

**Interplanetary Coronal Mass Ejections in the
Near-Earth Solar Wind During 1996-2007**
(Version 2 lists including consideration of ACE/SWICS
composition data (since February 1998)) updated from:
“Interplanetary coronal mass ejections in the
near-Earth solar wind during 1996-2002”, H. V. Cane
and I. G. Richardson, *J. Geophys. Res.*, 108 No. 4,
10.1029/2002JA009817, 2003;
Revised August 16, 2007.

H. V. Cane¹ and I. G. Richardson²

NASA Goddard Space Flight Center, Greenbelt, Maryland

¹Also at School of Mathematics and Physics, University of
Tasmania, Hobart, Australia.

²Also CRESST and Department of Astronomy, University of
Maryland, College Park.

Copyright 2007 by the American Geophysical Union.

Paper number .
0148-0227/07/\$9.00

Table 1. Near-Earth ICMEs in 1996-1997

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d	
1996											
May 27 1500	May 27 1500	May 29 0000	2	...	370	400	9	2	-33	...	
July 01 1320	July 01 1800	July 02 1100	2	0	360	370	10	2	-20	...	
Aug. 07 1300	Aug. 07 1300	Aug. 08 1000	2	...	350	380	7	2	-23	...	
Dec. 23 1600	Dec. 23 1700	Dec. 25 1000	2	...	360	420	10	2	-18	435	Dec. 19 1630 H
1997											
Jan. 10 0104	Jan. 10 0400	Jan. 11 0200	1	9	450	460	14	2	-78	507	Jan. 06 1510 H
Feb. 09 1321	Feb. 10 0200	Feb. 10 1900	1	22	450	600	8	2	-68	683	Feb. 07 0030 H
Feb. 16 1600	Feb. 16 2300	Feb. 17 1800	1	...	350	350	9	1	-54	...	
April 10 1745	April 11 0600	April 11 2000	1	0	430	420	22	0	-82	552	April 07 1427 H
April 21 0600	April 21 1000	April 23 0400	2	...	400	400	12	2	-107	...	
May 15 0159	May 15 0900	May 16 0000	1	33	450	480	23	2	-115	616	May 12 0530 H
May 26 0957	May 26 1600	May 27 1000	2	2	350	350	10	1	-74	381	May 21 2100
June 08 1636	June 08 1800	June 10 0000	2	0	380	400	12	2	-84	...	
June 19 0032	June 19 0700	June 20 2300	2	0	360	390	8	2	-36	...	
July 15 0311	July 15 0800	July 16 1100	1	0	350	360	12	2	-45	...	
Aug. 03 1042	Aug. 03 1300	Aug. 04 0300	1	0	400	480	16	2	-48	410	July 30 0445 H
Aug. 17 0200	Aug. 17 0600	Aug. 17 2000	1	...	390	410	7	0	-28	...	
Sept. 03 0800	Sept. 03 1300	Sept. 03 2100	1	...	400	490	15	0	-98	405	Aug. 30 0130 H
Sept. 17 0800	Sept. 17 1600	Sept. 18 0200	1	...	330	350	8	2	-45	...	
Sept. 21 1651	Sept. 21 2100	Sept. 22 1600	1	0	450	470	20	2	-36	450	Sept. 17 2028 H
Oct. 01 0059	Oct. 01 1600	Oct. 02 2300	2	23	450	470	10	2	-98	580	Sept. 28 0108 H
Oct. 10 1612	Oct. 10 2200	Oct. 12 0000	1	15	400	450	12	2	-130	430	Oct. 06 1528
Oct. 26 1200	Oct. 27 0000	Oct. 28 0700	2	...	500	520	7	1	-60	572	Oct. 23 1126 H
Nov. 06 2248	Nov. 07 0400	Nov. 09 1200	1	33	400	460	15	2	-110	640	Nov. 04 0610 H
Nov. 22 0949	Nov. 22 1500	Nov. 23 1400	2	34	510	510	17	2	-108	640	dg(Nov. 19 1700)
Dec. 10 0526	Dec. 10 1800	Dec. 12 0000	1	32	350	380	15	0	-60	460	Dec. 06 1027
Dec. 30 0209	Dec. 30 1200	Dec. 31 1100	3	11	390	360	12	1	-77	430	Dec. 26 0231

^a The time of the associated SC when present. Otherwise, 'A' indicates the time of shock passage at ACE. If no shock or SC is reported, the estimated arrival time of the disturbance (which in some cases is also the ICME leading edge) is given to the nearest hour.

^b The quality of the boundary times ('1' indicating the most reliable).

^c The SC size is the mean horizontal component for mid-latitude stations (from reports in *Solar-Geophysical Data*).

^d 'H' indicates that the CME had a 360° angular extent (i.e. halo CME). '?' indicates that the CME association may be doubtful. Times in brackets indicate associated solar events during an interval with no coronagraph coverage. 'dg' indicates that there was a LASCO data gap around the expected time of the associated CME.

^e ICMEs could result from multiple CMEs.

Table 2. Near-Earth ICMEs in 1998-1999

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b	SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d
1998											
Jan. 06 1416	Jan. 07 0100	Jan. 08 2200	2	29	400	410	16	2	-77	480	Jan. 02 2328 H
Jan. 09 0700	Jan. 09 0700	Jan. 10 0800	2	...	450	500	6	0	-28	...	
Jan. 20 0000	Jan. 20 1700	Jan. 21 0400	2	...	430	450	5	1	-29	...	
Jan. 21 0400	Jan. 21 0600	Jan. 22 1300	3	...	380	400	12	0	-11	430	Jan. 17 0409 H
Jan. 28 1800	Jan. 29 1800	Jan. 31 0100	2	...	350	400	7	0	-55	557	Jan. 25 1526 H
Feb. 04 0000	Feb. 04 0400	Feb. 05 2300	1	...	320	390	11	2	-34	...	
Feb. 17 0400	Feb. 17 1000	Feb. 17 2100	2	...	400	400	12	1	-100	602	Feb. 14 0655
Feb. 18 0750(A)	Feb. 18 1800	Feb. 20 0000	2	...	440	460	9	1	-51	...	
March 04 1156	March 04 1300	March 06 0900	1	0	350	380	12	2	-36	440	Feb. 28 1248
March 25 1000	March 25 1300	March 26 1000	1	...	400	400	10	0	-56	...	
March 30 2200	March 31 0600	April 03 0200	1	...	360	430	7	0	-35	...	
May 01 2156	May 02 0500	May 04 0200	2	29	520	650	10	2	-85	780	April 29 1658 H
May 04 0215(A)	May 04 1000	May 08 0000	3	...	550	780	12	0	-205	1150	May 02 1406 H ^e
May 15 1451	May 15 2300	May 16 1400	2	0	440	540	14	0	-8	...	
June 13 1925	June 14 0400	June 15 0600	2	0	350	400	11	1	-55	...	
June 24 1000	June 24 1300	June 25 2300	2	...	450	540	13	2	-25	...	June 21 0535?
June 25 1636	June 26 0000	June 26 1900	1	0	460	490	10	0	-101	...	
July 05 0500	July 06 0600	July 09 0700	1	...	450	630	5	0	-30	dg	dg
July 10 2300	July 11 0000	July 13 1500	2	...	400	400	10	0	-35	dg	dg
July 30 2333	July 31 0600	July 31 1600	3	0	410	430	13	1	-35	dg	dg
Aug. 01 0400	Aug. 01 0400	Aug. 03 1000	3	...	410	450	7	1	-6	dg	dg
Aug. 05 1300	Aug. 05 1300	Aug. 06 1200	2	...	360	420	13	1	-138	dg	dg
Aug. 07 1100	Aug. 07 2300	Aug. 09 2300	2	...	450	500	7	0	-62	dg	dg
Aug. 10 0046	Aug. 10 1100	Aug. 10 2200	3	11	440	500	9	0	-27	dg	dg
Aug. 11 2300	Aug. 12 0100	Aug. 14 0500	3	...	370	420	8	1	-19	dg	dg
Aug. 19 1847	Aug. 20 0600	Aug. 21 2000	1	0	300	340	14	2	-67	dg	dg
Aug. 26 0651	Aug. 26 2200	Aug. 28 0000	2	53	650	860	14	0	-155	1260	dg (Aug. 24 2200)
Sept. 03 1400	Sept. 03 1500	Sept. 05 1400	3	...	370	420	4	0	-19	dg	dg
Sept. 23 2000	Sept. 23 0400	Sept. 23 1800	2	...	420	490	7	1	-33	dg	dg
Sept. 24 2345	Sept. 25 0600	Sept. 26 2000	1	45	640	770	13	2	-207	1020	dg (Sept. 23 0700)
Oct. 18 1952	Oct. 19 0400	Oct. 20 0700	1	22	400	410	18	2	-112	510	Oct. 15 1004 H
Oct. 23 1230(A)	Oct. 23 1500	Oct. 24 1600	3	...	520	600	7	0	-52	...	
Nov. 07 0815	Nov. 07 2200	Nov. 09 0300	2	13	450	530	15	1	-81	570	Nov. 04 0754 H
Nov. 08 0451	Nov. 09 0400	Nov. 11 0100	2	0	450	640	12	2	-149	740	Nov. 05 2044 H
Nov. 13 0143	Nov. 13 0200	Nov. 14 1200	2	0	390	400	17	2	-131	520	Nov. 09 1818
Nov. 30 0507	Nov. 30 2100	Dec. 01 0600	3	24	460	500	8	0	-15	...	
Dec. 28 1826	Dec. 29 1800	Dec. 31 0200	2	11	400	410	8	0	-58	dg	dg
1999											
Jan. 13 1054	Jan. 13 1500	Jan. 13 2300	2	18	420	420	20	0	-112	dg	dg
Jan. 22 1950(A)	Jan. 23 0900	Jan. 24 0200	3	...	530	670	12	0	-52	dg	dg
Feb. 13 1900	Feb. 13 1900	Feb. 14 1500	3	...	440	470	9	0	-17	...	
Feb. 16 1500	Feb. 16 1500	Feb. 17 1100	3	...	460	470	6	1	-7	...	
Feb. 17 0600	Feb. 17 1600	Feb. 18 1000	3	...	410	490	8	0	-34	...	
Feb. 18 0246	Feb. 18 1000	Feb. 20 1700	2	41	540	700	9	2	-123	870	dg (Feb. 16 0312)
March 10 0130	March 10 1700	March 12 0200	2	8	410	460	7	0	-81	...	
April 16 1125	April 16 1800	April 17 1900	1	18	400	450	20	2	-91	520	April 13 0330 H
April 20 1600	April 21 0400	April 23 0000	1	...	480	620	8	1	-29	...	April 18 0830?
May 15 1600	May 15 1600	May 18 0000	2	...	390	400	5	0	-13	...	
June 01 2300	June 2 0300	June 2 2000	3	...	370	390	8	1	0	...	
June 02 2000	June 02 2300	June 03 2200	2	...	430	470	9	1	-6	...	
June 26 0325	June 26 0600	June 26 1900	3	8	350	350	15	1	-15	520	June 22 1854 H
June 26 2016	June 27 1400	June 29 0100	3	36	660	880	8	0	-41	760	June 24 1331 H
July 02 0059	July 02 0400	July 06 0600	2	11	480	680	6	0	-26	...	
July 06 1509	July 06 2100	July 08 0400	3	15	440	450	5	1	-1	620	July 03 1954
July 27 0000	July 27 1700	July 29 0600	3	...	390	430	6	0	-38	560	July 23 2130
July 30 1600	July 30 2000	July 31 0800	3	...	500	660	8	1	-52	710	July 28 0530? H
July 31 1837	July 31 1900	Aug. 02 0600	3	17	480	650	5	1	-39	510	July 28 0906 H
Aug. 02 1100	Aug. 02 1400	Aug. 03 2100	3	...	370	400	4	0	-16	...	
Aug. 08 1841	Aug. 08 1900	Aug. 10 1700	2	0	360	440	9	2	-47	...	
Aug. 11 2300	Aug. 12 2000	Aug. 14 0000	3	...	370	420	7	0	-13	615	Aug. 09 0326
Aug. 20 2300	Aug. 20 2300	Aug. 23 1700	2	...	450	570	8	1	-66	510	Aug. 17 1331
Sept. 15 0700	Sept. 15 1000	Sept. 16 0100	2	...	580	620	9	1	-51	913	Sept. 13 0930?
Sept. 22 1222	Sept. 22 1900	Sept. 24 1800	1	36	510	600	10	0	-173	770	Sept. 20 0606 H
Oct. 21 0225	Oct. 21 0800	Oct. 22 0700	2	42	500	580	20	0	-237	561	Oct. 18 0006 H
Nov. 11 1900	Nov. 12 1000	Nov. 13 1800	1	...	450	680	5	0	-69	dg	dg
Nov. 13. 1200	Nov. 13 2000	Nov. 15 0000	3	...	440	480	7	1	-106	dg	dg
Nov. 22 0000	Nov. 22 0000	Nov. 24 0300	3	...	450	490	9	0	-41	dg	dg
Nov. 30 0600	Nov. 30 1200	Dec. 2 1700	3	...	340	400	10	1	-3	dg	dg
Dec. 12 1551	Dec. 12 1900	Dec. 13 1600	2	16	520	700	12	0	-85	dg	dg
Dec. 13 2300	Dec. 14 0400	Dec. 14 2000	2	...	440	480	12	0	-33	dg	dg
Dec. 26 2130(A)	Dec. 27 1100	Dec. 28 0400	2	...	430	450	8	1	-8	...	

Table 3. Near-Earth ICMEs in 2000

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b	SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d
2000											
Jan. 22 0023	Jan. 22 1700	Jan. 25 0200	2	...	370	430	12	1	-97	530	Jan. 18 1754 H
Feb. 11 0258	Feb. 11 1600	Feb. 11 2000	1	0	420	505	7	0	-25	630	Feb. 08 0930 H
Feb. 11 2352	Feb. 12 0900	Feb. 13 0300	2	49	540	590	13	1	-133	915	Feb. 10 0230 H
Feb. 14 0731	Feb. 14 1200	Feb. 16 0800	3	0	520	680	5	0	-67	815	Feb. 12 0431 H
Feb. 20 2139	Feb. 21 1200	Feb. 22 1200	2	24	380	460	15	2	-26	560	Feb. 17 2006 H
March 01 0130	March 01 0300	March 02 0300	1	...	480	530	8	0	-43	...	
March 09 2300	March 10 0600	March 12 0800	2	...	360	400	7	1	-43	...	
March 18 2200	March 19 0200	March 19 1200	1	...	380	390	9	0	-3	...	
March 29 1100	March 29 1900	April 1 1200	2	...	380	590	8	0	-60	...	
April 06 1639	April 07 0400	April 08 1800	2	74	550	620	7	1	-288	860	April 04 1632 H
April 18 2000	April 18 2000	April 19 1400	3	...	460	470	10	1	-14	510	April 15 1035?
April 24 0400	April 24 0400	April 25 0200	3	...	500	560	13	0	-61	...	
April 27 1800	April 27 1800	April 28 0100	2	...	400	410	10	1	-28	...	
April 30 2200	May 01 1500	May 02 1000	3	...	440	460	7	0	-32	...	
May 02 1045(A)	May 02 2000	May 05 1000	3	...	500	860	6	0	-37	...	April 29 0154?
May 07 0000	May 07 0000	May 09 0000	3	...	380	420	10	0	-10	...	
May 13 1700	May 13 1700	May 14 1800	2	...	500	600	8	0	-2	603	May 10 2006
May 15 1900	May 15 1900	May 16 1400	3	...	430	450	8	0	-32	...	
May 16 2300	May 16 2300	May 17 0700	2	...	550	580	9	1	-92	500	May 13 1226
May 22 1700	May 23 0900	May 23 2100	2	...	570	610	10	0	-10	830	May 20 1450
May 23 2300	May 24 1200	May 26 1800	2	...	550	690	5	1	-147	650	May 21 0726
June 04 1502	June 04 1600	June 07 0000	3	17	470	560	9	1	-35	403	May 31 0806
June 08 0910	June 08 1600	June 11 0000	2	59	590	790	10	0	-90	1007	June 06 1554 H
June 11 0801	June 11 0800	June 11 1800	2	0	510	530	11	1	-36	...	
June 12 2208	June 13 1200	June 14 0600	2	0	440	550	7	0	-37	...	
June 18 0900	June 18 0900	June 18 1700	3	...	380	400	6	1	-12	...	
June 23 1303	June 24 0000	June 26 0800	1	37	500	590	10	0	-34	...	
June 26 0000	June 26 1000	June 27 0600	2	...	520	560	10	0	-76	...	
June 30 0700	June 30 0700	June 30 2300	3	...	380	400	6	0	-10	...	
July 01 0100	July 01 0600	July 03 1700	3	...	390	440	7	1	-11	...	
July 10 0638	July 11 0200	July 11 2000	2	36	440	490	13	0	0	609	July 07 1026 H
July 11 1123(A)	July 11 2200	July 13 0300	1	...	520	540	10	1	-26	...	
July 13 0942	July 13 1600	July 14 1500	2	31	620	700	7	0	-43	940	July 11 1327 H
July 14 1532	July 14 1700	July 15 1400	2	29	780	800	9	1	-57	965	July 12 2030?
July 15 1437	July 15 1900	July 18 0500	2	120	740	1040	20	2	-301	1500	July 14 1054 H
July 19 1527	July 20 0100	July 21 0800	2	19	530	630	8	0	-93	...	July 17 0854?
July 21 0800	July 21 1400	July 22 2100	2	...	440	520	5	0	-63	...	
July 23 1041	July 23 1500	July 26 0500	3	0	380	430	10	0	-68	dg	dg
July 26 1857	July 27 0200	July 28 0200	2	0	360	400	6	1	-42	490	July 23 0530
July 28 0634	July 28 1200	July 31 1800	3	45	440	480	9	2	-71	550	July 25 0330 H
Aug. 10 0407(A)	Aug. 10 1900	Aug. 12 0100	1	...	430	480	12	2	-106	...	Aug. 06 1830?
Aug. 11 1845	Aug. 12 0500	Aug. 13 2200	1	21	580	670	16	2	-235	830	Aug. 09 1630 H
Aug. 14 2200	Aug. 15 0100	Aug. 16 0600	3	...	480	580	5	1	-31	700	Aug. 12 1035
Sept. 01 2200	Sept. 02 1200	Sept. 03 1300	1	...	440	520	8	0	-57	550	Aug. 29 1830?
Sept. 08 1200	Sept. 08 1800	Sept. 10 1000	3	...	450	500	5	0	-48	530	Sept. 05 0554
Sept. 17 1657(A)	Sept. 17 2100	Sept. 21 1200	3	...	600	840	10	2	-201	...	Sept. 15/16 ^e
Oct. 03 0054	Oct. 03 1000	Oct. 05 0300	1	0	400	430	14	2	-143	...	
Oct. 05 0326	Oct. 05 1300	Oct. 07 1100	2	0	450	530	6	1	-182	756	Oct. 02 2026 H
Oct. 12 2228	Oct. 13 0800	Oct. 14 2000	2	21	410	460	13	2	-107	590	Oct. 09 2350 H
Oct. 28 0954	Oct. 28 2100	Oct. 30 1200	1	35	380	420	14	2	-127	565	Oct. 25 0826 H
Nov. 06 0948	Nov. 06 1800	Nov. 08 0300	2	18	510	610	20	2	-159	660	Nov. 3 1826 H
Nov. 08 1200	Nov. 08 1300	Nov. 09 1500	2	...	440	500	7	1	-36	...	
Nov. 11 0400(A)	Nov. 11 0800	Nov. 12 0000	2	...	790	910	7	0	-37	1200	(Nov. 09 1615)
Nov. 26 1158	Nov. 27 0800	Nov. 28 1100	2	0	560	630	10	0	-80	...	Nov. 24 ^e
Nov. 28 0530	Nov. 28 1100	Nov. 29 2200	2	24	540	580	9	1	-119	720	Nov. 25/26 ^e

Table 4. Near-Earth ICMEs in 2001

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b	SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d
2001											
Jan. 23 1048	Jan. 24 0900	Jan. 25 1700	1	30	400	550	5	1	-61	680	Jan. 20 2130 H ^e
Jan. 25 2100	Jan. 26 0800	Jan. 27 1200	3	...	330	360	5	1	-35	...	
March 03 1121	March 04 0400	March 05 0200	2	0	440	520	8	0	-73	610	Feb. 28 1450
March 19 1114	March 19 1700	March 22 1200	1	19	360	490	13	2	-149	520	March 16 0350
March 27 1747	March 27 2000	March 28 1700	2	26	610	650	12	0	-87	850	March 25 1706 H
March 29 0400	March 29 0400	March 30 1800	3	...	480	560	3	1	-51	...	
March 31 0052	March 31 0500	March 31 2200	3	105	640	710	39	1	-387	690	March 28 1250 H
March 31 2200	April 01 0400	April 03 1500	2	...	600	820	5	0	...	700	March 29 1026 H
April 04 1455	April 04 1800	April 05 2100	2	57	650	780	9	0	-50	1020	April 02 2206
April 08 1101	April 08 1800	April 9 0400	3	41	740	780	12	0	-59	1050	April 06 1930 H
April 11 1343	April 11 2200	April 13 0700	2	0	640	740	14	2	-271	1290	April 10 0530 H
April 13 0734	April 13 0900	April 14 1200	1	31	730	830	9	0	-77	990	April 11 1331 H
April 18 0046	April 18 1200	April 20 1100	2	0	430	520	8	0	-114	...	
April 21 1601	April 21 2300	April 23 0800	1	19	350	390	11	2	-102	...	
April 28 0431(A)	April 28 1400	May 2 1000	2	58	500	730	8	2	-47	1040	April 26 1230 H
May 07 0800	May 07 1900	May 08 0700	1	...	360	410	8	1	-25	...	
May 08 1101	May 09 1200	May 10 2200	2	...	430	560	8	1	-76	...	
May 11 1300	May 11 1300	May 12 0000	2	...	430	430	8	0	-48	...	
May 12 0920(A)	May 12 1700	May 13 1600	3	...	570	670	7	0	-45	...	May 10 0131?
May 27 1459	May 28 0300	May 31 1400	1	0	420	590	7	2	-42	...	
June 07 0852(A)	June 07 1800	June 08 0700	1	...	390	430	9	1	-8	...	
June 27 0300	June 27 0300	June 28 1700	1	...	420	490	3	0	-18	...	
July 08 1200	July 09 0200	July 11 0400	2	...	400	460	4	1	-38	520	July 05 0354
July 13 1700	July 13 1700	July 14 0100	2	...	400	420	8	1	-4	...	
Aug. 03 0716	Aug. 03 1100	Aug. 04 1000	3	0	400	440	6	0	-13	...	
Aug. 15 0500	Aug. 15 0500	Aug. 16 1400	3	...	390	450	5	0	-16	...	
Aug. 17 1103	Aug. 17 2000	Aug. 19 1600	2	29	500	600	11	0	-105	620	Aug. 14 1601 H
Aug. 27 1952	Aug. 28 2000	Aug. 29 2000	3	20	470	580	4	0	-23	810	Aug. 25 1650 H
Aug. 30 1411	Aug. 30 1700	Aug. 31 1000	2	0	420	500	6	1	-40	...	
Sept. 01 1300	Sept. 01 1300	Sept. 02 2200	2	...	360	410	5	1	-17	...	
Sept. 13 0200	Sept. 13 1800	Sept. 15 0200	2	...	410	440	10	1	-57	...	
Sept. 23 1100	Sept. 23 1800	Sept. 24 2200	3	...	450	570	7	1	-73	650	Sept. 20 1931
Sept. 25 0000	Sept. 25 0600	Sept. 25 2000	2	...	380	400	5	0	-24	...	
Sept. 29 0940	Sept. 30 0000	Oct. 01 0000	2	0	520	700	12	1	-66	...	Sept. 27 0454?
Sept. 30 1924	Oct. 01 0800	Oct. 02 0000	2	0	490	550	9	0	-148	710	Sept. 28 0854 H
Oct. 01 2200	Oct. 02 0400	Oct. 02 1200	2	...	490	520	8	1	-104	715	Sept. 29 1154
Oct. 02 1200	Oct. 02 1400	Oct. 04 0000	2	...	510	560	12	2	-166	...	
Oct. 11 1701	Oct. 12 0200	Oct. 12 1100	2	46	530	580	17	1	-71	780	Oct. 09 1130 H
Oct. 21 1648	Oct. 21 2000	Oct. 25 1000	1	61	460	680	9	0	-187	870	Oct. 19 1650 H
Oct. 26 2200	Oct. 27 0000	Oct. 28 0200	2	...	390	410	8	0	-27	550	Oct. 23 1826
Oct. 28 0319	Oct. 29 1600	Oct. 31 2000	2	48	360	510	5	0	-157	694	Oct. 25 1526
Oct. 31 1348	Oct. 31 2000	Nov. 02 1200	2	19	330	390	11	2	-106	...	
Nov. 5 1000	Nov. 5 1900	Nov. 6 0600	2	...	420	430	18	1	-73	...	
Nov. 06 0152	Nov. 06 1200	Nov. 09 0600	2	110	600	750	7	0	-292	1250	Nov. 04 1635 H
Nov. 19 1815	Nov. 19 2200	Nov. 20 1100	3	0	480	580	6	1	-47	680	Nov. 17 0530 H
Nov. 24 0656	Nov. 24 1400	Nov. 26 0000	2	62	720	1040	12	2	-221	1320	Nov. 22 2330 H
Dec. 28 0000	Dec. 28 0000	Dec. 29 1200	2	...	360	370	8	0	-10	...	
Dec. 29 0538	Dec. 30 0000	Dec. 30 1800	2	78	400	460	16	1	-58	580	Dec. 26 0530?

Table 5. Near-Earth ICMEs in 2002 – 2003

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b	SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d
2002											
Feb. 28 0451	Feb. 28 1700	March 02 1800	2	46	390	410	11	1	-71	...	
March 18 1322	March 19 0500	March 20 1600	2	64	380	470	15	2	-37	667	March 15 2306
March 20 1328	March 21 1400	March 22 0600	3	15	440	580	8	0	-13	...	
March 23 1137	March 23 2100	March 25 2000	2	24	450	500	15	2	-100	625	March 20 1706?
April 12 0100	April 12 0100	April 13 1300	3	...	420	450	8	0	-32	...	
April 17 1107	April 17 1600	April 19 1500	2	54	480	610	14	2	-127	750	April 15 0350
April 19 0835	April 20 0000	April 21 1800	2	30	500	640	8	2	-149	863	April 17 0826 H
May 09 1000	May 10 0000	May 10 1100	3	...	380	400	8	1	-13	...	
May 11 1000	May 11 1600	May 12 0000	3	...	430	440	15	0	-110	610	May 8 1350 H
May 20 0340	May 20 1500	May 21 2200	3	13	410	510	6	0	-36	420	May 16 0050 H
May 21 2203	May 22 1800	May 23 0500	3	17	420	440	9	0	-12	...	
May 23 1050	May 23 2000	May 25 1800	2	59	590	920	11	2	-109	1323	May 22 0326 H
July 17 1603	July 18 1200	July 19 0900	3	0	460	520	6	0	-17	955	July 15 2030 H
July 19 1450(A)	July 20 0000	July 22 0600	2	13	650	930	7	0	-36	...	
Aug. 01 0510	Aug. 01 0900	Aug. 01 2300	2	26	450	460	12	2	-51	...	
Aug. 01 2309	Aug. 02 0400	Aug. 04 0200	2	18	460	520	10	2	-102	500	July 29 1207
Aug. 18 1846	Aug. 19 1200	Aug. 21 1400	2	44	460	580	8	1	-106	766	Aug. 16 1230 H
Aug. 29 2100	Aug. 29 2100	Aug. 30 0600	2	...	400	420	8	1	-42	...	
Sept. 07 1636	Sept. 08 0400	Sept. 08 2000	2	27	470	550	10	0	-181	880	Sept. 05 1654 H
Sept. 08 2000	Sept. 08 2200	Sept. 10 2100	2	...	440	520	9	0	-82	...	
Sept. 19 0600	Sept. 19 1800	Sept. 20 2100	2	...	520	750	5	0	-40	910	Sept. 17 0806
Sept. 30 0815	Sept. 30 2000	Oct. 1 1500	2	14	390	410	23	2	-176	...	
Oct. 02 2210(A)	Oct. 03 0100	Oct. 04 1800	2	...	430	520	11	2	-146	...	
Nov. 16 2305	Nov. 17 1000	Nov. 19 1200	2	...	380	500	8	2	-52	...	
Dec. 17 1800	Dec. 17 1800	Dec. 19 1200	2	...	380	430	14	0	-30	...	
Dec. 20 1700	Dec. 21 0300	Dec. 22 1900	2	...	440	540	11	0	-75	...	
2003											
Jan. 26 0000	Jan. 27 0100	Jan. 28 0000	2	...	500	720	9	1	-20	...	
Feb. 1 1305(A)	Feb. 1 1900	Feb. 3 0700	2	...	510	760	11	0	-72	820	Jan. 30 1006
Feb. 17 2150(A)	Feb. 18 0400	Feb. 19 1600	1	...	600	700	8	0	-17	...	
Mar 20 0427	Mar 20 1200	Mar 20 2200	1	19	650	810	11	2	-64	...	
May 9 0455(A)	May 9 0700	May 11 0700	2	0	670	900	8	1	-84	...	
May 29 1155(A)	May 29 1300	May 29 1800	2	20	650	680	8	1	-49	...	
May 29 1825(A)	May 30 0200	May 30 1600	3	...	600	760	20	1	-144	999	May 28 0050 H
May 30 1600(A)	May 30 2200	June 1 0100	3	...	680	780	7	0	-63	1078	May 29 0127 H
June 15 1500	June 15 2000	June 16 2100	3	...	510	590	10	1	-68	dg	dg
June 16 1800	June 17 0700	June 18 0900	3	...	480	540	12	2	-141	650	June 14 0154
July 6 1200	July 6 1700	July 7 1200	3	...	600	700	7	0	-26	dg	dg
July 23 1400	July 23 1400	July 24 1600	2	...	430	500	6	1	-26	...	
Aug. 4 1700	Aug. 4 2200	Aug. 6 0200	2	...	440	500	9	1	-60	...	
Aug. 15 1200	Aug. 16 0200	Aug. 17 1600	2	...	490	620	7	1	-11	...	
Aug. 17 1421	Aug. 18 0100	Aug. 20 0800	1	35	450	530	16	2	-148	...	Aug. 14 2006 H?
Oct. 21 2200	Oct. 22 0000	Oct. 24 1500	2	...	520	740	9	1	-61	...	
Oct. 24 1524	Oct. 24 2100	Oct. 25 0100	2	0	580	600	30	1	-36	...	
Oct. 25 1100	Oct. 25 1400	Oct. 28 0230	3	...	480	590	11	1	-52	...	
Oct. 28 0131	Oct. 28 0230	Oct. 28 0900	1	...	610	620	19	0	-32	1331	Oct. 26 1754
Oct. 29 0611	Oct. 29 1100	Oct. 30 0300	2	107	1300	1900	32	2	-353	2185	Oct. 28 1130 H
Oct. 30 1620	Oct. 31 0200	Nov. 2 0000	2	...	800	1700	9	1	-383	2138	Oct. 29 2054 H
Nov. 20 0730(A)	Nov. 20 1000	Nov. 21 0800	2	52	580	700	28	2	-422	886	Nov. 18 0850 H

Table 6. Near-Earth ICMEs in 2004 – 2005

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d	
2004											
Jan. 9 1500	Jan. 10 0600	Jan. 11 0500	2	...	560	620	10	1	-60 P	...	
Jan. 22 0105(A)	Jan. 22 0800	Jan. 23 1700	2	45	560	680	12	0	-149 P	850	Jan. 20 0006 H
Jan. 23 1425(A)	Jan. 23 2300	Jan. 25 0600	2	...	490	550	10	1	-89 P	720	Jan. 21 0454 H
Feb. 17 1800	Feb. 17 1800	Feb. 18 1600	2	...	440	460	8	0	-26 P	...	
April 3 0900(A)	April 4 0000	April 5 1800	1	8	430	520	16	2	-112 P	...	dg(Mar. 31 1036)
April 26 1400	April 26 1600	April 27 2000	2	...	460	500	6	1	-6 P	dg	dg
April 30 1300	April 30 2100	May 03 0000	2	...	410	450	8	0	-36 P	dg	dg
July 22 1036	July 22 1800	July 24 0800	2	12	560	670	11	1	-101 P	920	July 20 1331 H
July 24 0613	July 24 1400	July 25 1500	2	51	560	610	20	2	-148 P	890	July 22 0731
July 25 1500	July 25 2000	July 26 2200	2	...	640	680	6	1	... P	890	July 23 1606 H
July 26 2249	July 27 0200	July 28 0100	1	65	870	1000	16	2	-197 P	1302	July 25 1454 H
Aug. 01 0100	Aug. 01 0900	Aug. 2 0400	2	...	440	520	6	1	-42 P	...	
Aug. 29 0900	Aug. 29 1900	Aug. 30 2200	1	11	390	440	12	2	-126 P	...	
Sep. 13 2003	Sept. 14 1500	Sept. 15 0000	2	38	560	600	10	1	-50 P	960	Sept. 12 0036 H
Sep. 17 2100	Sept. 18 1200	Sept. 20 0000	3	...	400	440	6	1	-43 P	500	Sept. 14 1010 H
Nov. 7 1000	Nov. 7 2200	Nov. 9 1000	1	23	630	720	18	2	-373 P	720	Nov. 4 2330
Nov. 9 1800	Nov. 9 2000	Nov. 11 2300	1	...	640	810	14	2	-289 P	830	Nov. 7 1654 H
Nov. 11 1700	Nov. 12 0800	Nov. 13 2300	2	0	520	670	7	1	-109 P	1080	Nov. 10 0226 H
Dec. 11 1300	Dec. 12 1200	Dec. 14 0000	3	22	400	580	12	0	-61 P	640	Dec. 8 2026 H
Dec. 27 0500	Dec. 27 1600	Dec. 29 0200	3	...	440	560	7	1	-48 P	dg	dg
2005											
Jan. 7 0900	Jan. 7 1500	Jan. 8 1200	2	5	520	570	17	1	-96 P	...	(Jan. 4 ~ 06 UT)
Jan. 8 1700	Jan. 8 2100	Jan. 9 1800	2	...	460	520	9	1	...	570	Jan. 5 1530 H
Jan. 16 1100	Jan. 16 1400	Jan. 17 0700	3	...	520	580	8	1	-70 P	630	Jan. 13, 1730 H
Jan. 18 2100	Jan. 19 0000	Jan. 20 0300	1	...	800	960	12	0	-121 P	1170	Jan. 17 0930 H
Jan. 21 1714	Jan. 21 1900	Jan. 22 1700	2	79	810	960	16	0	-105 P	1210	Jan. 20 0654 H
Jan. 31 0900	Jan. 31 1400	Feb. 2 0900	2	...	560	980	8	0	-36 P	...	
Feb. 17 2200	Feb. 18 1700	Feb. 19 0900	1	0	520	580	6	0	-86 P	...	
Feb. 20 1200	Feb. 20 1200	Feb. 22 0700	3	...	410	440	5	1	-48 P	500	Feb. 17 0006 H
Feb. 22 1000	Feb. 22 1400	Feb. 23 1900	3	...	380	400	9	0	-12 P	...	
May 15 0200	May 15 0600	May 17 1200	2	37	680	950	18	2	-263 P	1270	May 13 1712 H
May 20 0300	May 20 0300	May 22 0200	2	0	430	480	10	2	-103 P	488	May 16 1350
May 28 0400	May 29 0000	May 29 1500	2	...	400	490	11	1	-44 P	...	
May 29 0900	May 30 0100	May 30 2300	2	12	460	540	15	1	-138 P	630	May 26 1506 H
May 30 2300	May 31 0400	June 1 0300	3	...	460	490	4	0	...	430	May 26 2126
June 12 0700	June 12 1500	June 13 1300	2	35	480	510	14	2	-106 P	650	June 9 1436
June 14 1800	June 15 0500	June 16 0900	2	28	480	560	9	1	-54 P	...	
July 10 0300	July 10 1000	July 13 1000	2	21	430	480	12	1	-94 P	720	July 7 1706
July 17 0100	July 17 1400	July 18 2300	2	16	420	500	8	2	-76 P	...	
Aug. 9 0000	Aug. 9 0000	Aug. 9 1700	2	...	480	520	6	1	-18 P	477	Aug. 5 0854
Aug. 10 0600	Aug. 10 0600	Aug. 10 1200	2	0	440	460	8	1	-53 P	...	
Sep. 2 1300	Sept. 2 1800	Sept. 3 0400	2	0	650	680	10	1	-48 P	840	Aug. 31 1130
Sep. 9 1300	Sept. 9 2200	Sept. 10 0400	2	24	450	480	10	1	-38 P	...	
Sep. 10 0500	Sept. 10 0800	Sept. 10 1900	2	...	680	700	12	1	-70 P	...	
Sep. 11 0100	Sept. 11 0500	Sept. 12 0700	2	45	1100	900	10	2	-147 P	...	Sept. 9 1948
Sep. 12 0600	Sept. 12 2000	Sept. 13 1300	2	...	750	980	7	0	-90 P	...	
Sep. 13 0900	Sept. 13 1600	Sept. 14 0800	3	...	630	740	5	0	-95 P	...	
Sep. 15 0600	Sept. 15 0600	Sept. 16 1800	3	0	680	860	7	1	-86 P	1220	Sept. 13 2000 H
Sep. 20 1800	Sept. 20 1800	Sept. 21 1800	2	...	350	390	6	0	-34 P	...	
Oct. 31 0200	Oct. 31 0200	Oct. 31 1900	2	0	360	400	11	2	-75 P	...	
Dec. 31 0000	Dec. 31 0600	Jan. 1 1700	2	...	480	550	8	2	-45 P	...	

Table 7. Near-Earth ICMEs in 2006 – 2007

Disturbance Time ^a (UT)	ICME Start (UT)	ICME End (UT)	Qual. ^b	SC ^c (γ)	V_{ej} (km/s)	V_{max} (km/s)	B (nT)	MC?	Dst (nT)	V_{tr} (km/s)	LASCO CME ^d
2006											
Feb 5 2000	Feb. 5 2000	Feb. 6 1200	2	...	340	360	10	2	-51 Q		...
April 13 1100	April 13 1500	April 14 0800	2	...	520	550	18	2	-122 Q	540	April 10 0606?
July 9 2200	July 10 2100	July 11 1900	1	...	380	430	10	0	-25 Q	488	July 6 0854 H
Aug. 19 1100	Aug. 20 1300	Aug. 21 1600	3	0	400	470	8	0	-109 Q	620	Aug. 16 1630 H
Sep. 30 0300	Sept. 30 0800	Sept. 30 2000	3	...	400	440	17	2	-40 Q		...
Nov. 1 1700	Nov. 1 1700	Nov. 2 1400	3	...	380	410	5	0	-49 Q		...
Nov. 18 1000	Nov. 18 1000	Nov. 20 0200	1	...	400	430	9	0	-14 Q		...
Nov. 28 1300	Nov. 29 0500	Nov. 30 1000	3	...	420	500	12	2	-96 Q		...
Dec. 14 1400	Dec. 14 2200	Dec. 15 1300	1	30	740	900	13	1	-147 Q	1180	Dec. 13 0254 H
Dec. 15 2000	Dec. 15 2000	Dec. 16 1900	2	...	620	650	3	0
Dec. 16 1700	Dec. 17 0000	Dec. 17 1700	3	0	580	700	4	0	-37 Q	980	Dec. 14 2230 H
2007											
Jan. 14 1200	Jan. 14 1200	Jan. 15 0700	1	0	360	380	12	2	-51 Q		...