

XI. CATALOGUE OF SMM CORONAGRAPH MASS EJECTIONS

SMM C/P 1980 Coronal Mass Ejections page 1 of 29

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											First continuous observations Mar 07, 1980.
Mar 07	067	14:31-21:04	106	—	—	—	—	—	0	No clear front	Irregularly-shaped tongue superposed on fan (or streamer). Tongue is pinched at base to form concave-outward, 'V'-shape.
											DATA GAP: Mar 08 03:22 to 21:01
Mar 08/09	068/069	21:04-01:35	230	034	Mar 08 21:04:54-21:06:29	879 ₁ *	230	2	7	Cavity	Flattened loop/cavity superposed on streamer. Deflections.
											DATA GAPS: Mar 08 21:06 to Mar 09 01:32 Mar 09 01:36 to 16:11. Mar 09 16:16 to 23:51 Mar 09 23:56 to Mar 10 14:27 Mar 10 14:33 to 19:18 Mar 10 19:24 to 22:08 Mar 10 22:14 to Mar 11 16:10
Mar 11	071	<16:10<20:26	000	030	—	—	—	—	0	Front at 16:10 only	Loop(?)/cavity in 16:10 image only. Legs of loop are superposed on streamers. Deflections.
											DATA GAPS: Mar 11 16:16 to 20:26. Mar 11 22:14 to Mar 13 15:36. Mar 13 15:57 to Mar 14 15:36 Mar 14 15:56 to 18:47. Mar 14 23:53 to Mar 15 02:45. Mar 15 03:05 to 15:34.
Mar 15/16	075/076	<15:36~10:46	~120	~053	Mar 15 15:36-19:31	033 ₁ * 053 ₂	116	6	6	Cavity	Cavity rises slowly in fan. Fuzzy loop becomes visible around cavity. Brighter tongue-shaped core follows cavity. Base of core is concave-outward, 'U'-shaped by early Mar 16. Archetypal (pardon the expression) disconnection from ~06:05 until 10:46 on Mar 16. Fan is partially blown out. Deflections.
					Mar 15 15:36-19:31	035 ₁ * 046 ₂	116	7	7	Core	
					Mar 16 06:04-09:10	102 ₁ 190 ₂ *	122	6	7	Concave-outward U-shape	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 2 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Mar 18 14:38 to Mar 19 15:28.
Mar 20	080	09:11-10:41	013	050	Mar 20 09:11-09:53	608 ₁ *	005	2	3	Loop	Fuzzy loop/cavity superposed on streamer (or fan). Deflections.
					Mar 20 09:11-09:53	138 ₁ *	005	2	2	Cavity	
Mar 20	080	14:45-18:41	130	005	—	—	—	—	0	No obvious front	Blob 'N Ray.
Mar 20	080	18:43-22:10	228	055	Mar 20 18:43-20:38	282 ₁ 380 ₂ *	235	19	9	Loop	Thin loop/cavity with structured (prominence?) core superposed on streamer (or fan). Deflections.
					Mar 20 18:43-20:38	292 ₁ 414 ₂ *	235	19	9	Cavity	
											DATA GAPS: Mar 21 12:16 to 17:01. Mar 21 18:45 to 23:28.
Mar 22	082	04:23~06:19	185?	030?	—	—	—	—	0	Front visible for five minutes only. No apparent motion while visible.	Loop(?)/cavity with structured core(?) between streamers (or rays). Loop is obscured by pylon shadow and artifact.
Mar 23	083	01:00~09:09	230	035	Mar 23 04:46-06:06	162 ₁ * 186 ₂	235	5	3	Outer loop	Outward motion of jet from 01:00 until ~02:54 at 236° followed by a low contrast, broader cavity from ~02:49 until 09:09. Loop becomes visible around cavity. Well-defined, multiple loops/cavities appear beneath first cavity from 04:46 until ~09:09. Event is superposed on streamer. Streamer is disrupted. Deflections.
					Mar 23 04:14-06:06	101 ₁ * 140 ₂	235	6	3	Outer cavity	
			Mar 23 04:49-06:06	096 ₁ * 139 ₂	230	6	8	Inner cavity			
Mar 23	083	02:41-22:25?	~020	~008	—	—	—	—	0	No obvious front	Could be three events: 1. Narrow jet east of polar streamer. Possible brightening south of jet. Deflections. 2. Jet (or tongue) east of polar streamer. Deflections. 3. Fuzzy, faint loop/cavity superposed on polar streamer. Deflections.
		02:41-04:23			—	—	—	—	0	No obvious front	
		06:33-12:55	027	012	Mar 23 13:50-14:21	143 ₁ *	017†	2	3	Loop	
		13:50-22:25?	015	046							

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 3 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 24	084	09:37-11:13?	315	—	—	—	—	—	1	Cloud	Very faint cloud superposed on rays.
Mar 24	084	10:51~17:49	232	031	Mar 24 10:51-11:26	217 ₁ * 304 ₂	230	5	3	Loop	Thick, structured loop/cavity superposed on streamer. Deflections. Streamer is disrupted.
Mar 24	084	18:37-20:13	~314	~057	—	—	—	—	0	Too faint	Very faint cloud superposed on faint rays. Deflections.
Mar 25	085	02:35-07:38	234	015	Mar 25 04:53-05:06	682 ₁ * 816 ₂	238	6	4	Tongue	Could be two events: 1. Tongue superposed on rays.
			152?	036?	—	—	—	—	1	Very little motion while visible	2. Elongated loop/cavity superposed on streamer. Deflections.
Mar 26	086	01:03~05:52	098	051	—	—	—	—	1	Mound	Complex, structured mound (or loop/cavity) with structured core and concave-outward 'U'-shaped material all superposed on existing structures. Deflections.
Mar 26	086	13:56-20:24	212	033	Mar 26 13:56-14:24	126 ₁ *	208	2	5	Outer loop	Multiple, concentric loops/cavities superposed on rays. Deflections.
					Mar 26 14:24-18:59	067 ₁ * 059 ₂	215	8	6	Inner cavity	
Mar 27	087	04:41-07:22	225	016	—	—	—	—	0	No obvious front	Two part event, edge in pylon shadow: 1. Bright, irregular tongue superposed on rays. 2. Thin loop/cavity with fuzzy, internal loop/cavity(?) at north edge of outer loop. Northern leg of outer loop is superposed on rays from part one. Deflections. Loop is visible in southwest polaroid sequence.
		04:41-07:22 05:02-05:56			<204	>038	Mar 27 05:02-05:56	366 ₁ *	210	4	
Mar 27	087	06:31<14:07	~301	~028	—	—	—	—	0	No obvious front	Cloud superposed on rays and streamers. Could be wider.
											DATA GAP: Mar 27 07:22 to 13:46.
Mar 27	087	13:54-18:47	082	047	—	—	—	—	1	Front in 13:58 image. Edge visible at 13:54.	Loop(?)/cavity superposed on streamer. Rays at event boundary are bent. Big deflections. Region is disrupted.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 4 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 27	087	18:51-20:30?	246?	072?	—	—	—	—	1	Front visible for three minutes only. Very little motion.	Faint, thin loop/cavity superposed on rays and streamers. Deflections.
Mar 28	088	07:35-11:24?	225	021	Mar 28 09:10-10:50	127 ₁ * 151 ₂	225	5	5	Tongue	Irregularly-shaped tongue superposed on rays. Could be concave-outward, 'V'-shaped. Deflections.
Mar 28	088	10:35-13:51	~084	~024	—	—	—	—	0	Front visible for five minutes only. No apparent motion.	Fuzzy mound (or thick loop/cavity) superposed on rays. Deflections. Could extend as far south as 110°.
Mar 28	088	17:07-18:51	152	115	—	—	—	—	0	Front at 17:09 only	Wide loop/cavity superposed on wide fan (or streamer). Deflections.
Mar 28/29	088/089	22:13~01:02	222	024	—	—	—	—	0	No clear front	Irregularly-shaped tongue superposed on rays. DATA GAP: Mar 29 01:31 to 04:51.
Mar 29	089	05:50-07:26	~228	~010	—	—	—	—	0	Front visible for ninety seconds only. No apparent motion.	Loop(?)/cavity superposed on rays. Deflections. Could extend as far north as 262°.
Mar 29	089	06:01-10:34?	~352	~032	—	—	—	—	0	Missed front?	Irregular material with cavity and core superposed on rays. Probably missed the front between 00:57 and 06:01 images. (See previous DATA GAP). Core is visible in north images. Region is disrupted. Deflections.
Mar 29	089	09:01-12:11	~040	~030	—	—	—	—	0	No clear front	Fuzzy tongue superposed on streamer. Big deflections.
Mar 29	089	10:49?-13:51?	238	032	Mar 29 10:49-11:00	616 ₁ * 1035 ₂	230	4	4	Loop	Irregular loop/cavity just south of faint rays (or fan). Deflections. Motion in region at 09:05.
Mar 29	089	13:49-20:13	142	026	Mar 29 15:23-17:12	022 ₁ *	142	4	3	Cavity	Loop/cavity superposed on streamer (or fan). Region is disrupted. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 5 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 29/30	089/090	15:26~04:24	236	041	—	—	—	—	0	Too fuzzy	Mound superposed on rays. Front of mound evolves and fades.
Mar 29/30	089/090	22:00-02:37	177	050	Mar 29/30 22:00-01:01	117 ₁ * 127 ₂	190	3	5	Cavity	Loop(?)/cavity. Front of loop obscured by pylon shadow. Deflections.
Mar 30	090	10:33-12:09	327	020	—	—	—	—	0	No obvious front	Faint fan (or jets). Best seen in 10:33 image.
Mar 30	090	13:47-15:25	~062	~039	Mar 30 13:47-14:25	257 ₁ * 381 ₂	055	6	6	Cavity	Thin loop/cavity superposed on rays and streamers. Could extend as far south as 096°.
Mar 31	091	15:40-21:54	136	052	Mar 31 15:40-17:02	188 ₁ 302 ₂ *	135	5	7	Outer loop	Multiple, concentric loops/cavities with highly structured, arrowhead-shaped (prominence) core superposed on fan (or streamers). Core is bright in 18:50 h α image. Deflections. Region is disrupted.
					Mar 31 15:40-17:02	177 ₁ 316 ₂ *	135	5	7	Outer cavity	
					Mar 31 17:00-18:43	216 ₁ * 283 ₂	139	6	5	Back of 'arrowhead'-shaped core (prominence)	
											DATA GAP: Apr 01 04:24 to 11:05.
Apr 01/02	092/093	12:08-02:38?	240	042	—	—	—	—	0	No obvious front	Slow rising loop(?)/cavity (or mound) superposed on streamer. Front evolves. Region is disrupted. Deflections.
											DATA GAPS: Apr 02 02:40 to 10:42. Apr 02 11:10 to 15:38. Apr 03 01:52 to Apr 04 17:11.
Apr 04/05	095/096	20:15<07:33	100	020	—	—	—	—	0	No obvious front	Fuzzy mound superposed on rays (or streamer). Deflections.
											DATA GAP: Apr 04 21:02 to Apr 05 07:28.

Speed₁ \Rightarrow Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ \Rightarrow Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 6 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 05	096	07:28<20:07 07:28-12:07	343	044	Apr 05 07:55-09:33	047 ₁ * 069 ₂	337	3	4	Loop	Two part event: 1. Loop/cavity superposed on streamer. Surrounding rays move toward streamer during event. 2. Concave-outward, 'U'-shaped blob in 15:45 and 15:47 images at 343° 4R _☉ superposed on streamer. Material is ejected until ~21:49.
		~15:45~21:49									
Apr 05	096	09:10-14:01	250	030	—	—	—	—	0	No obvious front	Small, fuzzy cloud with blobs superposed on rays. Deflections.
Apr 05/06	096/097	12:11~02:41	097	046	—	—	—	—	0	Front at 12:11 only	(Multiple?) loop(?)/cavity superposed on streamer. Front is asymmetric. Concave-outward, 'U'-shaped material follows loop. Loop is visible at edge of field of view in 12:11 image. Gone from field of view by 12:45. Blobs (or clouds) ejected until ~02:41. Streamer is blown out. Deflections.
					Apr 05 12:11-13:52	234 ₁ * 197 ₂	090	3	5	Concave-outward material	
Apr 06	097	02:46-18:38	~220	~042	—	—	—	—	1	Loop	Fuzzy loop/cavity superposed on rays. Deflections. Evolves and fades by ~06:01. Fuzzy, concave-outward(?), 'U'-shaped material ejected from ~10:45 until ~18:38. Blob ejected north of 'U'-shaped material from 17:00 until ~18:38.
					Apr 06 10:45-14:06	026 ₁ * 023 ₂	210†	5	4	Concave-outward 'U'-shape	
		17:00~18:38	233	010	Apr 06 17:02-17:32	541 ₁ * 482 ₂	237†	5	4	Blob	
Apr 06	097	04:43-10:37	~052	~052	—	—	—	—	1	Mound	Fuzzy mound superposed on streamer. Deflections.
Apr 06	097	08:54-10:41	086	020	—	—	—	—	1	Greenline images only	Structured mound superposed on streamer in greenline images. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

** Event was detected in the narrow bandwidth 5300-5306Å 'green line' of Fe XIV.

SMM C/P 1980 Coronal Mass Ejections page 7 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 06	097	~16:58~20:25	068?	043?	—	—	—	—	0	Front at 18:34 only	Streamer at 065° swells slowly from ~16:58 until 17:29. Flattened loop/cavity appears in following frame at 18:34 just south of streamer. Streamer is disrupted. Deflections. Narrow material may have been ejected along ray at 062° from 15:20 until 15:34.
Apr 06/07	097/098	21:48<09:10	060	041	Apr 06/07 23:22-00:58	022 ₁ * 018 ₂	060	5	5	Loop	Fuzzy, concave-outward(?) 'U'-shaped material at 21:48 superposed on streamer (or fan).
					Apr 06/07 23:22-00:58	023 ₁ * 007 ₂	060	5	5	Cavity	Loop/cavity follows material from 23:20 until ~03:10. Loop fades. Region is disrupted. Deflections. Fuzzy, concave-outward, 'wishbone'-shaped material ejected late in event. No east sector images between 04:17 and 09:10. Material gone by 09:10.
Apr 07	098	04:05-07:45	320	081	Apr 07 04:05-04:46	708 ₁ * 717 ₂	295	5	7	Loop	Bright loop/cavity with structured core superposed on rays. Deflections. Rays are blown out.
					Apr 07 04:05-04:46	709 ₁ * 662 ₂	295	5	7	Cavity	
Apr 07	098	14:01-15:25	~035	~040	—	—	—	—	0	Front visible for eleven minutes only. No apparent motion.	Very faint cloud (with cavity?) superposed on faint rays. Deflections.
Apr 08	099	14:28~19:12	~272	~040	Apr 08 15:21-17:01	105 ₁ * 094 ₂	280	3	4	Mound	Irregular mound (or cloud) superposed on rays. Deflections. Region is disrupted.
Apr 09	100	04:21<09:00	218	009	—	—	—	—	0	No obvious front	Narrow tongue ejected just north of streamer. Deflections.
DATA GAP: Apr 09 04:53 to 07:15.											

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 8 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 09	100	12:43~15:40	282	075	—	—	—	—	1	Mound	Irregularly-shaped mound with some internal structure (and cavity?) superposed on rays (or streamers). Deflections.
Apr 09/10	100/101	21:37~02:35	262	065	Apr 09 23:16-23:59	329 ₁ * 435 ₂	265	12	5	Inner cavity	Multiple(?) loop/cavity and complex, (multiple?) loop-shaped core superposed on rays. Region is partially blown out. Deflections. Blobs ejected late along southern leg of event.
Apr 11	102	04:00>04:41 04:00>04:41	255	023	—	—	—	—	0	Greenline only	Could be two events: 1. Concave-outward(?), 'U'-shaped cloud (or blob) superposed on fan and ray. 2. Blob 'N Ray.
		04:21>04:41	~288	—	—	—	—	—	0	Greenline** only	
Apr 11	102	07:56-09:33	288	082	Apr 11 07:56-09:09	509 ₁ * 512 ₂	260	4	5	Southern cavity	Faint, multiple, adjacent loops/cavities (or single, broad, irregularly-shaped loop/cavity) superposed on existing structures. Southern loop/cavity is visible until ~09:12. Northern loop/cavity evolves into a broad cloud with concave-outward(?), structured core after 07:58. Deflections.
					Apr 11 08:58-09:12	282 ₁ * 384 ₂	280	4	3	Concave-outward shaped core	
Apr 11	102	14:10~20:44	280	029	—	—	—	—	1	Loop	Small loop/cavity with small, bright, structured (prominence?) core superposed on rays. Deflections.
					—	—	—	—	1	Core (prominence?)	
Apr 11	102	18:26-20:23	013	027	—	—	—	—	0	Visible in one image only	Mound superposed on rays in one image only.
DATA GAP: Apr 11 21:37 to Apr 12 00:57.											
Apr 12	103	04:04>18:27	077	035	—	—	—	—	0	Too fuzzy	Could be two events: 1. Cavity(?) in streamer. Streamer swells and disrupts. Appears to collide with material in part two. 2. Irregularly-shaped, structured mound. Northern part is superposed on streamer and fan. Southern part of mound is concave-outward, 'wishbone'(?)-shaped. Deflections.
		04:04>18:27			—	—	—	—	0	Too fuzzy	
		07:16-10:32	112	034	—	—	—	—	0	Too fuzzy	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

** Event was detected in the narrow bandwidth 5300-5306Å 'green line' of Fe XIV.

SMM C/P 1980 Coronal Mass Ejections page 9 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 12	103	07:20~23:42	253	010	—	—	—	—	0	No obvious front	Two part: 1. Narrow tongue superposed on ray. Ray fades. Deflections. 2. Small cavity appears in streamer and moves outward. Deflections. Streamer is disrupted.
		07:20~14:13		018							
Apr 12	103	<15:13>18:25	~003	—	—	—	—	—	1	Material	Faint material superposed on ray. Deflections. Could have missed the front between 13:56 and 15:13 images. No north images between Apr 12 18:25 and Apr 13 00:49. Ends during north sector data gap.
Apr 12	103	15:15-17:24	~117	~055	—	—	—	—	0	Front visible for ninety seconds only. No apparent motion.	Mound (or loop/cavity) in 15:15 and 15:17 images. Northern edge is well defined; southern edge is very fuzzy. Event is superposed on streamer and surrounding rays. Deflections.
Apr 12/13	103/104	21:33~05:42	253	035	Apr 12 21:33-22:21	398 ₁ * 335 ₂	250	4	6	Tongue	Tongue (or loop/cavity) with (prominence?) core superposed on streamer and rays. Deflections. Hint of h α emission in core in 23:23 h α image.
Apr 13	104	07:12-12:02	~008	~015	—	—	—	—	0	No obvious front	Faint fan of material at 07:12 superposed on faint rays. Second fan appears in same location at 10:24. Motion in northwest region throughout event. Event may be wider.

Speed₁ \Rightarrow Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ \Rightarrow Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 10 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Apr 13	104	09:10-10:32	~302	—	—	—	—	—	0	Jets	Narrow jets ejected at 277° and 302°. Jet at 302° is brighter. Motion in ray at 333°. Very faint cloud ejected(?) from 277° to 333°.
			304?	056?	—	—	—	—	0	Cloud	
Apr 14	105	04:49-08:47	005	051	Apr 14 04:49-06:10	285 ₁ 409 ₂ *	005	3	9	Outer loop	Archetypal loop/cavity with structured, interior (prominence) loop/cavity. Inner loop emitting in line of $h\alpha$ at 07:18 and 07:21. Event is superposed on rays. Western leg is superposed on streamer. Loop front flattens as it moves out through field of view. Region is blown out. Deflections.
					Apr 14 04:49-06:10	292 ₁ 374 ₂ *	005	3	9	Outer cavity	
			006	030	Apr 14 05:44-07:21	266 ₁ 365 ₂ *	005	5	9	Inner loop (prominence)	
					Apr 14 05:44-07:21	275 ₁ 353 ₂ *	005	5	9	Inner cavity	
Apr 14/15	105/106	08:47~23:19	313	038	Apr 14/15 09:09-04:23	019 ₁ * 017 ₂	305	23	5	Outer loop	Multiple, concentric(?) loops/cavities with amorphous core in streamer just west of previous 04:49 event. Streamer is disrupted. Large deflections.
Apr 14	105	~08:55-16:49?	126	028	—	—	—	—	0	No obvious front	Irregularly-shaped material superposed on system of rays. Deflections.
Apr 14	105	15:35?-23:13?	~238	~042	—	—	—	—	0	No obvious front	Fuzzy material superposed on rays. Blob 'N Ray at 218° late in event from 21:37 until ~23:13. Deflections. Could be related to previous southeast event at 08:55.
Apr 14/15	105/106	23:09<04:01	020	060	—	—	—	—	0	Front in one image only	Structured mound (or loop/cavity) with core superposed on rays (or streamers). Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 11 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 15	106	~10:33~18:20	~075	~020	—	—	—	—	0	Front visible for eight minutes only. No apparent motion.	Two piece event: 1. Fuzzy mound superposed on streamer. 2. Fuzzy cloud (or mound) with structured interior. Event is superposed on streamers. Entire region is disrupted. Large deflections. Northern part of cloud is in same location as mound in part one. Are these the same feature?
		10:33-10:46									
		11:59~18:20	098?	070?	—	—	—	—	0	Front at 11:59 only	
Apr 15/17	106/108	~22:05~07:52	282	035	Apr 15/16 23:13-04:02	041 ₁ * 002 ₂	282	4	3	Cloud	Structured cloud superposed on rays. Evolves and fades. Fainter tongue (or jets) ejected just south of cloud. Irregularly-shaped cavity becomes visible in streamer by 15:44 on Apr 16. Cavity rises slowly in fan and rays. Deflections. Region is blown out.
	106/107	22:12~01:22	~250	~020	—	—	—	—	0	Tongue	
	107/108	15:44~07:52	292	028	—	—	—	—	1	Cavity	
Apr 15/16	106/107	23:07~02:19	049	034	Apr 15/16 23:07-00:40	227 ₁ * 224 ₂	050	7	5	Loop	Thick loop/cavity with highly structured, loop-shaped (prominence) core. Core is visible in the emission line of $h\alpha$ from 23:27 until 23:57. Event is superposed on streamer. Deflections.
			053	018	Apr 15 23:07-23:37	174 ₁ * 011 ₂	050	4	4	Cavity	
			~050	—	Apr 15 23:07-23:57	108 ₁ * 103 ₂	050	8	5	Core (prominence)	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 12 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 16/17	107/108	~04:00-23:46	~126	~057	Apr 16 15:37-19:59	015 ₁ * 019 ₂	120	5	3	First cloud	Corona brightens and swells. Succession of clouds ejected in same location. First cloud visible from Apr 16 15:37 until Apr 17 02:22; second cloud seen from Apr 17 05:34 until 07:10; third cloud visible from Apr 17 13:34 until end of day. All superposed on wide fan. Fan is disrupted. Deflections.
Apr 17	108	01:12-02:20	071	037	Apr 17 01:12-01:24	206 ₁ *	075	2	9	Mound	Faint mound superposed on rays.
Apr 17	108	05:32-06:02	113	045	—	—	—	—	1	Front visible for ninety seconds only. No apparent motion.	Thick, complex loop/cavity and core superposed on broad fan. Deflections.
Apr 17	108	08:42~10:40	~310	—	—	—	—	—	0	Missed front?	Broad cloud (or loop/cavity) with several interior features and structured (prominence?) material in northern leg. Northern leg is bright in h α image at 09:30. Event is superposed on streamers and rays. Streamers are disrupted. Deflections. We probably missed the front of the event between 07:54 and 08:42.
Apr 17	108	13:30~19:53	020	070	Apr 17 13:30-15:09	135 ₁ *	358	2	4	Cloud	Broad, faint cloud with possible embedded loop/cavity all superposed on streamers. Streamers are disrupted. Deflections.
Apr 17/18	108/109	22:06~08:48	303	—	—	—	—	—	0	No obvious front	Could be up to three events: 1. Small, bright jet. 2. Irregular loop/cavity with possible core superposed on fan (or streamer). Deflections. 3. Jet (or narrow, elongated loop/cavity).
		22:06-23:11	312	035	Apr 17 23:05-23:25	937 ₁ * 709 ₂	310	5	6	Loop	
		23:05-00:42	302	014	—	—	—	—	0	No obvious front	
Apr 18	109	~04:03~21:43	100	029	Apr 18 04:03-13:31	025 ₁ * 036 ₂	105	9	4	Mound	Broad mound (or loop/cavity) superposed on series of rays (or streamers). Possible concave-outward material forms later in event. Region is disrupted.

Speed₁ \Rightarrow Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ \Rightarrow Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 13 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 19	110	00:42~07:48	~105	~036	—	—	—	—	1	Mound	Two part event: 1. Faint mound (or loop/cavity) superposed on fan. Deflections. 2. Bright jets.
		00:42-04:00									
		04:00~07:48	095	015							
Apr 19	110	02:20~16:46	225	050	Apr 19 04:07-10:40	025 ₁ 047 ₂ *	223	16	6	Cavity	Fuzzy loop/cavity and structured core superposed on streamer. Rays above loop front are disrupted. Base of core has concave-outward 'U'-shape from ~13:36 until end of event. Streamer is blown out.
			226	024						Core	
Apr 19	110	~03:52~07:54	~323	—	—	—	—	—	1	Jet	Structured, twisted jet superposed on bright ray.
Apr 19	110	~07:54-09:06	301?	053?	Apr 19 07:54-08:36	655 ₁ *	306	2	4	Loop	Faint loop/cavity and structured core ejected between two streamers. Northernmost streamer is blown out. Large deflections. Event may extend as far south as 260°.
Apr 20	111	08:42~11:53	081?	080?	—	—	—	—	0	Too fuzzy	Flattened(?), complex mound (or cloud) with possible loop/cavity at southern edge all superposed on existing structures. Deflections.
Apr 20	111	15:34-20:00	316	042	Apr 20 15:34-17:03	222 ₁ *	310	3	3	Loop	Irregularly-shaped loop/cavity and structured core superposed on fan. Faint cloud may precede loop front. Deflections.
DATA GAP: Apr 20 23:50 to Apr 21 03:50.											
Apr 21/22	112/113	~10:29~22:13	240	040	—	—	—	—	0	No obvious front	Faint, small loop/cavity with core superposed on rays. Region is disrupted. Deflections.
			241	017						—	
Apr 21	112	12:21-16:56	~191	~046	—	—	—	—	0	Front at 12:21 only	Concentric(?) loops/cavities(?) largely obscured by pylon shadow. Loops are superposed on rays (or streamer). Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 14 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 21/22	112/113	14:59~16:47	046	053	Apr 21/22 15:10-01:17	021 ₁ * 009 ₂	050	15	7	Cavity	Loop/cavity superposed on rays. Material appears late in event. Deflections.
Apr 22	113	17:29~19:47	111 107	032 —	—	—	—	—	1	Loop	Fuzzy, irregularly-shaped loop/cavity and small, bright core superposed on streamer (or fan). Region is disrupted.
					—	—	—	—	0	Core	
DATA GAPS: Apr 23 07:44 to 10:14. Apr 23 22:01 to Apr 24 00:35.											
Apr 24	115	10:22~12:37	~137	~057	Apr 24 10:24-11:05	750 ₁ * 980 ₂	139	6	7	Loop	Fuzzy, structured loop/cavity with structured (prominence?) core superposed on rays. Deflections.
					Apr 24 11:51-12:17	368 ₁ * 152 ₂	136†	5	5	Core (prominence?)	
Apr 24	115	~10:28~23:14	251	043	Apr 24 10:28-16:50	023 ₁ * 026 ₂	254†	13	6	Cavity	Cavity rises slowly in streamer. Loop becomes visible around cavity. Cavity has well-defined concave-outward, back edge (detached?) after ~13:30. Streamer is disrupted.
Apr 25/26	116/117	15:05~13:33	027	057	Apr 25 15:05-20:37	021 ₁ *	013	2	5	Cavity	Loop/cavity in streamer. Motion in streamer began on previous day. Streamer is disrupted. Deflections. Wider, faint cloud visible on Apr 26 from 00:36 until ~13:33.
Apr 25	116	~15:13~15:39	142	055	—	—	—	—	0	Front at 15:20 only	Faint cloud superposed on rays. Deflections.
DATA GAP: Apr 25 15:54 to 18:10.											
Apr 26	117	~07:06~18:41	252	033	—	—	—	—	0	Too faint	Faint mound (or cloud) superposed on rays (or streamers). Deflections.
Apr 27	118	02:12~07:03	091	038	—	—	—	—	0	—	Could be more than one event: 1. Fan (or jet) superposed on streamer. 2. Loop/cavity superposed on streamer overtakes fan (from part one). Deflections. Region is disrupted. 3. Structured cloud. Southern edge is brighter. Deflections.
		02:12~02:51 02:46-03:48			Apr 27 02:46-02:58	596 ₁ * 212 ₂	095	5	5	Loop	
		05:38-07:03			—	—	—	—	0	Too fuzzy	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 15 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAPS: Apr 27 11:49 to Apr 28 21:24. Apr 29 10:41 to 13:18.
Apr 29	120	13:20~14:54	121 121	048 033	Apr 29 13:20:06-13:21:50	1338 ₁ *	120	2	6	Loop Cavity	Thin loop/cavity with highly structured, multi-featured core superposed on rays. Second, more narrow, cavity follows core. Large deflections. Region is disrupted.
Apr 29/30	120/121	13:34-13:28	257	030	Apr 29 13:34-19:51	038 ₁ * 049 ₂	250	6	2	Mound	Structured mound (or loop/cavity) superposed on streamer. Front appears to stall between 15:35 and 18:16 on Apr 29. Acceleration(?) after 18:16. Front may be evolving or more than one structure may be present. Deflections. Region is blown out. Additional material is ejected from ~11:56 until 13:28 on Apr 30.
Apr 30	121	03:54<08:36	~116	~046	Apr 30 03:54-04:04	602 ₁ * 393 ₂	125	6	5	Southern edge of material	Complex, structured material (with cavities?) (or two adjacent, overlapping loops/cavities) superposed on faint fan and north edge of rays (or streamer). Southern edge leads northern edge. Deflections.
											DATA GAP: Apr 30 04:31 to 06:54.
Apr 30	121	11:50~13:24	066	042	Apr 30 11:52-12:08	803 ₁ * 783 ₂	080	4	6	Cloud	Structured cloud with embedded cavity superposed on fan.
					Apr 30 11:52-12:29	439 ₁ * 558 ₂	072	10	5	Interior cavity	
											DATA GAPS: Apr 30 13:40 to 15:38. Apr 30 15:46 to 18:06.
Apr 30/ May 01	121/122	19:45<00:50?	040 039	055 014	Apr 30 19:45-21:26	182 ₁ 252 ₂ *	030	4	9	Outer cavity	Multiple, concentric loops/cavities with structured (prominence?) core on and north of streamer. 'Light-bulb'-shaped by 21:21.
					Apr 30 19:45-21:29	084 ₁ 144 ₂ *	040	5	7	Core (prominence?)	Large deflections. Streamer is blown out. Ends during data gap.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 16 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAP: Apr 30 21:51 to May 01 00:46.
May 01	122	08:38-16:31	240	037	May 01 08:38-16:31	038 ₁ * 011 ₂	245	6	6	Loop	Loop/cavity superposed on fan and rays. Faint material may precede loop front. Fan is disrupted.
May 01	122	16:53~20:28	~102	~075	May 01 16:55-17:14	368 ₁ * 515 ₂	110	3	5	Material	Could be more than one event: 1. Faint, irregularly-shaped material with multiple blobs and jets superposed on existing coronal structures. 2. Cloud with structured loop/cavity. Arc-shaped blob at northern edge. Event is superposed on and between streamers. Small embedded cavity is visible in southern part of cloud in 20:28 image. Deflections.
		16:53-18:25									
											DATA GAP: May 02 08:38 to May 04 14:56.
May 04	125	15:04~22:05	124	042	—	—	—	—	1	Cloud	Structured cloud with possible cavity superposed on streamer. Streamer is disrupted. Deflections.
											DATA GAP: May 05 05:54 to 08:26.
May 05	126	08:31~13:22	207?	045?	—	—	—	—	0	Front at 08:31 only	Two part event: 1. Cloud partly obscured by pylon shadow. Could extend as far east as 100°. Deflections. 2. Small bright arc of structured (prominence?) material superposed on rays.
		08:31-10:24									

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 17 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 05	126	10:34~15:19	299	109	May 05 10:34-11:38	516 ₁ 625 ₂ *	300	7	7	Outer loop	Bright loop/cavity with highly structured, (multiple?) inner (prominence) loop/cavity. Northern leg of inner loop contains complex, coiled structures and is extremely bright in $h\alpha$ filter. Outer loop flattens as it moves out. Event is superposed on streamers and rays. Region is partially blown out. Big deflections.
					May 05 10:41-11:38	540 ₁ 297 ₂ *	300	5	7	Outer cavity	
					May 05 10:47-12:01	487 ₁ * 483 ₂	295	8	7	Inner loop (prominence)	
May 06	127	00:30-02:08	238	030	—	—	—	—	1	Loop	Faint loop/cavity and concave-outward(?), 'U'-shaped core superposed on streamer. 'U'-shape is visible from 01:00 to 01:11. Deflections.
May 06	127	10:17~13:57	~281	~070	May 06 10:24-10:45	233 ₁ * 420 ₂	275	7	5	Outer loop	Thick, fuzzy loop/cavity with complex, structured, interior (prominence) loop/cavity superposed on rays between streamers. Inner loop contains bright knots visible in $h\alpha$ filter from 10:34 until 12:17. Region is partially blown out. Large deflections.
					May 06 10:24-11:53	258 ₁ 430 ₂ *	275	11	7	Outer cavity	
					May 06 10:43-12:10	250 ₁ * 306 ₂	282	12	7	Inner loop (prominence)	
May 06	127	21:09~23:18	225	010	—	—	—	—	0	No obvious front	Two part event: 1. Narrow fan. 2. Cloud superposed on streamers (or rays).
		21:09~23:18			181	057	May 06 22:02-23:18	291 ₁ 564 ₂ *	190	5	
											DATA GAP: May 07 04:23 to 13:22.
May 07/08	128/129	<16:26~14:54	094	059	—	—	—	—	1	Loop	Slowly rising loop/cavity superposed on streamer. Evolves and fades. Region is blown out. Deflections.
											DATA GAPS: May 08 15:07 to 18:32. May 08 21:36 to May 09 06:45. May 09 10:30 to 13:24.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 18 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual			
May 09/10	130/131	~13:24~02:40	313	037	—	—	—	—	1	Mound	Mound (or cloud) in streamer. 'Light-bulb'-shaped by 18:02. Streamer is blown out. Deflections.	
May 09/10	130/131	<13:48~01:55	~029	~093	—	—	—	—	0	Too faint	Very faint cloud (or mound) superposed on background structures. Region is blown out. Deflections.	
May 09/10	130/131	22:53-01:57	113?	070?	—	—	—	—	0	Too faint	DATA GAP: May 09 15:31 to 17:56. Faint cloud superposed on streamers and rays. Deflections.	
											DATA GAPS: May 10 10:44 to Jun 03 13:58. Jun 03 21:12 to Jun 18 12:23. Jun 18 17:31 to 20:07.	
Jun 18/19	170/171	20:07~05:43	064	077	Jun 18 20:07-22:07	194 ₁ 305 ₂ *	070	11	5	5	Outer loop	Thick, wide loop/cavity with thick, flat-topped inner (prominence?) loop/cavity in streamer. Streamer is blown out. Big deflections.
					Jun 18 20:07-22:07	130 ₁ 262 ₂ *					Outer cavity	
					Jun 18 21:40-22:07	242 ₁ * 282 ₂					Inner loop (prominence?)	
											Inner cavity	
Jun 19	171	~12:20~23:28	040	040	Jun 19 12:20-17:03	065 ₁ 127 ₂ *	038	5	5	Cavity	Cavity and core superposed on streamer and rays. Loop becomes visible around cavity. Region is disrupted. Deflections.	
Jun 19/20	171/172	23:41-04:20	~207	~045	Jun 19/20 23:41-01:21	126 ₁ * 114 ₂	215	11	8	8	Loop	Loop/cavity and core superposed on streamer (or fan). Deflections. Region is blown out.
					Jun 19/20 23:41-01:21	139 ₁ * 170 ₂					Cavity	
					Jun 20 00:58-02:57	178 ₁ * 237 ₂					Core	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 19 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 20	172	~03:00>14:17	301	071	—	—	—	—	1	Top of streamer	Streamer swells slowly. Low contrast cavity appears in streamer and blows out from ~04:05 until 14:17. Inner loop(s?)/cavity visible from ~13:53 until 14:17. Big deflections. Region is blown out following data gap from 14:17 until 04:10.
			302?	049?	—	—	—	—	1	Cavity	
DATA GAP: Jun 20 14:22 to Jun 21 04:03.											
Jun 21/24	173/176 173	~09:10~22:09	~272	~015	—	—	—	—	0	Too fuzzy	Very slow. Could be more than one event: 1. Narrow cavity in streamer. Streamer is disrupted. Deflections. 2. Small, narrow mound (or cloud). Deflections. 3. Slow rising, cloud superposed on streamer and rays. Region is blown out. Deflections.
		~09:10~15:41									
		20:20>09:24									
	173/174	20:20>09:24	260?	024?	Jun 21/22 21:59-09:24	014 ₁ * 018 ₂	250	5	5	Mound	
	175/176	04:26~22:09	~260	~035	—	—	—	—	0	Too faint	
Jun 21	173	12:27-15:41	309	006	—	—	—	—	0	No clear front	Small blob and jet superposed on fan. Deflections.
DATA GAP: Jun 21 12:27 to 15:19.											
Jun 21/22	173/174	23:10-02:39	~103	~025	Jun 21/22 23:10-01:05	192 ₁ * 177 ₂	105	10	7	Loop	Very faint, very thin loop(?)/cavity with possible core superposed on rays and streamers. Deflections.
DATA GAPS: Jun 22 09:29 to 12:22. Jun 22 12:23 to 21:34. Jun 24 08:55 to 11:55. Jun 25 04:43 to 15:05. Jun 25 18:23 to Jun 26 02:15. Jun 26 07:47 to 11:52.											

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 20 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Jun 26/27	178/179	~12:27~00:47	207	068	Jun 26 21:51-22:03	449 ₁ * 351 ₂	220	8	5	Outer loop	Slow rising mound superposed on streamer. Concentric loops/cavities with core in same streamer late in event from 21:51 until ~22:03. Flattened loop/cavity from 23:07 until ~00:47 on Jun 27. Deflections. Are inner loop in 21:51 image and flattened loop in 23:07 image the same structure? Velocities of the two loops have been listed separately.
		21:51-22:03	215	030	Jun 26 21:51-22:03	473 ₁ * 740 ₂	220	8	5	Inner loop	
	178/179	23:07-00:47	210	017						Core	
			216	015	Jun 26 23:07-23:40	359 ₁ * 333 ₂	220	6	5	Flattened loop	
					Jun 26 23:07-23:40	366 ₁ * 335 ₂	215	8	5	Cavity following flattened loop	
Jun 27/28	179/180	~02:10~19:57	~226	~042	Jun 27 02:10-10:28	019 ₁ * 029 ₂	227	15	4	Outer cavity	Slow rising cavity with complex, structured (prominence?) cores in streamer. Faint loop(?)/cavity superposed on and north of same streamer from Jun 27 03:46 until ~08:46. Cavities and cores blow out slowly over two days. Streamer is blown out. Deflections.
					Jun 27 03:46-13:31	016 ₁ * 010 ₂	227	23	4	Outer core (prominence?)	
					Jun 27 07:15-23:05	017 ₁ * 022 ₂	226†	27	4	Inner core (prominence?)	
										DATA GAP: Jun 27 13:45 to 16:37.	
Jun 27	179	16:59?~23:07	247	035	Jun 27 16:59-17:25	346 ₁ * 413 ₂	253	4	3	Loop	Fuzzy, 'light-bulb'-shaped loop/cavity with complex (loop-shaped?) core between streamers and just north of Jun 27 02:10 event. Core is pinched at base to form concave-outward, 'C'-shape. Deflections. Event may have started earlier.
					Jun 27 16:59-17:27	333 ₁ * 276 ₂	253	9	4	Cavity	
					Jun 27 16:59-18:14	227 ₁ * 143 ₂	253	13	6	'C'-shape in core	
										DATA GAP: Jun 28 15:23 to 17:03.	
Jun 29	181	02:44>21:53	240	025	Jun 29 02:44-02:59	690 ₁ * 653 ₂	250	7	7	Loop	Could be two events: 1. Loop/cavity with complex, structured core superposed on rays. 2. Irregularly-shaped material (loop/cavity?) ejected between rays.
		02:44~04:29									
		18:39~21:53	244	025	Jun 29 18:39-18:59	1172 ₁ * 825 ₂	250	8	4	Material	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 21 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: (due to premature closing of shutter) Jun 29 10:48 to 13:22. Jun 30 00:00 to 08:37.
Jul 01	183	01:01-02:44	255	—	—	—	—	—	0	No front	Small, narrow jet superposed on fan.
Jul 02	184	05:15~11:44	357	069	—	—	—	—	1	Faint	Faint cloud superposed on and between streamers. Deflections.
											DATA GAP: Jul 02 23:38 to Jul 03 03:34.
Jul 04	186	08:27-10:16	221	019	—	—	—	—	0	Front at 08:26 only	Fuzzy cloud superposed on pre-existing faint structures. Deflections.
Jul 05	187	06:45-13:18	355	076	—	—	—	—	0	No clear front	Could be more than one event: 1. Faint mound superposed on streamers. Deflections. 2. Narrow tongue (or loop/cavity).
		06:45~11:34	~325	—	Jul 05 11:34-12:11	245 ₁ * 195 ₂	322†	9	5	Tongue	
Jul 05	187	11:34~22:45	050?	050?	—	—	—	—	1	Mound	Mound superposed on streamers. Cavity embedded in north edge of mound superposed on northern streamer. Region of streamer in vicinity of cavity is blown out. Deflections.
			045	015							
Jul 05/06	187/188	11:36~22:47	084	068	Jul 06 00:21-08:20	025 ₁ 049 ₂ *	075	5	5	Loop (late in event)	Cavity rises slowly in broad diffuse streamer (or fan). Loop becomes visible around cavity Jun 06 at ~00:21. Bright core appears at 03:38 on Jun 06. Region is disrupted. Deflections.
Jul 05	187	~11:39~19:36	138	050	—	—	—	—	1	Loop	Fuzzy, faint loop/cavity with loop-shaped core superposed on streamer and rays. Deflections. Entire sector is brighter due to ongoing activity.
			134	025							
Jul 05/06	187/188	23:07~00:39	~305	~050	—	—	—	—	0	Too faint	Irregularly-shaped material superposed on fan.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 22 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Jul 06	188	00:23~08:53	~263	~085	Jul 06 00:25-00:59	911 ₁ * 1005 ₂	270	16	7	Loop	Loop/cavity with amorphous core superposed on background fans. Region is disrupted. Big deflections.
					Jul 06 00:25-00:59	918 ₁ 1190 ₂ *	270	16	7	Cavity	
			249	045	Jul 06 00:32-00:58	832 ₁ * 863 ₂	250	8	5	Core	
Jul 06/08	188/190	~17:54~05:47	300	033	—	—	—	—	0	Too fuzzy	DATA GAP: Jul 06 09:00 to 11:39. Slow disruption of streamer. Deflections.
Jul 09	191	00:11-02:08	292	026	Jul 09 00:11-00:52	484 ₁ * 388 ₂	300	9	7	Outer loop	Multiple, concentric loops/cavities with complex, structured (prominence?) core superposed on streamer. Loop front flattens as it moves outward. Loop becomes 'light-bulb'-shaped. Streamer is disrupted. Deflections.
Jul 09 00:11-00:52	424 ₁ * 378 ₂	300	9	8	Inner cavity						
Jul 09 00:11-00:57	409 ₁ * 408 ₂	300	10	7	Core (prominence?)						
Jul 09/10	191/192	01:50<08:16	077	037	—	—	—	—	0	No obvious front	Two part event. Poor coverage. Data dropouts and data gaps throughout both parts of event. 1. Cloud north of and superposed on streamer. 2. Elongated cloud. Could extend further south.
	191	01:50<22:43			—	—	—	—	0	No obvious front	
	192	~01:47<08:16			~064	~034	—	—	—	—	
											DATA GAPS: Jul 09 02:28 to 22:40. Jul 10 16:25 to 19:24. Jul 11 00:53 to Jul 12 16:03. Jul 12 16:43 to 20:55. Jul 13 03:40 to Jul 14 14:28.
Jul 15	197	05:29~11:10	090	014	—	—	—	—	0	No obvious front	Narrow, faint cloud superposed on streamers and rays.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 23 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 16	198	17:35-23:57	226	057	Jul 16 17:35-19:13	091 ₁ *	225	4	3	Cavity	Faint, fuzzy, flattened loop/cavity with faint (loop-shaped?) core superposed on rays and streamers. Deflections. DATA GAP: Jul 16 19:27 to 22:17.
Jul 17	199	06:36~07:53	066?	034?	Jul 17 06:36:02-06:41:08	1054 ₁ *	068	4	5	Cavity	Could be two events. Same start/stop times for both parts. 1. Faint loop/cavity superposed on streamer.
			126?	046?	—	—	—	—	0	No clear front	2. Faint cloud superposed on streamers. DATA GAP: Jul 17 11:45 to 14:15.
Jul 17	199	<14:15~15:52	042	015	—	—	—	—	0	No obvious front	Faint mound (or loop/cavity) between streamers. Not visible in previous image at 11:14. DATA GAP: Jul 18 07:52 to 14:14.
Jul 19	201	06:15-11:05	358	075	—	—	—	—	1	Loop	Faint loop/cavity superposed on rays. Deflections. Region is disrupted. EAST DATA ONLY: Jul 19 18:57 to 22:48.
Jul 21	203	03:16~09:55	~255	~040	—	—	—	—	1	Mound	Mound superposed on streamer. Irregularly-shaped material seen in 06:12 image. Deflections. Event may be wider. DATA GAPS: Jul 21 03:35 to 06:06. Jul 21 06:52 to 09:18.
Jul 21/22	203/204	~21:21~09:45	~212	~045	—	—	—	—	0	Outer loop	Multiple loops/cavities superposed on streamer. Outer loop is very faint. Streamer is disrupted. Streamer began slow expansion and brightening early Jul 20.
					—	—	—	—	1	Inner loop	
Jul 22	204	<06:04~09:52	~315	~050	—	—	—	—	0	Missed front	Cloud superposed on fan. Missed front between 02:58 and 06:04 images. Deflections. Region is disrupted.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 24 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Jul 23	205	~03:05~07:53	260	050	—	—	—	—	0	No obvious front	Very faint cloud (or mound) south of streamer. Deflections.
											DATA GAPS: Jul 24 17:59 to 20:36. Jul 25 13:08 to 17:10.
Jul 27/28	209/210	20:37~07:52	230	020	—	—	—	—	1	Cavity	Cavity rises in streamer (or fan). Material rises above cavity. Region is disrupted. Deflections.
											DATA GAP: Jul 28 12:24 to 15:30.
Jul 29	211	05:06~17:53 05:06-07:51 10:54~17:53	278 ~292	024 ~055	Jul 29 05:06-06:09 —	455 ₁ * 560 ₂ —	275 —	5 —	5 0	Loop No obvious front	Could be two events: 1. Flattened, faint loop/cavity superposed on and north of streamer. Deflections. 2. Cloud (or irregularly-shaped material) superposed on rays and streamer. Region is disrupted.
											DATA GAPS: Jul 29 19:21 to Aug 01 23:35. Aug 02 01:53 to 15:23. Aug 02 22:30 to Aug 03 02:34. Aug 04 01:37 to 18:31. Aug 05 03:15 to 07:23. Aug 05 07:29 to 12:04.
Aug 05	218	19:16-23:22	075 070	041 014	Aug 05 20:00-20:50 Aug 05 19:16-20:50 Aug 05 20:00-22:05	386 ₁ * 417 ₂ 294 ₁ 424 ₂ * 193 ₁ * 222 ₂	060 070 070	11 12 22	4 5 6	Loop Cavity Core (prominence?)	Flattened loop/cavity with amorphous (prominence?) core superposed on streamer. North side of loop balloons outward. Streamer is partially blown out. Deflections.
											DATA GAP: Aug 06 11:04 to Aug 08 21:32.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 25 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 09	222	18:25~20:01	282	057	—	—	—	—	0	No apparent motion in 2 images 90 seconds apart.	Faint mound superposed on streamers.
Aug 10	223	12:05~13:40	287	035	Aug 10 12:05-12:37	257 ₁ * 318 ₂	285	5	7	Loop	Faint, fuzzy loop/cavity with loop-shaped core superposed on faint fan.
Aug 10/11	223/224	~21:28-02:30 ~21:28-00:49	107	034	Aug 10 21:28-21:50	367 ₁ * 349 ₂	105	4	3	Loop	Could be two events: 1. Fuzzy loop/cavity superposed on fan.
	224	01:11-02:30	~143	~040	Aug 10 02:11-02:30	394 ₁ * 442 ₂	151	8	7	Material (prominence)	2. Bright, highly structured (prominence) material. Bright in h α filter at 01:11. Region is disrupted. Deflections.
DATA GAP: Aug 11 02:30 to 04:33.											
Aug 11	224	07:03-08:37	052	035	Aug 11 07:05-07:20	325 ₁ * 394 ₂	051†	6	7	Back edge of loop	Complex, structured (prominence?) loop/cavity superposed on fan.
Aug 11/12	224/225	~11:53-23:09	~226	~031	—	—	—	—	0	No obvious front	Three part event: 1. Faint mound (or cloud) superposed on and between streamers.
	224	~11:53~13:38			—	—	—	—	1	Cavity	2. Cavity rises in faint streamer. Streamer is disrupted.
	225	~11:54~23:09			~230	~030	—	—	—	0	Too faint
Aug 12	225	07:02~08:33	104	025	—	—	—	—	1	Mound	Irregularly-shaped mound superposed on streamer and rays. Deflections.
Aug 13	226	00:34-03:46	055	026	—	—	—	—	0	—	Mound (or loop/cavity) superposed on fan. Deflections. Artifact obscures front.
Aug 13	226	13:21-15:16	134	080	Aug 13 13:21-13:48	634 ₁ 1340 ₂ *	100	7	6	Outer loop	Complex, structured, irregularly-shaped loop/cavity with structured core including interior, narrow loop/cavity in southern half of core. Event is superposed on pre-existing structures. Deflections.
					Aug 13 13:23-13:48	376 ₁ * 531 ₂	165	7	4	Inner loop	
					Aug 13 13:23-13:50	328 ₁ * 667 ₂	165	7	3	Inner cavity	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 26 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
											DATA GAPS: Aug 13 18:33 to 22:52. Aug 14 14:58 to 18:13. Aug 15 11:52 to 16:26.
Aug 15/17	228/230	~21:22~02:33	~095 055 ~058	— 029 ~018	—	—	—	—	0		Two part event: 1. Fan ejected. 2. Material in streamer slowly expands and elongates. Cavity and core become visible in streamer late in event on Aug 16 ~19:36. Thick loop(?) becomes visible around cavity. Core is pinched at base to form concave-outward 'V'-shaped structure. Streamer is blown out. 'Light-bulb' shaped event.
		~21:22-11:47			—	—	—	0	No clear front		
		22:52?~02:33			Aug 16/17 19:36-01:06	069 ₁ 113 ₂ *	060	28	5	Cavity (late in event)	
											DATA GAPS: Aug 16 05:39 to 11:40. Aug 16 11:47 to 16:53. Aug 17 07:14 to 13:10.
Aug 18	231	11:43-16:19	113	048	Aug 18 11:43-12:15	408 ₁ 594 ₂ *	113	10	7	Loop	Cavity and highly structured (prominence) core rise in streamer. Streamer deforms into frontal loop around cavity. Loop front flattens and sharpens as it moves outward. Core is extremely bright in h α filter from 11:50 until 15:26. Streamer is blown out. Big deflections.
					Aug 18 11:43-12:15	499 ₁ 616 ₂ *	113	11	9	Cavity	
					Aug 18 11:43-13:10	502 ₁ 729 ₂ *	118	10	9	Core (prominence)	
Aug 18/19	231/232	~16:16~11:39	070	034	—	—	—	—	1	Top of streamer	Cavity rises slowly within streamer. Streamer expands and blows out by Aug 19 07:18. Jets ejected until ~11:39 on Aug 19.
											DATA GAPS: Aug 19 14:52 to 17:51. Aug 19 18:15 to 20:12. Aug 19 20:16 to Aug 21 01:49. Aug 21 03:27 to 06:37.

Speed₁ \Rightarrow Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ \Rightarrow Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 27 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 21/22	234/235	09:58?~06:46	~250	~020	—	—	—	—	0	No obvious front	Material in streamer expands laterally (northward) and outward. Deflections. Region is disrupted. Material may extend as far south as 210°.
Aug 22/23	235/236	05:42-03:57	069	042	—	—	—	—	1	Mound	Mound (or cloud) superposed on streamer. Big deflections. Region is disrupted following data gap from Aug 22 08:25 until 16:12. Jets (or fan) are ejected in region after data gap until ~03:57 on Aug 23.
											DATA GAP: Aug 22 08:54 to 16:10.
Aug 22	235	18:30-21:36	281	023	Aug 22 18:30-20:08	298 ₁ * 292 ₂	288†	23	7	Material (prominence)	Highly structured, complex (prominence) material superposed on fan (or streamer). Material is bright in h α filter from 18:30 until 19:49. Could have missed front of event between 16:51 and 18:30 images. Region is blown out. Deflections.
											DATA GAPS: Aug 23 04:02 to 07:16. Aug 24 04:03 to 08:08. Aug 25 03:48 to 08:26. Aug 25 12:47 to 17:49.
Aug 25/26	238/239	17:52~08:24	~267	~035	—	—	—	—	0	No obvious front	Cloud superposed on streamer. Deflections.
Aug 25/26	238/239	18:15~11:30	088	028	Aug 26 06:28-09:40	048 ₁ * 054 ₂	075†	3	4	Concave-outward structure	Narrow jet emerges along ray. Blob ejected along same ray at 19:18. Blob is pinched at base at 22:36. By 06:28 event is concave-outward, 'U'-shaped. Gone from field-of-view by 11:30. Deflections. Ray is blown out. Motion in region south of event.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 28 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: Aug 27 13:26 to 17:34. Aug 28 10:08 to 14:39. Aug 28 21:32 to Aug 29 03:39. Aug 29 13:20 to Aug 30 03:04. Aug 30 05:26 to 09:29. Aug 30 10:14 to 12:38.
Aug 30	243	14:32~19:06	180	049	Aug 30 14:32-18:12	059 ₁ * 047 ₂	175	3	5	Cavity	Loop/cavity superposed(?) on streamer. Spans pylon shadow. Deflections.
Aug 30/31	243/244	20:38~01:26	143	095	Aug 30 20:38-21:09	780 ₁ 1097 ₂ *	145	7	9	Loop	Thin loop/cavity with highly structured (prominence) core superposed on rays. Core is bright in h α filter from 20:56 until 22:38. Loop spreads laterally and outward. Big deflections. Region is disrupted. Small blobs ejected until ~01:26 on Aug 31.
					Aug 30 20:38-20:56	705 ₁ * 611 ₂	145	5	9	Cavity	
					Aug 30 20:38-21:17	663 ₁ * 692 ₂	154†	8	7	Core (prominence)	
Aug 31	244	03:01~07:56	051	058	—	—	—	—	1	Mound	Mound (or loop/cavity) with structured, interior, loop-shaped (prominence?) core superposed on streamer (or fan). Region is disrupted.
Aug 31	244	~03:09~11:07	098	025	—	—	—	—	0	No obvious front	Mound (or cloud) with possible cavity superposed on streamer. Deflections.
Aug 31	244	~06:17>23:54	240	040	—	—	—	—	1	Very little motion while visible	Faint loop/cavity (or mound) and core superposed on and south of streamer. Deflections. Data gap occurs during event.
											DATA GAP: Aug 31 13:20 to 20:35.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1980 Coronal Mass Ejections page 29 of 29

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 01	245	06:11-07:46	297	055	Sep 01 06:18-06:27	810 ₁ * 629 ₂	280	6	7	Outer loop	Multiple, concentric loops/cavities with highly complex, multi-featured (prominence?) core superposed on streamer. Loop front is flattened. Streamer is blown out. Big deflections.
					Sep 01 06:18-06:27	642 ₁ * 517 ₂	285	7	6	Outer cavity	
			297	023	Sep 01 06:18-06:27	626 ₁ * 683 ₂	290	7	7	'Mushroom-shape' (prominence?) core	
Sep 01	245	11:31-14:20	085	029	—	—	—	—	0	Front in one image only	Loop/cavity (or mound) superposed on streamer. Streamer is disrupted. Deflections.
											DATA GAP: Sep 01 16:35 to Sep 05 20:22.
Sep 06	250	~02:46>14:02	320	020	Sep 06 03:08-09:10	018 ₁ * 011 ₂	322	6	5	Northern cavity	Multiple adjacent loops/cavities: 1. Northern loop/cavity superposed on streamer. Moves more slowly than southern loop. Ends after data gap. 2. Southern loop/cavity superposed on streamer. Loop and streamer are blown out by 06:04. Deflections.
		~02:46>14:02									
											DATA GAPS: Sep 06 16:07 to Sep 07 21:53. Sep 08 01:51 to Sep 10 15:32.
											Due to large data gaps we will list times when DATA IS AVAILABLE: Sep 10 15:32 to 17:26. Sep 12 16:52 to 17:29. Sep 12 23:16 to 23:20. Sep 20 19:42 to Sep 21 20:24 Sep 22 16:47 to Sep 23 02:40.
Sep 22/23	266/267	~17:00>02:40	068	044	Sep 22/23 17:00-02:35	011 ₁ * 017 ₂	065	16	3	Mound	Faint mound (or cloud) between streamers. Observations end during event.
											DATA ENDS: Sep 23, 1980.
											Continuous operations resume Jun 07, 1984.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 1 of 9

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											First continuous observations resume Jun 07, 1984.
											DATA GAP: Jun 07 18:07 to Jun 08 14:15.
Jun 08	160	20:36-21:50	~275	~010	—	—	—	—	0	No clear front	Faint wisps of material at south edge of streamer. Could be wider. Deflections.
Jun 09	161	12:09~12:41	118?	055?	—	—	—	—	0	No clear front	Cloud superposed on southern edge of streamer. Northern edge tough to measure.
											DATA GAP: Jun 10 02:52 to Jun 11 05:00.
Jun 12	164	15:46-17:42	~259	023	—	—	—	—	1	Fan	Fan (or jet) superposed on faint rays. Deflections.
Jun 12	164	21:03-23:37	~129	~052	—	—	—	—	1	Cloud	Cloud superposed on and north of streamer.
Jun 14	166	12:05-19:40	116?	024?	Jun 14 13:45-15:20	211 ₁ *	114†	4	7	Cavity	Could be two events: 1. Diffuse loop/cavity superposed on faint streamer. Could be wider. Deflections. Region is disrupted. 2. Cloud (or loop/cavity) superposed on and south of disrupted streamer in part one. Deflections continue. Region is blown out.
		12:05-16:34			444 ₂						
		16:44-19:40	~099	~040	Jun 14 16:44-17:15	187 ₁ *	095	3	4	Cloud	
Jun 17/18	169/170	~02:59-18:21?	077	054	—	—	—	—	0	No clear front	Could be two events. Same start/stop times for both. Data gap interrupts event. 1. Slow-moving, faint mound superposed on streamer. 2. Slow-moving, low-contrast cavity superposed on streamer. Streamer is disrupted. Could be wider. No south data available.
					—	—	—	—	0	No clear front	
Jun 17	169	10:44~13:58	315	050	—	—	—	—	1	Cloud	Faint cloud (or loop/cavity) superposed on streamer.
											DATA GAP: Jun 17 14:33 to Jun 18 15:02.
Jun 19	171	06:46<21:31	248	024	—	—	—	—	0	No obvious front	Streamer slowly elongates. Blows out during data gap. Deflections.
											DATA GAP: Jun 19 12:08 to 21:31.
Jun 26	178	02:29-08:47	120	009	—	—	—	—	0	No obvious front	Narrow fan (or jet) appears south of small streamer and blows out.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 2 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 27	179	09:57-13:06	~058	~046	—	—	—	—	0	No obvious front	Very faint cloud superposed on and south of streamer.
Jun 27	179	18:27-20:58	074	012	Jun 27 18:27-19:36	328 ₁ *	071†	2	5	Jet	Jet south of streamer. By 19:36 jet has widened and is concave-outward, 'U'-shaped with internal structure.
Jun 29	181	09:34~17:05	233	047	Jun 29 09:49-13:56	109 ₁ 185 ₂ *	230	7	7	Cavity	Loop/cavity and structured core superposed on streamer. Core is concave-outward, 'V'-shaped. Deflections. Streamer is blown out.
											DATA GAP: Jun 29 20:35 to Jul 02 15:48.
Jul 05/06	187/188	22:30-12:43	050	030	Jul 05/06 23:11-03:16	028 ₁ *	050	6	4	Cavity	Faint loop(?)/cavity and fuzzy core in streamer. Streamer is blown out. Deflections.
											DATA GAPS: Jul 06 13:24 to Jul 07 13:50. Jul 12 00:01 to 15:01.
Jul 14	196	07:55~23:46	309	053	Jul 14 08:01-10:14	215 ₁ 307 ₂ *	300	6	9	Cavity	Could be two events: 1. Loop/cavity and partially structured core superposed on streamer. Deflections. Streamer is blown out.
		15:54~23:46			279	021	—	—	—	0	Front at 15:54 only
											DATA GAP: Jul 17 13:44 to 19:20.
Jul 20	202	10:33-18:25	242	079	Jul 20 10:33-13:42	129 ₁ 055 ₂ *	255	3	5	Loop	Large loop/cavity with structured, loop-shaped(?) core superposed on and south of streamer. Deflections. Region is disrupted.
Jul 21	203	13:15-16:14	~100	—	—	—	—	—	0		Loop(?)/cavity south of streamer. Northern edge is tough to measure.
											DATA GAP: Jul 23 12:22 to 21:43.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 3 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 26	208	06:28-19:48	055	020	Jul 26 09:37-12:46	123 ₁ * 121 ₂	055	3	4	Cavity	Cavity and core in streamer. Thin loop(?) becomes visible around cavity. 'Light-bulb' shaped by 12:46. Streamer bulges and blows out. Deflections.
Jul 28	210	00:59-10:26	~071	~052	—	—	—	—	0	No obvious front	Faint, structured material superposed on fan (or streamer).
Jul 28	210	16:44-18:28	~108	~054	Jul 28 16:44-17:00	181 ₁ *†	094†	2	4	Loop	Loop(?)/cavity. South side of loop is superposed on streamer.
											DATA GAP: Jul 29 05:38 to 16:18.
Jul 29/31	211/213	<16:21-06:16	108	052	—	—	—	—	0	No clear front	Slow expansion and ejection of mound and core superposed on streamer and fan. Began during data gap. Deflections. Region is partially blown out.
Aug 09/10	222/223	18:21-16:40	086	055	—	—	—	—	0	No clear front	Slow expansion of streamer. Irregularly-shaped material ejected into streamer from Aug 10 03:59 until ~16:40. Streamer is disrupted. Deflections.
Aug 11	224	05:01-06:40	042?	027?	Aug 11 05:01-05:30	204 ₁ * 140 ₂	062	9	5	Mound	Faint mound just north of streamer.
Aug 13/15	226/228	~18:27~08:06	126	040	—	—	—	—	0	No obvious front	Could be two events: 1. Slow expansion of fan. Region is partially blown out. Deflections. Small loop(?)/cavity may be present at southern edge of event from Aug 13 23:04 until Aug 14 03:59. Loop(?)/cavity is deflected southward. 2. Wide, faint loop/cavity spans pylon shadow. Superposed on existing structures. Deflections. Structures at eastern extent of loop are partially blown out.
	226/227	~18:27~15:14									
	227/228	16:31~08:06	~182	~155	Aug 14/15 19:34-00:23	039 ₁ * 047 ₂	165	4	3	Loop	
Aug 16	229	~07:50~23:27	052	027	—	—	—	—	0	No clear front	Slow expansion of faint fan north of streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 4 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual			
Aug 20/21	233/234	02:06-15:16	289	011	—	—	—	—	0	No obvious front	Succession of narrow jets are ejected. Ray appears at Aug 20 ~02:06. Material is ejected along ray until ~03:42, from Aug 20 ~12:33 until 15:57 and from Aug 21 04:51 until 10:35 when ray disappears.	
											DATA GAPS: Aug 22 00:44 to 16:19. Aug 23 00:20 to 15:56. Aug 29 04:42 to Sep 05 21:47.	
Sep 06	250	10:26~23:39	129	020	—	—	—	—	0	No measurable front	Ray (or narrow fan) appears and expands south of existing structures. Material is ejected along ray.	
Sep 10	254	01:38-18:57	~067	~040	Sep 10 01:38-12:02	037 ₁ 088 ₂ *	065	7	3	Loop	Two part event: 1. Fuzzy (multiple?) loop(?)/cavity with internal structure superposed on and north of fan (or streamer). Southern edge defines dark 'V' in corona. Swelling began on previous day. Part two follows immediately. 2. Huge faint loop/cavity (or mound with cavity) superposed on existing structures. Possible halo. Western edge may contain multiple loops and is followed by a loop-shaped core. Deflections. Eastern region is mostly blown out.	
		01:38-12:36										
		11:59-18:57			~008	~146	Sep 10 12:02-14:14	093 ₁ * 102 ₂	054	4		5
					Sep 10 13:42-17:29	111 ₁ 184 ₂ *	315	7	5	Core		
Sep 11	255	05:58-14:47	080	052	—	—	—	—	0	No clear front	Fan of material ejected just south of streamer.	
Sep 11/12	255/256	11:44~04:54	309	050	Sep 11 10:38-21:40	031 ₁ 068 ₂ *	313	23	3	Mound	Mound (or loop) with cavity and structured core rise in streamer. Streamer is deflected northward and is disrupted. Base of ejection is concave-outward, 'V'-shaped from 21:49 until end of event.	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 5 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
											DATA GAP: Sep 13 18:50 to 23:25.
Sep 16/17	260/261	~08:49~14:43	~267	~063	—	—	—	—	0	No obvious front	Slow expansion of faint material around faint streamer (or fan).
Sep 17	261	21:59-23:57	~042	~056	Sep 17 22:02-23:54	223 ₁ 346 ₂ *	045	7	6	Cavity	Thin loop/cavity superposed on and north of streamer. Could be wider.
											DATA GAP: Sep 21 17:49 to 20:26.
Sep 21/22	265/266	22:27-01:36	~072	~056	Sep 21/22 22:27-01:36	145 ₁ * 127 ₂	070	11	4	Cavity	Faint (multiple?) loop/cavity superposed on streamer.
Oct 01	275	~08:34-21:41	~134	~086	Oct 01 11:34-17:52	173 ₂ *	125	12	7	Cavity	Cavity expands slowly in streamer. Loop(?) becomes visible around cavity and core is visible beneath cavity by 14:55. Cavity accelerates shortly thereafter. Deflections. Streamer is blown out.
Oct 02/03	276/277	14:20~23:23	107	039	Oct 02 16:07-19:43	065 ₁ *	101†	3	5	Loop	Loop/cavity and structured core superposed on fan. Core is concave-outward, 'V'-shaped. Vertex of 'V' becomes location of ray (or leg) that is deflected southward. Material may be ejected through fan prior to event from Oct 02 09:36 until ~11:47.
					Oct 02/03 21:18-00:27	039 ₁ * 046 ₂	105	5	6	Core	
Oct 03	277	13:08<21:55	247	013	—	—	—	—	0	No obvious front	Material ejected in narrow fan (or streamer). Fan is blown out following data gap from 17:12 to 21:55.
											DATA GAP: Oct 03 17:12 to 21:49.
Oct 12/13	286/287	16:41~19:27	325	030	—	—	—	—	1	Mound	Small mound(?) superposed on streamer. Streamer splits in two at 02:07 on Oct 13. Streamer splits into a third ray at 10:00.
Oct 15/16	289/290	22:22~12:31	017	046	Oct 15/16 22:22-06:14	023 ₁ * 026 ₂	010	8	7	Mound	Faint mound superposed on and north of streamer. Fades into background brightness levels.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 6 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Oct 17	291	~05:31~23:12	063	052	—	—	—	—	0	No clear front	Slow-moving cloud superposed on streamer. Streamer remains unaffected.
Oct 18	292	~03:55-12:45	068	047	Oct 18 06:27-08:39	094 ₁ 194 ₂ *	070	4	5	Loop	Loop/cavity and structured, loop-shaped(?) (prominence?) core superposed on streamer. 'Light-bulb'-shaped. Streamer is disrupted. Deflections.
					Oct 18 05:02-08:39	096 ₁ 170 ₂ *	070	5	5	Cavity	
					Oct 18 06:27-09:35	063 ₁ 085 ₂ *	070†	5	6	Core (prominence?)	
DATA GAP: Oct 19 13:02 to Oct 20 15:03.											
Oct 21	295	11:33-23:11	~110	~030	—	—	—	—	0	No clear front	Cloud superposed on streamer. Base of cloud is concave-outward, 'U'-shaped. Streamer is disrupted. Deflections.
					—	—	—	—	1	Base of cloud	
Oct 21/22	295/296	21:37~08:38	064	058	Oct 21/22 22:47-00:46	205 ₁ * 268 ₂	072	5	4	Loop	Loop/cavity and core superposed on streamer. Deflections. Streamer is disrupted.
					Oct 21/22 21:37-00:46	298 ₂ *	072	7	9	Cavity	
					Oct 21/22 22:47-00:46	112 ₁ * 077 ₂	072	7	9	Core	
Oct 23/24	297/298	~00:28~12:02	~292	~035	—	—	—	—	0	No clear front	Slow disruption of fuzzy streamer.
Oct 24/25	298/299	18:57~00:37	283	023	—	—	—	—	0	No clear front	Small mound(?) fans out and is ejected south of streamer.
DATA GAPS: Oct 27 09:50 to Oct 30 00:05. Oct 30 13:24 to Oct 31 18:34. Nov 02 03:56 to 17:49.											

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 7 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Nov 02/03	307/308	<17:58<17:34	~083	~036	—	—	—	—	1	Cavity	Low-contrast cavity rises in streamer. Streamer swells during data gap from Nov 02 03:47 until 17:58. Cavity accelerates on Nov 03 at ~01:41. Material appears to be concave-outward, 'U'-shaped from Nov 03 02:16 until ~03:24. Data gap follows until Nov 03 17:34. Deflections. Streamer is disrupted.
											DATA GAP: Nov 03 03:30 to 17:21.
Nov 09/10	314/315	~19:48~13:06	240	027	Nov 09/10 22:56-03:55	056 ₁ * 059 ₂	247	4	7	Mound	Mound (or loop/cavity) superposed on streamer. Streamer began to swell early Nov 09. Bottom of ejection is concave-outward, 'V'-shaped from ~06:49 until 08:23. Streamer is partially blown out. Deflections.
Nov 10	315	19:17-22:26	~054	~035	Nov 10 19:17-21:20	419 ₂ *	060	5	4	Material	Faint material superposed on streamer. Streamer began slow expansion ~06:43.
Nov 11/12	316/317	~00:00~16:55	~060	~060	—	—	—	—	0	No clear front	Slow, faint, structured material superposed on streamer. Streamer is blown out. Deflections.
Nov 12	317	13:43-17:01	~283	~070	Nov 12 13:43-13:52	398 ₁ *	298	2	3	Mound	Faint mound superposed on and north of fan. Deflections.
Nov 13/14	318/319	22:49~20:50	101	048	Nov 14 00:23-08:15	031 ₁ * 039 ₂	103†	5	6	Cavity	Cavity rises in streamer and is followed by a structured core. Fuzzy loop becomes visible around cavity. Base of core is concave-outward, 'V'-shaped from 06:41 until 12:58. Streamer is blown out. Deflections.
					Nov 14 08:15-12:58	057 ₁ * 082 ₂	105	3	6	Base of core	
											DATA GAP: Nov 15 15:52 to 18:49.
Nov 16/17	321/322	15:20-08:44	288	031	Nov 16 15:44-18:34	091 ₁ * 130 ₂	290	3	5	Mound	Fuzzy mound with embedded loop(?)/cavity and core superposed on northern half of faint fan. Deflections.
					—	—	—	—	1	Loop	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 8 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Nov 17/18	322/323	21:52-03:37	~072	~027	Nov 17/18 21:52-02:06	103 ₁ * 117 ₂	075†	9	7	Cavity	Cavity rises in streamer (or fan) and is followed by a bright, structured (prominence?) core. Streamer is disrupted. Deflections. Motion in southeast throughout the day.
					Nov 17/18 22:45-02:06	098 ₁ * 129 ₂	071†	7	7	Core (prominence?)	
											DATA GAPS: Nov 20 15:57 to 23:10. Nov 22 18:20 to Nov 23 03:11.
Nov 24	329	15:19-21:56	294	029	Nov 24 15:19-20:51	045 ₁ * 059 ₂	292	12	7	Cavity	Faint loop/cavity and core superposed on fan (or streamer). Fan is disrupted. Deflections.
					Nov 24 16:55-20:51	044 ₁ * 057 ₂	292	11	7	Core	
Nov 25	330	08:39-11:01	313	014	Nov 25 08:39-09:26	267 ₁ * 310 ₂	308†	4	5	Blob	Narrow blob (or jet) superposed on fan (or streamer).
Nov 26	331	01:58~06:41	324	016	—	—	—	—	0	No clear front	Fuzzy blob (or cloud) superposed on faint streamer (or fan).
Nov 27	332	~09:30~17:59	~115	~026	—	—	—	—	0	No clear front	Slow disruption of streamer (or fan). Deflections.
Nov 30/ Dec 02	335/337	~00:29~01:18	247?	077?	—	—	—	—	0	No clear front	Very slow ejection of faint material around streamer and fan. Region is disrupted. Deflections. Tough to give start/stop times.
											DATA GAP: Dec 01 06:58 to 09:25.
Dec 01	336	15:46-18:55	084	060	Dec 01 15:46-17:20	254 ₁ * 232 ₂	087	3	4	Cavity	Loop/cavity and possible core superposed on streamers. Deflections.
Dec 09/10	344/345	23:30~04:16	077	028	Dec 09/10 23:30-01:43	220 ₁ * 278 ₂	070	6	7	Loop	Loop/cavity and structured core in streamer. 'Light-bulb'-shaped. Streamer is disrupted. Deflections.
					Dec 09/10 23:30-01:07	203 ₁ * 224 ₂	070	5	7	Cavity	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1984 Coronal Mass Ejections page 9 of 9

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Dec 14	349	13:46-16:55	280	040	—	—	—	—	0	No clear front	Loop/cavity superposed on streamer and fan. Deflections. Event fades into background brightness levels.
											DATA GAP: Dec 15 13:54 to Dec 16 14:43.
Dec 18/20	353/355	16:59~15:58	~103	~065	—	—	—	—	0	No clear fronts	Very slow disruption and blowout of adjacent streamers. Three faint fans and jets of material are ejected just north of streamers from Dec 18 ~16:59 until ~19:57, Dec 19 ~13:47 until ~16:58 and Dec 20 ~13:25 until 15:58. A new streamer begins to appear in region late Dec 20.
											DATA GAP: Dec 21 00:22 to 05:12.
Dec 24	359	05:11-11:28	260	060	Dec 24 05:11-08:32	068 ₁ 121 ₂ *	257	6	6	Loop	Faint loop/cavity superposed on streamer. Deflections.
					Dec 24 06:34-08:32	149 ₁ 221 ₂ *	265	5	6	Cavity	
Dec 25/26	360/361	~12:48~07:57	~262	~021	—	—	—	—	1	Streamer	Slow blowout of streamer. Base of blowout is concave-outward, 'V'-shaped from ~02:37 until end of event. Deflections. Event could be wider.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 1 of 8

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Jan 02 14:39 to Jan 03 04:03.
Jan 04/05	004/005	~07:05~05:39	252	050	—	—	—	—	1	Streamer	Slow swelling of streamer. Streamer becomes mound-shaped. Cavity(?) and core appear beneath streamer. Core is concave-outward, 'U'-shaped later in event. Streamer is disrupted.
Jan 10	010	07:35-14:17	~312	~035	Jan 10 07:35-12:34	063 ₁ * 083 ₂	308	6	6	Cavity	Very low contrast cavity superposed on faint ray north of streamer. Could be wider. Deflections.
Jan 14/15	014/015	03:14~01:01	285	066	Jan 14 06:44-10:51	053 ₁ * 063 ₂	285	6	7	Wisp	Slow-moving cloud with bright, internal, structured wisp of material superposed on streamer. Wisp is concave-outward shaped late in event. Deflections.
Jan 17/18	017/018	09:38-07:40	262	055	Jan 17 11:12-18:06	050 ₁ * 067 ₂	278	9	6	Mound	Mound superposed on streamer. Streamer is disrupted.
Jan 21/22	021/022	~06:26-01:50	271	100	Jan 22 00:17-00:20	800 ₁ *	245	2	4	Fast cloud	Slow-moving cloud superposed on streamer. Fast-moving cloud with flat-topped core(?) is ejected from 00:17 until 01:50 on Jan 22. Core is concave-outward, 'U'-shaped in southwest images. Region is disrupted. Narrow jet appears in ray after event on Jan 22 from 12:56 until 15:55 at 265°.
					Jan 22 01:09-01:50	366 ₁ * 365 ₂	270	8	5	Concave-outward shaped core	
Jan 22	022	19:14-23:30	290	027	Jan 22 19:14-21:57	097 ₁ * 120 ₂	287	6	6	Loop	Faint loop/cavity superposed on ray. Ray is disrupted.
											DATA GAP: Jan 24 10:00 to 20:54.
Jan 28	028	00:25~19:16	~108	~065	Jan 28 02:05-08:23	030 ₁ * 028 ₂	108	6	4	Mound	Faint mound south of streamer. Event may be wider.
											DATA GAP: Feb 01 04:02 to Feb 02 01:27.
Feb 02	033	~03:29~17:21	242	067	—	—	—	—	1	Streamer	Slow expansion and disruption of faint streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 2 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 17	048	20:33-23:45	099	032	—	—	—	—	0	Front at 20:36 only	Asymmetric, flattened loop(?)/cavity superposed on and north of streamer. Streamer is disrupted.
Feb 18	049	10:46-17:05	086	030	—	—	—	—	0	No obvious front	Material (bulge) with cavity(?) superposed on fan and streamer.
Feb 22	053	13:52~16:07	093	066	Feb 22 13:52-14:34	234 ₁ *	080	3	4	Mound	Mound superposed on streamer. Deflections.
											DATA GAPS: Feb 28 13:47 to Mar 01 00:03. Mar 01 19:04 to Mar 02 15:22. Mar 07 08:48 to 15:09. Mar 11 13:56 to 18:00.
Mar 14/15	073/074	~05:55~04:15	266	040	—	—	—	—	0	No clear front	Streamer expands slowly and blows out. Deflections.
											DATA GAP: Mar 17 14:13 to 20:18.
Mar 17	076	20:21-22:05	~101	~038	—	—	—	—	1	Cavity	Very faint cloud (or loop) with cavity superposed on streamer.
											DATA GAP: Mar 18 14:24 to 18:20.
Mar 21/22	080/081	03:10-01:40									Could be up to three events:
	080	03:10-04:35	078	035	—	—	—	—	0	Front at 03:10 only	1. Small loop(?)/cavity in streamer. Data is streaked.
	080	09:19-12:27	077	042	—	—	—	—	0	No clear front	2. Structured material ejected in streamer. Streamer is disrupted. Data gap follows.
	080/081	23:28-01:40	081	038	—	—	—	—	1	Material	3. Concave-outward(?) shaped material superposed on streamer.
											DATA GAP: Mar 21 14:08 to 20:16.
Mar 28	087	06:34-16:37	255	040	—	—	—	—	0	No clear front	Slow expansion and partial blowout of streamer. Base of blowout appears concave-outward, 'V'-shaped. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 3 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Mar 31 04:14 to 17:46.
Mar 31/ Apr 01	090/091	<17:49~01:41	095	060	—	—	—	—	0	No obvious front	Faint material around streamer. Could have missed front during data gap. Bright streamer visible before data gap may have been blown out between 03:49 and 17:49.
											DATA GAPS: Apr 02 17:37 to 20:06. Apr 12 00:35 to 22:22.
Apr 14	104	04:18-07:27	098	040	—	—	—	—	0	Front at 04:18 only	Loop/cavity superposed on streamer. Streamer is disrupted.
											DATA GAPS: Apr 16 02:00 to 06:34. Apr 17 15:45 to 21:53. Apr 19 21:04 to Apr 20 00:12.
Apr 23/24	113/114	20:07-01:42	064	074	—	—	—	—	0	No clear front	Faint, fuzzy mound (with cavity?) superposed on faint streamer (or fan). Streamer is disrupted.
Apr 24	114	09:37-10:23	~035	~210	—	—	—	—	1	Loop in two images only at 09:37 and 09:40. Very little motion.	Possible halo. Broad loop/cavity superposed on existing structures in south and east images. Material (loop?/cavity?) in north and west. Data is streaked.
May 02	122	08:05-12:49	270	040	May 02 08:05-08:47	746 ₁ *	265	2	4	Loop	Loop/cavity with core superposed on rays and south edge of streamer. Deflections. Region is disrupted.
May 05	125	07:28~13:06	064	025	—	—	—	—	0	No clear front	Fan, north of streamer, widens and blows out.
May 05	125	12:09~15:05	275	080	May 05 12:09-12:18	664 ₁ *	295	2	6	Loop	Big, irregularly-shaped loop/cavity superposed on streamer. Streamer is disrupted. Deflections.
May 06	126	07:59~12:42	095	040	May 06 07:59-08:39	116 ₁ *	095	2	5	Cavity	Loop(?)/cavity and core superposed on streamer. Loop fades.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 4 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: May 08 14:13 to May 09 03:33. May 09 07:27 to 11:29. May 10 07:06 to 13:14.
May 12	132	08:57-11:56	289	015	—	—	—	—	0	No clear front	Narrow fan (or jets) ejected north of streamer.
May 12/13	132/133	22:56-01:08	273	040	May 12 22:56-23:34	214 ₁ *	275	2	3	Mound	Faint mound (or cloud) superposed on streamer.
											DATA GAPS: May 16 07:43 to 19:34. May 17 07:21 to 20:44. May 19 09:41 to 16:49. May 24 07:27 to 10:47. May 27 19:56 to May 28 14:42. Jun 04 12:31 to Jun 05 17:38.
Jun 12	163	~06:11~19:46	~257	~021	—	—	—	—	0	No clear front	Slow-moving cloud superposed on streamer. Streamer is disrupted. Deflections.
Jun 16/17	167/168	00:38~23:51	091	060	—	—	—	—	0	No clear front	Slow blowout of streamer.
Jun 18/19	169/170	00:41~23:11	257	072	—	—	—	—	0	No clear front	Slow southward expansion of pre-existing fan (or streamer) south of equatorial streamer. Fan is blown out. Deflections.
											DATA GAPS: Jun 26 05:14 to 15:31. Jun 28 11:30 to 22:31.
Jun 28/29	179/180	<22:34~06:26	097	027	—	—	—	—	1	Cavity	Faint, fuzzy loop(?)/cavity and core in streamer (or fan). Data is streaked. We may have missed an event during data gap. Fan (or streamer) at 105° is blown out during data gap from Jun 28 11:30 to 22:34.
Jun 29	180	17:26-20:34	102	045	Jun 29 17:26-18:03	329 ₁ *	107	2	4	Loop	Multiple(?) loops/cavity and core superposed on streamer. Streamer is disrupted. Data is streaked.
					Jun 29 17:26-19:00	349 ₁ 483 ₂ *	105†	3	4	Cavity	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 5 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Jun 30	181	00:21-02:52	095	042	Jun 30 00:21-01:18	305 ₁ *	085	2	3	Loop	Loop(s?)/cavity with diffuse core superposed on and south of streamer. Streamer is disrupted. Data is streaked.
					Jun 30 00:21-01:55	377 ₁ 623 ₂ *	085	3	3	Cavity	
Jul 02	183	21:32-22:29	100	055	Jul 02 21:32-21:35	1280 ₁ *	110	2	5	Loop	Loop/cavity and small, faint, loop-shaped(?) core superposed on and south of streamer. Large deflections.
					Jul 02 21:32-21:35	1600 ₁ *	110	2	5	Cavity	
											DATA GAPS: Jul 03 17:27 to 20:27. Jul 06 02:01 to 05:50.
Jul 09	190	02:22-06:11	253	100	Jul 09 02:25-03:02	690 ₁ *	270	2	5	Loop	Loop/cavities superposed on streamer and faint fan. Looks like two overlapping loops at 03:02. Streamer is disrupted. Data is streaked.
					Jul 09 02:25-03:02	752 ₁ *	275	2	5	Northern cavity	
					Jul 09 02:22-02:25	800 ₁ *	245	2	3	Southern cavity	
Jul 15/16	196/197	20:29~01:16	266	054	Jul 15 20:29-21:57	185 ₁ *	270	2	2	Loop	Loop/cavity and core. Legs of loop are superposed on streamers. Streamers are deflected. Southern, fainter streamer is disrupted. Some streaking in data.
Jul 17	198	03:41-05:24	~288	~100	Jul 17 03:41-03:50	1195 ₁ *	289	2	8	Loop	Big, complex loop/cavity and possible core superposed on and south of streamer. Loop is immediately adjacent to next event. Big deflections. Streamer is disrupted. Event may be wider.
					Jul 17 03:41-03:50	1129 ₁ *	285	2	8	Cavity	
Jul 17	198	03:47-05:21	215	048	Jul 17 03:47-03:50	1600 ₁ *	220	2	8	Loop	Loop/cavity and faint core. Southern edge is obscured by pylon shadow. Loop is immediately adjacent to previous event.
					Jul 17 03:47-03:50	1000 ₁ *	220	2	9	Cavity	
Jul 25	206	19:13-23:59	085	042	Jul 25 19:13-19:57	223 ₁ *	080	3	4	Loop	Faint loop/cavity superposed on fan. Data dropouts obscure parts of event.
											DATA GAP: Jul 27 00:13 to 16:50.
Aug 06/07	218/219	21:25~17:25	092	045	—	—	—	—	0	No clear front	Slow-moving cloud superposed on streamer. Additional material is ejected in same region from Aug 07 15:38 to 17:25.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 6 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Aug 07/08	219/220	20:27>08:06	263	034	Aug 07/08 20:27-04:38	044 ₁ 078 ₂ *	265	11	5	Cavity	Loop/cavity superposed on streamer. Small blob may be ejected along southern leg of loop just prior to data gap. Event ends during data gap.
											DATA GAP: Aug 08 08:06 to 18:22.
Aug 11	223	15:34-17:52	283	050	Aug 11 15:34-16:05	391 ₁ * 431 ₂	295	5	6	Outer loop	Complex, dimpled, concentric loops/cavities superposed on streamer. Bright (prominence?) blobs are visible on northern legs of outer and innermost loops at 305° and 295° respectively. Northern part of streamer is disrupted. Deflections.
					Aug 11 15:34-16:05	342 ₁ * 188 ₂		6	7	Outer cavity	
					Aug 11 15:34-16:05	406 ₁ * 468 ₂		6	7	Inner loop	
Aug 16/17	228/229	23:02~18:31	295	030	Aug 16/17 23:39-02:10	054 ₁ * 038 ₂	295	4	4	Mound	Faint mound superposed on fan (or streamer). Fan is disrupted.
Aug 19/20	231/232	12:15-23:28	083	080	Aug 19 12:53-14:27	062 ₁ * 063 ₂	095	3	4	Cavity	Faint loop(?)/cavity with possible core superposed on and north of streamer. Loop is gone by Aug 19 ~19:10. Additional faint material is ejected throughout Aug 20.
Aug 24/25	236/237	~04:16~23:06	255	050	—	—	—	—	0	No clear front	Very slow swelling and blowout of streamer. Some acceleration early Aug 25. Concave-outward, 'U'-shaped material visible from Aug 25 19:19 until 22:27.
											DATA GAP: Sep 05 16:57 to Sep 06 14:16.
Sep 11	254	02:59-05:55	063	010	—	—	—	—	1	Jet	Narrow jet appears north of streamer, widens and disappears.
Sep 12	255	03:56-18:05	094	008	—	—	—	—	0	No clear fronts	Multiple, narrow jets (or rays) are ejected in succession just north of fan (or streamer).
Sep 15/17	258/260	~08:10~05:47	275?	090?	—	—	—	—	0	No clear front	Very slow expansion of faint material superposed on streamer(s?). Region is disrupted. Deflections. Some streaking in data.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 7 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 17/18	260/261	17:38~03:17	~089	~046	Sep 17 17:38-19:51	090 ₁ * 170 ₂	085	4	2	Loop	Faint loop(?)/cavity superposed on fuzzy streamer (or fan). Loop is visible from Sep 17 17:38 until ~21:25. Additional material visible from Sep 17 ~23:55 until Sep 18 ~03:17. Streamer is disrupted. Event may be wider. Data is streaked.
			~083	~025	Sep 17/18 23:55-01:29	103 ₁ * 157 ₂	085	3	4	Material	
Sep 24/25	267/268	~04:10~13:01	~262	~025	—	—	—	—	1	Top of streamer	Very slow disruption of streamer. Event may be wider. Some streaking in data.
Sep 25	268	~05:32~12:46	~135	~030	—	—	—	—	1	Cloud	Very faint cloud.
Sep 25/28	268/271	~20:45~16:15	068	060	—	—	—	—	1	Material	Very slow blowout of streamer. Material ejected south of streamer from Sep 27 07:14~10:25.
DATA GAP: Sep 26 14:39 to 21:45.											
Oct 02/03	275/276	20:58-00:44	257	053	Oct 02 20:58-23:10	235 ₁ * 226 ₂	265	12	6	Loop	Thin loop/cavity and structured(?) core superposed on and south of streamer. Loop becomes 'light-bulb'-shaped. Streamer is disrupted. Some streaking in data.
					Oct 02 20:58-23:10	234 ₁ * 255 ₂	265	12	6	Cavity	
					Oct 02/03 21:01-00:10	174 ₁ * 135 ₂	265	13	5	Core	
DATA GAP: Oct 04 18:36 to 21:58.											
Oct 05/06	278/279	~13:42~19:18	290	040	—	—	—	—	0	No clear front	Faint cloud on north side of streamer. Cloud expands slowly and blows out.
Oct 10/12	283/285	~20:49<01:08	~288	~045	—	—	—	—	1	Cavity	Slow disruption of streamer. Cavity blows out through south side of streamer. Ends during data gap. New structure forms Oct 11/12. Data is streaked.
DATA GAP: Oct 11 14:47 to Oct 12 00:59.											
Oct 25/26	298/299	two days	~260	~040	—	—	—	—	0	No clear front	Slow elongation and disruption of streamer.
Oct 25	298	~05:07~19:53	~085	~060	—	—	—	—	0	No clear front	Cloud superposed on streamer.
DATA GAP: Nov 07 14:34 to Nov 08 14:59.											

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1985 Coronal Mass Ejections page 8 of 8

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Nov 15/16	319/320	23:06~02:15	~107	~035	Nov 15/16 23:06-00:40	073 ₁ * 045 ₂	105	3	2	Cloud	Cloud superposed on streamer. Could be wider.
											DATA GAP: Nov 25 23:45 to Dec 04 15:18.
Dec 05	339	03:55~07:04	~095	~040	—	—	—	—	0	No clear front	Fuzzy material superposed on streamer. Bulge moves outward along streamer from 05:30 until 06:08. Poor quality data.
											DATA GAPS: Dec 09 13:58 to Dec 10 01:47. Dec 17 16:47 to Dec 18 14:09. Dec 23 15:15 to Dec 25 00:13. Dec 30 14:33 to Dec 31 16:33.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 1 of 10

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAPS due to Halley's comet observations: Jan 03 15:40 to 21:35. Jan 08 03:05 to Feb 05 20:31.
Feb 06	037	06:42-08:16	~289	~078	—	—	—	—	0	Front at 06:42 only	Wide, irregular cloud. Deflections. Could be wider.
											DATA GAP: Feb 07 07:51 to 10:19.
Feb 07	038	11:00-13:31	~261	~082	—	—	—	—	0	Front at 11:00 only	Large, diffuse loop/cavity with core superposed on streamer. Streamer is disrupted. Loop may be wider. Data is streaked.
Feb 08	039	16:08-17:49	~281	~026	Feb 08 16:08-17:49	098 ₁ * 146 ₂	280	3	3	Loop	Small loop/cavity north of streamer. Data is streaked.
Feb 10	041	12:15~15:52	~272	~045	Feb 10 12:15-12:51	400 ₁ * 352 ₂	275	5	4	Loop	Loop/cavity with core between streamers. Data is streaked. Deflections.
Feb 10	041	20:44-22:18	272	052	—	—	—	—	0	Front at 20:44 only	Mound (or loop/cavity) between streamers. Possible concave-outward material from 21:45 to 22:18. Deflections. Data is very streaked.
					Feb 10 21:45-22:02	604 ₁ * 462 ₂	254	3	3	Concave-outward material	
Feb 11	042	11:42-14:02	~269	~065	Feb 11 11:50-12:15	460 ₁ * 567 ₂	285	3	2	Loop	Loop/cavity and core superposed on streamers. Data is streaked.
Feb 12	043	20:50~23:02	~270	~030	—	—	—	—	1	Loop	Faint loop(?)/cavity between streamers in rolled images. Could be wider. Motion prior to event. Data is streaked.
Feb 13	044	03:27-19:28	~265	~070	Feb 13 03:27-03:36	475 ₁ * 450 ₂	270	4	7	Loop	Could be two events in rolled, streaked data: 1. Loop/cavity and core superposed on streamers. Data gap follows. Deflections. 2. Concave-outward, 'U'-shaped material between streamers.
		03:27-04:34									
		18:51-19:28	~264	~020							

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 2 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAPS due to Halley's comet observations: Feb 13 04:34 to 18:43. Feb 14 04:08 to 15:12. Feb 15 03:43 to 14:47.
Feb 15	046	22:40-23:21 22:40-22:55 22:55-23:21	~242	~015	—	—	—	—	1	Concave-outward material	Two part event: 1. Concave-outward, 'U'-shaped material superposed on ray (or streamer) in rolled images. Deflections. Width was measured at $4.5R_{\odot}$. 2. Faint material superposed on streamer. Streamer is disrupted. Probably missed an event in afternoon during data gap.
					—	—	—	—	0	No obvious front	
Feb 16	047	00:17-05:00	272	037	Feb 16 00:17-00:55	167 ₁ * 114 ₂	280	4	7	Cavity	Loop(s?)/cavity and core superposed on streamer. Streamer is blown out. Data is streaked and rolled 180°.
					Feb 16 00:39-02:13	149 ₁ * 086 ₂	280	5	8	Core	
Feb 16	047	13:30-16:00	~275	~030	—	—	—	—	0	No clear front	Small, faint blob (or cloud) superposed on rays. Fades into background brightness levels. Could be related to previous event. Data is streaked and rolled 180°.
Feb 16	047	20:40-22:18	257	074	Feb 16 20:40-21:22	456 ₁ 704 ₂ *	240	6	7	Loop	Loop/cavity superposed on streamer in rolled images.
Feb 16/17	047/048	22:15~01:26	268	112	Feb 16 22:18-22:56	934 ₂ *	260	4	7	Loop	Big loop/cavity with possible fuzzy, inner loop/cavity superposed on streamer and rays. Large deflections. Streamer is disrupted. Data is rolled 180°.
					Feb 16 22:18-22:56	265 ₁ 477 ₂ *	260	4	7	Cavity	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 3 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Feb 17	048	14:13~21:52	~247	~015	—	—	—	—	0	No clear front	Faint blob superposed on streamer in streaked, rolled data. Additional material is ejected later from 19:03 until ~21:52.
											DATA GAPS due to Halley's comet observations: Feb 18 15:49 to Feb 19 03:39 Feb 19 15:24 to 20:54 Feb 20 14:59 to 18:58 Feb 20 22:52 to Feb 21 02:46 Feb 21 13:00 to 16:55 Feb 21 22:27 to Feb 22 02:21 Feb 22 14:11 to 18:05 Feb 22 23:37 to Feb 23 03:31 Feb 23 13:46 to 17:40 Feb 23 17:48 to 20:49 Feb 23 21:38 to Feb 24 03:10 Feb 24 14:56 to Feb 25 01:07 Feb 25 14:31 to 19:59
Feb 26	057	07:02-08:36	~104	~085	Feb 26 07:02-07:27	703 ₁ *	115	3	8	Loop	Flat-topped(?) loop/cavity and core superposed on and north of streamer. Large deflections. Data is rolled 180° and streaked.
					Feb 26 07:02-07:27	653 ₁ *	115	3	6	Cavity	
											DATA GAPS due to Halley's comet observations: Feb 26 15:40 to 21:12 Feb 27 14:33 to 20:45 Feb 28 13:16 to 18:45
Mar 06	065	17:50-18:35	~302	~083	Mar 06 17:50-17:58	731 ₁ *	310	2	6	Loop	Faint, wide, irregularly-shaped loop/cavity superposed on and north of streamers.
					Mar 06 17:50-17:58	598 ₁ *	310	2	6	Cavity	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 4 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: Mar 07 18:10 to 20:37. Mar 13 20:05 to Mar 14 17:35. Mar 17 13:55 to Mar 18 17:28. Apr 01 17:01 to Apr 02 21:14. Apr 02 21:14 to Apr 03 01:19. Apr 04 04:06 to 11:00.
Apr 05	095	~00:37>13:46	259	026	—	—	—	—	1	Streamer	Slow extension and disruption of streamer. Region is partially blown out following data gap.
											DATA GAPS: Apr 05 13:46 to Apr 06 00:03. Apr 16 19:51 to Apr 17 04:51. Apr 17 14:26 to Apr 18 02:51.
Apr 19	109	07:09~08:46	~075	~030	Apr 19 07:12-07:48	274 ₁ *	073	2	5	Mound	Faint mound superposed on streamer.
											DATA GAP: Apr 28 05:24 to 07:08.
May 03	123	11:07~20:02	275 280	045 020	—	—	—	—	0	No clear front	Cavity (and core?) slowly disrupts streamer. Faint material moves out ahead of cavity. Cavity fades into background brightness levels or stalls. Data is streaked.
					May 03 11:07-13:00	053 ₁ *	282	6	5	Cavity	
May 04	124	10:11-17:19	275	070	May 04 10:11-10:40	750 ₁ *	275	4	8	Loop	Could be two events: 1. Bright loop/cavity with complex core superposed on streamer(s?). Becomes flat-topped. Streamer is disrupted. Some streaking in data. 2. Faint, flat-topped, irregular loop(?)/cavity. Deflections.
		10:11-16:28			May 04 10:11-11:01	699 ₁ *	275	4	8	Cavity	
					May 04 12:03-12:36	161 ₁ *	274	3	8	Cavity (in core)	
		16:46-17:19	~253	~030	May 04 16:46-16:57	1039 ₁ *	260	2	4	Loop	
											DATA GAP: May 06 03:41 to 06:15.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 5 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 07/08	127/128	21:31-00:48	~280	~050	May 07 21:31-23:17	139 ₁ 042 ₂ *	290	3	4	Mound	Faint mound superposed on and north of streamer. Motion prior to event at 04:13. DATA GAP: May 08 14:01 to May 09 14:25.
May 14/15	134/135	~10:49~18:15	080	050	—	—	—	—	0	No clear front	Very slow disruption of streamer. Difficult to determine start/stop times. Data is streaked. DATA GAP: May 31 17:41 to Jun 03 13:18.
Jun 05	156	01:25~04:41	~292	~045	Jun 05 01:25-02:09	227 ₁ * 104 ₂	297	4	5	Loop	Faint loop/cavity(?) and possible core (or mound) superposed on and north of streamer. Deflections. Could be wider. DATA GAPS: Jun 05 13:09 to 23:24. Jun 06 17:01 to 19:50. Jun 07 13:50 to 15:19. Jun 12 08:34 to 14:09.
Jun 14	165	01:23-05:26	098	030	Jun 14 02:30-03:52 Jun 14 01:23-03:52 Jun 14 02:30-03:52	090 ₁ * 101 ₁ * 067 ₂ 099 ₁ *	100	4 5 3	4 5 3	Loop Cavity Core	Loop/cavity with central bright core superposed on streamer. Could be 'light-bulb' shaped. Deflections. Streamer is disrupted.
Jun 27	178	00:50~05:33	265	030	Jun 27 00:50-02:24	198 ₁ * 190 ₂	273	3	4	Loop	Loop/cavity and core superposed on and south of streamer. Deflections. Streamer is disrupted. DATA GAP: Jun 27 19:38 to Jun 30 17:39.
Jul 02	183	08:07-10:43	290	020	—	—	—	—	0	No clear front	Material ejected around faint fan (or streamer). DATA GAPS: Jul 03 13:58 to Jul 04 14:23. Jul 09 15:29 to 18:28.
Jul 11	192	05:09~10:32	~268	~060	Jul 11 05:12-05:49	376 ₁ *	275	2	8	Loop	Flat-topped loop/cavity and loop-like core superposed on streamer. Streamer is disrupted.
Jul 11	192	16:06~22:32	~090	~042	—	—	—	—	1	Cloud	Cloud superposed on streamer. Streamer expands.
Jul 12	193	06:57~10:54	275	026	Jul 12 07:46-09:38	168 ₁ * 179 ₂	275	5	3	Loop	Loop(?)/cavity superposed on streamer. Streamer is disrupted.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 6 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 13	194	02:37~07:38	276	042	Jul 13 02:37-04:11	249 ₁ * 278 ₂	280	9	4	Loop	Loop/cavity and amorphous core superposed on streamer. Streamer is disrupted.
					Jul 13 02:37-03:17	292 ₁ * 377 ₂	280	7	5	Cavity	
					Jul 13 02:37-03:17	241 ₁ * 296 ₂	280	7	5	Core	
Jul 13/14	194/195	20:06~05:23	~082	~044	Jul 13/14 20:06-02:24	034 ₁ * 028 ₂	085	8	5	Cavity	Loop/cavity with fuzzy core superposed on streamer. Streamer is disrupted. Deflections.
Jul 14	195	00:37-05:29	~280	~044	Jul 14 00:55-01:17	289 ₁ * 305 ₂	280	7	7	Loop	Loop/cavity and structured core superposed on streamer. Deflections.
					Jul 14 00:55-01:17	285 ₁ * 431 ₂	280	8	9	Cavity	
					—	—	—	—	1	Core	
Jul 15	196	12:46~22:12	~280	~030	Jul 15 12:46-13:26	229 ₁ * 319 ₂	285	9	7	Loop	Loop/cavity and core superposed on streamer. Event may be wider.
					Jul 15 12:46-13:26	173 ₁ * 168 ₂	285	9	9	Cavity	
					Jul 15 13:04-13:26	193 ₁ * 307 ₂	285	7	7	Core	
Jul 17	198	03:12-07:29	~288	~075	—	—	—	—	0	Front in one image only	Loop/cavity and loop-shaped core superposed on streamer. Streamer is disrupted.
					—	—	—	—	1	Core	
											DATA GAPS: Jul 17 18:21 to 19:46. Jul 18 20:07 to 22:29.
Jul 19	200	~02:24~12:47	~273	~030	Jul 19 03:39-09:38	041 ₁ 081 ₂ *	264	8	4	Southern edge of mound	Slow-moving mound (or cloud) superposed on streamer.
											DATA GAPS: Jul 22 16:50 to Jul 23 12:29 Jul 24 12:50 to Jul 25 03:49.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 7 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 28	209	02:29-05:37	~095	~015	Jul 28 03:16-04:49	094 ₁ * 155 ₂	095	6	5	Concave-outward 'U'-shaped structure	Concave-outward, 'U'-shaped material between existing structures in very streaked data. Could be wider.
											DATA GAP: Jul 31 20:56 to Aug 01 13:20.
Aug 06	218	19:52-23:52	089	034	Aug 06 19:52-22:18	040 ₁ * 055 ₂	085	4	5	Cavity	Loop/cavity superposed on streamer. Deflections.
											DATA GAPS: Aug 19 14:25 to Aug 25 20:30. Sep 12 13:35 to Sep 13 14:00.
Sep 14/15	257/258	~04:09~08:26	090	050	—	—	—	—	0	No clear front	Slow disruption and blowout of streamer.
											DATA GAP: Sep 16 13:27 to 18:57.
Sep 28	271	~08:16~23:59	082 ~081	025 ~015	—	—	—	—	0	Material	Cavity(?) expands slowly in streamer. Faint material ejected ahead of cavity. Cavity stalls or fades. Streamer expands but remains.
					—	—	—	—	1	Cavity	
											DATA GAPS: Oct 01 13:21 to Oct 02 20:04. Oct 03 17:10 to 22:46. Oct 08 09:43 to 18:59. Oct 09 04:34 to 16:03.
Oct 14/15	287/288	22:46-02:12	278	065	Oct 14 22:46-23:30	399 ₁ * 341 ₂	295	3	5	Outer loop	Multiple loops/cavities and core superposed on streamer. Event moves non-radially (equatorward). Northern part of streamer is blown out; southern part is deflected. Slow expansion in region began the previous day. Data is partially streaked.
					Oct 14/15 22:46-00:18	226 ₁ * 196 ₂	284†	4	5	Cavity	
Oct 15	288	21:01-23:55	298	037	Oct 15 21:01-21:26	879 ₁ 1241 ₂ *	295	6	8	Outer loop	Loop/cavity with multiple, interior, structured (prominence) loops just north of streamer. Knots on inner loop are visible in H α filter. Event moves non-radially (equatorward). Large deflections of streamer. Data is partially streaked.
					Oct 15 21:10-21:26	972 ₁ * 1100 ₂	295	4	8	Cavity	
					Oct 15 21:10-21:26	719 ₁ * 677 ₂	300	4	8	Inner loop (prominence)	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 8 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Oct 16	289	05:02-07:44	263	035	Oct 16 05:02-05:21	401 ₁ * 286 ₂	260	3	5	Loop	Flat-topped loop/cavity with loop- (or mound-) shaped core all superposed on streamer. Deflections. Data is streaked.
					Oct 16 05:02-05:21	310 ₁ * 198 ₂	260	3	7	Core	
Oct 16/17	289/290	09:30~08:53	~093	~050	—	—	—	—	0	No obvious front	Two part event: 1. Streamer expands slowly. (Cavities may be present in streamer.) 2. Loop(?)/cavity and structured core superposed on streamer. 'Light-bulb' shaped event. Streamer is disrupted. Deflections. Loop may be present in earlier image at edge of occulting disk. Data is streaked.
	289/290	09:30~08:53			—	—	—	—	0	No obvious front	
	290	~04:30~08:53			~090	~040	Oct 17 05:59-06:27	209 ₁ * 037 ₂	090	2	
					Oct 17 04:30-05:59	090 ₁ * 037 ₂	090	3	6	Core	
Oct 16/17	289/290	17:36~04:33	270	020	—	—	—	—	1	Streamer	Streamer bulges, expands and disrupts. Possible concave-outward material late in event. Data is streaked.
Oct 18/19	291/292	21:49-00:28	~308	~055	—	—	—	—	0	Front at 21:49 only	Faint, thin loop/cavity with inner loop/cavity and core north of streamer. Very faint, concave-outward(?) cloud visible from 22:45 until 23:12. Deflections.
Oct 19	292	00:37~03:20	090	060	Oct 19 00:40-00:52	654 ₁ * 578 ₂	080	4	7	Loop	Bright loop/cavity superposed on streamer. Streamer is disrupted. Large deflections.
Oct 26	299	~03:45-23:58	100	030	Oct 26 09:50-16:47	039 ₁ 070 ₂ *	094	11	7	Cavity	Cavity with evolving core rises slowly in southern part of streamer. Loop becomes visible around cavity. Loop becomes 'light-bulb' shaped. Part of streamer is blown out. Deflections.
					—	—	—	—	1	Core	
											DATA GAP: Oct 27 21:05 to 23:39.
Oct 31	304	09:24-12:33	080	050	—	—	—	—	1	Mound	Faint mound superposed on streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 9 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Oct 31/ Nov 01	304/305	22:04-08:49	099	062	Oct 31 22:04-23:24	301 ₁ * 165 ₂	100	3	5	Loop	Faint loop(s?)/cavity and concave-outward, 'U'-shaped, structured core superposed on streamer. Streamer is disrupted. Deflections.
					Oct 31/Nov 01 22:27-00:01	176 ₁ * 146 ₂	085	3	5	Cavity	
					—	—	—	—	1	Core	
Nov 01	305	11:58-13:32	127	105	Nov 01 11:58-12:38	295 ₁ *	125	4	3	Loop	Very faint, wide, fuzzy loop/cavity south of streamer. Deflections.
Nov 03	307	11:31-14:39	287	043	Nov 03 11:31-11:50	762 ₁ * 941 ₂	295	3	5	Cloud	Irregularly-shaped cloud (or loop/cavity) superposed on streamer.
Nov 03	307	19:32-23:46	280	073	Nov 03 20:38-20:49	515 ₁ *	270	2	3	Cloud	Cloud (or loop/cavity) superposed on streamer. Streamer is deflected. Southern edge of cloud appears flat-topped late in event.
Nov 04	308	07:38-09:31	~280	—	—	—	—	—	1	Cloud	Faint cloud with concave-outward material superposed on streamer.
Nov 07	311	~09:29~17:32	~270	—	—	—	—	—	0	No clear front	Faint, slow-moving cloud superposed on streamer.
Nov 10	314	17:28-19:02	~285	~007	Nov 10 17:28-17:49	341 ₁ *	282	3	5	Jet	Jet of material with structured (prominence?) blob north of streamer. Blob is visible in H α filter. Jet is pinched at base to form concave-outward, 'V'-shape.
					Nov 10 17:31-18:05	280 ₁ *	289	2	3	H α blob	
Nov 11	315	10:45-13:54	270	033	Nov 11 10:45-11:31	367 ₁ 638 ₂ *	275	5	3	Cloud	Faint cloud superposed on streamer. Deflections.
Nov 12/13	316/317	22:54>01:13	~265	~073	Nov 12/13 23:03-01:13	071 ₁ * 093 ₂	275	4	3	Cavity	Loop/cavity and core superposed on streamer. Deflections. Ends during data gap.
DATA GAP: Nov 13 01:13 to 11:28.											
Nov 17	321	10:30-14:53	~274	~058	Nov 17 10:30-12:04	259 ₁ * 271 ₂	270	3	4	Cloud	Faint cloud superposed on and north of streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1986 Coronal Mass Ejections page 10 of 10

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAP: Nov 19 14:20 to Nov 20 22:36.
Nov 24	328	15:18-19:23	267	025	—	—	—	—	0	No clear front	Faint cloud (or blob) superposed on streamer.
											DATA GAP: Dec 01 12:26 to 15:26.
Dec 04/05	338/339	~14:13-04:27	274	048	—	—	—	—	0	No clear front	Material superposed on streamer expands and moves outward. Streamer is only slightly affected.
											DATA GAP: Dec 05 16:20 to 22:28.
											DATA ENDS: Dec 07, 1986 at 15:26. RESUMES: March 30, 1987.

SMM C/P 1987 Coronal Mass Ejections page 1 of 14

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Feature	Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual			
											DATA BEGINS Mar 30, 1987 at 21:32.	
											DATA GAPS: Mar 31 01:21 to 14:58. Mar 31 21:48 to Apr 01 14:32. Apr 02 22:06 to Apr 03 15:14.	
Apr 04	094	01:04-11:31	090	034	—	—	—	—	1		Could be up to three events: 1. Faint, fuzzy material superposed on streamer. Streamer expands. 2. Loop(s?)/cavity superposed on south side of streamer. 3. Jet (or wisp) near south edge of previous loop.	
		01:04-05:14										
		03:40-06:48	115	034	Apr 04 03:40-05:22	080 ₁ *	115	4	7	Loop		
		09:57-11:31	~107	~040	Apr 04 03:40-05:22	051 ₁ *	115	4	7	Cavity		
											1	Faint front in 2 images
Apr 05	095	03:14-03:47	092	030	—	—	—	—	0	Front at 03:14 only	Loop(?)/cavity superposed on streamer.	
											DATA GAP: Apr 05 11:50 to 21:57.	
Apr 06	096	04:55-06:29	085	~030	—	—	—	—	0	Front at 04:55 only	Mound (or blob) superposed on streamer. Streamer is disrupted.	
											DATA GAP: Apr 06 19:03 to 21:30.	
Apr 15	105	16:15-19:07	247	035	Apr 15 16:15-16:48	230 ₁ *	242	3	3	Cloud	Faint cloud.	
						251 ₂						
											DATA GAP: Apr 15 23:05 to Apr 16 14:15	
Apr 16	106	17:07-20:16	~245	~040	Apr 16 17:07-17:48	672 ₁ *	249†	3	2	Cloud	Faint cloud followed by second cloud in same location. Could be wider.	
						536 ₂						
					Apr 16 17:40-17:57	280 ₁ *	245	3	3	Second cloud		
						280 ₂						
Apr 17	107	13:49-18:40	~100	—	—	—	—	—	0	No obvious front	Cloud and blob superposed on streamer. Streamer is disrupted.	
					Apr 17 15:48-16:57	325 ₁ *	102	2	4	Blob		
Apr 18	108	03:57-14:49	097?	015?	—	—	—	—	0	Front at 03:57 only	Blob superposed on streamer. Could be as far south as 065°. Data gap occurs during event.	
											DATA GAP: Apr 18 07:31 to 13:06.	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 2 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 19	109	05:05-09:48	083	041	—	—	—	—	1	Front in two images only, one good, one fuzzy	Material expands and blows out through streamer. Streamer is disrupted.
											DATA GAP: Apr 19 23:57 to Apr 20 01:56.
Apr 21/22	111/112	18:22~05:05	092	038	Apr 21 18:22-19:56	185 ₁ *	090	2	3	Loop	Fuzzy loop(?)/cavity in streamer. Streamer expands. Loop fades into background brightness levels.
											DATA GAP: Apr 23 13:11 to Apr 24 13:38.
Apr 28	118	~01:25-10:17	266	038	Apr 28 03:15-07:09	079 ₁ * 099 ₂	255	10	6	Southern edge of loop	Loop(?)/cavity superposed on streamer. Streamer is disrupted.
					Apr 28 02:26-03:15	045 ₁ * 081 ₂	268	4	3	Cavity	
May 17/18	137/138	~09:52-06:18?	~080	—	—	—	—	—	0	No clear front	Slow expansion and disruption of streamer.
											DATA GAP: May 20 17:16 to 19:34.
May 24	144	09:13-15:05	305	050	May 24 09:13-12:21	078 ₁ 143 ₂ *	305	7	6	Loop	Faint loop/cavity with (multiple?) inner loop/cavity. Possible concave-outward, 'U'-shaped material visible from 13:23 until 15:05.
					May 24 10:14-11:48	096 ₁ * 130 ₂	300	4	4	Cavity	
					May 24 10:47-12:05	112 ₁ * 103 ₂	305	3	5	Inner loop	
					May 24 10:47-12:21	078 ₁ 346 ₂ *	300	5	7	Inner cavity	
May 24	144	12:21-16:31	244	012	—	—	—	0	Front at 13:23 only	Faint cloud superposed on south side of streamer.	
May 26	146	07:39-15:38	115	040	May 26 07:39-08:12	206 ₁ * 079 ₂	110	4	6	Outer cavity	Multiple loops/cavities superposed on south edge of streamer. Streamer is deflected.
					May 26 08:12-10:47	076 ₁ * 046 ₂	120	3	7	Second loop	
					May 26 08:12-09:46	049 ₁ *	120	2	5	Second cavity	
May 26	146	12:38-23:37	256	020	May 26 13:03-14:37	079 ₁ * 042 ₂	253	4	6	Streamer	Expansion and disruption of streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 3 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 29	149	00:43-06:11	279?	017?	—	—	—	—	0	Front at 02:18 only	Small, faint cloud superposed on south side of streamer.
May 29	149	17:10-18:45	270	050	May 29 17:10-18:00	375 ₁ * 374 ₂	275	3	6	Outer loop	Flat-topped (or heart-shaped) system (arcade?) of loops/cavities. Streamer is deflected.
May 29	149	20:44-23:52	275	060	May 29 21:53-22:43	459 ₁ * 257 ₂	275	3	6	Outer loop	Fuzzy material followed by multiple loops/cavities and twisted, bright, structured core. Core extends to the southern edge of event.
					May 29 22:18-22:43	445 ₁ *	285	2	7	Northern cavity	
					May 29 21:53-22:18	422 ₁ *	265	2	9	Southern cavity	
					May 29 22:10-22:43	446 ₁ * 556 ₂	255	3	9	Outer edge of twisted core	
May 30	150	08:08-08:53	~270	~045	—	—	—	—	0	Front at 08:08 only	Faint cloud (or loop/cavity). Deflections.
May 31	151	02:34-14:43	296	068	May 31 10:25-11:59	166 ₁ 338 ₂ *	315	5	9	Outer loop	Slow rising, multiple loops/cavities with bright, twisted (prominence?) core superposed on streamer. Core is under northern half of loop. Rapid acceleration at ~10:01. Bright, non-radial ray forms at core location at ~18:00. Motion (ejection?) of material along bright ray until end of Jun 01. Large deflections. Streamer is disrupted.
					May 31 11:35-12:24	410 ₁ * 527 ₂	318†	4	7	Core (prominence?)	
											DATA GAPS: Jun 02 14:40 to 21:41. Jun 04 14:40 to Jun 05 15:39. Jun 05 17:38 to 19:13. Jun 10 09:33 to 13:27.
Jun 10	161	20:17-23:00	~252	~055	—	—	—	—	1	Cloud	Faint cloud (or fuzzy loop/cavity) superposed on and south of streamer.
											Jun 16 13:10 to Jun 17 13:28. Jun 18 01:16 to 14:35.
Jun 18	169	14:51-20:07	255	030	—	—	—	—	0	No obvious front	Expansion of faint material superposed on fan.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 4 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Jun 25/26	176/177	~13:54~23:55	287	033	—	—	—	—	0	No clear front	Material superposed on streamer. Streamer expands slowly and blows out.
											DATA GAPS: Jun 27 20:05 to 23:13. Jun 29 04:21 to 06:40. Jul 01 16:05 to Jul 02 00:41.
Jul 07/08	188/189	17:21~05:10	030	070	Jul 07 17:21-18:02	255 ₁ * 402 ₂	040	4	7	Loop	Loop/cavity with structured (prominence?) core. Core is located at north edge of event. Large deflections.
					—	—	—	1	Core (prominence?)		
											DATA GAP: Jul 09 18:43 to Jul 10 17:35.
Jul 10/11	191/192	19:51-08:25	075	050	Jul 10/11 20:44-03:42	056 ₁ 113 ₂ *	090	10	5	Southern edge of mound	Mound (with cavity?) in streamer. Streamer expands and blows out.
Jul 15	196	13:56-15:30	~090	~030	—	—	—	—	1	Obscured by artifact	Diffuse loop(?)/cavity superposed on south edge of streamer.
											DATA GAP: Jul 18 00:27 to 02:02.
Jul 18/19	199/200	22:35-02:45	~070	~020	—	—	—	—	1	Cavity	Very faint loop(s?)/cavity.
Jul 20	201	13:26-15:33	~266	~090	Jul 20 13:34-15:00	244 ₁ * 321 ₂	260	3	4	Loop	Wide, very faint loop/cavity.
					Jul 20 13:26-13:59	141 ₁ *	290	2	5	Cavity	
Jul 24	205	18:30-21:38	~280	~020	—	—	—	—	1		Faint material superposed on fan.
Jul 25/26	206/207	08:13-07:38	250	030	—	—	—	—	1		Structured material superposed on streamer. Streamer is disrupted.
Jul 27	208	12:19-16:28	102	055	Jul 27 13:12-13:53	314 ₁ * 315 ₂	089†	4	7	Loop	Faint loop/cavity with interior loop-shaped(?) core superposed on south side of streamer.
					Jul 27 13:12-13:53	254 ₁ * 270 ₂	095	4	7	Cavity	
Jul 29	210	06:18>06:51	~242	~005	Jul 29 06:18-06:26	770 ₁ *	243	2	3	Jet	Jet (or narrow loop/cavity).
											DATA GAP: Jul 29 06:51 to 15:27.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 5 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments		
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual				
Jul 30	211	07:17-08:51	~092	~005	—	—	—	—	0	No obvious front	Jet (or ray).		
											DATA GAP: Jul 30 10:59 to Jul 31 14:33.		
Aug 01	213	19:05-22:47	268	038	Aug 01 19:05-19:38	422 ₁ *	260	2	5	Mound	Mound (or cloud) superposed on streamer.		
Aug 02	214	11:12-16:03	352	145	Aug 02 12:05-12:55	312 ₁ *	340	4	8	Loop	Wide, faint loop/cavity with small, structured, inner (prominence?) loop/cavity superposed on west side of streamer. Streamer is unaffected.		
					Aug 02 12:55-13:56	155 ₁ *	319	3	6	Inner loop (prominence?)			
Aug 03	215	00:55-04:04	258	038	Aug 03 00:55-01:28	193 ₁ *	258	2	4	Mound	Mound (or cloud).		
Aug 05	217	12:35-23:44	280	042	—	—	—	—	0	No clear front	Slow expansion of streamer.		
Aug 05	217	17:10-21:44	~067	—	Aug 05 17:10-19:17	103 ₁ *	065	6	3	Cloud	Faint cloud.		
Aug 06/07	218/219	16:43~22:59	102	025	Aug 06 17:16-20:25	031 ₁ *	110	5	5	Cavity	Faint loop/cavity with possible core superposed on streamer. Streamer is disrupted.		
						020 ₂							
Aug 19	231	10:56-11:46	263	086	Aug 19 10:56-11:13	671 ₁ *	225	3	5	Cloud	Structured cloud visible from 10:56 until 11:21. Additional material (loop/cavity?) superposed on streamer in 11:46 image. Streamer is disrupted.		
					Aug 19 10:56-11:21	425 ₁ *	225	4	6	Hook in material			
Aug 19/20	231/232	~19:37~01:29	240 238?	022 018?	—	—	—	—	0	No clear front	Cavity superposed on streamer. Faint material precedes cavity.		
					Aug 19 19:37-22:20	043 ₁ *	240	3	6	Cavity			
Aug 20	232	13:46-17:28	115	050	Aug 20 13:46-15:53	214 ₁ *	115	5	5	Loop	Loop/cavity with structured, central core superposed on streamer. Streamer is blown out.		
						236 ₂							
					Aug 20 13:46-15:53	228 ₁ *	115	5	6	Cavity			
					Aug 20 13:46-15:53	179 ₁ *	120	5	6	Core			
						242 ₂							

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 6 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Aug 21 10:52 to 14:46.
Aug 22	234	08:44-19:43	085	036	—	—	—	—	1	Material	Diffuse material followed by a loop/cavity(?) superposed on streamer. Streamer is disrupted.
					Aug 22 11:19-14:27	101 ₁ * 148 ₂	090	4	6	Loop	
Aug 23/24	235/236	22:24-04:34	080	050	Aug 23 23:26-23:59	492 ₁ *	095	2	5	Southern mound	Multiple mounds (or clouds) superposed on streamer. Streamer is disrupted.
Aug 26	238	07:05-22:47	281	043	Aug 26 07:05-16:30	052 ₁ 094 ₂ *	280†	9	5	Cavity	Loop/cavity with core south of streamer. Core emerges late in event. Streamer is disrupted.
											DATA GAP: Aug 27 19:11 to Aug 28 17:55.
Aug 28	240	19:37-21:45	095	039	—	—	—	—	1		Small loop(?)/cavity superposed on south side of streamer. Data is streaked.
Aug 29	241	03:20-04:10	272	055	Aug 29 03:20-03:37	669 ₁ *	295	2	6	Northern top of loop	Large, flat-topped loop/cavity superposed on fan. Fan is blown out.
					Aug 29 03:20-03:37	563 ₁ *	295	2	4	Northern top of cavity	
Aug 31	243	12:42-13:43	280	055	—	—	—	—	0	Front at 12:42 only	Faint loop/cavity(?). Southern leg of loop is bent strongly away from event.
Sep 01	244	13:49-17:58	330	—	Sep 01 13:49-14:50	142 ₁ * 140 ₂	328†	3	4	Mound	Faint mound.
Sep 01	244	16:16-17:50	110	055	—	—	—	—	1		Structured material south of streamer. Streamer is deflected.
Sep 03	246	09:39-12:14	090	042	Sep 03 09:39-10:40	362 ₁ *	100	2	5	Loop	Faint, flat-topped loop/cavity superposed on streamer. Streamer is disrupted.
					Sep 03 09:39-10:40	343 ₁ *	100	2	7	Cavity	
Sep 07	250	09:27-22:54	106	047	Sep 07 10:28-15:11	086 ₁ 141 ₂ *	115	6	5	Cavity	Diffuse loop/cavity with complex, structured, concave-outward, 'U'-shaped core superposed on streamer. Part of streamer is blown out.
											DATA GAPS: Sep 08 03:53 to 08:19. Sep 08 13:51 to Sep 09 03:10.
Sep 09	252	07:53-15:52	070	064	Sep 09 07:53-11:34	053 ₁ * 067 ₂	065	10	3	Loop	Faint loop/cavity with faint core. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 7 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Sep 09	252	17:35-22:51	274	028	—	—	—	—	0	No clear front	Swelling and expansion of material superposed on streamer. Streamer is disrupted.
											DATA GAPS: Sep 10 17:00 to 20:00. Sep 10 22:24 to Sep 11 03:51. Sep 11 19:58 to Sep 12 00:16. Sep 13 01:48 to 03:22. Sep 15 18:28 to 22:29.
Sep 16/17	259/260	02:19-02:53	~108	~037	Sep 16 02:19-06:28	015 ₁ * 015 ₂	105	5	3	Cavity	Fuzzy loop/cavity (or mound). Could be wider. Region is disrupted.
Sep 17	260	07:43-09:51	266	022	Sep 17 07:43-08:16	365 ₁ * 301 ₂	260	3	5	Mound	Flat-topped mound (with small cavity?).
Sep 17	260	16:00-17:42	262	075	Sep 17 16:00-16:08	704 ₁ *	240	2	2	Outer loop	Multiple loops/cavities(?) with possible loop-shaped (structured?) core superposed on streamer. Streamer is unaffected.
Sep 17	260	20:25-23:17	094	042	Sep 17 20:25-20:42	598 ₁ *	108†	2	7	Loop	Loop/cavity superposed on fan. Deflections.
Sep 21	264	13:55-23:45	~240	—	Sep 21 13:55-21:38	048 ₁ * 051 ₂	235	10	3	Mound	Faint mound (or cloud) superposed on and south of streamer.
Sep 22	265	10:36-14:46	062	045	Sep 22 11:38-13:12	172 ₁ * 167 ₂	065	3	5	Loop	Faint loop(?)/cavity and mound-shaped core.
					Sep 22 12:11-13:12	208 ₁ *	065	2	4	Core	
											DATA GAPS: Sep 22 16:54 to 20:55. Sep 22 21:44 to Sep 24 14:01.
Sep 24	267	17:34-23:18	091	042	Sep 24 19:09-22:17	058 ₁ 134 ₂ *	100	6	7	Cavity	Loop/cavity and core superposed on fan. Could be 'light-bulb' shaped. Fan is disrupted.
											DATA GAP: Sep 25 15:42 to 18:01.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 8 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 25/26	268/269	18:17~03:42	267	046	Sep 25 18:50-21:59	082 ₁ * 194 ₂	260	3	3	Core	Faint mound (or loop) with embedded cavity and core superposed on streamer. Streamer is disrupted. Possible concave-outward, 'U'-shaped material from Sep 25 23:33 until Sep 26 ~03:42.
					—	—	—	—	1	Concave-outward material	
Sep 27	270	01:42~23:41	299	038	—	—	—	—	0	No clear front	Faint cloud superposed on fan near equator. Northern edge accelerates and blows out beginning at ~16:23. Possible concave-outward material from 16:23 until ~23:41.
Oct 04	277	06:10-13:08	117	050	Oct 04 08:26-11:01	129 ₁ 257 ₂ *	130	6	3	Loop	Diffuse loop/cavity superposed on and south of streamer. Part of streamer is deflected.
											DATA GAP: Oct 04 22:41 to Oct 05 00:15.
Oct 06	279	16:24-19:32	075	026	—	—	—	—	1	Cavity	Mound (or loop) with cavity.
Oct 09	282	07:45-20:18	118	005	—	—	—	—	0	No clear front	Two part event: 1. Multiple small jets in ray. 2. Mound (or loop/cavity) with interior structure in ray. Event may be wider.
		07:45-11:54 11:54-20:18	~127	~021	Oct 09 12:11-15:03	059 ₁ * 050 ₂	130†	6	3	Mound	
											DATA GAP: Oct 10 13:42 to 20:44.
Oct 11	284	10:07-14:50	272	025	Oct 11 10:07-11:41	229 ₁ * 307 ₂	270	3	4	Cloud	Fuzzy cloud near equatorial streamer.
Oct 14	287	08:38-11:13	083	027	—	—	—	—	0	No obvious front	Curved material (loop/cavity?) south of streamer. Deflections.
Oct 16	289	01:35-13:35	~272	~035	—	—	—	—	0	No clear front	Faint mound north of streamer. Could be wider.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 9 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 16/17	289/290 289	02:28-04:00 02:28-11:53	074	042	Oct 16 03:01-05:44	123 ₁ 183 ₂ *	070	7	7	Cavity	Two-part event: 1. Loop/cavity with structured, loop-shaped (prominence) core superposed on streamer. Streamer is disrupted. 2. Faint jet ejected along ray.
					Oct 16 04:27-06:01	072 ₁ * 224 ₂	073†	3	7	Core (prominence)	
	—	—	—	—	0	No clear front					
Oct 18	291	all day	250	054	—	—	—	—	1		Slow-moving, diffuse mound superposed on streamer. Faint cavity and core may be present in southern part of event.
											DATA GAP: Oct 19 14:22 to 21:24.
Oct 20/22	293/295	~01:22~06:38	~255	~030	—	—	—	—	0	No obvious front	Slow disruption of streamer.
Oct 21	294	03:48-08:39	081	048	—	—	—	—	0	No clear front	Fan appears and expands. Fan is superposed on equatorial streamer.
											DATA GAP: Oct 21 11:14 to 17:23.
Oct 23	296	10:13>12:37	290	030	Oct 23 10:13-12:37	044 ₁ * 013 ₂	291	6	6	Cavity	Loop/cavity and core superposed on streamer. Streamer is disrupted. Event ends during data gap.
											DATA GAPS: Oct 23 12:37 to 19:38. Oct 24 03:54 to 06:38.
Oct 24	297	12:10-23:02	277	026	Oct 24 12:10-16:20	047 ₁ * 019 ₂	280	6	5	Cavity	Loop/cavity with fuzzy core(?) superposed on fan.
					Oct 24 14:46-19:29	026 ₁ * 014 ₂	280	5	5	Core	
Oct 25	298	18:46-19:35	283	046	Oct 25 18:46-19:35	312 ₁ 469 ₂ *	305	4	7	Loop	Loop/cavity with broad, fuzzy core superposed on fan. Fan is unaffected. Deflections south of event.
					Oct 25 18:46-19:35	323 ₁ * 323 ₂	305	4	9	Cavity	
					Oct 25 19:02-19:35	434 ₁ * 282 ₂	305	3	7	Core	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 10 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Oct 26/27	299/300	20:27-02:51	109	063	Oct 26 20:27-22:17	157 ₁ 326 ₂ *	125	5	5	Loop	Diffuse loop/cavity with structured (prominence) core superposed on and south of streamer. Streamer is unaffected.
					Oct 26 20:43-22:17	156 ₁ 216 ₂ *	120	4	7	Cavity	
					Oct 26/27 21:52-01:17	175 ₁ * 196 ₂	102†	5	5	Core (prominence)	
Oct 26/27	299/300	23:02-05:35	245	030	Oct 26/27 23:02-01:00	105 ₁ * 048 ₂	245	4	3	Mound	Very faint mound (or loop/cavity).
Oct 27/28	300/301	12:17-08:08	096	052	Oct 27 12:17-16:52	042 ₁ * 026 ₂	100	5	2	Cavity	Loop/cavity (or mound with cavity) and core superposed on streamer. Streamer is disrupted. 'Light-bulb' shaped late in event. Deflections.
											DATA GAPS: Oct 28 03:34 to 08:00. Oct 28 11:58 to Oct 29 04:25.
Nov 01	305	07:55-11:36	117	045	Nov 01 07:55-08:28	246 ₁ * 316 ₂	120	3	8	Cavity	Faint loop/cavity superposed on and south of streamer. Streamer is unaffected. Very faint material ejected late in event.
Nov 01	305	12:54-17:12	116	052	Nov 01 12:54-14:12	387 ₁ * 435 ₂	125	3	7	Loop	Fuzzy loop/cavity superposed on and south of streamer. Streamer is unaffected.
					Nov 01 12:54-14:12	338 ₁ * 361 ₂	125	3	5	Cavity	Irregular material precedes loop. Could be related to previous event.
Nov 02	306	14:26-17:26	287	035	—	—	—	—	1		Faint mound (or loop/cavity) superposed on streamer. Streamer is unaffected.
Nov 03	307	16:51-21:42	110	041	Nov 03 16:51-18:08	321 ₁ 455 ₂ *	115	5	7	Cavity	Bright loop/cavity with loop-shaped core(?) superposed on streamer. Streamer is blown out.
					Nov 03 16:51-18:08	203 ₁ * 193 ₂	126†	3	4	Core	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 11 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 04	308	01:43-03:25	~020	~090	—	—	—	—	0	Front at 01:43 only	Very faint, broad mound spans north polar region. Could be wider. West edge is tough to measure.
Nov 04/05	308/309	18:06-06:14	289	047	—	—	—	—	0	No obvious front	Two piece event: 1. Slow expansion and disruption of streamer.
	308/309 309	18:06-06:14 05:13			—	—	—	—	0	Front at 05:13 only	2. (Loop-shaped?) material superposed on streamer.
Nov 05	309	07:40~22:21	110	040	Nov 05 07:40-12:56	037 ₁ * 054 ₂	105	11	7	Cavity	Two part event: 1. Loop/cavity superposed on streamer. Second, structured (prominence?) loop/cavity at south edge of first loop from 10:49 until 11:22. Streamer is disrupted.
		12:39~22:21			—	—	—	—	1		2. Mound-shaped material follows loops. Fades into background brightness levels.
											DATA GAP: Nov 05 22:29 to Nov 06 00:48.
Nov 06	310	07:46-10:22	113	037	Nov 06 08:47-09:20	070 ₁ *	110	2	4	Cavity	Fan expands. Loop(?) /cavity in fan.
Nov 06/07	310/311	20:20-12:02	120	060	Nov 06 20:20-20:28	776 ₁ *	125	2	8	Loop	Bright loop/cavity with structured (prominence?) core superposed on fan. Fan is blown out.
					Nov 06 20:20-20:28	706 ₁ *	125	2	9	Cavity	
					Nov 06 20:20-20:28	706 ₁ *	138	2	9	Core (prom?)	
Nov 07	311	17:45-22:53	122	047	Nov 07 17:45-18:18	270 ₁ * 158 ₂	125	3	7	Loop	Loop/cavity superposed on streamer. Back edge of cavity is concave-outward 'U'-shaped. Streamer is blown out.
					Nov 07 17:45-18:18	258 ₁ * 369 ₂	125	3	7	Cavity	
Nov 07/08	311/312	20:01~05:26	300	043	—	—	—	—	0	Front at 20:01 only	Bright loop/cavity superposed on fan. Fan is disrupted. Wisp of (prominence?) material is visible at north edge of event from 22:20 until 23:01. Data gap occurs near end of event.
											DATA GAP: Nov 08 03:52 to 05:09.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 12 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 08	312	17:51-22:09	~265	~030	—	—	—	—	0	No obvious fronts	Expansion of material in fan. Cavity may be present. Fan is disrupted.
Nov 09	313	12:41-23:33	114	032	—	—	—	—	1		Faint cloud superposed on streamer.
Nov 10/11	314/315	22:32-01:40	271	062	Nov 10 22:32-22:40	393 ₁ *	294†	2	7	Hook in core (prominence)	Fuzzy loop/cavity with structured, knotty (prominence) core in northern leg of loop. Region is disrupted. Deflections.
Nov 11/12	315/316	19:05-07:38	072	052	—	—	—	—	0	No clear front	Expansion and disruption of streamer. Concave-outward 'U'-shaped material may be present.
											DATA GAPS: Nov 16 09:14 to 13:32. Nov 16 14:22 to Nov 17 14:39.
Nov 18/19	322/323	05:20-09:43	~105	~070	—	—	—	—	0	No obvious front	Slow expansion of wide, faint, diffuse cloud around streamer.
Nov 18/19	322/323	12:54-23:51	~240	—	—	—	—	—	0	No obvious front	Slow expansion of faint, diffuse cloud around streamer.
Nov 19/20	323/324	10:44-11:51	106	071	Nov 19/20 22:09-09:16	039 ₁ 066 ₂ *	122†	18	7	Cavity	Faint cloud superposed on streamer. Tear-dropped-shaped cavity visible late in event. Deflections.
Nov 21	325	00:25-11:57	~102	~045	Nov 21 00:25-00:58	176 ₁ *	110	3	3	Cloud	Broad, fuzzy cloud superposed on background structures. Could be wider.
Nov 21	325	00:41~13:06	262	061	Nov 21 00:41-08:24	057 ₁ *	250	8	4	Cavity	Broad, diffuse cloud with cavity and possible concave-outward 'U'-shaped material superposed on existing structures. Equatorial region is blown out.
Nov 22	326	06:14-11:29	082	036	—	—	—	—	1		Cloud(?) with cavity superposed on fan. Fan is blown out.
											DATA GAP: Nov 22 14:13 to Nov 23 19:45.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 13 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments		
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature	
Nov 24	328	17:44-22:34	061	046	Nov 24 19:51-20:00	422 ₁ *	060	2	7	Outer loop	Loop/cavity with inner loop/cavity all superposed on southern edge of streamer. Deflections.	
					Nov 24 19:51-20:00	422 ₁ *	060	2	7	Outer cavity		
					Nov 24 19:51-21:00	327 ₁ *	060	3	7	Inner loop		
					Nov 24 19:51-21:00	236 ₁ *	063†	3	4	Inner cavity		
Nov 26	330	12:55-15:14	257	045	Nov 26 12:55-13:57	247 ₁ *	244†	2	3	Cloud	Faint, diffuse cloud.	
Nov 29	333	14:33-18:42	105	034	Nov 29 14:33-15:34	306 ₁ *	109†	2	3	Loop	Loop(?)/cavity superposed on streamer. Streamer is partially blown out.	
Dec 01	335	17:39-19:13	286	079	Dec 01 17:39-18:29	290 ₁ *	300	4	5	Loop	Faint loop/cavity superposed on streamer.	
Dec 03	337	09:43-12:44	280	060	—	—	—	—	1		Cloud superposed on streamer.	
											DATA GAP: Dec 03 14:27 to Dec 04 03:44.	
Dec 05	339	~04:00-16:41	259	042	Dec 05 11:58-13:33	185 ₁ *	263	3	2	Mound	Slow expansion and swelling of streamer. Fuzzy mound with indistinct cavity becomes visible around streamer at ~10:24. Brighter, structured core is visible from 13:33 until ~16:03. Streamer is blown out. Deflections.	
					Dec 05 14:34-15:07	351 ₁ *	270	2	5	Core		
Dec 06	340	06:08-07:42	103	055	Dec 06 06:08-06:41	351 ₁ *	115	3	6	Loop	Faint loop/cavity and diffuse core. Deflections.	
					Dec 06 06:08-06:41	351 ₂						
					Dec 06 06:08-06:41	293 ₁ *	115	3	6	Cavity		
					Dec 06 06:08-06:41	456 ₂						
					Dec 06 06:08-06:41	261 ₁ *	115	3	6	Core		
						298 ₂						
Dec 09	343	03:15-10:58	120	032	Dec 09 04:49-07:58	345 ₂ *	124†	7	5	Loop	Loop/cavity with diffuse core. Deflections.	
											DATA GAP: Dec 11 21:21 to Dec 12 15:55.	
Dec 14	348	02:28-10:27	062	060	Dec 14 02:28-03:09	208 ₁ *	063	4	5	Cavity	Faint loop/cavity and diffuse core in streamer. Streamer is disrupted.	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1987 Coronal Mass Ejections page 14 of 14

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual			
Dec 14	348	04:43-15:10	122	037	—	—	—	—	0	Front at 04:43 only	Two part event: 1. Mound with cavity(?) superposed on fan and streamer. 2. Faint mound with cavity superposed on fan.	
		04:43-06:10										
		10:27-15:10										~087
Dec 16	350	13:06-20:48	135	050	Dec 16 13:06-17:40	041 ₁ * 040 ₂	130	9	4	Mound	Faint mound superposed on streamer. Simultaneous deflections (or brightening) in southwest.	
Dec 17/18	351/352	23:13-02:13	080	078	Dec 17/18 23:13-00:39	262 ₁ * 299 ₂	056†	4	7	Loop	Loop/cavity and structured (prominence) core. South edge is superposed on streamer. Streamer is unaffected.	
						Dec 17/18 23:13-00:47	245 ₁ 368 ₂ *	056†	4	7		Cavity
						Dec 17/18 23:46-01:20	214 ₁ 342 ₂ *	060†	5	7		Core (prominence)
Dec 20/21	354/355	12:34-05:33	067	054	Dec 20 16:59-23:57	046 ₁ 098 ₂ *	065	13	5	Mound	Faint, diffuse mound north of equatorial streamer. Streamer is unaffected.	
Dec 26	360	20:30-22:05	138	027	—	—	—	—	1	Material	Irregularly-shaped, material with some internal structure. Deflections.	
Dec 26/27	360/361	22:38-05:11	~225	—	—	—	—	—	0	No clear front	Tongue south of streamer. Partially obscured by pylon shadow late in event.	
Dec 28	362	00:53-06:10	080	040	Dec 28 01:26-06:10	102 ₁ * 092 ₂	073†	5	3	Mound	Faint, diffuse mound with cavity(?) superposed on fan. Deflections.	
					Dec 28 01:26-03:54	100 ₁ *	080†	2	5	Cavity		
Dec 29	363	14:50-17:59	264	103	Dec 29 14:50-15:15	422 ₁ *	240	2	9	Loop	Asymmetric, flat-topped loop/cavity with complex, structured core on existing structures. Large region is blown out. Big deflections.	
					Dec 29 14:50-15:15	422 ₁ *	240	2	9	Cavity		

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 1 of 43

Date	DOY	Time [UT]	Ctrl PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 01	001	04:20-15:27	250	060	Jan 01 08:45-12:18	077 ₁ 114 ₂ *	240	7	7	Core	Mound (or loop/cavity) with structured core (or inner loop/cavity) all superposed on streamer. Region is blown out. Deflections.
Jan 01/02	001/002	22:28-05:26	288	065	Jan 01/02 22:28-02:26	110 ₁ 162 ₂ *	295	9	6	Cavity	Loop/cavity with flat-topped structured core in streamer. Streamer is disrupted.
					Jan 02 00:02-01:53	135 ₁ *	295	5	6	Core	
Jan 02	002	02:18-04:45	120	050	—	—	—	—	1		Faint cloud. Equatorial streamer is deflected. Data is streaked.
Jan 02	002	22:09-22:42	~122	~050	—	—	—	—	0	No obvious front	Faint cloud. Deflections.
Jan 02	002	22:16-23:51	288	045	—	—	—	—	0	No obvious front	Irregularly-shaped tongue north of equatorial streamer. Deflections.
Jan 03	003	07:42-13:58	315	040	Jan 03 07:42-09:49	029 ₁ *	310	7	3	Mound	Faint mound rises slowly.
Jan 04/05	004/005	18:21-07:11	130	030	Jan 04/05 21:29-04:11	019 ₁ *	130	11	6	Cavity	Faint loop/cavity, superposed on fan.
Jan 05	005	07:11~19:11	112	035	Jan 05 07:11-10:19	052 ₁ *	110	7	5	Cavity	Loop/cavity with structured core superposed on faint fan. Deflections north of event. Ends with possible concave-outward structure.
											DATA GAP: Jan 05 22:52 to Jan 06 01:19.
Jan 07	007	04:33-10:58	073	075	Jan 07 05:42-06:15	123 ₁ *	070	2	4	Loop	Loop(?)/cavity with loop-like core(?) at 05:42 superposed on streamer. Region is disrupted.
					Jan 07 05:42-06:15	163 ₁ *	070	3	4	Cavity	
Jan 07	007	18:15-22:58	047	010	—	—	—	—	1		Tongue (or small loop/cavity). Motion until 22:58.
Jan 09/10	009/010	12:54-12:26	120	072	Jan 10 01:52-06:26	123 ₂ *	124†	6	5	Cavity	Slow rising mound followed by cavity and wispy, structured core. Acceleration occurs Jan 10 ~04:18. Fan is blown out. Deflections.
					Jan 10 04:35-08:00	096 ₁ *	120	7	5	Core	
											DATA GAP: Jan 11 08:50 to Jan 12 17:55.
Jan 12	012	20:47-22:54	303	006	—	—	—	—	0	No obvious front	Fuzzy tongue superposed on fan.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 2 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 14/15	014/015	~08:52-13:07	285	039	—	—	—	—	1		Streamer slowly swells and expands. Cavity may be present. Region is partially blown out. DATA GAP: Jan 15 13:15 to Jan 16 15:31.
Jan 16	016	<15:48-23:39	300	036	—	—	—	—	1		Fuzzy tongue with possible internal structure superposed on streamer. Region is disrupted. Could be related to previous event.
Jan 19/20	019/020	~03:51~23:57	290	040	—	—	—	—	0	No obvious front	Very slow swelling and expansion of helmet streamer. Southern edge of streamer is blown out.
Jan 24/27	024/027	~00:11~02:44	245	050	—	—	—	—	0	No clear front	Streamer very slowly swells and expands. Expansion continues through data gap on Jan 25. Region is blown out by early Jan 27. Tough to give start/stop times.
Jan 24	024	12:12-15:54	~270	—	—	—	—	—	0	No obvious front	Very faint (large?) cloud superposed on streamers. DATA GAP: Jan 25 04:19 to 17:46.
Jan 26	026	06:53~13:18	060	015	—	—	—	—	0	No obvious front	Jet (or ray) brightens and fans out.
Jan 27	027	06:34~20:41	120	048	Jan 27 08:08-12:17	034 ₁ * 043 ₂	120	8	3	Mound	Mound swells and expands slowly. Superposed on streamer. Streamer remains.
Jan 27/28	027/028	18:26~07:49	303	045	Jan 27 18:26-20:49	052 ₁ * 045 ₂	295	8	5	Cavity	Loop/cavity with diffuse core superposed on existing structures. Region is disrupted. DATA GAP: Jan 28 09:23 to 16:24.
Jan 29	029	00:56-03:32	114	028	—	—	—	—	0	No obvious front	Material superposed on streamer swells and expands.
Jan 29/31	029/031	09:34-23:41?	285	039	—	—	—	—	0	No obvious front	Extremely slow expansion of material and cavity superposed on streamer.
Jan 30	030	07:38~23:28	066	029	—	—	—	—	1	Cavity	Cavity appears in streamer and expands slowly. Streamer expands. Acceleration at ~19:18.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 3 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 02	033	04:40-06:56	128	064	Feb 02 04:40-04:57	784 ₁ * 1002 ₂	135	3	6	Loop	Flat-topped(?) loop/cavity with structured (prominence?) core. Deflections.
					Feb 02 04:40-04:57	593 ₁ * 656 ₂	135	3	5	Core (prominence?)	
Feb 02	033	08:22-16:04	250	070	Feb 02 09:56-13:21	048 ₁ * 065 ₂	265	8	6	Cavity	Faint, fuzzy cloud followed by faint loop/cavity superposed on streamer.
											DATA GAPS: Feb 02 17:30 to 21:56. Feb 02 22:20 to Feb 03 15:11.
Feb 05	036	04:50-09:41	075	—	—	—	—	—	0	No obvious front	Diffuse cloud superposed on streamer.
Feb 05	036	12:58-14:15	032	105	—	—	—	—	0	Front at 12:58 only	Loop/cavity with diffuse core. Eastern edge is superposed on streamer. Streamer is deflected. Event in one image only.
Feb 06	037	13:47-19:11	145	082	Feb 06 14:12-14:37	350 ₁ * 504 ₂	155	3	7	Loop	(Multiple?) loop/cavity and large, highly structured (prominence) core in fuzzy fan. Eastern edge of loop has complex structure. Fan is blown out. Large deflections.
			147	070	Feb 06 13:47-14:37	290 ₁ 665 ₂ *	155	4	4	Cavity	
			148	076	Feb 06 14:12-15:30	390 ₁ 548 ₂ *	155	4	9	Core (prominence)	
Feb 09/10	040/041	~12:32>06:04	307	055	—	—	—	—	1		Diffuse cloud with possible cavity. Ends during data gap. Possible acceleration just prior to data gap. Region is blown out when data recommences on Feb 11. Data is streaked.
											DATA GAP: Feb 10 06:04 to Feb 11 16:10.
Feb 11	042	<16:10-21:01	078	044	Feb 11 16:10-17:00	128 ₁ * 133 ₂	075	4	6	Loop	Loop/cavity with broad, structured core. Region is blown out. Deflections.
					Feb 11 16:35-18:26	107 ₁ * 154 ₂	075	5	6	Core	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 4 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 12	043	06:18~12:59	137	044	Feb 12 06:18-08:34	308 ₂ *	138	3	7	Cavity	Loop/cavity with bright, complex, highly structured (prominence) core in streamer. Streamer is disrupted. Deflections. Possible concave-outward material.
					Feb 12 08:34-09:26	231 ₁ *	125†	3	7	Core (prominence)	
Feb 12/13	043/044	17:50~08:14	~250	~040	—	—	—	—	1	Mound	Diffuse mound (or loops/cavities) superposed on streamer. Mound fades from visibility as it moves outward.
Feb 13	044	19:04-21:40	105	030	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on rays and streamers. Deflections in streamer north of event.
Feb 15	046	09:45-11:11	100	040	—	—	—	—	0	Front at 09:45 only	Fuzzy loop/cavity superposed on streamer. Event is in one image only.
DATA GAP: Feb 17 21:39 to Feb 18 14:30.											
Feb 18	049	<14:30-16:45	265	050	Feb 18 15:19-16:45	146 ₁ * 193 ₂	280	3	3	Cavity	Faint loop/cavity (or cloud). Event began during data gap.
Feb 20	051	04:26~08:52	283	065	Feb 20 04:26-04:34	757 ₁ *	285	2	3	Loop	Bright loop/cavity in streamer. Visible in rolled west and north images. Region is blown out.
Feb 20	051	04:51-09:00	101	—	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on existing structures. Possible concave-outward shaped material. Streamers are unaffected. Data is streaked.
Feb 23	054	15:26-19:07	065	050	Feb 23 15:59-17:41	202 ₁ * 174 ₂	070	5	5	Cavity	Fuzzy loop/cavity superposed on streamer.
DATA GAP: Feb 23 19:15 to Feb 24 02:16.											
Feb 25	056	16:37-19:12	156	—	—	—	—	—	0	No obvious front	Nearly invisible cloud in east and south images. Data is slightly streaked.
Mar 02	062	05:24-08:58	076	027	—	—	—	—	1	Cloud	Faint, fuzzy cloud superposed on streamer. Streamer is unaffected.
DATA GAP: Mar 03 11:30 to 22:04.											

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 5 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 03/04	063/064	<22:12-03:19	156	159	Mar 03 22:12-22:45	232 ₁ * 011 ₂	085	3	5	Loop	Huge, broad loop/cavities(?) with two structured interior (prominence) loops/cavities appearing nearly simultaneously at widely different locations. Deflections north of event. Southern structured loop/cavity is surrounded by fuzzy, concentric loops/cavities.
	063/064	22:37-03:19	182		—	—	—	—	0	Southern loop (prominence) at 22:37 only	
	063/064	22:45-01:20	105		Mar 03/04 22:45-00:03	259 ₁ * 225 ₂	103†	3	5	Eastern loop (prominence)	
Mar 04	064	05:10-08:10?	275	030	—	—	—	—	0	Front at 05:10 only	Mound superposed on streamer.
Mar 08	068	05:38~09:02	348?	065?	Mar 08 05:38-06:19	112 ₁ * 124 ₂	320	3	3	Cloud	Irregularly-shaped cloud.
											DATA GAP: Mar 08 09:11 to 18:11.
Mar 12	072	~02:12-23:25	131	098	Mar 12 03:02-08:29	059 ₁ * 089 ₂	136†	7	4	First cavity	Fuzzy mound rises slowly and is followed by a succession of cavities and structured material all superposed on existing structures. Region is partially blown out.
Mar 13	073	08:42-11:17	288	025	—	—	—	—	0	No obvious front	Swelling and expansion of material superposed on fan.
Mar 14	074	03:23~08:22	253	035	—	—	—	—	0	No obvious front	Fuzzy mound with interior structure. Deflections.
											DATA GAP: Mar 14 20:32 to Mar 15 16:30.
Mar 20/21	080/081	11:34~10:32	~245	~080	Mar 20/21 13:08-00:23	014 ₁ * 012 ₂	225	9	6	Mound	Could be two events: 1. Fuzzy mound followed by sharper, complex (multiple?) loop/cavity at ~22:49. West equatorial streamer is unaffected. 2. Small, fuzzy jet just north of streamer.
	080/081	11:34~10:32									
	080/081	22:49~10:32	240	040	Mar 21 00:23-01:40	138 ₁ * 098 ₂	240†	4	6	Loop	
	080	12:35-14:33	320	006	—	—	—	—	0	Front at 12:35 only	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 6 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Mar 20/21	080/081	20:59~05:58	095	085	—	—	—	—	0	Front at 22:41 only	1. Diffuse loop/cavity in northeast. Deflections. 2. Cavity rises in east equatorial streamer. Loop becomes visible around cavity. Streamer is disrupted.
	080	20:59~23:33			Mar 20/21 21:15-01:16	029 ₁ * 020 ₂	111†	4	7	Cavity	
Mar 23/24	083/084	22:57~23:55	~094	~073	—	—	—	—	0	No obvious front	Mound superposed on streamer. Mound rises slowly. Deflections.
Mar 25	085	06:12-08:38	278	055	Mar 25 06:12-07:21	363 ₁ * 433 ₂	284	3	5	Tongue	Asymmetric tongue with possible cavity superposed on background corona.
Mar 25	085	12:11-17:02	246	038	Mar 25 12:11-12:36	303 ₁ * 342 ₂	245	3	5	Mound	Mound superposed on corona from ~12:11 until 13:21. Possible loop/cavity visible from ~13:54 until 17:02 in same location. Possible concave-outward, 'U'-shaped material visible in west images from 13:21 to 14:10.
Mar 25/26	085/086	21:53-12:07	287	054	—	—	—	—	0	Front at 21:53 only	Bright, complex material (multiple loops/cavities?) in 21:53 image only. Region is blown out. Faint, fuzzy material is ejected early Mar 26.
Mar 26	086	12:52-14:35	080	040	—	—	—	—	0	No obvious front	Fuzzy cloud (with cavity?) superposed on streamer. Region swelled slowly prior to event.
Mar 26/27	086/087	23:06-15:41	085	060	Mar 27 01:25-07:41	050 ₁ 073 ₂ *	085	5	2	Cavity	Faint mound superposed on streamer followed by low contrast cavity. Region is partially blown out. Deflections. Brighter material (mound?) is ejected along streamer from Mar 27 06:16 until ~15:41.
Mar 27	087	12:49-14:39	284	027	Mar 27 12:49-13:13	328 ₁ *	280	2	6	Tongue	Tongue superposed on streamer.
Mar 28	088	10:38-13:47	060	070	—	—	—	—	1	Cavity	Fuzzy loop/cavity, with structured (prominence) core superposed on streamer.
					—	—	—	—	1	Core (prominence)	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 7 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Mar 29	089	01:02-04:10	233	025	Mar 29 01:02-02:03	285 ₁ *	236	3	4	Mound	Mound (or loop/cavity) superposed on streamer. Structured material north of mound from ~02:36 until ~04:10. Bright cloud with concave-outward appearance at 03:46 from <238° to 255°. Slow buildup of material on Mar 28.
Mar 30	090	14:58-22:40	274	057	Mar 30 15:51-18:06	113 ₁ 184 ₂ *	280	5	2	Streamer	Expansion of streamer followed by loop/cavity. Streamer is disrupted.
Mar 31	091	09:31-16:57	232	055	Mar 31 09:31-12:31	110 ₁ 171 ₂ *	238	6	5	Loop	<p>Could be two events.</p> <p>1. Faint loop/cavity superposed on corona south of equatorial streamer. Southern leg is near pylon shadow.</p> <p>2. Irregular material expands and is ejected in and north of equatorial streamer. Streamer is disrupted. Concave-outward shaped material near equator from ~15:15 until 16:57.</p>
		12:56-16:57									
Apr 05/06	096/097	16:11-01:36	090	060	Apr 05 16:11-17:45	133 ₁ *	077	3	3	Loop	Thick, fuzzy loop/cavity (or mound) superposed on corona. Second fuzzy front appears in same location from 00:02 until 01:36. Region is disrupted.
Apr 06/07	097/098	22:32~10:40	225?	—	—	—	—	—	0	No obvious front	Cavity becomes visible in streamer at ~16:16 at 2.5R _☉ and remains stationary. Faint mound appears and obscures cavity at 22:32. Southern edge is at 245°. Northern edge is not visible. Fades. Deflections in east sector.
DATA GAP: Apr 07 10:40 to Apr 08 14:54.											

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 8 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Apr 08	099	16:12-23:18	081	032	Apr 08 16:12-17:54	277 ₁ * 296 ₂	092†	5	6	Loop	Loop/cavity with structured (prominence?) core in streamer. 'Light-bulb' shaped by 17:02. Streamer is blown out. Very faint blob visible at 23:18 at southern edge of event.
					Apr 08 16:29-17:54	235 ₁ * 254 ₂	085†	4	9	Core (prominence?)	
Apr 13	104	18:47-23:45	094	047	Apr 13 18:55-19:20	258 ₁ * 464 ₂	086†	3	3	First blob	Several fuzzy blobs in same location on north edge of streamer. Streamer is unaffected. First blob visible from 18:47 until 20:21. Second blob ejected from 20:37 until 23:45.
					Apr 13 20:29-21:38	351 ₁ * 221 ₂	085	3	3	Second blob	
Apr 14	105	12:26-18:43	278	065	Apr 14 12:26-13:27	201 ₁ *	272	2	5	Loop	Fuzzy loop/cavity and diffuse core.
Apr 14/15	105/106	20:00-02:17	064	045	Apr 14/15 20:00-20:25	483 ₁ *	061	2	4	Mound	Two piece event: 1. Faint mound (or loop/cavity) at 20:00 followed by highly structured (prominence?) blob at north edge of event in 21:26 image. 2. Fuzzy material from 23:08 until 23:33, followed by a faint loop(?)/cavity with embedded, bright, structured (prominence) loop/cavity.
	105/106	23:08-02:17									
Apr 17	108	09:35-15:34	~252	~015	—	—	—	—	0	Too diffuse	Narrow, fuzzy tongue.
Apr 17/18	108/109	21:26-04:15	113	035	—	—	—	—	0	Too fuzzy	Faint cloud with possible cavity.
Apr 18	109	02:08-02:41	251	028	—	—	—	—	0	No clear front	Faint, fuzzy cloud.
Apr 18	109	08:49-13:15	~015	~120	Apr 18 08:49-10:24	061 ₁ *	045	2	3	Mound	Wide, very faint mound (or loop/cavity).
Apr 18	109	20:57-23:13	278	075	Apr 18 21:30-22:23	329 ₁	280	2	3	Cloud	Faint, irregular cloud superposed on streamer.
Apr 19	110	20:20-23:53	340	190	—	—	—	—	0	Too fuzzy	Very faint, broad cloud. Halo?
Apr 20/21	111/112	15:59-09:06	324	017	—	—	—	—	1		Fuzzy fan expands slowly. Data dropouts partially obscure front.
Apr 21	112	14:57-18:05	064	048	—	—	—	—	0	Too fuzzy	Faint fan (or cloud) superposed on streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 9 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Apr 24	115	02:16~11:57									Two part event: 1. Tongue superposed on fan. 2. Fainter tongue in same location. Region is disrupted.
		02:16~06:14	295	030	—	—	—	—	0	Too fuzzy	
		07:40~11:57	295	—	—	—	—	—	0	Too fuzzy	
Apr 27	118	09:22~18:55									Two fuzzy ejections: 1. Tongue superposed on streamer. Moves non-radially (equatorward). 2. Fuzzy material with brighter jet. Jet visible from 14:58 until 17:13.
		09:22-11:57	300	050	—	—	—	—	0	No clear front	
		13:32~18:55	276	042	—	—	—	—	0	No clear front	
											DATA GAPS: Apr 29 03:26 to 07:44. Apr 29 08:00 to 21:50.
May 02	123	~13:05~20:56	242	015	—	—	—	—	1		Faint, fuzzy cloud followed by possible cavity.
May 02/03	123/124	23:39-04:47	119	122	May 02/03 23:39-01:30	379 ₂ *	130	5	5	Cavity	Loop/cavity with fuzzy core. Loop front first appears fuzzy and sharpens as it moves outward. Material south of northeast streamer is blown out. Streamer is deflected northward.
May 04	125	03:00-10:25	268	095	May 04 06:08-07:17	269 ₁ * 258 ₂	243†	3	7	Material (prominence?)	Faint, fuzzy cloud superposed on fan. U-shaped blob at south edge from 05:18 until 05:34. Highly structured, multiple, twisted, hook-shaped (prominence?) material (or loops/cavities) visible from 05:18 until 07:41 from 215° to 250°. Best seen at 06:08. Faint structures in southeast are deflected.
May 06	127	00:10-01:44	~255	~060	May 06 00:10-00:27	521 ₁ *	258	2	9	Loop	Slightly irregular loop/cavity with diffuse core in streamer. Streamer is mostly blown out. Deflections.
May 06	127	12:18-20:08	136	032	May 06 13:52-17:33	107 ₁ 171 ₂ *	140	6	7	Cavity	Loop/cavity and diffuse core in streamer. 'Light-bulb' shaped by 17:00. Streamer is blown out.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 10 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
											DATA GAP: May 10 02:39 to May 11 14:51.
May 12/13	133/134	05:15-04:46	306	042	—	—	—	—	0	No obvious front	Mound at north edge of streamer. Cavity visible in same location from ~11:39 until the end of May 12. Structured (prominence?) blob ejected from ~14:22 until 04:46. Northern part of streamer is blown out.
					May 12/13 14:47-02:55	118 ₂ *	290†	11	6	Bottom of blob (prominence?)	
May 17	138	20:16~23:25	103	075	—	—	—	—	0	Front at 20:16 only	Fast loop/cavity with possible core superposed on streamers. Big deflections. Hook-shape in streamer at 135° from 21:34 until 21:42.
May 19	140	06:39-07:40	299	022	—	—	—	—	0	No obvious front	Faint tongue (or jet).
May 20	141	02:46-13:45	~066	~023	—	—	—	—	1	Tongue	Very faint cloud superposed on streamer from 02:46 until ~13:45. Bright tongue in streamer at ~070° from 10:12 until ~13:20.
May 22	143	11:14-14:22	100	110	—	—	—	—	0	Too faint	Faint cloud superposed on streamers. Possible loop/cavity at south edge of event at 12:23.
May 23/24	144/145	05:54~17:41	092	065	—	—	—	—	0		Two part event: 1. Irregular cloud of material appears at 05:54. Sharp deflections on north side of event. Core (or blob) ejected from ~19:00 until ~10:24 the next day. 2. Concave-outward, 'U'-shaped material. Region is disrupted.
	144/145	05:54~10:24									
	145	08:59~17:41	098	075	May 24 10:40-16:40	056 ₁ 092 ₂ *	080	15	9	'U'-shaped material	
May 23/24	144/145	~17:17~16:48	258	035	—	—	—	—	0	No obvious front	Streamer slowly swells, expands and blows outward. Deflections.
May 25	146	all day	~145	~030	—	—	—	—	0	No obvious front	Fuzzy mound (or loop?) rises slowly in streamer. Streamer is disrupted.

† Position of feature was measured along a non-radial line.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 11 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
May 25	146	01:40-22:02	~260	~060	—	—	—	—	0	Too fuzzy	Could be up to three events: 1. Irregular material in fan. Fan is disrupted. 2. Faint mound (or loop/cavity). 3. Loop/cavity and structured (prominence) core. Deflections north of loop.
		01:40-04:48			—	—	—	1			
		10:04-11:21			247	035					
		14:45-22:02			230	050	May 25 14:45-16:19	293 ₁ 507 ₂ *	245	4	
May 26	147	09:43-12:42	237	015	—	—	—	—	0	No obvious front	Small, faint cloud from 09:43 until 11:00. Irregular jet from 12:09 until 12:42 in same location.
May 27	148	13:06-13:55	087	063	May 27 13:06-13:55	258 ₁ * 492 ₂	075	3	5	Cloud	Faint, fuzzy cloud superposed on streamers.
May 28	149	00:04-03:12	280	050	May 28 00:29-01:46	169 ₁ * 200 ₂	285	3	7	Loop	Fuzzy loop/cavity superposed on streamer. Streamer is unaffected.
					May 28 00:54-02:19	201 ₁ * 216 ₂	285	3	7	Cavity	
May 28	149	01:55-08:36	066?	068?	—	—	—	—	0	Too faint	Faint mound (or cloud) superposed on streamer. Could be much wider.
May 29	150	06:25-09:41	075	050	—	—	—	—	0	No obvious front	Fuzzy mound superposed on streamer.
May 29	150	21:40-23:47	078	045	May 29 21:40-22:13	205 ₁ *	075	3	7	Loop	Fuzzy loop/cavity and core superposed on streamer.
May 30/31	151/152	20:10~11:17	080	070	—	—	—	—	1	Loop	Faint loop/cavity superposed on streamer. Continual ejection of fuzzy clouds of material in same location until mid-May 31.
May 31	152	14:25~23:49	103	043	May 31 14:25-14:58	281 ₁ *	110	2	5	Loop	Two part event: 1. Fuzzy loop/cavity superposed on fan. 2. Cloud. Deflections late in event.
		14:25-19:07			—	—	—	0	Front at 22:15 only		
Jun 01	153	02:57~04:31	102	025	—	—	—	—	0	No obvious front	Faint, fuzzy cloud in fan. Fan is blown out.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 12 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 01	153	03:22~11:21	300	040	Jun 01 04:23-09:22	218 ₂ *	298†	7	7	Cavity	Cavity rises slowly in streamer. Loop becomes visible around cavity. Highly structured, loop-shaped (prominence) core appears. Streamer is blown out. Deflections.
					Jun 01 06:39-09:22	084 ₁ 144 ₂ *	300†	5	6	Core (prominence)	
Jun 01	153	~09:47~12:22	110	030	—	—	—	—	0	Too fuzzy	Small mound. Fuzzy after 09:47 image.
Jun 01/05	153/157	~22:27~23:05	~255	~070	—	—	—	—	1		Very slow expansion of streamer accompanied by multiple fuzzy clouds and fans.
Jun 02/03	154/155	22:51~07:22	~105	~040	—	—	—	—	1	Fuzzy front in two images	Fuzzy cloud superposed on streamer.
Jun 04	156	01:30-03:37	072	025	Jun 04 01:30-02:03	421 ₁ *	075	2	6	Mound	Narrow mound (or tongue). Region is disrupted.
Jun 05	157	02:34-04:08	074	017	—	—	—	—	0	No obvious front	Fuzzy jet superposed on streamer.
Jun 06	158	~00:23-02:13	277	023	—	—	—	—	0	No obvious front	Cloud superposed on fan.
Jun 06	158	02:05-04:04	063	035	Jun 06 02:05-02:22	211 ₁ *	065	2	7	Mound	Mound superposed on streamer.
Jun 06	158	10:12-16:03	252	087	Jun 06 10:12-10:36	515 ₁ *	260	2	4	Cloud	Could be two events: 1. Broad cloud superposed on streamers. 2. Small cavity at 240° followed by a broad, fuzzy mound. Region is disrupted. Deflections.
		—			—	—	—	0	Cavity		
		Jun 06 14:29-15:02			327 ₁ * 245 ₂	250	3	7	Mound		
Jun 07	159	11:25-14:33	253	095	Jun 07 11:25-12:26	339 ₁ *	250	3	7	Loop	Faint, fuzzy loop/cavity(?) superposed on fan.
											DATA GAP: Jun 07 14:49 to 18:42.
Jun 07/08	159/160	23:24-04:14	068	045	Jun 07/08 23:49-01:39	133 ₁ * 174 ₂	075	5	7	Cavity	Thin loop/cavity and mound-shaped core superposed on streamer.
											DATA GAP: Jun 08 04:22 to 13:30.
Jun 08	160	~13:30~22:55	~248	~045	—	—	—	—	1		Very faint irregular material (or cloud).
Jun 09/10	161/162	22:34-00:49	~274	~035	Jun 09 22:34-23:07	509 ₁ *	280	2	5	Tongue	Curved tongue (or cloud) superposed on streamer. South edge is very faint. Could be wider. Motion in region prior to event.
Jun 10	162	17:55-21:03	295	020	—	—	—	—	0	Too fuzzy	Narrow jet (or tongue) superposed on fan.
Jun 11	163	07:20-09:35	~300	~024	Jun 11 07:20-07:37	334 ₁ * 480 ₂	300	3	5	Mound	Mound superposed on streamer. Northern edge is brighter. Could be wider.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 13 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 11	163	18:35-19:08	~325	~050	Jun 11 18:43-19:08	479 ₁ * 327 ₂	315	3	7	Loop (prominence?)	Faint, multiple, adjacent, structured (prominence?) loops/cavities and blobs.
Jun 14/15	166/167	~15:24~20:18	~115	~050	—	—	—	—	0	No clear front	Fuzzy cloud followed by possible loop/cavity. Evolves slowly and fades.
Jun 15	167	04:38-06:12	258	065	Jun 15 04:38-05:22	814 ₁ *	250	2	4	Loop	Broad loop/cavity with embedded, complex, concave-outward shaped core and possible cavity.
					—	—	—	—	1	Core	
Jun 16	168	00:35-07:08	297	035	—	—	—	—	0	No obvious front	Two part event: 1. Expanding mound blows out along streamer. 2. Faint tongue superposed on fan.
		00:35-03:35			—	—	—	0	No obvious front		
		05:34-07:08			—	—	—	0	No obvious front		
Jun 16	168	~09:34~22:31	156	072	Jun 16 09:59-13:15	055 ₁ 102 ₂ *	150	8	5	First loop	Fuzzy, faint multiple loops/cavities. Begins as one wide loop. Second more narrow loop appears at southern half of first loop from 11:42 until 22:31. Deflections.
			173	030	Jun 16 11:42-14:50	082 ₁ * 097 ₂	165	5	5	Southern loop	
Jun 18	170	07:01~13:17	~295	~050	—	—	—	—	0	No obvious front	Cavity rises in streamer. Streamer is disrupted.
Jun 19	171	18:03-19:45	237	045	Jun 19 19:12-19:45	316 ₁ *	245	2	6	Cavity	Thin loop/cavity superposed on streamer. Thin, inner (prominence?) loop/cavity visible at 19:36. Streamer is unaffected.
DATA GAP: Jun 21 05:56 to Jun 22 14:26.											
Jun 23	175	07:40-15:38?	278	095	Jun 23 07:40-08:05	463 ₁ 809 ₂ *	295	4	9	Flat loop	Two part event: 1. Bright, flat-topped (multiple?) loop/cavity with smaller inner (prominence?) loop/cavity at northern part of event. Event is superposed on streamer. Streamer is unaffected. Deflections. 2. Very faint mound.
		07:40-09:23									
		09:23-15:38?									

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 14 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments								
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual										
Jun 24/25	176/177	early?~19:19	098	065	—	—	—	—	0	No obvious fronts	Cavity rises slowly under streamer. Loop becomes visible around cavity. (Prominence?) core appears at 18:17 on Jun 24. Core is initially mound-shaped then evolves. Streamer is partially blown out. Deflections.								
Jun 24	176	17:07-18:58	~253	~045	Jun 24 17:07-17:16	840 ₁ *	235	2	6	Tongue	Faint mound with brighter, tongue-shaped material following in close proximity. Tongue has evolved into multiple, curved wisps by 18:25.								
Jun 25	177	20:47~21:37	313	013	Jun 25 20:47-21:03	190 ₁ *	316†	2	5	Jet	Fuzzy jet.								
Jun 26	178	05:11~12:36	073	045	—	—	—	—	1		Mound superposed on streamer. Deflections.								
Jun 27/28	179/180	19:57-00:39	~090	~010	Jun 27/28 21:31-00:39	126 ₁ * 168 ₂	091	4	7	Back of cavity in 'U'-shaped material	Concave-outward, 'U'-shaped material with cavity superposed on streamer.								
Jun 29	181	05:17-14:50	100	070	—	—	—	—	1	Loop	Fuzzy loop/cavity and core on south side of streamer. Concave-outward shaped material from 11:41 until 14:17. Second concave-outward feature follows from 13:16 until ~14:50.								
Jun 30	182	00:14-17:13	~075	~025	—	—	—	—	0	No obvious front	Three fast ejections in same location. 1. Faint jet visible from 00:14 until 01:07. Fuzzy material ejected in same location from 02:50 until ~05:50. 2. Fuzzy, fast-moving mound followed by faint, concave-outward, 'U'-shaped material from 10:32 until 10:57 from 065° to 085°. 3. Faint blob.								
		09:39-10:57										~085	~063	—	—	—	—	0	Front at 09:39 only
		—										—	—	—	—	—	1	'U'-shaped material	
		15:22-17:13										~078	~020	—	—	—	—	0	Front at 15:55 only
Jun 30/ Jul 01	182/183	two days	248?	045?	—	—	—	—	0	No obvious front	Slow expulsion of faint material around fan.								
Jul 02	184	04:00-08:01	097	035	—	—	—	—	0	Front at 04:00 only	Faint cloud at northern edge of streamer.								

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 15 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 03/04	185/186	17:05~09:03	067	035	—	—	—	—	1		Slow expansion of material around streamer. Jet (or tongue) ejected from 01:29 until ~07:38. Region is brighter following event.
Jul 05	187	03:27-10:33	302	025	—	—	—	—	0	No obvious front	Faint, slow-rising mound. Fades into background brightness levels.
Jul 05	187	12:52-14:42	259	038	Jul 05 12:52-13:41	194 ₁ * 235 ₂	265	4	5	Mound	Faint mound (or loop/cavity) superposed on streamer.
Jul 06	188	01:32~20:21	079	053	Jul 06 06:48-09:48	019 ₁ * 015 ₂	080	3	3	Cavity	Faint loop/cavity and mound-shaped core superposed on streamer. Deflections.
Jul 10	192	13:58-21:48 13:58-17:06 18:40-21:48	050 ~088	016 ~015	—	—	—	—	0	No obvious front	Two piece event. Both move non-radially. 1. Faint jet (or fan) at north edge of streamer. 2. Jet (or fan) at south edge of streamer.
Jul 10/11	192/193	23:06-02:14	~128	~028	—	—	—	—	0	No obvious front	Fan with small, bright blob from 114° to 127° at 23:06. Fan brightens, widens and rises in a non-radial direction. Fan contains some structure by 00:40 and is located from 124° to 142°.
Jul 11	193	19:36-22:44	055	030	—	—	—	—	0	No obvious front	Fuzzy jet at north edge of streamer.
Jul 12/13	194/195	17:24~01:39	130	030	—	—	—	—	0	No obvious front	Faint, fuzzy, non-radially moving jet (or fan). Jet is located from 113° to 123° at 17:24. By 23:40 it is located from 115° to 145°.
Jul 13	195	~14:20~23:44	074	037	—	—	—	—	0	No obvious front	Streamer expands and disrupts. Region is partially blown out.
Jul 14	196	16:41-17:59	261	012	Jul 14 16:41-17:06	181 ₁ * 048 ₂	263	3	4	Blob	Small blob (or cloud) superposed on streamer.
Jul 16	198	10:34-13:42	258	067	Jul 16 10:34-11:25	352 ₁ * 524 ₂	263†	4	7	Loop	Irregular loop/cavity with partially structured core superposed on streamer.
Jul 17	199	02:31~18:11	070	055	—	—	—	—	0	No obvious front	Material in streamer expands outward and poleward. Region is disrupted.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 16 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 17	199	02:48-04:13	252	055	Jul 17 02:48-03:04	366 ₁ *	250†	2	7	Outer loop	Faint outer loop/cavity with bright, interior loop/cavity superposed on streamer. Streamer is disrupted.
Jul 18	200	00:19~23:41	093	065	Jul 18 00:52-01:45	198 ₁ *	090	2	5	Cloud	Could be two events: 1. Cloud with possible cavity superposed on fan north of streamer. Streamer is unaffected. 2. Fuzzy mound superposed on fan in the same location as part one.
		16:32~23:41			—	—	—	—	1		
Jul 19	201	03:38-05:04	086	022	—	—	—	—	0	Front at 03:38 only	Small mound (or cloud) superposed on fan.
Jul 20	202	07:34-08:35	105	070	Jul 20 07:34-07:43	772 ₁ *	085	2	7	Loop	Irregular loop/cavity with structured, loop-like (prominence) core in streamer. Streamer is blown out.
					—	—	—	—	1	Core (prominence)	
DATA GAP: Jul 21 06:56 to Jul 22 15:25.											
Jul 23	205	~07:06~23:27	~310	~090	—	—	—	—	0	No front	Faint, wide fan expands outward and poleward. Fan is superposed on streamer. Streamer is unaffected.
Jul 24	206	06:52-08:51	108	075	Jul 24 06:52-07:00	1042 ₁ *	115	2	7	Loop	Bright loop/cavity with (multiple?) loop-shaped core in streamer. Streamer is blown out. Large deflections. Motion of material in southern leg of event at 05:52.
Jul 25	207	06:06~15:53	080	023	—	—	—	—	0	Too fuzzy	Three ejections in northeast: 1. Fuzzy tongue at north edge of streamer. Streamer is unaffected. 2. Wide, fuzzy mound superposed on pre-existing structures. Northernmost streamer is disrupted. 3. Fuzzy tongue south of streamer. Northern edge is very tough to measure.
		06:06-07:40			—	—	—	—	1	Mound	
		10:03-11:37			—	—	—	—	0	Too fuzzy	
		12:46~15:53	065?	—	—	—	—	—	0	Too fuzzy	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 17 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments		
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature			
Jul 25	207	07:48-17:45	289	058	Jul 25 07:48-08:21	281 ₁ *	290	2	7	Cavity	Two part event: 1. Loop/cavity superposed on streamer from 07:48 until 09:22. Fuzzy core visible from 09:22 until 11:29. 2. Fuzzy material ejected near the equator. Region is disrupted.		
		—			—	—				1		Core	
		15:38-17:45			~270	—				—		—	0
Jul 25/26	207/208	21:46-00:54	112	025	Jul 25 21:46-22:35	180 ₁ * 166 ₂	116†	3	8	Blob (prominence)	Cloud at south edge of streamer containing twisted, structured (prominence) blobs from ~105° to 120°. Moves non-radially (equatorward).		
Jul 26/27	208/209 209	~00:02~16:04	270?	—	—	—	—	—	0	Too fuzzy	Equatorial streamer expands slowly and blows out. Concave-outward, 'U'-shaped blob is ejected on Jul 27. Deflections and motion in all four sectors.		
		08:55-16:04			—	—	—	5	5	'U'-shaped blob			
Jul 28/29	210/211	09:51-01:39	247	085	Jul 29 09:51-11:41	207 ₁ * 262 ₂	260	5	7	Loop	Could be two events: 1. Fuzzy loop/cavity with complex, structured (loop-shaped?) core in streamer. Streamer is blown out. Deflections. 2. Fuzzy loop/cavity (or mound).		
		23:24-01:39			~265	~030				Jul 28/29 23:49-00:14		327 ₁ * 400 ₂	261†
Jul 31/ Aug 02	213/215 213 213 214 214/215 215	09:39~18:27	~045	—	—	—	—	—	0	Too fuzzy	Could be six events: 1. Fuzzy fan. Moves non-radially. 2. Narrow, bright mound. 3. Second, narrow mound. Deflections. 4. Fuzzy cloud with internal structure. 5. Tongue (or mound) with internal structure at north edge of streamer (or fan). 6. Cloud in streamer with structured wisp of (prominence?) material at southern leg.		
		09:39-11:12			075	020	Jul 31 12:46-14:29	087 ₁ * 024 ₂	080	5		9	Mound
		12:46-15:55			—	—	—	—	—	—		0	No clear front
		19:20-22:28			077	022	Jul 31 19:20-19:28	281 ₁ *	080	2		7	Second mound
		01:27~07:35			064	046	—	—	—	—		0	—
		23:15-00:49			—	—	—	—	—	—		0	—
17:54-18:27	~075	~050	—	—	—	—	0	Missed front					

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 18 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 01	214	20:23-23:31	238	065	Aug 01 20:23-21:57	154 ₁ *	233	2	7	Loop	Fuzzy, helmet-shaped loop/cavity (or mound) superposed on streamer.
Aug 01	214	21:32-23:06	123	045	—	—	—	—	0	Too fuzzy	Fuzzy tongue in and south of streamer. Streamer is disrupted.
Aug 02/03	215/216	18:11~1:36	273	045	Aug 02 19:20-20:09	182 ₁ *	277	3	5	Mound	Two ejections: 1. Fuzzy, irregular material and mound superposed on streamer from ~18:11 to ~20:09. 2. Cloud.
		18:11~20:09									
Aug 04	217	10:46-13:54	083	045	—	—	—	—	0	Too fuzzy	Faint cloud superposed on south edge of streamer. Streamer is unaffected.
Aug 06/07	219/220	17:27~01:34	080	050	—	—	—	—	0	Too fuzzy	Elongated mound with internal structure superposed on southern part of streamer. Streamer is unaffected.
Aug 08	221	09:10-13:11	258	065	Aug 08 10:03-10:52	293 ₁ *	270	4	9	Loop	Thick loop/cavity with amorphous core superposed on streamer. Region is disrupted.
Aug 10	223	13:44~20:34	267	055	—	—	—	—	1	Loop	Fuzzy loop/cavity (or mound) superposed on fan. Fan is unaffected.
Aug 14/15	227/228	14:54~08:08	268	065	—	—	—	—	1	Mound	Elongated mound. Cavity and core become visible at ~17:09. Core becomes amorphous. Base of core becomes concave-outward, 'V'-shaped from 03:51 until end of event. Deflections.
Aug 15	228	06:34-08:50	114	068	Aug 15 06:34-06:59	416 ₁ *	115	4	7	Loop	Bright, flattened loop/cavity with highly structured (prominence) core in streamer. Faint cloud surrounds bright loop. Could be part of loop-structure. Streamer is disrupted.
					Aug 15 06:34-06:59	511 ₂	115	4	7	Cavity	
					Aug 15 06:34-06:59	392 ₁ *	114†	4	7	Core (prominence)	
						455 ₂					
						269 ₁ *					
						255 ₂					

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 19 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Aug 16	229	12:29-13:54	060	050	—	—	—	—	0	Too fuzzy	Faint cloud (or loop/cavity) superposed on streamer.
Aug 16	229	13:02~23:43	120	050	Aug 16 13:02-14:44	198 ₁ 302 ₂ *	112	4	7	Cavity	Two part event: 1. Loop/cavity and highly structured, loop-shaped (prominence) core in streamer. Region is disrupted. 2. Cavity with structured core blows out through southernmost leg of event from part one. Region is disrupted.
		13:02~20:11			Aug 16 13:54-14:44	141 ₁ * 141 ₂	110†	3	9	Core (prominence)	
		20:11~23:43	~140	—	—	—	—	0			
Aug 18	231	~10:12~21:27	~316	~032	—	—	—	—	1		Mound (or loop/cavity) superposed on streamer. Fades into background brightness levels.
											DATA GAP: Aug 19 10:08 to 21:58.
Aug 21	234	02:19~10:09	055?	130?	—	—	—	—	0	Too faint	Broad, faint material in east and north. Could be wider. Possible halo. Faint material appears (ejected?) near western equator from ~08:18 until end of event.
Aug 21	234	19:16-22:24	105	060	Aug 21 19:16-20:06	176 ₁ * 024 ₂	125	3	6	Mound	Faint mound (or loop/cavity) superposed on south side of streamer. Streamer is unaffected.
Aug 22	235	01:32~14:29	112	080	Aug 22 01:32-03:15	158 ₁ * 059 ₂	107	3	3	Cavity	Three part event: 1. Thick loop/cavity with structured (prominence?) core in streamer. 2. Second cavity with structured (prominence?) core in streamer. Streamer is blown out. 3. Faint loop/cavity.
		01:32~08:30			Aug 22 06:14-08:30	136 ₁ * 195 ₂	104	5	5	Second cavity	
		06:14~10:56	~100	~020	—	—	—	—	1	Loop	
		10:56-14:29	130	033	—	—	—	—	1		

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 20 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Aug 23	236	08:53-10:35	117	125	Aug 23 09:09-09:42	1035 ₁ * 1186 ₂	095	3	7	Loop	Structured jet (prominence?) at 118° visible from 08:53 to 10:35. Jet is followed by a broad, faint loop/cavity from 09:09 until 09:42. Additional structured (prominence?) material is visible at 09:17 at 118° and at 128° at 09:42. Northern edge of broad, faint loop is superposed on streamer. Streamer is unaffected.
Aug 23	236	13:43-15:58	048	067	Aug 23 13:43-14:16	267 ₁ * 333 ₂	061†	3	9	Loop	Thin, irregular loop/cavity with possible core at northern part of loop. Deflections.
Aug 23/24	236/237	~15:09~02:15	078	065	Aug 23 16:51-17:24	577 ₁ *	086	3	5	Outer loop	Bright, flattened loop/cavity with structured, interior (prominence) loop/cavity in streamer. Streamer is blown out. Big deflections. Blob of material is ejected in streamer south of event from 100° to 132° from 20:32 until 21:24. Concave-outward material is visible at 100° at 00:32. Moves outward and southward until ~02:15.
					Aug 23 15:58-17:24	781 ₂ *	085	4	6	Outer cavity	
DATA GAP: Aug 24 08:39 to Aug 25 21:58.											
Aug 26/27	239/240 239 239/240	~01:47-10:41 ~01:47~05:48 13:38~10:41	108	065	—	—	—	—	0	No obvious front	Two part event: 1. Faint cloud in north edge of streamer. Fades into background brightness levels. 2. Indistinct loop/cavity with probable core in streamer. Streamer expands and blows out.
					—	—	—	—	0	No obvious front	
					—	—	—	—	0	No obvious front	
Aug 26	239	15:12-17:27	335	100	Aug 26 15:12-16:54	210 ₁ * 228 ₂	314	5	8	Loop	Faint, wide, fuzzy, irregular loop/cavity.
Aug 29/30	242/243	~02:59~13:26	~050	~060	—	—	—	—	0	No obvious front	Slow expansion of faint material on and south of streamer. Deflections.
Aug 30	243	13:59~16:17	067	025	Aug 30 14:51-15:24	298 ₁ * 283 ₂	070†	3	5	Mound	Narrow, bright mound (or jet) superposed on small streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 21 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 01	245	05:52-08:08	~315	~020	—	—	—	—	0	Front in one image only	Jet (or fan) at 05:52 only. Very faint material may be ejected around streamer from 250° to 290°.
Sep 01	245	12:24-15:33	045	050	Sep 01 12:24-15:33	095 ₁ * 102 ₂	052	3	7	Cavity	Loop/cavity with core superposed on streamer.
Sep 01	245	19:05-21:40	065	050	—	—	—	—	1	Cavity	Bright, irregularly-shaped loop/cavity superposed on streamer. Streamer is disrupted. Deflections.
											DATA GAP: Sep 02 07:12 to Sep 03 17:23.
Sep 07	251	~00:15~19:03	~255	~070	—	—	—	—	1	Cavity	Faint material rises slowly at south edge of streamer. Loop(?)/cavity in same location from ~11:13 until ~19:03. Expansion and brightening in region began Sep 05.
Sep 08/09	252/253	~02:52~10:20	232	035	—	—	—	—	0	No obvious front	Slow expansion of helmet streamer. Streamer is disrupted between 18:41 and 23:23. Fuzzy material superposed on streamer at 08:55 on Sep 09.
Sep 08/09	252/253	16:50~22:36	020	040	—	—	—	—	0	Streamer	Streamer expands slowly outward. Small, low-contrast cavity in streamer. Streamer blows out. Artifact obscures event.
					—	—	—	—	1	Cavity	
Sep 08	252	17:15~22:58	~300	~040	—	—	—	—	1	Mound	Mound (or cloud) superposed on streamer.
Sep 09/10	253/254	21:18>14:15	250	040	Sep 10 02:00-14:15	008 ₁ * 001 ₂	251†	9	3	Cavity	Structured cloud with possible cavity from 21:18 until ~01:19. Loop/cavity and structured core are ejected from ~ 02:00 until >14:15. Visible in south images. Loop is located from 242° to 266°. Data gap follows and lasts until Sep 11.
											DATA GAP: Sep 10 15:41 to Sep 11 14:54.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 22 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 14	258	03:06-05:32	308	045	Sep 14 03:06-04:39	365 ₁ ★	300	2	9	Loop	Loop/cavity superposed on streamer (or fan). Loop is flat-topped at 04:39. Region is blown out.
Sep 14/15	258/259	13:46-02:34	082	055	Sep 14 14:11-15:04	506 ₁ ★	072	2	7	Cavity	Loop/cavity and highly structured (prominence) core. Loop is 'light-bulb' shaped from 15:04 until 15:37. Big deflections. Loop/cavity and core are out of the field of view by 16:29. A series of ejections of irregularly-shaped material follow at 16:54, 20:02 and 01:00.
					Sep 14 14:11-15:04	169 ₁ ★	074†	2	3	Core (prominence)	
Sep 14	258	15:04-19:37	126	063	Sep 14 15:04-17:19	256 ₁ 390 ₂ ★	132	6	7	Cavity	Loop/cavity with highly structured, loop-shaped (prominence) core in streamer. Deflections. Streamer is blown out.
					Sep 14 15:28-17:19	115 ₁ ★ 100 ₂	132	6	9	Core (prominence)	
Sep 14/15	258/259	23:35-13:32	107	021	Sep 15 02:34-07:17	016 ₁ ★ 021 ₂	105	7	5	Cavity	Cavity rises slowly (over twelve hours) in streamer. Concave-outward, structured material appears from 09:51 until 12:59. Streamer was buffeted by last two east events. Region is blown out.
					Sep 15 10:24-12:06	148 ₁ ★ 171 ₂	106†	4	5	Concave-outward material	
Sep 17	261	06:06>21:21	~067	~025	—	—	—	—	0	Too fuzzy	Streamer expands slowly. Streamer is disrupted following data gap on Sep 18. Deflections.
											DATA GAPS: throughout Sep 18 due to Comet Machholz observations.
Sep 19/20	263/264	~06:14~11:58	268	065	—	—	—	—	0	Too fuzzy	Streamer expands slowly. Deflections. Region is disrupted.
Sep 19	263	10:03-23:26	~027	~115	Sep 19 10:03-11:28	289 ₁ ★ 305 ₂	064	4	5	Cloud	Broad cloud visible from 10:03 until 11:28. Could be wider. Fuzzy, narrow material is ejected from 21:44 until 23:26 at 055°.
Sep 21	265	00:21-02:03	~255	~030	—	—	—	—	0	Too fuzzy	Structured mound (or tongue). Northern edge is curved at 01:10.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

★ Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 23 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Sep 21/22	265/266	21:15-19:02	255	050	Sep 21/22 22:49-00:39	206 ₁ * 143 ₂	252	5	6	Loop	Loop/cavity with loop-shaped core in streamer from 21:15 until ~03:14. Additional, brighter material is ejected from ~05:13 until ~19:02. Could be concave-outward, 'U'-shaped late in event. Deflections.
Sep 22	266	00:31-03:06	060	060	Sep 22 00:31-02:13	640 ₂ *	047	3	5	Cavity	Big loop/cavity with highly structured, inner (prominence) loop/cavity in streamer. Streamer is blown out. Big deflections.
					Sep 22 01:24-03:06	386 ₁ * 384 ₂	061	3	7	Inner loop (prominence)	
Sep 22	266	09:55-12:30	080	050	—	—	—	—	0	Too fuzzy	Irregularly-shaped cloud at north edge of streamer. Streamer is disrupted.
Sep 22	266	17:03-20:11	093	045	Sep 22 17:03-17:52	416 ₁ * 527 ₂	105	3	5	Loop	Irregularly-shaped loop/cavity with structured (prominence?) core superposed on streamer.
DATA GAP: Sep 22 21:00 to Sep 23 14:58.											
Sep 23	267	18:06-20:21	095	080	—	—	—	—	1		Irregularly-shaped cloud superposed on streamer or fan. Deflections.
Sep 24	268	13:34-20:43	270	040	Sep 24 13:34-14:52	382 ₁ * 437 ₂	280	3	5	Mound	Mound (or loop/cavity) superposed on streamer.
Sep 25	269	<01:24-03:40	~092	~095	—	—	—	—	0	Missed front	East equatorial corona is blown out between Sep 24 23:06 and Sep 25 01:24. We probably missed the front of the event. Fuzzy material is ejected until 03:40. Region is blown out. Large deflections.
Sep 25	269	03:15-05:14	277	025	Sep 25 03:15-03:48	545 ₁ *	275	2	5	Cloud	Cloud (or jet) on north side of streamer.
Sep 25	269	11:21~20:36	~239	~078	Sep 25 11:21-12:30	353 ₁ * 353 ₂	240	3	7	Loop	Loop(?)/cavity and structured core superposed on streamer.
Sep 27	271	16:27-18:17	125	080	Sep 27 16:27-16:52	794 ₁ * 1041 ₂	125	3	9	Loop	Loop/cavity with structured core superposed on streamer. Northern half of loop is brighter. Streamer is blown out. Large deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 24 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
											DATA GAP: Sep 27 18:25 to Sep 28 14:22.
Sep 28	272	~14:39-17:46	058	075	Sep 28 15:31-15:56	381 ₁ * 234 ₂	046	3	6	Loop	Faint loop/cavity with faint core superposed on streamers.
Sep 28	272	17:05~19:20	264	048	Sep 28 17:05-17:55	364 ₁ * 469 ₂	255	3	6	Loop	Irregularly-shaped (multiple?) loop/cavity with possible core superposed on streamer. Streamer is disrupted. Deflections.
Sep 28/29	272/273	>22:36-01:28	137?	035?	—	—	—	—	0	Missed front	Small streamer (or mound) is disrupted between 22:36 and 00:55. Deflections. Probably missed the front of the event.
											DATA GAP: Sep 30 01:13 to 17:37.
Sep 30	274	19:36-20:53	~153	~045	Sep 30 19:36-20:01	398 ₁ * 467 ₂	145	3	7	Loop	Loop/cavity with fuzzy core superposed on streamer or ray.
Oct 01	275	07:43?-08:08	256	048	Oct 01 08:00-08:08	413 ₁ *	259†	2	5	Loop	Loop/cavity(?) superposed on streamer. Visible in polaroid filter sequence only. Deflections.
											DATA GAP: Oct 01 10:06 to Oct 03 19:12.
Oct 04	278	00:27~05:18	226	052	—	—	—	—	1		Faint, fuzzy loop/cavity with fuzzy core south of streamer.
Oct 05/06	279/280	20:25~02:08	115	040	Oct 05 21:26-23:33	222 ₁ 342 ₂ *	124†	6	5	Cavity	Loop/cavity with highly structured, inner (prominence) loop/cavity superposed on streamer.
					Oct 05/06 21:26-00:34	188 ₁ 332 ₂ *	124†	7	8	Inner loop (prominence)	Motion in streamer ahead of loop front. Event moves non-radially (equatorward). Deflections in northern streamer.
Oct 06	280	00:26~08:15	~277	~055	—	—	—	—	0	Too fuzzy	Irregularly-shaped material superposed on existing structures. Non-radially moving feature (or deflection) from 01:59 until end of event.
Oct 06	280	16:05-18:28	290	040	Oct 06 16:05-16:54	239 ₁ * 141 ₂	290	3	6	Outer loop	Multiple, concentric loops/cavities superposed on existing structures.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 25 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 06	280	17:39-18:28	242	055	Oct 06 17:39-18:03	468 ₁ *	245	2	6	Mound	Faint mound (or thick loop/cavity) with some internal structure superposed on rays (or streamers). Event at 18:12 immediately follows.
Oct 06	280	18:12-20:46	245	070	Oct 06 18:12-19:13	478 ₁ * 551 ₂	240	3	8	Loop	Bright loop/cavity with fuzzy core superposed on previous event. Loop flattens between 19:13 and 19:37. Region is blown out. Deflections.
Oct 07/08	281/282	20:23-03:04	059	033	Oct 07 20:23-22:30	097 ₁ * 148 ₂	050	4	5	Loop	Loop/cavity and core superposed on fan. Core fills most of cavity region. Fan is disrupted. Concave-outward, 'V'-shaped, structured wisp of material from 01:05 until 01:38. Moves non-radially (equatorward).
Oct 08/09	282/283	21:51~01:59	235	040	Oct 08 22:07-23:16	240 ₁ * 370 ₂	235	3	6	Loop	Fuzzy loop/cavity with twisted, structured, coiled (prominence?) core superposed on fan or streamers. Background corona is disrupted.
					Oct 08 21:51-22:51	191 ₁ *	235	2	7	Cavity	
Oct 09	283	16:13-18:03	119	042	—	—	—	—	0	Too faint	Faint cloud (or mound) superposed on streamers.
Oct 10/11	284/285	12:33~23:14	112	055	Oct 10 17:05-21:02	041 ₁ 060 ₂ *	105	7	3	Cavity	Fuzzy loop becomes visible around slowly rising cavity in streamer. Material moves ahead of loop through streamer. Streamer is disrupted.
Oct 10	284	12:58-20:21	~240	~020	—	—	—	—	0	No clear front	Could be two fuzzy events: 1. Fuzzy fan superposed on existing rays. 2. Very faint cloud in same approximate location as part one.
		12:58-14:32 ~18:39~20:21			—	—	—	—	0	Too fuzzy	
Oct 12	286	04:12~06:38	070	020	—	—	—	—	0	Too fuzzy	Fuzzy, narrow cloud (or jet) superposed on streamer. Region south of event is disrupted.
Oct 12	286	05:46-07:28	~252	~047	—	—	—	—	0	Missed front	Irregularly-shaped material superposed on rays. Probably missed the front between 04:20 and 05:46. Large deflections. Region is disrupted.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 26 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Oct 12	286	12:54~16:01	080?	020?	—	—	—	—	0	No obvious front	Very faint, narrow jet with possible concave-outward, 'U'-shaped material from ~070° to ~090°. Motion (ejection?) of material on either side of jet.
Oct 12	286	16:18~22:42	~008	~085	—	—	—	—	0	No obvious front	Irregularly-shaped cloud (or mound) spans north sector. Could be wider.
											DATA GAP: Oct 12 19:34 to 22:17.
Oct 12	286	22:25-22:58	122	055	—	—	—	—	0	Front at 22:25 only	Flattened loop/cavity with highly structured, inner (prominence) loop/cavity superposed on streamer. Event has concave-outward shape between loop top and inner (prominence) loop. Streamer is disrupted.
		Oct 12 22:25-22:58			263 ₁ *	119	2	7		Inner loop (prominence)	
Oct 13	287	01:49~11:13	~006	~063	Oct 13 01:49-06:31	047 ₁ 090 ₂ *	355	4	5	Loop	Faint, fuzzy loop/cavity with fuzzy mound-shaped core over north pole.
Oct 13	287	03:07~12:30	~095	~070	—	—	—	—	0	Too fuzzy	Fuzzy, irregularly-shaped material (or cloud) superposed on and north of streamer. Streamer is disrupted.
Oct 13/14	287/288	~17:12~02:35	112	065	—	—	—	—	0	No obvious front	Blobs (or cloud) in streamer. Streamer expands outward. Additional material (and cavity?) is ejected in same location from 23:27 until 02:35. Streamer is disrupted.
Oct 13	287	20:44-22:26	248	065	Oct 13 20:44-21:01	913 ₁ *	255	2	3	Cloud	Fuzzy cloud with embedded, structured, coiled (prominence?) material superposed on rays. Region is disrupted. Large deflections.
Oct 14	288	07:08~07:33	065	040	Oct 14 07:16-07:33	388 ₁ * 312 ₂	075	3	7	Loop	Loop/cavity superposed on rays. Region is disrupted. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 27 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 15	289	13:16~22:39	050	100	Oct 15 13:16-14:34	458 ₁ *	069†	2	5	Loop	Wide, fuzzy loop/cavity with large, structured core superposed on rays and streamer. Large deflections. Region is disrupted. Additional fuzzy material is ejected from ~17:58 until 22:39.
Oct 15	289	18:14?~23:49	~250	~070	Oct 15 19:07-20:57	233 ₁ *	255	5	5	Outer loop	Loop/cavity with fuzzy core and faint, inner loop/cavity superposed on streamer. Deflections.
					Oct 15 20:57-22:31	097 ₁ *	250	5	5	Inner loop	
Oct 16	290	14:18~23:17	086	~068	—	—	—	—	0	No clear front	Loop/cavity superposed on streamers. Material is ejected in streamer at south edge of loop and overtakes the loop. Faint, concave-outward, 'U'-shaped material is ejected from 20:34 until the end of the event.
Oct 16	290	~16:17~21:43	~263	~045	—	—	—	—	0	Too fuzzy	Faint cloud superposed on rays.
Oct 16/17	290/291	22:07~03:06	285	040	Oct 16 22:32-23:58	342 ₁	283	3	6	Loop	Several, complex, intertwined loops/cavities followed by bright structured material (loop?/cavity?) all superposed on rays and streamers. Deflections. Region is disrupted.
					Oct 16 23:25-23:58	571 ₂ *	283	2	6	Second loop	
Oct 17	291	00:59-04:32	067	025	—	—	—	—	0	No obvious front	Narrow, bright structured jet (or fan).
Oct 17	291	05:32-15:03	075	040	Oct 17 05:32-07:48	428 ₂ *	077	6	4	Loop	Loop/cavity with core(?). Loop is out of the field of view by 07:48. Additional material is ejected at north edge from 13:21 until 15:03. Deflections.
Oct 17	291	15:36~18:44	050	012	—	—	—	—	0	No obvious front	Bright, narrow tongue with possible cavity superposed on ray.
Oct 17	291	21:10~23:25	250	030	Oct 17 21:10-21:35	702 ₁ *	247	2	5	Loop	Loop/cavity with structured interior core superposed on rays (or streamers). Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 28 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 19	293	13:59~17:07	~276	~070	—	—	—	—	0	No obvious front	Two clouds visible in 13:56 image. One is superposed on equatorial fan, the other is superposed on northwest streamer.
Oct 20	294	06:03~07:53	~147	~026	Oct 20 06:03-07:20	146 ₁ * 070 ₂	147†	5	9	Inner loop (prominence)	Fuzzy, outer loop/cavity with sharp, structured, interior (prominence) loop/cavity.
Oct 20/21	294/295	23:32~21:18	112	045	Oct 21 00:16-00:41	094 ₁ *	107	2	4	Cavity	Fuzzy loop/cavity and core superposed on streamer. Loop has faded by ~02:15. Streamer is disrupted and expands laterally until ~12:03. Cloud in streamer from ~12:47 until ~15:10. Faint, irregular material ejected in same location until end of day.
Oct 21	295	08:05~10:20	~287	~035	—	—	—	—	0	Too faint	Very faint cloud superposed on existing structures. Could be wider. Deflections.
Oct 21	295	11:21-13:28	265	030	—	—	—	—	1		Faint, fuzzy loop/cavity superposed on background rays and streamers.
Oct 21/22	295/296	21:18~06:33	~077	~045	—	—	—	—	0	No obvious front	Loop(?)/cavity with inner (loop-shaped?) core superposed on and north of fan (or streamers). Ejection of faint (concave-outward?) material from ~03:00 until ~12:15. Event may be wider.
Oct 22	296	20:05~23:13	272	055	—	—	—	—	0	Too faint	Faint, fuzzy loop/cavity. Deflections.
Oct 23	297	18:49-21:02	~290	~010	—	—	—	—	0	No obvious front	Jet.
Oct 24/25	298/299	19:17~01:33	347	045	—	—	—	—	1		Fuzzy loop/cavity superposed on rays. Western leg is brighter. Deflections.
Oct 24/25	298/299	22:08~11:29	~042	~055	—	—	—	—	1		Faint, irregular, wispy cloud superposed on streamer. Faint material ejected until ~11:29.
Oct 25	299	20:11~23:52	242	055	—	—	—	—	0	Too faint	Cloud superposed on streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 29 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 26	300	01:09-21:22	357	055	—	—	—	—	0	Too fuzzy	Polar streamer (or ray) expands outward. Cloud (or loop/cavity) is visible by 08:59. Faint material ejected until ~21:22.
Oct 27	301	~02:29>05:03	135	050	Oct 27 02:37-05:03	172 ₁ 310 ₂ *	140	4	3	Loop	Faint, fuzzy loop/cavity with structured, interior (loop-shaped) core superposed on streamer. Ends in data gap. Region is disrupted after data gap.
Oct 27	301	04:54>05:11	305	040	Oct 27 04:54-05:11	141 ₁ *	305	2	4	Mound	Mound superposed on rays. Ends during data gap. Changes in all sectors.
DATA GAP: Oct 27 05:11 to 22:07.											
Oct 29	303	02:51~13:40	105	030	Oct 29 02:51-03:51	077 ₁ *	105	2	7	Cavity	Fuzzy loop/cavity with bright, tongue-shaped core on faint fan at 02:51. Tongue stalls. Loop/cavity evolve and fade after 03:51. Narrow fan (or jet) is ejected at 135° from 11:40 until 13:14. Ray may have been ejected before event at 01:30 at 135°.
					Oct 29 02:51-03:51	087 ₁ *	105	2	7	Core	
Oct 29/30	303/304	19:29~02:26	109	043	Oct 29 19:29-21:12	342 ₁ 479 ₂ *	108	5	7	Cavity	Bright (multiple?) loop/cavity and core superposed on tongue from previous event. Core contains embedded, twisted (prominence?) structures. Loop is 'light-bulb' shaped from 20:19 until ~21:45. Large deflections. Region and tongue are blown out.
					Oct 29 20:19-21:45	245 ₁ *	109†	3	5	Kink in core	
Oct 30	304	~08:00-19:06	115	050	Oct 30 08:33-13:23	066 ₁ 094 ₂ *	115†	10	5	Outer loop	Loop/cavity (or arcade of loops/cavities) with inner loop/cavity superposed on faint rays.
					Oct 30 11:33-16:23	043 ₁ *	119†	7	5	Inner loop	
Oct 30/31	304/305	19:30~03:37	~155	~030	Oct 30 21:04-22:38	031 ₁ *	155	2	6	Loop	Faint loop/cavity just south of previous event. Possible core at 01:38. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 30 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Oct 31	305	09:52-10:52	351	058	Oct 31 09:52-10:52	283 ₁ *	332†	3	6	Loop	Thin loop/cavity and core. Loop may be 'light-bulb' shaped. Deflections. Region brightened at 09:19.
					—	—	—	—	1	Cavity	
Nov 01	306	11:37-13:19	080	080	Nov 01 11:37-12:02	577 ₁ * 760 ₂	060	3	9	Loop	Fuzzy, broad, 'light-bulb' shaped loop/cavity with structured, inner (prominence?) loop/cavity. Inner loop is in close proximity to outer loop and is also 'light-bulb' shaped. Additional faint material is visible under inner loop. Region is disrupted. Deflections.
Nov 01	306	17:52-19:35	085	090	Nov 01 17:52-18:17	170 ₁ * 327 ₂	070	3	6	Mound	Faint mound with thin, dark, embedded feature (or loop/cavity) superposed on streamers.
					Nov 01 18:09-18:42	308 ₁ * 177 ₂	070	3	7	Dark feature	
Nov 01/02	306/307	22:42~01:50	072	053	—	—	—	—	1	Cloud	Structured cloud with several bright blobs.
Nov 02	307	05:31-06:40	248	035	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on streamer.
Nov 02	307	13:12~14:37	115	060	—	—	—	—	1	Mound	Faint, fuzzy, mound superposed on streamer.
Nov 02/03	307/308	17:20~04:50	~083	~055	—	—	—	—	0	Too fuzzy	Faint, indistinct cloud superposed on streamers. Deflections north of event.
DATA GAP: Nov 03 07:32 to Nov 04 16:14.											
Nov 05	310	02:19-08:34	063	055	Nov 05 04:45-05:18	139 ₁ *	063	2	5	Outer cavity	Two faint loops/cavities all superposed on fan. Deflections.
					Nov 05 04:45-05:18	227 ₁ * 202 ₂	061	3	5	Inner loop	
Nov 05	310	10:16~17:24	121	049	Nov 05 11:08-12:34	115 ₁ * 090 ₂	120	4	5	Cavity	Cavity with structured, inner core rises in streamer. Irregular loop becomes visible around cavity. Streamer is blown out. Deflections.
Nov 06	311	05:46-08:02	094	072	Nov 06 05:46-06:02	343 ₁ * 485 ₂	097	3	6	Loop	Thick loop/cavity with possible small core.
Nov 06	311	10:36-12:01	063	035	—	—	—	—	1	Material	Faint material ejected in northern leg of previous loop. Could be part of previous event.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 31 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 06	311	15:09-17:24	064	053	Nov 06 15:09-15:33	495 ₁ * 795 ₂	045	3	6	Cloud	Flat, bright, tilted, filled cloud superposed on rays. Deflections.
Nov 06	311	21:57-23:47	~222	~045	—	—	—	—	0	Too faint	Very faint cloud superposed on rays.
Nov 06/07	311/312	22:13~02:39	100	060	Nov 06 23:06-23:39	137 ₁ *	095†	2	7	Back of inner loop	Fuzzy loop/cavity with interior loop/cavity.
Nov 08	313	07:06-08:31	<102	>032	—	—	—	—	0	Edge at 07:06 only	Loop/cavity at northern edge of streamer. Deflections.
Nov 08	313	13:12-16:03	~306	~137	—	—	—	—	0	No obvious front	Very faint material in north and west. Motion in all sectors. Material is most visible from ~237° to ~014°. Possible halo.
Nov 09	314	11:58~15:39	295	040	Nov 09 11:58-13:32	277 ₁ 365 ₂ *	295†	6	9	Outermost cavity	Loop/cavity with complex, interior loop/cavity and structured (prominence?) core in southern half of streamer. Outer loop flattens as it moves outward. 'Light-bulb' shaped event. Southern half of streamer is blown out.
					Nov 09 11:58-13:32	304 ₁ * 315 ₂	295	5	7	Inner loop	
Nov 10	315	06:43-14:41	089	107	Nov 10 06:43-07:08	773 ₁ * 659 ₂	074	4	9	Material (prominence) (Not leading edge)	Beautiful, highly structured (prominence) material. Could have missed coronal front of event between 05:43 and 06:43 images. Material ejected on both sides of (prominence) material. Small streamer at northern edge of event is disrupted.
Nov 10	315	10:41-13:32	312	067	Nov 10 10:41-12:14	321 ₁ 443 ₂ *	305	6	5	Loop	Flat-topped loop/cavity with probable (indistinct) core superposed on streamer. Loop gets flatter (dimpled) as it moves outward.
Nov 11	316	01:54-03:20	022	095	—	—	—	—	0	Front at 01:54 only	Wide mound superposed on existing structures. Possible cavity late in event.
Nov 12	317	16:43-18:33	~037	~065	Nov 12 16:43-16:59	562 ₁ *	041	2	5	Mound	Faint mound superposed on rays.
Nov 13	318	06:39-14:53	028	065	—	—	—	—	0	No obvious front	Faint cloud superposed on rays.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 32 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Nov 13/14	318/319	20:59-00:07	259	082	Nov 13 21:16-22:17	360 ₁ * 390 ₂	230	4	7	Loop	Loop/cavity with fuzzy, loop-shaped core superposed on streamer. Core contains highly structured (prominence) features at southern edge. Streamer is blown out. Deflections.
					Nov 13 21:24-22:17	443 ₁ * 466 ₂	245	3	7	Cavity	
					Nov 13 22:17-23:51	187 ₁ 065 ₂ *	245	5	9	Core feature (prominence)	
Nov 13/14	318/319	23:51-01:24	~255	~090	Nov 13/14 23:51-00:40	485 ₁ * 511 ₂	255	4	5	Loop	Loop/cavity follow close behind core from previous event. Southern edge of loop is not visible.
Nov 14	319	00:15-14:10	~320	~060	—	—	—	—	0	No obvious front	Faint material superposed on streamer.
Nov 14	319	12:29-14:02	~090	~040	—	—	—	—	0	Missed front	Faint, irregular cloud near streamer. Deflections. Could have missed the front.
Nov 14	319	15:28-16:17	~020	~080	—	—	—	—	1	—	Faint cloud over north pole.
Nov 14/15	319/320	16:01-02:41	263	075	—	—	—	—	0	Front at 16:01 only	Faint cloud (or loop/cavity) superposed on rays.
Nov 15/16	320/321	19:36~16:45	307	045	Nov 15 19:36-21:18	188 ₁ * 227 ₂	300	5	5	Cavity	Faint loop/cavity and fuzzy (loop-shaped?) core superposed on streamer. Concave-outward, 'U'-shaped material is visible from ~03:41 until ~16:45. Streamer is blown out. Data is streaked.
					—	—	—	—	1	Concave-outward material	
Nov 15/16	320/321	23:00-03:25	358	065	—	—	—	—	0	No obvious front	Mound (or loop/cavity) over north pole. Some structure in western leg of event. Data is very streaked.
Nov 16	321	20:45~22:35	248	065	—	—	—	—	0	No obvious front	Irregularly-shaped material superposed on streamers. Region is disrupted. Data is streaked.
Nov 17	322	14:30-15:22	092	045	—	—	—	—	0	No obvious front	Cloud superposed on streamer. Motion of ray at 130°. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 33 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	# Data Pts	Qual		
Nov 18	323	03:52-07:33	060	056	Nov 18 03:52-04:34	331 ₁ * 465 ₂	062	3	9	Cavity	Loop/cavity with structured core. Data is streaked.
Nov 19	324	00:28~17:40	~322	~035	—	—	—	—	0	No obvious front	Slow expansion and disruption of streamer. Streamer is column-shaped by the end of the event.
Nov 19	324	10:08-19:14	040	050	—	—	—	—	0	No obvious front	Very faint cloud north of streamer.
Nov 19	324	11:33-13:23	~105	~020	—	—	—	—	0	No obvious front	Faint, fuzzy, narrow jet.
Nov 19	324	20:39-23:55	045	060	Nov 19 20:39-21:12	521 ₁ * 184 ₂	042	3	5	Loop	Loop with irregularly-shaped cavity superposed on streamer.
Nov 20	325	09:18-16:58	050	060	Nov 20 10:43-12:17	116 ₁ * 176 ₂	060	4	5	Cavity	Faint loop/cavity with complex (multiple?) core superposed on streamer. Data is streaked.
Nov 20/21	325/326	16:50-00:39	282	035	Nov 20 18:48-19:57	305 ₁ * 453 ₂	280	3	5	Loop	Faint, irregular cloud superposed on rays. Brighter, evolving loop/cavity follows cloud from ~18:24 until end of event. Data is streaked.
Nov 20/21	325/326	20:30-02:37	230	060	Nov 20 20:30-23:54	113 ₁ 202 ₂ *	230	8	5	Cavity	Cavity rises in helmet streamer. Loop becomes visible around cavity. Cavity is followed by a bright, loop-shaped core. Core becomes concave-outward, 'V'-shaped. Streamer is blown out.
					Nov 20 20:30-23:54	118 ₁ 191 ₂ *	230	8	5	Core	
Nov 21	326	03:55-08:28	~144	~028	—	—	—	—	0	No obvious front	Faint cloud south of small streamer.
Nov 21/22	326/327	23:21~01:39	252	045	Nov 21/22 23:21-00:05	315 ₁ *	255	2	3	Mound	Fuzzy mound (or loop/cavity) superposed on fan.
Nov 22	327	14:50-16:24	~055	~030	—	—	—	—	0	Too faint	Faint cloud superposed on streamer.
Nov 22	327	18:50-23:32	342	075	Nov 22 18:50-19:40	182 ₁ 311 ₂ *	332†	4	7	Loop	Faint loop/cavity with partially structured (prominence?) core north of fan. Deflections.
Nov 24	329	06:03-07:28	207	085	—	—	—	—	0	Front at 06:03 only	Irregularly-shaped cloud with some structure superposed on and south of streamer in 06:03 image only. Gone by 07:28. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 34 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 25	330	01:40-05:13	150	030	—	—	—	—	0	Front at 02:05 only	Faint mound (or loop/cavity).
Nov 26	331	05:56-07:38	090	070	Nov 26 05:56-06:13	481 ₁ * 617 ₂	076†	3	9	Loop	Sharp loop/cavity with amorphous core superposed on streamer. Streamer is blown out. Deflections.
					Nov 26 06:13-06:29	492 ₁ *	112†	2	5	Cavity	
Nov 26	331	17:00~20:08	~285	~010	—	—	—	—	0	No obvious front	Narrow jet (or ray).
Nov 27/28	332/333	22:41-00:23	189?	078?	—	—	—	—	0	Front at 22:49 only	Structured (prominence?) loop/cavity centered under pylon shadow. Faint, wide, outer loop/cavity may be present. (See west images just prior to event start time.)
Nov 28	333	~16:17~20:49	~285	~030	—	—	—	—	0	No clear front	Faint, fuzzy cloud (or blob) in streamer. Data is very streaked.
Nov 29	334	00:05-01:31	060?	—	—	—	—	—	1		Faint cloud superposed on existing structures. Data is very streaked.
Nov 30	335	00:24-07:12	~068	~055	—	—	—	—	0	No clear front	Fuzzy, irregular loop(?)/cavity with complex core in fuzzy streamer. Streamer is blown out. Deflections. Core may be concave-outward, 'V'-shaped.
Nov 30/ Dec 01	335/336	~16:01~03:38	~305	~040	—	—	—	—	0	No obvious front	Very faint cloud superposed on streamer.
Nov 30	335	16:18-17:35	118	055	Nov 30 16:18-16:42	470 ₁ * 325 ₂	125	3	7	Loop	Loop/cavity with possible core superposed on rays.
											DATA GAP: Dec 01 13:01 to 18:26.
Dec 01/02	336/337	~18:26~23:23	118	095	—	—	—	—	0	Too fuzzy	Streamer at 135° swells during data gap between 12:36 and 18:26. Faint cloud visible at ~100° between 22:23 and 23:49. Cloud moves non-radially (equatorward). Second faint cloud is visible at ~100° from 01:31 until ~04:30. Cloud fades. Continual disruption of material in streamers at 110° and 135° until end of Dec 02.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 35 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 02	337	02:31~21:16	043	055	Dec 02 02:56-06:56	046 ₁ * 062 ₂	045	6	4	Tongue	Streamer expands and disrupts. 'Light-bulb' shaped tongue of material ejected through streamer.
Dec 05	340	12:02-21:26	260	120	Dec 05 13:11-14:38	229 ₁ * 199 ₂	260	3	7	Mound	Wide, faint mound (or loop/cavity) superposed on existing structures from 12:02 until 16:20. Loop(?)/cavity is visible from ~16:45 until end of event. Best seen in south images. Concave-outward, 'U'-shaped material visible from 18:18 until 19:52 between ~205° and 240°. Deflections. Data is streaked.
Dec 05/06	340/341	~21:34-10:57	~118	~085	Dec 06 05:15-07:05	075 ₁ * 129 ₂	129†	4	7	Material	Cloud between streamers followed by multiple, complex (loop-shaped) ejections of material. Region is partially blown out. Deflections. Some streaking in data.
Dec 06	341	~06:57~11:38	~260	~060	—	—	—	—	0	Too faint	Faint loop/cavity. Data is partially streaked.
Dec 07/08	342/343	21:37-02:10	305	040	Dec 07 21:37-23:02	175 ₁ * 296 ₂	304†	4	6	Cavity	Loop/cavity with possible core in streamer. Streamer is disrupted. Data is streaked.
Dec 08/10	343/345	~05:43~23:39	127	045	—	—	—	—	0	No clear front	Streamer slowly widens and expands outward. Material is ejected around streamer. Streamer is blown out by the end of Dec 10.
Dec 08	343	17:40-20:47	080	080	—	—	—	—	1		Broad, faint cloud with brighter, structured embedded material from 075° to 095°. Data is streaked.
Dec 08	343	19:13~23:11	250?	060?	—	—	—	—	0		Broad, faint mound (or cloud) superposed on existing structures. Deflections at south edge. Data is very streaked.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 36 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Dec 08/09	343/344	20:55-03:19	~315	~060	Dec 08 20:55-21:28	070 ₁ * 071 ₂	315	3	5	First cavity	Faint, multiple loops/cavities with faint, loop-shaped core superposed on existing structures. Region is disrupted. Data is streaked.
Dec 09	344	06:43-11:00	045 068	070 068	—	—	—	—	0		Two part event: 1. Faint cloud superposed on streamer. 2. Broad loop/cavity superposed on streamers. Region is disrupted. Data is streaked.
		06:43-09:34			—	—	—	—	0		
		09:42-11:00			Dec 09 09:42-10:07	1219 ₁ *	050	2	7	Loop	
					Dec 09 09:42-10:07	984 ₁ *	050	2	7	Cavity	
Dec 09/10	344/345	23:22-01:04	312	045	—	—	—	—	0	No clear front	Cloud superposed on rays and streamers. Data is streaked.
Dec 10	345	13:51~19:42	073	055	—	—	—	—	0	Missed front	Motion of material at ~050°. Blowout occurs between 14:16 and 15:09 images. We may have missed the front. Large deflections. Irregularly-shaped material is visible from 15:09 until 16:34. Faint material is ejected until 19:42. Data is streaked.
Dec 10/11	345/346	14:16~08:54	117	045	—	—	—	—	1	Cavity	Loop/cavity superposed on streamer. Moves out very slowly after 16:34. Event on Dec 11 at 08:54 immediately follows in same location. Data is streaked.
Dec 10/11	345/346	23:31-02:05	305	080	Dec 10/11 23:31-00:23	529 ₁ *	305	2	7	Loop	Fuzzy loop/cavity with faint core superposed on streamer. Core becomes concave-outward, 'V'-shaped. Streamer is disrupted. Data is streaked.
					Dec 10/11 23:31-00:23	463 ₁ *	305	2	7	Cavity	
Dec 11	346	03:39-05:38	~077	~035	Dec 11 03:39-04:12	808 ₁ *	075	2	5	Mound	Mound (or fuzzy cloud) superposed on faint rays. Southern side of event contains brighter material. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 37 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 11	346	08:54-21:32	130	040	Dec 11 09:54-11:20	036 ₁ *	127†	3	5	Outer cavity	Faint loop/cavity rises slowly in faint fan. Second loop/cavity with small hook-shaped core appears. Core is at south edge of outer loop/cavity. Deflections. Fan is blown out. Data is streaked.
					Dec 11 11:45-19:17	021 ₁ 052 ₂ *	129†	14	5	Second cavity	
					Dec 11 11:45-19:50	025 ₁ 042 ₂ *	131†	19	5	Core	
Dec 12	347	06:39-09:30	030	080	—	—	—	0	Front at 06:39 only	Loop/cavity(?) with partially structured core. Deflections. Some streaking in data.	
Dec 12/13	347/348	23:26-06:14	310	060	Dec 12/13 23:34-01:16	258 ₁ *	308†	4	4	Loop	Fuzzy loop/cavity superposed on streamers. Southern streamer is disrupted. Deflections. Some streaking in data.
					Dec 12/13 23:34-00:51	132 ₁ *	312†	3	4	Cavity	
Dec 13	348	02:25-05:33	067	035	Dec 13 02:25-03:06	281 ₁ *	077	3	7	Loop	Fuzzy loop/cavity superposed on streamer. Loop top is flattened in 03:06 image. Deflections. Streamer is disrupted. Some streaking in data.
Dec 13	348	12:37-21:10	072	035	—	—	—	0	No clear front	Mound (or cloud) superposed on fan. Data is streaked.	
DATA GAP: Dec 13 22:44 to Dec 15 15:22.											
Dec 16	351	02:27-04:17	325	110	—	—	—	0	Missed front	Broad, faint cloud superposed on rays and streamer. We missed the top of the cloud between 01:26 and 02:27 images. Deflections.	
Dec 16	351	08:50-10:32	075	170	Dec 16 08:50-09:06	1475 ₁ *	100	2	9	Loop	Very broad loop/cavity superposed on existing structures. Southern part of loop top is smooth. Northern part of loop top has irregular, complex shape. Interior tongue of (prominence?) material follows and moves non-radially. Top of tongue is located at 115° and the base is located at 095°. Ray at northern edge moved prior to event at 07:24. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 38 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 17	352	04:45~14:31	~062	~055	—	—	—	—	0	No obvious front	Faint, fuzzy cloud (or fan) of material superposed on streamer. Material is ejected over ten hours.
Dec 17/18	352/353	~16:04~03:01	007	055	Dec 17/18 20:46-01:27	034 ₁ * 025 ₂	005	4	7	Mound	Faint, slow-moving mound. Fades into background brightness levels.
Dec 17	352	19:04-23:45	235	070	—	—	—	—	0	Front at 19:04 only	Broad, faint, partially structured mound with possible thin cavity is superposed on streamer. Deflections.
Dec 18	353	17:37-23:52	240	060	Dec 18 17:37-18:29	410 ₁ *	250	2	4	Loop (prominence?)	Mound with embedded, structured (prominence?) loop/cavity just beneath mound top. Structured blob of (prominence?) material is visible at 267° at 4.4R _⊙ at 18:29. Mound and loop/cavity are gone by 19:55. Additional material (blobs?) is ejected along ray at 252° from 22:10 until 23:52. Event is superposed on streamers.
Dec 19	354	04:33~18:27	237	055	Dec 19 04:33-07:41	034 ₁ * 028 ₂	226	3	7	Cavity	Loop/cavity with partially structured core superposed on streamer. Concave-outward material moves outward from ~12:05 until end of event. Deflections. Region is disrupted.
Dec 20	355	03:17-08:31	075	026	—	—	—	—	0	No clear front	Irregularly-shaped cavity rises in streamer. Streamer elongates and disrupts. Deflections.
Dec 20	355	03:25-11:30	~237	~035	—	—	—	—	0	No obvious front	Irregularly-shaped material superposed on streamers. Region is disrupted. Lateral motions and brightening in northwest rays.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 39 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 20/21	355/356	12:31~04:16	097	085	—	—	—	—	1	Loop	Could be two events: 1. Bright (multiple?) loop/cavity with structured (loop-shaped?) core. Northern streamer is disrupted. Big deflections. 2. Irregularly-shaped material and blob in disrupted streamer from part one.
		12:31-14:13									
		21:53-04:16	059	022	—	—	—	—	0	No clear front	
Dec 21	356	01:00>04:24	235	050	Dec 21 01:08-04:24	131 ₁ * 167 ₂	235	4	7	Cavity	Loop/cavity and amorphous core in streamer. Streamer is disrupted. Deflections.
Dec 21/22	356/357	19:45-00:42	305	080	Dec 21 19:45-20:01	211 ₁ *	315	2	5	Mound	Wide, faint mound (or cloud) superposed on rays. Rays are disrupted. Deflections.
Dec 22/23	357/358	~00:42-02:06	028?	095?	—	—	—	—	0	Too fuzzy	Broad, very faint material superposed on existing structures. Material is ejected throughout Dec 22.
Dec 22	357	02:24~08:47	232	035	—	—	—	—	0	No obvious front	Faint rays of material superposed on streamers.
Dec 22	357	16:27-18:17	243	063	Dec 22 16:27-16:52	372 ₁ * 833 ₂	230	3	7	Loop	Fuzzy loop/cavity with core superposed on streamer. Bright, embedded flat edge trails loop front from 16:27 until 16:52. Could be part of loop front or may be a core immediately behind the cavity. Streamer is disrupted.
					Dec 22 16:27-16:52	501 ₁ * 811 ₂				Flat edge	
Dec 22/23	357/358	22:50-02:14	245	070	Dec 22 22:50-23:59	194 ₁ *	235	2	6	Cavity	Loop/cavity with complicated core superposed on streamers. Large deflections. Region is disrupted. Concurrent with next west event.
Dec 22/23	357/358	23:59-01:25	315	050	Dec 22/23 23:59-00:08	350 ₁ *	307	2	6	Loop	Complex (multiple?) loop/cavity with dimpled front and structured core superposed on streamer. Streamer is disrupted. Deflections. Concurrent with last southwest event.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 40 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Dec 23	358	01:25-05:14	308	033	Dec 23 02:58-03:48	221 ₁ * 433 ₂	313	3	5	Streamer	Cavity in streamer followed by a loop-shaped core. Streamer is blown out.
Dec 23	358	03:48-06:47	~230	~030	—	—	—	—	0	No obvious front	Tongues of material superposed on rays. Could be related to previous event that began Dec 22 at 22:50.
Dec 23	358	04:32-21:51	~040	~080	—	—	—	—	0	Too fuzzy	Faint, fuzzy cloud with brighter embedded mound all superposed on fan. Cloud has left the field of view by 12:37. Additional fuzzy, narrow material ejected at south edge of streamer from 18:44 until ~21:51.
Dec 23	358	09:21 -10:47	~237	~035	—	—	—	—	0	Front in one image only	Fuzzy, multiple loops/cavities with complex (twisted?) core superposed on streamer. Core is concave-outward, 'V'-shaped in 09:54 image. Deflections. Streamer blows out.
Dec 23	358	15:28~20:26	245	050	Dec 23 15:28-15:44	984 ₁ *	245	2	9	Loop	Loop/cavity with highly structured, multiple, loop-shaped (prominence) core superposed on streamers. Region is disrupted. Deflections.
					Dec 23 15:28-15:44	1055 ₁ *	245	2	9	Core (prominence)	
Dec 24	359	~04:14~11:46	~242	~035	—	—	—	—	0	No obvious front	Faint blob located at ~246° at 4.0R _⊙ is ejected at 04:14. Blob is followed by wider, irregularly-shaped material. Event is superposed on streamers. Could be related to previous southwest event on Dec 23 at 15:28. Rays in vicinity of blob brighten (material ejected?) from 02:59 until 04:14.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 41 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 24	359	12:19-20:07	242	055	Dec 24 12:19-13:36	710 ₂ *	247	5	5	Cavity	<p>Could be more than one event:</p> <ol style="list-style-type: none"> 1. Irregularly-shaped loop/cavity with diffuse core superposed on streamers. 2. Brighter loop/cavity with complex structured (prominence?) core follows immediately behind the loop in part one. Core contains concave-outward, 'U'-shaped material. Region is partially blown out. Big deflections. 3. Fuzzy blob. Blob is concave-outward, 'U'-shaped in 19:34 image.
		12:19-13:53									
		13:20~17:00	—	—	—	—	0	No obvious front			
		18:34-20:07	~240								
Dec 25	360	~04:56~22:32	~035	~070	—	—	—	—	0	No obvious front	Very faint cloud superposed on and north of streamer.
Dec 25	360	~09:38~12:45	235	020	—	—	—	—	0	No obvious front	Blob 'N Ray at 240° followed by tongue-shaped material superposed on rays.
Dec 26	361	10:45~15:24	062	045	—	—	—	—	0	No obvious front	Fan of material superposed on and south of streamer. Fuzzy blob is superposed on south side of fan. Deflections.
Dec 26	361	12:10-14:32	250	060	—	—	—	—	0	Too faint	Faint mound superposed on streamer.
Dec 27	362	03:01-04:27	277	055	—	—	—	—	0	Front at 03:01 only	Irregular loop/cavity and core superposed on streamer. Deflections. Visible in 03:01 image only at 2.5R _⊙ .
Dec 27	362	07:18-09:16	307	055	Dec 27 07:18-07:26	961 ₁ *	307	2	9	Loop	Bright (multiple?) loop/cavity with structured (prominence?) core containing twisted loop-shaped structure. Event is superposed on streamers. Streamers are disrupted. Large deflections.
					Dec 27 07:18-07:26	961 ₁ *	307	2	9	Cavity	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 42 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Dec 27	362	08:35~11:42	043	040	—	—	—	—	1	Fuzzy front in two images only	Cloud(?) of material in streamer. Streamer is disrupted.
Dec 27	362	10:41-16:23	~150	~060	Dec 27 10:41-12:15	161 ₁ *	157	2	4	Mound	Faint mound (or loop/cavity) superposed on and south of streamers.
Dec 27	362	11:59-16:40	~020	~080	—	—	—	—	1	Cloud	Faint cloud over north pole. Legs are superposed on streamers.
Dec 28	363	01:37~08:25	318	065	Dec 28 02:10-05:26	224 ₂ *	301†	5	4	Cavity	Faint, multiple loops/cavities with core in streamer. Core is concave-outward, 'V'-shaped. Streamer is disrupted. Deflections.
Dec 28	363	01:45-03:27	040	080	Dec 28 01:45-02:02	703 ₁ *	040	2	6	Loop	Faint, thin loop/cavity superposed on streamer. Deflections. Faint material may be added to the southeast sector at this time.
Dec 28	363	12:33-14:47	290	030	Dec 28 12:49-13:22	421 ₁ * 685 ₂	287	3	7	Mound	Mound (or tongue) superposed on streamer. Becomes irregularly-shaped as it moves outward.
Dec 28	363	17:47-20:54	~182	~085	—	—	—	—	0	No clear front	Faint, irregular cloud partially spans pylon shadow.
Dec 29	364	~00:10~02:52	290	030	Dec 29 00:10-01:02	376 ₁ *	292	2	6	Loop	Small, flat-topped loop/cavity superposed on rays. Rays are disrupted.
Dec 29	364	06:25~09:23	~192	~165	—	—	—	—	0	Front in one image only	Broad, diffuse loop/cavity spans pylon shadow. Eastern edge is superposed on streamer. Deflections.
Dec 29	364	~10:57-18:45	~138	~065	—	—	—	—	0	Too fuzzy	Faint cloud superposed on streamer. Streamer is disrupted. Motion in streamer prior to event. Motion may be due to previous event in south sector.
Dec 29	364	11:58-13:40	065	060	Dec 29 11:58-12:22	539 ₁ *	080	2	5	Outer loop	Thick, faint loop/cavity with inner loop/cavity and core. Northern leg is superposed on streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1988 Coronal Mass Ejections page 43 of 43

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Dec 29	364	12:06-16:39	250	040	—	—	—	—	1		Faint tongue of material with possible cavity superposed on rays. Rays are disrupted. Big deflections.
Dec 29/30	364/365	22:53-00:35	312	047	Dec 29 22:53-23:18	235 ₁ * 303 ₂	306	3	7	Loop	Loop/cavity with blob-shaped core superposed on south side of streamer. Core is concave-outward, 'V'-shaped.
					Dec 29 22:53-23:18	231 ₁ * 303 ₂	306	3	7	Cavity	
Dec 30	365	06:42-06:58	080	040	—	—	—	—	0	Front at 06:42 only	Very faint loop/cavity (or mound).
Dec 30	365	13:13-21:01	315	050	Dec 30 14:30-16:20	168 ₁ * 199 ₂	311	6	7	Cavity	Multiple loops/cavities with structured, loop-shaped (prominence?) core and fuzzy material all superposed on streamer. Streamer is blown out. Deflections.
					Dec 30 16:12-18:02	214 ₁ 360 ₂ *	316†	5	7	Core	
Dec 30	365	18:10~19:36	157	085	Dec 30 18:10-18:19	844 ₁ *	142	2	7	Core (prominence?)	Fuzzy, diffuse loop/cavity with brighter loop-like (prominence?) core superposed on streamers. Deflections.
Dec 30/31	365/366	19:19~03:16	247?	045?	Dec 30 19:44-19:52	704 ₁ *	250†	2	7	Structure in inner loop (prominence)	Faint, thin loop/cavity (or mound) with bright, embedded, highly structured (prominence) loop. Fuzzy jet is ejected from ~22:59 until ~03:16. Data is streaked.
Dec 31	366	~05:15-18:52?	282	045	—	—	—	—	0	Too faint	Very faint, diffuse cloud. Data is streaked.
Dec 31	366	~09:47~12:38	057	018	—	—	—	—	0	No clear front	Faint tongue of material superposed on fan. Deflections. Data is streaked.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 1 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 01	001	04:40-06:13	268	014	—	—	—	—	0	No obvious front	Narrow tongue.
Jan 01	001	07:55-09:12	~150	—	—	—	—	—	0	Too fuzzy	Fuzzy cloud near pylon shadow.
Jan 02	002	02:22~05:30	145	—	—	—	—	—	0	Too fuzzy	Cloud superposed on and south of streamer. Deflections.
Jan 02	002	19:21~22:53	297	055	Jan 02 19:21-20:30	621 ₁ 912 ₂ *	288†	3	9	Loop	Bright loop/cavity and loop-shaped(?) core superposed on streamer. Streamer is disrupted. Deflections. Core becomes concave-outward, 'V'-shaped from 20:30 to 22:04.
Jan 03	003	09:41~18:46	~058	—	—	—	—	—	1	—	Mound with core superposed on streamer (or fan). Could be more than one event. Deflections. Concave-outward shaped material at 18:29. Data is streaked.
Jan 04	004	~02:18~13:13	114	057	—	—	—	—	0	No obvious front	Cloud superposed on streamer.
Jan 04	004	~07:24~10:39	028 033?	025 025?	Jan 04 07:24-07:40	631 ₁ *	034	2	7	Northern loop	Two overlapping loops/cavities: 1. Northern loop/cavity. Front trails southern loop. 2. Southern loop/cavity.
					—	—	—	—	0	Front at 07:24 only	DATA GAP: Jan 04 13:54 to Jan 05 15:36.
Jan 06	006	02:40-08:54 02:40-04:55 07:12-08:54	060 060	070 080	—	—	—	—	0	No clear front	Two part event: 1. Broad, fuzzy cloud superposed on streamer. Deflections. 2. Structured (prominence?) cloud superposed on streamer.
Jan 06	006	05:39-09:02	290	070	Jan 06 05:39-06:28	190 ₁ * 422 ₂	290	3	7	Outer cavity	Loop/cavity and structured, inner (prominence?) loop/cavity. Inner loop is at northern edge of event. Event is superposed on fan.
					Jan 06 05:55-06:28	395 ₁ * 528 ₂	306	3	9	Inner loop (prominence?)	Fan is blown out. Deflections.
Jan 06	006	~11:01-21:56	~270	—	—	—	—	—	0	No obvious front	Slow expansion of material in fan. Fan is disrupted. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 2 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Jan 06	006	18:08-18:41	120	060	Jan 06 18:08-18:41	799 ₁ * 678 ₂	137†	3	6	Loop	Sharp loop/cavity at 18:08 superposed on south edge of streamer. Front gets fuzzy. Deflections.
Jan 07	007	00:22-09:00	~140	~020	—	—	—	—	0	No clear front	Blob 'N Ray. Moves synchronously with other east events from 05:03 to 06:37.
Jan 07	007	01:56-03:54	303	067	Jan 07 01:56-02:20	545 ₁ * 770 ₂	310	3	7	Loop	Fuzzy loop/cavity and twisted, structured (prominence?) core superposed on streamer (or ray). Deflections.
					Jan 07 02:12-02:45	491 ₁ * 400 ₂	310	3	7	Cavity (in core)	
Jan 07	007	03:29-23:46 03:29-14:24	~104	~041	Jan 07 12:51-13:24	219 ₁ * 070 ₂	110	3	4	Mound	Two part event: 1. Fuzzy mounds (or loops/cavities). Stalls or fades by 05:03. Bright, narrow material in southern edge at 05:19. Could be part of 00:22 event. Accelerates at 12:51. Possible fuzzy loop/cavity and core at this time. Event is superposed on streamers (or rays). 2. Fuzzy, structured loop/cavity (or cloud).
		20:39-23:46			~102	~036	—	—	—	—	
Jan 07	007	05:03-09:00	~055	~030	Jan 07 05:19-05:52	633 ₁ * 493 ₂	058	3	5	Loop	Fuzzy loop/cavity with concave-outward 'U'-shaped blob superposed on rays. Region is disrupted.
Jan 07	007	06:37~14:24	070?	056?	Jan 07 08:35-13:16	019 ₁ * 043 ₂	065	4	3	Loop	Faint loop/cavity superposed on fan (or rays) between two ongoing events. Front fades.
					Jan 07 06:37-13:16	020 ₁ * 013 ₂	068†	9	3	Cavity	
Jan 07	007	08:35<10:26	317	045	—	—	—	—	0	Front at 08:35 only	Loop(?)/cavity and structured, loop-shaped (prominence?) core superposed on fan.
Jan 07	007	18:13?-23:54	~250	~020	—	—	—	—	0	Too faint	Very faint cloud superposed on fan. Could have started earlier.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 3 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Jan 07/08	007/008	22:29-02:09	058	020	Jan 07 23:02-23:46	368 ₁ *	063	2	4	Tongue	Tongue superposed on fan.
Jan 08	008	03:10~08:16	060	030	—	—	—	—	1		Two part event: 1. Concave-outward, 'cornucopia'-, 'V'-shaped material with bright, structured (prominence?) material at 03:43. Event is superposed on fan. Could be part of previous event. Non-radial motion. 2. Irregularly-shaped material.
		03:10-08:16			—	—	—	—	0	No obvious front	
		05:01-08:16	090	037	—	—	—	—	0	No obvious front	
Jan 08	008	12:48-15:55	123	051	Jan 08 12:48-14:05	339 ₁ * 234 ₂	118	4	9	Loop	Flattened loop/cavity and fuzzy core superposed on streamer and rays. Region is disrupted. Deflections.
Jan 08	008	15:55-20:03	062	028	Jan 08 16:21-17:12	435 ₁ * 511 ₂	068	3	3	Cloud	Cloud containing concave-outward, 'U'-shaped front. Cloud is superposed on fan. Deflections.
Jan 08	008	17:04-20:11	240	031	—	—	—	—	0	No clear front	Fuzzy cloud superposed on fan.
Jan 08	008	20:03-22:26	074	021	—	—	—	—	0	No clear front	Narrow tongue superposed on rays.
Jan 09	009	04:41<11:39	053	047	—	—	—	—	0	No clear front	Narrow tongue superposed on rays followed by wider cloud superposed on rays at 09:14. Deflections.
Jan 09	009	13:21-15:12	343	100	Jan 09 13:21-13:38	737 ₁ *	325	2	9	Loop	Big loop/cavity and core(?) superposed on streamers and fan. Deflections.
Jan 09/10	009/010	18:36-10:12	227	055	Jan 09 18:36-21:43	050 ₁ * 074 ₂	215	3	5	Loop	Could be two events: 1. Thick loop/cavity superposed on streamer and fan. Second loop/cavity follows at 23:17. Deflections. Concave-outward material could be present from 07:13 to 10:12. 2. Faint cloud superposed on and north of part one.
					—	—					
Jan 09	009	19:45-21:18	130	054	Jan 09 19:45-20:18	340 ₁ * 352 ₂	128	4	4	Loop	Flattened loop/cavity superposed on fan (or streamers). Could be related to 18:36 southwest event.
Jan 10	010	00:42-03:16	134	027	Jan 10 00:50-00:58	844 ₁ *	135	2	7	Mound	Structured mound (or tongue) superposed on fan.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 4 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 10	010	20:50-22:32	125	080	Jan 10 20:50-21:15	611 ₁ * 467 ₂	140	3	7	Loop	Loop/cavity with possible core superposed on fan. Deflections.
Jan 10/11	010/011	22:16~00:22	~061	~028	—	—	—	—	0	No clear front	Narrow tongue superposed on rays. Deflections.
Jan 11	011	06:20-12:18	015?	—	—	—	—	—	0	No clear front	Possible halo. Motion in all sectors.
		09:11-12:18	020	020	—	—	—	—	0	Front at 09:11 only	Mound (or loop/cavity) north of streamer.
Jan 11	011	06:37~20:22	220	040	Jan 11 06:37-09:27	082 ₁ * -014 ₂	225	5	3	Cloud	Faint cloud (or mound) superposed on streamer followed by brighter material from 08:11 until ~20:22. Cavity could be present at 08:11. Streamer is disrupted.
Jan 11	011	13:35-15:09	060	064	Jan 11 13:52-14:00	912 ₁ *	068	2	8	Loop	Two part event, same times for both: 1. Loop/cavity and core superposed on background corona. Deflections.
			137	016	—	—	—	—	0	No obvious front	2. Tongue superposed on fan.
Jan 12	012	20:47-22:37	058	087	Jan 12 20:47-21:36	538 ₁ * 610 ₂	067	4	7	Loop	Wide loop/cavity and inner loop-shaped core superposed on streamers and rays. Region is disrupted. Deflections.
Jan 13	013	05:16-07:42	206?	032?	—	—	—	—	0	Front at 05:25 only	Cloud (or loop/cavity) near pylon shadow.
Jan 13	013	10:49-12:47	124	081	Jan 13 10:49-11:38	314 ₁ * 290 ₂	142†	4	5	Loop	Faint loop/cavity (or mound) with blob.
Jan 14	014	06:22~10:45	195?	062?	—	—	—	—	0	Too faint	Faint, irregular cloud spans pylon shadow. Deflections. Could extend as far east as 142°.
Jan 15	015	11:18-12:52	282	015	—	—	—	—	0	No clear front	Narrow tongue north of streamer.
Jan 15	015	16:40-17:49	310	020	—	—	—	—	0	No obvious front	Fuzzy, narrow cloud (or tongue) superposed on ray.
Jan 15	015	19:06-21:13	105	051	Jan 15 19:06-19:39	160 ₁ * 316 ₂	114	3	3	Loop	Faint loop/cavity superposed on rays (or streamers). Deflections.
Jan 15	015	20:31-22:05	283	007	—	—	—	—	0	No obvious front	Narrow jet north of streamer.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 5 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 15	015	20:48-23:55	015	050	—	—	—	—	0	Front at 20:48 only	Mound (or loop/cavity) with highly structured arrow-shaped (prominence) core at 012° in 22:22 image. Event appears between streamers. Deflections.
Jan 15	015	22:13-23:47	112	087	Jan 15 22:13-22:46	316 ₁ *	095	2	6	Loop	Faint structured, irregularly-shaped loop/cavity with faint structured (prominence?) core superposed on streamers (or rays). Deflections.
					Jan 15 22:13-22:46	347 ₁ *	107†	2	6	Core (prominence?)	
Jan 15/16	015/016	22:55-00:03	295	070	—	—	—	—	1	Cloud	Faint cloud superposed on streamers and rays. Deflections.
Jan 16	016	09:09-12:49	055	060	Jan 16 09:09-09:42	538 ₁ *	060	3	7	Cavity	Loop/cavity with beautiful, brighter, structured, inner (prominence) loop/cavity superposed on and between streamers. Northern leg of inner loop is highly structured. Streamers are disrupted. Big deflections.
			046	060	Jan 16 09:17-10:42	352 ₁ *	060	3	9	Inner loop (prominence)	
Jan 16	016	09:25-11:07	245	040	Jan 16 09:25-09:50	465 ₁ *	240	3	5	Loop	Faint, irregular loop/cavity (and core?) superposed on streamers. Deflections.
Jan 16	016	09:33-11:07	182?	065?	—	—	—	—	0	No clear front	Faint, irregular cloud partially obscured by pylon shadow. Could be wider.
Jan 17	017	03:55-07:27	~070	~050	—	—	—	—	1		Faint cloud superposed on streamers and rays.
Jan 17	017	09:17-14:42	~221	~042	—	—	—	—	0	Too faint	Faint cloud superposed on streamers and rays. South edge is obscured by pylon shadow. Deflections.
Jan 17/18	017/018	21:21-04:00	329	066	—	—	—	—	0	Too fuzzy	Could be two events: 1. Faint material superposed on streamer. Streamer expands. 2. Loop/cavity and core superposed on and north of streamer. Streamer is disrupted. Deflections.
	017/018	21:21-04:00			—	—	—	—	0	Too fuzzy	
	018	00:28-04:00	323	065	Jan 18 00:28-00:53	560 ₁ *	327	3	8	Loop	
					Jan 18 00:28-00:53	471 ₁ *	327	3	8	Cavity	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 6 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 18	018	07:00-11:49	240	081	Jan 18 07:00-07:52	725 ₁ * 608 ₂	245	3	7	Loop	Broad loop/cavity and complex multi-structured core superposed on and between streamers. Region is partially blown out. Big deflections.
Jan 18/19	018/019	07:00~06:24	~315	—	Jan 18 08:25-09:50	117 ₁ * 340 ₂	324	3	3	Cloud	Could be up to three events: 1. Cloud superposed on streamer. Could be concave-outward, 'V'-shaped. 2. Loop/cavity and inner, structured (prominence) loops/cavities superposed on and north of streamer. Inner loops are visible by 19:12. Deflections. 3. Streamer expands and blows out.
	018	07:00~11:24			—	—	—	—	—	1	
	018	18:47~20:20	318 335	063 030	—	—	—	—	1	Inner loops (prominence)	
	018/019	21:10-06:24	315	030	—	—	—	—	0	No obvious front	
Jan 18	018	11:07-12:41	095	090	—	—	—	—	0	Front at 11:07 only	Wide, irregular loop/cavity with core. South side is faint. Deflections.
Jan 19	019	01:43-04:17	~107	~086	—	—	—	—	1	Front clearly visible at 01:43 only	Loop/cavity with bright, structured cores superposed on and between streamers. Material covers east sector. Region is partially blown out. Deflections.
Jan 20	020	05:07-07:14	050	050	—	—	—	—	0	Front at 05:07 only	Multiple, concentric loops/cavities and structured core superposed on and between streamers. Region is partially blown out. Deflections.
					—	—	—	—	1	Cavity	
Jan 20	020	16:19-23:50	290	030	Jan 20 16:19-17:36	226 ₁ * 127 ₂	293	4	5	Mound	Fuzzy, structured mound (or tongue) superposed on and between rays. Fades.
Jan 21	021	00:40-02:13?	307	045	—	—	—	—	0	Front at 00:40 only	Thin loop/cavity and structured (prominence?) core superposed on streamer and ray. Core fragments. Faint material ejected mid Jan 21. Region is disrupted. Deflections.
Jan 21/22	021/022	~08:12-02:30	060	030	—	—	—	—	0	No obvious front	Slow expansion and disruption of streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 7 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 21/22	021/022	21:41~04:12	295	040	Jan 21 21:58-23:31	283 ₁ 479 ₂ *	300	4	5	Flat loop	Flattened loop/cavity (or mound) superposed on streamers. Second loop/cavity (or mound) at 01:13. Deflections.
Jan 22	022	11:52-15:00	~038	~043	Jan 22 13:26-13:42	562 ₁ *	045	2	5	Mound	Faint mound (or cloud) superposed on and north of streamer. Deflections. Could be wider.
DATA GAP: Jan 23 05:44 to Jan 24 22:58.											
Jan 25	025	03:47-05:54	307	045	Jan 25 03:47-03:55	561 ₁ *	310	2	9	Loop	Thick loop/cavity superposed on and south of streamer and rays. Deflections.
Jan 25	025	06:03-09:10	122?	025?	—	—	—	—	0	No obvious front	Cloud (or blob) in streamer.
Jan 25/26	025/026	16:41~07:00	127	055	Jan 25 16:57-20:05	055 ₁ *	130	8	5	Cavity	Cavity and core rise slowly in streamer. Loop becomes visible around cavity.
Jan 26	026	03:03-06:44	314	032	Jan 26 03:28-03:53	375 ₁ *	313	2	3	Cloud	Cloud superposed on and south of streamer.
Jan 26	026	14:06~15:40	268	—	—	—	—	—	0	No obvious front	Faint blob (or cloud) between streamers.
Jan 26	026	14:23-15:32	150?	050?	Jan 26 14:31-14:48	351 ₁ *	142	2	5	Loop	Faint loop(?) /cavity superposed on streamer.
Jan 26	026	19:20-20:54	~270	—	—	—	—	—	0	No obvious front	Faint, narrow jet. Data is streaked.
Jan 27	027	16:37-18:11	260	040	Jan 27 16:37-17:10	738 ₁ *	260	2	3	Mound	Faint, structured mound in streaked data. Deflections.
Jan 28	028	03:24-05:31	310	060	Jan 28 03:24-03:41	382 ₁ *	315	3	4	Loop (not leading edge)	Bright, irregular loop/cavity and complex loop-shaped core superposed on streamer. Remnants ejected late in event. Core is concave-outward, 'V'-shaped by 04:06. Streamer is partially blown out. Deflections.
			305	030	Jan 28 03:24-03:49	436 ₁ *	315	4	7	Inner cavity (in core)	
Jan 28	028	08:38-10:28	142	035	—	—	—	—	0	No obvious front	Faint cloud superposed on streamer.
Jan 28	028	13:27-15:00	~325	—	—	—	—	—	0	Front at 13:27 only	Faint loop/cavity superposed on fan (or streamer).
Jan 28/29	028/029	22:15-01:30	315	050	Jan 28 22:15-22:48	649 ₁ *	315	3	9	Outer loop	Two part event: 1. Multiple, concentric loops/cavities with core superposed on streamer and fan.
					Jan 28 22:15-22:48	638 ₁ *	315	3	9	Outer cavity	
		22:23-01:30	~018	~065	—	—	—	—	0	Front at 22:23 only.	2. Faint mound (or cloud) north of fan.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 8 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jan 29	029	00:30-02:48	~130	—	—	—	—	—	0	Too fuzzy	Cloud superposed on streamers. Cloud is concave-outward, 'V'-shaped.
Jan 29	029	04:21-17:06	040	048	Jan 29 06:28-08:02	142 ₁ *	030	2	5	Cavity	Two piece event: 1. Loop/cavity (and core?) superposed on rays. 2. Fuzzy loop/cavity and core north of fan. Deflections.
		08:02-17:06	000	040	Jan 29 09:18-10:52	174 ₁ *	002	2	3	Fuzzy cavity	
Jan 30	030	02:11~03:44	304	062	Jan 30 02:11-02:27	1055 ₁ *	310	2	9	Outer loop	Dimpled loop/cavity with beautiful, structured, knotty, inner (prominence) loop/cavity superposed on rays and streamer. Deflections. Region is disrupted.
			305	040	Jan 30 02:11-02:27	787 ₁ *	305	2	9	Inner loop (prominence)	
Jan 30	030	02:52~05:18	103	045	—	—	—	—	0	Too fuzzy	Structured mound superposed on streamer. Deflections.
Jan 30	030	05:51~22:41	027	022	—	—	—	—	0	No clear front	Tongue superposed on narrow streamer. Streamer is disrupted. Deflections.
Jan 30	030	12:05-16:10?	222	032	—	—	—	—	1		Fuzzy mound superposed on and south of streamer.
Jan 31	031	04:38~09:35	065	130	Jan 31 04:38-06:12	338 ₁ *	045	3	7	Outer loop	Could be two concentric, proximate loops/cavities centered on ray. Deflections.
					Jan 31 04:47-05:04	356 ₁ *	020	3	7	Inner loop	
Jan 31	031	11:34~20:30	059	043	—	—	—	—	1		Structured cloud. Could be related to previous event. Deflections.
Feb 01	032	04:01-06:08	032	014	—	—	—	—	1		Narrow, structured tongue superposed on ray. Ray is disrupted.
											DATA GAP: Feb 01 07:58 to 16:31.
Feb 01	032	16:39?~18:54	315	035	—	—	—	—	0	No obvious front	Faint loop/cavity superposed on streamer. Data is streaked.
											DATA GAP: Feb 01 23:02 to Feb 03 15:17.
Feb 03	034	<15:17-16:06	~315	—	—	—	—	—	0	Missed front	Bright, irregular material over west limb. Missed front in data gap.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 9 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 03/04	034/035	15:33~08:42?	051	049	—	—	—	—	1	Cloud	Irregularly-shaped cloud in streaked data.
Feb 04	035	10:15~23:00	042	095	Feb 04 10:15-10:40	842 ₁ *	052	2	5	Loop	Could be two events in streaked data: 1. Big, bright loop/cavity and complex, structured core superposed on streamers (or fan). Region is blown out. Big deflections. 2. Thin loop/cavity. Best seen in north images.
		11:49~23:00			Feb 04 11:49-16:29	027 ₁ * 021 ₂	062	4	3	Cavity	
Feb 05	036	11:20~14:27	~069	~022	—	—	—	—	0	No obvious front	Faint cloud superposed on rays. Could be wider. Data is streaked.
Feb 06	037	16:56-18:29	030	050	—	—	—	—	0	Front at 16:56 only	Structured mound (or loop/cavity) with structured core superposed on rays. Deflections.
Feb 07	038	01:00-13:28	235	026	—	—	—	—	0	No obvious front	Could be two events: 1. Tongue superposed on streamers. Motion prior to event. 2. Fuzzy loop/cavity(?) superposed on streamers. Deflections. Region is disrupted.
		01:00~03:59			—	—	—	—	0	No obvious front	
Feb 07		11:54-13:28	~230	—	—	—	—	—	0	No obvious front	
Feb 08	039	09:02-12:17	235	040	Feb 08 09:02-11:17	128 ₁ * 016 ₂	234†	4	3	Cavity	Fuzzy, structured loop(?)/cavity superposed on fan (or streamers). Region is disrupted. Deflections.
Feb 08/09	039/040	21:30~02:27	015	100	—	—	—	—	0	Missed front	Big loop/cavity and structured, loop-shaped core centered on streamer. Big deflections. Region is disrupted.
Feb 08/09	039/040	23:36-01:10	223	032	—	—	—	—	0	Front in one image only	Loop/cavity superposed between streamers. Deflections.
Feb 09	040	04:34-07:41	235	040	—	—	—	—	0	No obvious front	Faint, structured cloud superposed on streamers.
Feb 09	040	14:55-19:35	~020	~160	Feb 09 16:28-18:01	124 ₁ *	000	2	3	Loop	Wide, fuzzy, faint loop/cavity. Best seen in 18:01 image. Halo?

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 10 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 10	041	06:54-10:01	228	019	—	—	—	—	0	Missed front	Irregularly-shaped, highly structured, twisted ropes of (prominence?) material superposed on and south of streamer. Could have missed the front between 05:29 and 06:54 images.
Feb 10	041	12:35-15:42	103	054	Feb 10 12:35-13:08	742 ₁ 1611 ₂ *	108†	3	9	Loop	Thin loop/cavity with core and blob between streamers. Blob is in northern leg of event. Loop is 'light-bulb'-shaped. Deflections.
Feb 11	042	02:45-23:33	~050	—	—	—	—	—	0	No obvious front	Two part event in streaked data: 1. Fuzzy cloud with blob superposed on streamers. 2. Bright, narrow jet.
		02:45-09:15								—	
Feb 11	042	13:55-17:02	~210	~020	Feb 11 13:55-15:29	074 ₁ *	208	2	3	Cloud	Fuzzy cloud south of streamer.
		21:51-23:33	~057	—	—	—	—	—	0	No obvious front	
Feb 12	043	14:18~23:47	106	067	Feb 12 15:08-16:00	089 ₁ *	110	2	3	Cavity	Faint, fuzzy loop/cavity and complex, structured (loop-shaped?) core superposed on and between streamers. Deflections. Data is streaked.
Feb 12/13	043/044	20:57-05:10	150?	119?	Feb 12 20:57-21:22	784 ₁ * 935 ₂	140	3	6	Loop	Wide loop/cavity and diffuse core. Streaked data. Deflections. Could extend as far north as 055°.
Feb 13	044	16:54-20:01	056	038	Feb 13 16:54-18:28	291 ₁ * 274 ₂	055	4	7	Cavity	Loop/cavity and core superposed on and north of streamer. Streamer is partially blown out. Deflections. Data is streaked.
Feb 14	045	03:57~16:24	322	090	Feb 14 10:27-11:44	144 ₁ *	325	2	3	Northern cavity	Slow brightening and expansion of material in streamer. Irregular cloud appears at 08:54. Broad loop/cavity with complex core is visible at 10:27 with smaller, embedded loop/cavity and core at southern edge. Streamer is blown out. Big deflections. Data is streaked.
					Feb 14 11:52-13:01	186 ₁ * 110 ₂	295	3	4	Southern cavity	
Feb 14	045	05:47~12:01	~103	~015	—	—	—	—	1	Cavity	Small, faint cavity superposed on rays in streaked data.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 11 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 14/15	045/046	11:36~10:06	055	033	Feb 14 11:36-14:43	077 ₁ * 059 ₂	060	4	7	Cavity	Loop/cavity and brighter, structured inner (prominence) loop/cavity superposed on streamers. Region is partially blown out. Big deflections. Additional fuzzy cloud follows from 00:37 until ~10:06. Data is streaked.
					Feb 14 13:09-15:16	028 ₁ * 020 ₂	060	4	9	Inner loop (prominence)	
Feb 15	046	18:37-20:10	~305	—	—	—	—	—	0	No clear front	Jet (or narrow tongue). Could be wider.
Feb 16	047	11:53~22:47	092	020	—	—	—	—	0	No obvious front	Two part event: 1. Faint, irregularly-shaped cloud superposed on rays in streaked data. 2. Faint, narrow cloud. Possible concave-outward, 'U'-shaped material in 18:40 image.
		17:06-22:47	~135	—	—	—	—	—	0	No clear front	
Feb 17	048	14:22-19:02	105	050	Feb 17 14:22-15:55	236 ₁ *	110	2	7	Loop	Multiple(?), concentric loops/cavities and core superposed on streamer. 'Light-bulb' shape at 15:55. Streamer is blown out. Deflections.
					Feb 17 14:22-15:55	236 ₁ *	110	2	7	Cavity	
Feb 17/18	048/049	~21:08-08:11	~147	~039	—	—	—	—	0	Mound	Streamers expand slowly and develop a mound-shaped front. Highly structured, bright, knotty (prominence) material follows from 02:49 to 07:38. Knotty material extends as far north at ~100 degrees at 3.0R _⊙ . Streamers are blown out. Big deflections.
					Feb 18 02:49-04:47	059 ₁ * 079 ₂	130	4	7	Inner material (prominence)	
Feb 18	049	04:47~06:38	260	039	Feb 18 04:47-05:04	562 ₁ *	248	2	6	Loop	Bright loop/cavity superposed on and north of streamer. Southern leg is structured (prominence?) in 06:58 image. Deflections.
Feb 19	050	02:03~16:03	267	023	Feb 19 02:03-02:44	315 ₁ * 359 ₂	260	4	7	Cavity	Loop/cavity and core (or mound). Deflections. Faint material late in event.
Feb 19	050	05:10-11:48	041	051	—	—	—	—	0	Front at 05:10 only	Faint loop/cavity with core and blob superposed on rays. Region is disrupted. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 12 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Feb 20	051	02:05-05:21	~235	—	—	—	—	—	0	Front at 02:05 only	Faint cloud superposed on streamer.
Feb 20/22	051/053	15:48~04:45	~045	~035	—	—	—	—	0	Front at 15:48 only.	Multiple part event: 1. Structured cloud superposed on rays (or streamers). 2. Narrow tongue of material in ray from Feb 20 23:35 until Feb 21 01:09. More motion and brightening until Feb 22 ~04:45.
	051	15:48-18:55									
	051/053	23:35~04:45	~047	~013	—	—	—	—	—	—	
Feb 21	052	10:05-12:19	256	020	—	—	—	—	1	Blob	Narrow blob (or cloud) in streamer. Data is streaked.
Feb 22	053	11:07~14:14	251	035	—	—	—	—	0	Front at 11:07 only	Fuzzy, complex cloud superposed on streamer. Deflections.
Feb 23	054	06:13~07:47	043	016	—	—	—	—	0	Missed front	Structured fan (or tongue) along ray. Deflections. Could have missed the front.
Feb 23	054	09:36~12:02	149	033	—	—	—	—	0	No obvious front	Structured fan superposed on streamer.
Feb 24	055	09:41~13:29	234	081	Feb 24 11:31-12:04	223 ₁ * 243 ₂	255	4	7	Inner cavity (northern edge)	Fuzzy, complex loop/cavity with twisted, complex core and inner cavity superposed on streamers. Streamers are blown out. Big deflections. Data is streaked.
Feb 25	056	05:11~21:36	138	051	—	—	—	—	1	Loop	Could be two events: 1. Loop/cavity in streamer. Streamer is disrupted. Data is streaked. 2. Bright tongue in streamer. Streamer is blown out by end of day. Equatorial streamer brightens.
		05:11~07:28									
		16:56-21:36	135	010	—	—	—	—	0	No obvious front	
Feb 26	057	all day	304	032	—	—	—	—	1	Cavity	Motion in rays. Cavity with core rises slowly from ~04:06 until end of day. Data is streaked.
Feb 26	057	16:50~19:57	200	060	—	—	—	—	1	Cloud	Faint cloud spans pylon shadow. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 13 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments										
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual												
Feb 26/27	057/058	18:07-00:20	020	047	—	—	—	—	0	Front at 18:07 only	Two part event: 1. Loop/cavity (or mound) with structured, knotty, complex (prominence) blobs superposed on fan (or streamers). Deflections. 2. Mound (or cloud). Deflections.										
		18:07-00:20										—	—	—	0	Blobs at 19:40 only					
		22:47-00:20										~021	~047	—	—	—	0	Front at 22:47 only			
Feb 28	059	16:31~21:11	~168	~045	Feb 28 16:31-18:05	228 ₁ * 289 ₂	150	4	5	Loop		Fuzzy loop/cavity in streaked images superposed on and south of streamer. Moves non-radially (equatorward). Possible concave-outward, 'U'-shaped material from 18:38 to 21:11.									
Feb 28	059	18:46~21:03	293	065	Feb 28 18:46-19:55	513 ₁ * 235 ₂	295	3	3	Loop		Flattened loop/cavity superposed on fan at 18:46. Could be multiple, concentric loops/cavities with core by 19:30. Data is streaked.									
Mar 01	060	05:32?-22:39	280	—	—	—	—	—	0	No obvious front		Could be three events. 1. Faint (wide?) cloud superposed on streamers and rays. Deflections. Streaked data. 2. Structured cloud (or mound). Deflections. Region is disrupted. 3. Blob (or cloud) in fan.									
		05:32?-07:57									—		—	—	1	Cloud					
		14:10-17:17									275		030	—	—	—	1	Blob			
17:42-22:39	282	015	—	—	—	—	—	—	—												
Mar 02	061	04:27-05:00	290	040	Mar 02 04:27-05:00	562 ₁ *	300	2	5	Northern cloud	Two adjacent clouds (or blobs) superposed on rays and streamers. Northern cloud is faster.										
Mar 02	061	09:32-16:37	280	014	—	—	—	—	1	—	Two piece event: 1. Blob (or cloud) in fan. 2. Mound (or cloud) with cavity. Deflections.										
		09:32~10:48										290	035	Mar 02 12:38-13:30	512 ₁ *	290	2	5	Mound		
		12:38-16:37										290	035	Mar 02 12:38-13:55	495 ₁ * 523 ₂	290	3	3	Cavity		
Mar 02/04	061/063	22:59~23:46	105	040	—	—	—	—	0	No obvious front		Could be more than one event: 1. Irregular cloud superposed on streamers. 2. Slow expansion and disruption of streamer.									
		061/062											22:59-02:05	074	028	—	—	—	—	1	Streamer
		062/063											early~23:46	074	028	—	—	—	—	1	Streamer

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 14 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments			
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual					
Mar 03	062	08:10-14:24	274	048	Mar 03 08:10-08:36	357 ₁ * 401 ₂	270	4	5	Mound	Bright, complex mound (or loop/cavity) with structured (prominence?) core superposed on streamers and rays. Deflections. Region is blown out.			
					Mar 03 08:36-09:00	149 ₁ *	261	2	5	Core (prominence?)				
Mar 05	064	01:03-05:18?	327?	065?	Mar 05 01:27-03:01	140 ₁ * 153 ₂	325	5	6	Cavity	Very faint loop/cavity (or mound) superposed on streamers and ray. Deflections. Could be wider.			
Mar 05	064	10:14?-12:21?	270	030	Mar 05 10:14-10:39	547 ₁ * 349 ₂	266	3	5	Mound	Faint mound (or cloud) superposed on streamer (or rays). Deflections.			
Mar 05	064	21:33-23:06	089	020	—	—	—	—	0	Front at 21:33 only	Jet (or fan). Deflections.			
Mar 06	065	14:15-15:49	~034	~137	—	—	—	—	0	Front at 14:15 only	Bright loop/cavity and core superposed on streamers (or fan). Region is blown out. Big deflections. Faint material (ejected?) in this region from 09:51 to 12:41.			
Mar 07	066	06:07-23:29	108	035	—	—	—	—	0	Front at 06:07 only	Could be three events: 1. Loop/cavity and concave-outward, 'V'-shaped core superposed on north edge of streamer. Region is disrupted. Big deflections. 2. Small, flattened cloud (or blob). 3. Faint, narrow tongue (or wisp).			
		13:28-14:01								087		—	0	Front at 13:28 only
		22:40-23:29								090		026	—	0
Mar 07	066	14:09<21:15	~325	—	—	—	—	—	0	Front at 14:09 only	Mound seen in partial image at 14:09. Data gap follows.			
DATA GAP: Mar 07 14:09 to 21:07.														
Mar 08/09	067/068	01:55-01:15	239?	070?	—	—	—	—	0	No clear front	Could be more than one event: 1. Very faint cloud superposed on and north of streamer. 2. Faint structured cloud centered on streamer. Deflections.			
	067	01:55-03:28								—		—	0	No clear front
	067/068	12:48-01:15								213		094	—	—

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 15 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 08	067	03:34-05:27	050	024	—	—	—	—	0	Front at 03:34 only	Small mound(?) at north edge of streamer.
Mar 08/10	067/069	08:34~03:34	052	025	Mar 08/09 13:05-03:05	007 ₁ * 007 ₂	052	7	3	Outer cavity	Could be more than one event: 1. Cavity rises slowly in streamer. Loop becomes visible around cavity. Inner loop(?)/cavity and core appear under first cavity Mar 08 ~22:25. Streamer is blown out. Deflections. 2. Blob 'N Ray. 3. Very faint cloud (or blob). 4. Flattened, filled tongue at south edge of streamer.
		067/069 08:34~03:34			Mar 09 01:32-15:32	011 ₁ * 007 ₂	045†	9	4	Inner loop	
	067	15:47-17:20	080	—	Mar 09 15:32-18:39	040 ₁ * 059 ₂	043	3	4	Inner cavity	
		067	19:10-19:27	092	022	Mar 08 15:47-16:36	216 ₁ * 253 ₂	079	5	4	
	068	02:57-04:14	077	014	—	—	—	—	0	No obvious front	
	068	02:57-03:14	077	014	Mar 09 02:57-03:14	1370 ₁ * 1297 ₂	080	3	7	Tongue	
Mar 09	068	06:21-11:17	142	025	—	—	—	—	1	Tongue	Tongue of material along streamer. Front elongates. Streamer is disrupted.
Mar 09	068	14:07-18:11	112	046	Mar 09 14:07-15:07	444 ₁ * 307 ₂	125†	4	4	Loop	Two part event: 1. Loop/cavity and core superposed on streamer. Deflections. 2. Narrow, structured tongue.
		14:07~16:57									
		15:40-18:14									
Mar 09/10	068/069	23:27~00:52	067	025	—	—	—	—	0	Front at 23:27 only	Faint mound superposed on fan (or streamer).
Mar 10	069	02:42-12:03	160	050	—	—	—	—	1	—	Faint structured mound superposed on and south of streamer.
Mar 10/11	069/070	18:24-01:46	068	064	Mar 10 18:24-19:33	416 ₁ * 357 ₂	075	3	5	Mound	Mound superposed on streamer. Irregularly-shaped by 19:08. Brighter, structured knots of (prominence?) material from 19:57 to 23:04. Deflections.
			070	027							
Mar 10	069	19:24-20:58	~006	~058	—	—	—	—	0	Front at 19:24 only	Nice, bright loop/cavity at north edge of streamer. Could be wider. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 16 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 11	070	03:44~06:35	107	039	—	—	—	—	0	Front at 04:28 only	Faint, fuzzy loop/cavity superposed on fan. Corona brightens from 063° to 134°.
Mar 11	070	16:55-19:18	144	038	Mar 11 16:55-17:44	395 ₁ * 343 ₂	150	4	5	Material (prominence?)	Irregular cloud with twisted, complex, structured (prominence?) material superposed on rays (or streamers.)
Mar 11	070	18:36-21:51	~320	~180	Mar 11 18:36-19:09	343 ₁ * 499 ₂	340	3	4	Cloud	Very faint, very wide cloud (or mound) covers entire west and most of north sector. Brightest over north pole. Possible halo.
Mar 12	071	06:03-07:36	284	019	—	—	—	—	0	Missed front	Irregularly-shaped cloud. Could have missed front.
Mar 12	071	11:51-14:58	064	025	—	—	—	—	0	No obvious front	Faint cloud.
Mar 13	072	00:43-03:50	308	028	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on fan.
Mar 13	072	14:02-16:00	~250	—	—	—	—	—	0	No obvious front	Cloud superposed on streamer. Cloud is concave-outward, 'V'-shaped.
DATA GAP: Mar 13 22:05 to Mar 14 02:28.											
Mar 14/15	073/074	15:03-02:04	062	009	—	—	—	—	0	No obvious front	Two part event: 1. Fuzzy jet north of streamer. 2. Structured cloud. Deflections.
		15:03-18:26			—	—	—	—	0	Front at 21:33 only	
		21:33-02:04			—	—	—	—	0	No obvious front	
Mar 15	074	02:21~08:01	189?	166?	—	—	—	—	0	No obvious front	Faint loop/cavity (or wisp) superposed on streamer. Brightest from 220°-260°.
Mar 15/16	074/075	05:36~07:55	339	060	—	—	—	—	0	No clear front	Could be two events: 1. Faint cloud (or mound) superposed on and between streamers. 2. Fuzzy cloud superposed on streamers. Deflections.
		05:36-07:01			—	—	—	—	0	No obvious front	
		16:29~07:55			318	025	—	—	—	0	
Mar 16	075	02:49~13:42	156	088	Mar 16 02:49-03:14	328 ₁ *	150	2	3	Loop	Faint, thin loop/cavity with possible core superposed on fan in 02:49 image. Gone by 05:48. Blob 'N Ray from 09:44 to ~13:42.
Mar 17	076	05:07-07:22	125	024	Mar 17 05:07-05:32	327 ₁ * 255 ₂	130	3	4	Mound	Narrow mound at north edge of streamer.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 17 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 17	076	09:55-13:02	132	051	—	—	—	—	0	Front at 09:55 only	Structured cloud superposed on streamer. Wider at greater heights. Streamer is partially blown out. Deflections.
Mar 17	076	17:50~20:40	~308	~033	Mar 17 17:50-18:23	698 ₁ * 874 ₂	307	3	7	Loop	Structured, irregular loop/cavity in narrow streamer. Could be wider. Streamer is blown out. Deflections.
Mar 17	076	20:48-23:55	133	067	—	—	—	—	0	Front at 22:21 only	Structured loop/cavity(?) with possible core superposed on streamers (or fan). Deflections. Region is disrupted.
Mar 18	077	02:53-06:49	230	062	Mar 18 02:53-03:43	583 ₁ 740 ₂ *	247	4	9	Loop	Loop/cavity with highly structured, inner (prominence) loop/cavity in streamer. Streamer is blown out. Deflections.
					Mar 18 03:10-03:34	514 ₁ *	229	2	5	Inner loop (prominence)	
Mar 18	077	17:01-21:41	117	038	—	—	—	—	0	Front at 18:34 only	Loop/cavity and core superposed on streamer or fan. Deflections. Region is disrupted.
Mar 18/19	077/078	18:26-04:27	283	061	Mar 18 19:59-20:32	333 ₁ * 368 ₂	290	3	7	Loop	Big loop/cavity and amorphous core superposed on streamer. Big deflections. Streamer is blown out.
					Mar 18 19:59-20:32	439 ₁ * 262 ₂	290	3	7	Cavity	
Mar 19	078	13:30-15:03	~045	—	—	—	—	—	0	Front at 13:30 only	Cloud superposed on streamer (or fan). Deflections.
Mar 19	078	16:12-21:08	250	057	Mar 19 16:12-16:53	302 ₁ * 369 ₂	250	4	7	Loop	Loop/cavity with structured (prominence?) core and concave-outward, 'U'-shaped blob at ~265° from 18:18 to ~21:08. Event is superposed on fan.
					Mar 19 16:12-16:53	335 ₁ * 431 ₂	250	4	9	Cavity	
Mar 19	078	19:26-21:00	111	033	—	—	—	—	0	Front at 19:26 only	Multiple, structured loops/cavities and complex core north of streamer. Deflections.
											DATA GAP: Mar 19 23:06 to Mar 20 17:00.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 18 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 20	079	20:14-23:54	116	068	—	—	—	—	0	Front at 21:48 only	Broad, structured, complex cloud superposed on and north of streamers. Brightest at north and south edges. Region is disrupted. Deflections.
Mar 20/21	079/080	23:54-01:27	177	048	—	—	—	—	0	Front at 23:54 only	Faint loop/cavity on and south of streamer. Deflections.
Mar 21	080	09:05-22:58	025	041	—	—	—	—	0	No obvious front	Could be up to three events: 1. Faint cloud superposed on rays (or streamers). Deflections. 2. Loop/cavity(?) superposed on polar fan. Deflections. Region is disrupted. 3. Cloud superposed on fan. Deflections. Region is disrupted.
		09:05-15:12	019	052	—	—	—	—	0	Front at 16:45 only	
		16:45-18:19	014	052	—	—	—	—	0	No obvious front	
Mar 22	081	01:48-05:20	~105	~080	Mar 22 01:48-03:22	075 ₁ *	100	2	3	Cloud	Broad, very faint cloud extending over large fraction of east limb. Wisp (or loop-like) structure at southern edge.
Mar 22	081	16:29-23:25	073	008	—	—	—	—	0	No obvious front	Jet at 16:29 followed by second jet at 21:52 in same location.
Mar 23	082	10:18-13:24	075	013	—	—	—	—	0	No obvious front	Fan of material ejected between existing structures.
Mar 23/24	082/083	19:45-01:58	305?	110?	Mar 23 19:45-19:54	1400 ₁ *	320	2	7	Mound	Possible halo. Event could be wider. Mound with adjacent loop/cavity at northern edge from 19:45 to 19:54. Event is superposed on streamer. Streamer is disrupted. Material ejected all over west limb by 21:10. Brightening over all limbs. Deflections.
			315?	042?							
Mar 24	083	all day	116	082	—	—	—	—	1	Loop	Slow expansion of loop/cavity (or mound). Front evolves and fades. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 19 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 24/25	083/084	21:10~06:29	273	075	—	—	—	—	0	Mound at 22:10 only	Flat-topped mound with fuzzy internal loop/cavity and core at southern edge. Event is superposed on faint streamer. Deflections.
					Mar 24/25 22:10-00:16	139 ₁ * 192 ₂	262	3	3	Loop	
Mar 25	084	16:40~19:47	287	050	Mar 25 16:40-17:22	441 ₁ * 520 ₂	280	3	5	Mound	Faint, flat-topped mound (or loop/cavity) superposed on streamer.
Mar 26	085	12:52-23:45	282?	057?	Mar 26 13:33-14:25	492 ₁ *	265	2	3	Cloud	Structured cloud with possible concave-outward shaped cavity at southern edge from 14:50 to ~16:40. Loop/cavity (or mound), appears at 14:50 containing highly structured, loop-shaped (prominence) core. Southernmost edge of (prominence) core evolves into bright hook shape. Event is superposed on streamer. Streamer is disrupted. Deflections.
					Mar 26 14:50-17:32	219 ₁ * 239 ₂	285	5	7	Core (prominence)	
					Mar 26 15:58-19:30	136 ₁ 098 ₂ *	269†	8	6	Hook in core (prominence)	
Mar 26	085	19:13-23:53	043	020	—	—	—	—	0	No obvious front	Jet (or fan) between streamers.
Mar 27	086	16:46-23:40	278	037	Mar 27 17:10-17:27	422 ₁ *	267	2	3	Southern edge of mound	Two fuzzy blowouts: 1. Fuzzy mound (or cloud) superposed on rays in streaked data. 2. Faint cloud in streaked data.
		16:46-20:17									
		20:09-23:40									
Mar 28	087	02:05-10:32	~278	—	—	—	—	—	1	Cloud	Could be two events: 1. Fuzzy cloud superposed on streamer. 2. Loop/cavity and bright, structured (prominence?) core south of streamer. Deflections. Loop/cavity is gone by 05:53. Additional material ejected from 08:59 to 10:32 in same location.
		02:05-05:53									
		04:20-10:32									
Mar 28/29	087/088	03:38<18:43	~036	~037	—	—	—	—	0	No obvious front	Slow expansion of cloud superposed on fuzzy fan. Ends during data gap. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 20 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Mar 28/30	087/089	~07:26~13:13	101	060	—	—	—	—	1	Loop	Loop/cavity (with core?) expands slowly in streamer. Streamer blows out during data gap from Mar 28 20:51 to Mar 29 18:35. Deflections. Additional material, including possible 'V'-shaped, concave-outward structure at southern edge, ejected from Mar 29 ~22:14 to Mar 30 ~13:13.
Mar 28	087	11:24-22:32	281	046	Mar 28 11:24-12:05	305 ₁ * 213 ₂	275	3	7	Cavity	Flat-topped loop/cavity with core superposed on streamer (or fan). Region is disrupted. Deflections. Loop is out of the field of view by 14:30. Additional material (mound?) ejected from ~16:11 until 22:32.
											DATA GAP: Mar 28 22:32 to Mar 29 18:27.
Mar 30	089	08:58~17:44	300?	111?	Mar 30 08:58-09:07	560 ₁ *	337	2	9	Northern edge of loop	Thin loop/cavity with amorphous core superposed on streamers. Gone by 09:58. Deflections. Very faint material ejected until ~17:44.
											DATA GAP: Apr 01 06:18 to 19:28.
Apr 01	091	19:36?-22:42	322	045	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on fan. Deflections.
Apr 02	092	~08:27~23:58	050?	—	—	—	—	—	0	No obvious front	Very faint, cloud superposed on streamer.
Apr 02/03	092/093	09:59?~04:46	342	—	—	—	—	—	0	No clear front	Bright jet at northern edge of streamer (or fan). Possible concave-outward, 'U'-shaped material from ~12:41 until 14:31. Material could be falling sunward from 17:21 to 17:37 on Apr 02 and again on Apr 03 from 03:13 to 04:46 at 327°.
									1	'U'-shaped material	
Apr 03/04	093/094	23:25~03:56	250	041	—	—	—	—	0	No clear front	Fuzzy cloud superposed on streamer. Deflections.
Apr 04	094	~12:50-23:42	305	007	—	—	—	—	0	No obvious fronts	Narrow fans (or jets) at 12:50, 17:30 and 23:42. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 21 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 05	095	14:14-23:25	224	035	—	—	—	—	0	No obvious front	Cloud superposed on streamer. Streamer is disrupted. Data is streaked.
Apr 06	096	08:44-10:17	343	019	—	—	—	—	0	No clear front	Small, fuzzy cloud superposed on streamer. Deflections.
Apr 07	097	00:07-01:57	098	011	—	—	—	—	0	No obvious front	Fuzzy fan (or cloud).
Apr 07	097	00:15-23:08	263	026	—	—	—	—	1	Loop	Could be three events: 1. Loop/cavity rises slowly in streamer. Best seen in early south images. Evolves and fades. Deflections. 2. Jet brightens then expands and fades. 3. Fan ejected just north of streamer in part one. Deflections. Data is streaked.
		00:23~03:05	~310	—	—	—	—	0	No obvious front		
		20:01-23:08	292	015	—	—	—	—	0	No obvious front	
Apr 07	097	13:41-15:47	093	025	Apr 07 13:41-14:06	773 ₁ *	090	2	5	Mound	Fuzzy mound in streaked data. Deflections.
Apr 08	098	08:18-13:14	055?	078?	Apr 08 08:27-08:43	730 ₁ *	060	3	9	Loop	Loop/cavity and beautiful, highly structured, complex, inner (prominence) loop/cavity. Kink or sharp bend in southern leg of loop. Event is south of streamer. Deflections. Data is streaked.
			054?	033?	Apr 08 08:27-08:43	264 ₁ *	054†	3	5	Inner loop (prominence)	
Apr 08/09	098/099	23:50-01:31	310	025	Apr 08/09 23:50-00:31	337 ₁ *	305	2	2	Fan	Narrow fan. Data is streaked.
Apr 09	099	01:23-03:21	115	061	—	—	—	—	0	Missed front	Very faint, structured cloud. Data is streaked. Deflections. Could have missed the front.
Apr 10/11	100/101	18:17-16:00?	115	029	Apr 10 18:17-19:58	073 ₁	117	4	3	Cavity	Could be two events. Data is streaked. 1. Thick loop/cavity with amorphous core. Big deflections. 2. Wide, concave-outward, 'U'-shaped material at ~19:58. Moves outward until ~09:48. Faint cavity visible in southeast from ~19:41 until ~19:58. Deflections.
		18:17~22:20									

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 22 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 10/11	100/101	20:58-09:56	003	090	—	—	—	—	1	Loop	Wide, (multiple?) complex loop/cavity with structured core superposed on streamer and fan. Fan is blown out. Big deflections. Data is streaked. Swelling began Apr 09.
Apr 12/13	102/103	early~10:02	286	106	Apr 12/13 22:29-07:48	077 ₂ *	310	5	3	Outer loop	Very slow expansion of cavity on and north of streamer. Fuzzy loop(?) becomes visible around cavity late Apr 12. Inner loop/cavity appear by Apr 13 05:23. Outer and inner loops expand laterally and accelerate outward from Apr 13 05:23 until end of event. Big deflections. Region is blown out. Data is badly streaked.
Apr 12	102	12:19-14:44	157	050	Apr 12 12:19-13:44	200 ₁ *	163	3	3	Cavity	Mound with cavity superposed on rays in streaked data. Possible concave-outward material from 13:27 until 13:44. Deflections.
Apr 14	104	~01:25>13:49	090	057	—	—	—	—	0	No clear front	Slow, broad, faint cloud. Ends in data gap. Data is streaked.
Apr 14	104	08:37-10:49	261	029	Apr 14 08:54-09:02	689 ₁ *	268	2	7	Tongue	Structured, tongue (or loop/cavity) in streamer. Visible in polaroid filter sequence only.
											DATA GAP: Apr 14 13:57 to Apr 15 18:43.
Apr 17	107	all day	001	066	—	—	—	—	0	No obvious front	Slow expansion of streamer (or fan). Deflections. Region is disrupted.
Apr 18	108	06:13-09:27	> 134	> 056	Apr 18 07:13-07:37	536 ₁ * 418 ₂	150	4	6	Loop	Irregular, structured, dimpled (multiple?) loop/cavity and possible core superposed on and south of streamer. Deflections.
											DATA GAP: Apr 18 21:35 to Apr 20 15:02.
Apr 21	111	02:01-20:38	290	028	—	—	—	—	1		Two piece event: 1. Fuzzy cloud superposed on ray in very streaked data. Deflections.
		02:01~10:20									
		18:57-20:38	265	—	—	—	—	—	0	No obvious front	2. Narrow jet (or fan) south of cloud in part one. Very streaked data.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 23 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 22	112	01:17-12:00?	314?	076?	Apr 22 01:17-01:25	420 ₁ *	335	2	5	First inner loop	Wide loop/cavity with two smaller, inner loops/cavities at northern edge in 01:17 image. Data is very streaked. Streamer at site of inner loops is disrupted. Deflections. Motion (ejection?) of material until mid-day.
Apr 23	113	03:55-06:36	102	045	—	—	—	—	0	Front at 03:55 only	Mound superposed on streamer. Deflections. Data is streaked.
Apr 23	113	08:51-12:48	143	044	Apr 23 09:42-10:16	477 ₁ * 623 ₂	140†	5	9	Back edge of 'question-mark' core (prominence)	Thick loop/cavity with highly structured, 'question-mark' shaped (prominence) core. Event is superposed on streamer. Region is partially blown out. Deflections. Data is streaked.
Apr 23/24	113/114	16:03-08:07	274	057	Apr 23 16:03-18:09	277 ₁ * 334 ₂	280	4	6	Loop	Loop/cavity with amorphous core superposed on streamer and rays. Data is streaked. Region is disrupted. Deflections.
Apr 24/26	114/116	17:00-06:37	243	032	—	—	—	—	1	Cloud (late in event)	Slow expansion of streamer. Cavity visible early Apr 25. Cavity accelerates early Apr 26. Fuzzy cloud is ejected Apr 26 from 02:49 until ~06:37. Region is disrupted. Deflections. Cavity width measured at 3.0R _⊙ . Data is streaked.
			234	017	—	—	—	—	0	Cavity	
Apr 24	114	21:47-23:28	128	—	—	—	—	—	0	No clear front	Blob 'N Ray. Data is streaked.
Apr 28	118	02:52<12:26	030	—	—	—	—	—	0	No obvious front	DATA GAP: Apr 26 15:46 to Apr 27 13:12.
											Narrow fan in 02:52 image only. Data gap follows.
Apr 28/29	118/119	23:26-22:57	112	081	Apr 28 23:26-23:35	412 ₁ *	125	2	7	Loop	Could be more than one event. Data is streaked.
											1. Loop/cavity and core superposed on and south of streamer. Deflections.
											2. Blob superposed on streamer.
	119	21:16-22:57	092	—	—	—	—	—	0	No obvious front	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 24 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Apr 30	120	09:07~16:00	248	050	—	—	—	—	0	Loop at 09:07 only	Loop/cavity and possible core superposed on streamer. Data is streaked.
											DATA GAP: May 02 02:05 to 13:47.
May 02	122	20:07-21:49	~237	~045	—	—	—	—	0	No clear front	Cloud superposed on and north of streamer in very streaked data. Deflections.
May 02/03	122/123	21:32-02:11?	305	018	—	—	—	—	0	No obvious front	Narrow fan with small cavity. Data is streaked.
			315	027	—	—	—	—	1	Cavity	
May 03	123	04:00-05:50	028	044	—	—	—	—	1	Loop	Faint loop/cavity superposed on streamers (or fan). Data is streaked.
May 03	123	04:17-08:56	~090	~019	—	—	—	—	0	No obvious front	Cloud superposed on streamer. Streamer is disrupted. Data is streaked.
May 03/04	123/124	21:03-00:09	248	065	—	—	—	—	0	No clear front	Structured cloud superposed on and north of streamer. Data is very streaked.
May 06	126	14:06-17:11	251	047	May 06 15:22-15:39	573 ₁ *	233	3	3	Southern edge of outer cavity	Multiple, concentric loops/cavities superposed on and north of streamer. Deflections. Region is disrupted. Data is streaked.
					May 06 15:22-15:39	278 ₁ *	233	3	4	Inner cavity	
May 06/07	126/127	21:50~10:13	~194	~088	May 06 22:07-23:23	251 ₁ *	168	2	3	Cavity	Wide loop/cavity and inner, structured (prominence) loop/cavity all superposed on and south of streamer. Spans pylon shadow. Poor data quality. Deflections.
May 07/08	127/128	23:02~05:14	260	027	—	—	—	—	1	Clouds	Two clouds superposed on streamer in badly streaked data. First cloud ejected from 23:02~01:26. Deflections. Second cloud ejected from 03:32 until ~05:14.
May 08	128	11:17~19:01	145	043	—	—	—	—	0	No obvious front	Cloud expands and disrupts streamer in badly streaked data.
											DATA GAP: May 09 06:00 to 13:03.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 25 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
May 09	129	16:25-21:13	249	030	May 09 16:25-18:24	049 ₁ *	250	2	5	Cavity	Loop/cavity and possible core superposed on streamer. Streamer is disrupted. Deflections.
May 10	130	all day	068	086	—	—	—	—	0	No clear front	Broad faint cloud on and north of streamer. Region is disrupted. Deflections. Data is very streaked.
											DATA GAP: May 10 01:51 to 10:44.
May 10	130	10:44~15:56	248	044	May 10 10:44-11:25	376 ₁ 474 ₂ *	250	4	7	Loop	Loop/cavity and core superposed on fan (or streamer). Region is partially blown out. Deflections. Data is streaked.
					May 10 11:00-12:25	242 ₁ * 065 ₂	250	4	7	Cavity	
May 13	133	16:09-19:47	267	046	May 13 16:42-17:41	443 ₁ * 552 ₂	260	3	5	Outer cavity	Bright loop/cavity in streamer in 16:58 image. Multiple(?), dimpled loops/cavities with core by 17:41. Streamer is blown out. Deflections. Data is streaked.
May 15	135	02:21-10:38	150	061	May 15 02:21-04:36	101 ₁ * 178 ₂	147	4	3	Loop	Faint loop(?)/cavity with loop-shaped core superposed on streamer.
May 15	135	09:57-19:40	~271	~010	—	—	—	—	0	No clear front	Could be three events in streaked data: 1. Blob 'N Ray. 2. Another Blob 'N Ray. 3. Blob (or wave) 'N Ray. All blobs appear to be concave-outward, 'U'-shaped.
		09:57-11:55			May 15 13:03-13:53	433 ₁ * 457 ₂	267	3	4	Blob	
		13:03-14:36									
		13:03-19:40	~270	~010	—	—	—	—	0	No clear front	
May 15	135	16:42-17:50	134?	093?	May 15 16:42-16:50	1198 ₁ *	160	2	4	Outer loop	Broad loop/cavity with brighter, embedded, structured (prominence?) loop/cavity. Loop/cavity is superposed on and south of streamer. Southern edge is obscured by pylon shadow. Could extend as far south as 235°. Streamer is disrupted. Data is streaked.
					May 15 16:42-16:50	775 ₁ *	160	2	4	Outer cavity	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 26 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 16	136	03:08-04:32	070	013	May 16 03:08-03:16	521 ₁ *	070	2	7	Loop (prominence?)	Small, structured (prominence?) loop/cavity south of streamer. Data is streaked. Deflections.
May 16/17	136/137	17:37-05:36?	242	048	—	—	—	—	1		Mound (with cavity?) superposed on streamer in streaked data. Possible concave-outward, 'U'-shaped material at northern edge of event. Deflections. Region is disrupted.
											DATA GAP: May 17 05:36 to May 18 04:33.
May 18	138	06:39-16:04?	097?	050?	—	—	—	—	0	No obvious front	Very faint cloud superposed on streamers.
May 19	139	17:44-19:41	< 289	> 070	May 19 17:44-18:09	210 ₁ *	305	2	5	Loop	Loop/cavity superposed on fan. Missing data south of 254°. Deflections.
May 19	139	19:25-20:58	097	—	—	—	—	—	0	No obvious front	Cloud superposed on streamer.
May 20	140	09:46-10:54	~122	~083	—	—	—	—	0	Front at 09:46 only	Probable loop/cavity superposed on and between streamers. Visible in 09:46 image only. Region is disrupted. Big deflections.
May 20	140	11:02-16:14	292	085	May 20 11:11-11:35	726 ₁ *	270	2	7	Loop	Structured loop/cavity superposed on streamer. (Prominence?) Blobs (or jets) at 255° and 270° superposed on rays. Deflections.
					May 20 11:19-11:35	923 ₁ *	260†	2	4	Back of blob (prominence?)	
May 20/21	140/141	~17:39~13:13	103	020	—	—	—	—	0	No clear front	Slow expansion of cloud around streamer.
May 21	141	07:43-10:32	~228	~023	—	—	—	—	0	Front at 07:43 only	Cloud superposed on rays (or streamers). Deflections. Could extend as far south as 152°.
May 22	142	06:56-11:35	~209	~058	May 22 06:56-08:04	320 ₁ *	210	3	7	Loop	Loop/cavity with structured, inner (prominence) loop/cavity superposed on and south of streamer.
					May 22 06:56-08:04	473 ₂					

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 27 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 22	142	17:21-23:58									Could be two events. Data is streaked. 1. Small cloud superposed on faint streamer. 2. Mound superposed on and south of streamer. Images are streaked and contain data dropouts.
		17:21-18:54	291	023	—	—	—	—	0	Front at 17:21 only	
		23:08-23:58	289	029	—	—	—	—	1		
May 23	143	09:58-12:04	~225	~017	—	—	—	—	0	No clear front	Structured, knotty (prominence) material south of streamer. Edge of front could be visible in west sector images. Event is obscured by pylon shadow. Data is streaked. Deflections.
May 23	143	15:01-16:34	~264	~037	—	—	—	—	0	No clear front	Faint loop/cavity (or mound) between streamers in streaked data. Bright blob seen at south edge in 15:26 image. Deflections.
May 24	144	09:52-14:39									Could be two events. Data is streaked. 1. Bright loop/cavity superposed on streamer. 2. Bright, sharper, structured loop/cavity superposed on streamer. Concave-outward, 'U'-shaped material at 13:49. Streamer is disrupted. Deflections throughout event.
		09:52~11:08	240	038	May 24 09:52-10:43	407 ₁ *	240	2	4	First loop	
		11:08-14:39	—	—	May 24 11:08-12:49	252 ₁ * 235 ₂	243	5	6	Second loop	
May 24/25	144/145	19:17~06:50	284	097	May 24 19:17-21:58	054 ₁ * 063 ₂	305	5	4	First loop	Faint, fuzzy loop/cavity superposed on faint streamer at 19:17. Structured, complex loop/cavity(?) with structured core blows out south of first loop at 21:58. Region is disrupted. Deflections. Data is streaked.
					May 24 20:50-21:58	098 ₁ * 162 ₂	305	3	4	First cavity	
May 25	145	13:43-21:18	064	057	May 25 13:43-15:07	200 ₁ * 183 ₂	070	3	4	First loop	Loop/cavity with amorphous core superposed on and north of streamer. Second loop/cavity embedded in core at 16:40. Data is streaked. Deflections.
					May 25 16:15-16:40	094 ₁ *	086	2	4	Cavity in core	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 28 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
May 26	146	00:08-03:38	238	046	May 26 00:08-01:24	298 ₁ 497 ₂ *	240	4	7	Outer cavity	Multiple loops/cavities superposed on fan (or rays). Region is disrupted. Embedded cavity and concave-outward material from ~01:24 to ~02:57. Data is streaked. Deflections.
May 26	146	~14:03-16:02	212?	115?	—	—	—	—	1	Cloud	Wide(?) cloud. Could span pylon shadow. Deflections. Data is streaked.
May 28	148	04:53-06:34	~078	~020	—	—	—	—	0	No clear front	Small loop(?)/cavity north of streamer. Data is streaked.
May 28	148	12:37-17:31	267	032	May 28 12:37-13:45	291 ₁ * 394 ₂	271†	3	3	Cloud	Faint cloud (or mound) superposed on and north of ray. Deflections. Data is streaked.
May 28	148	18:56-23:34	093	024	—	—	—	—	0	Front at 20:29 only	Thin loop(?)/cavity in streamer. Streamer is blown out. Deflections. Data is streaked.
May 31	151	00:47~07:23	200?	—	—	—	—	—	0	No clear front	Cloud partially obscured by pylon shadow. Data is streaked. Deflections.
											DATA GAP: May 31 15:07 to 22:09.
Jun 01	152	01:48-20:05?	132	028	—	—	—	—	0	No clear front	Material superposed on streamer. Material is ejected throughout day.
Jun 01	152	~08:00-18:57	~323	—	—	—	—	—	0	No obvious front	Diffuse cloud with concave-outward shaped base superposed on streamer. Appears to detach from streamer. Region is disrupted. Mound and rays are left behind.
					—	—	—	—	1	Concave-upward base	
Jun 01/02	152/153	21:38-04:05	170?	045?	Jun 01/02 21:38-02:16	052 ₁ 081 ₂ *	162	4	3	Loop	Faint loop/cavity (or mound) south of streamer. Simultaneous ejection of material in adjacent streamer.
Jun 02	153	05:39-13:22	107	065	—	—	—	—	0	Front at 05:39 only	Irregular, outer, dimpled loop/cavity with complex core containing thick, inner loop/cavity between streamers. Big deflections. Loop is gone by 06:38. Material continues to be ejected in region until ~13:22.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 29 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 02	153	07:19~23:55	246?	067?	—	—	—	—	1	Cloud	Slow expansion of structured cloud in streamer. Data gap occurs during event. Streamer is disrupted. Deflections. Could extend as far south as 175°.
											DATA GAP: Jun 02 15:03 to 22:06.
Jun 03/04	154/155	13:50-05:34	133	028	—	—	—	—	0	Front at 13:50 only	Loop/cavity superposed on rays. Gone by 15:22. Deflections. Material is ejected in region until ~05:34 on Jun 04.
Jun 03/04	154/155	23:31-23:34	257	046	—	—	—	—	1	Cloud	Four part event: 1. Cloud superposed on streamer. 2. Cavity with structured core. Core has concave-outward, 'V'-shape. 3. Concave-outward, 'U'-shaped material in 17:23 image at north edge of event. 4. Fuzzy material ejected until ~23:34. Region is partially blown out.
	155	23:31~01:55 ~03:28~16:15			—	—	—	—	1	Cavity	
	155	17:23-17:43			—	—	—	—	0	Front at 17:23 only	
	155	~20:28-23:34			—	—	—	—	0	No clear front	
Jun 04	155	08:06~10:20	~323	~013	—	—	—	—	1	Cavity	Narrow fan with cavity and internal structure appears and blows out.
Jun 04	155	07:07-12:53	030	057	—	—	—	—	1	Cavity	Loop/cavity superposed on streamer. Deflections.
Jun 04	155	11:20~15:58	024	041	—	—	—	—	0	Front at 11:20 only	Loop/cavity with structured, narrow, inner (prominence) loop/cavity superposed on streamer immediately following previous event. Deflections continue. Streamer is blown out.
			019	011	Jun 04 11:20-12:53	231 ₁ *	020	2	9	Inner loop (prominence)	
Jun 05	156	18:32-21:54	315	—	—	—	—	—	1		Faint loop/cavity (or mound) in streaked data.
											DATA GAP: Jun 06 23:46 to Jun 12 14:22.
Jun 13	164	10:11-20:59	024	038	—	—	—	—	0	No clear front	Slow expansion of material superposed on streamer. Deflections. Data is streaked.
Jun 14	165	15:24-18:29	303	024	—	—	—	—	0	Too faint	Mound (or loop/cavity) superposed on fan (or streamers). Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 30 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 14	165	15:40-20:18	250	037	—	—	—	—	0	Front at 17:13 only	Faint loop/cavity superposed on and north of streamer (or fan) in 17:13 image. Motion in region at 15:40. Deflections. Data is streaked.
Jun 15	166	09:56-12:10	293	051	—	—	—	—	0	No obvious front	Material expands around streamer. Data is streaked.
											DATA GAP: Jun 15 12:10 to 22:17.
Jun 15/16	166/167	<22:17-07:33?	280	029	—	—	—	—	0	No clear front	Cloud on south side of streamer. Could be related to previous event. Deflections.
Jun 16	167	05:10~19:53	~252	—	—	—	—	—	1	Cloud	Small loop/cavity at north edge of streamer followed by a concave-outward shaped cloud from ~06:42 to ~12:11. Deflections.
Jun 16	167	17:21-20:26	107	029	—	—	—	—	0	Front at 17:21 only	Small, bright loop/cavity superposed on streamer (or rays).
Jun 17	168	01:12-04:18	290	020	—	—	—	—	0	Front at 02:03 only	Bright mound (or cloud) superposed on streamer. Deflections.
Jun 17	168	09:47~13:17	272	036	Jun 17 09:47-10:28	456 ₁ * 402 ₂	270	3	7	Loop	Irregular loop/cavity and structured core. Deflections.
					Jun 17 09:47-10:28	314 ₁ 431 ₂ *	270	4	9	Core	
Jun 17	168	14:25-17:30?	296	033	Jun 17 14:25-15:57	394 ₁ 565 ₂ *	300	4	7	Loop	Loop/cavity with core superposed on fan (or rays). Deflections.
Jun 17	168	16:22~19:44	291	076	—	—	—	—	1		Broad, structured cloud south of previous event.
Jun 18	169	05:00-10:45	268	013	Jun 18 05:00-06:33	239 ₁ *	263	2	5	Tongue	Two part event: 1. Elongated tongue. 2. Faint cloud. Deflections.
		05:00-09:38			261	2	5	Cloud			
		09:13-10:45			261	020	Jun 18 09:13-09:21	278 ₁ *	261	2	5
Jun 18	169	13:34~23:15	292	023	—	—	—	—	1	Cloud	Faint, narrow cloud. Part of next event?
Jun 18	169	15:07-15:32	259?	092?	Jun 18 15:07-15:24	944 ₁ * 1228 ₂	234	3	5	Loop	Loop/cavity and core superposed on rays (or streamers). Only southern part of loop/cavity is visible in rolled images. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 31 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 18/21	169/172	18:45-20:59?	103	061	—	—	—	—	0	No obvious front	Continual ejection of faint material superposed on east limb structures. Brighter, sharper material ejected in equatorial streamer from ~18:36 on Jun 20 until midday Jun 21. Material is concave-outward shaped. Streamer is blown out. Deflections. Data is streaked.
Jun 19	170	08:06-13:09	266	044	Jun 19 09:38-11:11	228 ₁ * 310 ₂	272	4	4	Loop	Faint loop/cavity with brighter, flattened, structured core superposed on streamer. Streamer is disrupted. Deflections. Data is streaked.
					Jun 19 11:11-11:52	392 ₁ * 440 ₂		3	4		
Jun 20	171	11:53-15:06?	330	048	Jun 20 11:53-12:34	223 ₁ * 324 ₂	335	4	7	Outer loop	Loop/cavity with multiple loops/cavities in core all superposed on south edge of streamer. Could extend further south. Data is streaked.
Jun 20	171	15:23-21:33?	293	026	Jun 20 15:23-15:39	246 ₁ *	295	2	7	Loop	Loop/cavity (or mound) with brighter, structured, mound-shaped (prominence) core superposed on rays. Part of (prominence) core falls sunward by 18:00. Data is very streaked.
					Jun 20 15:23-17:13	172 ₁ * 019 ₂		292†	3	7	
Jun 20/21	171/172	22:41-00:14	274	041	Jun 20 22:41-23:22	579 ₁ * 553 ₂	275	3	4	Cavity	Structured (multiple?) loop/cavity with amorphous core at south edge of streamer. Streamer is partially blown out. Big deflections. Data is streaked.
Jun 21	172	00:39-02:28	276	040	Jun 21 00:39-00:55	281 ₁ *	275	2	3	Loop	Faint loop/cavity at south edge of streamer. Data is streaked.
Jun 21	172	09:30-11:02	261	039	Jun 21 09:30-09:54	319 ₁ * 470 ₂	255	3	2	Cloud	Faint cloud. Data is very streaked.
Jun 23	174	03:18~11:01	~148	~025	—	—	—	—	0	No obvious front	Structured material superposed on fan (or streamer). Data is streaked.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 32 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jun 23	174	14:31-17:36	~223	~040	Jun 23 14:47-16:20	233 ₁ 458 ₂ *	240	4	2	Northern edge of loop	Loop/cavity and core in streamer (or fan). 'Light-bulb' shaped in 16:04 image. Southern edge obscured by pylon shadow. Region is blown out. Deflections. Data is streaked.
Jun 23	174	17:36~20:08	281	082	Jun 23 17:36-18:36	467 ₁ * 530 ₂	264	3	4	Loop	Wide, faint loop/cavity superposed on streamer. Data is streaked.
Jun 25	176	18:34-20:40	~055	~070	—	—	—	—	1	Cloud	Broad cloud superposed on streamer. Data is streaked.
Jun 26	177	21:05-22:13	300?	080?	—	—	—	—	0	Too faint	Very faint cloud superposed on streamer.
Jun 28	179	12:56-16:35	082	051	Jun 28 12:56-13:29	576 ₁ * 414 ₂	078	3	7	Loop	Loop/cavity superposed on south edge of streamer. Deflections.
Jun 29	180	03:31-04:56	340	034	—	—	—	—	0	No obvious front	Faint cloud superposed on faint streamer.
Jun 29	180	10:33~14:11	~080	—	—	—	—	—	0	No obvious front	Could be two events: 1. Jet (or wisp) superposed on rays (or fan). 2. Fuzzy cloud superposed on fan. Could extend as far south as 160°.
		10:33~14:11									
Jun 29	180	10:50~15:27	300	035	Jun 29 10:50-11:57	216 ₁ * 130 ₂	300	3	6	Loop	Thick loop/cavity superposed on faint fan. Fan is disrupted.
Jun 29	180	21:29-22:03	332	051	Jun 29 21:29-21:38	1373 ₁ *	323	2	7	Outer cavity	Multiple, concentric, structured loops/cavities superposed on rays. Inner loop could contain prominence material. Deflections.
Jun 30	181	06:29-10:24	104	046	Jun 30 06:29-06:54	518 ₁ * 644 ₂	105	3	4	Outer loop	Concentric loops/cavities and core superposed between streamers. Big deflections. Region is disrupted. Data is streaked.
					Jun 30 06:37-06:54	576 ₁ * 278 ₂					
Jul 03	184	13:22-18:08	105?	050?	—	—	—	—	0	No obvious front	Cloud superposed on and between streamers. Data is very streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 33 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 04	185	09:52-15:45	023	052	Jul 04 11:07-12:40	263 ₁ *	025	2	6	Outer loop	Thick loop/cavity with thick, structured inner loop/cavity in streamer. Streamer is blown out. Deflections.
											DATA GAPS: Jul 06 14:35 to Jul 07 15:59. Jul 07 18:21 to 20:36.
Jul 07	188	21:01-23:41	270?	027?	Jul 07 21:09-21:26	246 ₁ *	265	2	5	Loop	Loop/cavity and core superposed on and south of streamers. Best seen in 21:09 image. Core is concave-outward shaped at 23:41.
Jul 09	190	01:54-03:27	289	021	—	—	—	—	0	No clear front	Faint cloud superposed on streamer.
Jul 09/10	190/191	18:52-01:02	282	052	Jul 09 18:52-21:57	180 ₁ * 260 ₂	290	4	3	Outer loop	Concentric, complex loops/cavities and core in streamer. Streamer is disrupted.
					—	—	—	—	1	Inner loop	
Jul 09/10	190/191	22:13<09:01	~162	~035	—	—	—	—	0	No obvious front	Faint cloud superposed on and south of streamer.
Jul 11	192	00:43-05:21	068	035	—	—	—	—	0	Missed front	Loop(?)/cavity and core between streamers. Deflections. Probably missed the front.
Jul 12	193	20:00~23:05	310	043	—	—	—	—	1	Loop	Faint loop/cavity superposed on rays. Deflections.
Jul 13	194	01:29~06:48	307	039	Jul 13 01:29-02:10	392 ₁ * 201 ₂	315	4	5	Loop	Faint loop/cavity superposed on rays. Region is disrupted. Deflections.
Jul 13	194	03:26~17:27	160	024	Jul 13 03:26-05:08	072 ₁ *	154	3	7	Core (prominence?)	Cavity and structured (prominence?) core in streamer. Core contains concave-outward, 'U'-shaped material from 06:06 to ~08:21. Streamer is blown out.
											DATA GAPS: Jul 13 20:31 to 22:04. Jul 16 09:45 to 14:39.
Jul 17/18	198/199	22:44~02:14	098	050	—	—	—	—	1	Loop	Faint loop/cavity(?) with complex, flattened core at north edge of fan. Faint material could have been ejected earlier. Deflections.
											DATA GAP: Jul 18 09:31 to 15:33.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 34 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 18	199	15:41-18:46	041	021	—	—	—	—	0	Front at 15:41 only	Highly structured, knotty (prominence) material between streamers. We could have missed coronal front between 08:24 and 15:41 images.
Jul 19	200	~04:09-23:54?	301	034	—	—	—	—	1	Mound	Mound with cavity and structured core rises slowly in faint rays. Region is disrupted. Deflections.
Jul 19/20	200/201	06:57-03:24	070	039	—	—	—	—	0	Front at 22:55 only	Slow expansion of material around streamer. Second, brighter, structured, helmet-shaped material superposed on streamer in 22:55 image only. Deflections.
Jul 20	201	11:22-15:18	262	044	Jul 20 11:22-12:38	385 ₁ * 437 ₂	265	3	5	Mound	Structured mound (or cloud) superposed on streamer. Deflections.
Jul 20	201	12:22~20:29	071	038	—	—	—	—	1	Cloud	Cloud superposed on streamer.
Jul 21	202	02:38-14:41	~106	~032	—	—	—	—	0	No clear front	Fuzzy cloud around streamer. Streamer is disrupted. Deflections. Motion as far north as 073°.
Jul 22	203	06:23-09:36	123	033	—	—	—	—	1	Cloud	Fuzzy cloud with embedded structured loop/cavity superposed on streamer. Streamer is disrupted. Deflections.
											DATA GAPS: Jul 22 12:40 to 15:04. Jul 23 06:28 to 12:37.
Jul 23	204	~14:26>23:49	212	025	—	—	—	—	0	No obvious front	Faint cloud partially obscured by pylon shadow.
											DATA GAPS: Jul 23 20:44 to 23:44. Jul 23 23:49 to Jul 24 11:43.
Jul 24/25	205/206	~22:30<12:22	278	065	Jul 25 00:02-07:44	012 ₁ * -005 ₂	280	4	7	Cavity	Slow rising mound with cavity superposed on and north of streamer. Region is blown out following data gap between 08:09 and 12:22 images. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 35 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Jul 25	206	01:43-04:40	035	016	Jul 25 01:43-03:24	115 ₁ *	040	2	3	Mound	Mound (or cloud) superposed on rays between streamers. Moves outward and equatorward. Deflections.
Jul 25	206	08:18~12:30	045	031	—	—	—	—	0	Front at 08:18 only	Mound (or loop/cavity) on rays between streamers. Data gap follows immediately after start of event. Region is disrupted. Deflections.
											DATA GAP: Jul 25 08:26 to 12:22.
Jul 26	207	14:32~17:37	287	048	Jul 26 14:32-15:14	465 ₁ *	285	3	8	Outer loop	Complex multiple(?) loops(?)/cavities and structured core superposed on faint rays and streamers. Region is disrupted. Deflections.
					Jul 26 16:05-16:46	642 ₁ *	290	3	8	Second cavity	
Jul 27	208	01:19<10:33	307	019	—	—	—	—	0	Too faint	Jet (or fan) along rays followed by faint cloud with embedded, complex, structured (prominence) loops/cavities at 03:33. Loops are located just south of jet. Deflections.
			287	027	Jul 27 03:33-05:06	299 ₁ *	280	2	5	Outer loop (prominence)	
Jul 27	208	18:15~20:12	285	045	Jul 27 18:15-18:56	477 ₁ *	285	3	7	Loop	Fuzzy, structured loop/cavity superposed on rays. Deflections.
Jul 27/28	208/209	23:17~01:57	292	028	Jul 27/28 23:17-00:25	323 ₁ *	300	3	3	Mound	Structured mound (or loop/cavity and core) superposed on rays. Deflections.
Jul 28	209	06:34<11:11	294	052	—	—	—	—	1	Loop	Faint, complex loop/cavity superposed on and between streamers in polaroid filter sequence. Ends in data gap. Deflections.
											DATA GAP: Jul 28 07:16 to 11:11.
Jul 28	209	11:36-12:44	284	032	Jul 28 11:36-11:53	702 ₁ *	285	2	6	Loop	Fuzzy, structured loop/cavity(?) between streamers. Deflections.
											DATA GAP: Jul 29 04:32 to 17:59.
Jul 29	210	19:39-23:17	~162	—	Jul 29 19:39-20:12	489 ₁ *	162	5	3	Cloud	Faint cloud between streamers. Southern edge is obscured by pylon shadow.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 36 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Jul 30 00:33 to 03:13.
Jul 30	211	03:46-06:59	310	021	—	—	—	—	1	Cloud	Cloud superposed on and south of streamer. Deflections.
Jul 30	211	10:04~14:24	316	033	—	—	—	—	1	Loop	Thin loop/cavity(?) with amorphous core superposed on and south of streamer.
Jul 30	211	16:05?-19:10	~106	~048	—	—	—	—	0	No obvious front	Fuzzy cloud superposed on streamer (or fan).
Jul 30	211	16:14?~20:09	322	047	—	—	—	—	1	Core	Broad, faint loop/cavity with diffuse core superposed on and south of streamer. Deflections.
											DATA GAPS: Jul 31 01:27 to 07:37. Jul 31 07:37 to 10:00.
Jul 31	212	07:37-10:30	111	034	—	—	—	—	0	Front at 07:37 only	Loop/cavity (and core?) between streamers in partial image at 07:37. Deflections.
Jul 31	212	14:37~16:09	332	043	—	—	—	—	1		Faint cloud superposed on and south of streamer.
Jul 31	212	16:26<19:31	239	038	—	—	—	—	0	Front at 16:23 only	Faint mound (or thick loop/cavity) superposed on fan. Deflections.
Jul 31/Aug 01	212/213	19:22-11:11	~105	~042	Jul 31 19:22-19:47	445 ₁ *	092	2	6	Northern edge of mound	Could be two events.
	212/213	19:22-05:02									1. Structured mound (or loop/cavity and core) superposed on and between streamers. Deflections. Region is disrupted.
	213	06:00~11:08	135	024	—	—	—	—	0	No obvious front	2. Faint cloud superposed on streamer.
											DATA GAP: Aug 01 06:42 to 09:05.
Aug 01/02	213/214	22:56-01:10	240	040	Aug 01 23:21-23:38	417 ₁ *	235	2	5	Mound	Faint mound superposed on fan. Deflections.
Aug 02	214	11:48-14:52	119?	043?	—	—	—	—	0	No obvious front	Very faint cloud(s?) superposed on fan (or streamers). Deflections.
Aug 02	214	16:00-21:02	116	083	Aug 02 16:00-16:25	515 ₁ *	088	2	7	Northern edge of outer loop	Broad, thin outer loop/cavity with thick, inner loop/cavity superposed on existing rays and streamers. Region is disrupted. Big deflections. Wisp, or deflected pre-existing structure, is bent around southern edge of front.
					Aug 02 16:00-16:25	468 ₁ *	088	2	7	Northern edge of inner loop	

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 37 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 02/03	214/215	23:42-04:44?	106	026	—	—	—	—	0	Front at 00:06 only	Faint cloud superposed on rays. Deflections.
Aug 03	215	01:47-04:52	347	059	Aug 03 02:38-03:19	219 ₁ * 329 ₂	340	3	7	Outer loop	Thick loop/cavity with thick, (multiple?) structured, inner loop/cavity superposed on and south of streamer. Deflections.
			338	027	Aug 03 02:38-04:10	254 ₁ 397 ₂ *	335	4	7	Inner loop	
DATA GAP: Aug 03 04:52 to Aug 04 22:21.											
Aug 04/05	216/217	<23:48>13:39	126	052	Aug 05 04:26-09:03	120 ₂ *	125	3	6	First cavity	Cavity in streamer, visible after data gap in 23:48 image. Cavity rises slowly. Loop becomes visible around cavity. Structured core with loop(?)/cavity appear at 10:35. Streamer blows out. Deflections. Starts and ends in data gap.
					Aug 05 10:18-11:50	050 ₁ * 026 ₂	138	3	6	Cavity (in core)	
Aug 05	217	11:42>13:39	071	042	Aug 05 11:42-13:14	212 ₁ * 087 ₂	062	3	5	Loop	Loop/cavity and core between streamers. Deflections. Ends in data gap.
DATA GAP: Aug 05 14:39 to Aug 06 18:21.											
Aug 06	218	<18:29-21:59	116	062	—	—	—	—	1	Loop	Multiple loop/cavity with complex core. Core contains bright, structured (prominence?) material. Loop edge is visible at 18:29. Loop front is visible at 18:54. Data gap follows. Deflections.
Aug 07	219	00:47-07:22	146?	040?	Aug 07 05:07-05:24	210 ₁ * 207 ₂	135	3	3	Loop	Structured, complex, irregular cloud with faint, embedded loops(?)/cavities and possible concave-outward, 'U'-shaped material. Edge obscured by pylon shadow. Deflections.
Aug 07	219	00:55-06:40	273	067	Aug 07 01:12-02:44	176 ₁ * 163 ₂	285	3	5	Mound	Faint mound superposed on streamer. Deflections.
Aug 07	219	07:13-08:45	114	077	—	—	—	—	0	Front at 07:22 only	Broad, complex loop/cavity with structured core superposed on and between streamers. Region is disrupted. Deflections.
DATA GAPS: Aug 08 03:13 to 04:46. Aug 08 14:59 to 16:56.											

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 38 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 08/09	220/221	23:30-03:25	082	051	Aug 08/09 23:30-00:54	285 ₁ * 319 ₂	086	4	7	Cavity	Structured loop/cavity superposed on fan (or streamers). Deflections. DATA GAPS: Aug 09 23:34 to Aug 10 13:08.
Aug 11	223	09:34-10:41	~235	—	—	—	—	—	0	No obvious front	Faint cloud between streamers.
Aug 12	224	11:27-23:54	065	054	Aug 12 12:00-12:59	276 ₁ *	067	2	3	Cloud	Two part event. Swelling began Aug 11. 1. Fuzzy cloud (or mound) superposed on faint fan. 2. Structured loop/cavity (and core?) superposed on faint fan (or streamer). Deflections. Region is disrupted.
		12:59-14:32	072	046	Aug 12 12:59-13:32	450 ₁ * 126 ₂	067	3	7	Loop	
Aug 12	224	14:40~16:45	267?	085?	—	—	—	—	0	Front at 14:48 only	Broad, faint, structured cloud. Deflections. Could be wider.
Aug 12/13	224/225	17:53~01:59	264?	062?	Aug 12 18:01-19:25	304 ₁ * 256 ₂	265	4	7	Loop	Complex (multiple?) loop/cavity with structured core centered on streamer and fan. Loop has flattened front in 19:25 image. Loop is gone after 19:25. Region is partially blown out. Deflections. Irregular material continues to be ejected until ~01:59 the next day. Event could extend as far north as 320°.
Aug 14	226	01:03-01:46	256	046	—	—	—	—	0	Front at 01:03 only	Fast, bright, structured, (multiple?) thin loop/cavity with fainter, adjacent loop/cavity to the south. Top of bright loop is at ~2.5R _⊙ . Event is in 01:03 image only. Big deflections.
Aug 14	226	08:29~12:49	060	038	Aug 14 08:29-10:01	126 ₁ *	050	2	5	Loop	Fuzzy loop/cavity with structured core between streamers. Deflections.
Aug 14	226	15:53-20:30	~013	~026	—	—	—	—	0	No obvious front	Small cloud in streamer. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 39 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 15	227	01:24~06:17	242?	095?	Aug 15 02:23-02:48	748 ₁ *	276	2	9	Outer loop	Wide, complex, structured, multiple loops/cavities with complex, multiple, structured inner loop/cavity and structured core superposed on rays. Region is blown out. Big deflections. Could extend as far south as 175°.
					Aug 15 02:23-02:48	589 ₁ *	254	2	6	Blob in core	
Aug 16	228	01:28~05:22	257 265	055 010	—	—	—	—	0	Front at 01:28 only	Wide, complex, structured, multiple loops/cavities with complex, structured, twisted core superposed on faint structures. Bright, structured, narrow loop/cavity (prominence?) from 01:52<05:14. Region is disrupted. Big deflections. Slow brightening and swelling of material for ~16 hours prior to event.
					Aug 16 02:17-03:42	056 ₁ *	267†	2	7	Inner loop (prominence?)	
Aug 16	228	20:20-21:27	~249	~090	Aug 16 20:20-20:45	432 ₁ * 632 ₂	210	3	5	Southernmost edge of loop	Very faint loop/cavity span pylon shadow in rolled south images from 20:20 to 20:45. Best seen in subtractions. Southernmost edge is brightest and dimpled (or concave-outward).
Aug 16	228	21:27-23:00	~307	—	—	—	—	—	0	No obvious front	Bright jet superposed on fan. Could be part of previous event.
Aug 17	229	00:57~04:26	261 262	044 016	—	—	—	—	0	Outer loop	Two concentric, bright loops/cavities at south edge of fan in 00:57 image. Complex, multi-featured, structured core visible from 01:05 to 01:22. Fan is disrupted. Big deflections.
					Aug 17 00:57-01:05	210 ₁ *	260	2	7	Inner loop	
Aug 17	229	10:19~11:43	309?	053?	Aug 17 10:19-10:27	561 ₁ *	330	2	5	Loop	Faint loop/cavity superposed on streamers and rays. Deflections. Could be much wider.
Aug 17	229	18:59~22:54	255	070	—	—	—	—	0	Front at 18:59 only	Structured loop/cavity and brighter, highly structured, complex, 'harpoon'-shaped, inner (prominence) core between streamer and fan. Fan to the south is disrupted. Big deflections.
					Aug 17 18:59-19:24	1288 ₁ *	263	2	7	Harpoon-shape in core (prominence)	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 40 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 18	230	~04:47-18:35	085	030	—	—	—	—	0	No obvious front	Cloud expands slowly around streamer. Deflections.
Aug 18	230	06:27-08:08	281	108	Aug 18 06:27-06:35	560 ₁ *	252	2	5	Core	Complex, structured mound (or cloud) with bright core(?) at southern edge. Deflections.
Aug 18	230	16:46-18:19	200	080	—	—	—	—	0	Front at 16:46 only	Loop/cavity with brighter, structured inner (prominence) loop/cavity span pylon shadow. Deflections.
			193	042	—	—	—	—	1	Inner loop (prominence)	
Aug 18/19	230/231	18:02~05:30	267	040	Aug 18 18:02-18:27	445 ₁ *	270	3	7	Loop	Two part event: 1. Loop/cavity superposed on and south of streamer. Deflections. Ends in data gap. 2. Faint, concentric loops/cavities (with faint core?) visible after data gap superposed on and south of streamer. Deflections.
	230/231	18:02>18:27									
	231	<01:43~05:30									DATA GAP: Aug 18 18:43 to Aug 19 00:52.
Aug 19	231	12:37~23:48	028?	079?	—	—	—	—	0	No obvious front	Broad, faint cloud superposed on streamers. Second small cloud ejected from 20:18 until ~23:48 in same location. Deflections.
Aug 19	231	15:50-19:11?	261?	062?	—	—	—	—	1	Outer loop	Multiple loops/cavities with bright, complex, structured (prominence?) core superposed on rays. Could extend as far north as 325°. Big deflections. Slight brightening in region in 14:18 image.
Aug 20	232	02:52-04:33	240	040	—	—	—	—	0	Missed front	Broad, structured cloud with structured, embedded, arc-shaped (prominence) material at southern edge. Deflections. Probably missed front.
					—	—	—	—	0	Arc at 02:52 only	
Aug 21	233	05:08~09:45	291	046	Aug 21 06:40-07:31	481 ₁ *	295	2	7	Loop	Flattened loop/cavity and core superposed on streamer. 'Light-bulb' shaped late in event. Deflections.
					Aug 21 06:40-07:48	459 ₁ *	290	4	9	Cavity	
						453 ₂					

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 41 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 21/22	233/234	19:48~04:11	294	055	—	—	—	—	1	Loop	Faint loop(?)/cavity with structured, loop-shaped (prominence?) core superposed on streamer. Possible concave-outward, 'U'-shaped material from 03:29 to 04:11. Streamer is disrupted. Deflections.
					Aug 22 00:25-02:22	184 ₁ * 207 ₂	292	5	5	Cavity in core (late in event)	
Aug 22	234	all day	~251	~028	—	—	—	—	0	No obvious front	Slow expansion of cloud (with core and cavity?) in streamer. Streamer is disrupted.
Aug 22	234	02:05-03:54?	???	???	—	—	—	—	0	No obvious front	Small, bright mound in east at 02:05. Broad faint cloud covers east, south and west sectors. Halo?
Aug 22	234	10:11-11:43	117?	055?	—	—	—	—	0	Front at 10:11 only	Two faint, concentric loops/cavities with possible core between streamers. Deflections.
Aug 22/23	234/235	17:27-22:37	~350	—	—	—	—	—	0	No obvious front	Slow expansion of faint cloud around streamer. Deflections. Streamer is disrupted.
Aug 22/24	234/236	23:44-23:46	269	019	Aug 22/23 23:44-02:32	088 ₁ 016 ₂ *	266†	3	4	Cloud	Could be more than one event: 1. Fuzzy, faint cloud (or loop/cavity) at north edge of streamer in south images. 2. Mound superposed on streamer. Material continues to expand and blowout around streamer until end of Aug 24. Cavity(?) visible Aug 24 at ~00:27 until end of day. Trailing material is concave-outward, 'V'-shaped from ~03:48 until end of day. Region is disrupted. Deflections.
	234/235	23:44-03:05									
	235/236	15:14-23:46	292	027	Aug 23 15:14-16:22	231 ₁ * 001 ₂	295	3	3	Mound	
Aug 23	235	09:14-13:51	085	070	—	—	—	—	0	Front at 09:14 only	Bright loop/cavity at south edge of streamer. Deflections. Streamer is disrupted.
Aug 24	236	01:51-02:08	137	020	Aug 24 01:51-02:08	422 ₁ *	143	2	4	Loop	Faint, narrow (multiple?) loop/cavity and possible core between streamers. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 42 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 25	237	11:55~14:58	103	037	—	—	—	—	0	Loop at 11:55 only	Could be two events (or one wide event): 1. Loop/cavity in streamer. Streamer is blown out. Deflections. Slow swelling of streamer visible for ~6 hours prior to event. 2. Faint cloud with embedded material (or loop/cavity) between streamers.
		11:55~14:58									
		11:55~14:58	~149	—	—	—	—	1	Cloud		
Aug 25	237	17:29>18:10	319	018	Aug 25 17:29-18:10	165 ₁ * 239 ₂	318	3	4	Tongue	Tongue expands. Visible in rolled south images. Faint material could be ejected north of this region. Ends during data gap.
Aug 25	237	17:45-17:53	206	022	—	—	—	—	0	Front at 17:45 only	Concave-outward, 'U'-shaped material in 17:45 image only. Additional material could be present in the southeast in this image only. Data gap follows.
DATA GAP: Aug 25 18:07 to Aug 26 18:41.											
Aug 26/27	238/239	23:20~05:29	322	035	Aug 27 00:11-00:52	389 ₁ * 514 ₂	320	4	5	Mound	Structured mound (or loop/cavity) with embedded loop/cavity(?) superposed on rays. Deflections.
					Aug 27 00:19-00:52	387 ₁ * 175 ₂	320	3	5	Embedded loop	
Aug 27	239	04:55-05:21	~090	—	Aug 27 04:55-05:21	312 ₁ * 346 ₂	092†	4	5	Material (prominence?)	Irregular cloud with structured (prominence?) material at north edge. Deflections.
Aug 27	239	09:57-13:01	097	075	—	—	—	—	0	Front at 09:57 only	Faint, wide cloud. Deflections.
Aug 27/28	239/240	22:13-10:30	113	040	Aug 27/28 22:13-05:54	040 ₁ * 065 ₂	110	4	3	Loop	Loop/cavity with brighter, structured core superposed on streamer. Deflections. Brightening in region prior to event (~7 hours).
Aug 28	240	~05:21~19:18	258?	195?	—	—	—	—	0	No obvious front	Extremely wide cloud covers south and west sectors. Motion in north and east. Halo?
Aug 28	240	11:46~13:34	135	039	Aug 28 11:46-12:02	211 ₁ *	122	2	3	Loop	Faint loop/cavity between streamers.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 43 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Aug 28/29	240/241	13:34>00:19	102	040	—	—	—	—	1	Cloud	Cloud around streamer with two tongues of material at south edge. First tongue is visible from 13:34 until 18:11. Second tongue follows from 19:43 until end of day.
											DATA GAP: Aug 29 00:27 to Aug 30 00:19.
Aug 30	242	<00:19~08:08	089	028	—	—	—	—	0	Missed front	Faint cloud superposed on streamer. Could have missed the front.
Aug 30	242	<00:28~05:04	292	015	Aug 30 00:28-02:00	202 ₁ *	300	2	6	Bottom of goal-post shaped cavity	Cloud(?) containing embedded cavity with well-defined base. Cavity is concave-outward, goal-post shaped. Event is superposed on fan. Region is disrupted. Deflections.
Aug 30	242	03:24~05:37	149	012	Aug 30 03:24-04:05	643 ₁ * 739 ₂	151	4	5	Tongue	Structured tongue superposed on ray.
											DATA GAPS: Aug 30 08:16 to 21:49. Aug 31 03:06 to 17:45.
Aug 31	243	<17:45-20:49	125 126	058 021	Aug 31 17:45-18:10	469 ₁ *	117	2	5	Outer loop	Dimpled loop/cavity with complex core including inner loop/cavity and adjacent blobs all superposed on pre-existing bright ray. Deflections. Region is disrupted.
					Aug 31 17:45-18:27	448 ₁ * 515 ₂	134†	4	5	Inner loop	
Sep 01	244	05:03-06:27	~122	~041	—	—	—	—	1	Outer loop	Multiple loops/cavities and core (or highly structured, complex cloud) superposed on streamer. Streamer is blown out. Deflections. Could extend as far north as 060°. Data is streaked.
											DATA GAPS: Sep 01 08:16 to 17:04. Sep 02 07:18 to 18:53.
Sep 03	246	~02:58-06:11	076	062	—	—	—	—	0	Outer loop	Fuzzy outer loop/cavity with sharp, flattened, inner loop/cavity (or mound) and possible core superposed on streamer. Streamer is disrupted. Deflections. Data is streaked.
					Sep 03 04:05-04:47	266 ₁ * 283 ₂	072	3	7	Inner loop	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 44 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: Sep 03 09:15 to 13:18. Sep 04 05:20 to 12:35. Sep 05 23:53 to Sep 06 21:05.
Sep 07	250	07:49-10:02	~315	~010	—	—	—	—	1	Jet	Fuzzy jet (or ray).
Sep 07/08	250/251	16:02~02:31	077?	055?	—	—	—	—	0	Too fuzzy	Fuzzy irregular cloud in streamer. Cavity appears at 23:43. Streamer is blown out. Deflections.
Sep 07/08	250/251	21:54~05:59	288?	065?	Sep 07 21:54-22:19	374 ₁ * 303 ₂	267	3	6	Mound	Faint mound (or loop/cavity) superposed on streamer. Deflections.
Sep 08/10	251/253	04:02~17:39	062	025	—	—	—	—	1	Loop	Could be more than one event: 1. Loop/cavity (or mound) superposed on streamer. Streamer is disrupted. Deflections. 2. Faint mound (or loop/cavity) superposed on rays (or streamer). 3. Faint cloud superposed on streamer (or rays). 4. Blob 'N Ray with faint cloud superposed on streamer (or rays). Deflections.
	251	04:02-07:32									
	251	19:14-23:50									
	252	08:04?~11:31									
	253	11:31~17:39	095?	020?	—	—	—	—	0	Too faint	
	253	11:31~17:39	060	035	—	—	—	—	0	Too fuzzy	
Sep 08	251	22:26-23:58	270	020	—	—	—	—	0	No obvious front	Faint, narrow cloud.
Sep 09	252	19:54~23:23	282	033	—	—	—	—	0	No clear front	Structured cloud (or irregular loop/cavity) superposed on rays and streamers. Deflections.
Sep 10	253	~07:54-23:30	~227	~035	—	—	—	—	0	No clear front	Faint cloud superposed on streamers. Could extend as far north as 260°.
Sep 10	253	21:50-23:47	078	045	Sep 10 21:50-22:15	234 ₁ *	078	2	5	Inner loop	Fuzzy outer loop/cavity with sharper, concentric, inner loop/cavity superposed on fan (or streamers). Deflections.
Sep 10/11	253/254	22:23~16:47	~315	~050	—	—	—	—	1	Northern edge	Very faint, slow-moving cloud(s?).
											DATA GAP: Sep 11 04:31 to 08:25.
Sep 11/12	254/255	10:31-01:50	082	045	—	—	—	—	0	No clear front	Fuzzy cloud superposed on rays (or streamers). Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 45 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 11	254	14:50~17:54	~227	~025	Sep 11 14:50-16:22	151 ₁ *	220	2	3	Mound	Fuzzy mound superposed on streamer. Brightening as far south as ~160°.
											DATA GAP: Sep 12 01:59 to 13:33.
Sep 12	255	18:25~20:14	142?	024?	Sep 12 18:25-18:42	281 ₁ *	147	2	5	Mound	Fuzzy mound superposed on streamer. Could extend as far north as 122°. Deflections.
Sep 14	257	10:08-13:12	073? 074?	070? 038?	—	—	—	—	0	Front at 10:08 only	Loop/cavity with highly structured, complex, inner (prominence) loops/cavities. Edge of outer loop could extend south of equator in 10:33 east image. Deflections.
					Sep 14 10:08-10:33	478 ₁ *	064†	2	7	Inner loop (prominence)	
											DATA GAP: Sep 14 21:24 to Sep 15 02:51.
Sep 15	258	~02:51~07:27	302	051	—	—	—	—	0	No obvious front	Fuzzy (multiple?) loop/cavity and core in streamer. Becomes 'light-bulb' shaped. Big deflections. Streamer is partially blown out. Motion (swelling?) of material in streamer prior to event on Sep 14.
					Sep 15 02:51-06:36	175 ₁ 254 ₂ *	300	4	5	Cavity	
Sep 15	258	06:36~09:40	251	050	—	—	—	—	0	Front at 06:36 only	Complex loop/cavity and bright, structured, complex, loop-shaped (prominence) core south of streamer. Deflections. Core is brightest at 263°.
					Sep 15 06:36-07:52	529 ₁ * 649 ₂	271†	5	9	Core (prominence)	
Sep 15	258	13:47-15:36	163	035	Sep 15 13:47-14:04	211 ₁ *	155	2	5	Loop	Faint loop/cavity superposed on fan. Deflections.
Sep 16	259	11:30-16:06	066?	078?	—	—	—	—	0	No obvious front	Faint cloud superposed on and around streamer. Deflections. Could be wider.
Sep 16	259	12:29-23:28	252?	039?	—	—	—	—	0	No clear front	Faint, fuzzy cloud around streamer.
Sep 16	259	15:33~17:29	279	035	—	—	—	—	0	Too faint	Faint mound between streamers. Deflections.
Sep 18	261	10:49-15:41	325	050	Sep 18 10:49-12:37	486 ₂ *	320	6	9	Loop	Complex (multiple?) loop/cavity with structured core superposed on faint streamer (or fan). Region is blown out. Big deflections.
					Sep 18 11:56-12:37	420 ₁ * 516 ₂	323†	4	7	Blob in core	

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 46 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 18/19	261/262	21:15-06:18	285	055	Sep 18 21:32-22:39	271 ₁ * 297 ₂	301	3	5	Outer northern cavity	Could be two events: 1. Adjacent, multiple, complex (arcade?) loops/cavities and cores superposed on streamer. Streamer is disrupted. Deflections. 2. Irregular material with possible fainter loop/cavity and core. Region is blown out.
		Sep 18 21:32-23:04			413 ₁ * 521 ₂	285	4	5	Outer southern cavity		
		~00:52-05:28	—	—	—	—	0	Too faint			
Sep 19	262	14:14-15:45	191	060	Sep 19 14:14-14:30	386 ₁ *	163†	2	6	Eastern edge of loop (prominence)	Complex, highly structured (prominence) loop/cavity spans pylon shadow. Edges are superposed on streamers. Deflections. Could have missed coronal front between 12:42 and 14:14 images. Width was measured at 3.0R _☉ .
Sep 20	263	06:47~10:15	298	018	Sep 20 06:47-07:04	348 ₁ * 479 ₂	298	3	9	Mound	Mound (or loop/cavity) with bright, structured (prominence?) core at south edge of streamer.
											DATA GAP: Sep 21 04:46 to 14:55.
Sep 22	265	17:12-20:16	143?	044?	Sep 22 17:12-19:01	237 ₁ * 315 ₂	145	4	6	Loop	Thin, faint loop/cavity and core between streamers. Deflections. Could extend as far south as 195°.
											DATA GAP: Sep 22 20:33 to Sep 23 17:24.
Sep 23	266	17:58-21:01	125	010	—	—	—	—	0	No obvious front	Faint jet (or fan).
Sep 23/24	266/267	20:36~22:32	~357	~055	—	—	—	—	0	No obvious front	Slow expansion of cloud around streamer. Deflections. Streamer is disrupted.
Sep 25	268	00:25-03:04	313?	090?	Sep 25 00:25-00:41	913 ₁ *	310	2	7	Northern loop	Two overlapping, irregular loops/cavities superposed on and around fan. Very faint material could be ejected as far south as 230°. Deflections.
					Sep 25 00:25-00:41	948 ₁ *	310	2	7	Northern cavity	
											DATA GAP: Sep 25 09:52 to 13:54.
Sep 25	268	18:46?-21:41	217	045	—	—	—	—	0	Front at 20:10 only	Faint loop/cavity superposed on and south of streamer. Spans pylon shadow. Streamer is partially blown out. Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 47 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Sep 26	269	~02:00-23:33	297	047	—	—	—	—	0	No clear front	Slow, faint cloud superposed on fan and streamers. Deflections.
Sep 26	269	09:55~23:58	190	070	—	—	—	—	1	Loop	Slow, fuzzy loop/cavity spans pylon shadow. Superposed on streamer(?). Structured, inner (prominence?) loop follows at 22:26. Deflections.
Sep 27	270	05:32-06:05	080	040	Sep 27 05:32-05:57	367 ₁ * 378 ₂	075	4	5	Loop	Faint loop/cavity (or mound) between streamers.
Sep 27	270	16:22<20:57	040	060	—	—	—	—	0	Front at 16:22 only	Structured mound on and between streamers.
Sep 27	270	18:10~20:49	258	056	—	—	—	—	0	Missed front	Cloud superposed on streamers and rays. Deflections. Could have missed the front.
Sep 27	270	20:49-23:52	258	070	Sep 27 20:49-22:21	339 ₁ 441 ₂ *	274†	4	6	Loop	Complex (multiple?) loop/cavity with structured core superposed on streamer. Loop top flattens as it moves outward. Core could be concave-outward, 'V'-shaped. Deflections. Region is disrupted.
Sep 28	271	00:01-04:28	052	045	—	—	—	—	0	Front at 00:01 only	Multiple loops/cavities and complex, loop-shaped core superposed on streamer. Streamer is disrupted. Deflections.
											DATA GAP: Sep 28 18:54 to Sep 29 00:37.
Sep 29	272	~02:00~23:26	060 058	050 012	— Sep 29 18:51-20:47	— 099 ₁ * 119 ₂	— 054†	— 4	1 5	Cavity Core (late in event)	Slow loop/cavity(?) and core(?) superposed on streamers (or fan). Fades. Region is mostly blown out. Deflections.
Sep 29	272	07:08-11:27	284?	018?	—	—	—	—	0	Missed front	Structured (prominence?) cloud superposed on streamers and fan. Deflections. Could have missed the front. Could extend as far south as 240°.
Sep 29	272	11:27-12:34	262	077	Sep 29 11:27-11:43	1828 ₁ *	255	2	7	Loop	Bright, complex, structured (multiple?) loop/cavity with structured core superposed on faint streamer (or fan). Region is blown out. Big deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 48 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Sep 29 14:48 to 17:44.
Oct 01	274	10:27~12:40	~250	060?	Oct 01 10:27-11:08	544 ₁ * 464 ₂	250	3	6	Outer loop	Outer loop/cavity with complex (multiple?) inner loop/cavity and core between streamers. Deflections. Possible concave-outward, 'U'-shaped material in core.
					Oct 01 10:44-11:08	422 ₁ * 421 ₂	250	3	6	Core	
Oct 01	274	19:54~22:41	250?	060?	—	—	—	—	0	Front at 20:02 only	Structured(?) loop/cavity and core between and superposed on streamers. Could extend as far north as 310°. Deflections.
											DATA GAPS throughout Oct 02 totaling ~10 hours.
Oct 03	276	08:26~10:14	227?	075?	Oct 03 08:26-08:34	1603 ₁ *	213	2	7	Loop (prominence?)	Very fast, structured, knotty (prominence?) loop/cavity. Could extend as far south as 120° and as far north as 320°. Deflections. Could have missed coronal front between 07:11 and 08:26 images.
Oct 03	276	11:21-14:25	279	048	—	—	—	—	1	Cloud	Fuzzy cloud superposed on streamer.
Oct 03	276	14:33<20:40	032	025	—	—	—	—	0	Front at 14:33 only	Faint loop/cavity (or mound) superposed on and north of streamer. Data gap follows. Deflections.
											DATA GAP: Oct 03 14:41 to 20:31.
Oct 04	277	04:43-07:55	080	014	Oct 04 04:43-05:41	479 ₁ *	085	2	3	Loop	Small loop/cavity(?) superposed on fan. Deflections.
Oct 04	277	06:23-07:38	276	044	—	—	—	—	0	Front at 06:23 only	Fuzzy, faint loop/cavity (or mound) superposed on and south of streamer. Deflections.
Oct 05	278	17:06~23:29	132	025	—	—	—	—	1	Cloud	Faint cloud superposed on streamer.
Oct 05	278	17:14-21:24	289	042	Oct 05 17:14-17:31	352 ₁ *	295	2	9	Outer loop	Loop/cavity and beautiful, coiled, highly-structured, inner (prominence) loops/cavities superposed on streamer. Streamer is disrupted. Deflections.
					Oct 05 17:14-18:21	1007 ₂ *	290†	3	9	Outer cavity	
				Oct 05 17:31-18:21	543 ₁ *	291†	2	9	Inner loop (prominence)		

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 49 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics						Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual	Feature	
Oct 05/06	278/279	~22:56~18:43	275	043	Oct 06 02:40-08:23	096 ₂ *	272	6	5	Cavity	Cavity appears and rises slowly in streamer. Core appears beneath cavity at 00:28. Loop becomes visible around cavity at ~03:31. Loop/cavity are blown out by ~11:09. Irregularly-shaped material is ejected until ~18:43. Narrow concave-outward, 'U'-shaped material ejected from ~17:12 to 18:43. Streamer is blown out. Deflections.
Oct 06	279	09:46-10:03	164?	087?	—	—	—	—	0	Missed front	Broad, structured material near southern pole covers most of south sector. Visible in rolled north images. Missed the front between 08:48 and 09:46 images. Deflections.
Oct 06/08	279/281	~21:55~22:45	005	046	—	—	—	—	0	No obvious front	Slow lateral and outward expansion of adjacent streamers. Region is blown out. Deflections.
											DATA GAP: Oct 07 13:27 to 19:09.
Oct 07	280	19:25-22:45	~122	~045	Oct 07 19:25-19:42	141 ₁ *	120	2	3	Cavity	Loop/cavity and possible core superposed on fan. Deflections. Could extend as far north as 090°.
Oct 08	281	01:23-04:43	042	047	Oct 08 01:23-01:48	351 ₁ *	042	2	9	Outer loop	Outer loop/cavity with complex inner loop/cavity and structured (prominence?) core between streamers. Deflections.
Oct 08	281	01:31-04:51	132	021	—	—	—	—	0	First cavity	Cavity in fan at 01:31. Thin loop/cavity with complex, structured loop-shaped (prominence) core follows first cavity at 03:11. Deflections. Region is disrupted.
			147	032	Oct 08 03:11-03:19	634 ₁ *	145	2	9	Second cavity	
			146	012	Oct 08 03:11-03:19	775 ₁ *	145	2	9	Core (prominence)	
											DATA GAP: Oct 09 06:04 to 18:34.
Oct 09/10	282/283	21:37~07:03	059	018	Oct 09/10 21:37-01:05	036 ₁ * 047 ₂	062	6	4	Cavity	Cavity with core in streamer. Loop becomes visible around cavity. Streamer is disrupted. Data is streaked.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 50 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Oct 11 12:10 to 16:28.
Oct 11/12	284/285	~19:47~01:53	114	036	Oct 11 22:34-22:50	105 ₁ *	112	2	3	Loop	Motion and expansion of rays. Flattened(?) loop/cavity superposed on rays follows at 22:34. Best seen at 22:50. Deflections.
											DATA GAPS: Oct 12 03:33 to 07:26. Oct 12 10:46 to 15:04.
Oct 12	285	15:37~20:11	113	050	—	—	—	—	0	Front at 15:37 only	Fuzzy loop/cavity (or mound) superposed on streamer and rays.
Oct 12/13	285/286	~20:11~06:43	115	060	Oct 12/13 20:11-05:20	085 ₂ *	120	7	6	Cavity	Slowly rising cavity with thick fuzzy loop/cavity superposed on streamer(s?). Loop front sharpens as it moves outward. Complex, structured, loop-shaped core appears by 05:20. Region is blown out. Big deflections.
Oct 14/15	287/288	10:14~01:02	130	020	—	—	—	—	1	First cavity	Slow outward expansion of irregular cavity in streamer. Front evolves. Bright, dimpled, wider loop/cavity and core appear at 23:31 in same location as irregular cavity. Region is blown out. Big deflections.
		23:31-01:02	130	050	Oct 14/15 23:31-00:04	572 ₁ 866 ₂ *	132	3	9	Second cavity	
Oct 14/15	287/288	11:28~21:06	235	060	—	—	—	—	0	No clear front	Slow expansion of complex material in wide streamer. Concave-outward, 'U'-shaped material visible from 18:48 to 19:21 on Oct 14. 'Light-bulb' shaped loop/cavity and core appear in streamer on Oct 15 at 13:05. Streamer is blown out.
					—	—	—	—	1	Cavity (late in event)	
											DATA GAP: Oct 14 13:16 to 17:17.
Oct 15	288	all day	~294	~027	—	—	—	—	0	No clear front	Slow expansion of structured cloud superposed on streamer. Streamer is disrupted.
Oct 15	288	04:13~06:59	056	024	—	—	—	—	1	Mound	Faint, helmet-shaped mound (or loop/cavity) between streamers. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 51 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAPS: Oct 15 08:39 to 10:10. Oct 15 11:33 to 13:05. Oct 15 16:49 to 20:41. Oct 16 04:27 to 07:21.
Oct 16	289	08:52<23:24	217	024	—	—	—	—	1	Loop	Small loop/cavity superposed on streamer (or fan). Data gap occurs during event.
Oct 16	289	09:26<14:58	079	049	—	—	—	—	0	Front at 09:26 only	Complex (multiple?) loop/cavity at north edge of streamer. Multiple data gaps occur throughout event.
											DATA GAPS: Oct 16 09:34 to 14:58. Oct 16 15:55 to 22:34. Oct 16 23:32 to Oct 19 16:03.
Oct 19/20	292/293	~19:06~15:18	280	051	—	—	—	—	1	Cloud	Slow expansion of structured cloud around small streamer. Multiple loops/cavities and core appear at 09:30 and blowout through streamer. Streamer is disrupted. Deflections.
											DATA GAP: Oct 19 21:02 to Oct 20 03:16.
Oct 20	293	15:09-16:41	203?	097?	Oct 20 15:09-15:34	610 ₁ * 572 ₂	234	3	5	Loop	Loop/cavity superposed on faint rays and fan. Partially obscured by pylon shadow. Deflections.
Oct 20	293	20:58~23:11	270	040	Oct 20 20:58-21:39	395 ₁ * 324 ₂	263	3	7	Loop	Complex, flattened loop/cavity and structured core superposed on faint streamer (or rays). Deflections.
Oct 21	294	02:05-11:13	105	029	—	—	—	—	0	Front at 02:05 only	Mound superposed on adjacent, overlapping streamers. Some swelling and brightening of region for ~12 hours prior to event.
											DATA GAP: Oct 21 06:06 to 09:08.
Oct 21	294	~10:56~20:04	210	027	—	—	—	—	0	No obvious fronts	Two, irregular clouds superposed on ray. First cloud visible from 10:56 until 12:27. Second cloud seen from 15:30 until ~20:04.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 52 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
											DATA GAP: Oct 21 20:20 to Oct 22 09:29.
Oct 22	295	~11:25~23:09	324?	038?	—	—	—	—	0	No clear front	Faint, structured cloud with embedded concave-outward, 'U'-shaped material. Deflections.
		14:27-15:42	315	020	Oct 22 14:27-15:42	074 ₁ * 090 ₂	312†	4	3	'U'-shaped material	
Oct 23	296	01:22~12:01	~280	~040	—	—	—	—	1	Cloud	Faint, structured, complex cloud superposed on faint fan. Faint, narrow material ejected from ~11:19 until 12:01. Region is disrupted. Deflections. Could extend further south.
											DATA GAPS: Oct 23 04:16 to 09:48 Oct 23 15:04 to 19:21
Oct 24	297	04:20~19:23	042?	025?	—	—	—	—	0	No obvious front	Structured mound (or cloud) around streamer.
											DATA GAP: Oct 24 06:08 to 10:08.
Oct 24	297	11:39~13:27	237	043	Oct 24 11:39-12:04	231 ₁ * 306 ₂	241	3	5	Loop	Fuzzy, faint loop/cavity with fuzzy core superposed on faint fan (or streamers). Deflections.
Oct 24	297	18:00>19:56	256	108	Oct 24 18:00-18:25	1453 ₁ 1956 ₂ *	245	3	9	Loop	Bright, complex, wide, outer loop/cavity with inner, 'light-bulb' shaped loop/cavity and structured, complex (prominence?) core superposed on faint fan (or streamers). Big deflections. Region is blown out.
											DATA GAP: Oct 24 19:56 to Oct 25 15:23.
Oct 26/27	299/300	~20:22~06:35	045	034	—	—	—	—	0	No obvious front	Structured cloud around streamer. Best seen in 20:22 image.
Oct 26/27	299/300	23:33~03:25	259	064	Oct 26/27 23:33-00:23	675 ₁ *	263	2	6	Loop	Loop/cavity in 23:33 image. Broad, complex loop/cavity (or two overlapping loops) with core containing twisted, structured (prominence) ropes in 00:23 image. Event is superposed on rays (or streamers). Deflections.

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 53 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Oct 27	300	~03:58-14:35?	129	051	Oct 27 05:13-07:00	100 ₁ * 071 ₂	131	4	3	Loop	(Multiple?) loop/cavity with core in streamer. Streamer is disrupted. Slight swelling and brightening of streamer prior to event. Deflections.
Oct 27	300	20:31~23:50	263	035	Oct 27 20:31-21:38	433 ₁ * 365 ₂	270	3	3	Mound	Mound superposed on rays. Deflections.
Oct 28	301	05:21~07:17	090?	070?	Oct 28 05:29-05:46	633 ₁ *	124	2	3	Southernmost edge of loop	Big, faint, structured loop/cavity. Could extend as far south as 140°.
Oct 28	301	05:29~08:15	250	100	Oct 28 05:29-06:44	353 ₁ 122 ₂ *	252	4	4	Loop	Wide, complex (multiple?) loop/cavity with possible core. Deflections.
Oct 28/29	301/302	~08:48<12:07	134	043	Oct 28 08:48-20:56	018 ₁ * 023 ₂	130	15	7	Cavity	Slow rising loop/cavity in streamer with (multiple?) complex, inner, loop-shaped core. Streamer expands. Blows out during data gap from Oct 28 20:56 to Oct 29 11:50.
											DATA GAP: Oct 28 10:28 to 13:05.
Oct 28	301	13:13-20:40	230	020	—	—	—	—	1		Thin loop/cavity with core superposed on and north of streamer. Deflections.
											DATA GAPS: Oct 28 23:25 to Oct 29 07:33. Oct 29 14:52 to Oct 30 04:14. Oct 30 07:58 to Oct 30 12:06.
Oct 30	303	<12:06~16:22	230	040	Oct 30 12:14-15:16	164 ₁ 255 ₂ *	240	7	4	Cloud	Faint cloud followed by faint loop/cavity(?) and core.
Oct 31	304	16:46-18:41	089	073	Oct 31 16:46-17:10	539 ₁ *	072	2	7	Loop (northern edge)	Complex, multiple, pentagonal loops/cavities with core on and between streamers. Region is partially blown out. Deflections.
					Oct 31 16:54-17:10	702 ₁ *	114	2	7	Loop (southern edge)	
Oct 31	304	21:27~22:58	152?	035?	—	—	—	—	0	Missed front?	Cloud superposed on streamer. Southern edge near pylon shadow. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 54 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 01	305	09:17~12:44	260	050	Nov 01 09:17-10:48	251 ₁ 365 ₂ *	245	4	6	Loop	Broad, complex (multiple?) loop/cavity with wide, structured, complex core superposed on and south of streamer. Region is disrupted. Deflections.
			252	030	Nov 01 09:59-11:30	302 ₁ 416 ₂ *	257	4	6	Core	
Nov 01	305	17:25-18:56	072?	042?	—	—	—	—	0	No clear front	Faint cloud superposed on rays. Deflections.
Nov 01/03	305/307	~19:54~02:11	285	061	Nov 01/02 19:54-11:20	018 ₁ * 017 ₂	285	6	3	Cloud	Very slow rising cloud expands on and north of streamer. Region is partially blown out. Deflections. Cavity appears at south edge of streamer at 01:57 on Nov 02. Moves out until early Nov 03 then stalls or fades.
Nov 02	306	05:33~17:39	077	047	—	—	—	—	0	No clear front	Could be two events: 1. Structured cloud superposed on rays. Deflections. 2. Structured knots of (prominence) material superposed on rays.
		05:33-06:30?		010	—	—	—	—	1	Knots (prominence)	
Nov 03	307	~02:36-22:25	080	050	—	—	—	—	0	No obvious fronts	Could be two events: 1. Irregularly-shaped material along rays (or streamers). Deflections. 2. Blobs 'N Ray. Deflections. Region is disrupted.
		02:36-08:48		015	—	—	—	—	—	—	
DATA GAP: Nov 04 04:29 to 09:59.											
Nov 04	308	13:17-14:48	122	053	Nov 04 13:17-13:33	1053 ₁ *	119	2	5	Outer loop	Complex, structured, faint loop/cavity with multiple, interior loops/cavities and core between streamers. Deflections.
Nov 04/05	308/309	23:52~01:23	182	080	—	—	—	—	0	Front at 23:52 only	Mound spans pylon shadow.
Nov 05	309	05:39-07:52	077	030	Nov 05 05:39-06:04	304 ₁ * 265 ₂	083	3	5	Loop	Irregular, flat-topped loop/cavity superposed on streamer.
Nov 05	309	10:45-15:17	102?	026?	—	—	—	—	1	Mound	Faint mound superposed on and south of streamer. Could extend as far north as 067°. Fades. Deflections.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 55 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 05/06	309/310	21:03-00:21	108?	025?	—	—	—	—	1	Cloud	Faint cloud between streamers.
Nov 06	310	09:34~23:59	317	052	—	—	—	—	1	Cloud	Faint, structured cloud. Remnants ejected along ray at 300° late in event.
Nov 06	310	13:58~15:28	108?	030?	—	—	—	—	1	Cloud	Faint cloud superposed on and south of streamer. Deflections. Corona brightens from 080° to 134°.
Nov 07	311	08:15>15:14	069	057	Nov 07 08:15-09:37	057 ₁ *	060	2	3	Mound	Two part event: 1. Mound superposed on and north of streamer. Deflections. Streamer is disrupted. 2. Structured (prominence?) loop/cavity around streamer. Streamer is disrupted.
		15:06>15:14			077	035					
DATA GAP: Nov 07 15:22 to Nov 08 06:12.											
Nov 08/09	312/313	12:23~06:48	050	035	Nov 08 12:23-12:48	094 ₁ *	054	2	4	Cavity	Thick loop/cavity and structured core between streamers. Core evolves. Deflections.
Nov 08	312	19:48~22:58	314?	055?	—	—	—	—	0	Missed front	Structured loop/cavity superposed on and south of streamer. Region is disrupted. Deflections. Missed top of loop between 18:59 and 19:48 images. Could extend as far south as 275°.
Nov 09	313	20:31~22:01	089	023	—	—	—	—	0	No obvious front	Cloud superposed on fan (or streamers).
Nov 09/10	313/314	20:39~05:43	297?	035?	—	—	—	—	0	Too faint	Very faint, irregularly-shaped cloud superposed on and south of streamer. Material seen as far south as 240°.
Nov 10	314	14:04-15:59	228?	057?	—	—	—	—	0	Front at 14:04 only	Faint loop/cavity (or mound) superposed on streamer. Could extend further south.
Nov 10	314	16:16~18:36	310	044	Nov 10 17:13-17:46	492 ₁ *	308	3	6	Loop	Loop/cavity (or mound) superposed on streamers.
						351 ₂					

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 56 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Feature	Comments
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		
Nov 10/11	314/315	17:05~02:08	244	064	Nov 10 17:05-19:17	129 ₁ * 169 ₂	244	7	6	First loop	Faint (multiple?) loop/cavity with core and inner loop/cavity superposed on and north of streamer.
					Nov 10 18:36-19:17	113 ₁ * 159 ₂	244	3	5	Core	
					Nov 10 21:37-23:32	166 ₁ * 049 ₂	244	3	3	Inner loop	
											DATA GAP: Nov 10 19:17 to 21:37.
Nov 11	315	00:54~04:12	232	043	—	—	—	0	No clear front	Material ejected around streamer. Streamer is disrupted.	
Nov 11/12	315/316	19:00~13:05	234	037	Nov 11/12 19:00-02:32	027 ₁ * 019 ₂	233†	5	7	Cavity	Loop/cavity and core blows out slowly in streamer. Gone by Nov 12 ~ 13:05. Streamer is disrupted. Region fades until early Nov 14.
Nov 12	316	07:28-11:18	259	030	Nov 12 07:28-08:34	264 ₁ * 282 ₂	247	4	5	Loop	Loop/cavity at north edge of streamer.
Nov 13	317	01:25~09:06	047	035	—	—	—	1	Loop	Fuzzy loop/cavity and structured core superposed on streamer. Partially obscured by artifacts. Streamer is disrupted. Deflections.	
											DATA GAP: Nov 13 16:11 to 22:04.
Nov 13/14	317/318	22:29~01:30	077	047	—	—	—	0	No obvious front	Cloud expands around streamer. Deflections.	
Nov 14	318	11:53~14:29	277	022	Nov 14 11:53-12:10	281 ₁ *	275	2	4	Mound	Small mound around streamer (or ray).
Nov 14	318	14:46<19:33	117	038	—	—	—	0	Front at 14:46 only	Mound superposed on and north of streamer. Deflections. Ends during data gap.	
											DATA GAPS: Nov 14 14:54 to 19:25. Nov 14 20:30 to Nov 15 04:02.
Nov 14/15	318/319	11:29~11:33	~220	~020	—	—	—	—	0	No obvious front	Could be two events: 1. Tongue superposed on streamer. Streamer is disrupted. 2. Faint, structured cloud superposed on streamer (or fan). Began during data gap. Deflections.
	318	11:29-14:46			—	—	—	—	0	No obvious front	
	319	<04:02~11:33	235?	030?	—	—	—	0	No obvious front		

† Position of feature was measured along a non-radial line.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

SMM C/P 1989 Coronal Mass Ejections page 57 of 57

Date	DOY	Time [UT]	Cent PA [deg]	Width [deg]	Kinematics					Comments	
					Trajectory Times [UT]	Speed [km/s]	Speed PA	#Data Pts	Qual		Feature
Nov 15	319	<04:26~16:36	120	020	Nov 15 04:26-12:06	037 ₁ 071 ₂ *	118	6	5	Cavity	Loop/cavity superposed on fan (or streamers). Began during data gap. Amorphous core visible from 12:06 until ~16:36. Region is disrupted. Deflections.
Nov 15	319	06:14~11:33	273 266	050 020	—	—	—	—	0	No clear front	Structured mound (or cloud) with core and structured (prominence) loop/cavity and knots of material superposed on streamer. Streamer is disrupted.
					Nov 15 07:44-08:57	386 ₁ * 378 ₂	265	5	5	Loop (prominence)	
Nov 15	319	20:34-22:04	255? ~251	070? ~016	Nov 15 20:58-21:15	668 ₁ *	250	2	5	Arc	Blobs with arc-shaped material. Could be end of long southwest event that began Nov 11. Event is superposed on streamers and rays.
Nov 16	320	10:05-10:30	~175	~038	Nov 16 10:05-10:13	491 ₁ *	190	2	7	Knots (prominence?)	Structured cloud (or tongue) with knots of (prominence?) material at westernmost edge. Visible in rolled north images. Could have missed cloud front between 09:17 and 10:05. Deflections. Poor data coverage.
Nov 16	320	13:47-14:59	~278	~040	—	—	—	—	1		Loop/cavity and core (or mound) superposed on streamer (or ray). Brighter at south edge. Deflections. Could extend as far south as 246°.
											DATA ENDS at 11:52 on November 17, 1989.

Speed₁ ⇒ Speed was determined from a constant velocity fit to the number of points indicated.

Speed₂ ⇒ Speed was determined from a constant acceleration fit to the number of points indicated evaluated at the time of the last measurement (in Trajectory Times column).

* Preferred fit to the data. This quantity is included in the speed histograms.

A revised and expanded catalogue of mass ejections observed by the solar maximum mission coronagraph. - Link Page

[Previous](#)

[PART0001](#)