$Badrinathan, C. Phys. Rev. A	35 1033 1987
Xe + e -> XeA2+ + 3e	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971
AlA2+ + e -> AlA3+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971
PA4+ + e -> PA5+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971
CoA9+ + e -> CoA10+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Phys. Rev.	184 242 1969
WA+ + e -> WA2+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971
FeA15+ + e -> FeA16+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971
FeA15+ + e -> FeA16+ + Ze	
Mathur, K.C.\$Tripathi, A.N.\$Joshi, S.K. Astrophys. J.	165 425 1971

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Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1061	1992	
Ar + e → Ar ⁵⁺ + 6e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1051	1992	
Mg + e → Mg ⁴⁺ + 2e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1051	1992	
Mg + e → Mg ²⁺ + 3e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1051	1992	
Mg + e → Mg ³⁺ + 4e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1051	1992	
Mg + e → Mg ⁴⁺ + 5e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1061	1992	
Ar + e → Ar ⁴⁺ + 2e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1061	1992	
Ar + e → Ar ²⁺ + 3e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1061	1992	
Ar + e → Ar ⁴⁺ + 5e		
McCollion, P.\$Shah, M.B.\$Gilbody, H.B. J. Phys. B 25 1061	1992	
Ar + e → Ar ³⁺ + 4e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
M ⁵⁺ + e → M ⁶⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
M ⁴⁺ + e → M ⁵⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	

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M ⁴⁺ + e → M ²⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
M ²⁺ + e → M ³⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
M ³⁺ + e → M ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
Li ⁴⁺ + e → Li ²⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
Na + e → Na ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
Ar + e → Ar ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
Li + e → Li ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
He + e → He ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
Ne + e → Ne ⁴⁺ + 2e		
McCarthy, I.E.\$Stelbovics, A.T. Phys. Rev. A 28 1322	1983	
K + e → K ⁴⁺ + 2e		
McFarland, R.H. Phys. Rev. 159 20	1967	
Ba + e → Sum[Ba ⁿ⁺ + (n+1)e]		
McFarland, R.H.\$Kinney, J.D. Phys. Rev. 137 A1058	1965	
Rb + e → Sum[Rb ⁿ⁺ + (n+1)e]		
McFarland, R.H.\$Kinney, J.D. Phys. Rev. 137 A1058	1965	

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Na + e → Sum[Na ⁿ⁺ + (n+1)e]		
McFarland, R.H.\$Kinney, J.D. Phys. Rev. 137 A1058	1965	
Li + e → Sum[Li ⁿ⁺ + (n+1)e]		
McFarland, R.H.\$Kinney, J.D. Phys. Rev. 137 A1058	1965	
K + e → Sum[K ⁿ⁺ + (n+1)e]		
McFarland, R.H. Phys. Rev. 159 20	1967	
Sr + e → Sum[Sr ⁿ⁺ + (n+1)e]		
McFarland, R.H. Phys. Rev. 159 20	1967	
Ca + e → Sum[Ca ⁿ⁺ + (n+1)e]		
McFarland, R.H. Phys. Rev. 159 20	1967	
Tl + e → Sum[Tl ⁿ⁺ + (n+1)e]		
McFarland, R.H.\$Kinney, J.D. Phys. Rev. 137 A1058	1965	
Cs + e → Sum[Cs ⁿ⁺ + (n+1)e]		
McGowan, J.W.\$Clarke, E.M. Phys. Rev. 157 43	1968	
H + e → H ⁴⁺ + 2e		
McGowan, J.W.\$Fineman, R.A.\$Clarke, E.M.\$Hanson, H.P. Phys. Rev. 167 52	1968	
H ²⁺ + e → H ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 3 267	1971	
Ar + e → Ar ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 3 267	1971	
Ne + e → Ne ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 3 267	1971	
O + e → O ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 3 267	1971	

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He + e → He ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Tl + e → Tl ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Au ³⁺ + e → Au ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26 125	1982	
Si ³⁺ + e → Si ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26 125	1982	
Mg ⁴⁺ + e → Mg ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16 73	1977	
Co ⁴⁺ + e → Co ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Cs + e → Cs ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Cs ⁴⁺ + e → Cs ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Ba ⁴⁺ + e → Ba ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Ba + e → Ba ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 20 445	1979	
Au + e → Au ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16 62	1977	
Zr + e → Zr ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16 62	1977	

Mo + e → Mo ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Ru + e → Ru ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Pd + e → Pd ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Cd + e → Cd ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Sn + e → Sn ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Te + e → Te ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Xe + e → Xe ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Fe + e → Fe ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Ni + e → Ni ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Zn + e → Zn ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Ge + e → Ge ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Se + e → Se ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977

Kr + e → Kr ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Rb + e → Rb ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Sr + e → Sr ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
K + e → K ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Ca + e → Ca ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Tl + e → Tl ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 16	62	1977
Cr + e → Cr ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 28	445	1979
Hg + e → Hg ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 3	267	1971
N + e → N ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 28	2891	1983
Kr ³⁺ + e → Kr ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ¹¹⁺ + e → Al ¹²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁹⁺ + e → Al ¹⁰⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982

Al ⁷⁺ + e → Al ⁸⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁵⁺ + e → Al ⁶⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁶⁺ + e → Al ⁷⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Ni ¹⁷⁺ + e → Ni ¹⁸⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Zn ¹⁹⁺ + e → Zn ²⁰⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al + e → Al ⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁺ + e → Al ²⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ²⁺ + e → Al ³⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ³⁺ + e → Al ⁴⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁴⁺ + e → Al ⁵⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ⁸⁺ + e → Al ⁹⁺ + 2e		
McGuire, E.J. Phys. Rev. A 26	125	1982
Al ¹⁰⁺ + e → Al ¹¹⁺ + 2e		
McGuire, E.J. Phys. Rev. A 28	2891	1983

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McGuire, E.J. Phys. Rev. A 28	2891	1983
Ne ³⁺ + e → Ne ⁴⁺ + 2e		
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Xe + e → Xe ⁴⁺ + 2e		
Montague, R.G. Harrison, M.F.A. J. Phys. B 18	1419	1985
Ni ⁴⁺ + e → Ni ²⁺ + 2e		
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He + e → He ⁴⁺ + 2e		
Montague, R.G. Harrison, M.F.A. J. Phys. B 17	2787	1984
W ⁴⁺ + e → W ²⁺ + 2e		
Montague, R.G. Harrison, M.F.A. J. Phys. B 16	3845	1983
Al ⁴⁺ + e → Al ²⁺ + 2e		
Montague, R.G. D'Islerens, M.J. Harrison, M.F.A. J. Phys. B 17	2885	1984
Fe ⁴⁺ + e → Fe ²⁺ + 2e		
Moore, D.L. J. Phys. B 12	4171	1979
W ²⁺ + e → W ³⁺ + 2e		
Moore, D.L. J. Phys. B 5	286	1972
W ⁴⁺ + e → W ²⁺ + 2e		
Moore, D.L. J. Phys. B 5	286	1972
O ⁴⁺ + e → O ²⁺ + 2e		
Moore, D.L. J. Phys. B 5	286	1972
O ²⁺ + e → O ³⁺ + 2e		
Moore, D.L. J. Phys. B 5	286	1972

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$\text{Na}^+ + e \rightarrow \text{Na}^{2+} + 2e$	
Moore, D.L. J. Phys. B 5 286	1972
$\text{Na}^{2+} + e \rightarrow \text{Na}^{3+} + 2e$	
Moore, D.L. J. Phys. B 5 286	1972
$\text{Ca}^+ + e \rightarrow \text{Ca}^{2+} + 2e$	
Moore, D.L. J. Phys. B 5 286	1972
$\text{Ne}^+ + e \rightarrow \text{Ne}^{2+} + 2e$	
Moore, D.L. J. Phys. B 5 286	1972
$\text{Na}^{2+} + e \rightarrow \text{Na}^{3+} + 2e$	
Moore, D.L. J. Phys. B 11 1403	1978
$\text{Mg}^{2+} + e \rightarrow \text{Mg}^{3+} + 2e$	
Moore, D.L. J. Phys. B 11 1403	1978
$\text{Mg}^{3+} + e \rightarrow \text{Mg}^{4+} + 2e$	
Moore, D.L. J. Phys. B 11 1403	1978
$\text{Ca}^{3+} + e \rightarrow \text{Ca}^{4+} + 2e$	
Moore, D.L. J. Phys. B 5 286	1972
$\text{Na}^+ + e \rightarrow \text{Na}^{2+} + 2e$	
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$\text{Mg}^{2+} + e \rightarrow \text{Mg}^{3+} + 2e$	
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$\text{Ca}^{2+} + e \rightarrow \text{Ca}^{3+} + 2e$	
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$\text{O}^+ + e \rightarrow \text{O}^{2+} + 2e$	
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$\text{Ne}^+ + e \rightarrow \text{Ne}^{2+} + 2e$	
Mueller, A. Salzborn, E. Frodl, R. Becker, R. Klein, H. Winter, H. J. Phys. B 13 1877	1980
$\text{Ar}^+ + e \rightarrow \text{Ar}^{2+} + 2e$	
Mueller, A. Salzborn, E. Frodl, R. Becker, R. Klein, H. Winter, H. J. Phys. B 13 1877	1980
$\text{Ar}^{2+} + e \rightarrow \text{Ar}^{3+} + 2e$	
Mueller, A. Salzborn, E. Frodl, R. Becker, R. Klein, H. Winter, H. J. Phys. B 13 1877	1980
$\text{Ar}^{3+} + e \rightarrow \text{Ar}^{4+} + 2e$	
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$\text{Ar}^{4+} + e \rightarrow \text{Ar}^{5+} + 2e$	
Mueller, A. Salzborn, E. Frodl, R. Becker, R. Klein, H. Winter, H. J. Phys. B 13 1877	1980
$\text{Ar}^{5+} + e \rightarrow \text{Ar}^{6+} + 2e$	
Mueller, A. Salzborn, E. Frodl, R. Becker, R. Klein, H. Winter, H. J. Phys. B 13 1877	1980

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Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^+ + e \rightarrow \text{Xe}^{3+} + 3e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{2+} + e \rightarrow \text{Xe}^{4+} + 3e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{3+} + e \rightarrow \text{Xe}^{5+} + 3e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{4+} + e \rightarrow \text{Xe}^{6+} + 3e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{I}^+ + e \rightarrow \text{I}^{3+} + 3e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^+ + e \rightarrow \text{Xe}^{4+} + 4e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{2+} + e \rightarrow \text{Xe}^{5+} + 4e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{3+} + e \rightarrow \text{Xe}^{6+} + 4e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^+ + e \rightarrow \text{Xe}^{5+} + 5e$	
Mueller, A. Sachenbach, C. Salzborn, E. Becker, R. J. Phys. B 17 1427	1984
$\text{Xe}^{2+} + e \rightarrow \text{Xe}^{6+} + 5e$	
Mueller, A. Private Communication	1985
$\text{Kr}^{2+} + e \rightarrow \text{Kr}^{3+} + 2e$	
Mueller, A. Private Communication	1985

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$Kr^{3+} + e \rightarrow Kr^{4+} + 2e$		
Muller, A. Private Communication		1985
$Kr^{4+} + e \rightarrow Kr^{3+} + 3e$		
Muller, A. Private Communication		1985
$Kr^{2+} + e \rightarrow Kr^{4+} + 3e$		
Muller, A. Private Communication		1985
$Kr^{3+} + e \rightarrow Kr^{5+} + 3e$		
Muller, A. Private Communication		1985
$Kr^{4+} + e \rightarrow Kr^{6+} + 3e$		
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54 $Sb^{4+} + e \rightarrow Sb^{2+} + 2e$		
Muller, A. Stinschert, K. Sachenbach, C. Salzborn, E. Becker, R. Spindzola, M.S. Phys. Rev. Lett.	414	1985
54 $Sb^{2+} + e \rightarrow Sb^{3+} + 2e$		
Muller, A. Stinschert, K. Sachenbach, C. Becker, R. Salzborn, E. J. Phys. B	3011	1985
18 $Ar^{4+} + e \rightarrow Ar^{3+} + 3e$		
Muller, A. Stinschert, K. Sachenbach, C. Becker, R. Salzborn, E. J. Phys. B	3011	1985
18 $Ar^{4+} + e \rightarrow Ar^{6+} + 3e$		
Muller, A. Private Communication		1985
$Kr^{4+} + e \rightarrow Kr^{2+} + 2e$		
Muller, A. Stinschert, K. Sachenbach, C. Salzborn, E. Becker, R. Spindzola, M.S. Phys. Rev. Lett.	414	1985
54 $Sb^{4+} + e \rightarrow Sb^{3+} + 3e$		
Muller, A. Stinschert, K. Sachenbach, C. Salzborn, E. Becker, R. Spindzola, M.S. Phys. Rev. Lett.	414	1985
54 $Bi^{2+} + e \rightarrow Bi^{4+} + 3e$		
Muller, A. Stinschert, K. Sachenbach, C. Salzborn, E. Becker, R. Spindzola, M.S. Phys. Rev. Lett.	414	1985
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$Bi^{4+} + e \rightarrow Bi^{3+} + 3e$		
Muller, A. Stinschert, K. Hofman, G. Salzborn, E. Dunn, G.H. Younger, S.M. Spindzola, M.S. Phys. Rev. A	3584	1989
40 $La^{3+} + e \rightarrow La^{4+} + 2e$		
Muller, A. Stinschert, K. Hofman, G. Salzborn, E. Dunn, G.H. Younger, S.M. Spindzola, M.S. Phys. Rev. A	3584	1989
40 $La^{2+} + e \rightarrow La^{3+} + 2e$		
Muller, A. Shaber, K. Stinschert, K. Becker, R. Salzborn, E. J. Phys. B	2993	1985
18 $Ar^{4+} + e \rightarrow Ar^{2+} + 2e$		
Muller, A. Stinschert, K. Hofman, G. Salzborn, E. Dunn, G.H. Younger, S.M. Spindzola, M.S. Phys. Rev. A	3584	1989
40 $La^{4+} + e \rightarrow La^{3+} + 3e$		
Muller, A. Stinschert, K. Hofman, G. Salzborn, E. Dunn, G.H. Younger, S.M. Spindzola, M.S. Phys. Rev. A	3584	1989
40 $La^{2+} + e \rightarrow La^{4+} + 3e$		
Muller, A. Stinschert, K. Hofman, G. Salzborn, E. Dunn, G.H. Younger, S.M. Spindzola, M.S. Phys. Rev. A	3584	1989
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Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Xe + e \rightarrow Xe^{2+} + 3e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Xe + e \rightarrow Xe^{4+} + 2e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Kr + e \rightarrow Kr^{2+} + 3e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13		

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$Kr + e \rightarrow Kr^{3+} + 4e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $He + e \rightarrow He^{4+} + 2e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $He + e \rightarrow He^{2+} + 3e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Ne + e \rightarrow Ne^{4+} + 2e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Ne + e \rightarrow Ne^{2+} + 3e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Ne + e \rightarrow Ne^{3+} + 4e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Ar + e \rightarrow Ar^{4+} + 2e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
13 $Ar + e \rightarrow Ar^{2+} + 3e$		
Nagy, P. Skutlartz, A. Schmidt, V. J. Phys. B	1249	1980
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31 $Sr + e \rightarrow \text{Sum}[Sr^{n+} + (n+1)e]$		
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5 $C + e \rightarrow C^{4+} + 2e$		
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Omidvar, K. Kyle, H.L. Sullivan, E.C. Phys. Rev. A	1174	1972
5 $Hg + e \rightarrow Hg^{4+} + 2e$		
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$Ga + e \rightarrow Ga^{*2+} + 3e$		
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$K^{*+} + e \rightarrow K^{*2+} + 2e$		
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$Li^{*+} + e \rightarrow Li^{*3+} + 3e$		
Pearl, B.SDolder, K.T. J. Phys. B 1 240 1968		
$Na^{*+} + e \rightarrow Na^{*2+} + 2e$		
Pearl, B.SDolder, K.T. J. Phys. B 1 872 1968		
$Li^{*+} + e \rightarrow Li^{*2+} + 2e$		
Pearl, B.SWalton, D.S.SDolder, K.T. J. Phys. B 2 1347 1969		

$Li^{*+} + e \rightarrow Li^{*2+} + 2e$		
Pearl, B.SDolder, K.T. J. Phys. B 8 56 1975		
$Rb^{*+} + e \rightarrow Rb^{*2+} + 2e$		
Pearl, B.SMartin, S.O.SDolder, K.T. J. Phys. B 2 1176 1969		
$Mg^{*2+} + e \rightarrow Mg^{*3+} + 2e$		
Pearl, B.SDolder, K.T. J. Phys. B 1 872 1968		
$Ba^{*+} + e \rightarrow Ba^{*2+} + 2e$		
Pearl, B.SDolder, K.T. J. Phys. B 8 56 1975		
$Sr^{*+} + e \rightarrow Sr^{*2+} + 2e$		
Pearl, B.SDolder, K.T. J. Phys. B 8 56 1975		
$Ca^{*+} + e \rightarrow Ca^{*2+} + 2e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C. Phys. Rev. A 27 2331 1983		
$Xe^{*6+} + e \rightarrow Xe^{*7+} + 2e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C.SCrandall, D.H.SPhaneuf, R.A.SGregory, D.C. Phys. Rev. A 29 1749 1984		
$Kr^{*4+} + e \rightarrow Kr^{*6+} + 3e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C. Phys. Rev. A 25 211 1982		
$Ga^{*+} + e \rightarrow Ga^{*2+} + 2e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C.SCrandall, D.H.SPhaneuf, R.A.SGregory, D.C. Phys. Rev. A 29 1749 1984		
$Xe^{*4+} + e \rightarrow Xe^{*6+} + 3e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C.SCrandall, D.H.SPhaneuf, R.A.SGregory, D.C. Phys. Rev. A 29 1749 1984		
$Ar^{*4+} + e \rightarrow Ar^{*6+} + 3e$		
Pinzola, M.S.Griffin, D.C.SBottcher, C. Phys. Rev. A 27 2331 1983		
$Sb^{*3+} + e \rightarrow Sb^{*4+} + 2e$		

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Pindzola, M.S.Griffin, D.C.Sottcher, C. J. Phys. B 16 1355 1983 $Xe^{4+} + e \rightarrow Xe^{3+} + 3e$	
Pindzola, M.S.Gorczyca, T.W.Badnell, M.R.Griffin, D.C.Sstenke, M.Shotman, G. Weissbecker, K.Flinschert, K.Saizborn, E.Schüller, A.Sunn, G.H. Phys. Rev. A 49 933 1994 $Sc^{2+} + e \rightarrow Sc^{3+} + 2e$	
Pindzola, M.S.Griffin, D.C. Phys. Rev. A 46 2486 1992 $W + e \rightarrow W^{+} + 2e$	
Pindzola, M.S.Griffin, D.C.Sottcher, C.SBue, M.J.Gregory, D.C. ORNL/TM 11282 1998 $Ni^{17+} + e \rightarrow Ni^{18+} + 2e$	
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Pindzola, M.S.Griffin, D.C.Sottcher, C. Phys. Rev. A 33 3787 1986 $S^{4+} + e \rightarrow S^{5+} + 2e$	
Pindzola, M.S.Griffin, D.C.Sottcher, C. Phys. Rev. A 33 3787 1986 $Cl^{5+} + e \rightarrow Cl^{6+} + 2e$	
Pindzola, M.S.Griffin, D.C.Sottcher, C. Phys. Rev. A 33 3787 1986 $Ar^{6+} + e \rightarrow Ar^{7+} + 2e$	
Pindzola, M.S.Griffin, D.C.Sottcher, C. Phys. Rev. A 33 3787 1986 $S^{4+} + e \rightarrow S^{5+} + 2e$	

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Pindzola, M.S.Griffin, D.C.Sottcher, C. Phys. Rev. A 33 3787 1986 $Cl^{5+} + e \rightarrow Cl^{6+} + 2e$	
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1998年 10月 12日 (月)	18:22:35 AM
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Pindzola, M.S.Griffin, D.C.Sottcher, C.SBue, M.J.Gregory, D.C. ORNL/TM 11282 1998 $Ni^{16+} + e \rightarrow Ni^{17+} + 2e$	
Pindzola, M.S.Griffin, D.C. Phys. Rev. A 46 2486 1992 $W + e \rightarrow W^{+} + 2e$	
Pindzola, M.S.Griffin, D.C. Phys. Rev. A 46 2486 1992 $W + e \rightarrow W^{+} + 2e$	
Pattie, R.F. J. Chem. Phys. 44 916 1966 $Te + e \rightarrow \text{Sum}[Te^{n+} + (n+1)e]$	
Pattie, R.F. J. Chem. Phys. 44 916 1966 $Zn + e \rightarrow \text{Sum}[Zn^{n+} + (n+1)e]$	
Pattie, R.F. J. Chem. Phys. 44 916 1966 $Cd + e \rightarrow \text{Sum}[Cd^{n+} + (n+1)e]$	

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Rachafi, S.Belic, D.S.Duponchelle, M.Sjureta, J.Szabra, M.Skui, Zhang.SDefran ce, P. J. Phys. B 24 1843 1991 $Ar^{7+} + e \rightarrow Ar^{8+} + 2e$	
Rachafi, S.Belic, D.S.Duponchelle, M.Sjureta, J.Szabra, M.Skui, Zhang.SDefran ce, P. J. Phys. B 24 1843 1991 $Ar^{7+} + e \rightarrow Ar^{9+} + 3e$	
Rakhovskii, V.I.SStepanov, A.M. High Temp. 7 1801 1969 $Ca + e \rightarrow \text{Sum}[Ca^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $W^{2+} + e \rightarrow \text{Sum}$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $W^{2+} + e \rightarrow \text{Sum}$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $Xe + e \rightarrow \text{Sum}[Xe^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $Ar + e \rightarrow \text{Sum}[Ar^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $He + e \rightarrow \text{Sum}[He^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $Ne + e \rightarrow \text{Sum}[Ne^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $Kr + e \rightarrow \text{Sum}[Kr^{n+} + (n+1)e]$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $W^{2+} + e \rightarrow \text{Sum}$	
Rapp, D.Englander-Golden, P. J. Chem. Phys. 43 1464 1965 $W^{2+} + e \rightarrow \text{Sum}$	

43	1464	1965
O ²⁺ + e → Sum		
Reid, R.H.G.\$Bartschart, K.\$Burke, P.G. J. Phys. B		
25	3175-3185	1992
Cr + e → Cr ⁴⁺ + 2e		
Rinn, K.\$Gregory, D.C.\$Wang, L.J.\$Phaneuf, R.A.\$Müller, A. Phys. Rev. A		
36	595	1987
O ⁵⁺ + e → O ⁶⁺ + 2e		
Rogers, W.T.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Msezane, A.Z.\$Henry, R.J.W. Phys. Rev. A		
25	737	1982
Ga ⁴⁺ + e → Ga ²⁺ + 2e		
Rogers, W.T.\$Stefani, G.\$Camilloni, R.\$Dunn, G.H.\$Msezane, A.Z.\$Henry, R.J.W. Phys. Rev. A		
25	737	1982
Zn ⁴⁺ + e → Zn ²⁺ + 2e		
Rothe, E.W.\$Marino, L.L.\$Meynaber, R.H.\$Trujillo, S.M. Phys. Rev.		
125	582	1962
H + e → H ⁴⁺ + 2e		
Rothe, E.W.\$Marino, L.L.\$Meynaber, R.H.\$Trujillo, S.M. Phys. Rev.		
125	582	1962
D + e → Sum{O ⁿ⁺ + (n+1)e}		
Roy, B.N.\$Rai, D.K. J. Phys. B		
16	4677	1983
Ba + e → Ba ⁴⁺ + 2e		
Roy, B.N.\$Rai, D.K. J. Phys. B		
16	4677	1983
Mg + e → Mg ⁴⁺ + 2e		
Roy, B.N.\$Rai, D.K. J. Phys. B		
16	4677	1983
Ca + e → Ca ⁴⁺ + 2e		
Roy, B.N.\$Rai, D.K. J. Phys. B		
16	4677	1983
Sr + e → Sr ⁴⁺ + 2e		
Rudge, M.R.H.\$Schwartz, S.B. Proc. Phys. Soc.		
88	579	1966
Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
Rudge, M.R.H.\$Schwartz, S.B. Proc. Phys. Soc.		

88	579	1966
Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ca ²⁺ + e → Ca ³⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
N ⁴⁺ + e → N ²⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
O ²⁺ + e → O ³⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
O ⁴⁺ + e → O ²⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ne ²⁺ + e → Ne ³⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ne ³⁺ + e → Ne ⁴⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ne ⁴⁺ + e → Ne ⁵⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ar ¹⁰⁺ + e → Ar ¹¹⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ar ¹¹⁺ + e → Ar ¹²⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ar ¹²⁺ + e → Ar ¹³⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ar ³⁺ + e → Ar ⁴⁺ + 2e		
Salop, A. Phys. Rev. A		

14	2985	1976
Ca ⁴⁺ + e → Ca ⁵⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Mg ⁶⁺ + e → Mg ⁷⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
N ⁴⁺ + e → N ⁵⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
N ³⁺ + e → N ⁴⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ca ⁵⁺ + e → Ca ⁶⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
M ⁵⁺ + e → M ⁶⁺ + 2e		
Salop, A. Phys. Rev. A		
14	2985	1976
Ca ³⁺ + e → Ca ⁴⁺ + 2e		
Sampson, D.H.\$Golden, L.B. J. Phys. B		
12	1785	1979
Ca ³⁺ + e → Ca ⁴⁺ + 2e		
Sampson, D.H. J. Phys. B		
15	2087	1982
Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
Sampson, D.H.\$Golden, L.B. J. Phys. B		
12	1785	1979
O ⁵⁺ + e → O ⁶⁺ + 2e		
Sampson, D.H.\$Golden, L.B. J. Phys. B		
12	1785	1979
N ⁴⁺ + e → N ⁵⁺ + 2e		
Sataka, M.\$Othani, S.\$Swensen, D.\$Gregory, D.C. Phys. Rev. A		
39	2397	1989
Cr ¹⁰⁺ + e → Cr ¹¹⁺ + 2e		
Sataka, M.\$Othani, S.\$Swensen, D.\$Gregory, D.C. Phys. Rev. A		

39	2397	1989
Cr ⁷⁺ + e → Cr ⁸⁺ + 2e		
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39	2397	1989
Cr ⁶⁺ + e → Cr ⁷⁺ + 2e		
Sataka, M.\$Othani, S.\$Swensen, D.\$Gregory, D.C. Phys. Rev. A		
39	2397	1989
Cr ⁸⁺ + e → Cr ⁹⁺ + 2e		
Sato, S.\$Kobayashi, K.\$Takebe, H. Publ. Astron. Soc. Jpn.		
19	290	1967
Fe ¹⁵⁺ + e → Fe ¹⁶⁺ + 2e		
Schneider, M. J. Phys. D.		
7	183	1974
Ca + e → Sum{Co ⁿ⁺ + (n+1)e}		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		
31	94	1965
O ²⁺ + e → Sum		
Schram, B.L.\$Boerboom, A.J.H.\$Kistemaker, J. Physica		
32	185	1966
Ne + e → Ne ³⁺ + 4e		
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32	185	1966
Ne + e → Ne ⁴⁺ + 5e		
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32	185	1966
Ne + e → Ne ⁵⁺ + 6e		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		
31	94	1965
Ne + e → Sum{He ⁿ⁺ + (n+1)e}		
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31	94	1965
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31	94	1965
Ar + e → Sum{Ar ⁿ⁺ + (n+1)e}		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		

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32	197	1966
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32	734	1966
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Schram, B.L. Physica		

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32	197	1966
$Ar + e \rightarrow Ar^{6+} + 7e$		
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32	197	1966
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32	197	1966
$Xe + e \rightarrow Xe^{3+} + 4e$		
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Schram, B.L. Physica		
32	197	1966
$Xe + e \rightarrow Xe^{8+} + 9e$		
Schram, B.L. Physica		
32	197	1966
$Xe + e \rightarrow Xe^{9+} + 10e$		
Schram, B.L.\$Moustafa, H.R.\$Schutten, J.\$de Heer, F.J. Physica		
32	734	1966
$DN2^+ + e \rightarrow \text{Sum}$		
Schram, B.L.\$Moustafa, H.R.\$Schutten, J.\$de Heer, F.J. Physica		
32	734	1966
$NW2^+ + e \rightarrow \text{Sum}$		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		
31	94	1965
$DN2^+ + e \rightarrow \text{Sum}$		
Schram, B.L.\$Moustafa, H.R.\$Schutten, J.\$de Heer, F.J. Physica		
32	734	1966
$HW2^+ + e \rightarrow \text{Sum}$		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		
31	94	1965
$HW2^+ + e \rightarrow \text{Sum}$		
Schram, B.L.\$de Heer, F.J.\$Van der Wiel M.J.\$Kistemaker, J. Physica		
31	94	1965
$NW2^+ + e \rightarrow \text{Sum}$		
Schroerer, J.M.\$Gunduz, D.H.\$Livingston, S. J. Chem. Phys.		
58	5835	1973
$Au + e \rightarrow \text{Sum}[Au^{n+} + (n+1)e]$		
Schroerer, J.M.\$Gunduz, D.H.\$Livingston, S. J. Chem. Phys.		
58	5835	1973
$Cu + e \rightarrow \text{Sum}[Cu^{n+} + (n+1)e]$		
Shah, M.B.\$Gilbody, H.B. J. Phys. B		

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1998年 10月 12日 (月)		10:22:35 AM
27	175-183	1994
Cu + e → Cu ⁵⁺ + 6e		
Shah, M.B.\$Gillbody, H.B. J. Phys. B		
27	175-183	1994
Cu + e → Cu ³⁺ + 4e		
Shah, M.B.\$Elliott, D.S.\$McCallion, P.\$Gillbody, H.B. J. Phys. B		
21	2756	1988
He + e → He ⁺ + 2e		
Shah, M.B.\$Elliott, D.S.\$McCallion, P.\$Gillbody, H.B. J. Phys. B		
21	2756	1988
He + e → He ²⁺ + 3e		
Shah, M.B.\$McCallion, P.\$Okuno, K.\$Gillbody, H.B. J. Phys. B		
26	2393	1993
Fe ⁺ + e → Fe ²⁺ + 2e		
Shah, M.B.\$McCallion, P.\$Okuno, K.\$Gillbody, H.B. J. Phys. B		
26	2393	1993
Fe ²⁺ + e → Fe ³⁺ + 2e		
Shah, M.B.\$McCallion, P.\$Okuno, K.\$Gillbody, H.B. J. Phys. B		
26	2393	1993
Fe ³⁺ + e → Fe ⁴⁺ + 2e		
Shah, M.B.\$McCallion, P.\$Okuno, K.\$Gillbody, H.B. J. Phys. B		
26	2393	1993
Fe ⁴⁺ + e → Fe ⁵⁺ + 2e		
Shah, M.B.\$Gillbody, H.B. J. Phys. B		
27	175-183	1994
Cu + e → Cu ⁺ + 2e		
Shah, M.B.\$Gillbody, H.B. J. Phys. B		
27	175-183	1994
Cu + e → Cu ²⁺ + 3e		
Shah, M.B.\$Elliott, D.S.\$Gillbody, H.B. J. Phys. B		
20	3501	1987
H + e → H ⁺ + 2e		
Shah, M.B.\$Gillbody, H.B. J. Phys. B		
27	175-183	1994
Cu + e → Cu ⁴⁺ + 5e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		

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1998年 10月 12日 (月)		10:22:35 AM
20	941	1976
Ne + e → Sum[Ne ⁿ⁺ + (n+1)e]		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ne + e → Ne ⁺ + 2e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
He + e → He ⁺ + 2e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ar + e → Ar ²⁺ + 3e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ar + e → Ar ⁺ + 2e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ne + e → Ne ³⁺ + 4e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
He + e → He ²⁺ + 3e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ne + e → Ne ²⁺ + 3e		
Shchemelinin, S.G.\$Andreev, E.P. Sov. Phys.-Tech. Phys.		
20	941	1976
Ar + e → Ar ³⁺ + 4e		
Shimon, L.I.\$Nepipov, E.I.\$Zapochnyi, I.P. Sov. Phys.-Tech. Phys.		
20	434	1975
Al + e → Sum[Al ⁿ⁺ + (n+1)e]		
Shimon, L.I.\$Nepipov, E.I.\$Zapochnyi, I.P. Sov. Phys.-Tech. Phys.		
20	434	1975
Ti + e → Sum[Ti ⁿ⁺ + (n+1)e]		
Shimon, L.I.\$Nepipov, E.I.\$Zapochnyi, I.P. Sov. Phys.-Tech. Phys.		
20	434	1975
In + e → Sum[In ⁿ⁺ + (n+1)e]		
Shimon, L.I.\$Nepipov, E.I.\$Zapochnyi, I.P. Sov. Phys.-Tech. Phys.		

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1998年 10月 12日 (月)		10:22:35 AM
20	434	1975
Ca + e → Sum[Ca ⁿ⁺ + (n+1)e]		
Shrivastava, S.K.\$Roy, B.N. J. Phys. B		
17	4935	1984
Sr ⁺ + e → Sr ²⁺ + 2e		
Shrivastava, S.K.\$Roy, B.N. J. Phys. B		
17	4935	1984
Ca ⁺ + e → Ca ²⁺ + 2e		
Shrivastava, S.K.\$Roy, B.N. J. Phys. B		
17	4935	1984
Mg ⁺ + e → Mg ²⁺ + 2e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
In + e → In ³⁺ + 4e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
Ga + e → Ga ³⁺ + 4e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
Ga + e → Ga ²⁺ + 3e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
Ga + e → Ga ⁺ + 2e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
In + e → In ⁺ + 2e		
Shul, R.J.\$Wetzel, R.C.\$Freund, R.S. Phys. Rev. A		
39	5592	1989
In + e → In ²⁺ + 3e		
Smith, A.C.H.\$Coplinger, E.\$Neynaber, R.H.\$Rothe, E.W.\$Trujillo, S.M. Phys. Rev.		
127	1647	1962
N + e → Sum[N ⁿ⁺ + (n+1)e]		
Smith, P.T. Phys. Rev.		
36	1293	1930
Ar + e → Sum[Ar ⁿ⁺ + (n+1)e]		
Smith, P.T. Phys. Rev.		

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1998年 10月 12日 (月)		10:22:35 AM
36	1293	1930
He + e → Sum[He ⁿ⁺ + (n+1)e]		
Smith, P.T. Phys. Rev.		
37	808	1931
Hg + e → Sum[Hg ⁿ⁺ + (n+1)e]		
Smith, P.T. Phys. Rev.		
36	1293	1930
Ne + e → Sum[Ne ⁿ⁺ + (n+1)e]		
Srinivasan, V.\$Rees, J.A. J. Appl. Phys.		
18	59	1967
Ar + e → Sum[Ar ⁿ⁺ + (n+1)e]		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Kr + e → Kr ⁴⁺ + 5e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Kr + e → Kr ⁺ + 2e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Ar + e → Ar ²⁺ + 3e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Ne + e → Ne ³⁺ + 4e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Ne + e → Ne ⁺ + 2e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
He + e → He ⁺ + 2e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
He + e → He ²⁺ + 3e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		
73	3763	1980
Ne + e → Ne ²⁺ + 3e		
Stephan, K.\$Heilm, H.\$Mark, T.D. J. Chem. Phys.		

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1998年 10月 12日 (月)	10:22:35 AM
73 3763 Ar + e → Ar ⁴⁺ + 2e	1980
Stephan, K. \$Helm, H. \$Mark, T.D. J. Chem. Phys. 3763	1980
73 3763 Ar + e → Ar ³⁺ + 4e	1980
Stephan, K. \$Helm, H. \$Mark, T.D. J. Chem. Phys. 3763	1980
73 3763 Kr + e → Kr ³⁺ + 4e	1980
Stephan, K. \$Helm, H. \$Mark, T.D. J. Chem. Phys. 3763	1980
73 3763 Kr + e → Kr ²⁺ + 3e	1980
Stephan, K. \$Mark, T.D. J. Chem. Phys. 3116	1984
81 3116 Xe + e → Xe ³⁺ + 4e	1984
Stephan, K. \$Mark, T.D. J. Chem. Phys. 3116	1984
81 3116 Xe + e → Xe ⁴⁺ + 2e	1984
Stephan, K. \$Mark, T.D. J. Chem. Phys. 3116	1984
81 3116 Xe + e → Xe ²⁺ + 3e	1984
Stingl, E. J. Phys. B 5 1160	1972
5 1160 Ca ⁺ + e → Ca ²⁺ + 2e	1972
Stingl, E. J. Phys. B 5 1160	1972
5 1160 B + e → B ⁺ + 2e	1972
Stingl, E. J. Phys. B 5 1160	1972
5 1160 Na ²⁺ + e → Na ³⁺ + 2e	1972
Stingl, E. J. Phys. B 5 1160	1972
5 1160 O ³⁺ + e → O ⁴⁺ + 2e	1972
Straub, H.C. \$Renault, P. \$Lindsay, B.G. \$Smith, K.A. \$Stebbing, R.F. Phys. Rev. A 52 1115	1995
52 1115 Ar + e → Ar ⁴⁺ + 2e	1995
Straub, H.C. \$Renault, P. \$Lindsay, B.G. \$Smith, K.A. \$Stebbing, R.F. Phys. Rev. A 52 1115	1995

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1998年 10月 12日 (月)	10:22:35 AM
52 1115 Ar + e → Ar ²⁺ + 3e	1995
Straub, H.C. \$Renault, P. \$Lindsay, B.G. \$Smith, K.A. \$Stebbing, R.F. Phys. Rev. A 52 1115	1995
52 1115 Ar + e → Ar ³⁺ + 4e	1995
Straub, H.C. \$Renault, P. \$Lindsay, B.G. \$Smith, K.A. \$Stebbing, R.F. Phys. Rev. A 52 1115	1995
52 1115 Ar + e → Ar ⁴⁺ + 5e	1995
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ⁶⁺ + 7e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Ar + e → Ar ²⁺ + 3e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Ar + e → Ar ³⁺ + 4e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Ar + e → Ar ⁴⁺ + 5e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Ar + e → Ar ⁵⁺ + 6e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ⁴⁺ + 2e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ²⁺ + 3e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ³⁺ + 4e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ⁴⁺ + 5e	1992
Syage, J.A. Phys. Rev. A	

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1998年 10月 12日 (月)	10:22:35 AM
46 5666 Ar + e → Ar ⁴⁺ + 2e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ³⁺ + 4e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ²⁺ + 3e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ⁴⁺ + 2e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ⁵⁺ + 6e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Kr + e → Kr ⁶⁺ + 7e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ⁴⁺ + 5e	1992
Syage, J.A. Phys. Rev. A 46 5666	1992
46 5666 Xe + e → Xe ⁵⁺ + 6e	1992
Tarmovsky, V. \$Becker, K. Z. Phys. D 22 683	1992
22 683 Ar + e → Ar ²⁺ + 3e	1992
Tarmovsky, V. \$Becker, K. Z. Phys. D 22 683	1992
22 683 Kr + e → Kr ⁴⁺ + 2e	1992
Tarmovsky, V. \$Becker, K. Z. Phys. D 22 683	1992
22 683 Kr + e → Kr ²⁺ + 3e	1992
Tarmovsky, V. \$Becker, K. Z. Phys. D 22 683	1992
22 683 Ar + e → Ar ⁴⁺ + 2e	1992
Tate, J.T. \$Smith, P.T. Phys. Rev.	

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1998年 10月 12日 (月)	10:22:35 AM
39 270 O ²⁺ + e → Sum	1932
Tate, J.T. \$Smith, P.T. Phys. Rev. 39 270	1932
39 270 H ²⁺ + e → Sum	1932
Tate, J.T. \$Smith, P.T. Phys. Rev. 46 773	1934
46 773 Na + e → Na ⁴⁺ + 2e	1934
Tate, J.T. \$Smith, P.T. Phys. Rev. 39 270	1932
39 270 O ²⁺ + e → Sum	1932
Tate, J.T. \$Smith, P.T. Phys. Rev. 46 773	1934
46 773 Na + e → Na ²⁺ + 3e	1934
Taylor, S.S. \$Henry, R.J.W. Phys. Rev. A 33 3825	1986
33 3825 Ar ⁶⁺ + e → Ar ⁷⁺ + 2e	1986
Taylor, S.S. \$Henry, R.J.W. Phys. Rev. A 33 3825	1986
33 3825 Al ⁴⁺ + e → Al ²⁺ + 2e	1986
Taylor, S.S. \$Henry, R.J.W. Phys. Rev. A 33 3825	1986
33 3825 S ⁴⁺ + e → S ⁵⁺ + 2e	1986
Taylor, S.S. \$Henry, R.J.W. Phys. Rev. A 33 3825	1986
33 3825 Cl ⁵⁺ + e → Cl ⁶⁺ + 2e	1986
Taylor, I.R. \$Bell, K.L. \$Kingston, A.E. J. Phys. B 13 2983	1980
13 2983 He + e → He ⁴⁺ + 2e	1980
Taylor, I.R. \$Kingston, A.E. \$Bell, K.L. J. Phys. B 12 3093	1979
12 3093 He + e → He ⁴⁺ + 2e	1979
Taylor, I.R. \$Kingston, A.E. \$Bell, K.L. J. Phys. B	

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1998年 10月 12日 (月)		10:22:35 AM
12	3093	1979
He + e → He ⁿ⁺ + 2e		
Taylor, I.R.Sbell, K.L.Skingston, A.E.		
J. Phys. B	2983	1980
13	2983	1980
He + e → He ⁿ⁺ + 2e		
Thomas, B.K.Sgorcio, J.D.		
Phys. Rev.	94	1969
179	94	1969
M ⁿ⁺ + e → M ⁽ⁿ⁺¹⁾⁺ + 2e		
Thompson, J.S.SGregory, D.C.		
Phys. Rev. A	1377	1994
50	1377	1994
Si ⁿ⁺ + e → Si ⁽ⁿ⁺¹⁾⁺ + 2e		
Thompson, J.S.SGregory, D.C.		
Phys. Rev. A	1377	1994
50	1377	1994
Si ⁿ⁺ + e → Si ⁽ⁿ⁺¹⁾⁺ + 2e		
Thompson, W.R.SShah, M.B.SGillbody, H.B.		
J. Phys. B	1321	1995
28	1321	1995
O + e → O ⁿ⁺ + 2e		
Thompson, W.R.SShah, M.B.SGillbody, H.B.		
J. Phys. B	1321	1995
28	1321	1995
O + e → O ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.Shofmann, G.SSalzborn, E.		
Phys. Rev. A	3522	1991
43	3522	1991
Ba ⁿ⁺ + e → Ba ⁽ⁿ⁺¹⁾⁺ + 2e		
Tinschert, K.Müller, A.Shofmann, G.SSalzborn, E.		
Phys. Rev. A	3552	1991
43	3552	1991
Ba ⁿ⁺ + e → Ba ⁽ⁿ⁺¹⁾⁺ + 2e		
Tinschert, K.Müller, A.Shofmann, G.SHuber, K.SBeker, R.SGregory, D.C.SSalzborn, E.		
J. Phys. B	531	1989
22	531	1989
Li ⁿ⁺ + e → Li ⁽ⁿ⁺¹⁾⁺ + 2e		
Tinschert, K.Müller, A.SBecker, R.SSalzborn, E.		
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.SBecker, R.SSalzborn, E.		
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.SBecker, R.SSalzborn, E.		

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1998年 10月 12日 (月)		10:22:35 AM
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 4e		
Tinschert, K.Müller, A.Shofmann, G.Sachenbach, Ch.SBecker, R.SSalzborn, E.		
J. Phys. B	1121	1987
20	1121	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 2e		
Tinschert, K.Müller, A.Shofmann, G.Sachenbach, Ch.SBecker, R.SSalzborn, E.		
J. Phys. B	1121	1987
20	1121	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 2e		
Tinschert, K.Müller, A.Shofmann, G.Sachenbach, Ch.SBecker, R.SSalzborn, E.		
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 4e		
Tinschert, K.Müller, A.SBecker, R.SSalzborn, E.		
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.SBecker, R.SSalzborn, E.		
J. Phys. B	1823	1987
20	1823	1987
Kr ⁿ⁺ + e → Kr ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.Shofmann, G.SSalzborn, E.		
Phys. Rev. A	3552	1991
43	3552	1991
Ba ⁿ⁺ + e → Ba ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.SPhoneuf, R.A.Shofmann, G.SSalzborn, E.		
J. Phys. B	1243	1989
22	1243	1989
Ar ⁿ⁺ + e → Ar ⁽ⁿ⁺¹⁾⁺ + 3e		
Tinschert, K.Müller, A.SPhoneuf, R.A.Shofmann, G.SSalzborn, E.		
J. Phys. B	1243	1989
22	1243	1989
Ar ⁿ⁺ + e → Ar ⁽ⁿ⁺¹⁾⁺ + 3e		
Tisone, G.C.SBranscomb, L.M.		
Phys. Rev.	169	1968
170	169	1968
H ⁿ⁺ + e → H + 2e		
Tisone, G.C.SBranscomb, L.M.		
Phys. Rev.	169	1968
170	169	1968
O ⁿ⁺ + e → O + 2e		
Tozer, B.A.SCrags, J.D.		

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1998年 10月 12日 (月)		10:22:35 AM
J. Electron. Control	183	1960
8	183	1960
Xe + e → Sum[Xe ⁿ⁺ + (n+1)e]		
Tozer, B.A.SCrags, J.D.		
J. Electron. Control	183	1960
8	183	1960
Ar + e → Sum[Ar ⁿ⁺ + (n+1)e]		
Tozer, B.A.SCrags, J.D.		
J. Electron. Control	183	1960
8	183	1960
Kr + e → Sum[Kr ⁿ⁺ + (n+1)e]		
Tsuji, A.SKatagawa, H.SMarumi, H.		
J. Phys. Soc. Jpn.	2062	1980
48	2062	1980
He ⁿ⁺ + e → He ⁽ⁿ⁺¹⁾⁺ + 2e		
Vainshtein, L.A.Sochkur, V.I.SRakhovskii, V.I.SStepanov, A.M.		
Sov. Phys.-JETP	271	1972
34	271	1972
Ba + e → Sum[Ba ⁿ⁺ + (n+1)e]		
Vainshtein, L.A.Sochkur, V.I.SRakhovskii, V.I.SStepanov, A.M.		
Sov. Phys.-JETP	271	1972
34	271	1972
Mg + e → Sum[Mg ⁿ⁺ + (n+1)e]		
Vainshtein, L.A.Sochkur, V.I.SRakhovskii, V.I.SStepanov, A.M.		
Sov. Phys.-JETP	271	1972
34	271	1972
Sr + e → Sum[Sr ⁿ⁺ + (n+1)e]		
Vainshtein, L.A.Sochkur, V.I.SRakhovskii, V.I.SStepanov, A.M.		
Sov. Phys.-JETP	271	1972
34	271	1972
Ca + e → Sum[Ca ⁿ⁺ + (n+1)e]		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987
In + e → In ⁿ⁺ + 3e		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987
Ga + e → Ga ⁿ⁺ + 2e		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987
Ga + e → Ga + 1e		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987

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1998年 10月 12日 (月)		10:22:35 AM
66	36	1987
Ga + e → Ga ⁿ⁺ + 3e		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987
In + e → In ⁿ⁺ + 2e		
Vainshtein, L.A.SGolovach, D.G.Sochkur, V.I.SRakhovskii, V.I.SRumyantsev, N.M.SSh		
ustryakov, V.M.	36	1987
Sov. Phys.-JETP	36	1987
66	36	1987
In + 0 → SUM		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 7e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 6e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 5e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 4e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 3e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ar + e → Ar ⁿ⁺ + 2e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ne + e → Ne ⁿ⁺ + 5e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ne + e → Ne ⁿ⁺ + 4e		
Van der Wiel, M.J.SEl-Sherbini, Th.M.SVriens, L.		
Physica	411	1969
42	411	1969
Ne + e → Ne ⁿ⁺ + 3e		

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Van der Wiel, M.J.\$El-Sherbini, Th.M.\$Vriens, L. Physica 42	411	1969
Ne + e --> Ne ⁺ + Ze		
Van der Wiel, M.J.\$El-Sherbini, Th.M.\$Vriens, L. Physica 42	411	1969
He + e --> He ²⁺ + 3e		
Van der Wiel, M.J.\$El-Sherbini, Th.M.\$Vriens, L. Physica 42	411	1969
He + e --> He ⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁴⁺ + e --> Ni ¹⁵⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁵⁺ + e --> Ni ¹⁶⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁶⁺ + e --> Ni ¹⁷⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁷⁺ + e --> Ni ¹⁸⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁸⁺ + e --> Ni ¹⁹⁺ + Ze		
Wang, L.J.\$Rinn, K.\$Gregory, D.C. J. Phys. B 21	2117	1988
Ni ¹⁹⁺ + e --> Ni ²⁰⁺ + Ze		
Wareing, J.B.\$Dolder, K.T. Proc. Phys. Soc. 91	887	1967
Pb + e --> Sum{Pb ⁿ⁺ } + (n+1)e}		
Wareing, J.B.\$Dolder, K.T. Proc. Phys. Soc. 91	887	1967
Li ⁺ + e --> Li ²⁺ + Ze		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Xe + e --> Xe ³⁺ + 4e		

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Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Kr + e --> Kr ⁺ + Ze		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Ar + e --> Ar ⁺ + Ze		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
He + e --> He ⁺ + Ze		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Ne + e --> Ne ⁺ + Ze		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Ar + e --> Ar ²⁺ + 3e		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Kr + e --> Kr ²⁺ + 3e		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Xe + e --> Xe ²⁺ + 3e		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Kr + e --> Kr ³⁺ + 4e		
Wetzel, R.C.\$Baiocchi, F.A.\$Hayes, T.R.\$Freund, R.S. Phys. Rev. A 35	559	1987
Xe + e --> Xe ⁺ + Ze		
Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
Ar + e --> Ar ²⁺ + 3e		
Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
Ar + e --> Ar ²⁺ + 3e		
Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
Ar + e --> Ar ²⁺ + 3e		
Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
Ar + e --> Ar ²⁺ + 3e		

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Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
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Ar + e --> Ar ²⁺ + 3e		
Wiesemann, K.\$Puerto, J.\$Huber, B.A. J. Phys. B 20	587	1987
Ar + e --> Ar ²⁺ + 3e		
Wong, K.L.\$Beiersdorfer, P.\$Chen, M.H.\$Reed, K.J.\$Scafield, J.H. Phys. Rev. A 48	2850-2858	1993
Fe ²³⁺ + e --> Fe ²⁴⁺ + Ze		
Wong, K.L.\$Beiersdorfer, P.\$Chen, M.H.\$Reed, K.J.\$Scafield, J.H. Phys. Rev. A 48	2850-2858	1993
Mn ²²⁺ + e --> Mn ²³⁺ + Ze		
Wong, K.L.\$Beiersdorfer, P.\$Chen, M.H.\$Reed, K.J.\$Scafield, J.H. Phys. Rev. A 48	2850-2858	1993
V ²⁰⁺ + e --> V ²¹⁺ + Ze		
Wong, K.L.\$Beiersdorfer, P.\$Chen, M.H.\$Reed, K.J.\$Scafield, J.H. Phys. Rev. A 48	2850-2858	1993
Ti ¹⁹⁺ + e --> Ti ²⁰⁺ + Ze		
Wong, K.L.\$Beiersdorfer, P.\$Chen, M.H.\$Reed, K.J.\$Scafield, J.H. Phys. Rev. A 48	2850-2858	1993
Cr ²¹⁺ + e --> Cr ²²⁺ + Ze		
Woodruff, P.R.\$Hublet, M.-C.\$Harrison, M.F.A.\$Brook, E. J. Phys. B 11	1679	1978
Ca ²⁺ + e --> Ca ³⁺ + Ze		
Woodruff, P.R.\$Hublet, M.-C.\$Harrison, M.F.A. J. Phys. B 11	1305	1978
Ar ⁺ + e --> Ar ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	3151	1989
Ar ⁺ + e --> Ar ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	3151	1989

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1998年 10月 12日 (月)		10:22:35 AM
F ⁺ + e --> F ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	1587	1989
M ⁺ + e --> M ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	1587	1989
Ca ⁺ + e --> Ca ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	1587	1989
P ⁺ + e --> P ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	3151	1989
Cl ⁺ + e --> Cl ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 58	3151	1989
Ne ⁺ + e --> Ne ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 57	2699	1988
S ²⁺ + e --> S ³⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 57	2699	1988
O ⁺ + e --> O ²⁺ + Ze		
Yamada, I.\$Danjo, A.\$Shirayama, T.\$Matsumoto, A.\$Ohtani, S.\$Suzuki, H.\$Takayanagi J. Phys. Soc. Jpn. 57	2699	1988
S ⁺ + e --> S ²⁺ + Ze		
Younger, S.M. Private Communication		1982
Hg ⁺ + e --> Hg ²⁺ + Ze		
Younger, S.M. Private Communication		1982
Rb ⁺ + e --> Rb ²⁺ + Ze		

Younger, S.M. Private Communication	1982
$Ne^{3+} + e \rightarrow Ne^{4+} + 2e$	
Younger, S.M. J. of Res. of the National Bureau of Standards 87 49	1982
$Li + e \rightarrow Li^{+} + 2e$	
Younger, S.M. Phys. Rev. A 26 3177	1982
$Ar + e \rightarrow Ar^{+} + 2e$	
Younger, S.M. Phys. Rev. A 26 3177	1982
$K^{+} + e \rightarrow K^{2+} + 2e$	
Younger, S.M.	1982
$Mo^{5+} + e \rightarrow Mo^{6+} + 2e$	
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$Ar^{4+} + e \rightarrow Ar^{5+} + 2e$	
Younger, S.M.	1982
$Ar^{5+} + e \rightarrow Ar^{6+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{20+} + e \rightarrow Fe^{21+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{20+} + e \rightarrow Fe^{21+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{20+} + e \rightarrow Fe^{21+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{21+} + e \rightarrow Fe^{22+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{21+} + e \rightarrow Fe^{22+} + 2e$	
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$Fe^{21+} + e \rightarrow Fe^{22+} + 2e$	

Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{16+} + e \rightarrow Fe^{17+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{16+} + e \rightarrow Fe^{17+} + 2e$	
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$Fe^{16+} + e \rightarrow Fe^{17+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
$Fe^{17+} + e \rightarrow Fe^{18+} + 2e$	
Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541	1982
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$Fe^{4+} + e \rightarrow Fe^{5+} + 2e$	

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Fe ⁵⁺ + e → Fe ⁶⁺ + 2e	1982	
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ZZ 111	1980	
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ZZ 111	1980	
C ⁵⁺ + e → C ⁶⁺ + 2e		
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Ne ⁹⁺ + e → Ne ¹⁰⁺ + 2e		
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Be ⁴⁺ + e → Be ²⁺ + 2e		
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O ⁵⁺ + e → O ⁶⁺ + 2e		
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ZZ 111	1980	
Mg ⁹⁺ + e → Mg ¹⁰⁺ + 2e		
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ZZ 1425	1980	
B ³⁺ + e → B ⁴⁺ + 2e		
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ZZ 1425	1980	
Li ⁴⁺ + e → Li ²⁺ + 2e		

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Phys. Rev. A		
ZZ 1425	1980	
Na ⁵⁺ + e → Na ⁶⁺ + 2e		
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Na ⁹⁺ + e → Na ¹⁰⁺ + 2e		
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C ²⁺ + e → C ³⁺ + 2e		
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F ⁵⁺ + e → F ⁶⁺ + 2e		
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C ²⁺ + e → C ³⁺ + 2e		
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Na ³⁺ + e → Na ⁴⁺ + 2e		
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F ⁵⁺ + e → F ⁶⁺ + 2e		
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Phys. Rev. A		
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Ar ¹⁴⁺ + e → Ar ¹⁵⁺ + 2e		

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Younger, S.M.		
Phys. Rev. A		
ZZ 1278	1981	
C ²⁺ + e → C ³⁺ + 2e		
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Phys. Rev. A		
ZZ 1138	1981	
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Younger, S.M. Phys. Rev. A 24	1272	1981
$Al^{2+} + e \rightarrow Al^{3+} + Ze$		
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$PA^{4+} + e \rightarrow PA^{5+} + Ze$		
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$Ar^{7+} + e \rightarrow Ar^{8+} + Ze$		
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$Ar^{7+} + e \rightarrow Ar^{8+} + Ze$		
Younger, S.M. Phys. Rev. A 25	3396	1982
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$Fe^{9+} + e \rightarrow Fe^{10+} + Ze$		
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Younger, S.M. Phys. Rev. A 25	3396	1982
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$V^{5+} + e \rightarrow V^{6+} + Ze$		
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$Fe^{8+} + e \rightarrow Fe^{9+} + Ze$		
Younger, S.M. Phys. Rev. A 26	3177	1982
$Kr^{18+} + e \rightarrow Kr^{19+} + Ze$		
Younger, S.M. Phys. Rev. A 26	3177	1982
$Ar + e \rightarrow Ar^{+} + Ze$		
Younger, S.M. Phys. Rev. A 26	3177	1982
$K^{4+} + e \rightarrow K^{2+} + Ze$		
Younger, S.M. Phys. Rev. A 26	3177	1982
$Ca^{2+} + e \rightarrow Ca^{3+} + Ze$		

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Younger, S.M. Phys. Rev. A 26	3177	1982
$Sc^{3+} + e \rightarrow Sc^{4+} + Ze$		
Younger, S.M. Phys. Rev. A 26	3177	1982
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$Kr^{18+} + e \rightarrow Kr^{19+} + Ze$		
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$Li + e \rightarrow Li^{+} + Ze$		
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$Li + e \rightarrow Li^{+} + Ze$		
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$Fe^{9+} + e \rightarrow Fe^{10+} + Ze$		
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$Fe^{9+} + e \rightarrow Fe^{10+} + Ze$		

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$Fe^{12+} + e \rightarrow Fe^{13+} + Ze$		
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$Fe^{13+} + e \rightarrow Fe^{14+} + Ze$		
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$Fe^{13+} + e \rightarrow Fe^{14+} + Ze$		

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Younger, S.M. J. Quant. Spectrosc. & Radiat. Transfer 27 541 Fe ²²⁺ + e → Fe ²³⁺ + Ze	1982
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Younger, S.M. Ne + e → Ne ⁺ + Ze	1982

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