

Experimental Thermal Constants Adopted by Axton

(N. Otsuka, 2016-05-05, Memo 4C-3/402)

Thermal constants evaluated by Axton [1] are treated as “quasi-experimental data” in the least-squares analysis for the IAEA Neutron Cross-Section Standards. Following a request from this project, I checked the status of the experimental data points adopted by Axton against EXFOR with Mr Takuma Kawai (IAEA intern from Waseda Univ.), and found some data points missing in EXFOR as summarized below.

NNDC and NEA DB are requested to assess whether these data points must be compiled and to submit the results by a memo. Some references could be in EXFOR, but it does not always mean the data points are also in EXFOR!

Experimental data points considered in Axton’s evaluation but not seen in EXFOR

(See Appendix for more details about each data point.)

PtID: Data point ID shown in the last column of Table 1 of Ref. [1].

Remark:

- CIN: The article is compiled in CINDA.
- Five-digit number: The data point might be relevant to the EXFOR entry.

PtID	Author	Reference	Lab	Centre	Remark
1	B.Laponche+	J,NSE,48,305,1972	2FR CAD	NEA DB	
2	F.W.Cornish+	R,AECL-510,1956	1CANCR	NNDC	
3	J.Halperin+	J,NSE,16,245,1963	1USAORL	NNDC	
24	M.G.Inghram+	C,55GENEVA,4,105,1956	1USAAIF	NNDC	CIN
25	F.W.Cornish	R,NRDC-129,1960	2UK HAR	NEA DB	CIN
28	F.L.Lisman+	R,IN-1064,1967			
	W.J.Maeck+	R,IDO-14678,1967			
	F.L.Lisman+	R,IN-1178,1968	1USAMTR	NNDC	13205?
	B.F.Rider+	R,GEAP-5060,1965			
	B.F.Rider+	R,GEAP-5270,1966			
30					
31	D.E.Conway	R,WAPD-TM-613,1967	1USABET	NNDC	CIN
32					12428?
33	R.W.Durham+	C,66PARIS,2,17,1967	1CANCR	NNDC	12428?
72	R.L.Zimmerman+	W,ZIMMERMAN,1955	1USABNL	NNDC	52081?
77	H.Muether+	(unpublished)	1USABNL	NNDC	50645?
105	J.F.Raffle+	C,55GENEVA,4,187,1955	2UK HAR	NEA DB	22506?
145					
146					
147	J.R.Smith	R,EPRI-NP-3436,1984	1USAMTR	NNDC	CIN
148					

Reference

[1] E.J. Axton, Report GE/PH/01/86, EC-JRC Central Bureau for Nuclear Measurements, 1986.

Appendix: Experimental thermal constants adopted in Axton's evaluation and their status in EXFOR

PtID and RefID: Data point ID and reference ID shown in the second and last column of Table 1 of the Axton's report.

Quantity: See their definitions in the caption of Table 1 of the Axton's report. Not all of them are for EXFOR compilation.

EXFOR #:

- Five digits entry number means the article is in EXFOR but the quantity is not seen in the article.
- Subentry number 000 means the article is in EXFOR and the quantity is in the article, but missing in EXFOR. Probably for additional compilation.
- "CINDA" means the article is not in EXFOR but in CINDA.

Remark:

- !: the value is missing in EXFOR and the reference must be checked for additional compilation.
- ?: the value is in EXFOR, but its source article is not checked by me.
- x: the value is not in the reference cited by Axton.
- a: the value (ratio) is not in the reference cited by Axton, but its absolute value is in EXFOR.

PtID	Ref ID	Quantity	Value in Axton's compilation			EXFOR			X4/Axton	EXFOR #	Remark
			value	Unc. %	Unc.	value	Unc. %	Unc.			
1	1972(2)	(FA39)/FA35	1.6491E+00	0.583	9.6143E-03	<i>Not available. For compilation?</i>					!
2	1956(2)	CAP39	3.1200E+02	4.490	1.4009E+01	<i>Not available. For compilation?</i>					!
3	1963(2)	CAP33	4.9530E+01	6.400	3.1699E+00	<i>Not available. For compilation?</i>					!
4	1971(2)	FLEM	9.8270E-02	3.348	3.2901E-03					20459	
5	1982(1)	CAP34	9.5900E+01	2.086	2.0005E+00						
6	1953(2)	FF35	5.7110E+02	2.211	1.2627E+01						
7	1955(2)	33FFH33	8.4472E+02	3.147	2.6583E+01					20047	
8	1968(2)	33FFH33	8.3415E+02	1.371	1.1436E+01						

9	1968(2)	33FFH35	8.8901E+02	1.446	1.2855E+01						
10	1968(2)	39FFH39	1.8844E+03	0.949	1.7883E+01						
11	1975(2)	33FFH33	8.3520E+02	0.659	5.5040E+00					12356	
12	1955(2)	(FF41)/FF39	1.3552E+00	1.424	1.9298E-02	1.3620E+00	1.689	2.3000E-02	1.005	12521.003	
13	1967(2)	(FF39)/FF35	1.3583E+00	2.139	2.9054E-02	1.3850E+00	1.800	2.4930E-02	1.020	21494.008	
14	1967(2)	(FF41)/FF35	1.8806E+00	2.802	5.2694E-02	1.9200E+00	2.448	4.7000E-02	1.021	21494.009	
15	1970(2)	(FF33)/FF35	9.3200E-01	0.966	9.0031E-03	9.3100E-01	0.537	5.0000E-03	0.999	20552.000	
16	1975(2)	(FF33)/FF35	9.3230E-01	0.450	4.1954E-03	9.3330E-01	0.140	1.3066E-03	1.001	12356.002	
17	1973(2)	(39FFH39)/34FFH35	1.3544E+00	1.414	1.9151E-02						
18	1975(2)	(39FFH39)/33FFH33	2.2796E+00	0.669	1.5251E-02					12356	
19	1975(2)	(39FFH39)/33FFH35	2.1239E+00	0.709	1.5058E-02					12356	
20	1975(2)	F1BIG	5.5270E-01	0.562	3.1062E-03					12356	
21	1970(1)	(CA33)/FIS33	8.6100E-02	2.239	1.9278E-03	8.9900E-02	0.445	4.0000E-04	1.044	10013.002	
22	1970(1)	(CA35)/FIS35	1.6970E-01	1.709	2.9002E-03	1.7020E-01	0.411	7.0000E-04	1.003	10013.003	
23	1970(1)	(CA39)/FIS39	3.5550E-01	1.603	5.6987E-03	3.5970E-01	0.584	2.1000E-03	1.012	10013.004	
24	1956(2)	(CAP33)/FF33	9.4030E-02	3.190	2.9996E-03	<i>Not available. For compilation?</i>				CINDA	!
25	1960(2)	(CAP35)/FF35	1.8800E-01	7.447	1.4000E-02	<i>Not available. For compilation?</i>				CINDA	!
26	1964(2)	(CAP33)/FF33	9.0200E-02	1.731	1.5614E-03	9.4000E-02	0.426	4.0000E-04	1.042	12350.002	
27	1964A(2)	(CAP35)/FF35	1.7050E-01	1.056	1.8005E-03	1.7530E-01	0.342	6.0000E-04	1.028	12420.003	
28	1967(2)	(CAP33)/FF33	9.3000E-02	2.128	1.9790E-03	<i>Not available. For compilation?</i>				13205	!
29	1967(2)	(CAP35)/FF35	1.7120E-01	0.886	1.5168E-03	1.7600E-01	1.136	2.0000E-03	1.028	13205.000	
30	1967(2)	(CAP33)/FF33	8.5100E-02	4.935	4.1997E-03	<i>Not available. For compilation?</i>				CINDA	!
31	1967(2)	(CAP35)/FF35	1.7050E-01	4.223	7.2002E-03	<i>Not available. For compilation?</i>				CINDA	!
32	1967(2)	(CAP35)/FF35	1.7460E-01	1.145	1.9992E-03	<i>Not available. For compilation?</i>				12428	!
33	1967(2)	(CAP39)/FF39	3.8820E-01	1.520	5.9006E-03	<i>Not available. For compilation?</i>				12428	!
34	1971(2)	(CAP33)/FF33	8.5700E-02	3.048	2.6121E-03					20459	x

35	1971(2)	(CAP35)/FF35	1.6960E-01	1.759	2.9833E-03						20459	x
36	1971(2)	(CAP39)/FF39	3.8120E-01	4.808	1.8328E-02						20459	x
37	1961(2)	(F1ETA33)/F1ETA35	1.1150E+00	0.717	7.9946E-03							
38	1960(2)	(F1ETA39)/F1ETA35	9.9700E-01	1.625	1.6201E-02	1.0117E+00	0.761	7.7000E-03	1.015		12505.002	
39	1960(2)	(F1ETA41)/F1ETA35	1.0528E+00	1.653	1.7403E-02	1.0574E+00	0.766	8.1000E-03	1.004		12505.003	
40	1965(2)	(F3ETA33)/F3ETA35	1.0461E+00	2.357	2.4657E-02							
41	1965(2)	(F3ETA39)/F3ETA35	1.6079E+00	2.403	3.8638E-02							
42	1965(2)	(F3ETA33)/F3ETA35	1.0309E+00	3.919	4.0401E-02							
43	1965(2)	(F3ETA39)/F3ETA35	1.6223E+00	4.161	6.7504E-02							
44	1962(2)	(F2ETA33)/F2ETA35	9.5300E-01	1.414	1.3475E-02	9.5300E-01	1.469	1.4000E-02	1.000		10207.009	
45	1962(2)	(F2ETA39)/F2ETA35	1.6310E+00	1.414	2.3062E-02	1.6310E+00	1.410	2.3000E-02	1.000		10207.010	
46	1962/A(2)	F3ETA33	7.4470E+02	0.537	3.9990E+00						10208	x
47	1962/A(2)	F3ETA35	7.2270E+02	0.540	3.9026E+00						10208	x
48	1972(2)	(F3ETA39)/F3ETA35	1.6058E+00	1.107	1.7776E-02							
49	1972(2)	(F3ETA41)/F3ETA39	1.4687E+00	3.580	5.2579E-02							
50	1956(2)	(F3ETA33)/F3ETA35	1.0390E+00	3.561	3.6999E-02						40804	
51	1956(2)	(F3ETA39)/F3ETA35	1.5650E+00	6.709	1.0500E-01						40804	
52	1959(2)	(F3ETA33)/F3ETA35	1.0221E+00	1.811	1.8510E-02						12361	
53	1959(2)	(F3ETA39)/F3ETA35	1.6043E+00	2.271	3.6434E-02						12361	
54	1984(2)	WGA33	9.9884E-01	0.120	1.1986E-03							
55	1984(2)	WGA35	9.7870E-01	0.092	9.0040E-04							
56	1984(2)	WGA39	1.0767E+00	0.269	2.8963E-03							
57	1984(2)	WGA41	1.0444E+00	0.191	1.9948E-03							
58	1984(2)	WGF33	9.9664E-01	0.201	2.0032E-03							
59	1985(3)	WGF35	9.7780E-01	0.092	8.9958E-04							
60	1984(2)	WGF39	1.0562E+00	0.275	2.9046E-03							

61	1984(2)	WGF41	1.0452E+00	0.670	7.0028E-03						
62	1954(1)	(ABS35)+SCR35	7.2433E+02	3.590	2.6003E+01	7.2900E+02	2.058	1.5000E+01	1.006	21179.006	
63	1953(1)	(ABS35)+SCR35	6.9432E+02	2.016	1.3997E+01	6.9100E+02	0.724	5.0000E+00	0.995	12426.002	
64	1954(1)	(ABS35)+SCR35	7.0032E+02	1.428	1.0001E+01	7.0000E+02	0.714	5.0000E+00	1.000	12410.003	
65	1955(1)	(ABS35)+SCA35	7.1032E+02	2.956	2.0997E+01	7.1000E+02	2.817	2.0000E+01	1.000	41219.007	
66	1960(1)	(ABS35)+SCR35	6.9032E+02	1.391	9.6024E+00	6.9000E+02	1.449	1.0000E+01	1.000	12329.000	
67	1959(1)	(ABS35)+SCA35	6.9632E+02	0.359	2.4998E+00	6.9497E+02	0.260	1.8100E+00	0.998	12404.002	
68	1959(1)	(ABS35)+SCR35	6.9832E+02	0.730	5.0977E+00	6.9868E+02	0.688	4.8100E+00	1.001	12404.003	
69	1960(1)	(ABS35)+SCR35	6.9332E+02	0.721	4.9988E+00	6.9300E+02	0.722	5.0000E+00	1.000	12024.000	
70	1961(1)	(ABS35)+SCR35	6.9632E+02	0.359	2.4998E+00	6.9420E+02	0.216	1.5000E+00	0.997	12406.003	
71	1962(1)	ABS35	6.7031E+02	2.089	1.4003E+01	6.7000E+02	1.194	8.0000E+00	1.000	40651.002	
72	1955(1)	(ABS39)+SCR39	1.0225E+03	1.271	1.2996E+01	<i>Not available. For compilation?</i>				12322	!
73	1955(1)	(ABS39)+SCA39	1.0405E+03	2.979	3.0996E+01	1.0400E+03	2.885	3.0000E+01	1.000	41219.009	
74	1958(1)	(ABS39)+SCR39	1.0225E+03	1.369	1.3998E+01	1.0150E+03	0.985	1.0000E+01	0.993	12502.002	?
75	1956/A(1)	(ABS39)+SCR39	1.0125E+03	3.003	3.0405E+01	1.0150E+03	2.956	3.0000E+01	1.002	21033.003	
76	1961(1)	(ABS39)+SCR39	1.0185E+03	0.727	7.4045E+00	1.0180E+03	0.786	8.0000E+00	1.000	12507.002	
77	1954(1)	(ABS33)+SCR33	5.9727E+02	2.344	1.4000E+01	<i>Not available. For compilation?</i>				!	
78	1955(1)	(ABS33)+SCR33	5.7726E+02	3.638	2.1001E+01	5.8000E+02	3.448	2.0000E+01	1.005	41219.003	
79	1956(1)	(ABS33)+SCR33	5.9627E+02	3.019	1.8001E+01					21065.003	
80	1957(1)	ABS33	5.7426E+02	3.483	2.0001E+01	5.7800E+02	2.941	1.7000E+01	1.007	21186.002.3	
81	1960(1)	(ABS33)+SCR33	5.8727E+02	0.800	4.6982E+00	5.8700E+02	1.022	6.0000E+00	1.000	12341.000	
82	1960(1)	(ABS33)+SCA33	5.8577E+02	0.990	5.7991E+00	5.8700E+02	0.852	5.0000E+00	1.002	12362.003	
83	1960(1)	(ABS33)+SCR33	5.8567E+02	0.410	2.4012E+00	5.8600E+02	0.341	2.0000E+00	1.001	12362.003	
84	1960(1)	(ABS33)+SCR33	5.8727E+02	0.511	3.0009E+00	5.8700E+02	0.511	3.0000E+00	1.000	12024.000	
85	1961(1)	(ABS41)+SCA41	1.3866E+03	3.606	5.0001E+01	1.3830E+03			0.997	12537.002	
86	1964(1)	(ABS41)+SCA41	1.3806E+03	2.897	3.9996E+01	1.3830E+03	2.169	3.0000E+01	1.002	12528.017	

87	1984(3)	(ABS41)+SCR41	1.3956E+03	1.433	1.9999E+01	1.3890E+03	1.080	1.5000E+01	0.995	13019.000
88	1982(1)	SCA33	1.2306E+01	5.688	6.9997E-01					
89	1982(1)	(SCA33)-SCR33	1.2006E+00	49.977	6.0002E-01					
90	1982(1)	SCA35	1.6508E+01	7.875	1.3000E+00					
91	1982(1)	(SCA35)-SCR35	1.7008E+00	44.097	7.5000E-01					
92	1982(1)	SCA39	8.0037E+00	12.494	9.9998E-01					
93	1982(1)	(SCA39)-SCR39	8.0037E-01	137.437	1.1000E+00					
94	1982(1)	SCA41	1.2006E+01	21.657	2.6001E+00					
95	1982(1)	(SCA41)-SCR41	1.2006E+0	249.886	3.0001E+00					
96	1974(1)	39FH139	1.8121E+03	0.454	8.2269E+00					20143
97	1973(1)	34FH135	1.4391E+03	0.445	6.4040E+00					20143
98	1961(1)	FIS35	5.8937E+02	1.325	7.8092E+00	5.8700E+02	1.022	6.0000E+00	0.996	20189.000
99	1967(1)	(FIS39)/FIS35	1.2530E+00	1.800	2.2554E-02	1.2530E+00	1.756	2.2000E-02	1.000	21494.002
100	1967(1)	(FIS41)/FIS35	1.7630E+00	2.751	4.8500E-02	1.7720E+00	2.709	4.8000E-02	1.005	21494.003
101	1977(1)	34FH135	1.4430E+03	0.791	1.1414E+01					30399
102	1959(1)	33FH133	8.3426E+02	3.302	2.7547E+01					21471
103	1959(1)	FIS35	5.8197E+02	3.092	1.7995E+01	5.8200E+02	2.062	1.2000E+01	1.000	21471.006
104	1959(1)	39FH139	1.7148E+03	2.843	4.8752E+01					21471
105	1956(1)	(FIS41)/FIS39	1.3319E+00	6.000	7.9914E-02	<i>Not available. For compilation?</i>			22506	!
106	1965(1)	FIS35	5.8371E+02	1.449	8.4580E+00	5.7200E+02	1.049	6.0000E+00	0.980	21387.002
107	1959(1)	FIS35	5.9317E+02	2.232	1.3240E+01	6.0500E+02	0.992	6.0000E+00	1.020	12392.002 ?
108	1964(1)	FIS41	9.8545E+02	4.569	4.5025E+01	9.6200E+02	3.950	3.8000E+01	0.976	12529.005 ?
109	1965(1)	(39FH139)/34FH135	1.2425E+00	1.557	1.9346E-02					21520,21780
110	1970(1)	(39FH139)/34FH135	1.2578E+00	1.624	2.0427E-02					30089,30140
111	1977(1)	NUB52	3.7549E+00	0.431	1.6184E-02	3.7380E+00	0.401	1.5000E-02	0.995	31761.002
112	1980(1)	(NUB33)/NUB52	6.6049E-01	0.255	1.6842E-03	6.6010E-01	0.227	1.5000E-03	0.999	30772.002.1

113	1980(1)	(NUB35)/NUB52	6.4318E-01	0.255	1.6401E-03	6.4030E-01	0.203	1.3000E-03	0.996	30772.003.1	
114	1980(1)	(NUB39)/NUB52	7.6614E-01	0.243	1.8617E-03	7.6640E-01	0.274	2.1000E-03	1.000	30772.004.1	
115	1980(1)	(NUB41)/NUB52	7.8028E-01	0.231	1.8024E-03	7.7820E-01	0.244	1.9000E-03	0.997	30772.005.1	
116	1982(2)	NUB52	3.7831E+00	0.221	8.3607E-03	3.7730E+00	0.186	7.0000E-03	0.997	10954.002	
117	1984(2)	(NUB33)/NUB52	6.5996E-01	0.340	2.2439E-03	6.5970E-01	0.273	1.8000E-03	1.000	12833.000	
118	1984(2)	(NUB35)/NUB52	6.4701E-01	0.265	1.7146E-03	6.4430E-01	0.217	1.4000E-03	0.996	12833.000	
119	1984(2)	(NUB39)/NUB52	7.6530E-01	0.257	1.9668E-03	7.6550E-01	0.183	1.4000E-03	1.000	12833.000	
120	1984(2)	(NUB41)/NUB52	7.8423E-01	0.290	2.2743E-03	7.8200E-01	0.230	1.8000E-03	0.997	12834.000	
121	1963(1)	NUB52	3.7767E+00	0.838	3.1649E-02	3.7710E+00	0.796	3.0000E-02	0.998	12326.007	
122	1963(1)	(NUB33)/NUB52	6.5483E-01	0.895	5.8607E-03					12326	a
123	1963(1)	(NUB35)/NUB52	6.4587E-01	0.838	5.4124E-03					12326	a
124	1963(1)	(NUB39)/NUB52	7.5047E-01	0.996	7.4747E-03					12326	a
125	1963(1)	NUB52	3.7910E+00	1.066	4.0412E-02	3.7670E+00	1.009	3.8000E-02	0.994	20074.002	?
126	1965(1)	(NUB35)/NUB52	6.4222E-01	0.847	5.4396E-03	6.4000E-01	0.828	5.3000E-03	0.997	20025.000	
127	1968(1)	NUB52	3.8194E+00	1.033	3.9454E-02	3.7870E+00	0.819	3.1000E-02	0.992	21198.002	
128	1985A(3)	NUB52	3.7547E+00	0.300	1.1264E-02						
129	1966(1)	NUB52	3.7299E+00	0.806	3.0063E-02						
130	1965(1)	NUB52	3.7405E+00	0.438	1.6383E-02						
131	1965(1)	(NUB33)/NUB35	1.0204E+00	0.587	5.9897E-03	1.0200E+00	0.588	6.0000E-03	1.000	21454.002	
132	1965(1)	(NUB39)/NUB35	1.1835E+00	0.675	7.9886E-03	1.1820E+00	0.677	8.0000E-03	0.999	21454.003	
133	1965(1)	(NUB41)/NUB35	1.2102E+00	0.905	1.0952E-02	1.2100E+00	0.909	1.1000E-02	1.000	21454.006	
134	1965(1)	(NUB35)/NUB52	6.4334E-01	0.472	3.0366E-03					21454	x
135	1964(1)	(NUB33)/NUB52	6.7093E-01	1.235	8.2860E-03					21135	a
136	1964(1)	(NUB35)/NUB52	6.4145E-01	0.537	3.4446E-03					21252	a
137	1964(1)	(NUB39)/NUB52	7.7307E-01	1.122	8.6738E-03					21135	a
138	1981(1)	NUB52	3.7618E+00	0.483	1.8169E-02	3.7580E+00	0.399	1.5000E-02	0.999	41595.002	

139	1984(2)	NUB52	3.7678E+00	0.303	1.1416E-02	3.7670E+00	0.265	1.0000E-02	1.000	10941.002	
140	1982(1)	NUB52	3.7641E+00	0.711	2.6763E-02	3.7520E+00	0.773	2.9000E-02	0.997	21833.003	
141	1977(1)	NUB52	3.7475E+00	0.580	2.1736E-02	3.7440E+00	0.614	2.3000E-02	0.999	10717.002	
142	1972(1)	NUB52	3.7507E+00	0.463	1.7366E-02	3.7290E+00	0.402	1.5000E-02	0.994	10166.003	
143	1981(1)	NUB52	3.7534E+00	0.490	1.8392E-02	3.7430E+00	0.481	1.8000E-02	0.997	30536.002	
144	1981(1)	NUB52	3.7828E+00	0.759	2.8711E-02						
145	1984(2)	ETA33	2.2972E+00	0.350	8.0402E-03	<i>Not available. For compilation?</i>				CINDA	!
146	1984(2)	ETA35	2.0842E+00	0.386	8.0450E-03	<i>Not available. For compilation?</i>				CINDA	!
147	1984(2)	ETA39	2.1120E+00	0.380	8.0256E-03	<i>Not available. For compilation?</i>				CINDA	!
148	1984(2)	ETA41	2.1690E+00	0.419	9.0881E-03	<i>Not available. For compilation?</i>				CINDA	!
149	1960(1)	ETA33	2.3121E+00	0.375	8.6704E-03	2.2960E+00	0.436	1.0000E-02	0.993	12349.002	
150	1960(1)	ETA35	2.0757E+00	0.382	7.9292E-03	2.0770E+00	0.481	1.0000E-02	1.001	12349.003	
151	1962(1)	ETA39	2.1163E+00	0.851	1.8010E-02	2.1430E+00	0.467	1.0000E-02	1.013	12508.002	
152	1968(2)	F1CAB	2.7384E+02	4.960	1.3582E+01	2.7620E+02	4.417	1.2200E+01	1.009	21410.002	?
153	1968(2)	F2CAB	1.1719E+03	3.176	3.7220E+01	1.1828E+03	1.877	2.2200E+01	1.009	21410.004	?
154	1968(2)	F3CAB	3.2690E+00	2.776	9.0747E-02					21410	
155	1968(2)	F4CA3	3.0339E+02	5.836	1.7706E+01					21410	
156	1968(2)	F5CAB	3.9810E+00	1.602	6.3776E-02					21410	
157	1973(2)	CA40	2.8950E+02	0.484	1.4012E+00						
158	1973(2)	CA42	1.8500E+01	2.162	3.9997E-01						
159	1973(2)	GC11639	1.3262E+00	6.056	8.0315E-02						
160	1960(2)	GC11640	1.0860E+00	2.000	2.1720E-02						
161	1973(2)	GC11641	1.1085E+00	2.457	2.7236E-02						
162	1960(2)	GC11642	1.1335E+00	2.670	3.0264E-02						
163	1973(2)	GA11639	1.1846E+00	1.521	1.8018E-02						
164	1960(2)	GA11641	1.1073E+00	0.819	9.0688E-03						

165	1982(2)	(ETA39)/FIS39	2.7820E-03	2.072	5.7643E-05	12793	x
166	1985(3)	(ABS35)/SCR35	6.9000E+02	1.000	6.9000E+00		
167	1985(3)	(ABS39)/SCR39	1.0258E+03	1.000	1.0258E+01		