SOHO/LASCO CME CATALOG (http://cdaw.gsfc.nasa.gov)

The Center for Solar Physics and Space Weather (CSPSW) announces the availability of an online catalog of CME measurements. The catalog is developed using the SOHO data in cooperation with the Naval Research Laboratory and the Solar Data Analysis Center (SDAC) at the Goddard Space Flight Center. The entries start from January 1996 (immediately after the launch of SOHO). The catalog is complete up to December 2001 and will be current soon. There are about 3000 CMEs in the catalog.

The catalog contains a list of all CMEs identified by LASCO operators, and a few additional ones identified during our measurements. In addition, it contains a number of measurements that characterize the CMEs: Date and time of first appearance in the C2 coronagraph field of view, central position angle, angular width (twice the cone-angle), speed from linear fit to the height-time measurements, speed at the last height of measurement using quadratic fit, speed at 20 Ro using quadratic fit, acceleration obtained from the quadratic fit, and the actual position angle at which the height-time measurements are made. Links are also provided to the daily mpeg movies created by the Naval Research Laboratory using C2 and C3 coronagraph images and the Extreme-ultraviolet Imaging Telescope (EIT) images at 195 A. Each CME is identified by the date and time of occurrence. Here are some additional features of the catalog:

1. By clicking on the date, one can view javascript movies of the CMEs within the C2 field of view, with the EIT 195 images superposed so that the solar source of the CME could be identified.
2. By clicking on the time, one can view the actual height-time measurements.
3. By clicking on the linear speed, one can view the height-time plot (in gif format); by clicking on the second order speed, one can view the quadratic fit.

The catalog resides at the CSPSW's CDAW Data Center (http://cdaw.gsfc.nasa.gov), supported by NASA. The catalog will undergo frequent updates, so please check the web site frequently. Java-script movies may not be available for all dates at the moment.

We started this project initially to study the relation between interplanetary type II radio bursts observed by the Wind/WAVES and then extended to all CMEs. We hope this catalog will be useful to the scientific community in enhancing scientific return from US Space missions.

Sample measurements were made by two post-doctoral fellows, Drs S. Yashiro and G. Michalek to check for consistency. The measurements were within 10% error. We also consulted several CME researchers in developing this catalog: Drs. R. Howard (NRL), O. C. St. Cyr (CSPSW/NRL/GSFC), S. P. Plunkett (NRL), N. Rich (NRL) and G Lawrence (CSPSW).

We encourage everyone to use the catalog and send us comments and suggestions so we can improve and refine the catalog. We would be delighted to participate in collaborative projects that use the catalog. Please keep us informed about your projects that use the catalog so we can avoid conflicts.

We suggest that users of the catalog acknowledge the catalog to the effect of the following:

"This CME catalog is generated and maintained by the Center for Solar Physics and Space Weather, The Catholic University of America in cooperation with the Naval Research Laboratory and NASA. SOHO is a project of international cooperation between ESA and NASA."

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SOLAR CORONAL MASS EJECTIONS (CMEs) FROM SOHO/LASCO

http/cdaw/gsfc.nasa.gov

Center for Solar Physics and Space Weather (CSPSW) – The Catholic University of America
In cooperation with the Naval Research Laboratory (NRL)
and the National Aeronautical and Space Administration (NASA)

NOVEMBER 2001

First C2 Appearance Date	Time UT	Central Position Angle degree	Angular Width degree	Linear Fit Speed km/s	2nd order speed Initial km/s	Final km/s	20R km/s	Accel m/s^2	Measurement Position Angle degree
2001/11/01	03:30:05	250	069	559	626	489	514	-5.5	272
2001/11/01	08:30:05	323	038	346	271	428	429	5.2	324
2001/11/01	09:30:05	190	023	134	156	113	0	-4.9	189
2001/11/01	14:30:05	115	195	1053	995	1114	1089	8.1	111
2001/11/01	22:30:05	Halo	360	453	450	455	454	0.2	305
2001/11/02	12:30:05	45	051	579	695	458	301	-17.6	47
2001/11/02	12:30:05	211	104	282	188	382	353	3.8	199
2001/11/02	22:30:05	53	047	145	135	154	199	1.2	47
2001/11/03	00:07:40	250	052	476	369	585	668	15.7	252
2001/11/03	12:05:07	78	206	208	135	300	410	6.4	71
2001/11/03	17:50:06	248	058	327	365	285	0	-7.5	252
2001/11/03	19:20:05	Halo	360	457	571	329	299	-9.9	359
2001/11/04	07:50:05	23	136	259	259	260	262	0.1	11
2001/11/04	13:55:05	159	025	233	124	329	842	29.2	161
2001/11/04	16:35:06	Halo	360	1810	2058	1514	1691	-63.4	239
2001/11/05	01:25:32	63	064	711	798	614	491	-17.0	55
2001/11/05	09:43:25	252	040	967	997	936	898	-8.1	259
2001/11/06	17:38:29	29	014	320	353	287	0	-7.5	24
2001/11/06	18:00:43	28	026	315	322	307	233	-2.1	24
2001/11/10	02:06:05	207	012	196	165	226	275	2.0	206
2001/11/10	07:27:23	233	040	500	440	557	622	8.4	229
2001/11/10	13:27:19	85	>155	480	586	372	0	-19.0	87
2001/11/10	19:50:05	204	038	173	121	225	417	6.5	205
2001/11/11	01:27:25	297	031	542	558	525	444	-5.0	292
2001/11/12	00:26:05	266	053	353	----	----	----	------	259
2001/11/12	03:50:05	17	125	180	187	171	96	-1.0	40
2001/11/12	09:26:05	105	099	174	115	231	620	15.2	111
2001/11/12	10:06:05	151	058	480	376	587	578	8.2	142
2001/11/12	10:06:05	293	067	502	473	532	543	2.9	293
2001/11/12	19:50:05	122	012	352	242	467	518	9.0	121
2001/11/12	20:26:05	197	066	399	315	485	634	12.6	203
2001/11/12	22:06:05	130	011	417	319	513	574	9.6	131
2001/11/13	05:06:05	132	016	364	278	448	564	10.4	131
2001/11/13	06:06:05	267	066	416	455	377	252	-6.0	287
2001/11/13	18:26:06	57	044	272	102	439	875	31.6	52
2001/11/14	02:26:05	88	032	226	272	180	0	-25.7	94
2001/11/15	12:06:06	0	035	198	151	243	658	17.2	358
2001/11/15	20:50:05	32	164	618	245	964	1609	106.6	47
2001/11/16	03:26:05	17	149	118	0	232	341	4.9	355
2001/11/16	05:26:05	78	012	338	322	353	387	1.9	75
2001/11/16	05:26:05	79	013	334	356	313	0	-6.0	82
2001/11/16	08:50:05	60	062	347	205	494	1082	51.1	44
2001/11/16	21:15:35	52	067	364	388	337	224	-4.2	55

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NOVEMBER 2001

First C2 Appearance		Central							Measurement
		Position	Angular	Linear Fit	-------2nd order speed-------			Accel	Position
Date	Time UT	Angle degree	Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s	m/s^2	Angle degree
2001/11/17	00:30:05	98	020	636	823	466	0	-82.4	96
2001/11/17	05:30:06	Halo	360	1379	1505	1249	1350	-22.5	58
2001/11/17	10:56:24	354	057	282	282	282	283	0.0	349
2001/11/17	13:31:56	301	066	280	190	374	537	10.8	305
2001/11/17	15:06:05	235	035	459	420	500	689	12.6	222
2001/11/18	00:30:05	16	010	285	289	282	266	-0.6	21
2001/11/18	21:30:08	Halo	360	888	927	846	843	-7.0	225
2001/11/19	03:54:05	84	110	281	327	231	0	-6.2	75
2001/11/19	10:06:05	65	050	284	337	230	0	-13.8	58
2001/11/19	12:54:05	302	040	443	476	410	323	-5.3	295
2001/11/19	13:31:54	81	085	245	239	251	306	1.5	88
2001/11/19	14:30:05	64	069	265	264	267	275	0.2	64
2001/11/19	16:30:05	293	019	628	687	571	354	-14.5	303
2001/11/19	19:54:16	76	111	361	356	366	381	0.8	44
2001/11/20	04:30:28	309	038	586	708	465	0	-58.0	312
2001/11/20	08:06:05	314	036	183	171	196	335	3.4	314
2001/11/20	18:30:05	66	058	193	193	194	208	0.3	75
2001/11/21	00:30:05	172	003	229	81	374	597	15.6	171
2001/11/21	04:30:32	7	004	249	163	337	472	9.3	12
2001/11/21	14:06:05	Halo	360	518	534	502	507	-1.2	185
2001/11/22	03:30:05	226	026	126	93	158	549	12.1	223
2001/11/22	08:54:05	302	054	681	818	537	0	-33.2	294
2001/11/22	15:30:05	24	068	27	26	27	48	0.1	41
2001/11/22	20:30:33	Halo	360	1443	1662	1231	1307	-43.3	221
2001/11/22	23:30:05	Halo	360	1437	1503	1371	1409	-12.9	349
2001/11/23	00:54:05	197	071	806	403	1205	1199	53.8	200
2001/11/24	09:47:48	239	038	467	377	560	766	22.4	223
2001/11/24	12:17:24	35	075	137	83	192	364	5.2	31
2001/11/25	00:30:50	233	014	320	101	527	736	22.3	234
2001/11/25	01:31:50	256	009	580	704	456	0	-25.6	255
2001/11/25	11:07:00	248	013	377	280	473	637	14.7	250
2001/11/25	23:06:54	104	182	1574	1698	1449	1520	-26.6	104
2001/11/26	04:54:05	230	017	405	383	432	426	1.6	234
2001/11/26	07:54:15	115	056	478	407	553	615	9.6	109
2001/11/26	07:54:15	56	135	76	45	107	212	1.8	65
2001/11/26	23:06:05	52	122	288	311	265	0	-7.4	42
2001/11/27	03:54:05	59	111	216	168	269	306	2.7	57
2001/11/27	05:06:06	146	049	160	229	90	0	-21.1	145
2001/11/27	10:30:33	309	058	598	598	599	599	0.1	319
2001/11/27	18:30:05	316	073	637	674	599	601	-3.9	316
2001/11/28	00:54:05	273	058	330	357	303	263	-2.5	274
2001/11/28	09:30:05	72	004	366	322	414	423	3.4	69

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		Position	Angular	Linear Fit	-------2nd order speed--------			Accel	Position
Date	Time UT	Angle degree	Width degree	Speed km/s	Initial km/s	Final km/s	20R km/s	m/s^2	Angle degree
2001/11/28	17:30:06	Halo	360	500	500	501	502	0.1	46
2001/11/28	23:06:05	216	028	181	220	141	0	-5.6	223
2001/11/29	03:30:05	305	075	368	259	480	450	6.7	316
2001/11/29	12:54:05	48	092	297	285	311	311	0.7	68
2001/11/29	16:54:05	32	065	330	398	260	0	-7.6	37
2001/11/29	23:28:12	294	013	235	234	235	235	0.0	292
2001/11/30	14:30:05	122	106	374	306	442	582	10.0	124
2001/11/30	18:06:05	99	053	315	182	469	410	5.6	94
2001/11/30	18:30:05	65	039	261	237	285	531	9.3	53
2001/11/30	20:30:05	143	074	261	126	386	521	11.9	130
2001/11/30	21:08:05	261	062	235	179	291	890	31.6	274

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CME heights are measured at the fastest segment of the leading edge
PA= Postion Angle measured from Solar North in degrees (Counter clockwise)
ONLINE -- Click on date to view java script movies
ONLINE -- Click on time to see height-time digital files
ONLINE -- Click on speed to view height-time plot
Numbers in 2nd order fit columns correspond to the speed at the last height of measurement and at a distance of 20 solar radii.