

Part 1: Data scraping and preparation

Scraping your competitor's data

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In [1]: #Imports
import numpy as np
import requests
from bs4 import BeautifulSoup
from urllib.parse import urlparse
import pandas as pd

In [2]: #Getting html data
r = requests.get('https://cmsc320.github.io/files/top-50-solar-flares.html')

In [3]: #Extracting the text, reading and parsing the data
root = BeautifulSoup(r.content, "html.parser")

In [4]: #Using prettify to find the appropriate data - Too long so I commented it out
#print(root.prettify())

In [5]: #Isolating the data in a table
solartable = root.find("table")

In [6]: #Creating an empty dataframe with the appropriate column names
table = pd.DataFrame(columns=['rank', 'x_class', 'date', 'region', 'start_time', 'max_time',
                             'end_time', 'movie'], index = range(0,50))

In [7]: #Filling out the dataframe with the table data
row_marker = 0
for row in solartable.find_all('tr'): #Iterating through rows
    column_marker = 0
    columns = row.find_all('td')
    row_marker += 1
    for column in columns: #Iterating through each cell in the rows
        if row_marker > 1: #First row has unwanted info so skip that
            table.iloc[row_marker-2,column_marker] = column.get_text()
            column_marker += 1

In [8]: table
```

	rank	x_class	date	region	start_time	max_time	end_time	movie
0	1	X28+	2003/11/04	0486	19:29	19:53	20:06	MovieView archive
1	2	X20+	2001/04/02	9393	21:32	21:51	22:03	MovieView archive
2	3	X17.2+	2003/10/28	0486	09:51	11:10	11:24	MovieView archive
3	4	X17+	2005/09/07	0808	17:17	17:40	18:03	MovieView archive
4	5	X14.4	2001/04/15	9415	13:19	13:50	13:55	MovieView archive
5	6	X10	2003/10/29	0486	20:37	20:49	21:01	MovieView archive
6	7	X9.4	1997/11/06	8100	11:49	11:55	12:01	MovieView archive
7	8	X9.3	2017/09/06	2673	11:53	12:02	12:10	MovieView archive
8	9	X9	2006/12/05	0930	10:18	10:35	10:45	MovieView archive
9	10	X8.3	2003/11/02	0486	17:03	17:25	17:39	MovieView archive
10	11	X8.2	2017/09/10	2673	15:35	16:06	16:31	MovieView archive
11	12	X7.1	2005/01/20	0720	06:36	07:01	07:26	MovieView archive
12	13	X6.9	2011/08/09	1263	07:48	08:05	08:08	MovieView archive
13	14	X6.5	2006/12/06	0930	18:29	18:47	19:00	MovieView archive
14	15	X6.2	2005/09/09	0808	19:13	20:04	20:36	MovieView archive
15	16	X6.2	2001/12/13	9733	14:20	14:30	14:35	MovieView archive
16	17	X5.7	2000/07/14	9077	10:03	10:24	10:43	MovieView archive
17	18	X5.6	2001/04/06	9415	19:10	19:21	19:31	MovieView archive
18	19	X5.4	2012/03/07	1429	00:02	00:24	00:40	MovieView archive
19	20	X5.4	2005/09/08	0808	20:52	21:06	21:17	MovieView archive

	rank	x_class	date	region	start_time	max_time	end_time	movie
20	21	X5.4	2003/10/23	0486	08:19	08:35	08:49	MovieView archive
21	22	X5.3	2001/08/25	9591	16:23	16:45	17:04	MovieView archive
22	23	X4.9	2014/02/25	1990	00:39	00:49	01:03	MovieView archive
23	24	X4.9	1998/08/18	8307	22:10	22:19	22:28	View archive
24	25	X4.8	2002/07/23	0039	00:18	00:35	00:47	MovieView archive
25	26	X4	2000/11/26	9236	16:34	16:48	16:56	MovieView archive
26	27	X3.9	2003/11/03	0488	09:43	09:55	10:19	MovieView archive
27	28	X3.9	1998/08/19	8307	21:35	21:45	21:50	View archive
28	29	X3.8	2005/01/17	0720	06:59	09:52	10:07	MovieView archive
29	30	X3.7	1998/11/22	8384	06:30	06:42	06:49	MovieView archive
30	31	X3.6	2005/09/09	0808	09:42	09:59	10:08	MovieView archive
31	32	X3.6	2004/07/16	0649	13:49	13:55	14:01	MovieView archive
32	33	X3.6	2003/05/28	0365	00:17	00:27	00:39	MovieView archive
33	34	X3.4	2006/12/13	0930	02:14	02:40	02:57	MovieView archive
34	35	X3.4	2001/12/28	9767	20:02	20:45	21:32	MovieView archive
35	36	X3.3	2013/11/05	1890	22:07	22:12	22:15	MovieView archive
36	37	X3.3	2002/07/20	0039	21:04	21:30	21:54	MovieView archive
37	38	X3.3	1998/11/28	8395	04:54	05:52	06:13	MovieView archive
38	39	X3.2	2013/05/14	1748	00:00	01:11	01:20	MovieView archive
39	40	X3.1	2014/10/24	2192	21:07	21:41	22:13	MovieView archive
40	41	X3.1	2002/08/24	0069	00:49	01:12	01:31	MovieView archive
41	42	X3	2002/07/15	0030	19:59	20:08	20:14	MovieView archive
42	43	X2.8	2013/05/13	1748	15:48	16:05	16:16	MovieView archive
43	44	X2.8	2001/12/11	9733	07:58	08:08	08:14	MovieView archive
44	45	X2.8	1998/08/18	8307	08:14	08:24	08:32	View archive
45	46	X2.7	2015/05/05	2339	22:05	22:11	22:15	MovieView archive
46	47	X2.7	2003/11/03	0488	01:09	01:30	01:45	MovieView archive
47	48	X2.7	1998/05/06	8210	07:58	08:09	08:20	MovieView archive
48	49	X2.6	2005/01/15	0720	22:25	23:02	23:31	MovieView archive
49	50	X2.6	2001/09/24	9632	09:32	10:38	11:09	MovieView archive

Tidying the top 50 solar flare dat

In [9]:

```
#Drop last column
table = table.drop('movie', axis=1)

#Combining the date and each of the three time columns into three datetime columns
table['start_datetime'] = pd.to_datetime(table['date'] + ' ' + table['start_time'])
table['max_datetime'] = pd.to_datetime(table['date'] + ' ' + table['max_time'])
table['end_datetime'] = pd.to_datetime(table['date'] + ' ' + table['end_time'])

#New table with only the specified columns in the right order
table = table[['rank', 'x_class', 'start_datetime', 'max_datetime', 'end_datetime', 'region']]

table.replace('-', 'NaN') #No regions missing
table
```

Out[9]:

	rank	x_class	start_datetime	max_datetime	end_datetime	region
0	1	X28+	2003-11-04 19:29:00	2003-11-04 19:53:00	2003-11-04 20:06:00	0486
1	2	X20+	2001-04-02 21:32:00	2001-04-02 21:51:00	2001-04-02 22:03:00	9393
2	3	X17.2+	2003-10-28 09:51:00	2003-10-28 11:10:00	2003-10-28 11:24:00	0486
3	4	X17+	2005-09-07 17:17:00	2005-09-07 17:40:00	2005-09-07 18:03:00	0808
4	5	X14.4	2001-04-15 13:19:00	2001-04-15 13:50:00	2001-04-15 13:55:00	9415
5	6	X10	2003-10-29 20:37:00	2003-10-29 20:49:00	2003-10-29 21:01:00	0486
6	7	X9.4	1997-11-06 11:49:00	1997-11-06 11:55:00	1997-11-06 12:01:00	8100
7	8	X9.3	2017-09-06 11:53:00	2017-09-06 12:02:00	2017-09-06 12:10:00	2673
8	9	X9	2006-12-05 10:18:00	2006-12-05 10:35:00	2006-12-05 10:45:00	0930
9	10	X8.3	2003-11-02 17:03:00	2003-11-02 17:25:00	2003-11-02 17:39:00	0486
10	11	X8.2	2017-09-10 15:35:00	2017-09-10 16:06:00	2017-09-10 16:31:00	2673

	rank	x_class	start_datetime	max_datetime	end_datetime	region
11	12	X7.1	2005-01-20 06:36:00	2005-01-20 07:01:00	2005-01-20 07:26:00	0720
12	13	X6.9	2011-08-09 07:48:00	2011-08-09 08:05:00	2011-08-09 08:08:00	1263
13	14	X6.5	2006-12-06 18:29:00	2006-12-06 18:47:00	2006-12-06 19:00:00	0930
14	15	X6.2	2005-09-09 19:13:00	2005-09-09 20:04:00	2005-09-09 20:36:00	0808
15	16	X6.2	2001-12-13 14:20:00	2001-12-13 14:30:00	2001-12-13 14:35:00	9733
16	17	X5.7	2000-07-14 10:03:00	2000-07-14 10:24:00	2000-07-14 10:43:00	9077
17	18	X5.6	2001-04-06 19:10:00	2001-04-06 19:21:00	2001-04-06 19:31:00	9415
18	19	X5.4	2012-03-07 00:02:00	2012-03-07 00:24:00	2012-03-07 00:40:00	1429
19	20	X5.4	2005-09-08 20:52:00	2005-09-08 21:06:00	2005-09-08 21:17:00	0808
20	21	X5.4	2003-10-23 08:19:00	2003-10-23 08:35:00	2003-10-23 08:49:00	0486
21	22	X5.3	2001-08-25 16:23:00	2001-08-25 16:45:00	2001-08-25 17:04:00	9591
22	23	X4.9	2014-02-25 00:39:00	2014-02-25 00:49:00	2014-02-25 01:03:00	1990
23	24	X4.9	1998-08-18 22:10:00	1998-08-18 22:19:00	1998-08-18 22:28:00	8307
24	25	X4.8	2002-07-23 00:18:00	2002-07-23 00:35:00	2002-07-23 00:47:00	0039
25	26	X4	2000-11-26 16:34:00	2000-11-26 16:48:00	2000-11-26 16:56:00	9236
26	27	X3.9	2003-11-03 09:43:00	2003-11-03 09:55:00	2003-11-03 10:19:00	0488
27	28	X3.9	1998-08-19 21:35:00	1998-08-19 21:45:00	1998-08-19 21:50:00	8307
28	29	X3.8	2005-01-17 06:59:00	2005-01-17 09:52:00	2005-01-17 10:07:00	0720
29	30	X3.7	1998-11-22 06:30:00	1998-11-22 06:42:00	1998-11-22 06:49:00	8384
30	31	X3.6	2005-09-09 09:42:00	2005-09-09 09:59:00	2005-09-09 10:08:00	0808
31	32	X3.6	2004-07-16 13:49:00	2004-07-16 13:55:00	2004-07-16 14:01:00	0649
32	33	X3.6	2003-05-28 00:17:00	2003-05-28 00:27:00	2003-05-28 00:39:00	0365
33	34	X3.4	2006-12-13 02:14:00	2006-12-13 02:40:00	2006-12-13 02:57:00	0930
34	35	X3.4	2001-12-28 20:02:00	2001-12-28 20:45:00	2001-12-28 21:32:00	9767
35	36	X3.3	2013-11-05 22:07:00	2013-11-05 22:12:00	2013-11-05 22:15:00	1890
36	37	X3.3	2002-07-20 21:04:00	2002-07-20 21:30:00	2002-07-20 21:54:00	0039
37	38	X3.3	1998-11-28 04:54:00	1998-11-28 05:52:00	1998-11-28 06:13:00	8395
38	39	X3.2	2013-05-14 00:00:00	2013-05-14 01:11:00	2013-05-14 01:20:00	1748
39	40	X3.1	2014-10-24 21:07:00	2014-10-24 21:41:00	2014-10-24 22:13:00	2192
40	41	X3.1	2002-08-24 00:49:00	2002-08-24 01:12:00	2002-08-24 01:31:00	0069
41	42	X3	2002-07-15 19:59:00	2002-07-15 20:08:00	2002-07-15 20:14:00	0030
42	43	X2.8	2013-05-13 15:48:00	2013-05-13 16:05:00	2013-05-13 16:16:00	1748
43	44	X2.8	2001-12-11 07:58:00	2001-12-11 08:08:00	2001-12-11 08:14:00	9733
44	45	X2.8	1998-08-18 08:14:00	1998-08-18 08:24:00	1998-08-18 08:32:00	8307
45	46	X2.7	2015-05-05 22:05:00	2015-05-05 22:11:00	2015-05-05 22:15:00	2339
46	47	X2.7	2003-11-03 01:09:00	2003-11-03 01:30:00	2003-11-03 01:45:00	0488
47	48	X2.7	1998-05-06 07:58:00	1998-05-06 08:09:00	1998-05-06 08:20:00	8210
48	49	X2.6	2005-01-15 22:25:00	2005-01-15 23:02:00	2005-01-15 23:31:00	0720
49	50	X2.6	2001-09-24 09:32:00	2001-09-24 10:38:00	2001-09-24 11:09:00	9632

Scraping the NASA data

```
In [10]: r = requests.get('http://cdaw.gsfc.nasa.gov/CME_list/radio/waves_type2.html')
root = BeautifulSoup(r.content, "html.parser")

In [11]: nasa_table = root.find('pre')
nasa_table

Out[11]: <pre>
NOTE: List includes DH type II bursts observed by Wind spacecraft,
but after STEREO launch on Oct 2006 the start and end times and
frequencies of bursts are determined using both Wind and STEREO
observations

=====
----- DH Type II ----- Flare ----- CME ----- Plots
Start      End      Frequency      Loc  NOAA  Imp  Date  Time  CPA  Width  Spd
(1)        (2)      (3)  (4)  (5)  (6)  (7)  (8)  (9)  (10) (11) (12) (13) (14) (15)
=====
```

1997/04/01 14:00 04/01 14:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/04/01/c2rdfif\_waves.html">8000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/04/01/c3rdfif\_waves.html">4000</a> S25E16 80  
26 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_04/jsmovies/1997\_04/19970401.151838.p073g/c2\_rdif.html">04/01</a> 15:18 74 79 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_04/httpng/19970401.151838.p073g.htm.html">312</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_04/sephxt\_19970401.png">PHXT</a>  
1997/04/07 14:30 04/07 17:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/04/07/c2rdfif\_waves.html">1000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/04/07/c3rdfif\_waves.html">1000</a> S28E19 80  
27 C6.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_04/jsmovies/1997\_04/19970407.142744.p123g/c2\_rdif.html">04/07</a> 14:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_04/httpng/19970407.142744.p123g.htm.html">878</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_04/sephxt\_19970407.png">PHXT</a>  
1997/05/12 05:15 05/14 16:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/05/12/c2rdfif\_waves.html">12000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/05/12/c3rdfif\_waves.html">80</a> N21W08 80  
38 C1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_05/jsmovies/1997\_05/19970512.053005.p264g/c2\_rdif.html">05/12</a> 05:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_05/httpng/19970512.053005.p264g.htm.html">464</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_05/sephxt\_19970512.png">PHXT</a>  
1997/05/21 20:20 05/21 22:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/05/21/c2rdfif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/05/21/c3rdfif\_waves.html">500</a> N05W12 80  
40 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_05/jsmovies/1997\_05/19970521.210053.p267g/c2\_rdif.html">05/21</a> 21:00 263 165 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_05/httpng/19970521.210053.p267g.htm.html">296</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_05/sephxt\_19970521.png">PHXT</a>  
1997/09/23 21:53 09/23 22:16 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/09/23/c2rdfif\_waves.html">6000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/09/23/c3rdfif\_waves.html">2000</a> S29E25 80  
88 C1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_09/jsmovies/1997\_09/19970923.220210.p116g/c2\_rdif.html">09/23</a> 22:02 133 155 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_09/httpng/19970923.220210.p116g.htm.html">712</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_09/sephxt\_19970923.png">PHXT</a>  
1997/11/03 05:15 11/03 12:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/03/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/03/c3rdfif\_waves.html">250</a> S20W13 81  
00 C8.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/jsmovies/1997\_11/19971103.052807.p233g/c2\_rdif.html">11/03</a> 05:28 240 109 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/httpng/19971103.052807.p233g.htm.html">227</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_11/sephxt\_19971103.png">PHXT</a>  
1997/11/03 10:30 11/03 11:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/03/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/03/c3rdfif\_waves.html">5000</a> S16W21 81  
00 M4.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/jsmovies/1997\_11/19971103.111105.p235g/c2\_rdif.html">11/03</a> 11:11 233 122 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/httpng/19971103.111105.p235g.htm.html">352</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_11/sephxt\_19971103.png">PHXT</a>  
1997/11/04 06:00 11/05 04:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/04/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/04/c3rdfif\_waves.html">100</a> S14W33 81  
00 X2.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/jsmovies/1997\_11/19971104.061005.p243g/c2\_rdif.html">11/04</a> 06:10 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/httpng/19971104.061005.p243g.htm.html">785</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_11/sephxt\_19971104.png">PHXT</a>  
1997/11/06 12:20 11/07 08:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/06/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/06/c3rdfif\_waves.html">100</a> S18W63 81  
00 X9.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/jsmovies/1997\_11/19971106.121041.p262g/c2\_rdif.html">11/06</a> 12:10 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/httpng/19971106.121041.p262g.htm.html">1556</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_11/sephxt\_19971106.png">PHXT</a>  
1997/11/27 13:30 11/27 14:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/27/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/11/27/c3rdfif\_waves.html">7000</a> N17E63 81  
13 X2.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/jsmovies/1997\_11/19971127.135655.p113g/c2\_rdif.html">11/27</a> 13:56 98 91 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_11/httpng/19971127.135655.p113g.htm.html">441</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_11/sephxt\_19971127.png">PHXT</a>  
1997/12/12 22:45 12/23 20:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/12/12/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1997/12/12/c3rdfif\_waves.html">8000</a> N25W52 81  
16 B9.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_12/jsmovies/1997\_12/19971212.026225.p283g/c2\_rdif.html">12/13</a> 00:26 278 73 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1997\_12/httpng/19971212.026225.p283g.htm.html">191</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1997\_12/sephxt\_19971212.png">PHXT</a>  
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41 C1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_01/jsmovies/1998\_01/19980125.152624.p111g/c2\_rdif.html">01/25</a> 15:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_01/httpng/19980125.152624.p111g.htm.html">56</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_01/sephxt\_19980125.png">PHXT</a>  
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94 M1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/jsmovies/1998\_04/19980420.100711.p278g/c2\_rdif.html">04/20</a> 10:07 284 165 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/httpng/19980420.100711.p278g.htm.html">1863</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_04/sephxt\_19980420.png">PHXT</a>  
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10 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/jsmovies/1998\_04/19980423.055522.p116g/c2\_rdif.html">04/23</a> 05:55 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/httpng/19980423.055522.p116g.htm.html">1691</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_04/sephxt\_19980423.png">PHXT</a>  
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10 C8.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/jsmovies/1998\_04/19980424.085519.p112g/c2\_rdif.html">04/24</a> 08:55 100 84 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/httpng/19980424.085519.p112g.htm.html">1184</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_04/sephxt\_19980424.png">PHXT</a> uncertain  
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10 X1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/jsmovies/1998\_04/19980427.085606.p079g/c2\_rdif.html">04/27</a> 08:56 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/httpng/19980427.085606.p079g.htm.html">1385</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_04/sephxt\_19980427.png">PHXT</a>  
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10 M6.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/jsmovies/1998\_04/19980429.165854.p336g/c2\_rdif.html">04/29</a> 16:58 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_04/httpng/19980429.165854.p336g.htm.html">1374</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_04/sephxt\_19980429.png">PHXT</a>  
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10 X1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980502.140612.p331g/c2\_rdif.html">05/02</a> 14:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980502.140612.p331g.htm.html">938</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980502.png">PHXT</a>  
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10 X2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980506.082913.p294g/c2\_rdif.html">05/06</a> 08:29 309 190 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980506.082913.p294g.htm.html">1099</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980506.png">PHXT</a>  
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10 M7.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980509.033558.p275g/c2\_rdif.html">05/09</a> 03:35 262 178 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980509.033558.p275g.htm.html">2331</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980509.png">PHXT</a>  
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14 B6.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980511.215522.p284g/c2\_rdif.html">05/11</a> 21:55 208 &gt;301 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980511.215522.p284g.htm.html">830</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980511.png">PHXT</a>  
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22 B5.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980519.102706.p311g/c2\_rdif.html">05/19</a> 10:27 268 139 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980519.102706.p311g.htm.html">801</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980519.png">PHXT</a>  
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26 C7.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/jsmovies/1998\_05/19980527.134542.p306g/c2\_rdif.html">05/27</a> 13:45 175 268 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_05/httpng/19980527.134542.p306g.htm.html">878</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_05/sephxt\_19980527.png">PHXT</a>  
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43 M1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/jsmovies/1998\_06/19980611.102838.p097g/c2\_rdif.html">06/11</a> 10:28 123 177 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/httpng/19980611.102838.p097g.htm.html">1223</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_06/sephxt\_19980611.png">PHXT</a>  
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32 M1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/jsmovies/1998\_06/19980616.182705.p278g/c2\_rdif.html">06/16</a> 18:27 341 281 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/httpng/19980616.182705.p278g.htm.html">1484</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_06/sephxt\_19980616.png">PHXT</a>  
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43 C2.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/jsmovies/1998\_06/19980622.050129.p254g/c2\_rdif.html">06/22</a> 05:01 265 59 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_06/httpng/19980622.050129.p254g.htm.html">206</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_06/sephxt\_19980622.png">PHXT</a>  
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73 C4.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_11/jsmovies/1998\_11/19981102.141810.p115g/c2\_rdif.html">11/02</a> 14:18 116 169 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_11/httpng/19981102.141810.p115g.htm.html">661</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_11/sephxt\_19981102.png">PHXT</a>  
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75 M8.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_11/jsmovies/1998\_11/19981105.204402.p300s/c2\_rdif.html">11/05</a> 20:44 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1998\_11/httpng/19981105.204402.p300s.htm.html">1118</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1998\_11/sephxt\_19981105.png">PHXT</a>  
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25 M4.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_05/jsmovies/1999\_05/19990503.060605.p088s/c2\_rdif.html">05/03</a> 06:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_05/htpng/19990503.060605.p088s.htm.html">1584</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_05/sephxt.19990503.png">PHTX</a>  
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---- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_05/jsmovies/1999\_05/19990527.110605.p341g/c2\_rdif.html">05/27</a> 11:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_05/htpng/19990527.110605.p341g.htm.html">1691</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_05/sephxt.19990527.png">PHTX</a>  
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---- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990601.193735.p359s/c2\_rdif.html">06/01</a> 19:37 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990601.193735.p359s.htm.html">1772</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990601.png">PHTX</a>  
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52 M3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990604.072654.p287s/c2\_rdif.html">06/04</a> 07:26 289 150 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990604.072654.p287s.htm.html">2230</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990604.png">PHTX</a>  
1999/06/11 11:45 06/11 17:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/11/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/11/c3rdif\_waves.html">400</a> N38E90 ---  
-- C8.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990611.112605.p038s/c2\_rdif.html">06/11</a> 11:26 35 &gt;181 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990611.112605.p038s.htm.html">1569</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990611.png">PHTX</a>  
1999/06/22 18:25 06/22 18:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/22/c2rdif\_waves.html">3000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/22/c3rdif\_waves.html">2000</a> N22E37 85  
92 M1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990622.185405.p040s/c2\_rdif.html">06/22</a> 18:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990622.185405.p040s.htm.html">1133</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990622.png">PHTX</a>  
1999/06/23 05:50 06/23 07:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/23/c2rdif\_waves.html">12000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/23/c3rdif\_waves.html">2000</a> BACK ---  
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96 M1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990623.073124.p046s/c2\_rdif.html">06/23</a> 07:31 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990623.073124.p046s.htm.html">1006</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990623.png">PHTX</a> uncertain  
1999/06/28 21:03 06/28 21:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/28/c2rdif\_waves.html">3500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/28/c3rdif\_waves.html">1500</a> N22W44 85  
92 C3.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990628.213008.p328s/c2\_rdif.html">06/28</a> 21:30 336 &gt;184 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990628.213008.p328s.htm.html">903</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990628.png">PHTX</a>  
1999/06/29 19:20 06/29 19:55 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/29/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/06/29/c3rdif\_waves.html">2000</a> S14E01 86  
03 M1.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/jsmovies/1999\_06/19990629.195407.p320s/c2\_rdif.html">06/29</a> 19:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_06/htpng/19990629.195407.p320s.htm.html">560</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_06/sephxt.19990629.png">PHTX</a>  
1999/07/05 03:10 07/05 04:05 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/07/05/c2rdif\_waves.html">2000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/07/05/c3rdif\_waves.html">1000</a> SW90B 86  
03 C7.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_07/jsmovies/1999\_07/19990705.025405.p302g/c2\_rdif.html">07/05</a> 02:54 284 190 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_07/htpng/19990705.025405.p302g.htm.html">670</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_07/sephxt.19990705.png">PHTX</a>  
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74 X1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_08/jsmovies/1999\_08/19990828.182624.p221g/c2\_rdif.html">08/28</a> 18:26 120 245 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_08/htpng/19990828.182624.p221g.htm.html">462</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_08/sephxt.19990828.png">PHTX</a>  
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79 C2.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_09/jsmovies/1999\_09/19990903.000606.p182g/c2\_rdif.html">09/03</a> 00:06 184 175 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_09/htpng/19990903.000606.p182g.htm.html">512</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_09/sephxt.19990903.png">PHTX</a>  
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31 X1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_10/jsmovies/1999\_10/19991014.092605.p061g/c2\_rdif.html">10/14</a> 09:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_10/htpng/19991014.092605.p061g.htm.html">1250</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_10/sephxt.19991014.png">PHTX</a>  
1999/10/17 23:27 10/17 23:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/10/17/c2rdif\_waves.html">1500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/1999/10/17/c3rdif\_waves.html">10000</a> N03E38 ---  
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66 M3.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_11/jsmovies/1999\_11/19991116.030605.p086g/c2\_rdif.html">11/16</a> 03:06 81 98 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_11/htpng/19991116.030605.p086g.htm.html">636</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_11/sephxt.19991116.png">PHTX</a>  
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59 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_11/jsmovies/1999\_11/19991116.053005.p260g/c2\_rdif.html">11/16</a> 05:30 285 129 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/1999\_11/htpng/19991116.053005.p260g.htm.html">712</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/1999\_11/sephxt.19991116.png">PHTX</a>  
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31 M3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_01/jsmovies/2000\_01/20000118.175405.p045s/c2\_rdif.html">01/18</a> 17:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_01/htpng/20000118.175405.p045s.htm.html">739</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_01/sephxt.20000118.png">PHTX</a>  
2000/01/28 20:20 01/28 20:24 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/01/28/c2rdif\_waves.html">2200</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/01/28/c3rdif\_waves.html">1100</a> S31W17 88  
41 C4.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_01/jsmovies/2000\_01/20000128.201241.p195s/c2\_rdif.html">01/28</a> 20:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_01/htpng/20000128.201241.p195s.htm.html">1177</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_01/sephxt.20000128.png">PHTX</a>  
2000/02/05 19:30 02/05 19:38 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/02/05/c2rdif\_waves.html">5800</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/02/05/c3rdif\_waves.html">2900</a> N26E52 88  
58 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/jsmovies/2000\_02/20000205.195418.p061s/c2\_rdif.html">02/05</a> 19:54 60 76 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/htpng/20000205.195418.p061s.htm.html">632</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_02/sephxt.20000205.png">PHTX</a>  
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58 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/jsmovies/2000\_02/20000208.093005.p050s/c2\_rdif.html">02/08</a> 09:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/htpng/20000208.093005.p050s.htm.html">1079</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_02/sephxt.20000208.png">PHTX</a>  
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58 C7.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/jsmovies/2000\_02/20000210.023005.p340s/c2\_rdif.html">02/10</a> 02:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/htpng/20000210.023005.p340s.htm.html">944</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_02/sephxt.20000210.png">PHTX</a>  
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58 M1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/jsmovies/2000\_02/20000212.043120.p020s/c2\_rdif.html">02/12</a> 04:31 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/htpng/20000212.043120.p020s.htm.html">1107</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_02/sephxt.20000212.png">PHTX</a>  
2000/02/17 20:42 02/18 22:12 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/02/17/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/02/17/c3rdif\_waves.html">100</a> S29E07 88  
72 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/jsmovies/2000\_02/20000217.213008.p184s/c2\_rdif.html">02/17</a> 21:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_02/htpng/20000217.213008.p184s.htm.html">728</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_02/sephxt.20000217.png">PHTX</a>  
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82 M6.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/jsmovies/2000\_03/20000302.135405.p221s/c2\_rdif.html">03/02</a> 13:54 235 76 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/htpng/20000302.135405.p221s.htm.html">835</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_03/sephxt.20000302.png">PHTX</a>  
2000/03/07 16:24 03/07 16:48 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/03/07/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/03/07/c3rdif\_waves.html">4500</a> S22E77 89  
06 M1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/jsmovies/2000\_03/20000307.163005.p114s/c2\_rdif.html">03/07</a> 16:30 120 108 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/htpng/20000307.163005.p114s.htm.html">644</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_03/sephxt.20000307.png">PHTX</a>  
2000/03/27 06:56 03/27 06:58 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/03/27/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/03/27/c3rdif\_waves.html">10000</a> S00E90 89  
32 C2.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/jsmovies/2000\_03/20000327.073120.p115s/c2\_rdif.html">03/27</a> 07:31 129 90 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_03/htpng/20000327.073120.p115s.htm.html">487</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_03/sephxt.20000327.png">PHTX</a>  
2000/04/04 15:45 04/04 16:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/04/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/04/c3rdif\_waves.html">9000</a> N16W66 89  
33 C9.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/jsmovies/2000\_04/20000404.163237.p265s/c2\_rdif.html">04/04</a> 16:32 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/htpng/20000404.163237.p265s.htm.html">1188</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_04/sephxt.20000404.png">PHTX</a>  
2000/04/09 23:15 04/09 23:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/09/c2rdif\_waves.html">4500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/09/c3rdif\_waves.html">1000</a> S14W01 89  
48 M3.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/jsmovies/2000\_04/20000410.003005.p225s/c2\_rdif.html">04/10</a> 00:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/htpng/20000410.003005.p225s.htm.html">409</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_04/sephxt.20000409.png">PHTX</a>

2000/04/18 15:00 04/18 16:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/18/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/04/18/c3rdif\_waves.html">6000</a> S50W30 al tr FILA <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/jsmovies/2000\_04/20000418.145405.p181s/c2\_rdif.html">04/18</a> 14:54 195 105 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_04/htpng/20000418.145405.p181s.http.html">669</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_04/sephxt\_20000418.png">PHTX</a> 2000/05/04 11:10 05/04 13:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/04/c2rdif\_waves.html">6500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/04/c3rdif\_waves.html">1000</a> S17W87 89 200 M6.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/jsmovies/2000\_05/20000504.112605.p258s/c2\_rdif.html">05/04</a> 11:26 235 &gt;170 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/htpng/20000504.112605.p258s.http.html">1404</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_05/sephxt\_20000504.png">PHTX</a> 2000/05/05 16:35 05/05 17:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/05/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/05/c3rdif\_waves.html">2500</a> S17W87 89 200 M1.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/jsmovies/2000\_05/20000505.155005.p265s/c2\_rdif.html">05/05</a> 15:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/htpng/20000505.155005.p265s.http.html">1594</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_05/sephxt\_20000505.png">PHTX</a> 2000/05/07 21:15 05/07 24:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/07/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/07/c3rdif\_waves.html">500</a> W90b --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/jsmovies/2000\_05/20000507.205007.p269s/c2\_rdif.html">05/07</a> 20:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/htpng/20000507.205007.p269s.http.html">1781</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_05/sephxt\_20000507.png">PHTX</a> 2000/05/12 23:34 05/12 23:42 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/12/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/12/c3rdif\_waves.html">7000</a> E90b --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/jsmovies/2000\_05/20000512.232605.p072s/c2\_rdif.html">05/12</a> 23:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/htpng/20000512.232605.p072s.http.html">2604</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_05/sephxt\_20000512.png">PHTX</a> 2000/05/15 16:47 05/16 14:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/15/c2rdif\_waves.html">4800</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/05/15/c3rdif\_waves.html">40</a> S24W67 89 93 C7.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/jsmovies/2000\_05/20000515.162605.p239s/c2\_rdif.html">05/15</a> 16:26 257 &gt;165 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_05/htpng/20000515.162605.p239s.http.html">1212</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_05/sephxt\_20000515.png">PHTX</a> 2000/06/02 22:00 06/02 22:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/02/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/02/c3rdif\_waves.html">8000</a> N16E60 90 26 M7.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000602.213005.p062s/c2\_rdif.html">06/02</a> 21:30 69 104 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000602.213005.p062s.http.html">547</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000602.png">PHTX</a> 2000/06/06 15:20 06/08 09:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/06/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/06/c3rdif\_waves.html">40</a> N20E18 90 26 X2.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000606.155405.p047s/c2\_rdif.html">06/06</a> 15:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000606.155405.p047s.http.html">1119</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000606.png">PHTX</a> 2000/06/10 17:15 06/10 18:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/10/c2rdif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/10/c3rdif\_waves.html">1000</a> N22W38 90 26 M5.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000610.170805.p307s/c2\_rdif.html">06/10</a> 17:08 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000610.170805.p307s.http.html">1108</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000610.png">PHTX</a> 2000/06/15 19:52 06/15 19:56 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/15/c2rdif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/15/c3rdif\_waves.html">2500</a> N20W65 90 41 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000615.200605.p290s/c2\_rdif.html">06/15</a> 20:06 298 116 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000615.200605.p290s.http.html">1081</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000615.png">PHTX</a> 2000/06/17 03:00 06/17 04:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/17/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/17/c3rdif\_waves.html">1000</a> N22W72 90 41 M3.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000617.032813.p301s/c2\_rdif.html">06/17</a> 03:28 298 133 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000617.032813.p301s.http.html">857</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000617.png">PHTX</a> 2000/06/23 14:40 06/23 15:05 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/23/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/23/c3rdif\_waves.html">2000</a> N26W72 90 42 M3.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000623.145405.p293s/c2\_rdif.html">06/23</a> 14:54 282 &gt;198 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000623.145405.p293s.http.html">984</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_06/sephxt\_20000623.png">PHTX</a> 2000/06/25 08:10 06/25 09:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/25/c2rdif\_waves.html">12000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/06/25/c3rdif\_waves.html">2500</a> N16W55 90 46 M1.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/jsmovies/2000\_06/20000625.075413.p274s/c2\_rdif.html">06/25</a> 07:54 262 165 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_06/htpng/20000625.075413.p274s.http.html">1617</a> <a 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href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_07/jsmovies/2000\_07/20000711.132723.p063s/c2\_rdif.html">07/11</a> 13:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_07/htpng/20000711.132723.p063s.http.html">1078</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_07/sephxt\_20000711.png">PHTX</a> 2000/07/12 20:05 07/12 20:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/07/12/c2rdif\_waves.html">6000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/07/12/c3rdif\_waves.html">1000</a> N19W61 90 70 M1.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_07/jsmovies/2000\_07/20000712.203005.p281s/c2\_rdif.html">07/12</a> 20:30 281 101 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_07/htpng/20000712.203005.p281s.http.html">820</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_07/sephxt\_20000712.png">PHTX</a> 2000/07/14 10:30 07/15 14:30 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href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_07/htpng/20000722.115405.p275s.http.html">1230</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_07/sephxt\_20000722.png">PHTX</a> 2000/08/11 11:35 08/11 11:59 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/08/11/c2rdif\_waves.html">2800</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/08/11/c3rdif\_waves.html">2000</a> N9W9b --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_08/jsmovies/2000\_08/20000811.073125.p283g/c2\_rdif.html">08/11</a> 07:31 273 70 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_08/htpng/20000811.073125.p283g.http.html">1071</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_08/sephxt\_20000811.png">PHTX</a> uncertain 2000/09/12 12:00 09/13 12:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/12/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/12/c3rdif\_waves.html">60</a> S19W06 D SF M1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/jsmovies/2000\_09/20000912.115405.p220g/c2\_rdif.html">09/12</a> 11:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/htpng/20000912.115405.p220g.http.html">1550</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_09/sephxt\_20000912.png">PHTX</a> 2000/09/12 18:15 09/12 19:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/12/c2rdif\_waves.html">2000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/12/c3rdif\_waves.html">1000</a> E9N0b --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/jsmovies/2000\_09/20000912.173005.p039g/c2\_rdif.html">09/12</a> 17:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/htpng/20000912.173005.p039g.http.html">1053</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_09/sephxt\_20000912.png">PHTX</a> 2000/09/16 04:30 09/16 10:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/16/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/16/c3rdif\_waves.html">400</a> N14W07 91 65 M5.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/jsmovies/2000\_09/20000916.051814.p003g/c2\_rdif.html">09/16</a> 05:18 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/htpng/20000916.051814.p003g.http.html">1215</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_09/sephxt\_20000916.png">PHTX</a> 2000/09/19 08:45 09/19 10:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/19/c2rdif\_waves.html">12000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/19/c3rdif\_waves.html">1500</a> N14W46 91 65 M5.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/jsmovies/2000\_09/20000919.085005.p292g/c2\_rdif.html">09/19</a> 08:50 283 76 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/htpng/20000919.085005.p292g.http.html">766</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_09/sephxt\_20000919.png">PHTX</a> 2000/09/25 02:20 09/25 03:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/25/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/09/25/c3rdif\_waves.html">1000</a> N09W18 91 69 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/jsmovies/2000\_09/20000925.025005.p202g/c2\_rdif.html">09/25</a> 02:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_09/htpng/20000925.025005.p202g.http.html">587</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_09/sephxt\_20000925.png">PHTX</a> 2000/10/16 07:10 10/16 08:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/10/16/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/10/16/c3rdif\_waves.html">1000</a> N03W90 91 82 M2.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_10/jsmovies/2000\_10/20001016.072721.p270g/c2\_rdif.html">10/16</a> 07:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_10/htpng/20001016.072721.p270g.http.html">1336</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_10/sephxt\_20001016.png">PHTX</a> 2000/10/25 09:30 10/25 24:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/10/25/c2rdif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/10/25/c3rdif\_waves.html">300</a> N09W63 91 99 C4.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_10/jsmovies/2000\_10/20001025.082605.p275g/c2\_rdif.html">10/25</a> 08:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_10/htpng/20001025.082605.p275g.http.html">770</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_10/sephxt\_20001025.png">PHTX</a> 2000/11/03 18:35 11/03 18:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/03/c2rdif\_waves.html">4000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/03/c3rdif\_waves.html">2500</a> N02W02 92 13 C3.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001103.182606.p057g/c2\_rdif.html">11/03</a> 18:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001103.182606.p057g.http.html">291</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001103.png">PHTX</a> 2000/11/08 23:20 11/09 12:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/08/c2rdif\_waves.html">4000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/08/c3rdif\_waves.html">200</a> N10W77 92 13 H7.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001108.230605.p299s/c2\_rdif.html">11/08</a> 23:06 271 &gt;170 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001108.230605.p299s.http.html">38</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001108.png">PHTX</a> 2000/11/09 16:15 11/11 04:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/09/c2rdif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/09/c3rdif\_waves.html">40</a> S11E10 92 21 M1.0 --- --- --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/09/sephxt/2000\_11/sephxt\_20001109.png">PHTX</a> CME not measurable due to the Snow Storm 2000/11/12 14:25 11/12 14:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/12/c2rdif\_waves.html">3000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/12/c3rdif\_waves.html">2000</a> S14E05 92 27 C4.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001112.145005.p274g/c2\_rdif.html">11/12</a> 14:50 257 50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001112.145005.p274g.http.html">581</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001112.png">PHTX</a> 2000/11/23 08:16 11/23 08:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/23/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/23/c3rdif\_waves.html">9000</a> S26W40 92 38 C5.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001123.060605.p215g/c2\_rdif.html">11/23</a> 06:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001123.060605.p215g.http.html">492</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001123.png">PHTX</a> 2000/11/23 21:00 11/23 21:06 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/23/c2rdif\_waves.html">3500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/23/c3rdif\_waves.html">3000</a> S20E60 92 37 C7.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001123.213008.p144g/c2\_rdif.html">11/23</a> 21:30 124 148 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001123.213008.p144g.http.html">1198</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001123.png">PHTX</a> 2000/11/24 05:10 11/24 15:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/24/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/24/c3rdif\_waves.html">100</a> N20W05 92 38 X2.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/jsmovies/2000\_11/20001124.053005.p313s/c2\_rdif.html">11/24</a> 05:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2000\_11/htpng/20001124.053005.p313s.http.html">1289</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2000\_11/sephxt\_20001124.png">PHTX</a> 2000/11/24 15:25 11/24 22:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/24/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2000/11/24/c3rdif\_waves.html">200</a> N22W07 92

7/24

8/24



2002/02/21 12:35 02/21 12:50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/02/21/c2rdfif\_waves.html">4000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/02/21/c3rdfif\_waves.html">1500</a> N16W79 98  
5 M23.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_02/jsmovies/2002\_02/20020221.125405.p284g/c2\_rdif.html">02/21</a> 12:54 275 108 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_02/htpng/20020221.125405.p284g.http.html">02/21</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_02/sephxt\_20020221.png">PHXT</a>  
2002/03/11 00:00 03/11 00:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/11/c3rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/11/c3rdfif\_waves.html">8000</a> S11890 98  
66 M2.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020310.230655.p123g/c2\_rdif.html">03/10</a> 23:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020310.230655.p123g.http.html">1429</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020311.png">PHXT</a>  
2002/03/12 00:00 03/12 02:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/12/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/12/c3rdfif\_waves.html">2200</a> S15845 ---  
-- M5.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020311.233005.p118n/c2\_rdif.html">03/11</a> 23:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020311.233005.p118n.http.html">950</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020312.png">PHXT</a> broad feature  
2002/03/15 22:45 03/15 23:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/15/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/15/c3rdfif\_waves.html">6000</a> S08W03 98  
66 M2.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020315.230606.p309g/c2\_rdif.html">03/15</a> 23:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020315.230606.p309g.http.html">957</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020315.png">PHXT</a>  
2002/03/17 06:00 03/17 06:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/17/c2rdfif\_waves.html">3000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/17/c3rdfif\_waves.html">1000</a> S20E24 98  
71 C3.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020317.040605.p158n/c2\_rdif.html">03/17</a> 04:06 141 56 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020317.040605.p158n.http.html">658</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020317.png">PHXT</a>  
2002/03/18 02:55 03/18 05:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/18/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/18/c3rdfif\_waves.html">1000</a> S10W30 98  
73 M1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020318.025406.p311n/c2\_rdif.html">03/18</a> 02:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020318.025406.p311n.http.html">989</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020318.png">PHXT</a>  
2002/03/22 11:30 03/22 12:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/22/c2rdfif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/22/c3rdfif\_waves.html">5000</a> S09W90 98  
66 M1.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020322.110605.p259n/c2\_rdif.html">03/22</a> 11:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020322.110605.p259n.http.html">1750</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020322.png">PHXT</a>  
2002/03/22 13:10 03/22 13:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/22/c2rdfif\_waves.html">3000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/03/22/c3rdfif\_waves.html">2000</a> S00W90 98  
66 M1.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/jsmovies/2002\_03/20020322.123006.p249g/c2\_rdif.html">03/22</a> 12:30 243 120 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_03/htpng/20020322.123006.p249g.http.html">875</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_03/sephxt\_20020322.png">PHXT</a>  
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93 M8.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020410.132723.p011s/c2\_rdif.html">04/10</a> 13:27 340 159 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020410.132723.p011s.http.html">650</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020410.png">PHXT</a>  
2002/04/14 07:50 04/14 08:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/14/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/14/c3rdfif\_waves.html">8000</a> N19W57 98  
93 C9.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020414.075007.p330s/c2\_rdif.html">04/14</a> 07:50 323 76 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020414.075007.p330s.http.html">757</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020414.png">PHXT</a>  
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06 M1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020415.035005.p198s/c2\_rdif.html">04/15</a> 03:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020415.035005.p198s.http.html">720</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020415.png">PHXT</a>  
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06 M2.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020417.082605.p292g/c2\_rdif.html">04/17</a> 08:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020417.082605.p292g.http.html">1244</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020417.png">PHXT</a>  
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06 X1.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020421.012720.p282g/c2\_rdif.html">04/21</a> 01:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020421.012720.p282g.http.html">2393</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020421.png">PHXT</a>  
2002/04/30 14:15 04/30 14:23 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/30/c2rdfif\_waves.html">4000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/30/c3rdfif\_waves.html">2500</a> S16877 99  
34 C3.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020430.142605.p106g/c2\_rdif.html">04/30</a> 14:26 92 90 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020430.142605.p106g.http.html">618</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020430.png">PHXT</a>  
2002/04/30 22:30 04/30 23:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/30/c2rdfif\_waves.html">2000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/04/30/c3rdfif\_waves.html">500</a> W90b ---  
--- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/jsmovies/2002\_04/20020430.232605.p266g/c2\_rdif.html">04/30</a> 23:26 254 199 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_04/htpng/20020430.232605.p266g.http.html">1103</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_04/sephxt\_20020430.png">PHXT</a> uncertain  
2002/05/02 23:50 05/03 00:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/02/c2rdfif\_waves.html">2800</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/02/c3rdfif\_waves.html">900</a> E90b 99  
37 ---- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/jsmovies/2002\_05/20020502.231813.p109s/c2\_rdif.html">05/02</a> 23:18 119 99 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/htpng/20020502.231813.p109s.http.html">902</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_05/sephxt\_20020502.png">PHXT</a> uncertain  
2002/05/16 01:50 05/16 03:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/16/c2rdfif\_waves.html">9000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/16/c3rdfif\_waves.html">2000</a> S22E01 99  
48 C4.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/jsmovies/2002\_05/20020516.005005.p158s/c2\_rdif.html">05/16</a> 00:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/htpng/20020516.005005.p158s.http.html">9600</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_05/sephxt\_20020516.png">PHXT</a>  
2002/05/22 00:00 05/22 00:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/22/c2rdfif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/22/c3rdfif\_waves.html">8000</a> S25W64 99  
48 C9.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/jsmovies/2002\_05/20020522.000606.p272g/c2\_rdif.html">05/22</a> 00:06 230 186 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/htpng/20020522.000606.p272g.http.html">1246</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_05/sephxt\_20020522.png">PHXT</a>  
2002/05/27 12:50 05/27 13:50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/27/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/05/27/c3rdfif\_waves.html">5000</a> N18E18 99  
67 C3.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/jsmovies/2002\_05/20020527.132718.p035s/c2\_rdif.html">05/27</a> 13:27 49 &gt;161 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_05/htpng/20020527.132718.p035s.http.html">1106</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_05/sephxt\_20020527.png">PHXT</a>  
2002/07/07 11:35 07/07 20:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/07/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/07/c3rdfif\_waves.html">200</a> S19W90 100  
17 M1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020707.113031.p260s/c2\_rdif.html">07/07</a> 11:30 277 &gt;228 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020707.113031.p260s.http.html">1423</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020707.png">PHXT</a>  
31 p260s.http.html>1423</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/09/c2rdfif\_waves.html">1000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/09/c3rdfif\_waves.html">650</a> W90b ---  
2002/07/09 19:46 07/09 20:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020709.193148.p240s/c2\_rdif.html">07/09</a> 19:31 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020709.193148.p240s.http.html">1076</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020709.png">PHXT</a>  
2002/07/15 21:15 07/16 05:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/15/c2rdfif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/15/c3rdfif\_waves.html">175</a> N19W01 100  
30 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020715.213005.p045s/c2\_rdif.html">07/15</a> 21:30 14 &gt;188 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020715.213005.p045s.http.html">1300</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020715.png">PHXT</a>  
2002/07/17 07:30 07/17 07:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/17/c2rdfif\_waves.html">3500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/17/c3rdfif\_waves.html">2000</a> N21W17 100  
30 M8.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020717.073147.p0329g/c2\_rdif.html">07/17</a> 07:31 36 177 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020717.073147.p0329g.http.html">716</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020717.png">PHXT</a>  
2002/07/18 07:55 07/18 08:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/18/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/18/c3rdfif\_waves.html">1500</a> N19W30 100  
30 X1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020718.080608.p354s/c2\_rdif.html">07/18</a> 08:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020718.080608.p354s.http.html">1099</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020718.png">PHXT</a>  
2002/07/18 20:55 07/18 21:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/18/c2rdfif\_waves.html">6000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/18/c3rdfif\_waves.html">3000</a> E90b 100  
36 C3.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020718.193147.p104s/c2\_rdif.html">07/18</a> 19:31 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020718.193147.p104s.http.html">2191</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020718.png">PHXT</a>  
2002/07/19 16:40 07/19 17:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/19/c2rdfif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/19/c3rdfif\_waves.html">1000</a> S15E90 ---  
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2002/07/20 21:30 07/20 22:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/20/c2rdfif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/20/c3rdfif\_waves.html">2000</a> S13E90 100  
39 X3.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020720.220609.p091s/c2\_rdif.html">07/20</a> 22:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020720.220609.p091s.http.html">1941</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020720.png">PHXT</a>  
2002/07/23 00:50 07/23 04:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/23/c2rdfif\_waves.html">11000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/23/c3rdfif\_waves.html">400</a> S13E72 100  
39 X4.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020723.004205.p087s/c2\_rdif.html">07/23</a> 00:42 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020723.004205.p087s.http.html">228</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020723.png">PHXT</a>  
2002/07/26 22:27 07/26 23:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/26/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/26/c3rdfif\_waves.html">2000</a> S19E26 100  
39 M8.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020726.220610.p172s/c2\_rdif.html">07/26</a> 22:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020726.220610.p172s.http.html">818</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020726.png">PHXT</a>  
2002/07/29 12:10 07/29 12:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/29/c2rdfif\_waves.html">4200</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/07/29/c3rdfif\_waves.html">1300</a> N10W15 FI  
1A ---- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/jsmovies/2002\_07/20020729.120733.p301g/c2\_rdif.html">07/29</a> 12:07 13 &gt;236 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_07/htpng/20020729.120733.p301g.http.html">562</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_07/sephxt\_20020729.png">PHXT</a>  
2002/08/03 19:20 08/03 20:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/03/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/03/c3rdfif\_waves.html">2000</a> S16W76 100  
39 X1.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020803.193149.p272s/c2\_rdif.html">08/03</a> 19:31 259 138 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpng/20020803.193149.p272s.http.html">1150</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020803.png">PHXT</a>  
2002/08/14 02:20 08/14 24:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/14/c2rdfif\_waves.html">1000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/14/c3rdfif\_waves.html">30</a> N09W54 100  
61 M2.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020814.023005.p282s/c2\_rdif.html">08/14</a> 02:30 297 133 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpng/20020814.023005.p282s.http.html">1309</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020814.png">PHXT</a>  
2002/08/16 06:15 08/16 09:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/16/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/16/c3rdfif\_waves.html">300</a> N07W83 100  
61 M2.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020816.060605.p271g/c2\_rdif.html">08/16</a> 06:06 293 162 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpng/20020816.060605.p271g.http.html">1378</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020816.png">PHXT</a>

2002/08/16 12:20 08/17 21:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/16/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/16/c3rdfif\_waves.html">60</a> S14E20 100  
p129 M5.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020816.123005.p121g/c2\_rdif.html">08/16</a> 12:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpnp/20020816.123005.  
p121g.http.html">1595</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020816.png">PHTX</a>  
2002/08/22 05:22 08/22 04:13 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/22/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/22/c3rdfif\_waves.html">3500</a> S07M62 ---  
M5.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020822.020606.p231g/c2\_rdif.html">08/22</a> 04:20 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpnp/20020822.020606.  
p231g.http.html">998</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020822.png">PHTX</a> Faint, broad feature  
2002/08/24 01:45 08/24 03:25 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/24/c2rdfif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/08/24/c3rdfif\_waves.html">400</a> S02W81 100  
69 X3.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/jsmovies/2002\_08/20020824.012719.p270g/c2\_rdif.html">08/24</a> 01:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_08/htpnp/20020824.012719.  
p270g.http.html">1913</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_08/sephxt\_20020824.png">PHTX</a>  
2002/09/05 16:55 09/07 16:22 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/09/05/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/09/05/c3rdfif\_waves.html">30</a> N09E28 101  
C02 C5.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/jsmovies/2002\_09/20020905.165406.p114g/c2\_rdif.html">09/05</a> 16:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/htpnp/20020905.165406.  
p114g.http.html">1748</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_09/sephxt\_20020905.png">PHTX</a>  
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05 M2.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/jsmovies/2002\_09/20020910.153053.p133n/c2\_rdif.html">09/10</a> 15:30 127 38 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/htpnp/20020910.153053.  
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2002/09/27 13:35 09/27 14:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/09/27/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/09/27/c3rdfif\_waves.html">8000</a> N13E45 101  
C01 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/jsmovies/2002\_09/20020927.135612.p052s/c2\_rdif.html">09/27</a> 13:56 64 64 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_09/htpnp/20020927.135612.  
p052s.http.html">591</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_09/sephxt\_20020927.png">PHTX</a>  
2002/10/13 18:10 10/13 18:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/10/13/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2002/10/13/c3rdfif\_waves.html">4000</a> S07W54 101  
50 C4.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_10/jsmovies/2002\_10/20021013.193520.p265g/c2\_rdif.html">10/13</a> 19:35 252 141 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_10/htpnp/20021013.193520.  
p265g.http.html">373</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_10/sephxt\_20021013.png">PHTX</a>  
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59 M2.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_10/jsmovies/2002\_10/20021013.235405.p083g/c2\_rdif.html">10/13</a> 23:54 107 264 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_10/htpnp/20021013.235405.  
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89 M2.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_11/jsmovies/2002\_11/20021110.033011.p227g/c2\_rdif.html">11/10</a> 03:30 203 282 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_11/htpnp/20021110.033011.  
p227g.http.html">167</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_11/sephxt\_20021110.png">PHTX</a>  
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80 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_11/jsmovies/2002\_11/20021111.155405.p227s/c2\_rdif.html">11/11</a> 15:54 212 93 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_11/htpnp/20021111.155405.  
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p008s.http.html">1077</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2002\_11/sephxt\_20021124.png">PHTX</a>  
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29 M2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_12/jsmovies/2002\_12/20021219.220605.p300g/c2\_rdif.html">12/19</a> 22:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2002\_12/htpnp/20021219.220605.  
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14 X1.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_03/jsmovies/2003\_03/20030318.123005.p266g/c2\_rdif.html">03/18</a> 12:30 263 209 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_03/htpnp/20030318.123005.  
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65 X1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/jsmovies/2003\_05/20030527.235005.p067g/c2\_rdif.html">05/27</a> 23:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/htpnp/20030527.235005.  
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65 X3.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/jsmovies/2003\_05/20030528.005005.p292g/c2\_rdif.html">05/28</a> 00:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/htpnp/20030528.005005.  
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65 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/jsmovies/2003\_05/20030529.012712.p260g/c2\_rdif.html">05/29</a> 01:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_05/htpnp/20030529.012712.  
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86 X1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_06/jsmovies/2003\_06/20030615.235405.p067g/c2\_rdif.html">06/15</a> 23:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_06/htpnp/20030615.235405.  
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86 M6.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_06/jsmovies/2003\_06/20030617.231814.p117g/c2\_rdif.html">06/17</a> 23:18 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_06/htpnp/20030617.231814.  
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97 M3.6 --- --- --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_07/sephxt\_20030710.png">PHTX</a> LASCO DATA GAP  
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31 M2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_08/jsmovies/2003\_08/20030819.103023.p275s/c2\_rdif.html">08/19</a> 10:30 262 111 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_08/htpnp/20030819.103023.  
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86 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/jsmovies/2003\_10/20031026.065430.p056s/c2\_rdif.html">10/26</a> 06:54 108 87 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/htpnp/20031026.065430.  
p056s.http.html">1371</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_10/sephxt\_20031026.png">PHTX</a>  
2003/10/26 17:45 10/26 19:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2003/10/26/c2rdfif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2003/10/26/c3rdfif\_waves.html">1500</a> C N02W38 104

84 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/jsmovies/2003\_10/20031026.175405.c2\_rdif.html">10/26/<a/> 17:54 270 &gt;171 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/htpng/20031026.175405.c2\_rdif.html">1537</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_10/sephxt\_20031026.png">PHTX</a>  
05.p235s.http.html">1537</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2003\_10/28/c3rdif\_waves.html">40</a> S16808 104  
86 X17. <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/jsmovies/2003\_10/20031028.113005.p015s.c2\_rdif.html">10/28/<a/> 11:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/htpng/20031028.113005.p015s.http.html">2459</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_10/sephxt\_20031028.png">PHTX</a>  
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86 X10. <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/jsmovies/2003\_10/20031029.205405.p190s/c2\_rdif.html">10/29/<a/> 20:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_10/htpng/20031029.205405.p190s.http.html">2029</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_10/sephxt\_20031029.png">PHTX</a>  
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86 M3.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031101.230653.p224s/c2\_rdif.html">11/01/<a/> 23:06 254 &gt;93 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031101.230653.p224s.http.html">899</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031101.png">PHTX</a>  
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86 X8.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031102.173005.p265s/c2\_rdif.html">11/02/<a/> 17:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031102.173005.p265s.http.html">2598</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031102.png">PHTX</a>  
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88 X2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031103.015924.p324s/c2\_rdif.html">11/03/<a/> 01:59 304 65 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031103.015924.p324s.http.html">827</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031103.png">PHTX</a>  
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88 X3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031103.100605.p301s/c2\_rdif.html">11/03/<a/> 10:06 293 103 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031103.100605.p301s.http.html">1420</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031103.png">PHTX</a>  
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86 X28. <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031104.195405.p260s/c2\_rdif.html">11/04/<a/> 19:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031104.195405.p260s.http.html">2657</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031104.png">PHTX</a>  
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01 M1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031113.093005.p058s/c2\_rdif.html">11/13/<a/> 09:30 49 217 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031113.093005.p058s.http.html">214</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031113.png">PHTX</a>  
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01 M4.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031117.092605.p151s/c2\_rdif.html">11/17/<a/> 09:26 72 &gt;242 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031117.092605.p151s.http.html">1061</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031117.png">PHTX</a>  
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01 M3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031118.085005.p266s/c2\_rdif.html">11/18/<a/> 08:50 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031118.085005.p266s.http.html">1660</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031118.png">PHTX</a>  
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08 M4.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/jsmovies/2003\_11/20031118.095005.p087s/c2\_rdif.html">11/18/<a/> 09:50 95 &gt;197 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_11/htpng/20031118.095005.p087s.http.html">1824</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_11/sephxt\_20031118.png">PHTX</a>  
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08 C7.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_12/jsmovies/2003\_12/20031202.105005.p267s/c2\_rdif.html">12/02/<a/> 10:50 261 &gt;150 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2003\_12/htpng/20031202.105005.p267s.http.html">1393</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2003\_12/sephxt\_20031202.png">PHTX</a>  
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36 M6.9 --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_01/sephxt\_20040105.png">PHTX</a> LASCO\_DATA\_GAP  
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37 M5.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/jsmovies/2004\_01/20040106.085306.p088s/c2\_rdif.html">01/06/<a/> 08:53 88 166 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/htpng/20040106.085306.p088s.http.html">146</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_01/sephxt\_20040106.png">PHTX</a> PARTIAL LASCO DATA GAP  
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37 M4.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/jsmovies/2004\_01/20040107.040607.p116s/c2\_rdif.html">01/07/<a/> 04:06 78 171 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/htpng/20040107.040607.p116s.http.html">1581</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_01/sephxt\_20040107.png">PHTX</a>  
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37 M8.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/jsmovies/2004\_01/20040107.103029.p081s/c2\_rdif.html">01/07/<a/> 10:30 81 182 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_01/htpng/20040107.103029.p081s.http.html">1822</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_01/sephxt\_20040107.png">PHTX</a>  
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88 M2.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/jsmovies/2004\_04/20040406.133143.p167g/c2\_rdif.html">04/06/<a/> 13:31 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/htpng/20040406.133143.p167g.http.html">1368</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_04/sephxt\_20040406.png">PHTX</a>  
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88 C7.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/jsmovies/2004\_04/20040408.103019.p197g/c2\_rdif.html">04/08/<a/> 10:30 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/htpng/20040408.103019.p197g.http.html">1068</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_04/sephxt\_20040408.png">PHTX</a>  
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88 C1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/jsmovies/2004\_04/20040408.133142.p202g/c2\_rdif.html">04/08/<a/> 13:31 198 92 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/htpng/20040408.133142.p202g.http.html">146</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_04/sephxt\_20040408.png">PHTX</a>  
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88 C9.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/jsmovies/2004\_04/20040411.043006.p237g/c2\_rdif.html">04/11/<a/> 04:30 203 314 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_04/htpng/20040411.043006.p237g.http.html">1645</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_04/sephxt\_20040411.png">PHTX</a>  
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2004/06/22 22:07 06/22 22:30 10000 7000 S12W24 10635 C1.7 --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_06/sephxt\_20040622.png">PHTX</a> LASCO\_DATA\_GAP  
2004/06/23 06:30 06/23 08:55 14000 5000 S09W21 10635 C2.5 --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_06/sephxt\_20040623.png">PHTX</a> LASCO\_DATA\_GAP  
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52 C4.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/jsmovies/2004\_07/20040723.193147.p197g/c2\_rdif.html">07/23/<a/> 19:31 209 100 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/htpng/20040723.193147.p197g.http.html">874</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_07/sephxt\_20040723.png">PHTX</a>  
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52 M1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/jsmovies/2004\_07/20040725.145405.p204s/c2\_rdif.html">07/25/<a/> 14:54 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/htpng/20040725.145405.p204s.http.html">1333</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_07/sephxt\_20040725.png">PHTX</a>  
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52 C2.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/jsmovies/2004\_07/20040729.120605.p245s/c2\_rdif.html">07/29/<a/> 12:06 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/htpng/20040729.120605.p245s.http.html">1180</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_07/sephxt\_20040729.png">PHTX</a>  
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52 C8.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/jsmovies/2004\_07/20040731.055405.p287s/c2\_rdif.html">07/31/<a/> 05:54 259 &gt;197 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_07/htpng/20040731.055405.p287s.http.html">874</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_07/sephxt\_20040731.png">PHTX</a>  
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72 M4.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_09/jsmovies/2004\_09/20040912.003606.p132s/c2\_rdif.html">09/12/<a/> 00:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2004\_09/htpng/20040912.003606.p132s.http.html">1328</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2004\_09/sephxt\_20040912.png">PHTX</a>

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0.p099g.http.html">995</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2007\_12/sephctx\_20071231.png">PHTX</a>  
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89 M1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2008\_03/jsmovies/2008\_03/20080325.193136.p097g/c2\_rdif.html">03/25</a> 19:31 98 112 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2008\_03/htpng/20080325.193136.p097g.http.html">110</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2008\_03/sephctx\_20080325.png">PHTX</a>  
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99 C4.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2010\_08/jsmovies/2010\_08/20100818.054805.p230g/c2\_rdif.html">08/18</a> 05:48 255 184 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2010\_08/htpng/20100818.054805.p230g.http.html">1471</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2010\_08/sephctx\_20100818.png">PHTX</a>  
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49 C1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_01/jsmovies/2011\_01/20110127.123605.p261g/c2\_rdif.html">01/27</a> 12:36 255 43 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_01/htpng/20110127.123605.p261g.http.html">349</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_01/sephctx\_20110127.png">PHTX</a>  
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58 M6.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/jsmovies/2011\_02/20110213.183605.p089g/c2\_rdif.html">02/13</a> 18:36 359 276 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/htpng/20110213.183605.p089g.http.html">373</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_02/sephctx\_20110213.png">PHTX</a>  
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58 X2.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/jsmovies/2011\_02/20110215.022405.p189g/c2\_rdif.html">02/15</a> 02:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/htpng/20110215.022405.p189g.http.html">669</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_02/sephctx\_20110215.png">PHTX</a>  
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63 M3.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/jsmovies/2011\_02/20110224.074805.p096g/c2\_rdif.html">02/24</a> 07:48 70 158 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_02/htpng/20110224.074805.p096g.http.html">1186</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_02/sephctx\_20110224.png">PHTX</a>  
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66 M1.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_03/jsmovies/2011\_03/20110307.144836.p053g/c2\_rdif.html">03/07</a> 14:48 354 261 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_03/htpng/20110307.144836.p053g.http.html">698</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_03/sephctx\_20110307.png">PHTX</a>  
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64 M3.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_03/jsmovies/2011\_03/20110307.200005.p313g/c2\_rdif.html">03/07</a> 20:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_03/htpng/20110307.200005.p313g.http.html">2125</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_03/sephctx\_20110307.png">PHTX</a>  
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27 C3.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_06/jsmovies/2011\_06/20110602.081206.p098g/c2\_rdif.html">06/02</a> 08:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_06/htpng/20110602.081206.p098g.http.html">976</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_06/sephctx\_20110602.png">PHTX</a>  
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61 M1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/jsmovies/2011\_08/20110802.063605.p285g/c2\_rdif.html">08/02</a> 06:36 288 268 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/htpng/20110802.063605.p285g.http.html">712</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_08/sephctx\_20110802.png">PHTX</a>  
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61 M9.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/jsmovies/2011\_08/20110804.041205.p298g/c2\_rdif.html">08/04</a> 04:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/htpng/20110804.041205.p298g.http.html">1315</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_08/sephctx\_20110804.png">PHTX</a>  
2011/08/08 18:10 08/08 20:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/08/08/c2rdif\_waves.html">6000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/08/08/c3rdif\_waves.html">400</a> N16W61 112  
63 M3.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/jsmovies/2011\_08/20110808.181207.p281g/c2\_rdif.html">08/08</a> 18:12 305 237 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/htpng/20110808.181207.p281g.http.html">1343</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_08/sephctx\_20110808.png">PHTX</a>  
2011/08/09 08:20 08/09 08:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/08/09/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/08/09/c3rdif\_waves.html">4000</a> N17W69 112  
63 X6.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/jsmovies/2011\_08/20110809.081206.p279g/c2\_rdif.html">08/09</a> 08:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_08/htpng/20110809.081206.p279g.http.html">1610</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_08/sephctx\_20110809.png">PHTX</a>  
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83 M5.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/jsmovies/2011\_09/20110906.022405.p070g/c2\_rdif.html">09/06</a> 02:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/htpng/20110906.022405.p070g.http.html">782</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_09/sephctx\_20110906.png">PHTX</a>  
2011/09/06 22:30 09/07 15:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/09/06/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/09/06/c3rdif\_waves.html">150</a> N14W18 112  
83 X2.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/jsmovies/2011\_09/20110906.230557.p300g/c2\_rdif.html">09/06</a> 23:05 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/htpng/20110906.230557.p300g.http.html">575</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_09/sephctx\_20110906.png">PHTX</a>  
2011/09/22 11:05 09/22 24:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/09/22/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/09/22/c3rdif\_waves.html">70</a> N09E89 113  
02 X1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/jsmovies/2011\_09/20110922.104806.p072g/c2\_rdif.html">09/22</a> 10:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/htpng/20110922.104806.p072g.http.html">1905</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_09/sephctx\_20110922.png">PHTX</a>  
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02 M7.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/jsmovies/2011\_09/20110924.124807.p078g/c2\_rdif.html">09/24</a> 12:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/htpng/20110924.124807.p078g.http.html">1915</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_09/sephctx\_20110924.png">PHTX</a>  
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02 M7.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/jsmovies/2011\_09/20110925.051205.p313g/c2\_rdif.html">09/25</a> 05:12 98 193 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_09/htpng/20110925.051205.p313g.http.html">788</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_09/sephctx\_20110925.png">PHTX</a>  
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19 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_10/jsmovies/2011\_10/20111021.132555.p250g/c2\_rdif.html">10/21</a> 13:25 252 109 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_10/htpng/20111021.132555.p250g.http.html">317</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_10/sephctx\_20111021.png">PHTX</a>  
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43 M1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_11/jsmovies/2011\_11/20111109.133605.p048g/c2\_rdif.html">11/09</a> 13:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_11/htpng/20111109.133605.p048g.http.html">907</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_11/sephctx\_20111109.png">PHTX</a>  
2011/11/26 07:15 11/27 24:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/11/26/c2rdif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2011/11/26/c3rdif\_waves.html">50</a> N17W49 113  
53 C1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_11/jsmovies/2011\_11/20111126.071206.p327g/c2\_rdif.html">11/26</a> 07:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_11/htpng/20111126.071206.p327g.http.html">933</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_11/sephctx\_20111126.png">PHTX</a>  
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87 M4.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_12/jsmovies/2011\_12/20111225.184806.p235g/c2\_rdif.html">12/25</a> 18:48 247 125 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2011\_12/htpng/20111225.184806.p235g.http.html">366</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephctx/2011\_12/sephctx\_20111225.png">PHTX</a>

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p244g.http.html">1136</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/01/02/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/01/02/c3rdif\_waves.html">4000</a> BACK ---  
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02 M3.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/jsmovies/2012\_01/2010119.143605.p202g/c2\_rdif.html">01/19</a> 14:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/htpnp/20120119.143605.  
p202g.http.html">1120</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_01/sephxt\_20120119.png">PHTX</a>  
2012/01/23 04:00 01/24 15:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/01/23/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/01/23/c3rdif\_waves.html">400</a> N28W21 114  
02 M8.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/jsmovies/2012\_01/20120123.040005.p326g/c2\_rdif.html">01/23</a> 04:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/htpnp/20120123.040005.  
p326g.http.html">2175</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_01/sephxt\_20120123.png">PHTX</a>  
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02 X1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/jsmovies/2012\_01/20120127.182752.p296g/c2\_rdif.html">01/27</a> 18:27 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_01/htpnp/20120127.182752.  
p296g.http.html">2508</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_01/sephxt\_20120127.png">PHTX</a>  
2012/03/05 04:00 03/05 12:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/05/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/05/c3rdif\_waves.html">400</a> N17E52 114  
29 X1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/jsmovies/2012\_03/20120305.040005.p061g/c2\_rdif.html">03/05</a> 04:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/htpnp/20120305.040005.  
p061g.http.html">1531</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120305.png">PHTX</a>  
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29 X5.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/jsmovies/2012\_03/20120307.002406.p057g/c2\_rdif.html">03/07</a> 00:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/htpnp/20120307.002406.  
p057g.http.html">2684</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120307.png">PHTX</a>  
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29 M6.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/jsmovies/2012\_03/20120309.042609.p029g/c2\_rdif.html">03/09</a> 04:26 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/htpnp/20120309.042609.  
p029g.http.html">950</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120309.png">PHTX</a>  
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29 M8.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/jsmovies/2012\_03/20120310.180005.p005g/c2\_rdif.html">03/10</a> 18:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/htpnp/20120310.180005.  
p005g.http.html">1296</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120310.png">PHTX</a>  
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29 M7.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/jsmovies/2012\_03/20120313.173605.p286g/c2\_rdif.html">03/13</a> 17:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_03/htpnp/20120313.173605.  
p286g.http.html">1884</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120313.png">PHTX</a>  
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p300g.http.html">1210</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120318.png">PHTX</a>  
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p347g.http.html">1152</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_03/sephxt\_20120324.png">PHTX</a>  
2012/03/26 23:15 03/26 23:55 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/26/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/26/c3rdif\_waves.html">1500</a> BACK ---  
p092g.http.html">139d</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/26/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/03/26/c3rdif\_waves.html">1500</a> BACK ---  
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p216g.http.html">1582</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_05/sephxt\_20120517.png">PHTX</a>  
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51 C3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_04/jsmovies/2012\_04/20120409.123607.p310g/c2\_rdif.html">04/09</a> 12:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_04/htpnp/20120409.123607.  
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61 C1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_04/jsmovies/2012\_04/20120415.022407.p089g/c2\_rdif.html">04/15</a> 02:24 79 173 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_04/htpnp/20120415.022407.  
p089g.http.html">1220</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_04/sephxt\_20120415.png">PHTX</a>  
2012/05/17 01:40 05/17 06:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/05/17/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/05/17/c3rdif\_waves.html">300</a> N11W76 114  
76 M5.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_05/jsmovies/2012\_05/20120517.014805.p261g/c2\_rdif.html">05/17</a> 01:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_05/htpnp/20120517.014805.  
p261g.http.html">1582</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_05/sephxt\_20120517.png">PHTX</a>  
2012/07/04 17:00 07/04 17:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/04/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/04/c3rdif\_waves.html">8000</a> N14W34 115  
13 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120704.172404.p124g/c2\_rdif.html">07/04</a> 17:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120704.172404.  
p124g.http.html">962</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120704.png">PHTX</a>  
2012/07/05 22:40 07/05 23:50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/05/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/05/c3rdif\_waves.html">800</a> S12W46 115  
15 M1.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120705.220004.p235g/c2\_rdif.html">07/05</a> 22:00 220 94 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120705.220004.  
p235g.http.html">980</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120705.png">PHTX</a>  
2012/07/06 23:10 07/07 03:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/06/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/06/c3rdif\_waves.html">300</a> S13W59 115  
15 X1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120706.232406.p233g/c2\_rdif.html">07/06</a> 23:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120706.232406.  
p233g.http.html">1828</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120706.png">PHTX</a>  
2012/07/08 16:35 07/08 22:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/08/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/08/c3rdif\_waves.html">300</a> S17W74 115  
15 M6.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120708.165405.p234g/c2\_rdif.html">07/08</a> 16:54 212 157 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120708.165405.  
p234g.http.html">1495</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120708.png">PHTX</a>  
2012/07/12 16:45 07/13 09:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/12/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/12/c3rdif\_waves.html">250</a> S15W01 115  
20 X1.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120712.164805.p158g/c2\_rdif.html">07/12</a> 16:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120712.164805.  
p158g.http.html">885</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120712.png">PHTX</a>  
2012/07/17 14:40 07/18 05:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/17/c2rdif\_waves.html">12000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/17/c3rdif\_waves.html">150</a> S28W65 115  
20 C9.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120717.134806.p241g/c2\_rdif.html">07/17</a> 13:48 255 176 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120717.134806.  
p241g.http.html">958</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120717.png">PHTX</a>  
2012/07/19 05:30 07/19 06:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/19/c2rdif\_waves.html">5000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/19/c3rdif\_waves.html">600</a> S13W88 115  
20 M7.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120719.052405.p275g/c2\_rdif.html">07/19</a> 05:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120719.052405.  
p275g.http.html">1631</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120719.png">PHTX</a>  
2012/07/23 02:30 07/23 21:40 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/23/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/07/23/c3rdif\_waves.html">20</a> S17W32 115  
20 --- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/jsmovies/2012\_07/20120723.023605.p286g/c2\_rdif.html">07/23</a> 02:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_07/htpnp/20120723.023605.  
p286g.http.html">2003</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_07/sephxt\_20120723.png">PHTX</a>  
2012/08/31 20:00 08/31 23:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/08/31/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/08/31/c3rdif\_waves.html">400</a> S25E59 115  
63 C8.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_08/jsmovies/2012\_08/20120831.200005.p090g/c2\_rdif.html">08/31</a> 20:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_08/htpnp/20120831.200005.  
p090g.http.html">1442</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_08/sephxt\_20120831.png">PHTX</a>  
2012/09/27 23:55 09/28 10:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/09/27/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/09/27/c3rdif\_waves.html">250</a> N06W34 115  
77 C3.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_09/jsmovies/2012\_09/20120928.001205.p251g/c2\_rdif.html">09/28</a> 00:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_09/htpnp/20120928.001205.  
p251g.http.html">947</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_09/sephxt\_20120927.png">PHTX</a>  
2012/10/22 01:50 10/22 11:15 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/10/22/c2rdif\_waves.html">1000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2012/10/22/c3rdif\_waves.html">200</a> S10E76 115  
98 M1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_10/jsmovies/2012\_10/20121021.205728.p090g/c2\_rdif.html">10/21</a> 20:57 83 243 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2012\_10/htpnp/20121021.205728.  
p090g.http.html">946</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2012\_10/sephxt\_20121022.png">PHTX</a>  
2013/01/16 22:00 01/17 01:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/01/16/c2rdif\_waves.html">1000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/01/16/c3rdif\_waves.html">200</a> S33W64 116  
50 C2.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_01/jsmovies/2013\_01/20130116.190005.p236g/c2\_rdif.html">01/16</a> 19:00 211 250 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_01/htpnp/20130116.190005.  
p236g.http.html">648</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_01/sephxt\_20130116.png">PHTX</a>  
2013/03/15 07:00 03/15 21:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/03/15/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/03/15/c3rdif\_waves.html">100</a> N11E12 116  
92 M1.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_03/jsmovies/2013\_03/20130315.071205.p122g/c2\_rdif.html">03/15</a> 07:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_03/htpnp/20130315.071205.  
p122g.http.html">1063</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_03/sephxt\_20130315.png">PHTX</a>  
2013/04/11 07:10 04/11 15:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/11/c2rdif\_waves.html">10000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/11/c3rdif\_waves.html">200</a> N09E12 117  
19 M6.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/jsmovies/2013\_04/20130411.072406.p085g/c2\_rdif.html">04/11</a> 07:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/htpnp/20130411.072406.  
p085g.http.html">861</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_04/sephxt\_20130411.png">PHTX</a>  
2013/04/18 18:00 04/18 19:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/18/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/18/c3rdif\_waves.html">4000</a> N11W83 117  
19 C6.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/jsmovies/2013\_04/20130418.182405.p285g/c2\_rdif.html">04/18</a> 18:24 284 199 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/htpnp/20130418.182405.  
p285g.http.html">495</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_04/sephxt\_20130418.png">PHTX</a>  
2013/04/21 20:25 04/21 22:12 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/21/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/04/21/c3rdif\_waves.html">1700</a> S19W53 117  
23 C2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/jsmovies/2013\_04/20130421.203605.p260g/c2\_rdif.html">04/21</a> 20:36 255 212 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_04/htpnp/20130421.203605.  
p260g.http.html">562</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_04/sephxt\_20130421.png">PHTX</a>  
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48 X1.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/jsmovies/2013\_05/20130513.020005.p064g/c2\_rdif.html">05/13</a> 02:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/htpnp/20130513.020005.  
p064g.http.html">1270</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_05/sephxt\_20130513.png">PHTX</a>

2013/05/13 16:15 05/13 19:10 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/05/13/c2rdfif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/05/13/c3rdfif\_waves.html">300</a> N11E85 117  
48 X2.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/jsmovies/2013\_05/20130513.160755.p063g/c2\_rdif.html">05/13</a> 16:07 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/htpnp/20130513.160755.p063g.http.html">1950</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_05/sephxt\_20130513.png">PHTX</a>  
2013/05/14 01:15 05/14 08:20 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/05/14/c2rdfif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2013/05/14/c3rdfif\_waves.html">240</a> N08E77 117  
48 X3.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/jsmovies/2013\_05/20130514.012551.p089g/c2\_rdif.html">05/14</a> 01:25 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/htpnp/20130514.012551.p089g.http.html">2625</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_05/sephxt\_20130514.png">PHTX</a>  
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48 X1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/jsmovies/2013\_05/20130515.014805.p093g/c2\_rdif.html">05/15</a> 01:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/htpnp/20130515.014805.p093g.http.html">1366</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_05/sephxt\_20130515.png">PHTX</a>  
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45 M5.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/jsmovies/2013\_05/20130522.132550.p287g/c2\_rdif.html">05/22</a> 13:25 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_05/htpnp/20130522.132550.p287g.http.html">1466</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_05/sephxt\_20130522.png">PHTX</a>  
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77 M2.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_06/jsmovies/2013\_06/20130621.031209.p107g/c2\_rdif.html">06/21</a> 03:12 123 &gt;207 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_06/htpnp/20130621.031209.p107g.http.html">1900</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_06/sephxt\_20130621.png">PHTX</a>  
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77 C4.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_06/jsmovies/2013\_06/20130628.020005.p214g/c2\_rdif.html">06/28</a> 02:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_06/htpnp/20130628.020005.p214g.http.html">1037</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_06/sephxt\_20130628.png">PHTX</a>  
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87 C6.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_07/jsmovies/2013\_07/20130704.201205.p109g/c2\_rdif.html">07/04</a> 20:12 111 188 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_07/htpnp/20130704.201205.p109g.http.html">1468</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_07/sephxt\_20130704.png">PHTX</a>  
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EP B4.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_08/jsmovies/2013\_08/20130806.021205.p037g/c2\_rdif.html">08/06</a> 02:12 48 207 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2013\_08/htpnp/20130806.021205.p037g.http.html">2441</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephxt/2013\_08/sephxt\_20130806.png">PHTX</a>  
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92 C4.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2014\_10/jsmovies/2014\_10/20141021.124805.p134g/c2\_rdif.html">10/21/</a> 12:48 152 142 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2014\_10/htpnc/20141021.124805.p134g.http.html">260/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2014\_10/sephx/20141021.png">PHTX/</a>  
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97 M5.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_03/jsmovies/2015\_03/20150310.000005.p107g/c2\_rdif.html">03/10/</a> 00:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_03/htpnc/20150310.000005.p107g.http.html">995/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_03/sephx/20150310.png">PHTX/</a>  
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97 M2.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_03/jsmovies/2015\_03/20150311.082405.p067g/c2\_rdif.html">03/11/</a> 08:24 62 93 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_03/htpnc/20150311.082405.p067g.http.html">530/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_03/sephx/20150311.png">PHTX/</a>  
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39 X2.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_05/jsmovies/2015\_05/20150505.022405.p041g/c2\_rdif.html">05/05/</a> 22:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_05/htpnc/20150505.022405.p041g.http.html">715/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_05/sephx/20150505.png">PHTX/</a>  
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03 M1.2 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_08/jsmovies/2015\_08/20150822.071204.p095g/c2\_rdif.html">08/22/</a> 07:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_08/htpnc/20150822.071204.p095g.http.html">547/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_08/sephx/20150822.png">PHTX/</a>  
2015/09/18 04:54 09/18 09:52 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/09/18/c2rdfif\_waves.html">14000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/09/18/c3rdfif\_waves.html">400/</a> S21W10 124  
15 C2.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_09/jsmovies/2015\_09/20150918.050006.p188g/c2\_rdif.html">09/18/</a> 05:00 201 131 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_09/htpnc/20150918.050006.p188g.http.html">96/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_09/sephx/20150918.png">PHTX/</a>  
2015/09/20 18:23 09/21 01:46 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/09/20/c2rdfif\_waves.html">14000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/09/20/c3rdfif\_waves.html">300/</a> S20W24 124  
15 M2.1 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_09/jsmovies/2015\_09/20150920.181204.p219g/c2\_rdif.html">09/20/</a> 18:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_09/htpnc/20150920.181204.p219g.http.html">1239/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_09/sephx/20150920.png">PHTX/</a>  
2015/11/04 14:07 11/04 15:14 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/11/04/c2rdfif\_waves.html">14000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/11/04/c3rdfif\_waves.html">440/</a> N09W04 124  
43 M3.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_11/jsmovies/2015\_11/20151104.144804.p288g/c2\_rdif.html">11/04/</a> 14:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_11/htpnc/20151104.144804.p288g.http.html">578/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_11/sephx/20151104.png">PHTX/</a>  
2015/11/09 13:21 11/09 13:27 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/11/09/c2rdfif\_waves.html">14000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/11/09/c3rdfif\_waves.html">9000/</a> S11E41 124  
49 M3.9 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_11/jsmovies/2015\_11/20151109.132550.p137g/c2\_rdif.html">11/09/</a> 13:25 142 273 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_11/htpnc/20151109.132550.p137g.http.html">1041/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_11/sephx/20151109.png">PHTX/</a>  
2015/12/16 08:45 12/16 08:57 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/16/c2rdfif\_waves.html">5300/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/16/c3rdfif\_waves.html">3800/</a> S13W04 124  
68 C6.6 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/jsmovies/2015\_12/20151216.093604.p334g/c2\_rdif.html">12/16/</a> 09:36 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/htpnc/20151216.093604.p334g.http.html">579/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_12/sephx/20151216.png">PHTX/</a>  
2015/12/23 01:18 12/23 01:23 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/23/c2rdfif\_waves.html">12000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/23/c3rdfif\_waves.html">6700/</a> S22E63 124  
73 M4.7 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/jsmovies/2015\_12/20151223.012547.p110g/c2\_rdif.html">12/23/</a> 01:25 98 89 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/htpnc/20151223.012547.p110g.http.html">520/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephx/2015\_12/sephx/20151223.png">PHTX/</a>  
2015/12/28 11:50 12/28 21:45 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/28/c2rdfif\_waves.html">14000/</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2015/12/28/c3rdfif\_waves.html">180/</a> S23W11 124

73 M1.8 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/jsmovies/2015\_12/20151228.121205.p163g/c2\_rdif.html">12/28</a> 12:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2015\_12/htpng/20151228.121205.p163g.http.html">1212</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2015\_12/sephtx\_20151228.png">PHTX</a>  
2016/01/02 00:55 01/02 03:08 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/01/02/c2rdif\_waves.html">1100</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/01/02/c3rdif\_waves.html">300</a> S25W82 124  
73 M2.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_01/jsmovies/2016\_01/20160101.232404.p227g/c2\_rdif.html">01/01</a> 23:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_01/htpng/20160101.232404.p227g.http.html">1730</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_01/sephtx\_20160102.png">PHTX</a>  
2016/02/05 20:28 02/05 23:31 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/02/05/c2rdif\_waves.html">1650</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/02/05/c3rdif\_waves.html">500</a> -----  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_02/sephtx\_20160205.png">PHTX</a> uncertain  
2016/02/05 22:35 02/05 22:55 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/02/05/c2rdif\_waves.html">5200</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/02/05/c3rdif\_waves.html">1900</a> S17W29 ---  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_02/jsmovies/2016\_02/20160205.212404.p241s/c2\_rdif.html">02/05</a> 21:24 193 155 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_02/htpng/20160205.212404.p241s.http.html">445</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_02/sephtx\_20160205.png">PHTX</a>  
2016/05/04 14:20 05/04 14:34 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/05/04/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/05/04/c3rdif\_waves.html">10500</a> N06W61 125  
35 C1.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_05/jsmovies/2016\_05/20160504.141204.p281g/c2\_rdif.html">05/04</a> 14:12 255 134 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_05/htpng/20160504.141204.p281g.http.html">390</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_05/sephtx\_20160504.png">PHTX</a>  
2016/05/24 17:00 05/24 20:50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/05/24/c2rdif\_waves.html">1500</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/05/24/c3rdif\_waves.html">700</a> -----  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_05/sephtx\_20160524.png">PHTX</a> uncertain  
2016/08/15 18:21 08/15 18:28 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/08/15/c2rdif\_waves.html">11000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2016/08/15/c3rdif\_waves.html">3400</a> E90b ---  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_08/jsmovies/2016\_08/20160815.172405.p067g/c2\_rdif.html">08/15</a> 17:24 75 98 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2016\_08/htpng/20160815.172405.p067g.http.html">633</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2016\_08/sephtx\_20160815.png">PHTX</a>  
2017/04/23 06:00 04/23 06:13 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/04/23/c2rdif\_waves.html">15000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/04/23/c3rdif\_waves.html">8300</a> N16E41 ---  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_04/jsmovies/2017\_04/20170423.060005.p088g/c2\_rdif.html">04/23</a> 06:00 85 77 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_04/htpng/20170423.060005.p088g.http.html">955</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_04/sephtx\_20170423.png">PHTX</a>  
2017/07/14 01:18 07/14 21:30 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/07/14/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/07/14/c3rdif\_waves.html">70</a> S06W29 126  
65 M2.4 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_07/jsmovies/2017\_07/20170714.012541.p230g/c2\_rdif.html">07/14</a> 01:25 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_07/htpng/20170714.012541.p230g.http.html">1200</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_07/sephtx\_20170714.png">PHTX</a>  
2017/07/23 05:27 07/23 06:12 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/07/23/c2rdif\_waves.html">4400</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/07/23/c3rdif\_waves.html">900</a> BACK ---  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_07/jsmovies/2017\_07/20170723.044805.p134g/c2\_rdif.html">07/23</a> 04:48 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_07/htpng/20170723.044805.p134g.http.html">1848</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_07/sephtx\_20170723.png">PHTX</a> faint  
2017/09/04 20:27 09/05 04:54 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/04/c2rdif\_waves.html">14000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/04/c3rdif\_waves.html">210</a> S10W12 126  
73 M5.5 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/jsmovies/2017\_09/20170904.201205.p184g/c2\_rdif.html">09/04</a> 20:12 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/htpng/20170904.201205.p184g.http.html">1418</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_09/sephtx\_20170904.png">PHTX</a>  
2017/09/06 12:05 09/07 08:00 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/06/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/06/c3rdif\_waves.html">70</a> S08W33 126  
73 X9.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/jsmovies/2017\_09/20170906.122405.p201g/c2\_rdif.html">09/06</a> 12:24 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/htpng/20170906.122405.p201g.http.html">1571</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_09/sephtx\_20170906.png">PHTX</a>  
2017/09/10 16:02 09/11 06:50 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/10/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/10/c3rdif\_waves.html">150</a> S09W92 ---  
----- X8.3 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/jsmovies/2017\_09/20170910.160005.p262g/c2\_rdif.html">09/10</a> 16:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/htpng/20170910.160005.p262g.http.html">3163</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_09/sephtx\_20170910.png">PHTX</a> onset has WAVES Data Gap  
2017/09/12 07:38 09/12 07:43 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/12/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/12/c3rdif\_waves.html">13000</a> N08E48 126  
80 C3.0 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/jsmovies/2017\_09/20170912.080323.p106g/c2\_rdif.html">09/12</a> 08:03 124 96 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/htpng/20170912.080323.p106g.http.html">252</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_09/sephtx\_20170912.png">PHTX</a> uncertain  
2017/09/17 11:45 09/17 12:35 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/17/c2rdif\_waves.html">16000</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_movies/2017/09/17/c3rdif\_waves.html">900</a> S08E170 ---  
----- <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/jsmovies/2017\_09/20170917.120006.p072g/c2\_rdif.html">09/17</a> 12:00 Halo 360 <a href="https://cdaw.gsfc.nasa.gov/CME\_list/UNIVERSAL/2017\_09/htpng/20170917.120006.p072g.http.html">1385</a> <a href="https://cdaw.gsfc.nasa.gov/CME\_list/daily\_plots/sephtx/2017\_09/sephtx\_20170917.png">PHTX</a> STEREO A data  
=====

```
In [12]: #Putting each line of the html into an array
text = nasa_table.get_text()
lines = text.split('\n')
lines = lines[12:-2]

#creating empty dataframe
new_nasa = pd.DataFrame(columns=['start_date', 'start_time', 'end_date', 'end_time', 'start_frequency', 'end_frequency',
                                'flare_location', 'flare_region', 'flare_classification', 'cme_date', 'cme_time',
                                'cme_angle', 'cme_width', 'cme_speed'], index = range(0,len(lines)))

#Filling dataframe with html values. Splitting each line on whitespace
row_marker = 0
for line in lines:
    columns = line.split()
    column_marker = 0
    for cell in columns[14]:
        new_nasa.iloc[row_marker][column_marker] = cell
        column_marker+=1
    row_marker+=1
new_nasa
```

	start_date	start_time	end_date	end_time	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_date	cme_time	cme_angle	cme_width	cme_speed
0	1997/04/01	14:00	04/01	14:15	8000	4000	S25E16	8026	M1.3	04/01	15:18	74	79	312
1	1997/04/07	14:30	04/07	17:30	11000	1000	S28E19	8027	C6.8	04/07	14:27	Halo	360	878
2	1997/05/12	05:15	05/14	16:00	12000	80	N21W08	8038	C1.3	05/12	05:30	Halo	360	464
3	1997/05/21	20:20	05/21	22:00	5000	500	N05W12	8040	M1.3	05/21	21:00	263	165	296
4	1997/09/23	21:53	09/23	22:16	6000	2000	S29E25	8088	C1.4	09/23	22:02	133	155	712
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
513	2017/09/04	20:27	09/05	04:54	14000	210	S10W12	12673	M5.5	09/04	20:12	Halo	360	1418
514	2017/09/06	12:05	09/07	08:00	16000	70	S08W33	12673	X9.3	09/06	12:24	Halo	360	1571
515	2017/09/10	16:02	09/11	06:50	16000	150	S09W92	-----	X8.3	09/10	16:00	Halo	360	3163
516	2017/09/12	07:38	09/12	07:43	16000	13000	N08E48	12680	C3.0	09/12	08:03	124	96	252
517	2017/09/17	11:45	09/17	12:35	16000	900	S08E170	-----	-----	09/17	12:00	Halo	360	1385

518 rows x 14 columns

Tidying the NASA data

```
In [13]: def onlyInt(x): # Helper
        bad_chars = [';', '>', 'h']
        x = str(x)
        for i in bad_chars:
            x = x.replace(i, '')
        return x

        #Replacing unavailable data with NaN
        new_nasa = new_nasa.replace('---', 'NaN').replace('----', 'NaN').replace('-----', 'NaN').replace('-----', 'NaN')
        new_nasa = new_nasa.replace('---/--', 'NaN').replace('---:--', 'NaN')
        new_nasa = new_nasa.replace('????', 'NaN')

        #New is_halo column that returns if cme_angle is a halo. Replace all hale ine cme_angle with NaN
        new_nasa["is_halo"] = new_nasa["cme_angle"].map(lambda x: x == 'Halo')
        new_nasa = new_nasa.replace('Halo', 'NA')

        #New width_lower_bound that indicates if the cme_width is given as a lower bound
        new_nasa["width_lower_bound"] = new_nasa["cme_width"].map(lambda x: str(x)[0] == '>')

        #Removing non_numeric parts of cme_width
        new_nasa["cme_width"] = new_nasa["cme_width"].map(lambda x: onlyInt(x))
        new_nasa
```

Out[13]:

	start_date	start_time	end_date	end_time	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_date	cme_time	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound
0	1997/04/01	14:00	04/01	14:15	8000	4000	S25E16	8026	M1.3	04/01	15:18	74	79	312	False	False
1	1997/04/07	14:30	04/07	17:30	11000	1000	S28E19	8027	C6.8	04/07	14:27	NA	360	878	True	False
2	1997/05/12	05:15	05/14	16:00	12000	80	N21W08	8038	C1.3	05/12	05:30	NA	360	464	True	False
3	1997/05/21	20:20	05/21	22:00	5000	500	N05W12	8040	M1.3	05/21	21:00	263	165	296	False	False
4	1997/09/23	21:53	09/23	22:16	6000	2000	S29E25	8088	C1.4	09/23	22:02	133	155	712	False	False
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
513	2017/09/04	20:27	09/05	04:54	14000	210	S10W12	12673	M5.5	09/04	20:12	NA	360	1418	True	False
514	2017/09/06	12:05	09/07	08:00	16000	70	S08W33	12673	X9.3	09/06	12:24	NA	360	1571	True	False
515	2017/09/10	16:02	09/11	06:50	16000	150	S09W92	NaN	X8.3	09/10	16:00	NA	360	3163	True	False
516	2017/09/12	07:38	09/12	07:43	16000	13000	N08E48	12680	C3.0	09/12	08:03	124	96	252	False	False
517	2017/09/17	11:45	09/17	12:35	16000	900	S08E170	NaN	NaN	09/17	12:00	NA	360	1385	True	False

518 rows x 16 columns

```
In [14]: #Combining date and time columns for start, end and cme
        for row in range(0, len(lines)):
            temp = new_nasa.values[row][0].split('/')[0] # Getting each year
            new_nasa.iloc[row, 2] = temp + '/' + new_nasa.values[row][2] # Replacing end_date
            new_nasa.iloc[row, 9] = temp + '/' + new_nasa.values[row][9] # Replacing cme_date

            new_nasa=new_nasa.replace('24:00','00:00') #Replace 24:00 with 00:00
            new_nasa['start_datetime'] = pd.to_datetime(new_nasa['start_date'] + ' ' + new_nasa['start_time'])
            new_nasa['end_datetime'] = pd.to_datetime(new_nasa['end_date'] + ' ' + new_nasa['end_time'])
            new_nasa['cme_datetime'] = pd.to_datetime(new_nasa['cme_date'] + ' ' + new_nasa['cme_time'], errors='coerce')

            new_nasa
```

Out[14]:

	start_date	start_time	end_date	end_time	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_date	cme_time	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound	start_datetime	end_datetime	cme_datetime
0	1997/04/01	14:00	1997/04/01	14:15	8000	4000	S25E16	8026	M1.3	1997/04/01	15:18	74	79	312	False	False	1997-04-01 14:00:00	1997-04-01 14:15:00	1997-04-01 15:18:00
1	1997/04/07	14:30	1997/04/07	17:30	11000	1000	S28E19	8027	C6.8	1997/04/07	14:27	NA	360	878	True	False	1997-04-07 14:30:00	1997-04-07 17:30:00	1997-04-07 14:27:00
2	1997/05/12	05:15	1997/05/14	16:00	12000	80	N21W08	8038	C1.3	1997/05/12	05:30	NA	360	464	True	False	1997-05-12 05:15:00	1997-05-14 16:00:00	1997-05-12 05:30:00
3	1997/05/21	20:20	1997/05/21	22:00	5000	500	N05W12	8040	M1.3	1997/05/21	21:00	263	165	296	False	False	1997-05-21 20:20:00	1997-05-21 22:00:00	1997-05-21 21:00:00
4	1997/09/23	21:53	1997/09/23	22:16	6000	2000	S29E25	8088	C1.4	1997/09/23	22:02	133	155	712	False	False	1997-09-23 21:53:00	1997-09-23 22:16:00	1997-09-23 22:02:00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
513	2017/09/04	20:27	2017/09/05	04:54	14000	210	S10W12	12673	M5.5	2017/09/04	20:12	NA	360	1418	True	False	2017-09-04 20:27:00	2017-09-05 04:54:00	2017-09-04 20:12:00
514	2017/09/06	12:05	2017/09/07	08:00	16000	70	S08W33	12673	X9.3	2017/09/06	12:24	NA	360	1571	True	False	2017-09-06 12:05:00	2017-09-07 08:00:00	2017-09-06 12:24:00
515	2017/09/10	16:02	2017/09/11	06:50	16000	150	S09W92	NaN	X8.3	2017/09/10	16:00	NA	360	3163	True	False	2017-09-10 16:02:00	2017-09-11 06:50:00	2017-09-10 16:00:00
516	2017/09/12	07:38	2017/09/12	07:43	16000	13000	N08E48	12680	C3.0	2017/09/12	08:03	124	96	252	False	False	2017-09-12 07:38:00	2017-09-12 07:43:00	2017-09-12 08:03:00
517	2017/09/17	11:45	2017/09/17	12:35	16000	900	S08E170	NaN	NaN	2017/09/17	12:00	NA	360	1385	True	False	2017-09-17 11:45:00	2017-09-17 12:35:00	2017-09-17 12:00:00

518 rows x 19 columns

```
In [15]: new_nasa = new_nasa[['start_datetime', 'end_datetime', 'start_frequency', 'end_frequency',
```

```
'flare_location', 'flare_region', 'flare_classification',
'cme_datetime', 'cme_angle', 'cme_width', 'cme_speed', 'is_halo',
'width_lower_bound' ]])
new_nasa = new_nasa.replace('NaT', 'NaN')
new_nasa
```

Out[15]:

	start_datetime	end_datetime	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_datetime	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound
0	1997-04-01 14:00:00	1997-04-01 14:15:00	8000	4000	S25E16	8026	M1.3	1997-04-01 15:18:00	74	79	312	False	False
1	1997-04-07 14:30:00	1997-04-07 17:30:00	11000	1000	S28E19	8027	C6.8	1997-04-07 14:27:00	NA	360	878	True	False
2	1997-05-12 05:15:00	1997-05-14 16:00:00	12000	80	N21W08	8038	C1.3	1997-05-12 05:30:00	NA	360	464	True	False
3	1997-05-21 20:20:00	1997-05-21 22:00:00	5000	500	N05W12	8040	M1.3	1997-05-21 21:00:00	263	165	296	False	False
4	1997-09-23 21:53:00	1997-09-23 22:16:00	6000	2000	S29E25	8088	C1.4	1997-09-23 22:02:00	133	155	712	False	False
...	...	...	...	...	...	...	...	...	...	...	...	...	...
513	2017-09-04 20:27:00	2017-09-05 04:54:00	14000	210	S10W12	12673	M5.5	2017-09-04 20:12:00	NA	360	1418	True	False
514	2017-09-06 12:05:00	2017-09-07 08:00:00	16000	70	S08W33	12673	X9.3	2017-09-06 12:24:00	NA	360	1571	True	False
515	2017-09-10 16:02:00	2017-09-11 06:50:00	16000	150	S09W92	NaN	X8.3	2017-09-10 16:00:00	NA	360	3163	True	False
516	2017-09-12 07:38:00	2017-09-12 07:43:00	16000	13000	N08E48	12680	C3.0	2017-09-12 08:03:00	124	96	252	False	False
517	2017-09-17 11:45:00	2017-09-17 12:35:00	16000	900	S08E170	NaN	NaN	2017-09-17 12:00:00	NA	360	1385	True	False

518 rows x 13 columns

Part 2: Analysis

Replication

```
In [16]: import warnings
warnings.filterwarnings('ignore')
#Obtaining the top 50 flares
#Getting X class rows
top_50 = new_nasa[new_nasa['flare_classification'].str.contains('X')]

#Creating column for sorting the X class flares
top_50['flare'] = top_50.flare_classification.str.strip('X').astype(float)
top_50 = top_50.sort_values(by=['flare'], ascending=False)

#Top 50
top_50 = top_50.head(50)

#Resetting the index
top_50.index = range(1,len(top_50)+1)

#Removed extra column used for sorting
top_50.drop('flare',1, inplace=True)
top_50
```

Out[16]:

	start_datetime	end_datetime	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_datetime	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound
1	2003-11-04 20:00:00	2003-11-04 00:00:00	10000	200	S19W83	10486	X28.	2003-11-04 19:54:00	NA	360	2657	True	False
2	2001-04-02 22:05:00	2001-04-03 02:30:00	14000	250	N19W72	9393	X20.	2001-04-02 22:06:00	261	244	2505	False	False
3	2003-10-28 11:10:00	2003-10-29 00:00:00	14000	40	S16E08	10486	X17.	2003-10-28 11:30:00	NA	360	2459	True	False
4	2001-04-15 14:05:00	2001-04-16 13:00:00	14000	40	S20W85	9415	X14.	2001-04-15 14:06:00	245	167	1199	False	False
5	2003-10-29 20:55:00	2003-10-29 00:00:00	11000	500	S15W02	10486	X10.	2003-10-29 20:54:00	NA	360	2029	True	False
6	1997-11-06 12:20:00	1997-11-07 08:30:00	14000	100	S18W63	8100	X9.4	1997-11-06 12:10:00	NA	360	1556	True	False
7	2017-09-06 12:05:00	2017-09-07 08:00:00	16000	70	S08W33	12673	X9.3	2017-09-06 12:24:00	NA	360	1571	True	False
8	2006-12-05 10:50:00	2006-12-05 20:00:00	14000	250	S07E68	10930	X9.0	NaT	NaN	NaN	NaN	False	False
9	2003-11-02 17:30:00	2003-11-03 01:00:00	12000	250	S14W56	10486	X8.3	2003-11-02 17:30:00	NA	360	2598	True	False
10	2017-09-10 16:02:00	2017-09-11 06:50:00	16000	150	S09W92	NaN	X8.3	2017-09-10 16:00:00	NA	360	3163	True	False
11	2005-01-20 07:15:00	2005-01-20 16:30:00	14000	25	N14W61	10720	X7.1	2005-01-20 06:54:00	NA	360	882	True	False
12	2011-08-09 08:20:00	2011-08-09 08:35:00	16000	4000	N17W69	11263	X6.9	2011-08-09 08:12:00	NA	360	1610	True	False
13	2006-12-06 19:00:00	2006-12-08 00:00:00	16000	30	S05E64	10930	X6.5	NaT	NaN	NaN	NaN	False	False
14	2005-09-09 19:45:00	2005-09-09 22:00:00	10000	50	S12E67	10808	X6.2	2005-09-09 19:48:00	NA	360	2257	True	False
15	2000-07-14 10:30:00	2000-07-15 14:30:00	14000	80	N22W07	9077	X5.7	2000-07-14 10:54:00	NA	360	1674	True	False
16	2001-04-06 19:35:00	2001-04-07 01:50:00	14000	230	S21E31	9415	X5.6	2001-04-06 19:30:00	NA	360	1270	True	False
17	2012-03-07 01:00:00	2012-03-08 19:00:00	16000	30	N17E27	11429	X5.4	2012-03-07 00:24:00	NA	360	2684	True	False
18	2001-08-25 16:50:00	2001-08-25 23:00:00	8000	170	S17E34	9591	X5.3	2001-08-25 16:50:00	NA	360	1433	True	False
19	2014-02-25 00:56:00	2014-02-25 11:28:00	14000	100	S12E82	11990	X4.9	2014-02-25 01:25:00	NA	360	2147	True	False

	start_datetime	end_datetime	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_datetime	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound
20	2002-07-23 00:50:00	2002-07-23 04:00:00	11000	400	S13E72	10039	X4.8	2002-07-23 00:42:00	NA	360	2285	True	False
21	2000-11-26 17:00:00	2000-11-26 17:15:00	14000	7000	N18W38	9236	X4.0	2000-11-26 17:06:00	NA	360	980	True	False
22	2003-11-03 10:00:00	2003-11-03 12:30:00	6000	400	N08W77	10488	X3.9	2003-11-03 10:06:00	293	103	1420	False	False
23	2005-01-17 10:00:00	2005-01-17 10:35:00	6100	1500	N15W25	10720	X3.8	2005-01-17 09:54:00	NA	360	2547	True	False
24	2003-05-28 01:00:00	2003-05-29 00:30:00	1000	200	S07W20	10365	X3.6	2003-05-28 00:50:00	NA	360	1366	True	False
25	2006-12-13 02:45:00	2006-12-13 10:40:00	12000	150	S06W23	10930	X3.4	2006-12-13 02:54:00	NA	360	1774	True	False
26	2001-12-28 20:35:00	2001-12-29 03:00:00	14000	350	S26E90	9756	X3.4	2001-12-28 20:30:00	NA	360	2216	True	False
27	2002-07-20 21:30:00	2002-07-20 22:20:00	10000	2000	S13E90	10039	X3.3	2002-07-20 22:06:00	NA	360	1941	True	False
28	2013-05-14 01:16:00	2013-05-14 08:20:00	16000	240	N08E77	11748	X3.2	2013-05-14 01:25:00	NA	360	2625	True	False
29	2002-08-24 01:45:00	2002-08-24 03:25:00	5000	400	S02W81	10069	X3.1	2002-08-24 01:27:00	NA	360	1913	True	False
30	2013-05-13 16:15:00	2013-05-13 19:10:00	16000	300	N11E85	11748	X2.8	2013-05-13 16:07:00	NA	360	1850	True	False
31	2015-05-05 22:24:00	2015-05-05 23:14:00	14000	500	N15E79	12339	X2.7	2015-05-05 22:24:00	NA	360	715	True	False
32	1998-05-06 08:25:00	1998-05-06 08:35:00	14000	5000	S11W65	8210	X2.7	1998-05-06 08:29:00	309	190	1099	False	False
33	2003-11-03 01:15:00	2003-11-03 01:25:00	3000	1500	N10W83	10488	X2.7	2003-11-03 01:59:00	304	65	827	False	False
34	2005-01-15 23:00:00	2005-01-17 00:00:00	3000	40	N15W05	10720	X2.6	2005-01-15 23:06:00	NA	360	2861	True	False
35	2001-09-24 10:45:00	2001-09-25 20:00:00	7000	30	S16E23	9632	X2.6	2001-09-24 10:30:00	NA	360	2402	True	False
36	1997-11-27 13:30:00	1997-11-27 14:00:00	14000	7000	N17E63	8113	X2.6	1997-11-27 13:56:00	98	91	441	False	False
37	2004-11-10 02:25:00	2004-11-10 03:40:00	14000	1000	N09W49	10696	X2.5	2004-11-10 02:26:00	NA	360	3387	True	False
38	2001-04-10 05:24:00	2001-04-10 00:00:00	14000	100	S23W09	9415	X2.3	2001-04-10 05:30:00	NA	360	2411	True	False
39	2000-11-24 15:25:00	2000-11-24 22:00:00	14000	200	N22W07	9236	X2.3	2000-11-24 15:30:00	NA	360	1245	True	False
40	2000-06-06 15:20:00	2000-06-08 09:00:00	14000	40	N20E18	9026	X2.3	2000-06-06 15:54:00	NA	360	1119	True	False
41	2011-02-15 02:10:00	2011-02-15 07:00:00	16000	400	S20W12	11158	X2.2	2011-02-15 02:24:00	NA	360	669	True	False
42	2005-09-10 21:45:00	2005-09-11 01:00:00	14000	200	S13E47	10808	X2.1	2005-09-10 21:52:00	NA	360	1893	True	False
43	2011-09-06 22:30:00	2011-09-07 15:40:00	16000	150	N14W18	11283	X2.1	2011-09-06 23:05:00	NA	360	575	True	False
44	2013-10-25 15:08:00	2013-10-25 22:32:00	16000	200	S06E69	11882	X2.1	2013-10-25 15:12:00	NA	360	1081	True	False
45	1997-11-04 06:00:00	1997-11-05 04:30:00	14000	100	S14W33	8100	X2.1	1997-11-04 06:10:00	NA	360	785	True	False
46	2000-11-24 05:10:00	2000-11-24 15:00:00	14000	100	N20W05	9236	X2.0	2000-11-24 05:30:00	NA	360	1289	True	False
47	2001-04-12 10:20:00	2001-04-12 10:40:00	14000	7000	S19W43	9415	X2.0	2001-04-12 10:31:00	NA	360	1184	True	False
48	2004-11-07 16:25:00	2004-11-08 20:00:00	14000	60	N09W17	10696	X2.0	2004-11-07 16:54:00	NA	360	1759	True	False
49	2005-01-17 09:25:00	2005-01-17 16:00:00	14000	30	N15W25	10720	X2.0	2005-01-17 09:30:00	NA	360	2094	True	False
50	2000-11-25 19:00:00	2000-11-25 19:35:00	6000	2000	N20W23	9236	X1.9	2000-11-25 19:31:00	NA	360	671	True	False

A lot of the observations from the SpaceWeatherLive data seem to be present in the NASA table based on the flare classification but the information inside the similar observations seems to be slightly different. The regions are the same for the most part, the times rarely match and there are quite a new flare classifications in the SpaceWeatherLive dataset that aren't present in the NASA dataset.

Integration

```
In [17]: def isFloat(s): #helper method for dealing with converting to float errors
    try:
        return float(s)
    except ValueError:
        return s

newsolar = table #making a copy of the SpaceWeatherLive data table
newnasa = new_nasa #making a copy of the NASA data table
newnasa['SWL_rank'] = pd.Series('NaN', index=newnasa.index)

#getting flare classification column ready for comparison with nasa's flare classifications
newsolar['x_class'] = newsolar['x_class'].str.strip('X')
newsolar['x_class'][:4] = newsolar['x_class'][:4].str.strip('+')
newsolar['x_class']=newsolar['x_class'].astype(float)

#####
#This function iterates through the whole solar table and checks if the region and flare
#classification match for any of single row observation in the NASA table. If they match, the
#rank is returned and if they don't 'None' is returned
#####
rank_tracker = []
def rank_finder(row_count):
    for i,row in newsolar.iterrows():
        if (newnasa.iloc[row_count,5][-4:] == row['region']) and (isFloat(newnasa.iloc[row_count,6][1:]) == row['x_class']):
            rank_tracker.append(int(row['rank']))
            return row['rank']

#Applying the function to all the rows in the NASA table
```

```
for i, row in newnasa.iterrows():
    rank = rank_finder(i)

    newnasa.iloc[i, 13] = rank

#pd.set_option('display.max_rows', newnasa.shape[0]+1)

newnasa
```

Out[17]:

	start_datetime	end_datetime	start_frequency	end_frequency	flare_location	flare_region	flare_classification	cme_datetime	cme_angle	cme_width	cme_speed	is_halo	width_lower_bound	SWL_rank
0	1997-04-01 14:00:00	1997-04-01 14:15:00	8000	4000	S25E16	8026	M1.3	1997-04-01 15:18:00	74	79	312	False	False	None
1	1997-04-07 14:30:00	1997-04-07 17:30:00	11000	1000	S28E19	8027	C6.8	1997-04-07 14:27:00	NA	360	878	True	False	None
2	1997-05-12 05:15:00	1997-05-14 16:00:00	12000	80	N21W08	8038	C1.3	1997-05-12 05:30:00	NA	360	464	True	False	None
3	1997-05-21 20:20:00	1997-05-21 22:00:00	5000	500	N05W12	8040	M1.3	1997-05-21 21:00:00	263	165	296	False	False	None
4	1997-09-23 21:53:00	1997-09-23 22:16:00	6000	2000	S29E25	8088	C1.4	1997-09-23 22:02:00	133	155	712	False	False	None
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
513	2017-09-04 20:27:00	2017-09-05 04:54:00	14000	210	S10W12	12673	M5.5	2017-09-04 20:12:00	NA	360	1418	True	False	None
514	2017-09-06 12:05:00	2017-09-07 08:00:00	16000	70	S08W33	12673	X9.3	2017-09-06 12:24:00	NA	360	1571	True	False	8
515	2017-09-10 16:02:00	2017-09-11 06:50:00	16000	150	S09W92	NaN	X8.3	2017-09-10 16:00:00	NA	360	3163	True	False	None
516	2017-09-12 07:38:00	2017-09-12 07:43:00	16000	13000	N08E48	12680	C3.0	2017-09-12 08:03:00	124	96	252	False	False	None
517	2017-09-17 11:45:00	2017-09-17 12:35:00	16000	900	S08E170	NaN	NaN	2017-09-17 12:00:00	NA	360	1385	True	False	None

518 rows x 14 columns

Analysis

These plots show how the starting frequencies, ending frequencies and cme widths for the top 50 flares compare to the rest of the NASA dataset. The top 50 flares are in red while the rest are in black

In [18]:

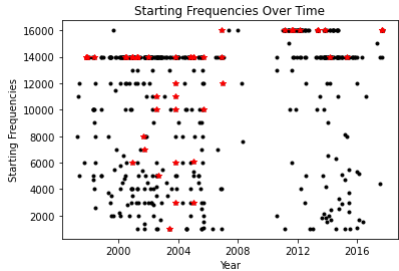
```
import matplotlib.pyplot as plt
%matplotlib inline
```

In [19]:

```
#By start_frequency
new_nasa['start_frequency'].replace('NaN', np.nan, inplace=True)
top_50['start_frequency'] = top_50['start_frequency'].astype(float) # to get an ordered y axis
new_nasa['start_frequency'] = new_nasa['start_frequency'].astype(float)

plt.plot(new_nasa['start_datetime'], new_nasa['start_frequency'], '.', color='black')
plt.plot(top_50['start_datetime'], top_50['start_frequency'], '+', color='red') #top 50
plt.title('Starting Frequencies Over Time')
plt.xlabel('Year')
plt.ylabel('Starting Frequencies')
```

Out[19]: Text(0, 0.5, 'Starting Frequencies')



The top 50 flares seem to fit in to the rest of the NASA dataset. Most of them seem to have high starting frequencies but so do a lot of other flares not in the top 50.

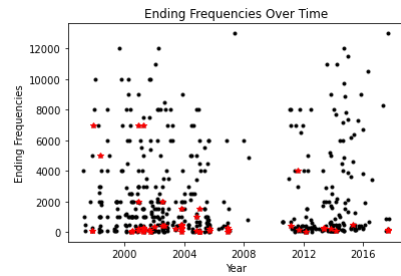
In [20]:

```
#Plotting Top 50 Flares

#By end_frequency
new_nasa['end_frequency'].replace('NaN', np.nan, inplace=True)
top_50['end_frequency'] = top_50['end_frequency'].astype(float) # to get an ordered y axis
new_nasa['end_frequency'] = new_nasa['end_frequency'].astype(float)

plt.plot(new_nasa['start_datetime'], new_nasa['end_frequency'], '.', color='black')
plt.plot(top_50['start_datetime'], top_50['end_frequency'], '+', color='red') #top 50
plt.title('Ending Frequencies Over Time')
plt.xlabel('Year')
plt.ylabel('Ending Frequencies')
```

Out[20]: Text(0, 0.5, 'Ending Frequencies')



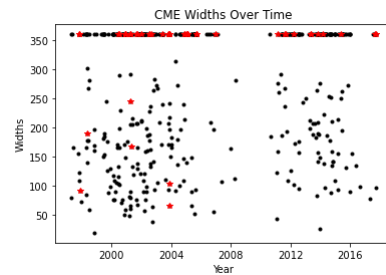
There is little distinction between the top 50 flares and those not in the top 50. You would not be able to tell the difference if they were all the same color

```
In [21]: #Plotting Top 50 Flares

#By cme_width
new_nasa['cme_width'].replace('NaN', np.nan, inplace=True)
top_50['cme_width'] = top_50['cme_width'].astype(float) # to get an ordered y axis
new_nasa['cme_width'] = new_nasa['cme_width'].astype(float)

plt.plot(new_nasa['start_datetime'], new_nasa['cme_width'], '.', color='black')
plt.plot(top_50['start_datetime'], top_50['cme_width'], '*', color='red') #top 50
plt.title('CME Widths Over Time')
plt.xlabel('Year')
plt.ylabel('Widths')
```

Out[21]: Text(0, 0.5, 'Widths')



The vast majority of the top 50 flares seem to have large widths, but so do a lot of other flares not in the top 50.

There seems to be a positive correlation between the cme widths and the starting frequencies as their plots over time look very similar.