ULYSSES

HISACALE Full Resolution Rate Channel

90-090B-03C

These data are contained on 266 CD-ROM's.

The KD numbers and the time spans are as follows:

KD#	TIME SPAN
KD019603	11/14/1990 - 11/25/1990
KD019604	11/26/1990 - 12/08/1990
KD019605	12/09/1990 - 12/19/1990
KD019606	12/20/1990 - 01/04/1991
KD019607	01/05/1991 - 01/20/1991
KD019608	01/21/1991 - 02/05/1991
KD019609	02/06/1991 - 02/21/1991
KD019610	02/22/1991 - 03/09/1991
KD019611	03/10/1991 - 03/25/1991
KD019612	03/26/1991 - 04/10/1991
KD019613	04/11/1991 - 04/26/1991
KD019614	04/27/1991 - 05/12/1991
KD019615	05/13/1991 - 05/28/1991
KD019616	05/29/1991 - 06/13/1991
KD019617	06/14/1991 - 06/25/1991
KD019618	06/26/1991 - 07/11/1991
KD019619	07/12/1991 - 07/27/1991
KD019620	07/28/1991 - 08/12/1991
KD019621	08/13/1991 - 08/28/1991
KD019622	08/29/1991 - 09/13/1991
KD019623	09/14/1991 - 09/29/1991
KD019624	09/30/1991 - 10/15/1991
KD019625	10/16/1991 - 10/31/1991
KD019626	11/01/1991 - 11/16/1991
KD019627	11/17/1991 - 12/02/1991
KD019628	12/03/1991 - 12/18/1991
KD019629	12/19/1991 - 12/31/1991
KD019630	01/01/1992 - 01/16/1992
KD019631	01/17/1992 - 02/01/1992
KD019632	02/02/1992 - 02/07/1992
KD019633	02/08/1992 - 02/11/1992
KD019634	02/12/1992 - 02/21/1992
KD019635	02/22/1992 - 03/04/1992
KD019636	03/05/1992 - 03/16/1992
KD019637	03/17/1992 - 04/01/1992
KD019638	04/02/1992 - 04/17/1992
KD019639	04/18/1992 - 05/03/1992
KD019640	05/04/1992 - 05/19/1992
KD019641	05/20/1992 - 06/04/1992
KD019642	06/05/1992 - 06/20/1992
KD019643	06/21/1992 - 07/06/1992
KD019644	07/07/1992 - 07/22/1992
KD019645	07/23/1992 - 08/07/1992

KD#	TIME SPAN
KD019646	08/08/1992 - 08/23/1992
KD019647	08/24/1992 - 09/08/1992
KD019648	09/09/1992 - 09/24/1992
KD019649	09/25/1992 - 10/10/1992
KD019650	10/11/1992 - 10/26/1992
KD019651	10/27/1992 - 11/11/1992
KD019652	11/12/1992 - 11/27/1992
KD019653	11/28/1992 - 12/13/1992
KD019654	12/14/1992 - 12/29/1992
KD019655	12/30/1992 - 01/12/1993
KD019656	01/13/1993 - 01/28/1993
KD019657	01/29/1993 - 02/13/1993
KD019658	02/14/1993 - 03/01/1993
KD019659	03/02/1993 - 03/17/1993
KD019660	03/18/1993 - 04/02/1993
KD019661	04/03/1993 - 04/18/1993
KD019662	04/19/1993 - 05/04/1993
KD019663	05/05/1993 - 05/20/1993
KD019664	05/21/1993 - 06/05/1993
KD019665	06/06/1993 - 06/21/1993
KD019666	06/22/1993 - 07/07/1993
KD019667	07/08/1993 - 07/23/1993
KD019668	07/24/1993 - 08/08/1993
KD019669	08/09/1993 - 08/24/1993
KD019670	08/25/1993 - 09/09/1993
KD019671	09/10/1993 - 09/25/1993
KD019672	09/26/1993 - 10/11/1993
KD019673	10/12/1993 - 10/27/1993
KD019674	10/28/1993 - 11/12/1993
KD019675	11/13/1993 - 11/28/1993
KD019676	11/29/1993 - 12/14/1993
KD019677	12/15/1993 - 12/30/1993
KD019678	12/31/1993 - 01/12/1994
KD019679	01/13/1994 - 01/28/1994
KD019680	01/29/1994 - 02/13/1994
KD019681	02/14/1994 - 03/01/1994
KD019682	03/02/1994 - 03/17/1994
KD019683	03/18/1994 - 04/02/1994
KD019684	04/03/1994 - 04/18/1994
KD019685	04/19/1994 - 05/04/1994
KD019686	05/05/1994 - 05/20/1994
KD019687	05/21/1994 - 06/05/1994
KD019688	06/06/1994 - 06/21/1994
KD019689	06/22/1994 - 07/07/1994
KD019690	07/08/1994 - 07/23/1994
KD019691	07/24/1994 - 08/08/1994
KD019692	08/09/1994 - 08/24/1994
KD019693	08/25/1994 - 09/09/1994
KD019694	09/10/1994 - 09/25/1994
KD019695	09/26/1994 - 10/11/1994
KD019696	10/12/1994 - 10/23/1994
KD019697	10/24/1994 - 11/04/1994
KD019698	11/05/1994 - 11/16/1994
KD019699	11/17/1994 - 11/28/1994

KD#	TIME SPAN
KD019700	11/29/1994 - 12/10/1994
KD019701	12/11/1994 - 12/26/1994
KD019702	12/27/1994 - 01/12/1995
KD019703	01/13/1995 - 01/28/1995
KD019704	01/29/1995 - 02/13/1995
KD019705	02/14/1995 - 03/01/1995
KD019706	03/02/1995 - 03/17/1995
KD019707	03/18/1995 - 04/02/1995
KD019708	04/03/1995 - 04/14/1995
KD019709	04/15/1995 - 04/26/1995
KD019710	04/27/1995 - 05/08/1995
KD019711	05/09/1995 - 05/20/1995
KD019712	05/21/1995 - 06/01/1995
KD019713	06/02/1995 - 06/13/1995
KD019714	06/14/1995 - 06/25/1995
KD019715	06/26/1995 - 07/07/1995
KD019716	07/08/1995 - 07/19/1995
KD019717	07/20/1995 - 07/31/1995
KD019718	08/01/1995 - 08/12/1995
KD019719	08/13/1995 - 08/24/1995
KD019720	08/25/1995 - 09/09/1995
KD019721	09/10/1995 - 09/29/1995
KD019722	09/30/1995 - 10/15/1995
KD019723	10/16/1995 - 11/04/1995
KD019724	11/05/1995 - 11/24/1995
KD019725	11/25/1995 - 12/14/1995
KD019726	12/15/1995 - 12/31/1995
KD019727	01/01/1996 - 01/20/1996
KD019728	01/21/1996 - 02/09/1996
KD019729	02/09/1996 - 02/29/1996
KD019730	03/01/1996 - 03/20/1996
KD019731	03/21/1996 - 04/09/1996
KD019732	04/10/1996 - 04/29/1996
KD019733	04/30/1996 - 05/19/1996
KD019734	05/20/1996 - 06/08/1996
KD019735	06/09/1996 - 06/28/1996
KD019736	06/29/1996 - 07/18/1996
KD019737	07/19/1996 - 08/07/1996
KD019738	08/08/1996 - 08/27/1996
KD019739	08/28/1996 - 09/16/1996
KD019740	09/17/1996 - 10/06/1996
KD019741	10/07/1996 - 10/26/1996
KD019742	10/27/1996 - 11/11/1996
KD019743	11/12/1996 - 12/01/1996
KD019744	12/02/1996 - 12/21/1996
KD019745	12/22/1996 - 01/08/1997
KD019746	01/09/1997 - 01/28/1997
KD019747	01/29/1997 - 02/17/1997
KD019748	02/18/1997 - 03/09/1997
KD019749	03/10/1997 - 03/29/1997
KD019750	03/30/1997 - 04/18/1997
KD019751	04/19/1997 - 05/08/1997
KD019752	05/09/1997 - 05/28/1997
KD019753	05/29/1997 - 06/17/1997
KD019754	06/18/1997 - 07/07/1997

KD#	TIME SPAN
KD019755	07/08/1997 - 07/27/1997
KD019756	07/28/1997 - 08/16/1997
KD019757	08/17/1997 - 09/05/1997
KD019758	09/06/1997 - 09/25/1997
KD019759	09/26/1997 - 10/15/1997
KD019760	10/16/1997 - 10/19/1997
KD019761	10/20/1997 - 11/08/1997
KD019762	11/09/1997 - 11/28/1997
KD019763	11/29/1997 - 12/18/1997
KD019764	12/19/1997 - 01/08/1998
KD019765	01/09/1998 - 01/28/1998
KD019766	01/29/1998 - 02/17/1998
KD019767	02/18/1998 - 03/05/1998
KD019768	03/06/1998 - 03/21/1998
KD019769	03/22/1998 - 04/06/1998
KD019770	04/07/1998 - 04/10/1998
KD019771	04/11/1998 - 04/30/1998
KD019772	05/01/1998 - 05/20/1998
KD019773	05/21/1998 - 06/09/1998
KD019774	06/10/1998 - 06/29/1998
KD019775	06/30/1998 - 07/19/1998
KD019776	07/20/1998 - 08/08/1998
KD019777	08/09/1998 - 08/28/1998
KD019778	08/29/1998 - 09/17/1998
KD019779	09/18/1998 - 10/07/1998
KD019780	10/08/1998 - 10/27/1998
KD019781	10/28/1998 - 11/16/1998
KD019782	11/17/1998 - 12/06/1998
KD019783	12/07/1998 - 12/26/1998
KD019784	12/27/1998 - 01/08/1999
KD019785	01/09/1999 - 02/01/1999
KD019786	02/02/1999 - 02/25/1999
KD019787	02/26/1999 - 03/17/1999
KD019788	03/18/1999 - 04/06/1999
KD019789	04/07/1999 - 04/26/1999
KD019790	04/27/1999 - 05/16/1999
KD019791	05/17/1999 - 06/05/1999
KD019792	06/06/1999 - 06/25/1999
KD019793	06/26/1999 - 07/15/1999
KD019794	07/16/1999 - 08/04/1999
KD019795	08/05/1999 - 08/24/1999
KD019796	08/25/1999 - 09/13/1999
KD019797	09/14/1999 - 10/03/1999
KD019798	10/04/1999 - 10/23/1999
KD019799	10/24/1999 - 11/12/1999
KD019800	11/13/1999 - 12/02/1999
KD019801	12/03/1999 - 12/22/1999
KD019802	12/23/1999 - 01/12/2000
KD019803	01/13/2000 - 02/01/2000
KD019804	02/02/2000 - 02/21/2000
KD019805	02/22/2000 - 03/12/2000
KD019806	03/13/2000 - 04/01/2000
KD019807	04/02/2000 - 04/21/2000
KD019808	04/22/2000 - 05/11/2000
KD019809	05/12/2000 - 05/31/2000
KD019810	06/01/2000 - 06/20/2000
KD019811	06/21/2000 - 07/10/2000

KD019812 07/11/2000 - 07/30/2000

KD#	TIME SPAN
KD019813	07/31/2000 - 08/19/2000
KD019814	08/20/2000 - 09/08/2000
KD019815	09/09/2000 - 09/28/2000
KD019816	09/29/2000 - 10/18/2000
KD019817	10/19/2000 - 11/07/2000
KD019818	11/08/2000 - 11/23/2000
KD019819	11/24/2000 - 12/05/2000
KD019820	12/06/2000 - 12/17/2000
KD019821	12/18/2000 - 01/01/2001
KD019822	01/02/2001 - 01/12/2001
KD019823	01/13/2001 - 01/24/2001
KD019824	01/25/2001 - 02/05/2001
KD019825	02/06/2001 - 02/21/2001
KD019826	02/22/2001 - 03/09/2001
KD019827	03/10/2001 - 03/25/2001
KD019828	03/26/2001 - 04/06/2001
KD019829	04/07/2001 - 04/18/2001
KD019830	04/19/2001 - 04/30/2001
KD019831	05/01/2001 - 05/12/2001
KD019832	05/13/2001 - 05/24/2001
KD019833	05/25/2001 - 06/05/2001
KD019834	06/06/2001 - 06/17/2001
KD019835	06/18/2001 - 06/29/2001
KD019836	06/30/2001 - 07/11/2001
KD019837	07/12/2001 - 07/23/2001
KD019838	07/24/2001 - 08/04/2001
KD019839	08/05/2001 - 08/16/2001
KD019840	08/17/2001 - 08/28/2001
KD019841	08/29/2001 - 09/09/2001
KD019842	09/10/2001 - 09/21/2001
KD019843	09/22/2001 - 10/03/2001
KD019844	10/04/2001 - 10/15/2001
KD019845	10/16/2001 - 10/27/2001
KD019846	10/28/2001 - 11/08/2001
KD019847	11/09/2001 - 11/20/2001
KD019848	11/21/2001 - 12/02/2001
KD019849	12/03/2001 - 12/22/2001
KD019850	12/23/2001 - 01/12/2002
KD019851	01/13/2002 - 02/01/2002
KD019852	02/02/2002 - 02/21/2002
KD019853	02/22/2002 - 03/13/2002
KD019854	03/14/2002 - 04/02/2002
KD019855	04/03/2002 - 04/22/2002
KD019856	04/23/2002 - 05/12/2002
KD019857	05/13/2002 - 06/01/2002
KD019858	06/02/2002 - 06/21/2002
KD019859	06/22/2002 - 07/11/2002
KD019860	07/12/2002 - 07/31/2002
KD019861	08/01/2002 - 08/20/2002
KD019862	08/21/2002 - 09/09/2002
KD020216	09/10/2002 - 09/26/2002
KD020217	09/30/2002 - 10/16/2002
KD020218	10/20/2002 - 11/05/2002
KD020219	11/09/2002 - 11/25/2002
KD020220	11/29/2002 - 12/15/2002
KD020221	12/19/2002 - 12/31/2002

Date: February 28, 2003

Memo to: Cecil Tranquille, ESA, UDS
John Cooper, NASA, NSSDC

CC: Lou Lanzerotti, Lucent Bell Laboratories (without enclosures)
Rob Gold, Johns Hopkins University Applied Physics Laboratory (without enclosures)
Ed Massey, Jet Propulsion Laboratory (without enclosures)

From: Thomas P. Armstrong, **Fundamental Technologies, LLC**

Subject:

On behalf of the HISCALE investigation team, Lou Lanzerotti, Principal Investigator, Jeni Patterson, Amanda Faulconer, Stuart Armstrong, and Jeanette Armstrong, it is my pleasure to ship to ESA/UDS and NASA/NSSDC each a full set of CDROM media (approximately 260 discs) that contain full resolution HISCALE rate channel observations from instrument turn-on (Day 318, 1990) through Day 256, 2002. A four page write-up included with this cover describes what has been shipped and how to use it. This data is also posted on our web site and can be downloaded as desired by the public. The URL is http://hiscale.ftecs.com/csv/, This web site also has a substantial amount of technical information that expands on the descriptions of this data (http://hiscale.ftecs.com/index.html) as well as additional HISCALE data. Of special interest are the hourly-averaged files which are much smaller and ideal for browsing and survey use.The URL for these additional data is: http://hiscale.ftecs.com/data-index.html

We are sending these shipments via UPS to:

Ralph Post
National Space Science Data Center
Code 633
NASA Goddard Space Flight Center
8800 Greenbelt Road
Greenbelt, Maryland 20771

and

Dr. Cecil Tranquille
Research and Scientific Support Department
ESTEC (SCI-SH)
Postbus 299
2200 AG Noordwijk
The Netherlands

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong
Fundamental Technologies, LLC
February 28, 2003

1. Purpose:

To render the HISCALE data as tables of ASCII values in labelled columns. These files open correctly with EXCEL and probably with other spreadsheet applications.

2. Scope:

These files include all HISCALE counting rates,both spin-averaged and sectored along with the pitch (look) direction, the polar and azimuthal (look) angles in RTN coordinates of the sectored data the observed magnetic field (courtesy of the HED investigation), and the spacecraft heliocentric x,y, and z coordinates.

3. Interpreting the File Names:

The files names have the format "ULAYYDDDGNN.CSV"

Where "ULA" stands for Ulysses Lan Average (same for all files)
And "YY" are the last two digits of the year (of the beginning of the data)
And "DDD" is the day of year (of the beginning of the data)
And "G" is a delimiter introducing the print group selection for this listing.
And "NN" is the print group number for 01 through 64
And "CSV" is the filename extension that identifies this as Comma Separated Variable format.

4. Using the file names and print groups to find what you want:

Table 1 below gives a summary of the channels available. A column-by-column description of Table 1 follows:

Column 1:	Channel name.
Column 2:	Geometrical factor in units of cm^2 sr
Column 3:	Dominant species.
Column 4:	Average energy of particles contributing to this channel in keV or keV/nucleon.
Column 5:	Lower energy threshold of particles contributing to this channel in keV or keV/nucleon
Column 6:	Upper energy threshold of particles contributing to this channel in keV or keV/nucleon
Column 7:	Print group number containing the spin-averaged rate of this channel
Column 8:	Print group number containing the sectored rate of this channel
Column 9:	Print group number containing the pitch angle of sectored rate of this channel
Column 10:	Print group number containing the polar (RTN) angle of sectored rate of this channel
Column 11:	Print group number containing the azimuth (RTN) angle of sectored rate of this channel

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong

Fundamental Technologies, LLC

February 28, 2003

Table 1

						Print Group Containing these Items				
Channel	**G**	**Species**	**E(KeV)**	**E-Lo(KeV)**	**E-Hi(keV)**	**SpinAvg**	**Sectored**	**PitchAng**	**PhaseAng**	**PhiAng**
	(cm2 sr)		**(keV)**	**(keV)**	**(keV)**	**Rate, c./sec.**		**Deg.**	**Deg.**	**Deg.**
E1'	0.397	Electron	52	42	65	1	8	45	46	47
E2'	0.397	Electron	85	64	112	1	9	45	46	47
E3'	0.397	Electron	141	112	178	1	10	45	46	47
E4'	0.397	Electron	227	178	290	1	11	45	46	47
FP5':	0.397	Z.GE.1	645	546	761	1	12	45	46	47
FP6':	0.397	Z.GE.1	965	761	1223	1	13	45	46	47
FP7':	0.397	Z.GE.1	2466	1223	4974	1	14	45	46	47
P1'	0.428	Z.GE.1	69	61	77	2	15	48	49	50
P2'	0.428	Z.GE.1	99	77	127	2	16	48	49	50
P3'	0.428	Z.GE.1	162	127	207	2	17	48	49	50
P4'	0.428	Z.GE.1	264	207	336	2	18	48	49	50
P5'	0.428	Z.GE.1	449	336	601	2	19	48	49	50
P6'	0.428	Z.GE.1	822	601	1123	2	20	48	49	50
P7'	0.428	Z.GE.1	1451	1123	1874	2	21	48	49	50
P8'	0.428	Z.GE.1	2984	1874	4752	2	22	48	49	50
W1(see note b.)	0.103	Z=1	681	480	966	5	23	51	52	53
W2(see note b.)	0.103	Z=1	1080	968	1204	5	24	51	52	53
W3(see note b.)	0.103	Z=2	704	389	1278	5	25	51	52	53
W4(see note b.)	0.103	Z=2	2986	1277	6984	5	26	51	52	53
W5(see note b.)	0.103	5<Z<12	891	465	1709	5	27	51	52	53
W6(see note b.)	0.103	Z>5	5714	1709	19107	5	28	51	52	53
W7(see note b.)	0.103	Z>12	448	239	840	5	29	51	52	53
W8(see note b.)	0.103	Z>12	8822	840	92663	5	30	51	52	53
Z2(see note c.)	0.279	Z > 1	741.5	167	1316	6	31	51	52	53
Z2A(see note d.)	0.279	Z > 7	1150	427	1873	6	32	51	52	53
Z3(see note e.)	0.279	Z > 5	4052.5	183	7922	6	33	51	52	53
Z4(see note f.)	0.279	Z > 10	10471.5	243	20700	6	34	51	52	53

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong
Fundamental Technologies, LLC

February 28, 2003

						Print Group Containing these Items				
Channel	G	Species	E(KeV)	E-Lo(KeV)	E-Hi(keV)	SpinAvg	Sectored	PitchAng	PhaseAng	PhiAng
	(cm2 sr)		(keV)	(keV)	(keV)	Rate, c./sec.		Deg.	Deg.	Deg.
E1	0.397	Electron	51	40	65	3	35	56	57	58
E2	0.397	Electron	80	60	107	3	36	56	57	58
E3	0.397	Electron	135	107	170	3	37	56	57	58
E4	0.397	Electron	218	170	280	3	38	56	57	58
FP5	0.397	Z.GE.1	643	540	765	3	39	56	57	58
FP6	0.397	Z.GE.1	967	765	1223	3	40	56	57	58
FP7	0.397	Z.GE.1	2458	1223	4942	3	41	56	57	58
P1	0.428	Z.GE.1	66	56	78	4	35	54	55	55
P2	0.428	Z.GE.1	101	78	130	4	36	54	55	55
P3	0.428	Z.GE.1	167	130	214	4	37	54	55	55
P4	0.428	Z.GE.1	269	214	337	4	38	54	55	55
P5	0.428	Z.GE.1	447	337	594	4	39	54	55	55
P6	0.428	Z.GE.1	798	594	1073	4	40	54	55	55
P7	0.428	Z.GE.1	1391	1073	1802	4	41	54	55	55
P8	0.428	Z.GE.1	2926	1802	4752	4	42	54	55	55
DE1(see note a.)	0.14	Electron	42	38	53	6	42	58	59	59
DE2	0.14	Electron	55	53	103	6	43	58	59	59
DE3	0.14	Electron	130	103	175	6	43	58	59	59
DE4	0.14	Electron	220	175	315	6	44	58	59	59
B (singles)	0.14	All		31.5		7				
C (singles)	0.103	All		78		7				
D (singles)	0.279	All		145		7				
M (singles)	0.428	All		30		7				
F (singles)	0.397	All		34		7				
M' (singles)	0.428	All		34		7				
F' (singles)	0.397	All		36		7				
BX (RTN, nT)						63				
BY (RTN, nT)						63				
BZ (RTN, nT)						63				
Bmag (nT)						63				
BX (HEL, nT)						63				

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong

Fundamental Technologies, LLC

February 28, 2003

BY (HEL, nT)						63				
BZ (HEL, nT)						63				
Bmag (nT)						63				
X HEL (km)						64				
X HEL (km)						64				
X HEL (km)						64				
Spin Long (deg)						64				
Spin Lat (deg)						64				
Note (a.) The commandable lower threshold for DE1 is 47.5 keV										
Note (b.) The energy units for W passbands are keV/Nucleon										
Note (c.) The passband quoted for Z2 is for $_2He^4$ keV/nucleon; responds to heavier species also.										
Note (d.) The passband quoted for Z2A is for $_8O^{16}$ keV/nucleon; responds to heavier species also										
Note (e.) The passband quoted for Z3 is for $_8O^{16}$ keV/nucleon; responds to $_6C^{12}$ and all heavier species										
Note (f.) The passband quoted for Z4 is for $_{26}Fe^{56}$ keV/nucleon;										

Print Groups 60, 61, and 62 are not included in Table 1 because they contain status and housekeeping information that can only be interpreted be referring to the HISCALE data system description given in: http://hiscale.ftecs.com/chapter%204/5-datasystem-index.html

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong
Fundamental Technologies, LLC
February 28, 2003

1. Purpose:

To render the HISCALE data as tables of ASCII values in labelled columns. These files open correctly with EXCEL and probably with other spreadsheet applications.

2. Scope:

These files include all HISCALE counting rates,both spin-averaged and sectored along with the pitch (look) direction, the polar and azimuthal (look) angles in RTN coordinates of the sectored data the observed magnetic field (courtesy of the HED investigation), and the spacecraft heliocentric x,y, and z coordinates.

3. Interpreting the File Names:

The files names have the format "ULAYYDDDGNN.CSV"

Where "ULA" stands for Ulysses Lan Average (same for all files)
And "YY" are the last two digits of the year (of the beginning of the data)
And "DDD" is the day of year (of the beginning of the data)
And "G" is a delimiter introducing the print group selection for this listing.
And "NN" is the print group number for 01 through 64
And "CSV" is the filename extension that identifies this as Comma Separated Variable format.

4. Using the file names and print groups to find what you want:

Table 1 below gives a summary of the channels available. A column-by-column description of Table 1 follows:

Column 1: Channel name.
Column 2: Geometrical factor in units of cm^2 sr
Column 3: Dominant species.
Column 4: Average energy of particles contributing to this channel in keV or keV/nucleon.
Column 5: Lower energy threshold of particles contributing to this channel in keV or keV/nucleon
Column 6: Upper energy threshold of particles contributing to this channel in keV or keV/nucleon
Column 7: Print group number containing the spin-averaged rate of this channel
Column 8: Print group number containing the sectored rate of this channel
Column 9: Print group number containing the pitch angle of sectored rate of this channel
Column 10: Print group number containing the polar (RTN) angle of sectored rate of this channel
Column 11: Print group number containing the azimuth (RTN) angle of sectored rate of this channel

Explanation of HISCALE Comma Separated Variable (CSV) Files

Thomas P. Armstrong
Fundamental Technologies, LLC

February 28, 2003

Table 1

						Print Group Containing these Items				
Channel	**G**	**Species**	**E(KeV)**	**E-Lo(KeV)**	**E-Hi(keV)**	**SpinAvg**	**Sectored**	**PitchAng**	**PhaseAng**	**PhiAng**
	(cm2 sr)		**(keV)**	**(keV)**	**(keV)**	**Rate, c./sec.**		**Deg.**	**Deg.**	**Deg.**
E1'	0.397	Electron	52	42	65	1	8	45	46	47
E2'	0.397	Electron	85	64	112	1	9	45	46	47
E3'	0.397	Electron	141	112	178	1	10	45	46	47
E4'	0.397	Electron	227	178	290	1	11	45	46	47
FP5':	0.397	Z.GE.1	645	546	761	1	12	45	46	47
FP6':	0.397	Z.GE.1	965	761	1223	1	13	45	46	47
FP7':	0.397	Z.GE.1	2466	1223	4974	1	14	45	46	47
P1'	0.428	Z.GE.1	69	61	77	2	15	48	49	50
P2'	0.428	Z.GE.1	99	77	127	2	16	48	49	50
P3'	0.428	Z.GE.1	162	127	207	2	17	48	49	50
P4'	0.428	Z.GE.1	264	207	336	2	18	48	49	50
P5'	0.428	Z.GE.1	449	336	601	2	19	48	49	50
P6'	0.428	Z.GE.1	822	601	1123	2	20	48	49	50
P7'	0.428	Z.GE.1	1451	1123	1874	2	21	48	49	50
P8'	0.428	Z.GE.1	2984	1874	4752	2	22	48	49	50
W1(see note b.)	0.103	Z=1	681	480	966	5	23	51	52	53
W2(see note b.)	0.103	Z=1	1080	968	1204	5	24	51	52	53
W3(see note b.)	0.103	Z=2	704	389	1278	5	25	51	52	53
W4(see note b.)	0.103	Z=2	2986	1277	6984	5	26	51	52	53
W5(see note b.)	0.103	5<Z<12	891	465	1709	5	27	51	52	53
W6(see note b.)	0.103	Z>5	5714	1709	19107	5	28	51	52	53
W7(see note b.)	0.103	Z>12	448	239	840	5	29	51	52	53
W8(see note b.)	0.103	Z>12	8822	840	92663	5	30	51	52	53
Z2(see note c.)	0.279	Z > 1	741.5	167	1316	6	31	51	52	53
Z2A(see note d.)	0.279	Z > 7	1150	427	1873	6	32	51	52	53
Z3(see note e.)	0.279	Z > 5	4052.5	183	7922	6	33	51	52	53
Z4(see note f.)	0.279	Z > 10	10471.5	243	20700	6	34	51	52	53

Explanation of HISCALE Comma Separated Variable (CSV) Files

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February 28, 2003

						Print Group Containing these Items				
Channel	**G**	**Species**	**E(KeV)**	**E-Lo(KeV)**	**E-Hi(keV)**	**SpinAvg**	**Sectored**	**PitchAng**	**PhaseAng**	**PhiAng**
	(cm2 sr)		**(keV)**	**(keV)**	**(keV)**	**Rate, c./sec.**		**Deg.**	**Deg.**	**Deg.**
E1	0.397	Electron	51	40	65	3	35	56	57	58
E2	0.397	Electron	80	60	107	3	36	56	57	58
E3	0.397	Electron	135	107	170	3	37	56	57	58
E4	0.397	Electron	218	170	280	3	38	56	57	58
FP5	0.397	Z.GE.1	643	540	765	3	39	56	57	58
FP6	0.397	Z.GE.1	967	765	1223	3	40	56	57	58
FP7	0.397	Z.GE.1	2458	1223	4942	3	41	56	57	58
P1	0.428	Z.GE.1	66	56	78	4	35	54	55	55
P2	0.428	Z.GE.1	101	78	130	4	36	54	55	55
P3	0.428	Z.GE.1	167	130	214	4	37	54	55	55
P4	0.428	Z.GE.1	269	214	337	4	38	54	55	55
P5	0.428	Z.GE.1	447	337	594	4	39	54	55	55
P6	0.428	Z.GE.1	798	594	1073	4	40	54	55	55
P7	0.428	Z.GE.1	1391	1073	1802	4	41	54	55	55
P8	0.428	Z.GE.1	2926	1802	4752	4	42	54	55	55
DE1(see note a.)	0.14	Electron	42	38	53	6	42	58	59	59
DE2	0.14	Electron	55	53	103	6	43	58	59	59
DE3	0.14	Electron	130	103	175	6	43	58	59	59
DE4	0.14	Electron	220	175	315	6	44	58	59	59
B (singles)	0.14	All		31.5		7				
C (singles)	0.103	All		78		7				
D (singles)	0.279	All		145		7				
M (singles)	0.428	All		30		7				
F (singles)	0.397	All		34		7				
M' (singles)	0.428	All		34		7				
F' (singles)	0.397	All		36		7				
BX (RTN, nT)						63				
BY (RTN, nT)						63				
BZ (RTN, nT)						63				
Bmag (nT)						63				
BX (HEL, nT)						63				

Explanation of HISCALE Comma Separated Variable (CSV) Files

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February 28, 2003

BY (HEL, nT)						63				
BZ (HEL, nT)						63				
Bmag (nT)						63				
X HEL (km)						64				
X HEL (km)						64				
X HEL (km)						64				
Spin Long (deg)						64				
Spin Lat (deg)						64				
Note (a.) The commandable lower threshold for DE1 is 47.5 keV										
Note (b.) The energy units for W passbands are keV/Nucleon										
Note (c.) The passband quoted for Z2 is for $_2He^4$ keV/nucleon; responds to heavier species also.										
Note (d.) The passband quoted for Z2A is for $_8O^{16}$ keV/nucleon; responds to heavier species also										
Note (e.) The passband quoted for Z3 is for $_8O^{16}$ keV/nucleon; responds to $_6C^{12}$ and all heavier species										
Note (f.) The passband quoted for Z4 is for $_{26}Fe^{56}$ keV/nucleon;										

Print Groups 60, 61, and 62 are not included in Table 1 because they contain status and housekeeping information that can only be interpreted be referring to the HISCALE data system description given in: http://hiscale.ftecs.com/chapter%204/5-datasystem-index.html