672

IMP H & J

HOUR AVERAGED PROTON FLUX
72-073A-08M/73-078A-08G

DAILY AVERAGED FLUXES
72-073A-080/73-078A-08I

IMP H & J

HOUR AVERAGED PROTON FLUX

(1,2,4,10,30,60 MEV)

72-073A-08M/73-078A-08G

This dataset consists of three tapes. IMP-H (72-073A-08M) data cover years 1972 and 1973 on the first tape only. The rest is IMP-J (73-078A-08G). The first two tapes are single filed and contain VAX binary data. The third tape contains three files (one for each year of data) and is in ASCII formated in pages (with headers for each page). Sample pages from each file are in the printout section. The binary data tapes are unblocked (60 byte records). The D and C numbers and time spans follow:

D#	C#	FILES	TIME SPAN
D-079140	C-027091	1	09/26/72 - 12/31/82
D-079141	C-027092	1	01/01/83 - 10/28/88
D-086223	C-029247	1	12/31/88 - 12/30/90

THE UNIVERSITY OF KANSAS · LAWRENCE, KANSAS · 66045-2151

DEPARTMENT OF
PHYSICS & ASTRONOMY
913-864-4626
Telex: 535004 DEPT PHYS ASTR

January 13, 1989

MEMO

TO: Joe King
IMP-8 Project Scientist
NSSDC

FROM: Thomas P. Armstrong TPA

SUBJECT: New Release of IMP 7 and 8 Solar Particle Data Set

This memo covers the shipment to you for immediate release to NSSDC of daily averaged plots of integral proton fluxes >1, 2, 4, 10, 30, and 60 MeV derived from the IMP 7 and 8 CPME instrument for the interval 1972 day 275 to 1988 day 300. I am also shipping you a magnetic tape data set of hourly averages of these same thresholds. We have taken great care to eliminate magnetospheric contributions to the lower thresholds of the daily averages and to flag the affected hourly averages on the tape. Note that this data set extends to lower thresholds, namely >1, 2, 4 MeV, the widely used solar proton data set. Note also the *length* of the data set and the fact that there are only a few missing days in the 16 year span. I expect that this data set will be widely used for studies of solar cycle time-scale statistical properties of solar particles.

I believe that this data set testifies eloquently to the past success of the IMP 7 and 8 project and to the continuing value and importance of IMP 8 tracking and data reduction.

TPA/thw

Enclosure

cc: S.M. Krimigis
R. McGuire
File

Description of Hourly Average Flux File

Each record of the Hourly Average Flux file is 60-bytes long, and it has year, day, hour, 6 channels of flux (1 Mev, 2 Mev, 4 Mev, 10 Mev, 30 Mev, and 60 Mev), and 6 channels of flags. The times are stored in I*4; the fluxes are stored in R*4, and the flags are stored in I*4. Each flag corresponds to each channel. The flag value is always 1, except when the flux is dominated by magnetospheric event, the flag value is 0. The hourly average fluxes for 1972 and 1973 are computed from IMP 7 and the rest are from IMP 8.

MSB0:01 has the hourly average flux from time 1972 270 16 to 1982 365 22 and MSB0:02 has the hourly average flux from time 1983 1 2 to 1988 302 14.

Time		
Year	I*4	1
Day	I*4	2
Hour	I*4	3
Flux		
>1Mev	R*4	4
>2Mev	R*4	5
>4Mev	R*4	6
>10Mev	R*4	7
>30Mev	R*4	8
>60Mev	R*4	9
Flag		
>1Mev	I*4	10
>2Mev	I*4	11
>4Mev	I*4	12
>10Mev	I*4	13
>30Mev	I*4	14
>60Mev	I*4	15

TIME			FLUX						FLAG					
YEAR	DAY	HH	>1 Mev	>2 Mev	>4 Mev	>10 Mev	>30 Mev	>60 Mev	F1	F2	F3	F4	F5	F6
1972	270	17	0.409	0.361	0.353	0.348	0.345	0.345	1	1	1	1	1	1
1972	270	18	0.438	0.373	0.360	0.355	0.350	0.348	1	1	1	1	1	1
1972	270	19	0.423	0.362	0.347	0.341	0.337	0.335	1	1	1	1	1	1
1972	270	20	0.387	0.337	0.328	0.325	0.320	0.317	1	1	1	1	1	1
1972	270	21	0.387	0.323	0.316	0.313	0.306	0.304	1	1	1	1	1	1
1972	270	22	0.484	0.412	0.401	0.396	0.391	0.390	1	1	1	1	1	1
1972	270	23	0.405	0.340	0.328	0.323	0.318	0.315	1	1	1	1	1	1
1972	271	0	0.408	0.345	0.335	0.331	0.327	0.325	1	1	1	1	1	1
1972	271	1	0.388	0.317	0.305	0.301	0.299	0.295	1	1	1	1	1	1
1972	271	2	0.427	0.352	0.341	0.336	0.333	0.333	1	1	1	1	1	1
1972	271	3	0.407	0.343	0.333	0.328	0.324	0.323	1	1	1	1	1	1
1972	271	4	0.380	0.320	0.311	0.306	0.300	0.295	1	1	1	1	1	1
1972	271	5	0.409	0.355	0.346	0.342	0.339	0.334	1	1	1	1	1	1
1972	271	6	0.433	0.366	0.355	0.349	0.345	0.343	1	1	1	1	1	1
1972	271	7	0.420	0.345	0.336	0.332	0.330	0.328	1	1	1	1	1	1
1972	271	8	0.428	0.340	0.330	0.326	0.322	0.321	1	1	1	1	1	1
1972	271	9	0.424	0.335	0.326	0.322	0.318	0.315	1	1	1	1	1	1
1972	271	10	0.419	0.332	0.319	0.314	0.308	0.308	1	1	1	1	1	1
1972	271	11	0.458	0.363	0.354	0.350	0.346	0.346	1	1	1	1	1	1
1972	271	12	0.434	0.331	0.320	0.316	0.313	0.313	1	1	1	1	1	1
1972	271	13	0.457	0.343	0.333	0.328	0.325	0.323	1	1	1	1	1	1
1972	271	14	0.421	0.316	0.302	0.297	0.292	0.287	1	1	1	1	1	1
1972	271	15	0.477	0.380	0.372	0.369	0.363	0.363	1	1	1	1	1	1
1972	271	16	0.406	0.314	0.307	0.303	0.301	0.301	1	1	1	1	1	1

Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 1 (00000001), 60 (003C) bytes

```
 F3733FBD C6A43FC1 81C03FC4 ACBE3FC9 4B243FE0 00000010 0000010E 000007B4 ¶..........à?$KÉ?¶¶Ä?À.Á?¶Æ¼?só 000000
          00000001 00000001 00000001 00000001 00000001 00000001 F3733FBD ¼?só........................... 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 2 (00000002), 60 (003C) bytes

 E1713FB0 6AE33FB2 924A3FB4 F2003FB8 67B83FD1 00000011 0000010E 000007B4 ¶...........Ñ?¶g¶?.ò¶?J.²?ãj°?qá 000000
          00000001 00000001 00000001 00000001 00000001 00000001 E1713FB0 °?qá........................... 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 3 (00000003), 60 (003C) bytes

 0E1D3FB3 A7D13FB5 27883FB8 2B4C3FBF 24FD3FE0 00000012 0000010E 000007B4 ¶...........à?ÿ$¿?L+¶?.'µ?Ñ§³?.. 000000
          00000001 00000001 00000001 00000001 00000001 00000001 1B773FB2 ²?w............................ 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 4 (00000004), 60 (003C) bytes

 5DDD3FAC B2093FAE CAC23FB1 33083FB9 BF143FD8 00000013 0000010E 000007B4 ¶...........Ø?.¿¹?.3±?ÅÊ¶?.¹¶?Ÿ] 000000
          00000001 00000001 00000001 00000001 00000001 00000001 6F743FAB «?to........................... 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 5 (00000005), 60 (003C) bytes

 A0D73FA3 41C93FA6 23553FA8 55063FAC 3CE13FC6 00000014 0000010E 000007B4 ¶..........Æ?á<¶?.U¤?U#¶?ÉA£?Æ. 000000
          00000001 00000001 00000001 00000001 00000001 00000001 3C8F3FA2 ¢?.<............................ 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 6 (00000006), 60 (003C) bytes

 CE553F9C 7C6A3FA0 AE053FA1 94CC3FA5 F9443FC5 00000015 0000010E 000007B4 ¶...........Å?Dù¥?Ì.¡?.¶.?j|.?UÎ 000000
          00000001 00000001 00000001 00000001 00000001 00000001 6F2A3F9B .?*o............................ 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 7 (00000007), 60 (003C) bytes

 F03D3FC7 F5D93FCA 833E3FCD E7C03FD2 979E3FF7 00000016 0000010E 000007B4 ¶...........m?..Ò?ÀçÍ?>.È?ÙõÇ?=¶ 000000
          00000001 00000001 00000001 00000001 00000001 00000001 79483FC7 Ç?Hy............................ 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 8 (00000008), 60 (003C) bytes

 D84E3FA2 9A803FA5 08C93FA8 223F3FAE 5C623FCF 00000017 0000010E 000007B4 ¶..........Ï?b\¶??"¤?É.¥?..¢?N¤ 000000
          00000001 00000001 00000001 00000001 00000001 00000001 6ECC3FA1 ¡?Ìn........................... 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 9 (00000009), 60 (003C) bytes

 67883FA7 6DCB3FA9 704B3FAB D0FE3FB0 08BC3FD1 00000000 0000010F 000007B4 ¶...........Ñ?¼.°?¶¶«?Kp°?Ëm§?.g 000000
          00000001 00000001 00000001 00000001 00000001 00000001 7B303FA6 ¶?0{............................ 000020
```

```
Dump of device MSB0: on 13-JAN-1989 16:18:28.55

Block number 10 (0000000A), 60 (003C) bytes

 F86C3F98 E2DB3F99 0F483F9C 5F283FA2 99053FC6 00000001 0000010F 000007B4 ¶...........Æ?..¢?(_.?H..?Ûâ.?l■ 000000
          00000001 00000001 00000001 00000001 00000001 00000001 19B03F97 .?°............................. 000020
```

D-79140
9/26/72 = 12/31/82

FILE 1 RECORD 1 80 BYTES
07B4 = 1972 010E = 270 = 9/26

```
(     0)  6407 0000  0E01 0000  10000000  E03F2446  C93FBEAC  C43FC061  C13FA4C6  BD3F73F3  BD3F73F3  01000000
(    40)  01000000  01000000  01000000  01000000  01000000
```

FILE 1 RECORD 73768 80 BYTES
07BE = 1982 016D = 365 = 12/31

```
(     0)  0E07 0000  6D01 0000  16000000  8A4379CC  B2420440  9841FE11  714016BB  943F94CC  643FA8FF  01000000
(    40)  01000000  01000000  01000000  01000000  01000000
```

D-79141
1/1/83 - 10/28/88

FILE 1 RECORD 1 60 BYTES

07BF = 1983 0001 = 1/1

```
(     0)  [0F07]0000 [0100]0000 02000000 6B43EE72 964298BB 84415EF0 5B40DB68 8E3F2138 6A3F40DB 01000000
(    40)  01000000 01000000 01000000 01000000 01000000
```

FILE 1 RECORD 29160 60 BYTES

07C4 = 1988 012E = 302 = 10/28

```
(     0)  [C407]0000 [2E01]0000 0F000000 C542F369 AA41900C 6140SC4B C13F0CF9 953F363D 943F903A 01000000
(    40)  01000000 01000000 01000000 01000000 01000000
```

D86223 /C 29247
12/31/88 - 12/30/90

```
$$
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS FL=1=1 3 1 1

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   1 9
1                      1988 HOURLY AVG


 TAPE NO.   1              FILE NO.   1
 RECORD   1 55             LENGTH   84
 1988 365 23                  7.78        1.49        0.591        0.371        0.335

 TAPE NO.   1              FILE NO.   2
 RECORD   1                LENGTH   1 9
1                      1989 HOURLY AVG


 TAPE NO.   1              FILE NO.   3
 RECORD   6738             LENGTH   84
 1989 365 23                1.94        0.539        0.393        0.347        0.292        0.218

 TAPE NO.   1              FILE NO.   3
 RECORD   1                LENGTH   1 9
1                      1990 HOURLY AVG


 TAPE NO.   1              FILE NO.   3
 RECORD   6361             LENGTH   84
 199  364   59 29   .573        0.485        0.437        0.437        0.38         0.294

***** JOB DONE.
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS FL=1=1 3 1 3

 TAPE NO.   1              FILE NO.   3
 RECORD   1                LENGTH   1 9
1                      1990 HOURLY AVG


 TAPE NO.   1              FILE NO.   3
 RECORD   6361             LENGTH   84
 199  364   59 29   .573        0.485        0.437        0.437        0.38         0.294

***** JOB DONE.
$WEO LPS
```

D-86223 File 1
Sample page

1988 HOURLY AVG

YR=1988 DAY=299 11 0 0 IMP8

YEAR	DAY	HH	MM	SS	>1 MEV	>2 MEV	>4 MEV	>10 MEV	>30 MEV	>60 MEV
1988	299	11	0	0	0.489	0.282	0.276	0.275	0.275	0.275
1988	299	21	0	0	0.435	0.280	0.264	0.260	0.259	0.257
1988	299	22	0	0	0.483	0.293	0.282	0.279	0.275	0.271
1988	299	23	0	0	0.547	0.329	0.312	0.307	0.301	0.298
1988	300	0	0	0	0.534	0.295	0.278	0.274	0.271	0.268
1988	300	0	59	59	0.543	0.333	0.319	0.315	0.307	0.303
1988	300	2	0	0	0.547	0.329	0.312	0.308	0.304	0.302
1988	300	3	0	0	0.495	0.298	0.284	0.279	0.276	0.275
1988	300	3	59	59	0.454	0.295	0.283	0.279	0.275	0.272
1988	300	5	0	0	0.411	0.287	0.276	0.272	0.270	0.269
1988	300	6	0	0	0.395	0.282	0.275	0.272	0.269	0.266
1988	300	7	0	0	0.392	0.283	0.275	0.272	0.269	0.266
1988	300	8	0	0	0.397	0.297	0.290	0.287	0.285	0.284
1988	300	9	0	0	0.404	0.305	0.298	0.295	0.291	0.289
1988	300	10	0	0	0.390	0.303	0.296	0.294	0.289	0.286
1988	300	11	0	0	0.389	0.298	0.292	0.290	0.285	0.285
1988	300	12	0	0	0.399	0.293	0.285	0.282	0.278	0.276
1988	300	13	0	0	0.348	0.277	0.269	0.267	0.264	0.262
1988	300	14	0	0	0.347	0.285	0.277	0.274	0.271	0.263
1988	300	23	0	0	0.337	0.295	0.293	0.292	0.291	0.288
1988	301	0	0	0	0.348	0.306	0.302	0.300	0.298	0.294
1988	301	0	59	59	0.302	0.263	0.260	0.258	0.255	0.253
1988	301	2	0	0	0.312	0.264	0.260	0.258	0.256	0.254
1988	301	3	0	0	0.360	0.316	0.311	0.310	0.307	0.304
1988	301	3	59	59	0.331	0.283	0.278	0.276	0.273	0.271
1988	301	5	0	0	0.324	0.280	0.277	0.275	0.271	0.267
1988	301	6	0	0	0.282	0.250	0.246	0.245	0.241	0.240
1988	301	7	0	0	0.349	0.307	0.302	0.301	0.294	0.291
1988	301	8	0	0	0.336	0.304	0.301	0.300	0.296	0.294
1988	301	9	0	0	0.315	0.282	0.279	0.278	0.274	0.273
1988	301	10	0	0	0.295	0.263	0.261	0.260	0.257	0.256
1988	301	11	0	0	0.321	0.286	0.282	0.281	0.277	0.275
1988	301	12	0	0	0.323	0.287	0.284	0.282	0.279	0.276
1988	301	13	0	0	0.324	0.293	0.290	0.289	0.285	0.281
1988	301	14	0	0	0.316	0.284	0.281	0.280	0.277	0.274
1988	301	15	0	0	0.332	0.298	0.296	0.294	0.291	0.289
1988	301	16	0	0	0.286	0.254	0.253	0.252	0.244	0.238
1988	301	20	0	0	0.340	0.316	0.315	0.314	0.309	0.303
1988	301	21	0	0	0.312	0.288	0.287	0.286	0.283	0.280
1988	301	22	0	0	0.327	0.304	0.302	0.301	0.297	0.295
1988	302	3	59	59	0.317	0.293	0.289	0.287	0.282	0.280
1988	302	5	0	0	0.293	0.270	0.267	0.265	0.262	0.260
1988	302	6	0	0	0.335	0.311	0.305	0.303	0.300	0.298
1988	302	7	0	0	0.328	0.293	0.283	0.281	0.280	0.279
1988	302	8	0	0	0.344	0.304	0.293	0.289	0.287	0.286
1988	302	9	0	0	0.451	0.339	0.302	0.292	0.288	0.287
1988	302	10	0	0	4.77	1.32	0.438	0.304	0.279	0.276
1988	302	11	0	0	5.90	1.65	0.482	0.302	0.265	0.265
1988	302	12	0	0	15.6	3.46	0.748	0.379	0.308	0.305
1988	302	13	0	0	22.6	4.73	0.856	0.369	0.277	0.274
1988	302	15	0	0	30.6	6.19	1.01	0.463	0.371	0.360
1988	302	16	0	0	30.1	5.94	1.02	0.442	0.343	0.343
1988	306	14	0	0	4.83	0.609	0.307	0.261	0.254	0.250
1988	306	15	0	0	4.62	0.624	0.328	0.284	0.281	0.277
1988	306	16	0	0	4.32	0.575	0.316	0.276	0.271	0.269
1988	306	17	0	0	4.16	0.563	0.316	0.277	0.275	0.273
1988	306	18	0	0	3.94	0.540	0.292	0.254	0.251	0.247
1988	306	19	0	0	3.94	0.544	0.318	0.281	0.277	0.277
1988	306	20	0	0	4.05	0.565	0.338	0.301	0.296	0.295
1988	306	21	0	0	4.18	0.566	0.330	0.292	0.286	0.282

D-86223 File 2
Sample Page

1989 HOURLY AVG

YR=1989 DAY= 2 11 0 0 IMP8

YEAR	DAY	HH	MM	SS	>1 MEV	>2 MEV	>4 MEV	>10 MEV	>30 MEV	>60 MEV
1989	2	11	0	0	1.10	0.476	0.353	0.307	0.265	0.250
1989	2	12	0	0	1.07	0.492	0.380	0.337	0.298	0.283
1989	2	13	0	0	1.09	0.491	0.379	0.330	0.293	0.286
1989	2	14	0	0	1.13	0.564	0.430	0.368	0.314	0.294
1989	2	15	0	0	1.06	0.505	0.351	0.292	0.249	0.242
1989	2	16	0	0	1.24	0.624	0.426	0.347	0.307	0.296
1989	2	17	0	0	1.62	0.739	0.413	0.313	0.260	0.254
1989	2	18	0	0	1.91	0.821	0.432	0.329	0.284	0.271
1989	2	19	0	0	2.43	0.922	0.438	0.318	0.269	0.259
1989	2	20	0	0	2.63	0.885	0.408	0.294	0.250	0.238
1989	2	21	0	0	3.47	1.04	0.457	0.327	0.273	0.255
1989	3	9	0	0	38.7	8.02	1.41	0.452	0.276	0.258
1989	3	10	0	0	39.9	8.19	1.34	0.405	0.241	0.231
1989	3	11	0	0	42.7	8.35	1.36	0.437	0.266	0.256
1989	3	12	0	0	40.8	8.22	1.34	0.417	0.254	0.245
1989	3	13	0	0	36.8	7.46	1.27	0.406	0.250	0.246
1989	3	14	0	0	35.5	7.04	1.20	0.394	0.250	0.240
1989	3	15	0	0	41.3	7.92	1.33	0.434	0.274	0.266
1989	3	16	0	0	52.3	9.39	1.49	0.413	0.238	0.235
1989	3	17	0	0	52.0	9.87	1.66	0.484	0.276	0.266
1989	3	18	0	0	41.5	7.84	1.35	0.402	0.237	0.228
1989	3	19	0	0	37.5	7.21	1.28	0.417	0.254	0.240
1989	3	20	0	0	37.0	7.24	1.30	0.442	0.269	0.256
1989	3	21	0	0	40.0	7.54	1.29	0.419	0.257	0.253
1989	3	22	0	0	43.1	7.99	1.35	0.451	0.287	0.278
1989	3	23	0	0	47.5	8.55	1.40	0.410	0.247	0.240
1989	4	0	0	0	44.5	7.61	1.26	0.419	0.268	0.261
1989	4	0	59	59	40.6	7.19	1.23	0.421	0.265	0.257
1989	4	2	0	0	37.8	6.57	1.10	0.355	0.223	0.218
1989	4	3	0	0	32.1	5.59	1.01	0.387	0.260	0.252
1989	4	3	59	59	28.4	4.94	0.946	0.385	0.272	0.265
1989	4	11	0	0	21.3	3.76	0.764	0.353	0.267	0.267
1989	4	12	0	0	22.3	3.76	0.729	0.325	0.233	0.222
1989	4	13	0	0	26.2	4.44	0.875	0.402	0.297	0.287
1989	4	14	0	0	20.4	3.85	0.794	0.355	0.258	0.251
1989	4	15	0	0	15.5	3.02	0.660	0.326	0.257	0.256
1989	4	16	0	0	18.3	3.49	0.745	0.353	0.258	0.253
1989	4	17	0	0	13.6	2.67	0.628	0.329	0.261	0.254
1989	4	18	0	0	22.6	4.02	0.786	0.349	0.251	0.247
1989	4	19	0	0	49.8	8.19	1.31	0.483	0.327	0.317
1989	4	20	0	0	68.1	10.6	1.72	0.674	0.431	0.389
1989	4	21	0	0	89.9	13.9	2.89	1.07	0.447	0.369
1989	4	22	0	0	74.2	17.0	5.61	1.59	0.469	0.389
1989	4	23	0	0	303.	100.	28.5	4.63	0.701	0.569
1989	5	0	0	0	308.	180.	57.4	7.57	0.958	0.727
1989	5	0	59	59	428.	231.	69.1	8.06	0.944	0.784
1989	5	14	0	0	828.	200.	26.8	2.00	0.344	0.308
1989	5	15	0	0	899.	201.	25.4	1.88	0.343	0.317
1989	5	16	0	0	705.	168.	22.9	1.77	0.327	0.306
1989	5	17	0	0	736.	175.	24.5	1.80	0.329	0.308
1989	5	18	0	0	672.	152.	21.6	1.71	0.354	0.322
1989	5	19	0	0	719.	168.	23.4	1.67	0.329	0.312
1989	5	20	0	0	615.	146.	20.3	1.62	0.335	0.322
1989	5	21	0	0	482.	104.	14.1	1.26	0.304	0.290
1989	5	22	0	0	508.	103.	13.2	1.16	0.281	0.259
1989	5	23	0	0	371.	77.3	10.5	1.04	0.264	0.250
1989	6	0	0	0	364.	73.8	10.0	0.975	0.250	0.238
1989	6	0	59	59	327.	65.4	9.01	0.999	0.281	0.274
1989	6	2	0	0	286.	58.1	8.14	0.941	0.277	0.268
1989	6	3	0	0	271.	54.6	7.60	0.875	0.257	0.247

D-86223 File 1
Sample Page

1990 HOURLY AVG

YR=1990 DAY= 2 14 0 0 IMP8

YEAR	DAY	HH	MM	SS	>1 MEV	>2 MEV	>4 MEV	>10 MEV	>30 MEV	>60 MEV
1990	2	14	0	0	0.859	0.388	0.324	0.295	0.261	0.199
1990	2	15	0	0	0.840	0.457	0.386	0.354	0.301	0.222
1990	2	16	0	0	0.708	0.355	0.282	0.248	0.224	0.209
1990	2	17	0	0	0.813	0.457	0.396	0.370	0.318	0.240
1990	2	18	0	0	0.865	0.452	0.381	0.347	0.308	0.256
1990	2	19	0	0	0.732	0.429	0.387	0.363	0.313	0.232
1990	2	20	0	0	0.662	0.366	0.305	0.279	0.245	0.195
1990	2	22	0	0	0.697	0.476	0.423	0.395	0.356	0.291
1990	2	23	0	0	0.586	0.377	0.339	0.319	0.281	0.224
1990	3	0	0	0	0.568	0.393	0.352	0.334	0.289	0.224
1990	3	0	59	59	0.594	0.404	0.367	0.343	0.292	0.220
1990	3	7	0	0	0.494	0.354	0.318	0.294	0.250	0.152
1990	3	8	0	0	0.569	0.433	0.402	0.381	0.334	0.252
1990	3	9	0	0	0.528	0.407	0.372	0.351	0.310	0.208
1990	3	14	0	0	0.500	0.395	0.372	0.357	0.302	0.206
1990	3	15	0	0	0.473	0.368	0.343	0.326	0.283	0.218
1990	3	16	0	0	0.465	0.369	0.348	0.331	0.290	0.223
1990	3	17	0	0	0.517	0.420	0.397	0.380	0.331	0.245
1990	3	18	0	0	0.500	0.403	0.378	0.363	0.314	0.240
1990	3	19	0	0	0.483	0.406	0.390	0.377	0.335	0.264
1990	3	20	0	0	0.512	0.424	0.400	0.386	0.351	0.267
1990	3	21	0	0	0.459	0.377	0.356	0.342	0.297	0.224
1990	3	22	0	0	0.450	0.369	0.352	0.337	0.302	0.241
1990	3	23	0	0	0.431	0.347	0.324	0.306	0.274	0.205
1990	4	0	0	0	0.448	0.350	0.329	0.313	0.277	0.221
1990	4	0	59	59	0.475	0.387	0.369	0.352	0.294	0.205
1990	4	17	0	0	0.414	0.356	0.341	0.326	0.282	0.207
1990	4	18	0	0	0.405	0.365	0.351	0.336	0.293	0.227
1990	4	19	0	0	0.406	0.362	0.347	0.331	0.283	0.216
1990	4	20	0	0	0.412	0.385	0.370	0.354	0.309	0.233
1990	4	21	0	0	0.394	0.361	0.348	0.334	0.295	0.238
1990	4	22	0	0	0.409	0.382	0.365	0.347	0.301	0.228
1990	4	23	0	0	0.393	0.344	0.330	0.315	0.275	0.211
1990	5	0	0	0	0.418	0.397	0.384	0.370	0.312	0.217
1990	5	0	59	59	0.403	0.376	0.363	0.349	0.308	0.236
1990	5	2	0	0	0.413	0.382	0.368	0.354	0.311	0.241
1990	5	3	0	0	0.364	0.334	0.321	0.307	0.269	0.211
1990	5	15	0	0	0.401	0.380	0.364	0.347	0.302	0.237
1990	5	16	0	0	0.385	0.363	0.348	0.334	0.296	0.229
1990	5	17	0	0	0.400	0.380	0.361	0.348	0.304	0.235
1990	5	18	0	0	0.396	0.363	0.350	0.339	0.298	0.228
1990	5	19	0	0	0.426	0.397	0.384	0.370	0.323	0.247
1990	5	20	0	0	0.451	0.405	0.392	0.379	0.329	0.234
1990	5	21	0	0	0.398	0.363	0.346	0.331	0.291	0.225
1990	5	22	0	0	0.416	0.380	0.364	0.348	0.310	0.248
1990	5	23	0	0	0.429	0.408	0.393	0.378	0.332	0.262
1990	6	0	0	0	0.367	0.350	0.335	0.320	0.282	0.227
1990	6	0	59	59	0.398	0.376	0.362	0.346	0.295	0.215
1990	6	2	0	0	0.418	0.380	0.367	0.352	0.306	0.235
1990	6	3	0	0	0.381	0.360	0.349	0.337	0.299	0.230
1990	6	3	59	59	0.408	0.387	0.371	0.357	0.315	0.241
1990	6	15	0	0	0.352	0.338	0.326	0.312	0.255	0.211
1990	6	16	0	0	0.392	0.376	0.363	0.350	0.304	0.235
1990	6	17	0	0	0.367	0.355	0.339	0.326	0.287	0.220
1990	6	18	0	0	0.374	0.362	0.345	0.331	0.283	0.216
1990	6	19	0	0	0.385	0.371	0.358	0.346	0.307	0.246
1990	6	20	0	0	0.389	0.374	0.361	0.349	0.308	0.235
1990	6	21	0	0	0.399	0.381	0.369	0.355	0.313	0.234
1990	6	22	0	0	0.380	0.366	0.352	0.337	0.294	0.226
1990	6	23	0	0	0.375	0.359	0.346	0.332	0.290	0.221

REQ. AGENT	RAND NO.	ACQ. AGENT
RLR		JHK

IMP-J/H

DAILY AVERAGED FLUXES

72-073A-08O/73-078A-08I

This data set catalog consists of one tape. Files 1 thru 19 contain data on IMP 8 , while files 20 thru 26 contain data on IMP 7. The tape is 6250 bpi, 9-track, multifiled, ASCII, created on the VAX. The D and C numbers, time spans, and number of files are as follows:

D#	C#	FILES	TIME SPANS
D-79800	C-27300	26	10/30/73 - 8/11/91 (IMP 8)
			9/26/72 - 10/21/78 (IMP 7)

IMP 7 & IMP 8 DAILY AVERAGED PROTON FLUXES

(1) IMP8 1973 DAILY PROTON FLUX
1 EOF
(2) IMP8 1974 DAILY PROTON FLUX
1 EOF
(3) IMP8 1975 DAILY PROTON FLUX
1 EOF
(4) IMP8 1976 DAILY PROTON FLUX
1 EOF
(5) IMP8 1977 DAILY PROTON FLUX
1 EOF
(6) IMP8 1978 DAILY PROTON FLUX
1 EOF
(7) IMP8 1979 DAILY PROTON FLUX
1 EOF
(8) IMP8 1980 DAILY PROTON FLUX
1 EOF
(9) IMP8 1981 DAILY PROTON FLUX
1 EOF
(10) IMP8 1982 DAILY PROTON FLUX
1 EOF
(11) IMP8 1983 DAILY PROTON FLUX
1 EOF
(12) IMP8 1984 DAILY PROTON FLUX
1 EOF
(13) IMP8 1985 DAILY PROTON FLUX
1 EOF
(14) IMP8 1986 DAILY PROTON FLUX
1 EOF
(15) IMP8 1987 DAILY PROTON FLUX
1 EOF
(16) IMP8 1988 DAILY PROTON FLUX
1 EOF
(17) IMP8 1989 DAILY PROTON FLUX
1 EOF
(18) IMP8 1990 DAILY PROTON FLUX
1 EOF
(19) IMP8 1991 DAILY PROTON FLUX
1 EOF
(20) IMP7 1972 DAILY PROTON FLUX
1 EOF
(21) IMP7 1973 DAILY PROTON FLUX
1 EOF
(22) IMP7 1974 DAILY PROTON FLUX
1 EOF
(23) IMP7 1975 DAILY PROTON FLUX
1 EOF
(24) IMP7 1976 DAILY PROTON FLUX
1 EOF
(25) IMP7 1977 DAILY PROTON FLUX
1 EOF
(26) IMP7 1978 DAILY PROTON FLUX
12 EOF

From: KUPHSX::ARMSTRONG 5-FEB-1992 10:31:21.42
To: @IMP_8.DIS
[illegible] ARMSTRONG
Subj: Solar Particle Fluxes

Memo to: Dr. Zawodny, Langley Research Center
Charles Jackman, Goddard Space Flight Center
Joan Feynman, Jet Propulsion Lab.
Joe King, Goddard Space Flight Center
Steve Gabriel, Univ. of Southampton, UK
Tom Krimigis, Applied Physics Lab./Johns Hopkins U.

From: Tom Armstrong, University of Kansas

Date: February 4, 1992

Subject: Solar Proton Integral Fluxes

We have recently updated the daily averaged proton fluxes covering the period through day 300, 1991. In order to simplify the servicing of requests for this data set, I am sending each of you a copy of our standard "flat file" in ASCII text of the times and fluxes of >1, >2, >4, >10, >30, and >60 MeV protons. The units are "number/cmsq sec sr". Please acknowledge all use of these data for publication as deriving from the Charged Particle Measurement Experiment (CPME) aboard IMP8 (S.M. Krimigis, PI).

[illegible]ORTANT NOTES ABOUT THESE DATA

In comparing absolute fluxes derived from the IMP 8 CPME instrument with those derived from GOES 7 for the March 1991 flare event, the >10, >30, and >60 proton flux values from IMP8 appear to be too large by about factors of 2 to 5 during the decay phase of the event. This is almost certainly due to unintended electron sensitivities of some of the IMP 8 higher energy proton channels. Thus, the absolute flux values for times when the relativistic electron flux is of the same order at the >10, >30, and >60 MeV protong fluxes should be treated as uncertain. Thus far, only the March 89 event decay phase has been so identified. There may be others. We are in process of evaluating the entire data set (1972 to present) so that we can introduce any necessary adjustments to the fluxes.

T.P. Armstrong
KUPHSX::ARMSTRONG

1 1973 DAILY AVG

YR=1973 DAY=303 0 0 0 IMP8

YEAR	DAY	HH	MM	SS	>1 MEV	>2 MEV	>4 MEV	>10 MEV	>30 MEV	>60 MEV
1973	303	0	0	0	0.767	0.390	0.346	0.330	0.320	0.315
1973	304	0	0	0	0.809	0.372	0.342	0.331	0.323	0.321
1973	305	0	0	0	0.460	0.351	0.337	0.332	0.326	0.323
1973	306	0	0	0	1.14	0.395	0.346	0.332	0.325	0.323
1973	307	0	0	0	20.5	12.2	6.16	2.86	0.928	0.580
1973	308	0	0	0	30.5	8.69	2.83	0.977	0.404	0.352
1973	309	0	0	0	10.2	2.61	1.01	0.513	0.344	0.331
1973	310	0	0	0	2.16	0.930	0.493	0.364	0.319	0.314
1973	311	0	0	0	0.573	0.383	0.344	0.329	0.318	0.315
1973	312	0	0	0	0.440	0.344	0.331	0.325	0.318	0.315
1973	313	0	0	0	0.387	0.334	0.328	0.326	0.321	0.317
1973	314	0	0	0	0.378	0.340	0.335	0.333	0.327	0.324
1973	315	0	0	0	0.387	0.339	0.333	0.331	0.325	0.323
1973	316	0	0	0	0.442	0.340	0.328	0.324	0.319	0.316
1973	317	0	0	0	0.382	0.339	0.335	0.333	0.328	0.325
1973	318	0	0	0	0.343	0.333	0.332	0.331	0.326	0.323
1973	319	0	0	0	0.336	0.333	0.333	0.332	0.327	0.324
1973	320	0	0	0	0.337	0.333	0.332	0.331	0.326	0.324
1973	321	0	0	0	0.360	0.341	0.339	0.338	0.333	0.330
1973	322	0	0	0	0.403	0.336	0.330	0.328	0.323	0.320
1973	323	0	0	0	0.417	0.337	0.331	0.329	0.324	0.321
1973	324	0	0	0	0.612	0.357	0.341	0.337	0.332	0.330
1973	325	0	0	0	1.05	0.386	0.347	0.338	0.333	0.330
1973	326	0	0	0	1.02	0.394	0.344	0.333	0.327	0.324
1973	327	0	0	0	0.562	0.366	0.346	0.342	0.336	0.333
1973	328	0	0	0	1.90	0.368	0.340	0.334	0.329	0.325
1973	329	0	0	0	9.21	2.36	2.25	2.22	2.22	2.21
1973	330	0	0	0	1.58	0.381	0.339	0.330	0.324	0.322
1973	331	0	0	0	1.10	0.367	0.336	0.329	0.322	0.319
1973	332	0	0	0	1.10	0.375	0.340	0.332	0.327	0.324
1973	333	0	0	0	1.18	0.376	0.341	0.334	0.328	0.325
1973	334	0	0	0	0.509	0.347	0.339	0.337	0.332	0.329
1973	335	0	0	0	0.444	0.342	0.335	0.334	0.327	0.324
1973	336	0	0	0	0.488	0.348	0.338	0.336	0.329	0.326
1973	337	0	0	0	0.493	0.349	0.336	0.332	0.326	0.324
1973	338	0	0	0	0.506	0.345	0.334	0.331	0.326	0.323
1973	339	0	0	0	0.883	0.363	0.341	0.335	0.329	0.327
1973	340	0	0	0	1.47	0.383	0.341	0.332	0.326	0.323
1973	341	0	0	0	1.76	0.429	0.345	0.327	0.321	0.318
1973	342	0	0	0	1.77	0.476	0.353	0.327	0.320	0.318
1973	343	0	0	0	0.653	0.379	0.341	0.332	0.326	0.323
1973	344	0	0	0	0.998	0.456	0.360	0.338	0.330	0.327
1973	345	0	0	0	2.32	0.547	0.371	0.336	0.327	0.324
1973	346	0	0	0	0.830	0.392	0.347	0.336	0.329	0.327
1973	347	0	0	0	0.443	0.346	0.334	0.331	0.325	0.321
1973	348	0	0	0	0.443	0.349	0.339	0.336	0.331	0.328
1973	349	0	0	0	0.352	0.341	0.339	0.338	0.332	0.329
1973	350	0	0	0	0.354	0.340	0.338	0.337	0.331	0.329
1973	351	0	0	0	0.392	0.350	0.345	0.344	0.339	0.336
1973	352	0	0	0	0.400	0.342	0.335	0.333	0.328	0.325
1973	353	0	0	0	0.540	0.454	0.435	0.420	0.391	0.360
1973	354	0	0	0	0.725	0.606	0.577	0.548	0.492	0.420
1973	355	0	0	0	0.826	0.356	0.336	0.331	0.326	0.324
1973	356	0	0	0	0.406	0.333	0.327	0.325	0.320	0.317
1973	357	0	0	0	0.388	0.331	0.326	0.325	0.319	0.316
1973	358	0	0	0	0.421	0.338	0.333	0.331	0.326	0.322
1973	359	0	0	0	0.369	0.337	0.332	0.331	0.326	0.323
1973	360	0	0	0	0.369	0.340	0.337	0.335	0.330	0.327
1973	361	0	0	0	0.357	0.337	0.335	0.334	0.329	0.325
1973	362	0	0	0	0.375	0.339	0.337	0.336	0.330	0.327

1 1973 DAILY AVG

YR=1973 DAY=363 0 0 0 IMP8

Y[illegible]	DAY	HH	MM	SS	>1 MEV	>2 MEV	>4 MEV	>10 M[illegible]	>30 MEV	>60 MEV

1973	363	0	0	0	0.488	0.342	0.336	0.335	0.330	0.327
1973	364	0	0	0	0.630	0.354	0.337	0.332	0.326	0.323

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 1 (00000001), 81 (0051) bytes

 20594C49 41442033 37393120 20202020 20202020 20202020 20202020 20202031 1                    1973 DAILY  000000
 20202020 20202020 20202020 20202020 20202020 20202020 20202020 20475641 AVG                              000020
                                 20 20202020 20202020 20202020 20202020                   ............... 000040
```

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 2 (00000002), 35 (0023) bytes

 49202020 20203020 20302020 30202020 3330333D 59414420 33373931 3D525920  YR=1973 DAY=303   0  0  0     I 000000
                                                                   38504D MP8............................ 000020
```

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 3 (00000003), 84 (0054) bytes

 20202020 2056454D 20313E20 20205353 204D4D20 48482059 41442052 41455920  YEAR DAY HH MM SS    >1 MEV       000000
 20202056 454D2030 313E2020 20202056 454D2034 3E202020 20205645 4D20323E >2 MEV      >4 MEV      >10 MEV     000020
                           2056454D 2030363E 20202020 56454D20 30333E20  >30 MEV     >60 MEV ............ 000040
```

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 4 (00000004), 84 (0054) bytes

 30202020 20202037 36372E30 20203020 20302020 30202033 30332033 37393120  1973 303  0  0  0  0.767      0 000000
 20202020 20203033 332E3020 20202020 20363433 2E302020 20202020 3039332E .390      0.346      0.330       000020
                            20202020 3531332E 30202020 20202030 32332E30 0.320      0.315    ............ 000040
```

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 5 (00000005), 84 (0054) bytes

 30202020 20202039 30382E30 20203020 20302020 30202034 30332033 37393120  1973 304  0  0  0  0.809      0 000000
 20202020 20203133 332E3020 20202020 20323433 2E302020 20202020 3237332E .372      0.342      0.331       000020
                            20202020 3132332E 30202020 20202033 32332E30 0.323      0.321    ............ 000040
```

```
Dump of  vice MUB0: on 31-OCT-1991 20:30:42.36

Block number 6 (00000006), 84 (0054) bytes

 30202020 20202030 36342E30 20203020 20302020 30202035 30332033 37393120  1973 305  0  0  0  0.460      0 000000
 20202020 20203233 332E3020 20202020 20373333 2E302020 20202020 3135332E .351      0.337      0.332       000020
                            20202020 3332332E 30202020 20202036 32332E30 0.326      0.323    ............ 000040
```

DUMP of 79800

```
$JOB    7:21:05
$ASS IN HTS
$NOP
$NOP
$NOP
$NOP  ***************** RC21 4 ****************
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=1=10 1 1 1
 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   11
1                  1973 DAILY AVG
Year      DAY OF YEAR

 TAPE NO.   1              FILE NO.   1
 RECORD   2                LENGTH   64
 YR=1973 DAY=303   0   0   0      IMP8P8P8P8P8P8P8 F8 F8 P8 P8 F8 F8 F8 F8 P

 TAPE NO.   1              FILE NO.   1
 RECORD   3                LENGTH   84
 YEAR DAY HH MM SS    >1 MEV     >2 MEV     >4 MEV     >10 MEV    >30 MEV    >60 MEV

 TAPE NO.   1              FILE NO.   1
 RECORD   4                LENGTH   84
 1973 303   0   0   0   0.767      0.390      0.346      0.330      0.320      0.315

 TAPE NO.   1              FILE NO.   1
 RECORD   5                LENGTH   84
 1973 304   0   0   0   0.809      0.372      0.342      0.331      0.323      0.321

 TAPE NO.   1              FILE NO.   1
 RECORD   6                LENGTH   84
 1973 305   0   0   0   0.460      0.351      0.337      0.332      0.326      0.323

 TAPE NO.   1              FILE NO.   1
 RECORD   7                LENGTH   84
 1973 306   0   0   0   1.14       0.395      0.346      0.332      0.325      0.323

 TAPE NO.   1              FILE NO.   1
 RECORD   8                LENGTH   84
 1973 307   0   0   0   20.5       12.2       6.16       2.86       0.928      0.580

 TAPE NO.   1              FILE NO.   1
 RECORD   9                LENGTH   84
 1973 308   0   0   0   30.5       8.69       2.83       0.977      0.404      0.352

 TAPE NO.   1              FILE NO.   1
 RECORD   1                LENGTH   84
 1973 309   0   0   0   10.2       2.61       1.01       0.513      0.344      0.331

***** JOB DONE.
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=219=11 1 1 19

 TAPE NO.   1              FILE NO.   19
 RECORD   219              LENGTH   84
 1991 212   0   0   0   1.97       0.664      0.390      0.325      0.275      0.208

 TAPE NO.   1              FILE NO.   19
 RECORD   220              LENGTH   84
 1991 213   0   0   0   2.60       0.868      0.437      0.336      0.280      0.214
```

Start Date of IMP8: 10/30/73
STOP Date of IMP8: 8/11/91
Start Date of IMP7: 9/26/72
STOP Date of IMP7: 10/21/78

```
TAPE NO.   1              FILE NO.   19
RECORD   221              LENGTH   84
1991 214   0   0   0   3.44       1.[illegible]2       [illegible].492       0.357       .284       0.215

TAPE NO.   1              FILE NO.   19
RECORD   222              LENGTH   84
1991 215   0   0   0   3.11       [illegible].992       0.547       0.411       [illegible].329       0.259

TAPE NO.   1              FILE NO.   19
RECORD   223              LENGTH   84
1991 216   0   0   0   4.81       1.62       0.649       0.387       0.286       0.218

TAPE NO.   1              FILE NO.   19
RECORD   224              LENGTH   84
1991 217   0   0   0   8.58       2.53       0.690       0.383       0.285       0.219

TAPE NO.   1              FILE NO.   19
RECORD   225              LENGTH   84
1991 218   0   0   0   7.42       1.68       0.51[illegible]       0.342       0.277       0.211

TAPE NO.   1              FILE NO.   19
RECORD   226              LENGTH   84
1991 219   0   0   0   5.31       1.[illegible]9       0.444       0.337       0.286       0.219

TAPE NO.   1              FILE NO.   19
RECORD   227              LENGTH   84
1991 22[illegible]   0   0   0   1.95       0.588       0.371       0.319       0.275       0.215

TAPE NO.   1              FILE NO.   19
RECORD   228              LENGTH   84
1991 221   0   0   0   1.47       0.522       0.378       0.332       0.278       0.208

TAPE NO.   1              FILE NO.   19
RECORD   229              LENGTH   84
1991 223   0   0   0   37[illegible].       75.5       8.29       0.856       0.29[illegible]       0.223

***** JOB DONE.
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=1=1[illegible] 1 1 2

TAPE NO.   1              FILE NO.   2[illegible]
RECORD   1                LENGTH   11[illegible]
1                     1972 DAILY AVG

TAPE NO.   1              FILE NO.   2[illegible]
RECORD   2                LENGTH   64
YR=1972 DAY=27[illegible]   0   0   0     IMP7P7P7P7P7P7P7P7P7P7P7P7P7P7P7P7P

TAPE NO.   1              FILE NO.   2[illegible]
RECORD   3                LENGTH   84
YEAR DAY HH MM SS   >1 MEV     >2 MEV     >4 MEV     >1[illegible] MEV    >3[illegible] MEV    >6[illegible] MEV

TAPE NO.   1              FILE NO.   2[illegible]
RECORD   4[illegible]              LENGTH   84
1972 27[illegible]   0   0   0   [illegible].421       [illegible].361       0.35[illegible]       0.346       [illegible].34[illegible]       0.338

TAPE NO.   1              FILE NO.   2[illegible]
RECORD   5                LENGTH   84
1972 271   0   0   0   [illegible].422       [illegible].337       0.328       0.324       0.32[illegible]       0.318

TAPE NO.   1              FILE NO.   [illegible]
RECORD   6                LENGTH   84
1972 272   0   0   0   0.379       0.33[illegible]       0.326       0.324       0.319       0.317
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```
TAPE NO.   1              FILE NO.   2
RECORD   7                LENGTH   84
1972 273                .343       .326       .324       .322       .318       0.315

TAPE NO.   1              FILE NO.   2
RECORD   8                LENGTH   84
1972 274                .338       .332       .331       .329       .325       0.323

TAPE NO.   1              FILE NO.   2
RECORD   9                LENGTH   84
1972 275  0  0  0  0.327       0.323       0.322       0.321       0.317       0.314

TAPE NO.   1              FILE NO.   2
RECORD   1                LENGTH   84
1972 276  0  0  0  0.321       0.318       0.318       0.316       0.312       0.310

***** JOB DONE.
$EXE TPLIST BS

INPUT PARAMETERS ARE:  AS SR=283=11 1 1 26

TAPE NO.   1              FILE NO.   26
RECORD   283              LENGTH   84
1978 272  0  0  0  75.3       1[illegible].5       2.63       0.666       0.288       0.264

TAPE NO.   1              FILE NO.   26
RECORD   284              LENGTH   84
1978 273  0  0  0  5.03       1.71       0.909       0.440       0.286       0.270

TAPE NO.   1              FILE NO.   26
RECORD   285              LENGTH   84
1978 274  0  0  0  2.60       1.44       0.988       0.645       0.407       0.407

TAPE NO.   1              FILE NO.   26
RECORD   286              LENGTH   84
1978 275  0  0  0  8.16       3.53       1.33       0.268       0.000E+00   0.000E+00

TAPE NO.   1              FILE NO.   26
RECORD   287              LENGTH   84
1978 276  0  0  0  76.6       19.9       3.03       0.680       0.324       0.270

TAPE NO.   1              FILE NO.   26
RECORD   288              LENGTH   84
1978 281  0  0  0  2.60       1.00       0.445       0.000E+00   0.000E+00   0.000E+00

TAPE NO.   1              FILE NO.   26
RECORD   289              LENGTH   84
1978 284  0  0  0  4.86       2.25       0.822       0.315       0.203       0.203

TAPE NO.   1              FILE NO.   26
RECORD   29               LENGTH   84
1978 288  0  0  0  2.42       1.67       1.20       0.913       0.720       0.573

TAPE NO.   1              FILE NO.   26
RECORD   291              LENGTH   84
1978 29[illegible]  0  0  0  1.[illegible]4       0.713       0.580       0.472       0.387       0.355

TAPE NO.   1              FILE NO.   26
RECORD   292              LENGTH   84
1978 293  0  0  0  0.000E+00  0.000E+00  0.000E+00  0.000E+00  0.000E+00  0.000E+00

TAPE NO.   1              FILE NO.   26
RECORD   293              LENGTH   84
1978 294  0  0  0  0.000E+00  0.000E+00  0.000E+00  0.000E+00  0.000E+00  0.000E+00

***** JOB DONE.
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