Proj1

Part 1: Data scraping and preparation

Step 1: Scrape your competitor's data

This pipeline first reads the html from the provided url and finds the table based on the HTML node. Column names are added by using a vectpr of column names and the pipeline results in a dataframe

```
url <- "https://www.spaceweatherlive.com/en/solar-activity/top-50-solar-flares"

sf <- url %>%
  read_html() %>%
  html_node(".table-striped") %>%
  html_table() %>%
  set_colnames(c("rank", "flare_classification","date","flare_region", "start_time","m
aximum_time","end_time","movie")) %>%
  as.data.frame()
head(sf, n = 10)
```

```
##    rank flare_classification       date flare_region start_time
## 1     1                X28.0 2003/11/04          486      19:29
## 2     2                X20.0 2001/04/02         9393      21:32
## 3     3                X17.2 2003/10/28          486      09:51
## 4     4                X17.0 2005/09/07          808      17:17
## 5     5                X14.4 2001/04/15         9415      13:19
## 6     6                X10.0 2003/10/29          486      20:37
## 7     7                 X9.4 1997/11/06         8100      11:49
## 8     8                 X9.3 2017/09/06         2673      11:53
## 9     9                 X9.0 2006/12/05          930      10:18
## 10   10                 X8.3 2003/11/02          486      17:03
##    maximum_time end_time           movie
## 1         19:53    20:06 MovieView archive
## 2         21:51    22:03 MovieView archive
## 3         11:10    11:24 MovieView archive
## 4         17:40    18:03 MovieView archive
## 5         13:50    13:55 MovieView archive
## 6         20:49    21:01 MovieView archive
## 7         11:55    12:01 MovieView archive
## 8         12:02    12:10 MovieView archive
## 9         10:35    10:45 MovieView archive
## 10        17:25    17:39 MovieView archive
```

Step 2: Tidy the top 50 solar flare data

uses the data frame from Step 1 and first drops the movie column by using the select function that keeps everything but the movie col using the minus sign operator. Then the unite function is used to create a new column based on the column vectors passed in and finally the united column is converted to a POSIXct type using type convert and using a column specification which uses a regex.

```
sf <- sf %>%
  select(-movie) %>%
  unite ("start_datetime", c("date", "start_time"), sep = " ", remove =    FALSE)%>%
  unite ("max_datetime",  c("date", "maximum_time"),sep = " ", remove = FALSE)%>%
  unite ("end_datetime", c("date", "end_time"), sep = " ", remove = TRUE)%>%
 type_convert(cols(start_datetime=col_datetime(format = "%Y/%m/%d %H:%M"),   max_datet
ime=col_datetime(format = "%Y/%m/%d %H:%M"), end_datetime = col_datetime(format = "%
Y/%m/%d %H:%M")))
head(sf, n = 10)
```

```
##     rank flare_classification      start_datetime          max_datetime
## 1     1                   X28.0 2003-11-04 19:29:00 2003-11-04 19:53:00
## 2     2                   X20.0 2001-04-02 21:32:00 2001-04-02 21:51:00
## 3     3                   X17.2 2003-10-28 09:51:00 2003-10-28 11:10:00
## 4     4                   X17.0 2005-09-07 17:17:00 2005-09-07 17:40:00
## 5     5                   X14.4 2001-04-15 13:19:00 2001-04-15 13:50:00
## 6     6                   X10.0 2003-10-29 20:37:00 2003-10-29 20:49:00
## 7     7                    X9.4 1997-11-06 11:49:00 1997-11-06 11:55:00
## 8     8                    X9.3 2017-09-06 11:53:00 2017-09-06 12:02:00
## 9     9                    X9.0 2006-12-05 10:18:00 2006-12-05 10:35:00
## 10   10                    X8.3 2003-11-02 17:03:00 2003-11-02 17:25:00
##            end_datetime flare_region start_time maximum_time
## 1  2003-11-04 20:06:00          486   19:29:00     19:53:00
## 2  2001-04-02 22:03:00         9393   21:32:00     21:51:00
## 3  2003-10-28 11:24:00          486   09:51:00     11:10:00
## 4  2005-09-07 18:03:00          808   17:17:00     17:40:00
## 5  2001-04-15 13:55:00         9415   13:19:00     13:50:00
## 6  2003-10-29 21:01:00          486   20:37:00     20:49:00
## 7  1997-11-06 12:01:00         8100   11:49:00     11:55:00
## 8  2017-09-06 12:10:00         2673   11:53:00     12:02:00
## 9  2006-12-05 10:45:00          930   10:18:00     10:35:00
## 10 2003-11-02 17:39:00          486   17:03:00     17:25:00
```

Step 3: Scrape the NASA data

```r
url <-  "http://cdaw.gsfc.nasa.gov/CME_list/radio/waves_type2.html"

NASA <- url %>%
  read_html() %>%
  html_node("pre")%>%
  html_text() %>%
  strsplit("\n") %>%
  as.data.frame() %>%
  set_colnames(c("col")) %>%
  separate(col, into = c("start_date", "start_time", "end_date", "end_time", "start_fr
eq", "end_freq", "Location", "NOAA", "Importance",
                        "CME_date", "CME_time", "CME_CPA", "CME_width", "CME_speed", "Pl
ots"), sep = "[ ]+")
```

```
## Warning: Too many values at 43 locations: 11, 28, 39, 55, 90, 98, 104, 109,
## 135, 136, 162, 163, 169, 183, 195, 196, 220, 242, 263, 264, ...
```

```
## Warning: Too few values at 13 locations: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12,
## 524, 525
```

```r
tail(NASA, 513) %>%
  head(511)
```

```
##      start_date start_time end_date end_time start_freq end_freq Location
## 13  1997/04/01      14:00    04/01    14:15       8000     4000   S25E16
## 14  1997/04/07      14:30    04/07    17:30      11000     1000   S28E19
## 15  1997/05/12      05:15    05/14    16:00      12000       80   N21W08
## 16  1997/05/21      20:20    05/21    22:00       5000      500   N05W12
## 17  1997/09/23      21:53    09/23    22:16       6000     2000   S29E25
## 18  1997/11/03      05:15    11/03    12:00      14000      250   S20W13
## 19  1997/11/03      10:30    11/03    11:30      14000     5000   S16W21
## 20  1997/11/04      06:00    11/05    04:30      14000      100   S14W33
## 21  1997/11/06      12:20    11/07    08:30      14000      100   S18W63
## 22  1997/11/27      13:30    11/27    14:00      14000     7000   N17E63
## 23  1997/12/12      22:45    12/12    23:20      14000     8000   N25W52
## 24  1998/01/25      15:03    01/25    15:18      14000    10000   N21E25
## 25  1998/03/29      03:40    03/29    03:52      14000     7000     SW90
## 26  1998/04/20      10:25    04/22    06:00      10000       35   S22W90
## 27  1998/04/23      06:00    04/23    15:30      14000      200   S17E90
## 28  1998/04/24      09:17    04/24    09:25       4700     2600   S10E90
## 29  1998/04/27      09:20    04/27    10:00      10000     1000   S16E50
## 30  1998/04/29      16:30    04/29    17:00      10000     2000   S18E20
## 31  1998/05/02      14:25    05/02    14:50       5000     3000   S15W15
## 32  1998/05/06      08:25    05/06    08:35      14000     5000   S11W65
## 33  1998/05/09      03:35    05/09    10:00       9000      400   S14W89
## 34  1998/05/11      21:40    05/11    22:00      10000     1000   N32W90
## 35  1998/05/19      10:00    05/19    11:30      14000     3000   N29W46
## 36  1998/05/27      13:30    05/27    14:20       4000     1000   N19W62
## 37  1998/06/11      10:15    06/11    10:20       8000     4000   N16E86
## 38  1998/06/16      18:20    06/17    21:00      12000       50   S22W90
## 39  1998/06/20      19:39    06/20    20:00       2600     1800     Back
## 40  1998/06/22      07:15    06/22    09:20       6000     2000   N16W46
## 41  1998/11/02      14:00    11/02    14:40      14000     4000   S25E47
## 42  1998/11/05      22:00    11/07    08:00       5000       50   N22W18
## 43  1998/11/06      03:00    11/06    05:30       5000     1000     BACK
## 44  1998/11/07      00:20    11/07    00:50      14000     6000    NE90b
## 45  1998/11/08      11:20    11/08    11:30      10000     8000   S21W37
## 46  1998/12/18      17:50    12/18    18:15      14000     5000   N19E64
## 47  1999/04/24      13:50    04/24    00:00       3700     1500    NW90b
## 48  1999/05/03      05:50    05/03    08:45       8000      200   N15E32
## 49  1999/05/27      10:55    05/28    10:00      14000       70     W90b
## 50  1999/06/01      18:50    06/02    09:00      14000      400    NW90b
## 51  1999/06/04      07:05    06/05    01:00      14000       60   N17W69
## 52  1999/06/11      11:45    06/11    17:00      14000      400   N38E90
## 53  1999/06/22      18:25    06/22    18:40       3000     2000   N22E37
## 54  1999/06/23      05:50    06/23    07:10      12000     2000     BACK
## 55  1999/06/23      07:07    06/23    07:14      14000     2000   N23E42
## 56  1999/06/28      21:03    06/28    21:10       3500     1500   N22W44
## 57  1999/06/29      19:20    06/29    19:55      14000     2000   S14E01
## 58  1999/07/05      03:10    07/05    04:05       2000     1000     SW90b
## 59  1999/08/28      18:25    08/28    18:33      16000    12000   S26W14
```

```
## 60  1999/09/03   03:00  09/03  04:10   2000   1000  S36W24
## 61  1999/09/10   07:30  09/10  07:35   5500   2000   NW90b
## 62  1999/10/14   09:10  10/14  10:00  14000   4000  N11E32
## 63  1999/10/17   23:27  10/17  23:33  11500  10000  N03E38
## 64  1999/11/16   03:27  11/16  03:48   7000   4000  N17E38
## 65  1999/11/16   05:17  11/16  05:34  14000   7000  N08W39
## 66  2000/01/18   17:31  01/18  22:00  14000    500  S19E11
## 67  2000/01/28   20:20  01/28  20:24   2200   1100  S31W17
## 68  2000/02/05   19:34  02/05  19:34   5800   2900  N26E52
## 69  2000/02/08   09:05  02/11  02:20  12000     20  N25E26
## 70  2000/02/10   01:55  02/10  02:00  14000   8000  N31E04
## 71  2000/02/12   03:55  02/12  09:20   4000    400  N26W23
## 72  2000/02/17   20:42  02/18  22:12  14000    100  S29E07
## 73  2000/02/18   09:44  02/18  09:54   2000   1200   NW90b
## 74  2000/03/02   13:50  03/02  14:03  14000   6000  S20W58
## 75  2000/03/07   16:24  03/07  16:48  14000   4500  S22E77
## 76  2000/03/27   06:56  03/27  06:58  14000  10000  S00E90
## 77  2000/04/04   15:45  04/04  16:00  14000   9000  N16W66
## 78  2000/04/09   23:15  04/09  23:45   4500   1000  S14W01
## 79  2000/04/18   15:00  04/18  16:00  14000   6000  S50W30
## 80  2000/05/04   11:10  05/04  13:00   6500   1000  S17W87
## 81  2000/05/05   16:35  05/05  17:30  14000   2500  S17W87
## 82  2000/05/07   21:15  05/07  24:00  14000    500    W90b
## 83  2000/05/12   23:34  05/12  23:42  14000   7000    E90b
## 84  2000/05/15   16:47  05/16  14:00   4800     40  S24W67
## 85  2000/06/02   22:00  06/02  22:15  14000   8000  N16E60
## 86  2000/06/06   15:20  06/08  09:00  14000     40  N20E18
## 87  2000/06/10   17:15  06/10  18:45  10000   1000  N22W38
## 88  2000/06/15   19:52  06/15  19:56   5000   2500  N20W65
## 89  2000/06/17   03:00  06/17  04:15  14000   1000  N22W72
## 90  2000/06/19   01:19  06/19  01:22   3800   1900  N42E60
## 91  2000/06/23   14:40  06/22  15:05  14000   2000  N26W72
## 92  2000/06/25   08:10  06/25  09:00  12000   2500  N16W55
## 93  2000/07/10   22:00  07/10  23:30  14000   1000  N18E49
## 94  2000/07/11   13:00  07/11  13:30  12000   1000  N18E27
## 95  2000/07/12   20:05  07/12  20:35   6000   1000  N19W61
## 96  2000/07/14   10:30  07/15  14:30  14000     80  N22W07
## 97  2000/07/22   11:45  07/22  12:45  14000   2000  N14W56
## 98  2000/08/11   11:35  08/11  11:59   2800   2000   NW90b
## 99  2000/09/12   12:00  09/13  12:20  14000     60  S19W06
## 100 2000/09/12   18:15  09/12  19:00   2000   1000   NE90b
## 101 2000/09/16   04:30  09/16  10:30  14000    400  N14W07
## 102 2000/09/19   08:45  09/19  10:20  12000   1500  N14W46
## 103 2000/09/25   02:20  09/25  03:00  14000   1000  N09W18
## 104 2000/10/05   22:10  10/05  22:35   5000   1250  N25W90
## 105 2000/10/16   07:10  10/16  08:00  14000   1000  N03W90
## 106 2000/10/25   09:30  10/25  24:00  10000    300  N09W63
## 107 2000/11/03   18:35  11/03  18:45   4000   2500  N02W02
## 108 2000/11/08   23:20  11/09  12:00   4000    200  N10W77
```

```
## 109  2000/11/09   16:15   11/11   04:00   10000     40   S11E10
## 110  2000/11/12   14:25   11/12   14:40    3000   2000   S14E05
## 111  2000/11/23   08:16   11/23   08:35   14000   9000   S26W40
## 112  2000/11/23   21:00   11/23   21:06    3500   3000   S20E60
## 113  2000/11/24   05:10   11/24   15:00   14000    100   N20W05
## 114  2000/11/24   15:25   11/24   22:00   14000    200   N22W07
## 115  2000/11/24   22:24   11/24   22:36    4000   3000   N21W14
## 116  2000/11/25   01:25   11/25   02:25   14000   3000   N07E50
## 117  2000/11/25   19:00   11/25   19:35    6000   2000   N20W23
## 118  2000/11/25   19:55   11/25   20:25   13000   4000   N20W27
## 119  2000/11/26   17:00   11/26   17:15   14000   7000   N18W38
## 120  2000/12/28   12:40   12/28   13:38   14000   1900     Back
## 121  2001/01/20   19:12   01/20   19:16   14000   6000   S07E40
## 122  2001/01/20   21:30   01/20   24:00   14000    500   S07E46
## 123  2001/01/26   12:06   01/26   14:20   14000    400   S23W57
## 124  2001/01/28   15:45   01/28   17:00   14000    200   S04W59
## 125  2001/02/11   01:40   02/11   01:55   12000   5500   N24W57
## 126  2001/03/10   04:18   03/10   04:32   14000   4000   N27W42
## 127  2001/03/12   05:35   03/12   05:45    3000   1500     BACK
## 128  2001/03/27   02:35   03/27   03:15    6000   1000   N14E17
## 129  2001/03/27   15:00   03/27   15:20    4000   1500   N15E14
## 130  2001/03/29   10:12   03/30   06:00    4000     60   N20W19
## 131  2001/04/02   11:30   04/02   12:00   14000   5000   N20W70
## 132  2001/04/02   22:05   04/03   02:30   14000    250   N19W72
## 133  2001/04/03   03:40   04/03   07:25   14000    400   S21E83
## 134  2001/04/04   09:50   04/04   10:10   13000   3000   S21E68
## 135  2001/04/05   00:00   04/05   00:00   14000   7500   N14W85
## 136  2001/04/06   19:35   04/07   01:50   14000    230   S21E31
## 137  2001/04/09   15:53   04/10   01:00   12000    100   S21W04
## 138  2001/04/10   05:24   04/10   24:00   14000    100   S23W09
## 139  2001/04/11   13:15   04/11   14:15   14000   1500   S22W27
## 140  2001/04/12   10:20   04/12   10:40   14000   7000   S19W43
## 141  2001/04/15   14:05   04/16   13:00   14000     40   S20W85
## 142  2001/04/18   02:55   04/18   14:00    1000    100     SW90b
## 143  2001/04/26   12:40   04/28   05:00    5000     20   N20W05
## 144  2001/05/07   12:00   05/07   13:50    2000    280     NW90b
## 145  2001/05/12   23:52   05/13   00:12    3000   1000   S17E00
## 146  2001/05/30   00:25   05/30   01:38   14000   1000      E90b
## 147  2001/06/15   10:50   06/15   11:15    7000   3000   S26E41
## 148  2001/06/15   16:05   06/15   16:20   14000   3500      W90b
## 149  2001/08/16   00:10   08/15   08:40    5400    200     Back
## 150  2001/08/25   16:50   08/25   23:00    8000    170   S17E34
## 151  2001/08/30   20:43   08/30   20:47   12000  10000   N15E44
## 152  2001/09/03   18:48   09/03   19:00   12000   7500   S23E90
## 153  2001/09/15   11:50   09/15   12:05   14000   6000   S21W49
## 154  2001/09/16   13:50   09/16   14:10    3000   2000   S13E15
## 155  2001/09/17   08:35   09/17   08:47   14000   5400   S14E04
## 156  2001/09/20   18:43   09/20   18:57   14000  10000   N09W11
## 157  2001/09/24   10:45   09/25   20:00    7000     30   S16E23
```

```
## 158 2001/09/27   08:15   09/28   07:00    4000      80    S15W40
## 159 2001/10/01   07:00   10/01   18:30    1000     150    S24W81
## 160 2001/10/05   11:35   10/05   12:55    1400     500     SW90b
## 161 2001/10/09   11:15   10/09   16:00    8000     200    S28E08
## 162 2001/10/09   11:20   10/09   11:55   14000    2000    S28E08
## 163 2001/10/09   13:10   10/09   23:00    5000      50      BACK
## 164 2001/10/19   01:15   10/19   02:25   14000    1300    N16W18
## 165 2001/10/19   16:45   10/21   16:40   14000      30    N15W29
## 166 2001/10/22   15:15   10/22   17:40    8000    1200    S21E18
## 167 2001/10/25   15:30   10/27   23:00   14000      30    S16W21
## 168 2001/11/04   16:30   11/06   11:00   14000      70    N06W18
## 169 2001/11/17   05:35   11/17   06:40   11000    1700    S13E42
## 170 2001/11/22   20:50   11/22   22:23    8000    1000    S25W67
## 171 2001/11/22   22:40   11/24   02:30   14000      40    S17W36
## 172 2001/12/11   12:45   12/11   17:00    4500     750     SW90b
## 173 2001/12/25   11:25   12/25   12:40   14000    1000     SE90b
## 174 2001/12/26   05:20   12/27   05:00   14000     150    N08W54
## 175 2001/12/28   20:35   12/29   03:00   14000     350    S26E90
## 176 2001/12/29   20:45   12/29   21:05    3000    1500      BACK
## 177 2002/01/08   18:30   01/09   24:00   14000      90     NE90b
## 178 2002/01/14   06:25   01/14   21:30   12000     100    S28W83
## 179 2002/01/27   12:49   01/27   13:25   14000    3000     Back?
## 180 2002/02/01   19:23   02/01   19:31   14000   11000      BACK
## 181 2002/02/21   12:35   02/21   12:50    4000    1500    N16W79
## 182 2002/03/11   00:00   03/11   00:15   14000    8000    S11E90
## 183 2002/03/12   00:00   03/12   02:20   14000    2200    S15E45
## 184 2002/03/15   22:45   03/15   23:30   14000    6000    S08W03
## 185 2002/03/17   06:00   03/17   06:35    3000    1000    S20E24
## 186 2002/03/18   02:55   03/18   05:35   14000    1000    S15W22
## 187 2002/03/22   11:30   03/22   12:40   14000     500    S09W90
## 188 2002/03/22   13:10   03/22   13:35    3000    2000    S00W90
## 189 2002/04/10   12:59   04/10   13:02   13000   12000    N15W14
## 190 2002/04/14   07:50   04/14   08:10   14000    8000    N19W57
## 191 2002/04/15   03:35   04/15   04:15   11000    1500    S15W01
## 192 2002/04/17   08:30   04/19   04:00    5000      40    S14W34
## 193 2002/04/21   01:30   04/21   24:00   10000      60    S14W84
## 194 2002/04/30   14:15   04/30   14:23    4000    2500    S16E77
## 195 2002/04/30   22:30   04/30   23:20    2000     500      W90b
## 196 2002/05/02   23:50   05/03   00:10    2800     900      E90b
## 197 2002/05/16   01:50   05/16   03:30    9000    2000    S22E01
## 198 2002/05/22   00:00   05/22   00:30   14000    8000    S25W64
## 199 2002/05/27   12:50   05/27   13:50   14000    5000    N18E18
## 200 2002/07/07   11:35   07/07   20:00   14000     200    S19W90
## 201 2002/07/09   19:46   07/09   20:40    1000     650      W90b
## 202 2002/07/15   21:15   07/16   05:00    5000     175    N19W01
## 203 2002/07/17   07:30   07/17   07:45    3500    2000    N21W17
## 204 2002/07/18   07:55   07/18   08:45   14000    1500    N19W30
## 205 2002/07/18   20:55   07/18   21:40    6000    3000      E90b
## 206 2002/07/19   16:40   07/19   17:10    5000    1000    S15E90
```

```
## 207 2002/07/20    21:30   07/20   22:20   10000    2000    SE90b
## 208 2002/07/23    00:50   07/23   04:00   11000     400    S13E72
## 209 2002/07/26    22:27   07/26   23:30   14000    2000    S19E26
## 210 2002/07/29    12:10   07/29   12:45    4200    1300    N10W15
## 211 2002/08/03    19:20   08/03   20:30   14000    2000    S16W76
## 212 2002/08/14    02:20   08/14   24:00    1000      30    N09W54
## 213 2002/08/16    06:15   08/16   09:30   14000     300    N07W83
## 214 2002/08/16    12:20   08/17   21:00   14000      60    S14E20
## 215 2002/08/24    01:45   08/24   03:25    5000     400    S02W81
## 216 2002/09/05    16:55   09/07   16:22   14000      30    N09E28
## 217 2002/09/10    15:19   09/10   16:00   14000    8500    S10E43
## 218 2002/09/27    13:35   09/27   14:30   14000    8000    N13E45
## 219 2002/10/13    18:10   10/13   18:40   14000    4000    S07W54
## 220 2002/10/14    00:19   10/14   02:00    1700     500    S13E75
## 221 2002/10/14    14:35   10/14   16:50   14000    1200    NE90b
## 222 2002/10/27    23:06   10/28   01:20   14000     300    SE90b
## 223 2002/11/09    13:20   11/10   03:00   14000     100    S12W29
## 224 2002/11/10    03:20   11/10   06:00    3000     300    S12W37
## 225 2002/11/11    16:15   11/11   17:50   14000     600    S13W60
## 226 2002/11/24    20:05   11/24   20:45   14000    7000    N20E35
## 227 2002/12/19    21:45   12/19   22:30   14000    1500    N15W09
## 228 2002/12/22    04:20   12/22   04:50    5500    3500    N23W42
## 229 2003/01/20    19:10   01/20   20:00   14000    6000    N34W26
## 230 2003/01/27    22:20   01/27   22:26   11000    8000    S17W23
## 231 2003/03/18    12:25   03/18   13:45    4500     500    S15W46
## 232 2003/03/18    13:55   03/18   14:10   14000    7000     S90b
## 233 2003/03/19    02:30   03/19   03:15   14000    6000    SW90b
## 234 2003/04/22    07:25   04/22   08:22    3500     700    NE90b
## 235 2003/05/27    23:12   05/27   23:45   14000    2000    S07W17
## 236 2003/05/28    01:00   05/29   00:30    1000     200    S06W21
## 237 2003/05/29    01:10   05/29   08:00   13000     200    S06W37
## 238 2003/05/31    03:00   05/31   08:00    1000     150    S07W65
## 239 2003/06/05    00:00   06/05   00:00    ????    ????     W90b
## 240 2003/06/16    00:00   06/16   03:00   14000     400    S07E80
## 241 2003/06/17    22:50   06/18   05:30   10000     200    S08E59
## 242 2003/07/10    14:10   07/10   16:10    4000     400    N13W90
## 243 2003/08/19    11:15   08/19   12:00   14000    1000    S10W57
## 244 2003/10/21    04:10   10/21   04:55    5000    1000    SE90b
## 245 2003/10/26    07:00   10/26   09:15    8000    1500    S15E44
## 246 2003/10/26    17:45   10/26   19:40   14000    1500    N02W38
## 247 2003/10/28    11:10   10/29   24:00   14000      40    S16E08
## 248 2003/10/29    20:55   10/29   24:00   11000     500    S15W02
## 249 2003/11/01    22:55   11/02   00:50   14000    2000    S12W60
## 250 2003/11/02    00:00   11/02   00:00    ????    ????    SW90b
## 251 2003/11/02    17:30   11/03   01:00   12000     250    S14W56
## 252 2003/11/03    01:15   11/03   01:25    3000    1500    N10W83
## 253 2003/11/03    10:00   11/03   12:30    6000     400    N08W77
## 254 2003/11/04    00:00   11/04   00:00    ????    ????    Back?
## 255 2003/11/04    20:00   11/04   24:00   10000     200    S19W83
```

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## 256 2003/11/09   00:00   11/09   00:00   ????    ????    E90b
## 257 2003/11/11   00:00   11/11   00:00   ????    ????    W90b
## 258 2003/11/13   09:35   11/13   10:50   14000   4000    N12E90
## 259 2003/11/17   09:05   11/17   09:20   4000    1500    S01E33
## 260 2003/11/18   00:00   11/18   00:00   ????    ????    N00E18
## 261 2003/11/18   10:15   11/18   11:30   5000    2000    S16E90
## 262 2003/12/02   11:00   12/02   12:00   14000   9000    S14W70
## 263 2004/01/05   03:40   01/05   03:50   9000    2500    S12E38
## 264 2004/01/06   00:00   01/06   00:00   14000   2000    N05E90
## 265 2004/01/07   04:15   01/07   06:15   14000   750     N02E82
## 266 2004/01/07   10:35   01/07   11:35   14000   1500    N06E75
## 267 2004/04/06   13:05   04/06   16:00   8000    300     S18E15
## 268 2004/04/08   10:25   04/08   12:50   3000    500     S15W11
## 269 2004/04/08   13:30   04/08   14:00   6000    3000    S19W08
## 270 2004/04/11   04:20   04/11   05:35   14000   500     S14W47
## 271 2004/06/02   23:13   06/02   23:55   14000   2100    W90b
## 272 2004/06/03   16:48   06/03   17:10   12000   5000    W90b
## 273 2004/06/04   07:50   06/04   09:55   14000   2500    W90b
## 274 2004/06/22   22:07   06/22   22:30   10000   7000    S12W24
## 275 2004/06/23   06:30   06/23   08:55   14000   5000    S09W21
## 276 2004/07/23   19:00   07/23   19:35   10000   2500    N04W05
## 277 2004/07/25   15:00   07/26   22:25   1000    28      N08W33
## 278 2004/07/29   13:20   07/30   20:30   1000    50      N00W90
## 279 2004/07/31   07:10   07/31   11:30   1000    200     N05W89
## 280 2004/08/08   09:15   08/08   09:22   14000   7000    BACK
## 281 2004/09/12   00:45   09/13   21:00   14000   40      N03E49
## 282 2004/09/19   17:15   09/19   18:15   14000   2500    N03W58
## 283 2004/10/24   03:12   10/24   03:21   14000   8000    N11E19
## 284 2004/10/30   06:40   10/30   07:40   4000    1000    N13W22
## 285 2004/11/01   05:55   11/01   07:25   3000    400     W90b
## 286 2004/11/03   15:55   11/03   16:30   14000   3400    N09E38
## 287 2004/11/03   03:35   11/03   04:10   2000    1200    N09E45
## 288 2004/11/06   01:50   11/06   02:45   6000    700     N09E05
## 289 2004/11/07   16:25   11/08   20:00   14000   60      N09W17
## 290 2004/11/09   17:35   11/09   18:10   14000   5000    N08W51
## 291 2004/11/10   02:25   11/10   03:40   14000   1000    N09W49
## 292 2004/12/03   00:07   12/04   04:30   10000   60      N08W02
## 293 2004/12/08   20:05   12/08   20:10   14000   8000    N08W03
## 294 2004/12/29   16:35   12/29   17:00   14000   4500    N04E62
## 295 2004/12/30   23:45   12/31   04:20   5000    700     N04E46
## 296 2005/01/01   00:45   01/01   02:25   14000   450     N06E34
## 297 2005/01/04   11:20   01/04   11:35   13000   6000    N05W11
## 298 2005/01/15   06:15   01/15   09:30   14000   250     N16E04
## 299 2005/01/15   23:00   01/15   00:00   3000    40      N15W05
## 300 2005/01/17   09:25   01/17   16:00   14000   30      N15W25
## 301 2005/01/19   09:20   01/19   00:00   5300    40      N15W51
## 302 2005/01/17   10:00   01/17   10:35   6100    1500    N15W25
## 303 2005/01/20   07:15   01/20   16:30   14000   25      N14W61
## 304 2005/02/01   11:40   02/01   11:50   8000    4000    BACK
```

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## 305 2005/05/02    22:40   03/02   23:00   14000    5500   S05E90
## 306 2005/05/03    00:20   03/03   01:10   14000    1500   S05E90
## 307 2005/05/06    17:52   05/06   18:03    5000    4000   S09E29
## 308 2005/05/13    17:00   05/13   02:10    5000      40   N12E11
## 309 2005/05/17    03:20   05/17   03:35    4500    1500     BACK
## 310 2005/06/03    12:50   06/03   15:00   10000     270   N15E90
## 311 2005/06/16    20:25   06/16   21:40    9000    1000   N08W90
## 312 2005/07/07    16:30   07/07   16:40    4000    2000   N09E03
## 313 2005/07/09    22:15   07/09   23:00   14000     600   N12W28
## 314 2005/07/13    14:15   07/13   15:05   14000    1000   N11W90
## 315 2005/07/14    11:00   07/14   12:54    3000     800   N11W90
## 316 2005/07/17    11:50   07/17   13:45    7000     300     BACK
## 317 2005/07/24    13:50   07/24   22:30   14000     150     BACK
## 318 2005/07/24    22:35   07/24   22:40    1000     700     BACK
## 319 2005/07/27    05:20   07/27   06:45    1000     450   N11E90
## 320 2005/07/27    07:45   07/27   08:30    2500    1000     NE90b
## 321 2005/07/30    07:40   07/30   20:00    9000      80   N12E60
## 322 2005/08/01    14:15   08/01   14:50   14000    4500   N13E32
## 323 2005/08/22    01:30   08/22   03:35    8000     550   S11W54
## 324 2005/08/22    17:15   08/23   13:00   12000      40   S13W65
## 325 2005/08/23    15:00   08/23   19:30   13000     400   S14W90
## 326 2005/08/29    11:10   08/29   11:14   10000    6000     BACK
## 327 2005/08/31    11:40   08/31   12:10    6000     800   N13W13
## 328 2005/08/31    22:10   08/31   23:00   14000    6000     BACK
## 329 2005/09/03    03:20   09/03   05:15    2000     500     BACK
## 330 2005/09/05    10:40   09/06   00:00    1500      60   S07E81
## 331 2005/09/07    18:05   09/08   00:00   12000     200   S11E77
## 332 2005/09/09    19:45   09/09   22:00   10000      50   S12E67
## 333 2005/09/10    21:45   09/10   01:00   14000     300   S13E47
## 334 2005/09/11    13:10   09/11   15:15    3000     350   S16E39
## 335 2005/09/13    20:20   09/15   06:00    1100      35   S09E10
## 336 2006/04/30    16:20   05/02   01:00    1000     200   S09E08
## 337 2006/07/06    08:45   07/06   17:18   14000     300   S09W34
## 338 2006/08/16    15:45   08/16   22:15   14000     400   S16W08
## 339 2006/08/26    20:40   08/26   21:00    7000    2000   S10E08
## 340 2006/11/05    17:35   11/05   19:20   14000     400     E90b
## 341 2006/11/06    10:35   11/06   11:05   14000    6000     E90b
## 342 2006/11/06    17:45   11/06   19:25    4000     300     E90b
## 343 2006/12/05    10:50   12/05   20:00   14000     250   S07E68
## 344 2006/12/06    02:00   12/06   03:30    1000     200   S07E69
## 345 2006/12/06    08:30   12/06   09:45    4000     600   S04E63
## 346 2006/12/06    19:00   12/08   24:00   16000      30   S05E64
## 347 2006/12/13    02:45   12/13   10:40   12000     150   S06W23
## 348 2006/12/14    22:30   12/14   23:40   14000    1500   S06W46
## 349 2007/01/25    06:55   01/25   23:30   14000      90   S08E90
## 350 2007/05/19    13:02   05/19   13:05   16000   13000   N07W06
## 351 2007/12/31    01:05   12/31   01:22   16000    6000   S08E81
## 352 2008/03/25    19:05   03/25   19:20   12000     800   S13E78
## 353 2008/04/26    14:23   04/26   14:39    7600    4900   N08E09
```

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## 354 2010/08/01    09:20    08/01    17:30     2000     700    N20E36
## 355 2010/08/07    18:35    08/07    19:50    14000     700    N11E34
## 356 2010/08/18    06:05    08/18    07:45    13000     700    N18W88
## 357 2011/01/13    09:15    01/13    10:05    16000    3500      E90b
## 358 2011/01/27    12:20    01/27    12:35    16000    8000    N12W87
## 359 2011/02/13    17:50    02/13    18:00    16000    8000    S20E04
## 360 2011/02/15    02:10    02/15    07:00    16000     400    S20W12
## 361 2011/02/24    12:50    02/24    15:10     1000     700    N15E87
## 362 2011/03/07    14:30    03/07    15:00    16000    7000    N10E18
## 363 2011/03/07    20:00    03/08    08:30    16000     200    N31W53
## 364 2011/05/09    21:00    05/10    04:00    16000     900    N16E88
## 365 2011/05/29    21:10    05/30    13:40    16000      90    S19E72
## 366 2011/06/02    08:00    06/02    08:25    15000    4000    S19E25
## 367 2011/06/04    07:00    06/04    13:45    16000     300      W90b
## 368 2011/06/04    22:00    06/07    01:30    16000      25      W90b
## 369 2011/06/07    06:45    06/07    18:00    16000     250    S21W54
## 370 2011/08/02    06:15    08/02    07:30    16000    3000    N14W15
## 371 2011/08/04    04:15    08/05    17:00    13000      60    N19W36
## 372 2011/08/08    18:10    08/08    20:10     6000     400    N16W61
## 373 2011/08/09    08:20    08/09    08:35    16000    4000    N17W69
## 374 2011/09/06    02:00    09/06    23:40    14000     200    N14W07
## 375 2011/09/06    22:30    09/07    15:40    16000     150    N14W18
## 376 2011/09/22    11:05    09/22    24:00    14000      70    N09E89
## 377 2011/09/24    12:50    09/24    22:45    16000     300    N10E56
## 378 2011/09/25    05:30    09/25    06:00    16000    8000    N11E47
## 379 2011/10/21    13:15    10/21    13:50    16000    6500    N05W79
## 380 2011/11/09    13:30    11/09    17:00    16000     400    N24E35
## 381 2011/11/26    07:15    11/27    24:00    10000      50    N17W49
## 382 2011/12/21    03:00    12/21    08:15    16000     400      BACK
## 383 2011/12/25    18:45    12/25    18:55    14000    7000    S22W26
## 384 2012/01/02    15:00    01/02    15:45    16000    4000      BACK
## 385 2012/01/19    15:00    01/20    02:45    16000     100    N32E22
## 386 2012/01/23    04:00    01/24    15:00    16000      40    N28W21
## 387 2012/01/27    18:30    01/28    04:45    16000     150    N27W71
## 388 2012/03/05    04:00    03/05    12:20    16000     400    N17E52
## 389 2012/03/07    01:00    03/08    19:00    16000      30    N17E27
## 390 2012/03/09    04:10    03/09    06:05    14000    1000    N15W03
## 391 2012/03/10    17:55    03/11    12:30    14000      30    N17W24
## 392 2012/03/13    17:35    03/13    24:00    16000     200    N17W66
## 393 2012/03/18    00:20    03/18    01:20    16000     200      BACK
## 394 2012/03/24    00:40    03/24    10:40    16000     300      BACK
## 395 2012/03/26    23:15    03/26    23:55    16000    1500      BACK
## 396 2012/03/27    21:45    03/27    22:30     4000    1500      BACK
## 397 2012/04/09    12:20    04/09    13:00    16000    5000    N20W65
## 398 2012/04/15    02:30    04/15    02:50    16000    4000    N10E90
## 399 2012/05/17    01:40    05/17    06:20    16000     300    N11W76
## 400 2012/07/04    17:00    07/04    17:20    14000    8000    N14W34
## 401 2012/07/05    22:40    07/05    23:50     3000     800    S12W46
## 402 2012/07/06    23:10    07/07    03:40    16000     300    S13W59
```

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## 403 2012/07/08    16:35    07/08    22:00    16000      300    S17W74
## 404 2012/07/12    16:45    07/13    09:00    14000      250    S15W01
## 405 2012/07/17    14:40    07/18    05:00    12000      150    S28W65
## 406 2012/07/19    05:30    07/19    06:20     5000      600    S13W88
## 407 2012/07/23    02:30    07/23    21:40    16000       20    S17W132
## 408 2012/08/31    20:00    08/31    23:45    16000      400    S25E59
## 409 2012/09/27    23:55    09/28    10:15    16000      250    N06W34
## 410 2012/10/22    01:50    10/22    11:15     1000      200    S10E76
## 411 2013/01/16    22:00    01/17    01:30     1000      200    S33W64
## 412 2013/03/15    07:00    03/15    21:30    14000      100    N11E12
## 413 2013/04/11    07:10    04/11    15:00    10000      200    N09E12
## 414 2013/04/18    18:00    04/18    19:10    16000     4000    N11W83
## 415 2013/04/21    20:25    04/21    22:12    14000     1700    S19W53
## 416 2013/05/13    02:20    05/13    03:00    16000     2000    N11E90
## 417 2013/05/13    16:15    05/13    19:10    16000      300    N11E85
## 418 2013/05/14    01:16    05/14    02:35    16000      700    N08E77
## 419 2013/05/15    01:49    05/15    07:30    16000      250    N12E64
## 420 2013/05/22    13:10    05/24    06:00    16000      150    N15W70
## 421 2013/06/21    03:35    06/21    05:15    14000     2000    S16E73
## 422 2013/06/28    01:53    06/28    03:26    14000      400    S18W19
## 423 2013/07/04    20:57    07/04    21:27    11000     2900    S14E62
## 424 2013/08/06    02:01    08/06    02:11    14000    11000    N27E25
## 425 2013/08/17    20:25    08/18    03:05     1800      150    S05W30
## 426 2013/08/30    02:34    08/31    04:00    14000       50    N15E46
## 427 2013/09/06    22:29    09/06    22:34     5000     2000    N10E104
## 428 2013/09/29    21:53    09/30    21:00    14000       60    N17W29
## 429 2013/10/02    20:46    10/02    21:10    10000     5200    N20W85
## 430 2013/10/05    07:00    10/05    14:46    16000      200    S22E118
## 431 2013/10/11    07:23    10/11    11:43    14000      100    N21E103
## 432 2013/10/13    18:47    10/14    05:15     2100      600    ------
## 433 2013/10/22    21:33    10/22    22:08    14000      650    N04W01
## 434 2013/10/25    15:08    10/25    22:32    16000      200    S06E69
## 435 2013/10/26    03:01    10/26    04:00    14000      200    N09W44
## 436 2013/10/26    09:34    10/26    10:10    14000     5000    N08W49
## 437 2013/10/27    18:12    10/27    18:36    14000     1700    N06W70
## 438 2013/10/28    04:41    10/28    11:51    14000      200    N08W71
## 439 2013/10/28    15:24    10/28    15:29    14000     9000    S06E28
## 440 2013/11/04    05:10    11/04    08:00    16000      450    N03W165
## 441 2013/11/07    10:26    11/07    20:40    16000      100    N02E151
## 442 2013/11/19    10:39    11/19    20:20    14000      100    S14W70
## 443 2013/11/29    22:18    11/30    09:20     1800      100    N06W183
## 444 2013/12/05    12:45    12/05    13:00     4200     1600    S20E119
## 445 2013/12/05    20:48    12/05    21:35    14000     2500    ------
## 446 2013/12/07    07:43    12/07    08:36    14000     3000    S16W49
## 447 2013/12/12    03:55    12/12    21:30    12000       70    S23W46
## 448 2013/12/20    08:23    12/20    13:24     1500      400    ------
## 449 2013/12/28    17:31    12/28    18:05    16000      500    S15W125
## 450 2014/01/04    17:41    01/04    18:47     9000      100    ------
## 451 2014/01/04    19:03    01/05    09:00     6500      100    ------
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## 452 2014/01/06     07:57   01/06   22:30   14000      80   S15W112
## 453 2014/01/07     18:33   01/08   21:00   14000      60    S15W11
## 454 2014/01/20     22:24   01/20   22:36   14000    8000    S07E67
## 455 2014/02/18     02:16   02/18   02:51    2000     900    S24W43
## 456 2014/02/20     08:05   02/20   08:29   12000    7700    S15W73
## 457 2014/02/25     00:56   02/25   11:28   14000     100    S13E82
## 458 2014/03/04     18:24   03/04   20:10   16000    2000   N13W170
## 459 2014/03/05     13:33   03/05   17:10   16000     500   N14E180
## 460 2014/03/25     07:52   03/25   11:30    1700     400   S23W130
## 461 2014/03/29     00:12   03/29   00:48   14000    2200    N11W23
## 462 2014/03/29     17:59   03/30   09:58   14000     200   S08W152
## 463 2014/04/02     13:42   04/03   08:10   14000      60    N11E53
## 464 2014/04/02     18:49   04/03   06:40    2400     200    ------
## 465 2014/04/04     14:02   04/04   14:07   14000   11000    N13E26
## 466 2014/04/18     13:05   04/18   22:50   14000     150    S20W34
## 467 2014/05/07     16:24   05/07   23:18   16000     200    N11E53
## 468 2014/05/08     03:21   05/08   05:26   16000    1100   S09W108
## 469 2014/05/09     02:40   05/09   04:30   14000     500   S11W122
## 470 2014/05/10     04:32   05/10   08:37   16000     400   S11W136
## 471 2014/06/10     12:58   06/10   15:00   16000    1000    S17E82
## 472 2014/06/12     22:14   06/12   22:35   14000    6000    S20W55
## 473 2014/07/30     07:44   07/30   08:00    6300    4500    N10E30
## 474 2014/08/01     18:58   08/02   05:00    1000     150    S10E11
## 475 2014/08/22     10:37   08/22   11:18   14000    6000    N12E01
## 476 2014/08/25     15:20   08/25   16:02   14000    4000    N05W36
## 477 2014/08/25     20:43   08/25   21:00   14000    7200    N07W43
## 478 2014/08/28     17:05   08/28   22:08   16000     600   S19E162
## 479 2014/09/01     11:12   09/01   22:35   16000     600   N14E127
## 480 2014/09/09     00:05   09/09   13:00   11000     100    N12E29
## 481 2014/09/10     17:45   09/11   12:00   14000     100    N14E02
## 482 2014/09/20     05:10   09/20   05:30   14000    9700    S11W89
## 483 2014/09/22     06:13   09/22   06:50   16000    4900   N14W142
## 484 2014/09/23     23:41   09/23   23:47   14000   12000    S13E33
## 485 2014/09/24     20:54   09/24   23:48   16000     500   N13E179
## 486 2014/10/02     21:34   10/02   21:56    3300    1900    S17W82
## 487 2014/10/10     18:11   10/10   18:33    2500    1500    S20W51
## 488 2014/10/21     12:33   10/21   13:01   14000    8900    S18E36
## 489 2014/11/08     16:57   11/08   17:18   14000    7800      W90b
## 490 2014/12/13     14:27   12/13   14:51   14000    3900      W90b
## 491 2014/12/17     04:09   12/17   04:19    2900    2100    S11E33
## 492 2014/12/17     05:00   12/17   05:09   14000   11500    S20E09
## 493 2014/12/18     22:31   12/18   22:54    5100    1300    S11E15
## 494 2014/12/21     12:05   12/21   12:28   14000    7400    S14W25
## 495 2015/03/03     02:33   03/03   02:37    8100    3600      W90b
## 496 2015/03/06     08:00   03/06   11:30    4700     200    S20E87
## 497 2015/03/10     00:10   03/10   00:27   14000    6200    S18E45
## 498 2015/03/11     10:30   03/11   14:50    1000     250    S15E23
## 499 2015/03/24     09:00   03/06   11:47   14000     400     SW90b
## 500 2015/04/26     03:21   04/26   03:33    8000    4600      W90b
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## 501 2015/05/05      22:24    05/05    23:14    14000       500    N15E79
## 502 2015/05/12      03:00    05/12    03:04    14000      6400     W90b
## 503 2015/06/09      20:23    06/09    22:35     2300       200    S03E25
## 504 2015/06/14      05:26    06/14    05:41     3000      1250    S12W34
## 505 2015/06/18      17:42    06/18    19:40     3700       500    N15E50
## 506 2015/06/21      02:33    06/21    21:20     5500       150    N12E13
## 507 2015/06/22      18:20    06/22    21:55    14000       300    N12W08
## 508 2015/06/25      08:35    06/25    16:30    14000       150    N09W42
## 509 2015/07/01      16:08    07/01    20:47     1000       150     W90b
## 510 2015/08/22      07:07    08/22    07:18    14000      7300    S15E13
## 511 2015/09/18      04:54    09/18    09:52    14000       400    S21W10
## 512 2015/09/20      18:23    09/21    01:46    14000       300    S20W24
## 513 2015/11/04      14:07    11/04    15:14    14000       440    N09W04
## 514 2015/11/09      13:21    11/09    13:27    14000      9000    S11E41
## 515 2015/12/16      08:45    12/16    08:57     5300      3800    S13W04
## 516 2015/12/23      01:18    12/23    01:23    12000      6700    S22E63
## 517 2015/12/28      11:50    12/28    21:45    14000       180    S23W11
## 518 2016/01/02      00:55    01/02    03:08     1100       300    S25W82
## 519 2016/02/05      20:28    02/05    23:31     1650       500    ------
## 520 2016/02/05      22:35    02/05    22:55     5200      1900    ------
## 521 2016/05/04      14:20    05/04    14:34    14000     10500    N06W61
## 522 2016/05/24      17:00    05/24    20:50     1500       700    ------
## 523 2016/08/15      18:21    08/15    18:28    11000      3400    ------
##      NOAA Importance CME_date CME_time CME_CPA CME_width CME_speed Plots
## 13   8026     M1.3    04/01    15:18      74       79        312   PHTX
## 14   8027     C6.8    04/07    14:27    Halo      360        878   PHTX
## 15   8038     C1.3    05/12    05:30    Halo      360        464   PHTX
## 16   8040     M1.3    05/21    21:00     263      165        296   PHTX
## 17   8088     C1.4    09/23    22:02     133      155        712   PHTX
## 18   8100     C8.6    11/03    05:28     240      109        227   PHTX
## 19   8100     M4.2    11/03    11:11     233      122        352   PHTX
## 20   8100     X2.1    11/04    06:10    Halo      360        785   PHTX
## 21   8100     X9.4    11/06    12:10    Halo      360       1556   PHTX
## 22   8113     X2.6    11/27    13:56      98       91        441   PHTX
## 23   8116     B9.4    12/13    00:26     278       73        191   PHTX
## 24   8141     C1.1    01/25    15:26    Halo      360        693   PHTX
## 25   -----    ----    03/29    03:48    Halo      360       1397   PHTX
## 26   8194     M1.4    04/20    10:07     284      165       1863   PHTX
## 27   8210     X1.2    04/23    05:55    Halo      360       1691   PHTX
## 28   8210     C8.9    04/24    08:55     100       84       1184   PHTX
## 29   8210     X1.0    04/27    08:56    Halo      360       1385   PHTX
## 30   8210     M6.8    04/29    16:58    Halo      360       1374   PHTX
## 31   8210     X1.1    05/02    14:06    Halo      360        938   PHTX
## 32   8210     X2.7    05/06    08:29     309      190       1099   PHTX
## 33   8210     M7.7    05/09    03:35     262      178       2331   PHTX
## 34   8214     B6.6    05/11    21:55     208     >301        830   PHTX
## 35   8222     B7.9    05/19    10:27     268      139        801   PHTX
## 36   8226     C7.5    05/27    13:45     175      268        878   PHTX
## 37   8243     M1.4    06/11    10:28     123      177       1223   PHTX
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## 38    8232    M1.0    06/16    18:27    341     281     1484    PHTX
## 39    -----   ----    06/20    18:20    Halo    360      964    PHTX
## 40    8243    C2.9    06/22    05:01    265      59      206    PHTX
## 41    8373    C4.4    11/02    14:18    116     169      661    PHTX
## 42    8375    M8.4    11/05    20:44    Halo    360     1118    PHTX
## 43    -----   ----    11/06    02:18    159    >160      405    PHTX
## 44    -----   C1.0    11/07    01:54    296      19      381    PHTX
## 45    -----   C5.9    11/08    11:54    264     196      559    PHTX
## 46    8415    M8.0    12/18    18:09    Halo    360     1749    PHTX
## 47    -----   ----    04/24    13:31    Halo    360     1495    PHTX
## 48    8525    M4.4    05/03    06:06    Halo    360     1584    PHTX
## 49    -----   ----    05/27    11:06    Halo    360     1691    PHTX
## 50    -----   ----    06/01    19:37    Halo    360     1772    PHTX
## 51    8552    M3.9    06/04    07:26    289     150     2230    PHTX
## 52    -----   C8.8    06/11    11:26     35    >181     1569    PHTX
## 53    8592    M1.7    06/22    18:54    Halo    360     1133    PHTX
## 54    -----   ----    06/23    06:06    264    >154      450    PHTX
## 55    8596    M1.7    06/23    07:31    Halo    360     1006    PHTX
## 56    8592    C3.5    06/28    21:30    336    >184      903    PHTX
## 57    8603    M1.6    06/29    19:54    Halo    360      560    PHTX
## 58    8603    C7.6    07/05    02:54    284     190      670    PHTX
## 59    8674    X1.1    08/28    18:26    120     245      462    PHTX
## 60    8679    C2.1    09/03    00:06    184     175      512    PHTX
## 61    -----   ----    09/10    07:54     18     125     1467    PHTX
## 62    8731    X1.8    10/14    09:26    Halo    360     1250    PHTX
## 63    -----   ----    10/18    00:06     40      87      247    PHTX
## 64    8766    M3.8    11/16    03:06     81      98      636    PHTX
## 65    8759    M1.8    11/16    05:30    285     129      712    PHTX
## 66    8831    M3.9    01/18    17:54    Halo    360      739    PHTX
## 67    8841    C4.7    01/28    20:12    Halo    360     1177    PHTX
## 68    8858    X1.2    02/05    19:54     60      76      632    PHTX
## 69    8858    M1.3    02/08    09:30    Halo    360     1079    PHTX
## 70    8858    C7.3    02/10    02:30    Halo    360      944    PHTX
## 71    8858    M1.7    02/12    04:31    Halo    360     1107    PHTX
## 72    8872    M1.3    02/17    21:30    Halo    360      728    PHTX
## 73    -----   C1.1    02/18    09:54    286     118      890    PHTX
## 74    8882    M6.5    03/02    13:54    235      76      835    PHTX
## 75    8906    M1.2    03/07    16:30    120     108      644    PHTX
## 76    8932    C2.3    03/27    07:31    129      90      487    PHTX
## 77    8933    C9.7    04/04    16:32    Halo    360     1188    PHTX
## 78    8948    M3.1    04/10    00:30    Halo    360      409    PHTX
## 79    altr    FILA    04/18    14:54    195     105      668    PHTX
## 80    8970    M6.8    05/04    11:26    235    >170     1404    PHTX
## 81    8970    M1.5    05/05    15:50    Halo    360     1594    PHTX
## 82    -----   ----    05/07    20:50    Halo    360     1781    PHTX
## 83    -----   ----    05/12    23:26    Halo    360     2604    PHTX
## 84    8993    C7.8    05/15    16:26    257    >165     1212    PHTX
## 85    9026    M7.6    06/02    21:30     69     104      547    PHTX
## 86    9026    X2.3    06/06    15:54    Halo    360     1119    PHTX
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## 87    9026     M5.2    06/10    17:08    Halo    360     1108    PHTX
## 88    9041     M1.8    06/15    20:06    298     116     1081    PHTX
## 89    9041     M3.5    06/17    03:28    298     133      857    PHTX
## 90    -----    ----    06/18    21:30     8      49       459    PHTX
## 91    9042     M3.0    06/23    14:54    282     >198     847    PHTX
## 92    9046     M1.9    06/25    07:54    262     165     1617    PHTX
## 93    9077     M5.7    07/10    21:50    67      >289    1352    PHTX
## 94    9077     X1.0    07/11    13:27    Halo    360     1078    PHTX
## 95    9070     M1.5    07/12    20:30    281     101      820    PHTX
## 96    9077     X5.7    07/14    10:54    Halo    360     1674    PHTX
## 97    9085     M3.7    07/22    11:54    259     >229    1230    PHTX
## 98    -----    ----    08/11    07:31    273     70      1071    PHTX
## 99     DSF     M1.0    09/12    11:54    Halo    360     1550    PHTX
## 100  -----    ----    09/12    17:30    Halo    360     1053    PHTX
## 101   9165     M5.9    09/16    05:18    Halo    360     1215    PHTX
## 102   9165     M5.1    09/19    08:50    283     76       766    PHTX
## 103   9169     M1.8    09/25    02:50    Halo    360      587    PHTX
## 104   9177     ----    10/05    18:26    323     86      1046    PHTX
## 105   9182     M2.5    10/16    07:27    Halo    360     1336    PHTX
## 106   9199     C4.0    10/25    08:26    Halo    360      770    PHTX
## 107   9213     C3.2    11/03    18:26    Halo    360      291    PHTX
## 108   9213     M7.4    11/08    23:06    271     >170    1738    PHTX
## 109   9221     M1.0    --/--    --:--    ----    ----    ----    PHTX
## 110   9227     C4.4    11/12    14:50    257     50       581    PHTX
## 111   9238     C5.4    11/23    06:06    Halo    360      492    PHTX
## 112   9239     C7.9    11/23    21:30    124     148     1198    PHTX
## 113   9236     X2.0    11/24    05:30    Halo    360     1289    PHTX
## 114   9236     X2.3    11/24    15:30    Halo    360     1245    PHTX
## 115   9236     X1.8    11/24    22:06    Halo    360     1005    PHTX
## 116   9240     M8.2    11/25    01:31    Halo    360     2519    PHTX
## 117   9236     X1.9    11/25    19:31    Halo    360      671    PHTX
## 118   9236     ----    11/25    21:30    345     59       388    PHTX
## 119   9236     X4.0    11/26    17:06    Halo    360      980    PHTX
## 120  -----    ----    12/28    12:06    Halo    360      930    PHTX
## 121   9313     M1.2    01/20    19:31    Halo    360      839    PHTX
## 122   9313     M7.7    01/20    21:30    Halo    360     1507    PHTX
## 123   9320     C1.6    01/26    12:06    276     176      928    PHTX
## 124   9313     M1.5    01/28    15:54    Halo    360      916    PHTX
## 125   9346     C6.5    02/11    01:31    Halo    360     1183    PHTX
## 126   9368     M6.7    03/10    04:26    297     81       819    PHTX
## 127  -----    ----    03/12    05:50    233     48       829    PHTX
## 128   9393     C7.3    03/27    02:06    154     60       300    PHTX
## 129   9393     C5.6    03/27    17:06    46      66       340    PHTX
## 130   9393     X1.7    03/29    10:26    Halo    360      942    PHTX
## 131   9393     X1.1    04/02    11:26    270     80       992    PHTX
## 132   9393     X20.    04/02    22:06    261     244     2505    PHTX
## 133   9415     X1.2    04/03    03:26    108     292     1613    PHTX
## 134   9415     M1.6    04/04    09:50    86      89      1065    PHTX
## 135   9393     M8.4    04/05    09:06    283     205     1750    PHTX
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## 136   9415    X5.6    04/06   19:30   Halo    360    1270    PHTX
## 137   9415    M7.9    04/09   15:54   Halo    360    1192    PHTX
## 138   9415    X2.3    04/10   05:30   Halo    360    2411    PHTX
## 139   9415    M2.3    04/11   13:31   Halo    360    1103    PHTX
## 140   9415    X2.0    04/12   10:31   Halo    360    1184    PHTX
## 141   9415    X14.    04/15   14:06    245    167    1199    PHTX
## 142   -----   C2.2    04/18   02:30   Halo    360    2465    PHTX
## 143   9433    M1.5    04/26   12:30   Halo    360    1006    PHTX
## 144   -----   ----    05/07   12:06    286    205    1223    PHTX
## 145   9455    M3.0    05/13   02:21    190    132     527    PHTX
## 146   9481    ----    05/30   00:06     70    216    2087    PHTX
## 147   9502    M6.3    06/15   10:31    185    119    1090    PHTX
## 148   -----   ----    06/15   15:56   Halo    360    1701    PHTX
## 149   -----   ----    08/15   23:54   Halo    360    1575    PHTX
## 150   9591    X5.3    08/25   16:50   Halo    360    1433    PHTX
## 151   9601    M3.0    08/30   21:26     82     76     351    PHTX
## 152   9607    M2.5    09/03   18:35    127    207    1352    PHTX
## 153   9608    M1.5    09/15   11:54    263    130     478    PHTX
## 154   9616    C8.9    09/16   14:30    131     68     584    PHTX
## 155   9616    M1.5    09/17   08:54    198    166    1009    PHTX
## 156   9631    M1.5    09/20   19:31    306    207     446    PHTX
## 157   9632    X2.6    09/24   10:30   Halo    360    2402    PHTX
## 158     EP    C9.5    09/27   08:06    224    138     669    PHTX
## 159   9628    M9.1    10/01   05:30   Halo    360    1405    PHTX
## 160   -----   ----    10/05   10:30   Halo    360    1537    PHTX
## 161   9653    M1.4    10/09   11:30   Halo    360     973    PHTX
## 162   9653    ----    --/--   --:--   ----   ----    ----    PHTX
## 163   -----   ----    --/--   --:--   ----   ----    ----    PHTX
## 164   9661    X1.6    10/19   01:27   Halo    360     558    PHTX
## 165   9661    X1.6    10/19   16:50   Halo    360     901    PHTX
## 166   9672    M6.7    10/22   15:06   Halo    360    1336    PHTX
## 167   9672    X1.3    10/25   15:26   Halo    360    1092    PHTX
## 168   9684    X1.0    11/04   16:35   Halo    360    1810    PHTX
## 169   9704    M2.8    11/17   05:30   Halo    360    1379    PHTX
## 170   9698    M3.8    11/22   20:30   Halo    360    1443    PHTX
## 171   9704    M9.9    11/22   23:30   Halo    360    1437    PHTX
## 172   -----   ----    12/11   09:54    263    121     891    PHTX
## 173   -----   ----    12/25   11:30   Halo    360    1773    PHTX
## 174   9742    M7.1    12/26   05:30    281   >212    1446    PHTX
## 175   9756    X3.4    12/28   20:30   Halo    360    2216    PHTX
## 176   -----   ----    12/29   20:30    297   >211     819    PHTX
## 177   -----   ----    01/08   17:54   Halo    360    1794    PHTX
## 178   9772    M4.4    01/14   05:35   Halo    360    1492    PHTX
## 179   -----   ----    01/27   12:30   Halo    360    1136    PHTX
## 180   -----   ----    02/01   19:54    350     89     448    PHTX
## 181   9825    M3.9    02/21   12:54    275    108     358    PHTX
## 182   9866    M2.3    03/10   23:06   Halo    360    1429    PHTX
## 183   -----   M5.0    03/11   23:30   Halo    360     950    PHTX
## 184   9866    M2.2    03/15   23:06   Halo    360     957    PHTX
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## 185   9871    C3.1    03/17    04:06    141     56     658   PHTX
## 186   9873    M1.0    03/18    02:54    Halo    360    989   PHTX
## 187   9866    M1.6    03/22    11:06    Halo    360   1750   PHTX
## 188   9866    M1.6    03/22    12:30    243    120    875   PHTX
## 189   9893    M8.2    04/10    13:27    340    159    650   PHTX
## 190   9893    C9.6    04/14    07:50    323     76    757   PHTX
## 191   9906    M1.2    04/15    03:50    Halo    360    720   PHTX
## 192   9906    M2.6    04/17    08:26    Halo    360   1240   PHTX
## 193   9906    X1.5    04/21    01:27    Halo    360   2393   PHTX
## 194   9934    C3.2    04/30    14:26     92     90    618   PHTX
## 195  -----    ----    04/30    23:26    254    199   1103   PHTX
## 196   9937    ----    05/02    23:18    119     99    902   PHTX
## 197   9948    C4.5    05/16    00:50    Halo    360    600   PHTX
## 198   9948    C9.7    05/22    00:06    230    186   1246   PHTX
## 199   9967    C3.7    05/27    13:27     49   >161   1106   PHTX
## 200  10017    M1.0    07/07    11:30    277   >228   1423   PHTX
## 201  -----    ----    07/09    19:31    Halo    360   1076   PHTX
## 202  10030    M1.8    07/15    21:30     14   >188   1300   PHTX
## 203  10030    M8.5    07/17    07:31     36    177    716   PHTX
## 204  10030    X1.8    07/18    08:06    Halo    360   1099   PHTX
## 205  10036    C3.3    07/18    19:31    Halo    360   2191   PHTX
## 206  -----    ----    07/19    16:30    Halo    360   2047   PHTX
## 207  10039    X3.3    07/20    22:06    Halo    360   1941   PHTX
## 208  10039    X4.8    07/23    00:42    Halo    360   2285   PHTX
## 209  10039    M8.7    07/26    22:06    Halo    360    818   PHTX
## 210   FILA    ----    07/29    12:07     13   >236    562   PHTX
## 211  10039    X1.0    08/03    19:31    259    138   1150   PHTX
## 212  10061    M2.3    08/14    02:30    297    133   1309   PHTX
## 213  10061    M2.4    08/16    06:06    293    162   1378   PHTX
## 214  10069    M5.2    08/16    12:30    Halo    360   1585   PHTX
## 215  10069    X3.1    08/24    01:27    Halo    360   1913   PHTX
## 216  10102    C5.2    09/05    16:54    Halo    360   1748   PHTX
## 217  10105    M2.9    09/10    15:30    127     38    273   PHTX
## 218  10134    M1.8    09/27    13:56     64     64    591   PHTX
## 219  10150    C4.7    10/13    19:35    252    141    373   PHTX
## 220  10159    M2.2    10/13    23:54    107    264   1009   PHTX
## 221  -----    C4.5    10/14    14:54    Halo    360   1694   PHTX
## 222  -----    ----    10/27    23:18    Halo    360   2115   PHTX
## 223  10180    M4.6    11/09    13:31    Halo    360   1838   PHTX
## 224  10180    M2.4    11/10    03:30    203    282   1670   PHTX
## 225  10180    M1.8    11/11    15:54    212     93   1083   PHTX
## 226  -----    ----    11/24    20:30    Halo    360   1077   PHTX
## 227  10229    M2.7    12/19    22:06    Halo    360   1092   PHTX
## 228  10223    M1.1    12/22    03:30    328    272   1071   PHTX
## 229   FILA    C1.7    01/20    18:30    315    105    733   PHTX
## 230   FILA    C2.4    01/27    22:23    205    267   1053   PHTX
## 231  10314    X1.5    03/18    12:30    263    209   1601   PHTX
## 232  -----    ----    03/18    13:54    Halo    360   1042   PHTX
## 233  -----    ----    03/19    02:30    Halo    360   1342   PHTX
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## 234 -----   ----   04/22  07:36   87    171    918   PHTX
## 235 10365  X1.3   05/27  23:50   Halo  360    964   PHTX
## 236 10365  X3.6   05/28  00:50   Halo  360    1366  PHTX
## 237 10365  X1.2   05/29  01:27   Halo  360    1237  PHTX
## 238 10365  M9.3   05/31  02:30   Halo  360    1835  PHTX
## 239 -----   ----   06/05  20:06   230   239    1458  PHTX
## 240 10386  X1.3   06/15  23:54   Halo  360    2053  PHTX
## 241 10386  M6.8   06/17  23:18   Halo  360    1813  PHTX
## 242 10397  M3.6   --/--  --:--   ----  ----   ----  PHTX
## 243 10431  M2.7   08/19  10:30   262   111    468   PHTX
## 244 -----   ----   10/21  03:54   Halo  360    1484  PHTX
## 245 10486  X1.2   10/26  06:54   108   >207   1371  PHTX
## 246 10484  X1.2   10/26  17:54   270   >171   1537  PHTX
## 247 10486  X17.   10/28  11:30   Halo  360    2459  PHTX
## 248 10486  X10.   10/29  20:54   Halo  360    2029  PHTX
## 249 10486  M3.2   11/01  23:06   254   >93    899   PHTX
## 250 -----   ----   11/02  09:30   Halo  360    2036  PHTX
## 251 10486  X8.3   11/02  17:30   Halo  360    2598  PHTX
## 252 10488  X2.7   11/03  01:59   304   65     827   PHTX
## 253 10488  X3.9   11/03  10:06   293   103    1420  PHTX
## 254 -----   ----   11/04  12:06   Halo  360    1208  PHTX
## 255 10486  X28.   11/04  19:54   Halo  360    2657  PHTX
## 256 -----   ----   11/09  06:30   Halo  360    2008  PHTX
## 257 -----   ----   11/11  02:30   Halo  360    1359  PHTX
## 258 10501  M1.4   11/13  09:30   49    217    1141  PHTX
## 259 10501  M4.2   11/17  09:26   72    >242   1061  PHTX
## 260 10501  M3.9   11/18  08:50   Halo  360    1660  PHTX
## 261 10508  M4.5   11/18  09:50   95    >197   1824  PHTX
## 262 10508  C7.2   12/02  10:50   261   >150   1393  PHTX
## 263 10536  M6.9   --/--  --:--   ----  ----   ----  PHTX
## 264 10537  M5.8   01/06  08:53   88    166    1469  PHTX
## 265 10537  M4.5   01/07  04:06   78    171    1581  PHTX
## 266 10537  M8.3   01/07  10:30   81    182    1822  PHTX
## 267 10588  M2.4   04/06  13:31   Halo  360    1368  PHTX
## 268 10588  C7.4   04/08  10:30   Halo  360    1068  PHTX
## 269 10588  C1.3   04/08  13:31   198   92     959   PHTX
## 270 10588  C9.6   04/11  04:30   203   314    1645  PHTX
## 271 -----   ----   06/02  23:15   287   136    1102  PHTX
## 272 -----   ----   06/03  16:50   303   179    1226  PHTX
## 273 -----   ----   06/04  07:50   309   >273   1306  PHTX
## 274 10635  C1.7   --/--  --:--   ----  ----   ----  PHTX
## 275 10635  C2.5   --/--  --:--   ----  ----   ----  PHTX
## 276 10652  C4.1   07/23  19:31   209   100    874   PHTX
## 277 10652  M1.1   07/25  14:54   Halo  360    1333  PHTX
## 278 10652  C2.1   07/29  12:06   Halo  360    1180  PHTX
## 279 10652  C8.4   07/31  05:54   259   >197   1192  PHTX
## 280 -----   ----   08/08  08:54   Halo  360    1004  PHTX
## 281 10672  M4.8   09/12  00:36   Halo  360    1328  PHTX
## 282 10672  M1.9   --/--  --:--   ----  ----   ----  PHTX
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## 283 10687      C1.7    10/24    03:54      26      >109      417    PHTX
## 284 10691      M4.2    10/30    06:54    Halo       360      422    PHTX
## 285 -----      ----    11/01    06:06     266       146      925    PHTX
## 286 10696      M5.0    11/03    16:06    Halo       360     1068    PHTX
## 287 10696      M1.6    11/03    03:54      91      >239      918    PHTX
## 288 10696      M3.6    11/06    02:06     351      >214     1111    PHTX
## 289 10696      X2.0    11/07    16:54    Halo       360     1759    PHTX
## 290 10696      M8.9    11/09    17:26    Halo       360     2000    PHTX
## 291 10696      X2.5    11/10    02:26    Halo       360     3387    PHTX
## 292 10708      M1.5    12/03    00:26    Halo       360     1216    PHTX
## 293 10709      C2.5    12/08    20:26    Halo       360      611    PHTX
## 294 10715      M2.3    12/29    16:45      71       140      774    PHTX
## 295 10715      M4.2    12/30    22:30    Halo       360     1035    PHTX
## 296 10715      X1.7    01/01    00:54    Halo       360      832    PHTX
## 297 10715      C7.3    --/--    --:--     ----      ----     ----    PHTX
## 298 10720      M8.6    01/15    06:30    Halo       360     2049    PHTX
## 299 10720      X2.6    01/15    23:06    Halo       360     2861    PHTX
## 300 10720      X2.0    01/17    09:30    Halo       360     2094    PHTX
## 301 10720      X1.3    01/19    08:29    Halo       360     2020    PHTX
## 302 10720      X3.8    01/17    09:54    Halo       360     2547    PHTX
## 303 10720      X7.1    01/20    06:54    Halo       360      882    PHTX
## 304 -----      ----    02/01    11:06    Halo       360     1380    PHTX
## 305 10758      C8.0    05/02    22:26     105       148      955    PHTX
## 306 10758      ----    05/03    00:26      82       >66      978    PHTX
## 307 10758      C8.5    05/06    17:28    Halo       360     1128    PHTX
## 308 10759      M8.0    05/13    17:12    Halo       360     1689    PHTX
## 309 -----      ----    05/17    03:06     252        89      311    PHTX
## 310 10775      M1.0    06/03    12:32    Halo       360     1679    PHTX
## 311 10775      M4.0    --/--    --:--     ----      ----     ----    PHTX
## 312 10786      M4.9    07/07    17:06    Halo       360      683    PHTX
## 313 10786      M2.8    07/09    22:30    Halo       360     1540    PHTX
## 314 10786      M5.0    07/13    14:30    Halo       360     1423    PHTX
## 315 10786      X1.2    07/14    10:54    Halo       360     2115    PHTX
## 316 -----      ----    07/17    11:30    Halo       360     1527    PHTX
## 317 -----      ----    07/24    13:54    Halo       360     2528    PHTX
## 318 -----      ----    07/24    22:30    Halo       360     1234    PHTX
## 319 10792      M3.7    07/27    04:54    Halo       360     1787    PHTX
## 320 -----      ----    07/27    07:54      65        51      533    PHTX
## 321 10792      X1.3    07/30    06:50    Halo       360     1968    PHTX
## 322 10792      M1.0    08/01    14:30      83        93      984    PHTX
## 323 10798      M2.6    08/22    01:31    Halo       360     1194    PHTX
## 324 10798      M5.6    08/22    17:30    Halo       360     2378    PHTX
## 325 10798      M2.7    08/23    14:54    Halo       360     1929    PHTX
## 326 -----      ----    08/29    10:54    Halo       360     1600    PHTX
## 327 10803      C2.0    08/31    11:30    Halo       360      825    PHTX
## 328 -----      ----    08/31    22:30    Halo       360     1808    PHTX
## 329 -----      ----    09/03    03:12    Halo       360     1672    PHTX
## 330 -----      C2.7    09/05    09:48    Halo       360     2326    PHTX
## 331 10808      X1.7    --/--    --:--     ----      ----     ----    PHTX
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## 332 10808       X6.2    09/09   19:48   Halo    360    2257   PHTX
## 333 10808       X2.1    09/10   21:52   Halo    360    1893   PHTX
## 334 10808       M3.0    09/11   13:00   Halo    360    1922   PHTX
## 335 10808       X1.5    09/13   20:00   Halo    360    1866   PHTX
## 336 10876       C1.8    04/30   09:54   Halo    360     544   PHTX
## 337 10898       M2.5    07/06   08:54   Halo    360     911   PHTX
## 338 10904       C3.6    08/16   16:30   Halo    360     888   PHTX
## 339 10905       C2.5    08/26   20:57    164    208     786   PHTX
## 340 -----       ----    11/05   17:54     39    196    1398   PHTX
## 341 -----       ----    11/06   10:30     77     55     829   PHTX
## 342 -----       C8.8    11/06   17:54   Halo    360    1994   PHTX
## 343 10930       X9.0    --/--   --:--   ----   ----    ----   PHTX
## 344 10930       M1.1    --/--   --:--   ----   ----    ----   PHTX
## 345 10930       M6.0    --/--   --:--   ----   ----    ----   PHTX
## 346 10930       X6.5    --/--   --:--   ----   ----    ----   PHTX
## 347 10930       X3.4    12/13   02:54   Halo    360    1774   PHTX
## 348 10930       X1.5    12/14   22:30   Halo    360    1042   PHTX
## 349 10940       C6.3    01/25   06:54   Halo    360    1367   PHTX
## 350 10956       B9.5    05/19   13:24    260    106     958   PHTX
## 351 10980       C8.3    12/31   01:31     92    164     995   PHTX
## 352 10989       M1.7    03/25   19:31     98    112    1103   PHTX
## 353 -----       B3.8    04/26   14:30     65    281     515   PHTX
## 354 11092       C3.2    --/--   --:--   ----   ----    ----   PHTX
## 355 11093       M1.0    08/07   18:36   Halo    360     871   PHTX
## 356 11099       C4.5    08/18   05:48    255    184    1471   PHTX
## 357 -----       ----    01/13   09:36     79    122     664   PHTX
## 358 11149       C1.2    01/27   12:36    255     43     349   PHTX
## 359 11158       M6.6    02/13   18:36    359    276     373   PHTX
## 360 11158       X2.2    02/15   02:24   Halo    360     669   PHTX
## 361 11163       M3.5    02/24   07:48     70    158    1186   PHTX
## 362 11166       M1.9    03/07   14:48    354    261     698   PHTX
## 363 11164       M3.7    03/07   20:00   Halo    360    2125   PHTX
## 364 -----       C5.4    05/09   20:57     55    292    1318   PHTX
## 365 11227       C8.7    05/29   21:24    107    186    1407   PHTX
## 366 11227       C3.7    06/02   08:12   Halo    360     976   PHTX
## 367 11222       ----    06/04   06:48   Halo    360    1407   PHTX
## 368 11222       ----    06/04   22:05   Halo    360    2425   PHTX
## 369 11226       M2.5    06/07   06:49   Halo    360    1255   PHTX
## 370 11261       M1.4    08/02   06:36    288    268     712   PHTX
## 371 11261       M9.3    08/04   04:12   Halo    360    1315   PHTX
## 372 11263       M3.5    08/08   18:12    305    237    1343   PHTX
## 373 11263       X6.9    08/09   08:12   Halo    360    1610   PHTX
## 374 11283       M5.3    09/06   02:24   Halo    360     782   PHTX
## 375 11283       X2.1    09/06   23:05   Halo    360     575   PHTX
## 376 11302       X1.4    09/22   10:48   Halo    360    1905   PHTX
## 377 11302       M7.1    09/24   12:48   Halo    360    1915   PHTX
## 378 11302       M7.4    09/25   05:12     98    193     788   PHTX
## 379 11319       M1.3    10/21   13:25    252    109     317   PHTX
## 380 11343       M1.1    11/09   13:36   Halo    360     907   PHTX
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## 381 11353    C1.2    11/26   07:12   Halo    360     933     PHTX
## 382 -----    ----    12/21   03:12   Halo    360    1064     PHTX
## 383 11387    M4.0    12/25   18:48    247    125     366     PHTX
## 384 -----    ----    01/02   15:12   Halo    360    1138     PHTX
## 385 11402    M3.2    01/19   14:36   Halo    360    1120     PHTX
## 386 11402    M8.7    01/23   04:00   Halo    360    2175     PHTX
## 387 11402    X1.7    01/27   18:27   Halo    360    2508     PHTX
## 388 11429    X1.1    03/05   04:00   Halo    360    1531     PHTX
## 389 11429    X5.4    03/07   00:24   Halo    360    2684     PHTX
## 390 11429    M6.3    03/09   04:26   Halo    360     950     PHTX
## 391 11429    M8.4    03/10   18:00   Halo    360    1296     PHTX
## 392 11429    M7.9    03/13   17:36   Halo    360    1884     PHTX
## 393 -----    ----    03/18   00:24   Halo    360    1210     PHTX
## 394 -----    ----    03/24   00:24   Halo    360    1152     PHTX
## 395 -----    ----    03/26   23:12   Halo    360    1390     PHTX
## 396 -----    ----    03/27   22:00    261    101     622     PHTX
## 397 11451    C3.9    04/09   12:36   Halo    360     921     PHTX
## 398 11461    C1.7    04/15   02:24     79    173    1220     PHTX
## 399 11476    M5.1    05/17   01:48   Halo    360    1582     PHTX
## 400 11513    M1.8    07/04   17:24   Halo    360     662     PHTX
## 401 11515    M1.6    07/05   22:00    220     94     980     PHTX
## 402 11515    X1.1    07/06   23:24   Halo    360    1828     PHTX
## 403 11515    M6.9    07/08   16:54    212    157    1495     PHTX
## 404 11520    X1.4    07/12   16:48   Halo    360     885     PHTX
## 405 11520    C9.9    07/17   13:48    255    176     958     PHTX
## 406 11520    M7.7    07/19   05:24   Halo    360    1631     PHTX
## 407 11520    ----    07/23   02:36   Halo    360    2003     PHTX
## 408 11563    C8.1    08/31   20:00   Halo    360    1442     PHTX
## 409 11577    C3.7    09/28   00:12   Halo    360     947     PHTX
## 410 11598    M1.3    10/21   20:57     83    243     496     PHTX
## 411 11650    C2.2    01/16   19:00    211    250     648     PHTX
## 412 11692    M1.1    03/15   07:12   Halo    360    1063     PHTX
## 413 11719    M6.5    04/11   07:24   Halo    360     861     PHTX
## 414 11719    C6.5    04/18   18:24    284    199     495     PHTX
## 415 11723    C2.7    04/21   20:36    255    212     562     PHTX
## 416 11748    X1.7    05/13   02:00   Halo    360    1270     PHTX
## 417 11748    X2.8    05/13   16:07   Halo    360    1850     PHTX
## 418 11748    X3.2    05/14   01:25   Halo    360    2625     PHTX
## 419 11748    X1.2    05/15   01:48   Halo    360    1366     PHTX
## 420 11745    M5.0    05/22   13:25   Halo    360    1466     PHTX
## 421 11777    M2.9    06/21   03:12    123   >207    1900     PHTX
## 422 11777    C4.4    06/28   02:00   Halo    360    1037     PHTX
## 423 11787    C6.8    07/04   20:12    111    188     468     PHTX
## 424    EP    B4.5    08/06   02:12     48    207     441     PHTX
## 425 11818    M1.4    08/17   19:12   Halo    360    1202     PHTX
## 426 11836    C8.3    08/30   02:48   Halo    360     949     PHTX
## 427   DIM    ----    09/06   20:48     90    182     734     PHTX
## 428    EP    C1.3    09/29   22:12   Halo    360    1179     PHTX
## 429   DIM    C1.2    10/02   20:36    309    263     619     PHTX
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## 430	11865	----	10/05	07:09	Halo	360	964	PHTX
## 431	11869	----	10/11	07:24	Halo	360	1200	PHTX
## 432	-----	----	10/13	14:12	----	83	293	PHTX
## 433	11875	M4.2	10/22	21:48	Halo	360	459	PHTX
## 434	11882	X2.1	10/25	15:12	Halo	360	1081	PHTX
## 435	11875	C4.5	10/26	03:12	271	208	473	PHTX
## 436	11875	M1.3	10/26	09:48	286	141	460	PHTX
## 437	11875	C9.1	10/27	18:12	308	189	795	PHTX
## 438	11875	M5.1	10/28	04:48	315	156	1201	PHTX
## 439	11882	M4.4	10/28	15:36	Halo	360	812	PHTX
## 440	11875	----	11/04	05:12	Halo	360	1040	PHTX
## 441	11899	----	11/07	10:36	Halo	360	1405	PHTX
## 442	11893	X1.0	11/19	10:36	Halo	360	740	PHTX
## 443	11899	----	11/29	17:24	251	188	465	PHTX
## 444	DIM	----	12/05	10:24	133	148	549	PHTX
## 445	-----	----	--/--	--:--	----	---	----	PHTX
## 446	11909	M1.2	12/07	07:36	Halo	360	1085	PHTX
## 447	11912	C4.6	12/12	03:36	214	276	1002	PHTX
## 448	-----	----	12/20	04:36	255	26	337	PHTX
## 449	11928	----	12/28	17:36	Halo	360	1118	PHTX
## 450	-----	----	--/--	--:--	----	---	----	PHTX
## 451	-----	----	--/--	--:--	----	---	----	PHTX
## 452	11936	----	01/06	08:00	Halo	360	1402	PHTX
## 453	11943	X1.2	01/07	18:24	Halo	360	1830	PHTX
## 454	DIM	C3.6	01/20	22:00	Halo	360	721	PHTX
## 455	EP	----	02/18	01:36	Halo	360	779	PHTX
## 456	11976	M3.0	02/20	08:00	Halo	360	948	PHTX
## 457	11990	X4.9	02/25	01:25	Halo	360	2147	PHTX
## 458	12005	----	03/04	18:48	Halo	360	794	PHTX
## 459	-----	----	03/05	13:48	Halo	360	828	PHTX
## 460	EP	----	03/25	05:36	261	223	651	PHTX
## 461	12017	M2.6	03/28	23:48	325	138	514	PHTX
## 462	12011	----	03/29	18:12	Halo	360	528	PHTX
## 463	12027	M6.5	04/02	13:36	Halo	360	1471	PHTX
## 464	-----	----	--/--	--:--	----	---	----	PHTX
## 465	12027	C8.3	04/04	14:12	54	96	467	PHTX
## 466	12036	M7.3	04/18	13:25	Halo	360	1203	PHTX
## 467	12027	----	05/07	16:24	Halo	360	923	PHTX
## 468	12051	----	05/08	03:24	Halo	360	847	PHTX
## 469	12051	----	05/09	02:48	Halo	360	1099	PHTX
## 470	12051	----	05/10	04:36	Halo	360	1086	PHTX
## 471	12087	X1.5	06/10	13:30	Halo	360	1469	PHTX
## 472	12085	M3.1	06/12	22:12	233	186	684	PHTX
## 473	EP?	C1.5	07/30	07:00	13	254	700	PHTX
## 474	12127	M1.5	08/01	18:36	Halo	360h	789	PHTX
## 475	12146	C2.2	08/22	11:12	Halo	360	600	PHTX
## 476	12146	M2.0	08/25	15:36	Halo	360	555	PHTX
## 477	12146	M3.9	08/25	20:48	273	177	711	PHTX
## 478	12157	----	08/28	17:24	Halo	360	766	PHTX

## 479	12158	----	09/01	11:12	Halo	360	1901	PHTX
## 480	12158	M4.5	09/09	00:06	Halo	360	920	PHTX
## 481	12158	X1.6	09/10	18:00	Halo	360	1267	PHTX
## 482	12164	----	09/20	05:24	292	87	426	PHTX
## 483	12158	----	09/22	06:12	342	252	618	PHTX
## 484	12172	M2.3	09/23	23:36	109	134	331	PHTX
## 485	EP	----	09/24	21:30	Halo	360	1350	PHTX
## 486	12173	M7.3	10/02	19:12	264	159	513	PHTX
## 487	EP	C3.0	10/10	16:12	309	>210	782	PHTX
## 488	12192	C4.4	10/21	12:48	152	142	260	PHTX
## 489	12203	----	11/08	16:36	305	141	426	PHTX
## 490	-----	----	12/13	14:24	Halo	360	2222	PHTX
## 491	12241	M1.1	12/17	02:00	107	108	869	PHTX
## 492	12242	M8.7	12/17	05:00	Halo	360	587	PHTX
## 493	12241	M6.9	12/19	01:04	Halo	360	1195	PHTX
## 494	12241	M1.0	12/21	12:12	Halo	360	669	PHTX
## 495	12290	M8.2	03/03	01:48	329	213	764	PHTX
## 496	12297	M1.5	03/06	07:12	83	155	880	PHTX
## 497	12297	M5.8	03/10	00:00	Halo	360	995	PHTX
## 498	12297	M2.6	03/11	08:24	62	93	530	PHTX
## 499	-----	----	03/24	08:24	Halo	360	1794	PHTX
## 500	-----	----	04/26	03:24	Halo	360	820	PHTX
## 501	12339	X2.7	05/05	22:24	Halo	360	715	PHTX
## 502	-----	----	05/12	02:48	286	250	772	PHTX
## 503	12364	C2.8	06/09	20:12	77	262	1036	PHTX
## 504	12365	C5.9	06/14	04:12	199	195	1228	PHTX
## 505	12371	M3.0	06/18	17:24	Halo	360	1305	PHTX
## 506	12371	M2.0	06/21	02:36	Halo	360	1366	PHTX
## 507	12371	M6.5	06/22	18:36	Halo	360	1209	PHTX
## 508	12371	M7.9	06/25	08:36	Halo	360	1627	PHTX
## 509	-----	----	07/01	14:36	Halo	360	1435	PHTX
## 510	12403	M1.2	08/22	07:12	Halo	360	547	PHTX
## 511	12415	C2.6	09/18	05:00	201	131	823	PHTX
## 512	12415	M2.1	09/20	18:12	Halo	360	1239	PHTX
## 513	12443	M3.7	11/04	14:48	Halo	360	578	PHTX
## 514	12449	M3.9	11/09	13:25	142	273	1041	PHTX
## 515	12468	C6.6	12/16	09:36	Halo	360	579	PHTX
## 516	12473	M4.7	12/23	01:25	98	89	520	PHTX
## 517	12473	M1.8	12/28	12:12	Halo	360	1212	PHTX
## 518	12473	M2.3	01/01	23:24	Halo	360	1730	PHTX
## 519	-----	----	--/--	--:--	----	---	----	PHTX
## 520	-----	----	02/05	21:24	193	155	445	PHTX
## 521	12535	C1.3	05/04	14:12	255	134	390	PHTX
## 522	-----	----	--/--	--:--	----	---	----	PHTX
## 523	-----	----	08/15	17:24	75	98	633	PHTX

Step 4: Tidy the NASA Table

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NASA[NASA == "-----"] <- NA
NASA[NASA == "----"] <- NA
NASA[NASA == "--/--"] <- NA
NASA[NASA == "--:--"] <- NA
NASA$Halo <- NA
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"Location", "NOAA", "Importance",
                "CME_date", "CME_time", "CME_CPA", "CME_width", "CME_speed", "Pl
ots", "Halo")]
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7
    2014/10/10
## 48
8
    2014/10/21
## 48
9
    2014/11/08
## 49
0
    2014/12/13
```

```
## 49
1
       2014/12/17
## 49
2
       2014/12/17
## 49
3
       2014/12/18
## 49
4
       2014/12/21
## 49
5
       2015/03/03
## 49
6
       2015/03/06
## 49
7
       2015/03/10
## 49
8
       2015/03/11
## 49
9
       2015/03/24
## 50
0
       2015/04/26
## 50
1
       2015/05/05
## 50
2
       2015/05/12
## 50
3
       2015/06/09
## 50
4
       2015/06/14
## 50
5
       2015/06/18
## 50
6
       2015/06/21
## 50
```

```
7
       2015/06/22
## 50
8
       2015/06/25
## 50
9
       2015/07/01
## 51
0
       2015/08/22
## 51
1
       2015/09/18
## 51
2
       2015/09/20
## 51
3
       2015/11/04
## 51
4
       2015/11/09
## 51
5
       2015/12/16
## 51
6
       2015/12/23
## 51
7
       2015/12/28
## 51
8
       2016/01/02
## 51
9
       2016/02/05
## 52
0
       2016/02/05
## 52
1
       2016/05/04
## 52
2
       2016/05/24
## 52
3
```

```
    2016/08/15
## 52
4
```

##	start_time	end_date	end_time	start_freq
## 1	<NA>	<NA>	<NA>	<NA>
## 2	List	includes	DH	type
## 3	after	STEREO	launch	on
## 4	of	bursts	are	determined
## 5	<NA>	<NA>	<NA>	<NA>
## 6	<NA>	<NA>	<NA>	<NA>
## 7	<NA>	<NA>	<NA>	<NA>
## 8	DH	Type	II	Flare
## 9	----------------	--------------------------	Plots	<NA>
## 10	End	Frequency	Loc	NOAA
## 11	(2)	(3)	(4)	(5)
## 12	<NA>	<NA>	<NA>	<NA>
## 13	14:00	04/01	14:15	8000
## 14	14:30	04/07	17:30	11000
## 15	05:15	05/14	16:00	12000
## 16	20:20	05/21	22:00	5000
## 17	21:53	09/23	22:16	6000
## 18	05:15	11/03	12:00	14000
## 19	10:30	11/03	11:30	14000
## 20	06:00	11/05	04:30	14000
## 21	12:20	11/07	08:30	14000
## 22	13:30	11/27	14:00	14000
## 23	22:45	12/12	23:20	14000
## 24	15:03	01/25	15:18	14000
## 25	03:40	03/29	03:52	14000
## 26	10:25	04/22	06:00	10000
## 27	06:00	04/23	15:30	14000
## 28	09:17	04/24	09:25	4700
## 29	09:20	04/27	10:00	10000
## 30	16:30	04/29	17:00	10000
## 31	14:25	05/02	14:50	5000
## 32	08:25	05/06	08:35	14000
## 33	03:35	05/09	10:00	9000
## 34	21:40	05/11	22:00	10000
## 35	10:00	05/19	11:30	14000
## 36	13:30	05/27	14:20	4000
## 37	10:15	06/11	10:20	8000
## 38	18:20	06/17	21:00	12000
## 39	19:39	06/20	20:00	2600
## 40	07:15	06/22	09:20	6000
## 41	14:00	11/02	14:40	14000
## 42	22:00	11/07	08:00	5000

```
## 43          03:00          11/06    05:30    5000
## 44          00:20          11/07    00:50   14000
## 45          11:20          11/08    11:30   10000
## 46          17:50          12/18    18:15   14000
## 47          13:50          04/24    00:00    3700
## 48          05:50          05/03    08:45    8000
## 49          10:55          05/28    10:00   14000
## 50          18:50          06/02    09:00   14000
## 51          07:05          06/05    01:00   14000
## 52          11:45          06/11    17:00   14000
## 53          18:25          06/22    18:40    3000
## 54          05:50          06/23    07:10   12000
## 55          07:07          06/23    07:14   14000
## 56          21:03          06/28    21:10    3500
## 57          19:20          06/29    19:55   14000
## 58          03:10          07/05    04:05    2000
## 59          18:25          08/28    18:33   16000
## 60          03:00          09/03    04:10    2000
## 61          07:30          09/10    07:35    5500
## 62          09:10          10/14    10:00   14000
## 63          23:27          10/17    23:33   11500
## 64          03:27          11/16    03:48    7000
## 65          05:17          11/16    05:34   14000
## 66          17:31          01/18    22:00   14000
## 67          20:20          01/28    20:24    2200
## 68          19:34          02/05    19:34    5800
## 69          09:05          02/11    02:20   12000
## 70          01:55          02/10    02:00   14000
## 71          03:55          02/12    09:20    4000
## 72          20:42          02/18    22:12   14000
## 73          09:44          02/18    09:54    2000
## 74          13:50          03/02    14:03   14000
## 75          16:24          03/07    16:48   14000
## 76          06:56          03/27    06:58   14000
## 77          15:45          04/04    16:00   14000
## 78          23:15          04/09    23:45    4500
## 79          15:00          04/18    16:00   14000
## 80          11:10          05/04    13:00    6500
## 81          16:35          05/05    17:30   14000
## 82          21:15          05/07    24:00   14000
## 83          23:34          05/12    23:42   14000
## 84          16:47          05/16    14:00    4800
## 85          22:00          06/02    22:15   14000
## 86          15:20          06/08    09:00   14000
## 87          17:15          06/10    18:45   10000
## 88          19:52          06/15    19:56    5000
## 89          03:00          06/17    04:15   14000
## 90          01:19          06/19    01:22    3800
## 91          14:40          06/22    15:05   14000
```

## 92	08:10	06/25	09:00	12000
## 93	22:00	07/10	23:30	14000
## 94	13:00	07/11	13:30	12000
## 95	20:05	07/12	20:35	6000
## 96	10:30	07/15	14:30	14000
## 97	11:45	07/22	12:45	14000
## 98	11:35	08/11	11:59	2800
## 99	12:00	09/13	12:20	14000
## 100	18:15	09/12	19:00	2000
## 101	04:30	09/16	10:30	14000
## 102	08:45	09/19	10:20	12000
## 103	02:20	09/25	03:00	14000
## 104	22:10	10/05	22:35	5000
## 105	07:10	10/16	08:00	14000
## 106	09:30	10/25	24:00	10000
## 107	18:35	11/03	18:45	4000
## 108	23:20	11/09	12:00	4000
## 109	16:15	11/11	04:00	10000
## 110	14:25	11/12	14:40	3000
## 111	08:16	11/23	08:35	14000
## 112	21:00	11/23	21:06	3500
## 113	05:10	11/24	15:00	14000
## 114	15:25	11/24	22:00	14000
## 115	22:24	11/24	22:36	4000
## 116	01:25	11/25	02:25	14000
## 117	19:00	11/25	19:35	6000
## 118	19:55	11/25	20:25	13000
## 119	17:00	11/26	17:15	14000
## 120	12:40	12/28	13:38	14000
## 121	19:12	01/20	19:16	14000
## 122	21:30	01/20	24:00	14000
## 123	12:06	01/26	14:20	14000
## 124	15:45	01/28	17:00	14000
## 125	01:40	02/11	01:55	12000
## 126	04:18	03/10	04:32	14000
## 127	05:35	03/12	05:45	3000
## 128	02:35	03/27	03:15	6000
## 129	15:00	03/27	15:20	4000
## 130	10:12	03/30	06:00	4000
## 131	11:30	04/02	12:00	14000
## 132	22:05	04/03	02:30	14000
## 133	03:40	04/03	07:25	14000
## 134	09:50	04/04	10:10	13000
## 135	00:00	04/05	00:00	14000
## 136	19:35	04/07	01:50	14000
## 137	15:53	04/10	01:00	12000
## 138	05:24	04/10	24:00	14000
## 139	13:15	04/11	14:15	14000
## 140	10:20	04/12	10:40	14000

## 141	14:05	04/16	13:00	14000
## 142	02:55	04/18	14:00	1000
## 143	12:40	04/28	05:00	5000
## 144	12:00	05/07	13:50	2000
## 145	23:52	05/13	00:12	3000
## 146	00:25	05/30	01:38	14000
## 147	10:50	06/15	11:15	7000
## 148	16:05	06/15	16:20	14000
## 149	00:10	08/15	08:40	5400
## 150	16:50	08/25	23:00	8000
## 151	20:43	08/30	20:47	12000
## 152	18:48	09/03	19:00	12000
## 153	11:50	09/15	12:05	14000
## 154	13:50	09/16	14:10	3000
## 155	08:35	09/17	08:47	14000
## 156	18:43	09/20	18:57	14000
## 157	10:45	09/25	20:00	7000
## 158	08:15	09/28	07:00	4000
## 159	07:00	10/01	18:30	1000
## 160	11:35	10/05	12:55	1400
## 161	11:15	10/09	16:00	8000
## 162	11:20	10/09	11:55	14000
## 163	13:10	10/09	23:00	5000
## 164	01:15	10/19	02:25	14000
## 165	16:45	10/21	16:40	14000
## 166	15:15	10/22	17:40	8000
## 167	15:30	10/27	23:00	14000
## 168	16:30	11/06	11:00	14000
## 169	05:35	11/17	06:40	11000
## 170	20:50	11/22	22:23	8000
## 171	22:40	11/24	02:30	14000
## 172	12:45	12/11	17:00	4500
## 173	11:25	12/25	12:40	14000
## 174	05:20	12/27	05:00	14000
## 175	20:35	12/29	03:00	14000
## 176	20:45	12/29	21:05	3000
## 177	18:30	01/09	24:00	14000
## 178	06:25	01/14	21:30	12000
## 179	12:49	01/27	13:25	14000
## 180	19:23	02/01	19:31	14000
## 181	12:35	02/21	12:50	4000
## 182	00:00	03/11	00:15	14000
## 183	00:00	03/12	02:20	14000
## 184	22:45	03/15	23:30	14000
## 185	06:00	03/17	06:35	3000
## 186	02:55	03/18	05:35	14000
## 187	11:30	03/22	12:40	14000
## 188	13:10	03/22	13:35	3000
## 189	12:59	04/10	13:02	13000

```
## 190          07:50          04/14     08:10     14000
## 191          03:35          04/15     04:15     11000
## 192          08:30          04/19     04:00      5000
## 193          01:30          04/21     24:00     10000
## 194          14:15          04/30     14:23      4000
## 195          22:30          04/30     23:20      2000
## 196          23:50          05/03     00:10      2800
## 197          01:50          05/16     03:30      9000
## 198          00:00          05/22     00:30     14000
## 199          12:50          05/27     13:50     14000
## 200          11:35          07/07     20:00     14000
## 201          19:46          07/09     20:40      1000
## 202          21:15          07/16     05:00      5000
## 203          07:30          07/17     07:45      3500
## 204          07:55          07/18     08:45     14000
## 205          20:55          07/18     21:40      6000
## 206          16:40          07/19     17:10      5000
## 207          21:30          07/20     22:20     10000
## 208          00:50          07/23     04:00     11000
## 209          22:27          07/26     23:30     14000
## 210          12:10          07/29     12:45      4200
## 211          19:20          08/03     20:30     14000
## 212          02:20          08/14     24:00      1000
## 213          06:15          08/16     09:30     14000
## 214          12:20          08/17     21:00     14000
## 215          01:45          08/24     03:25      5000
## 216          16:55          09/07     16:22     14000
## 217          15:19          09/10     16:00     14000
## 218          13:35          09/27     14:30     14000
## 219          18:10          10/13     18:40     14000
## 220          00:19          10/14     02:00      1700
## 221          14:35          10/14     16:50     14000
## 222          23:06          10/28     01:20     14000
## 223          13:20          11/10     03:00     14000
## 224          03:20          11/10     06:00      3000
## 225          16:15          11/11     17:50     14000
## 226          20:05          11/24     20:45     14000
## 227          21:45          12/19     22:30     14000
## 228          04:20          12/22     04:50      5500
## 229          19:10          01/20     20:00     14000
## 230          22:20          01/27     22:26     11000
## 231          12:25          03/18     13:45      4500
## 232          13:55          03/18     14:10     14000
## 233          02:30          03/19     03:15     14000
## 234          07:25          04/22     08:22      3500
## 235          23:12          05/27     23:45     14000
## 236          01:00          05/29     00:30      1000
## 237          01:10          05/29     08:00     13000
## 238          03:00          05/31     08:00      1000
```

## 239	00:00	06/05	00:00	????
## 240	00:00	06/16	03:00	14000
## 241	22:50	06/18	05:30	10000
## 242	14:10	07/10	16:10	4000
## 243	11:15	08/19	12:00	14000
## 244	04:10	10/21	04:55	5000
## 245	07:00	10/26	09:15	8000
## 246	17:45	10/26	19:40	14000
## 247	11:10	10/29	24:00	14000
## 248	20:55	10/29	24:00	11000
## 249	22:55	11/02	00:50	14000
## 250	00:00	11/02	00:00	????
## 251	17:30	11/03	01:00	12000
## 252	01:15	11/03	01:25	3000
## 253	10:00	11/03	12:30	6000
## 254	00:00	11/04	00:00	????
## 255	20:00	11/04	24:00	10000
## 256	00:00	11/09	00:00	????
## 257	00:00	11/11	00:00	????
## 258	09:35	11/13	10:50	14000
## 259	09:05	11/17	09:20	4000
## 260	00:00	11/18	00:00	????
## 261	10:15	11/18	11:30	5000
## 262	11:00	12/02	12:00	14000
## 263	03:40	01/05	03:50	9000
## 264	00:00	01/06	00:00	14000
## 265	04:15	01/07	06:15	14000
## 266	10:35	01/07	11:35	14000
## 267	13:05	04/06	16:00	8000
## 268	10:25	04/08	12:50	3000
## 269	13:30	04/08	14:00	6000
## 270	04:20	04/11	05:35	14000
## 271	23:13	06/02	23:55	14000
## 272	16:48	06/03	17:10	12000
## 273	07:50	06/04	09:55	14000
## 274	22:07	06/22	22:30	10000
## 275	06:30	06/23	08:55	14000
## 276	19:00	07/23	19:35	10000
## 277	15:00	07/26	22:25	1000
## 278	13:20	07/30	20:30	1000
## 279	07:10	07/31	11:30	1000
## 280	09:15	08/08	09:22	14000
## 281	00:45	09/13	21:00	14000
## 282	17:15	09/19	18:15	14000
## 283	03:12	10/24	03:21	14000
## 284	06:40	10/30	07:40	4000
## 285	05:55	11/01	07:25	3000
## 286	15:55	11/03	16:30	14000
## 287	03:35	11/03	04:10	2000

##					
## 288	01:50	11/06	02:45	6000
## 289	16:25	11/08	20:00	14000
## 290	17:35	11/09	18:10	14000
## 291	02:25	11/10	03:40	14000
## 292	00:07	12/04	04:30	10000
## 293	20:05	12/08	20:10	14000
## 294	16:35	12/29	17:00	14000
## 295	23:45	12/31	04:20	5000
## 296	00:45	01/01	02:25	14000
## 297	11:20	01/04	11:35	13000
## 298	06:15	01/15	09:30	14000
## 299	23:00	01/15	00:00	3000
## 300	09:25	01/17	16:00	14000
## 301	09:20	01/19	00:00	5300
## 302	10:00	01/17	10:35	6100
## 303	07:15	01/20	16:30	14000
## 304	11:40	02/01	11:50	8000
## 305	22:40	03/02	23:00	14000
## 306	00:20	03/03	01:10	14000
## 307	17:52	05/06	18:03	5000
## 308	17:00	05/13	02:10	5000
## 309	03:20	05/17	03:35	4500
## 310	12:50	06/03	15:00	10000
## 311	20:25	06/16	21:40	9000
## 312	16:30	07/07	16:40	4000
## 313	22:15	07/09	23:00	14000
## 314	14:15	07/13	15:05	14000
## 315	11:00	07/14	12:54	3000
## 316	11:50	07/17	13:45	7000
## 317	13:50	07/24	22:30	14000
## 318	22:35	07/24	22:40	1000
## 319	05:20	07/27	06:45	1000
## 320	07:45	07/27	08:30	2500
## 321	07:40	07/30	20:00	9000
## 322	14:15	08/01	14:50	14000
## 323	01:30	08/22	03:35	8000
## 324	17:15	08/23	13:00	12000
## 325	15:00	08/23	19:30	13000
## 326	11:10	08/29	11:14	10000
## 327	11:40	08/31	12:10	6000
## 328	22:10	08/31	23:00	14000
## 329	03:20	09/03	05:15	2000
## 330	10:40	09/06	00:00	1500
## 331	18:05	09/08	00:00	12000
## 332	19:45	09/09	22:00	10000
## 333	21:45	09/10	01:00	14000
## 334	13:10	09/11	15:15	3000
## 335	20:20	09/15	06:00	1100
## 336	16:20	05/02	01:00	1000

## 337	08:45	07/06	17:18	14000
## 338	15:45	08/16	22:15	14000
## 339	20:40	08/26	21:00	7000
## 340	17:35	11/05	19:20	14000
## 341	10:35	11/06	11:05	14000
## 342	17:45	11/06	19:25	4000
## 343	10:50	12/05	20:00	14000
## 344	02:00	12/06	03:30	1000
## 345	08:30	12/06	09:45	4000
## 346	19:00	12/08	24:00	16000
## 347	02:45	12/13	10:40	12000
## 348	22:30	12/14	23:40	14000
## 349	06:55	01/25	23:30	14000
## 350	13:02	05/19	13:05	16000
## 351	01:05	12/31	01:22	16000
## 352	19:05	03/25	19:20	12000
## 353	14:23	04/26	14:39	7600
## 354	09:20	08/01	17:30	2000
## 355	18:35	08/07	19:50	14000
## 356	06:05	08/18	07:45	13000
## 357	09:15	01/13	10:05	16000
## 358	12:20	01/27	12:35	16000
## 359	17:50	02/13	18:00	16000
## 360	02:10	02/15	07:00	16000
## 361	12:50	02/24	15:10	1000
## 362	14:30	03/07	15:00	16000
## 363	20:00	03/08	08:30	16000
## 364	21:00	05/10	04:00	16000
## 365	21:10	05/30	13:40	16000
## 366	08:00	06/02	08:25	15000
## 367	07:00	06/04	13:45	16000
## 368	22:00	06/07	01:30	16000
## 369	06:45	06/07	18:00	16000
## 370	06:15	08/02	07:30	16000
## 371	04:15	08/05	17:00	13000
## 372	18:10	08/08	20:10	6000
## 373	08:20	08/09	08:35	16000
## 374	02:00	09/06	23:40	14000
## 375	22:30	09/07	15:40	16000
## 376	11:05	09/22	24:00	14000
## 377	12:50	09/24	22:45	16000
## 378	05:30	09/25	06:00	16000
## 379	13:15	10/21	13:50	16000
## 380	13:30	11/09	17:00	16000
## 381	07:15	11/27	24:00	10000
## 382	03:00	12/21	08:15	16000
## 383	18:45	12/25	18:55	14000
## 384	15:00	01/02	15:45	16000
## 385	15:00	01/20	02:45	16000

```
## 386          04:00          01/24    15:00    16000
## 387          18:30          01/28    04:45    16000
## 388          04:00          03/05    12:20    16000
## 389          01:00          03/08    19:00    16000
## 390          04:10          03/09    06:05    14000
## 391          17:55          03/11    12:30    14000
## 392          17:35          03/13    24:00    16000
## 393          00:20          03/18    01:20    16000
## 394          00:40          03/24    10:40    16000
## 395          23:15          03/26    23:55    16000
## 396          21:45          03/27    22:30     4000
## 397          12:20          04/09    13:00    16000
## 398          02:30          04/15    02:50    16000
## 399          01:40          05/17    06:20    16000
## 400          17:00          07/04    17:20    14000
## 401          22:40          07/05    23:50     3000
## 402          23:10          07/07    03:40    16000
## 403          16:35          07/08    22:00    16000
## 404          16:45          07/13    09:00    14000
## 405          14:40          07/18    05:00    12000
## 406          05:30          07/19    06:20     5000
## 407          02:30          07/23    21:40    16000
## 408          20:00          08/31    23:45    16000
## 409          23:55          09/28    10:15    16000
## 410          01:50          10/22    11:15     1000
## 411          22:00          01/17    01:30     1000
## 412          07:00          03/15    21:30    14000
## 413          07:10          04/11    15:00    10000
## 414          18:00          04/18    19:10    16000
## 415          20:25          04/21    22:12    14000
## 416          02:20          05/13    03:00    16000
## 417          16:15          05/13    19:10    16000
## 418          01:16          05/14    02:35    16000
## 419          01:49          05/15    07:30    16000
## 420          13:10          05/24    06:00    16000
## 421          03:35          06/21    05:15    14000
## 422          01:53          06/28    03:26    14000
## 423          20:57          07/04    21:27    11000
## 424          02:01          08/06    02:11    14000
## 425          20:25          08/18    03:05     1800
## 426          02:34          08/31    04:00    14000
## 427          22:29          09/06    22:34     5000
## 428          21:53          09/30    21:00    14000
## 429          20:46          10/02    21:10    10000
## 430          07:00          10/05    14:46    16000
## 431          07:23          10/11    11:43    14000
## 432          18:47          10/14    05:15     2100
## 433          21:33          10/22    22:08    14000
## 434          15:08          10/25    22:32    16000
```

## 435	03:01	10/26	04:00	14000
## 436	09:34	10/26	10:10	14000
## 437	18:12	10/27	18:36	14000
## 438	04:41	10/28	11:51	14000
## 439	15:24	10/28	15:29	14000
## 440	05:10	11/04	08:00	16000
## 441	10:26	11/07	20:40	16000
## 442	10:39	11/19	20:20	14000
## 443	22:18	11/30	09:20	1800
## 444	12:45	12/05	13:00	4200
## 445	20:48	12/05	21:35	14000
## 446	07:43	12/07	08:36	14000
## 447	03:55	12/12	21:30	12000
## 448	08:23	12/20	13:24	1500
## 449	17:31	12/28	18:05	16000
## 450	17:41	01/04	18:47	9000
## 451	19:03	01/05	09:00	6500
## 452	07:57	01/06	22:30	14000
## 453	18:33	01/08	21:00	14000
## 454	22:24	01/20	22:36	14000
## 455	02:16	02/18	02:51	2000
## 456	08:05	02/20	08:29	12000
## 457	00:56	02/25	11:28	14000
## 458	18:24	03/04	20:10	16000
## 459	13:33	03/05	17:10	16000
## 460	07:52	03/25	11:30	1700
## 461	00:12	03/29	00:48	14000
## 462	17:59	03/30	09:58	14000
## 463	13:42	04/03	08:10	14000
## 464	18:49	04/03	06:40	2400
## 465	14:02	04/04	14:07	14000
## 466	13:05	04/18	22:50	14000
## 467	16:24	05/07	23:18	16000
## 468	03:21	05/08	05:26	16000
## 469	02:40	05/09	04:30	14000
## 470	04:32	05/10	08:37	16000
## 471	12:58	06/10	15:00	16000
## 472	22:14	06/12	22:35	14000
## 473	07:44	07/30	08:00	6300
## 474	18:58	08/02	05:00	1000
## 475	10:37	08/22	11:18	14000
## 476	15:20	08/25	16:02	14000
## 477	20:43	08/25	21:00	14000
## 478	17:05	08/28	22:08	16000
## 479	11:12	09/01	22:35	16000
## 480	00:05	09/09	13:00	11000
## 481	17:45	09/11	12:00	14000
## 482	05:10	09/20	05:30	14000
## 483	06:13	09/22	06:50	16000

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## 484            23:41                    09/23   23:47    14000
## 485            20:54                    09/24   23:48    16000
## 486            21:34                    10/02   21:56     3300
## 487            18:11                    10/10   18:33     2500
## 488            12:33                    10/21   13:01    14000
## 489            16:57                    11/08   17:18    14000
## 490            14:27                    12/13   14:51    14000
## 491            04:09                    12/17   04:19     2900
## 492            05:00                    12/17   05:09    14000
## 493            22:31                    12/18   22:54     5100
## 494            12:05                    12/21   12:28    14000
## 495            02:33                    03/03   02:37     8100
## 496            08:00                    03/06   11:30     4700
## 497            00:10                    03/10   00:27    14000
## 498            10:30                    03/11   14:50     1000
## 499            09:00                    03/06   11:47    14000
## 500            03:21                    04/26   03:33     8000
## 501            22:24                    05/05   23:14    14000
## 502            03:00                    05/12   03:04    14000
## 503            20:23                    06/09   22:35     2300
## 504            05:26                    06/14   05:41     3000
## 505            17:42                    06/18   19:40     3700
## 506            02:33                    06/21   21:20     5500
## 507            18:20                    06/22   21:55    14000
## 508            08:35                    06/25   16:30    14000
## 509            16:08                    07/01   20:47     1000
## 510            07:07                    08/22   07:18    14000
## 511            04:54                    09/18   09:52    14000
## 512            18:23                    09/21   01:46    14000
## 513            14:07                    11/04   15:14    14000
## 514            13:21                    11/09   13:27    14000
## 515            08:45                    12/16   08:57     5300
## 516            01:18                    12/23   01:23    12000
## 517            11:50                    12/28   21:45    14000
## 518            00:55                    01/02   03:08     1100
## 519            20:28                    02/05   23:31     1650
## 520            22:35                    02/05   22:55     5200
## 521            14:20                    05/04   14:34    14000
## 522            17:00                    05/24   20:50     1500
## 523            18:21                    08/15   18:28    11000
## 524            <NA>                     <NA>    <NA>      <NA>
## 525            <NA>                     <NA>    <NA>      <NA>
##      end_freq Location      NOAA Importance CME_date   CME_time CME_CPA
## 1        <NA>     <NA>      <NA>       <NA>      <NA>       <NA>    <NA>
## 2          II   bursts  observed         by      Wind spacecraft,
## 3         Oct     2006       the      start       and        end   times
## 4       using     both      Wind        and    STEREO                <NA>
## 5        <NA>     <NA>      <NA>       <NA>      <NA>       <NA>    <NA>
## 6        <NA>     <NA>      <NA>       <NA>      <NA>       <NA>    <NA>
```

	Imp	Date	Time	CPA	Width	Spd	
	(6)	(7)	(8)	(9)	(10)	(11)	(12)
## 7	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 8	CME		<NA>	<NA>	<NA>	<NA>	<NA>
## 9	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 10	Imp	Date	Time	CPA	Width	Spd	
## 11	(6)	(7)	(8)	(9)	(10)	(11)	(12)
## 12	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 13	4000	S25E16	8026	M1.3	04/01	15:18	74
## 14	1000	S28E19	8027	C6.8	04/07	14:27	Halo
## 15	80	N21W08	8038	C1.3	05/12	05:30	Halo
## 16	500	N05W12	8040	M1.3	05/21	21:00	263
## 17	2000	S29E25	8088	C1.4	09/23	22:02	133
## 18	250	S20W13	8100	C8.6	11/03	05:28	240
## 19	5000	S16W21	8100	M4.2	11/03	11:11	233
## 20	100	S14W33	8100	X2.1	11/04	06:10	Halo
## 21	100	S18W63	8100	X9.4	11/06	12:10	Halo
## 22	7000	N17E63	8113	X2.6	11/27	13:56	98
## 23	8000	N25W52	8116	B9.4	12/13	00:26	278
## 24	10000	N21E25	8141	C1.1	01/25	15:26	Halo
## 25	7000	SW90	<NA>	<NA>	03/29	03:48	Halo
## 26	35	S22W90	8194	M1.4	04/20	10:07	284
## 27	200	S17E90	8210	X1.2	04/23	05:55	Halo
## 28	2600	S10E90	8210	C8.9	04/24	08:55	100
## 29	1000	S16E50	8210	X1.0	04/27	08:56	Halo
## 30	2000	S18E20	8210	M6.8	04/29	16:58	Halo
## 31	3000	S15W15	8210	X1.1	05/02	14:06	Halo
## 32	5000	S11W65	8210	X2.7	05/06	08:29	309
## 33	400	S14W89	8210	M7.7	05/09	03:35	262
## 34	1000	N32W90	8214	B6.6	05/11	21:55	208
## 35	3000	N29W46	8222	B7.9	05/19	10:27	268
## 36	1000	N19W62	8226	C7.5	05/27	13:45	175
## 37	4000	N16E86	8243	M1.4	06/11	10:28	123
## 38	50	S22W90	8232	M1.0	06/16	18:27	341
## 39	1800	Back	<NA>	<NA>	06/20	18:20	Halo
## 40	2000	N16W46	8243	C2.9	06/22	05:01	265
## 41	4000	S25E47	8373	C4.4	11/02	14:18	116
## 42	50	N22W18	8375	M8.4	11/05	20:44	Halo
## 43	1000	BACK	<NA>	<NA>	11/06	02:18	159
## 44	6000	NE90b	<NA>	C1.0	11/07	01:54	296
## 45	8000	S21W37	<NA>	C5.9	11/08	11:54	264
## 46	5000	N19E64	8415	M8.0	12/18	18:09	Halo
## 47	1500	NW90b	<NA>	<NA>	04/24	13:31	Halo
## 48	200	N15E32	8525	M4.4	05/03	06:06	Halo
## 49	70	W90b	<NA>	<NA>	05/27	11:06	Halo
## 50	400	NW90b	<NA>	<NA>	06/01	19:37	Halo
## 51	60	N17W69	8552	M3.9	06/04	07:26	289
## 52	400	N38E90	<NA>	C8.8	06/11	11:26	35
## 53	2000	N22E37	8592	M1.7	06/22	18:54	Halo
## 54	2000	BACK	<NA>	<NA>	06/23	06:06	264
## 55	2000	N23E42	8596	M1.7	06/23	07:31	Halo

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## 56    1500   N22W44   8592    C3.5   06/28   21:30   336
## 57    2000   S14E01   8603    M1.6   06/29   19:54   Halo
## 58    1000   SW90b    8603    C7.6   07/05   02:54   284
## 59   12000   S26W14   8674    X1.1   08/28   18:26   120
## 60    1000   S36W24   8679    C2.1   09/03   00:06   184
## 61    2000   NW90b    <NA>    <NA>   09/10   07:54    18
## 62    4000   N11E32   8731    X1.8   10/14   09:26   Halo
## 63   10000   N03E38   <NA>    <NA>   10/18   00:06    40
## 64    4000   N17E38   8766    M3.8   11/16   03:06    81
## 65    7000   N08W39   8759    M1.8   11/16   05:30   285
## 66     500   S19E11   8831    M3.9   01/18   17:54   Halo
## 67    1100   S31W17   8841    C4.7   01/28   20:12   Halo
## 68    2900   N26E52   8858    X1.2   02/05   19:54    60
## 69      20   N25E26   8858    M1.3   02/08   09:30   Halo
## 70    8000   N31E04   8858    C7.3   02/10   02:30   Halo
## 71     400   N26W23   8858    M1.7   02/12   04:31   Halo
## 72     100   S29E07   8872    M1.3   02/17   21:30   Halo
## 73    1200   NW90b    <NA>    C1.1   02/18   09:54   286
## 74    6000   S20W58   8882    M6.5   03/02   13:54   235
## 75    4500   S22E77   8906    M1.2   03/07   16:30   120
## 76   10000   S00E90   8932    C2.3   03/27   07:31   129
## 77    9000   N16W66   8933    C9.7   04/04   16:32   Halo
## 78    1000   S14W01   8948    M3.1   04/10   00:30   Halo
## 79    6000   S50W30   altr    FILA   04/18   14:54   195
## 80    1000   S17W87   8970    M6.8   05/04   11:26   235
## 81    2500   S17W87   8970    M1.5   05/05   15:50   Halo
## 82     500   W90b     <NA>    <NA>   05/07   20:50   Halo
## 83    7000   E90b     <NA>    <NA>   05/12   23:26   Halo
## 84      40   S24W67   8993    C7.8   05/15   16:26   257
## 85    8000   N16E60   9026    M7.6   06/02   21:30    69
## 86      40   N20E18   9026    X2.3   06/06   15:54   Halo
## 87    1000   N22W38   9026    M5.2   06/10   17:08   Halo
## 88    2500   N20W65   9041    M1.8   06/15   20:06   298
## 89    1000   N22W72   9041    M3.5   06/17   03:28   298
## 90    1900   N42E60   <NA>    <NA>   06/18   21:30     8
## 91    2000   N26W72   9042    M3.0   06/23   14:54   282
## 92    2500   N16W55   9046    M1.9   06/25   07:54   262
## 93    1000   N18E49   9077    M5.7   07/10   21:50    67
## 94    1000   N18E27   9077    X1.0   07/11   13:27   Halo
## 95    1000   N19W61   9070    M1.5   07/12   20:30   281
## 96      80   N22W07   9077    X5.7   07/14   10:54   Halo
## 97    2000   N14W56   9085    M3.7   07/22   11:54   259
## 98    2000   NW90b    <NA>    <NA>   08/11   07:31   273
## 99      60   S19W06   DSF     M1.0   09/12   11:54   Halo
## 100   1000   NE90b    <NA>    <NA>   09/12   17:30   Halo
## 101    400   N14W07   9165    M5.9   09/16   05:18   Halo
## 102   1500   N14W46   9165    M5.1   09/19   08:50   283
## 103   1000   N09W18   9169    M1.8   09/25   02:50   Halo
## 104   1250   N25W90   9177    <NA>   10/05   18:26   323
```

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## 105    1000    N03W90    9182    M2.5    10/16    07:27    Halo
## 106     300    N09W63    9199    C4.0    10/25    08:26    Halo
## 107    2500    N02W02    9213    C3.2    11/03    18:26    Halo
## 108     200    N10W77    9213    M7.4    11/08    23:06     271
## 109      40    S11E10    9221    M1.0    <NA>     <NA>     <NA>
## 110    2000    S14E05    9227    C4.4    11/12    14:50     257
## 111    9000    S26W40    9238    C5.4    11/23    06:06    Halo
## 112    3000    S20E60    9239    C7.9    11/23    21:30     124
## 113     100    N20W05    9236    X2.0    11/24    05:30    Halo
## 114     200    N22W07    9236    X2.3    11/24    15:30    Halo
## 115    3000    N21W14    9236    X1.8    11/24    22:06    Halo
## 116    3000    N07E50    9240    M8.2    11/25    01:31    Halo
## 117    2000    N20W23    9236    X1.9    11/25    19:31    Halo
## 118    4000    N20W27    9236    <NA>    11/25    21:30     345
## 119    7000    N18W38    9236    X4.0    11/26    17:06    Halo
## 120    1900    Back      <NA>    <NA>    12/28    12:06    Halo
## 121    6000    S07E40    9313    M1.2    01/20    19:31    Halo
## 122     500    S07E46    9313    M7.7    01/20    21:30    Halo
## 123     400    S23W57    9320    C1.6    01/26    12:06     276
## 124     200    S04W59    9313    M1.5    01/28    15:54    Halo
## 125    5500    N24W57    9346    C6.5    02/11    01:31    Halo
## 126    4000    N27W42    9368    M6.7    03/10    04:26     297
## 127    1500    BACK      <NA>    <NA>    03/12    05:50     233
## 128    1000    N14E17    9393    C7.3    03/27    02:06     154
## 129    1500    N15E14    9393    C5.6    03/27    17:06      46
## 130      60    N20W19    9393    X1.7    03/29    10:26    Halo
## 131    5000    N20W70    9393    X1.1    04/02    11:26     270
## 132     250    N19W72    9393    X20.    04/02    22:06     261
## 133     400    S21E83    9415    X1.2    04/03    03:26     108
## 134    3000    S21E68    9415    M1.6    04/04    09:50      86
## 135    7500    N14W85    9393    M8.4    04/05    09:06     283
## 136     230    S21E31    9415    X5.6    04/06    19:30    Halo
## 137     100    S21W04    9415    M7.9    04/09    15:54    Halo
## 138     100    S23W09    9415    X2.3    04/10    05:30    Halo
## 139    1500    S22W27    9415    M2.3    04/11    13:31    Halo
## 140    7000    S19W43    9415    X2.0    04/12    10:31    Halo
## 141      40    S20W85    9415    X14.    04/15    14:06     245
## 142     100    SW90b     <NA>    C2.2    04/18    02:30    Halo
## 143      20    N20W05    9433    M1.5    04/26    12:30    Halo
## 144     280    NW90b     <NA>    <NA>    05/07    12:06     286
## 145    1000    S17E00    9455    M3.0    05/13    02:21     190
## 146    1000    E90b      9481    <NA>    05/30    00:06      70
## 147    3000    S26E41    9502    M6.3    06/15    10:31     185
## 148    3500    W90b      <NA>    <NA>    06/15    15:56    Halo
## 149     200    Back      <NA>    <NA>    08/15    23:54    Halo
## 150     170    S17E34    9591    X5.3    08/25    16:50    Halo
## 151   10000    N15E44    9601    M3.0    08/30    21:26      82
## 152    7500    S23E90    9607    M2.5    09/03    18:35     127
## 153    6000    S21W49    9608    M1.5    09/15    11:54     263
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## 154    2000   S13E15    9616    C8.9   09/16   14:30   131
## 155    5400   S14E04    9616    M1.5   09/17   08:54   198
## 156   10000   N09W11    9631    M1.5   09/20   19:31   306
## 157      30   S16E23    9632    X2.6   09/24   10:30   Halo
## 158      80   S15W40      EP    C9.5   09/27   08:06   224
## 159     150   S24W81    9628    M9.1   10/01   05:30   Halo
## 160     500   SW90b    <NA>    <NA>   10/05   10:30   Halo
## 161     200   S28E08    9653    M1.4   10/09   11:30   Halo
## 162    2000   S28E08    9653    <NA>    <NA>    <NA>   <NA>
## 163      50    BACK    <NA>    <NA>    <NA>    <NA>   <NA>
## 164    1300   N16W18    9661    X1.6   10/19   01:27   Halo
## 165      30   N15W29    9661    X1.6   10/19   16:50   Halo
## 166    1200   S21E18    9672    M6.7   10/22   15:06   Halo
## 167      30   S16W21    9672    X1.3   10/25   15:26   Halo
## 168      70   N06W18    9684    X1.0   11/04   16:35   Halo
## 169    1700   S13E42    9704    M2.8   11/17   05:30   Halo
## 170    1000   S25W67    9698    M3.8   11/22   20:30   Halo
## 171      40   S17W36    9704    M9.9   11/22   23:30   Halo
## 172     750   SW90b    <NA>    <NA>   12/11   09:54   263
## 173    1000   SE90b    <NA>    <NA>   12/25   11:30   Halo
## 174     150   N08W54    9742    M7.1   12/26   05:30   281
## 175     350   S26E90    9756    X3.4   12/28   20:30   Halo
## 176    1500    BACK    <NA>    <NA>   12/29   20:30   297
## 177      90   NE90b    <NA>    <NA>   01/08   17:54   Halo
## 178     100   S28W83    9772    M4.4   01/14   05:35   Halo
## 179    3000   Back?    <NA>    <NA>   01/27   12:30   Halo
## 180   11000    BACK    <NA>    <NA>   02/01   19:54   350
## 181    1500   N16W79    9825    M3.9   02/21   12:54   275
## 182    8000   S11E90    9866    M2.3   03/10   23:06   Halo
## 183    2200   S15E45    <NA>    M5.0   03/11   23:30   Halo
## 184    6000   S08W03    9866    M2.2   03/15   23:06   Halo
## 185    1000   S20E24    9871    C3.1   03/17   04:06   141
## 186    1000   S15W22    9873    M1.0   03/18   02:54   Halo
## 187     500   S09W90    9866    M1.6   03/22   11:06   Halo
## 188    2000   S00W90    9866    M1.6   03/22   12:30   243
## 189   12000   N15W14    9893    M8.2   04/10   13:27   340
## 190    8000   N19W57    9893    C9.6   04/14   07:50   323
## 191    1500   S15W01    9906    M1.2   04/15   03:50   Halo
## 192      40   S14W34    9906    M2.6   04/17   08:26   Halo
## 193      60   S14W84    9906    X1.5   04/21   01:27   Halo
## 194    2500   S16E77    9934    C3.2   04/30   14:26    92
## 195     500   W90b    <NA>    <NA>   04/30   23:26   254
## 196     900   E90b    9937    <NA>   05/02   23:18   119
## 197    2000   S22E01    9948    C4.5   05/16   00:50   Halo
## 198    8000   S25W64    9948    C9.7   05/22   00:06   230
## 199    5000   N18E18    9967    C3.7   05/27   13:27    49
## 200     200   S19W90   10017    M1.0   07/07   11:30   277
## 201     650   W90b    <NA>    <NA>   07/09   19:31   Halo
## 202     175   N19W01   10030    M1.8   07/15   21:30    14
```

## 203	2000	N21W17	10030	M8.5	07/17	07:31	36
## 204	1500	N19W30	10030	X1.8	07/18	08:06	Halo
## 205	3000	E90b	10036	C3.3	07/18	19:31	Halo
## 206	1000	S15E90	<NA>	<NA>	07/19	16:30	Halo
## 207	2000	SE90b	10039	X3.3	07/20	22:06	Halo
## 208	400	S13E72	10039	X4.8	07/23	00:42	Halo
## 209	2000	S19E26	10039	M8.7	07/26	22:06	Halo
## 210	1300	N10W15	FILA	<NA>	07/29	12:07	13
## 211	2000	S16W76	10039	X1.0	08/03	19:31	259
## 212	30	N09W54	10061	M2.3	08/14	02:30	297
## 213	300	N07W83	10061	M2.4	08/16	06:06	293
## 214	60	S14E20	10069	M5.2	08/16	12:30	Halo
## 215	400	S02W81	10069	X3.1	08/24	01:27	Halo
## 216	30	N09E28	10102	C5.2	09/05	16:54	Halo
## 217	8500	S10E43	10105	M2.9	09/10	15:30	127
## 218	8000	N13E45	10134	M1.8	09/27	13:56	64
## 219	4000	S07W54	10150	C4.7	10/13	19:35	252
## 220	500	S13E75	10159	M2.2	10/13	23:54	107
## 221	1200	NE90b	<NA>	C4.5	10/14	14:54	Halo
## 222	300	SE90b	<NA>	<NA>	10/27	23:18	Halo
## 223	100	S12W29	10180	M4.6	11/09	13:31	Halo
## 224	300	S12W37	10180	M2.4	11/10	03:30	203
## 225	600	S13W60	10180	M1.8	11/11	15:54	212
## 226	7000	N20E35	<NA>	<NA>	11/24	20:30	Halo
## 227	1500	N15W09	10229	M2.7	12/19	22:06	Halo
## 228	3500	N23W42	10223	M1.1	12/22	03:30	328
## 229	6000	N34W26	FILA	C1.7	01/20	18:30	315
## 230	8000	S17W23	FILA	C2.4	01/27	22:23	205
## 231	500	S15W46	10314	X1.5	03/18	12:30	263
## 232	7000	S90b	<NA>	<NA>	03/18	13:54	Halo
## 233	6000	SW90b	<NA>	<NA>	03/19	02:30	Halo
## 234	700	NE90b	<NA>	<NA>	04/22	07:36	87
## 235	2000	S07W17	10365	X1.3	05/27	23:50	Halo
## 236	200	S06W21	10365	X3.6	05/28	00:50	Halo
## 237	200	S06W37	10365	X1.2	05/29	01:27	Halo
## 238	150	S07W65	10365	M9.3	05/31	02:30	Halo
## 239	????	W90b	<NA>	<NA>	06/05	20:06	230
## 240	400	S07E80	10386	X1.3	06/15	23:54	Halo
## 241	200	S08E59	10386	M6.8	06/17	23:18	Halo
## 242	400	N13W90	10397	M3.6	<NA>	<NA>	<NA>
## 243	1000	S10W57	10431	M2.7	08/19	10:30	262
## 244	1000	SE90b	<NA>	<NA>	10/21	03:54	Halo
## 245	1500	S15E44	10486	X1.2	10/26	06:54	108
## 246	1500	N02W38	10484	X1.2	10/26	17:54	270
## 247	40	S16E08	10486	X17.	10/28	11:30	Halo
## 248	500	S15W02	10486	X10.	10/29	20:54	Halo
## 249	2000	S12W60	10486	M3.2	11/01	23:06	254
## 250	????	SW90b	<NA>	<NA>	11/02	09:30	Halo
## 251	250	S14W56	10486	X8.3	11/02	17:30	Halo

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## 252    1500    N10W83    10488    X2.7    11/03    01:59    304
## 253     400    N08W77    10488    X3.9    11/03    10:06    293
## 254    ????     Back?    <NA>    <NA>    11/04    12:06    Halo
## 255     200    S19W83    10486    X28.    11/04    19:54    Halo
## 256    ????      E90b    <NA>    <NA>    11/09    06:30    Halo
## 257    ????      W90b    <NA>    <NA>    11/11    02:30    Halo
## 258    4000    N12E90    10501    M1.4    11/13    09:30     49
## 259    1500    S01E33    10501    M4.2    11/17    09:26     72
## 260    ????    N00E18    10501    M3.9    11/18    08:50    Halo
## 261    2000    S16E90    10508    M4.5    11/18    09:50     95
## 262    9000    S14W70    10508    C7.2    12/02    10:50    261
## 263    2500    S12E38    10536    M6.9    <NA>    <NA>    <NA>
## 264    2000    N05E90    10537    M5.8    01/06    08:53     88
## 265     750    N02E82    10537    M4.5    01/07    04:06     78
## 266    1500    N06E75    10537    M8.3    01/07    10:30     81
## 267     300    S18E15    10588    M2.4    04/06    13:31    Halo
## 268     500    S15W11    10588    C7.4    04/08    10:30    Halo
## 269    3000    S19W08    10588    C1.3    04/08    13:31    198
## 270     500    S14W47    10588    C9.6    04/11    04:30    203
## 271    2100      W90b    <NA>    <NA>    06/02    23:15    287
## 272    5000      W90b    <NA>    <NA>    06/03    16:50    303
## 273    2500      W90b    <NA>    <NA>    06/04    07:50    309
## 274    7000    S12W24    10635    C1.7    <NA>    <NA>    <NA>
## 275    5000    S09W21    10635    C2.5    <NA>    <NA>    <NA>
## 276    2500    N04W05    10652    C4.1    07/23    19:31    209
## 277      28    N08W33    10652    M1.1    07/25    14:54    Halo
## 278      50    N00W90    10652    C2.1    07/29    12:06    Halo
## 279     200    N05W89    10652    C8.4    07/31    05:54    259
## 280    7000      BACK    <NA>    <NA>    08/08    08:54    Halo
## 281      40    N03E49    10672    M4.8    09/12    00:36    Halo
## 282    2500    N03W58    10672    M1.9    <NA>    <NA>    <NA>
## 283    8000    N11E19    10687    C1.7    10/24    03:54     26
## 284    1000    N13W22    10691    M4.2    10/30    06:54    Halo
## 285     400      W90b    <NA>    <NA>    11/01    06:06    266
## 286    3400    N09E38    10696    M5.0    11/03    16:06    Halo
## 287    1200    N09E45    10696    M1.6    11/03    03:54     91
## 288     700    N09E05    10696    M3.6    11/06    02:06    351
## 289      60    N09W17    10696    X2.0    11/07    16:54    Halo
## 290    5000    N08W51    10696    M8.9    11/09    17:26    Halo
## 291    1000    N09W49    10696    X2.5    11/10    02:26    Halo
## 292      60    N08W02    10708    M1.5    12/03    00:26    Halo
## 293    8000    N08W03    10709    C2.5    12/08    20:26    Halo
## 294    4500    N04E62    10715    M2.3    12/29    16:45     71
## 295     700    N04E46    10715    M4.2    12/30    22:30    Halo
## 296     450    N06E34    10715    X1.7    01/01    00:54    Halo
## 297    6000    N05W11    10715    C7.3    <NA>    <NA>    <NA>
## 298     250    N16E04    10720    M8.6    01/15    06:30    Halo
## 299      40    N15W05    10720    X2.6    01/15    23:06    Halo
## 300      30    N15W25    10720    X2.0    01/17    09:30    Halo
```

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## 301      40  N15W51  10720   X1.3  01/19   08:29   Halo
## 302    1500  N15W25  10720   X3.8  01/17   09:54   Halo
## 303      25  N14W61  10720   X7.1  01/20   06:54   Halo
## 304    4000   BACK    <NA>   <NA>  02/01   11:06   Halo
## 305    5500  S05E90  10758   C8.0  05/02   22:26    105
## 306    1500  S05E90  10758   <NA>  05/03   00:26     82
## 307    4000  S09E29  10758   C8.5  05/06   17:28   Halo
## 308      40  N12E11  10759   M8.0  05/13   17:12   Halo
## 309    1500   BACK    <NA>   <NA>  05/17   03:06    252
## 310     270  N15E90  10775   M1.0  06/03   12:32   Halo
## 311    1000  N08W90  10775   M4.0   <NA>    <NA>   <NA>
## 312    2000  N09E03  10786   M4.9  07/07   17:06   Halo
## 313     600  N12W28  10786   M2.8  07/09   22:30   Halo
## 314    1000  N11W90  10786   M5.0  07/13   14:30   Halo
## 315     800  N11W90  10786   X1.2  07/14   10:54   Halo
## 316     300   BACK    <NA>   <NA>  07/17   11:30   Halo
## 317     150   BACK    <NA>   <NA>  07/24   13:54   Halo
## 318     700   BACK    <NA>   <NA>  07/24   22:30   Halo
## 319     450  N11E90  10792   M3.7  07/27   04:54   Halo
## 320    1000  NE90b    <NA>   <NA>  07/27   07:54     65
## 321      80  N12E60  10792   X1.3  07/30   06:50   Halo
## 322    4500  N13E32  10792   M1.0  08/01   14:30     83
## 323     550  S11W54  10798   M2.6  08/22   01:31   Halo
## 324      40  S13W65  10798   M5.6  08/22   17:30   Halo
## 325     400  S14W90  10798   M2.7  08/23   14:54   Halo
## 326    6000   BACK    <NA>   <NA>  08/29   10:54   Halo
## 327     800  N13W13  10803   C2.0  08/31   11:30   Halo
## 328    6000   BACK    <NA>   <NA>  08/31   22:30   Halo
## 329     500   BACK    <NA>   <NA>  09/03   03:12   Halo
## 330      60  S07E81   <NA>   C2.7  09/05   09:48   Halo
## 331     200  S11E77  10808   X1.7   <NA>    <NA>   <NA>
## 332      50  S12E67  10808   X6.2  09/09   19:48   Halo
## 333     300  S13E47  10808   X2.1  09/10   21:52   Halo
## 334     350  S16E39  10808   M3.0  09/11   13:00   Halo
## 335      35  S09E10  10808   X1.5  09/13   20:00   Halo
## 336     200  S09E08  10876   C1.8  04/30   09:54   Halo
## 337     300  S09W34  10898   M2.5  07/06   08:54   Halo
## 338     400  S16W08  10904   C3.6  08/16   16:30   Halo
## 339    2000  S10E08  10905   C2.5  08/26   20:57    164
## 340     400  E90b     <NA>   <NA>  11/05   17:54     39
## 341    6000  E90b     <NA>   <NA>  11/06   10:30     77
## 342     300  E90b     <NA>   C8.8  11/06   17:54   Halo
## 343     250  S07E68  10930   X9.0   <NA>    <NA>   <NA>
## 344     200  S07E69  10930   M1.1   <NA>    <NA>   <NA>
## 345     600  S04E63  10930   M6.0   <NA>    <NA>   <NA>
## 346      30  S05E64  10930   X6.5   <NA>    <NA>   <NA>
## 347     150  S06W23  10930   X3.4  12/13   02:54   Halo
## 348    1500  S06W46  10930   X1.5  12/14   22:30   Halo
## 349      90  S08E90  10940   C6.3  01/25   06:54   Halo
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## 350   13000   N07W06   10956    B9.5   05/19    13:24   260
## 351    6000   S08E81   10980    C8.3   12/31    01:31    92
## 352     800   S13E78   10989    M1.7   03/25    19:31    98
## 353    4900   N08E09    <NA>    B3.8   04/26    14:30    65
## 354     700   N20E36   11092    C3.2    <NA>     <NA>   <NA>
## 355     700   N11E34   11093    M1.0   08/07    18:36   Halo
## 356     700   N18W88   11099    C4.5   08/18    05:48   255
## 357    3500     E90b    <NA>    <NA>   01/13    09:36    79
## 358    8000   N12W87   11149    C1.2   01/27    12:36   255
## 359    8000   S20E04   11158    M6.6   02/13    18:36   359
## 360     400   S20W12   11158    X2.2   02/15    02:24   Halo
## 361     700   N15E87   11163    M3.5   02/24    07:48    70
## 362    7000   N10E18   11166    M1.9   03/07    14:48   354
## 363     200   N31W53   11164    M3.7   03/07    20:00   Halo
## 364     900   N16E88    <NA>    C5.4   05/09    20:57    55
## 365      90   S19E72   11227    C8.7   05/29    21:24   107
## 366    4000   S19E25   11227    C3.7   06/02    08:12   Halo
## 367     300     W90b   11222    <NA>   06/04    06:48   Halo
## 368      25     W90b   11222    <NA>   06/04    22:05   Halo
## 369     250   S21W54   11226    M2.5   06/07    06:49   Halo
## 370    3000   N14W15   11261    M1.4   08/02    06:36   288
## 371      60   N19W36   11261    M9.3   08/04    04:12   Halo
## 372     400   N16W61   11263    M3.5   08/08    18:12   305
## 373    4000   N17W69   11263    X6.9   08/09    08:12   Halo
## 374     200   N14W07   11283    M5.3   09/06    02:24   Halo
## 375     150   N14W18   11283    X2.1   09/06    23:05   Halo
## 376      70   N09E89   11302    X1.4   09/22    10:48   Halo
## 377     300   N10E56   11302    M7.1   09/24    12:48   Halo
## 378    8000   N11E47   11302    M7.4   09/25    05:12    98
## 379    6500   N05W79   11319    M1.3   10/21    13:25   252
## 380     400   N24E35   11343    M1.1   11/09    13:36   Halo
## 381      50   N17W49   11353    C1.2   11/26    07:12   Halo
## 382     400     BACK    <NA>    <NA>   12/21    03:12   Halo
## 383    7000   S22W26   11387    M4.0   12/25    18:48   247
## 384    4000     BACK    <NA>    <NA>   01/02    15:12   Halo
## 385     100   N32E22   11402    M3.2   01/19    14:36   Halo
## 386      40   N28W21   11402    M8.7   01/23    04:00   Halo
## 387     150   N27W71   11402    X1.7   01/27    18:27   Halo
## 388     400   N17E52   11429    X1.1   03/05    04:00   Halo
## 389      30   N17E27   11429    X5.4   03/07    00:24   Halo
## 390    1000   N15W03   11429    M6.3   03/09    04:26   Halo
## 391      30   N17W24   11429    M8.4   03/10    18:00   Halo
## 392     200   N17W66   11429    M7.9   03/13    17:36   Halo
## 393     200     BACK    <NA>    <NA>   03/18    00:24   Halo
## 394     300     BACK    <NA>    <NA>   03/24    00:24   Halo
## 395    1500     BACK    <NA>    <NA>   03/26    23:12   Halo
## 396    1500     BACK    <NA>    <NA>   03/27    22:00   261
## 397    5000   N20W65   11451    C3.9   04/09    12:36   Halo
## 398    4000   N10E90   11461    C1.7   04/15    02:24    79
```

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## 399     300   N11W76   11476   M5.1   05/17   01:48   Halo
## 400    8000   N14W34   11513   M1.8   07/04   17:24   Halo
## 401     800   S12W46   11515   M1.6   07/05   22:00    220
## 402     300   S13W59   11515   X1.1   07/06   23:24   Halo
## 403     300   S17W74   11515   M6.9   07/08   16:54    212
## 404     250   S15W01   11520   X1.4   07/12   16:48   Halo
## 405     150   S28W65   11520   C9.9   07/17   13:48    255
## 406     600   S13W88   11520   M7.7   07/19   05:24   Halo
## 407      20   S17W132  11520   <NA>   07/23   02:36   Halo
## 408     400   S25E59   11563   C8.1   08/31   20:00   Halo
## 409     250   N06W34   11577   C3.7   09/28   00:12   Halo
## 410     200   S10E76   11598   M1.3   10/21   20:57     83
## 411     200   S33W64   11650   C2.2   01/16   19:00    211
## 412     100   N11E12   11692   M1.1   03/15   07:12   Halo
## 413     200   N09E12   11719   M6.5   04/11   07:24   Halo
## 414    4000   N11W83   11719   C6.5   04/18   18:24    284
## 415    1700   S19W53   11723   C2.7   04/21   20:36    255
## 416    2000   N11E90   11748   X1.7   05/13   02:00   Halo
## 417     300   N11E85   11748   X2.8   05/13   16:07   Halo
## 418     700   N08E77   11748   X3.2   05/14   01:25   Halo
## 419     250   N12E64   11748   X1.2   05/15   01:48   Halo
## 420     150   N15W70   11745   M5.0   05/22   13:25   Halo
## 421    2000   S16E73   11777   M2.9   06/21   03:12    123
## 422     400   S18W19   11777   C4.4   06/28   02:00   Halo
## 423    2900   S14E62   11787   C6.8   07/04   20:12    111
## 424   11000   N27E25     EP    B4.5   08/06   02:12     48
## 425     150   S05W30   11818   M1.4   08/17   19:12   Halo
## 426      50   N15E46   11836   C8.3   08/30   02:48   Halo
## 427    2000   N10E104    DIM   <NA>   09/06   20:48     90
## 428      60   N17W29     EP    C1.3   09/29   22:12   Halo
## 429    5200   N20W85     DIM   C1.2   10/02   20:36    309
## 430     200   S22E118  11865   <NA>   10/05   07:09   Halo
## 431     100   N21E103  11869   <NA>   10/11   07:24   Halo
## 432     600    <NA>     <NA>   <NA>   10/13   14:12   <NA>
## 433     650   N04W01   11875   M4.2   10/22   21:48   Halo
## 434     200   S06E69   11882   X2.1   10/25   15:12   Halo
## 435     200   N09W44   11875   C4.5   10/26   03:12    271
## 436    5000   N08W49   11875   M1.3   10/26   09:48    286
## 437    1700   N06W70   11875   C9.1   10/27   18:12    308
## 438     200   N08W71   11875   M5.1   10/28   04:48    315
## 439    9000   S06E28   11882   M4.4   10/28   15:36   Halo
## 440     450   N03W165  11875   <NA>   11/04   05:12   Halo
## 441     100   N02E151  11899   <NA>   11/07   10:36   Halo
## 442     100   S14W70   11893   X1.0   11/19   10:36   Halo
## 443     100   N06W183  11899   <NA>   11/29   17:24    251
## 444    1600   S20E119    DIM   <NA>   12/05   10:24    133
## 445    2500    <NA>     <NA>   <NA>   <NA>    <NA>    <NA>
## 446    3000   S16W49   11909   M1.2   12/07   07:36   Halo
## 447      70   S23W46   11912   C4.6   12/12   03:36    214
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##							
## 448	400	<NA>	<NA>	<NA>	12/20	04:36	255
## 449	500	S15W125	11928	<NA>	12/28	17:36	Halo
## 450	100	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 451	100	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 452	80	S15W112	11936	<NA>	01/06	08:00	Halo
## 453	60	S15W11	11943	X1.2	01/07	18:24	Halo
## 454	8000	S07E67	DIM	C3.6	01/20	22:00	Halo
## 455	900	S24W43	EP	<NA>	02/18	01:36	Halo
## 456	7700	S15W73	11976	M3.0	02/20	08:00	Halo
## 457	100	S13E82	11990	X4.9	02/25	01:25	Halo
## 458	2000	N13W170	12005	<NA>	03/04	18:48	Halo
## 459	500	N14E180	<NA>	<NA>	03/05	13:48	Halo
## 460	400	S23W130	EP	<NA>	03/25	05:36	261
## 461	2200	N11W23	12017	M2.6	03/28	23:48	325
## 462	200	S08W152	12011	<NA>	03/29	18:12	Halo
## 463	60	N11E53	12027	M6.5	04/02	13:36	Halo
## 464	200	<NA>	<NA>	<NA>	<NA>	<NA>	<NA>
## 465	11000	N13E26	12027	C8.3	04/04	14:12	54
## 466	150	S20W34	12036	M7.3	04/18	13:25	Halo
## 467	200	N11E53	12027	<NA>	05/07	16:24	Halo
## 468	1100	S09W108	12051	<NA>	05/08	03:24	Halo
## 469	500	S11W122	12051	<NA>	05/09	02:48	Halo
## 470	400	S11W136	12051	<NA>	05/10	04:36	Halo
## 471	1000	S17E82	12087	X1.5	06/10	13:30	Halo
## 472	6000	S20W55	12085	M3.1	06/12	22:12	233
## 473	4500	N10E30	EP?	C1.5	07/30	07:00	13
## 474	150	S10E11	12127	M1.5	08/01	18:36	Halo
## 475	6000	N12E01	12146	C2.2	08/22	11:12	Halo
## 476	4000	N05W36	12146	M2.0	08/25	15:36	Halo
## 477	7200	N07W43	12146	M3.9	08/25	20:48	273
## 478	600	S19E162	12157	<NA>	08/28	17:24	Halo
## 479	600	N14E127	12158	<NA>	09/01	11:12	Halo
## 480	100	N12E29	12158	M4.5	09/09	00:06	Halo
## 481	100	N14E02	12158	X1.6	09/10	18:00	Halo
## 482	9700	S11W89	12164	<NA>	09/20	05:24	292
## 483	4900	N14W142	12158	<NA>	09/22	06:12	342
## 484	12000	S13E33	12172	M2.3	09/23	23:36	109
## 485	500	N13E179	EP	<NA>	09/24	21:30	Halo
## 486	1900	S17W82	12173	M7.3	10/02	19:12	264
## 487	1500	S20W51	EP	C3.0	10/10	16:12	309
## 488	8900	S18E36	12192	C4.4	10/21	12:48	152
## 489	7800	W90b	12203	<NA>	11/08	16:36	305
## 490	3900	W90b	<NA>	<NA>	12/13	14:24	Halo
## 491	2100	S11E33	12241	M1.1	12/17	02:00	107
## 492	11500	S20E09	12242	M8.7	12/17	05:00	Halo
## 493	1300	S11E15	12241	M6.9	12/19	01:04	Halo
## 494	7400	S14W25	12241	M1.0	12/21	12:12	Halo
## 495	3600	W90b	12290	M8.2	03/03	01:48	329
## 496	200	S20E87	12297	M1.5	03/06	07:12	83

```
## 497     6200     S18E45    12297        M5.8     03/10      00:00      Halo
## 498      250     S15E23    12297        M2.6     03/11      08:24        62
## 499      400      SW90b    <NA>         <NA>     03/24      08:24      Halo
## 500     4600       W90b    <NA>         <NA>     04/26      03:24      Halo
## 501      500     N15E79    12339        X2.7     05/05      22:24      Halo
## 502     6400       W90b    <NA>         <NA>     05/12      02:48       286
## 503      200     S03E25    12364        C2.8     06/09      20:12        77
## 504     1250     S12W34    12365        C5.9     06/14      04:12       199
## 505      500     N15E50    12371        M3.0     06/18      17:24      Halo
## 506      150     N12E13    12371        M2.0     06/21      02:36      Halo
## 507      300     N12W08    12371        M6.5     06/22      18:36      Halo
## 508      150     N09W42    12371        M7.9     06/25      08:36      Halo
## 509      150       W90b    <NA>         <NA>     07/01      14:36      Halo
## 510     7300     S15E13    12403        M1.2     08/22      07:12      Halo
## 511      400     S21W10    12415        C2.6     09/18      05:00       201
## 512      300     S20W24    12415        M2.1     09/20      18:12      Halo
## 513      440     N09W04    12443        M3.7     11/04      14:48      Halo
## 514     9000     S11E41    12449        M3.9     11/09      13:25       142
## 515     3800     S13W04    12468        C6.6     12/16      09:36      Halo
## 516     6700     S22E63    12473        M4.7     12/23      01:25        98
## 517      180     S23W11    12473        M1.8     12/28      12:12      Halo
## 518      300     S25W82    12473        M2.3     01/01      23:24      Halo
## 519      500      <NA>     <NA>         <NA>     <NA>       <NA>       <NA>
## 520     1900      <NA>     <NA>         <NA>     02/05      21:24       193
## 521    10500     N06W61    12535        C1.3     05/04      14:12       255
## 522      700      <NA>     <NA>         <NA>     <NA>       <NA>       <NA>
## 523     3400      <NA>     <NA>         <NA>     08/15      17:24        75
## 524     <NA>      <NA>     <NA>         <NA>     <NA>       <NA>       <NA>
## 525     <NA>      <NA>     <NA>         <NA>     <NA>       <NA>       <NA>
##      CME_width CME_speed Plots Halo
## 1       <NA>      <NA>   <NA>   NA
## 2       <NA>      <NA>   <NA>   NA
## 3        and             <NA>   NA
## 4       <NA>      <NA>   <NA>   NA
## 5       <NA>      <NA>   <NA>   NA
## 6       <NA>      <NA>   <NA>   NA
## 7       <NA>      <NA>   <NA>   NA
## 8       <NA>      <NA>   <NA>   NA
## 9       <NA>      <NA>   <NA>   NA
## 10      <NA>      <NA>   <NA>   NA
## 11      (13)      (14)   (15)   NA
## 12      <NA>      <NA>   <NA>   NA
## 13        79       312   PHTX   NA
## 14       360       878   PHTX   NA
## 15       360       464   PHTX   NA
## 16       165       296   PHTX   NA
## 17       155       712   PHTX   NA
## 18       109       227   PHTX   NA
## 19       122       352   PHTX   NA
```

```
## 20          360        785  PHTX   NA
## 21          360       1556  PHTX   NA
## 22           91        441  PHTX   NA
## 23           73        191  PHTX   NA
## 24          360        693  PHTX   NA
## 25          360       1397  PHTX   NA
## 26          165       1863  PHTX   NA
## 27          360       1691  PHTX   NA
## 28           84       1184  PHTX   NA
## 29          360       1385  PHTX   NA
## 30          360       1374  PHTX   NA
## 31          360        938  PHTX   NA
## 32          190       1099  PHTX   NA
## 33          178       2331  PHTX   NA
## 34         >301        830  PHTX   NA
## 35          139        801  PHTX   NA
## 36          268        878  PHTX   NA
## 37          177       1223  PHTX   NA
## 38          281       1484  PHTX   NA
## 39          360        964  PHTX   NA
## 40           59        206  PHTX   NA
## 41          169        661  PHTX   NA
## 42          360       1118  PHTX   NA
## 43         >160        405  PHTX   NA
## 44           19        381  PHTX   NA
## 45          196        559  PHTX   NA
## 46          360       1749  PHTX   NA
## 47          360       1495  PHTX   NA
## 48          360       1584  PHTX   NA
## 49          360       1691  PHTX   NA
## 50          360       1772  PHTX   NA
## 51          150       2230  PHTX   NA
## 52         >181       1569  PHTX   NA
## 53          360       1133  PHTX   NA
## 54         >154        450  PHTX   NA
## 55          360       1006  PHTX   NA
## 56         >184        903  PHTX   NA
## 57          360        560  PHTX   NA
## 58          190        670  PHTX   NA
## 59          245        462  PHTX   NA
## 60          175        512  PHTX   NA
## 61          125       1467  PHTX   NA
## 62          360       1250  PHTX   NA
## 63           87        247  PHTX   NA
## 64           98        636  PHTX   NA
## 65          129        712  PHTX   NA
## 66          360        739  PHTX   NA
## 67          360       1177  PHTX   NA
## 68           76        632  PHTX   NA
```

```
## 69   360   1079   PHTX   NA
## 70   360    944   PHTX   NA
## 71   360   1107   PHTX   NA
## 72   360    728   PHTX   NA
## 73   118    890   PHTX   NA
## 74    76    835   PHTX   NA
## 75   108    644   PHTX   NA
## 76    90    487   PHTX   NA
## 77   360   1188   PHTX   NA
## 78   360    409   PHTX   NA
## 79   105    668   PHTX   NA
## 80  >170   1404   PHTX   NA
## 81   360   1594   PHTX   NA
## 82   360   1781   PHTX   NA
## 83   360   2604   PHTX   NA
## 84  >165   1212   PHTX   NA
## 85   104    547   PHTX   NA
## 86   360   1119   PHTX   NA
## 87   360   1108   PHTX   NA
## 88   116   1081   PHTX   NA
## 89   133    857   PHTX   NA
## 90    49    459   PHTX   NA
## 91  >198    847   PHTX   NA
## 92   165   1617   PHTX   NA
## 93  >289   1352   PHTX   NA
## 94   360   1078   PHTX   NA
## 95   101    820   PHTX   NA
## 96   360   1674   PHTX   NA
## 97  >229   1230   PHTX   NA
## 98    70   1071   PHTX   NA
## 99   360   1550   PHTX   NA
## 100   360   1053   PHTX   NA
## 101   360   1215   PHTX   NA
## 102    76    766   PHTX   NA
## 103   360    587   PHTX   NA
## 104    86   1046   PHTX   NA
## 105   360   1336   PHTX   NA
## 106   360    770   PHTX   NA
## 107   360    291   PHTX   NA
## 108  >170   1738   PHTX   NA
## 109  <NA>   <NA>   PHTX   NA
## 110    50    581   PHTX   NA
## 111   360    492   PHTX   NA
## 112   148   1198   PHTX   NA
## 113   360   1289   PHTX   NA
## 114   360   1245   PHTX   NA
## 115   360   1005   PHTX   NA
## 116   360   2519   PHTX   NA
## 117   360    671   PHTX   NA
```

```
## 118       59       388   PHTX    NA
## 119      360       980   PHTX    NA
## 120      360       930   PHTX    NA
## 121      360       839   PHTX    NA
## 122      360      1507   PHTX    NA
## 123      176       928   PHTX    NA
## 124      360       916   PHTX    NA
## 125      360      1183   PHTX    NA
## 126       81       819   PHTX    NA
## 127       48       829   PHTX    NA
## 128       60       300   PHTX    NA
## 129       66       340   PHTX    NA
## 130      360       942   PHTX    NA
## 131       80       992   PHTX    NA
## 132      244      2505   PHTX    NA
## 133      292      1613   PHTX    NA
## 134       89      1065   PHTX    NA
## 135      205      1750   PHTX    NA
## 136      360      1270   PHTX    NA
## 137      360      1192   PHTX    NA
## 138      360      2411   PHTX    NA
## 139      360      1103   PHTX    NA
## 140      360      1184   PHTX    NA
## 141      167      1199   PHTX    NA
## 142      360      2465   PHTX    NA
## 143      360      1006   PHTX    NA
## 144      205      1223   PHTX    NA
## 145      132       527   PHTX    NA
## 146      216      2087   PHTX    NA
## 147      119      1090   PHTX    NA
## 148      360      1701   PHTX    NA
## 149      360      1575   PHTX    NA
## 150      360      1433   PHTX    NA
## 151       76       351   PHTX    NA
## 152      207      1352   PHTX    NA
## 153      130       478   PHTX    NA
## 154       68       584   PHTX    NA
## 155      166      1009   PHTX    NA
## 156      207       446   PHTX    NA
## 157      360      2402   PHTX    NA
## 158      138       669   PHTX    NA
## 159      360      1405   PHTX    NA
## 160      360      1537   PHTX    NA
## 161      360       973   PHTX    NA
## 162     <NA>      <NA>   PHTX    NA
## 163     <NA>      <NA>   PHTX    NA
## 164      360       558   PHTX    NA
## 165      360       901   PHTX    NA
## 166      360      1336   PHTX    NA
```

```
## 167       360      1092   PHTX    NA
## 168       360      1810   PHTX    NA
## 169       360      1379   PHTX    NA
## 170       360      1443   PHTX    NA
## 171       360      1437   PHTX    NA
## 172       121       891   PHTX    NA
## 173       360      1773   PHTX    NA
## 174      >212      1446   PHTX    NA
## 175       360      2216   PHTX    NA
## 176      >211       819   PHTX    NA
## 177       360      1794   PHTX    NA
## 178       360      1492   PHTX    NA
## 179       360      1136   PHTX    NA
## 180        89       448   PHTX    NA
## 181       108       358   PHTX    NA
## 182       360      1429   PHTX    NA
## 183       360       950   PHTX    NA
## 184       360       957   PHTX    NA
## 185        56       658   PHTX    NA
## 186       360       989   PHTX    NA
## 187       360      1750   PHTX    NA
## 188       120       875   PHTX    NA
## 189       159       650   PHTX    NA
## 190        76       757   PHTX    NA
## 191       360       720   PHTX    NA
## 192       360      1240   PHTX    NA
## 193       360      2393   PHTX    NA
## 194        90       618   PHTX    NA
## 195       199      1103   PHTX    NA
## 196        99       902   PHTX    NA
## 197       360       600   PHTX    NA
## 198       186      1246   PHTX    NA
## 199      >161      1106   PHTX    NA
## 200      >228      1423   PHTX    NA
## 201       360      1076   PHTX    NA
## 202      >188      1300   PHTX    NA
## 203       177       716   PHTX    NA
## 204       360      1099   PHTX    NA
## 205       360      2191   PHTX    NA
## 206       360      2047   PHTX    NA
## 207       360      1941   PHTX    NA
## 208       360      2285   PHTX    NA
## 209       360       818   PHTX    NA
## 210      >236       562   PHTX    NA
## 211       138      1150   PHTX    NA
## 212       133      1309   PHTX    NA
## 213       162      1378   PHTX    NA
## 214       360      1585   PHTX    NA
## 215       360      1913   PHTX    NA
```

```
## 216    360   1748  PHTX  NA
## 217     38    273  PHTX  NA
## 218     64    591  PHTX  NA
## 219    141    373  PHTX  NA
## 220    264   1009  PHTX  NA
## 221    360   1694  PHTX  NA
## 222    360   2115  PHTX  NA
## 223    360   1838  PHTX  NA
## 224    282   1670  PHTX  NA
## 225     93   1083  PHTX  NA
## 226    360   1077  PHTX  NA
## 227    360   1092  PHTX  NA
## 228    272   1071  PHTX  NA
## 229    105    733  PHTX  NA
## 230    267   1053  PHTX  NA
## 231    209   1601  PHTX  NA
## 232    360   1042  PHTX  NA
## 233    360   1342  PHTX  NA
## 234    171    918  PHTX  NA
## 235    360    964  PHTX  NA
## 236    360   1366  PHTX  NA
## 237    360   1237  PHTX  NA
## 238    360   1835  PHTX  NA
## 239    239   1458  PHTX  NA
## 240    360   2053  PHTX  NA
## 241    360   1813  PHTX  NA
## 242   <NA>  <NA>  PHTX  NA
## 243    111    468  PHTX  NA
## 244    360   1484  PHTX  NA
## 245   >207   1371  PHTX  NA
## 246   >171   1537  PHTX  NA
## 247    360   2459  PHTX  NA
## 248    360   2029  PHTX  NA
## 249    >93    899  PHTX  NA
## 250    360   2036  PHTX  NA
## 251    360   2598  PHTX  NA
## 252     65    827  PHTX  NA
## 253    103   1420  PHTX  NA
## 254    360   1208  PHTX  NA
## 255    360   2657  PHTX  NA
## 256    360   2008  PHTX  NA
## 257    360   1359  PHTX  NA
## 258    217   1141  PHTX  NA
## 259   >242   1061  PHTX  NA
## 260    360   1660  PHTX  NA
## 261   >197   1824  PHTX  NA
## 262   >150   1393  PHTX  NA
## 263   <NA>  <NA>  PHTX  NA
## 264    166   1469  PHTX  NA
```

```
## 265       171    1581  PHTX   NA
## 266       182    1822  PHTX   NA
## 267       360    1368  PHTX   NA
## 268       360    1068  PHTX   NA
## 269        92     959  PHTX   NA
## 270       314    1645  PHTX   NA
## 271       136    1102  PHTX   NA
## 272       179    1226  PHTX   NA
## 273      >273    1306  PHTX   NA
## 274      <NA>    <NA>  PHTX   NA
## 275      <NA>    <NA>  PHTX   NA
## 276       100     874  PHTX   NA
## 277       360    1333  PHTX   NA
## 278       360    1180  PHTX   NA
## 279      >197    1192  PHTX   NA
## 280       360    1004  PHTX   NA
## 281       360    1328  PHTX   NA
## 282      <NA>    <NA>  PHTX   NA
## 283      >109     417  PHTX   NA
## 284       360     422  PHTX   NA
## 285       146     925  PHTX   NA
## 286       360    1068  PHTX   NA
## 287      >239     918  PHTX   NA
## 288      >214    1111  PHTX   NA
## 289       360    1759  PHTX   NA
## 290       360    2000  PHTX   NA
## 291       360    3387  PHTX   NA
## 292       360    1216  PHTX   NA
## 293       360     611  PHTX   NA
## 294       140     774  PHTX   NA
## 295       360    1035  PHTX   NA
## 296       360     832  PHTX   NA
## 297      <NA>    <NA>  PHTX   NA
## 298       360    2049  PHTX   NA
## 299       360    2861  PHTX   NA
## 300       360    2094  PHTX   NA
## 301       360    2020  PHTX   NA
## 302       360    2547  PHTX   NA
## 303       360     882  PHTX   NA
## 304       360    1380  PHTX   NA
## 305       148     955  PHTX   NA
## 306       >66     978  PHTX   NA
## 307       360    1128  PHTX   NA
## 308       360    1689  PHTX   NA
## 309        89     311  PHTX   NA
## 310       360    1679  PHTX   NA
## 311      <NA>    <NA>  PHTX   NA
## 312       360     683  PHTX   NA
## 313       360    1540  PHTX   NA
```

```
## 314    360    1423    PHTX    NA
## 315    360    2115    PHTX    NA
## 316    360    1527    PHTX    NA
## 317    360    2528    PHTX    NA
## 318    360    1234    PHTX    NA
## 319    360    1787    PHTX    NA
## 320     51     533    PHTX    NA
## 321    360    1968    PHTX    NA
## 322     93     984    PHTX    NA
## 323    360    1194    PHTX    NA
## 324    360    2378    PHTX    NA
## 325    360    1929    PHTX    NA
## 326    360    1600    PHTX    NA
## 327    360     825    PHTX    NA
## 328    360    1808    PHTX    NA
## 329    360    1672    PHTX    NA
## 330    360    2326    PHTX    NA
## 331   <NA>   <NA>    PHTX    NA
## 332    360    2257    PHTX    NA
## 333    360    1893    PHTX    NA
## 334    360    1922    PHTX    NA
## 335    360    1866    PHTX    NA
## 336    360     544    PHTX    NA
## 337    360     911    PHTX    NA
## 338    360     888    PHTX    NA
## 339    208     786    PHTX    NA
## 340    196    1398    PHTX    NA
## 341     55     829    PHTX    NA
## 342    360    1994    PHTX    NA
## 343   <NA>   <NA>    PHTX    NA
## 344   <NA>   <NA>    PHTX    NA
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## 346   <NA>   <NA>    PHTX    NA
## 347    360    1774    PHTX    NA
## 348    360    1042    PHTX    NA
## 349    360    1367    PHTX    NA
## 350    106     958    PHTX    NA
## 351    164     995    PHTX    NA
## 352    112    1103    PHTX    NA
## 353    281     515    PHTX    NA
## 354   <NA>   <NA>    PHTX    NA
## 355    360     871    PHTX    NA
## 356    184    1471    PHTX    NA
## 357    122     664    PHTX    NA
## 358     43     349    PHTX    NA
## 359    276     373    PHTX    NA
## 360    360     669    PHTX    NA
## 361    158    1186    PHTX    NA
## 362    261     698    PHTX    NA
```

```
## 363    360   2125   PHTX   NA
## 364    292   1318   PHTX   NA
## 365    186   1407   PHTX   NA
## 366    360    976   PHTX   NA
## 367    360   1407   PHTX   NA
## 368    360   2425   PHTX   NA
## 369    360   1255   PHTX   NA
## 370    268    712   PHTX   NA
## 371    360   1315   PHTX   NA
## 372    237   1343   PHTX   NA
## 373    360   1610   PHTX   NA
## 374    360    782   PHTX   NA
## 375    360    575   PHTX   NA
## 376    360   1905   PHTX   NA
## 377    360   1915   PHTX   NA
## 378    193    788   PHTX   NA
## 379    109    317   PHTX   NA
## 380    360    907   PHTX   NA
## 381    360    933   PHTX   NA
## 382    360   1064   PHTX   NA
## 383    125    366   PHTX   NA
## 384    360   1138   PHTX   NA
## 385    360   1120   PHTX   NA
## 386    360   2175   PHTX   NA
## 387    360   2508   PHTX   NA
## 388    360   1531   PHTX   NA
## 389    360   2684   PHTX   NA
## 390    360    950   PHTX   NA
## 391    360   1296   PHTX   NA
## 392    360   1884   PHTX   NA
## 393    360   1210   PHTX   NA
## 394    360   1152   PHTX   NA
## 395    360   1390   PHTX   NA
## 396    101    622   PHTX   NA
## 397    360    921   PHTX   NA
## 398    173   1220   PHTX   NA
## 399    360   1582   PHTX   NA
## 400    360    662   PHTX   NA
## 401     94    980   PHTX   NA
## 402    360   1828   PHTX   NA
## 403    157   1495   PHTX   NA
## 404    360    885   PHTX   NA
## 405    176    958   PHTX   NA
## 406    360   1631   PHTX   NA
## 407    360   2003   PHTX   NA
## 408    360   1442   PHTX   NA
## 409    360    947   PHTX   NA
## 410    243    496   PHTX   NA
## 411    250    648   PHTX   NA
```

```
## 412    360    1063    PHTX    NA
## 413    360     861    PHTX    NA
## 414    199     495    PHTX    NA
## 415    212     562    PHTX    NA
## 416    360    1270    PHTX    NA
## 417    360    1850    PHTX    NA
## 418    360    2625    PHTX    NA
## 419    360    1366    PHTX    NA
## 420    360    1466    PHTX    NA
## 421   >207    1900    PHTX    NA
## 422    360    1037    PHTX    NA
## 423    188     468    PHTX    NA
## 424    207     441    PHTX    NA
## 425    360    1202    PHTX    NA
## 426    360     949    PHTX    NA
## 427    182     734    PHTX    NA
## 428    360    1179    PHTX    NA
## 429    263     619    PHTX    NA
## 430    360     964    PHTX    NA
## 431    360    1200    PHTX    NA
## 432     83     293    PHTX    NA
## 433    360     459    PHTX    NA
## 434    360    1081    PHTX    NA
## 435    208     473    PHTX    NA
## 436    141     460    PHTX    NA
## 437    189     795    PHTX    NA
## 438    156    1201    PHTX    NA
## 439    360     812    PHTX    NA
## 440    360    1040    PHTX    NA
## 441    360    1405    PHTX    NA
## 442    360     740    PHTX    NA
## 443    188     465    PHTX    NA
## 444    148     549    PHTX    NA
## 445    ---    <NA>    PHTX    NA
## 446    360    1085    PHTX    NA
## 447    276    1002    PHTX    NA
## 448     26     337    PHTX    NA
## 449    360    1118    PHTX    NA
## 450    ---    <NA>    PHTX    NA
## 451    ---    <NA>    PHTX    NA
## 452    360    1402    PHTX    NA
## 453    360    1830    PHTX    NA
## 454    360     721    PHTX    NA
## 455    360     779    PHTX    NA
## 456    360     948    PHTX    NA
## 457    360    2147    PHTX    NA
## 458    360     794    PHTX    NA
## 459    360     828    PHTX    NA
## 460    223     651    PHTX    NA
```

```
## 461     138      514   PHTX   NA
## 462     360      528   PHTX   NA
## 463     360     1471   PHTX   NA
## 464     ---     <NA>   PHTX   NA
## 465      96      467   PHTX   NA
## 466     360     1203   PHTX   NA
## 467     360      923   PHTX   NA
## 468     360      847   PHTX   NA
## 469     360     1099   PHTX   NA
## 470     360     1086   PHTX   NA
## 471     360     1469   PHTX   NA
## 472     186      684   PHTX   NA
## 473     254      700   PHTX   NA
## 474    360h      789   PHTX   NA
## 475     360      600   PHTX   NA
## 476     360      555   PHTX   NA
## 477     177      711   PHTX   NA
## 478     360      766   PHTX   NA
## 479     360     1901   PHTX   NA
## 480     360      920   PHTX   NA
## 481     360     1267   PHTX   NA
## 482      87      426   PHTX   NA
## 483     252      618   PHTX   NA
## 484     134      331   PHTX   NA
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## 486     159      513   PHTX   NA
## 487    >210      782   PHTX   NA
## 488     142      260   PHTX   NA
## 489     141      426   PHTX   NA
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## 494     360      669   PHTX   NA
## 495     213      764   PHTX   NA
## 496     155      880   PHTX   NA
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## 499     360     1794   PHTX   NA
## 500     360      820   PHTX   NA
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## 502     250      772   PHTX   NA
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## 505     360     1305   PHTX   NA
## 506     360     1366   PHTX   NA
## 507     360     1209   PHTX   NA
## 508     360     1627   PHTX   NA
## 509     360     1435   PHTX   NA
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## 511      131      823  PHTX    NA
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## 513      360      578  PHTX    NA
## 514      273     1041  PHTX    NA
## 515      360      579  PHTX    NA
## 516       89      520  PHTX    NA
## 517      360     1212  PHTX    NA
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## 522      ---     <NA>  PHTX    NA
## 523       98      633  PHTX    NA
## 524     <NA>     <NA>  <NA>    NA
## 525     <NA>     <NA>  <NA>    NA
```

```
NASA$Halo[NASA$CME_CPA == "Halo"] <- "Yes"
NASA$CME_CPA[NASA$CME_CPA == "Halo"] <- NA
NASA[c("Halo")][is.na(NASA[c("Halo")])] <- "No"
NASA$Lower_bound <- NA
NASA[c("start_date", "start_time", "end_date", "end_time", "start_freq", "end_freq",
"Location", "NOAA", "Importance",
                  "CME_date", "CME_time", "CME_CPA", "CME_width", "CME_speed", "Pl
ots", "Halo", "Lower_bound")]
```

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## 7    ================================================================================
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## 44
6
     2013/12/07
## 44
7
     2013/12/12
## 44
8
     2013/12/20
## 44
9
     2013/12/28
## 45
0
     2014/01/04
## 45
1
     2014/01/04
## 45
2
     2014/01/06
## 45
3
     2014/01/07
## 45
4
     2014/01/20
## 45
5
     2014/02/18
## 45
6
     2014/02/20
## 45
7
     2014/02/25
## 45
```

```
8
    2014/03/04
## 45
9
    2014/03/05
## 46
0
    2014/03/25
## 46
1
    2014/03/29
## 46
2
    2014/03/29
## 46
3
    2014/04/02
## 46
4
    2014/04/02
## 46
5
    2014/04/04
## 46
6
    2014/04/18
## 46
7
    2014/05/07
## 46
8
    2014/05/08
## 46
9
    2014/05/09
## 47
0
    2014/05/10
## 47
1
    2014/06/10
## 47
2
    2014/06/12
## 47
3
    2014/07/30
## 47
4
```

```
      2014/08/01
## 47
5
      2014/08/22
## 47
6
      2014/08/25
## 47
7
      2014/08/25
## 47
8
      2014/08/28
## 47
9
      2014/09/01
## 48
0
      2014/09/09
## 48
1
      2014/09/10
## 48
2
      2014/09/20
## 48
3
      2014/09/22
## 48
4
      2014/09/23
## 48
5
      2014/09/24
## 48
6
      2014/10/02
## 48
7
      2014/10/10
## 48
8
      2014/10/21
## 48
9
      2014/11/08
## 49
0
      2014/12/13
```

```
## 49
1
    2014/12/17
## 49
2
    2014/12/17
## 49
3
    2014/12/18
## 49
4
    2014/12/21
## 49
5
    2015/03/03
## 49
6
    2015/03/06
## 49
7
    2015/03/10
## 49
8
    2015/03/11
## 49
9
    2015/03/24
## 50
0
    2015/04/26
## 50
1
    2015/05/05
## 50
2
    2015/05/12
## 50
3
    2015/06/09
## 50
4
    2015/06/14
## 50
5
    2015/06/18
## 50
6
    2015/06/21
## 50
```

```
7
      2015/06/22
## 50
8
      2015/06/25
## 50
9
      2015/07/01
## 51
0
      2015/08/22
## 51
1
      2015/09/18
## 51
2
      2015/09/20
## 51
3
      2015/11/04
## 51
4
      2015/11/09
## 51
5
      2015/12/16
## 51
6
      2015/12/23
## 51
7
      2015/12/28
## 51
8
      2016/01/02
## 51
9
      2016/02/05
## 52
0
      2016/02/05
## 52
1
      2016/05/04
## 52
2
      2016/05/24
## 52
3
```

```
    2016/08/15
## 52
4


## 525 ========================================================================
==================
##              start_time         end_date end_time start_freq
## 1             <NA>                  <NA>     <NA>      <NA>
## 2             List               includes    DH       type
## 3             after               STEREO   launch       on
## 4               of                bursts      are determined
## 5             <NA>                  <NA>     <NA>      <NA>
## 6             <NA>                  <NA>     <NA>      <NA>
## 7             <NA>                  <NA>     <NA>      <NA>
## 8              DH                   Type      II     Flare
## 9     ----------------   ------------------------   Plots     <NA>
## 10            End                Frequency    Loc      NOAA
## 11            (2)                   (3)      (4)       (5)
## 12            <NA>                  <NA>     <NA>      <NA>
## 13           14:00                 04/01    14:15      8000
## 14           14:30                 04/07    17:30     11000
## 15           05:15                 05/14    16:00     12000
## 16           20:20                 05/21    22:00      5000
## 17           21:53                 09/23    22:16      6000
## 18           05:15                 11/03    12:00     14000
## 19           10:30                 11/03    11:30     14000
## 20           06:00                 11/05    04:30     14000
## 21           12:20                 11/07    08:30     14000
## 22           13:30                 11/27    14:00     14000
## 23           22:45                 12/12    23:20     14000
## 24           15:03                 01/25    15:18     14000
## 25           03:40                 03/29    03:52     14000
## 26           10:25                 04/22    06:00     10000
## 27           06:00                 04/23    15:30     14000
## 28           09:17                 04/24    09:25      4700
## 29           09:20                 04/27    10:00     10000
## 30           16:30                 04/29    17:00     10000
## 31           14:25                 05/02    14:50      5000
## 32           08:25                 05/06    08:35     14000
## 33           03:35                 05/09    10:00      9000
## 34           21:40                 05/11    22:00     10000
## 35           10:00                 05/19    11:30     14000
## 36           13:30                 05/27    14:20      4000
## 37           10:15                 06/11    10:20      8000
## 38           18:20                 06/17    21:00     12000
## 39           19:39                 06/20    20:00      2600
## 40           07:15                 06/22    09:20      6000
## 41           14:00                 11/02    14:40     14000
## 42           22:00                 11/07    08:00      5000
```

```
## 43          03:00              11/06    05:30     5000
## 44          00:20              11/07    00:50    14000
## 45          11:20              11/08    11:30    10000
## 46          17:50              12/18    18:15    14000
## 47          13:50              04/24    00:00     3700
## 48          05:50              05/03    08:45     8000
## 49          10:55              05/28    10:00    14000
## 50          18:50              06/02    09:00    14000
## 51          07:05              06/05    01:00    14000
## 52          11:45              06/11    17:00    14000
## 53          18:25              06/22    18:40     3000
## 54          05:50              06/23    07:10    12000
## 55          07:07              06/23    07:14    14000
## 56          21:03              06/28    21:10     3500
## 57          19:20              06/29    19:55    14000
## 58          03:10              07/05    04:05     2000
## 59          18:25              08/28    18:33    16000
## 60          03:00              09/03    04:10     2000
## 61          07:30              09/10    07:35     5500
## 62          09:10              10/14    10:00    14000
## 63          23:27              10/17    23:33    11500
## 64          03:27              11/16    03:48     7000
## 65          05:17              11/16    05:34    14000
## 66          17:31              01/18    22:00    14000
## 67          20:20              01/28    20:24     2200
## 68          19:34              02/05    19:34     5800
## 69          09:05              02/11    02:20    12000
## 70          01:55              02/10    02:00    14000
## 71          03:55              02/12    09:20     4000
## 72          20:42              02/18    22:12    14000
## 73          09:44              02/18    09:54     2000
## 74          13:50              03/02    14:03    14000
## 75          16:24              03/07    16:48    14000
## 76          06:56              03/27    06:58    14000
## 77          15:45              04/04    16:00    14000
## 78          23:15              04/09    23:45     4500
## 79          15:00              04/18    16:00    14000
## 80          11:10              05/04    13:00     6500
## 81          16:35              05/05    17:30    14000
## 82          21:15              05/07    24:00    14000
## 83          23:34              05/12    23:42    14000
## 84          16:47              05/16    14:00     4800
## 85          22:00              06/02    22:15    14000
## 86          15:20              06/08    09:00    14000
## 87          17:15              06/10    18:45    10000
## 88          19:52              06/15    19:56     5000
## 89          03:00              06/17    04:15    14000
## 90          01:19              06/19    01:22     3800
## 91          14:40              06/22    15:05    14000
```

## 92	08:10	06/25	09:00	12000
## 93	22:00	07/10	23:30	14000
## 94	13:00	07/11	13:30	12000
## 95	20:05	07/12	20:35	6000
## 96	10:30	07/15	14:30	14000
## 97	11:45	07/22	12:45	14000
## 98	11:35	08/11	11:59	2800
## 99	12:00	09/13	12:20	14000
## 100	18:15	09/12	19:00	2000
## 101	04:30	09/16	10:30	14000
## 102	08:45	09/19	10:20	12000
## 103	02:20	09/25	03:00	14000
## 104	22:10	10/05	22:35	5000
## 105	07:10	10/16	08:00	14000
## 106	09:30	10/25	24:00	10000
## 107	18:35	11/03	18:45	4000
## 108	23:20	11/09	12:00	4000
## 109	16:15	11/11	04:00	10000
## 110	14:25	11/12	14:40	3000
## 111	08:16	11/23	08:35	14000
## 112	21:00	11/23	21:06	3500
## 113	05:10	11/24	15:00	14000
## 114	15:25	11/24	22:00	14000
## 115	22:24	11/24	22:36	4000
## 116	01:25	11/25	02:25	14000
## 117	19:00	11/25	19:35	6000
## 118	19:55	11/25	20:25	13000
## 119	17:00	11/26	17:15	14000
## 120	12:40	12/28	13:38	14000
## 121	19:12	01/20	19:16	14000
## 122	21:30	01/20	24:00	14000
## 123	12:06	01/26	14:20	14000
## 124	15:45	01/28	17:00	14000
## 125	01:40	02/11	01:55	12000
## 126	04:18	03/10	04:32	14000
## 127	05:35	03/12	05:45	3000
## 128	02:35	03/27	03:15	6000
## 129	15:00	03/27	15:20	4000
## 130	10:12	03/30	06:00	4000
## 131	11:30	04/02	12:00	14000
## 132	22:05	04/03	02:30	14000
## 133	03:40	04/03	07:25	14000
## 134	09:50	04/04	10:10	13000
## 135	00:00	04/05	00:00	14000
## 136	19:35	04/07	01:50	14000
## 137	15:53	04/10	01:00	12000
## 138	05:24	04/10	24:00	14000
## 139	13:15	04/11	14:15	14000
## 140	10:20	04/12	10:40	14000

## 141	14:05	04/16	13:00	14000
## 142	02:55	04/18	14:00	1000
## 143	12:40	04/28	05:00	5000
## 144	12:00	05/07	13:50	2000
## 145	23:52	05/13	00:12	3000
## 146	00:25	05/30	01:38	14000
## 147	10:50	06/15	11:15	7000
## 148	16:05	06/15	16:20	14000
## 149	00:10	08/15	08:40	5400
## 150	16:50	08/25	23:00	8000
## 151	20:43	08/30	20:47	12000
## 152	18:48	09/03	19:00	12000
## 153	11:50	09/15	12:05	14000
## 154	13:50	09/16	14:10	3000
## 155	08:35	09/17	08:47	14000
## 156	18:43	09/20	18:57	14000
## 157	10:45	09/25	20:00	7000
## 158	08:15	09/28	07:00	4000
## 159	07:00	10/01	18:30	1000
## 160	11:35	10/05	12:55	1400
## 161	11:15	10/09	16:00	8000
## 162	11:20	10/09	11:55	14000
## 163	13:10	10/09	23:00	5000
## 164	01:15	10/19	02:25	14000
## 165	16:45	10/21	16:40	14000
## 166	15:15	10/22	17:40	8000
## 167	15:30	10/27	23:00	14000
## 168	16:30	11/06	11:00	14000
## 169	05:35	11/17	06:40	11000
## 170	20:50	11/22	22:23	8000
## 171	22:40	11/24	02:30	14000
## 172	12:45	12/11	17:00	4500
## 173	11:25	12/25	12:40	14000
## 174	05:20	12/27	05:00	14000
## 175	20:35	12/29	03:00	14000
## 176	20:45	12/29	21:05	3000
## 177	18:30	01/09	24:00	14000
## 178	06:25	01/14	21:30	12000
## 179	12:49	01/27	13:25	14000
## 180	19:23	02/01	19:31	14000
## 181	12:35	02/21	12:50	4000
## 182	00:00	03/11	00:15	14000
## 183	00:00	03/12	02:20	14000
## 184	22:45	03/15	23:30	14000
## 185	06:00	03/17	06:35	3000
## 186	02:55	03/18	05:35	14000
## 187	11:30	03/22	12:40	14000
## 188	13:10	03/22	13:35	3000
## 189	12:59	04/10	13:02	13000

```
## 190          07:50          04/14   08:10   14000
## 191          03:35          04/15   04:15   11000
## 192          08:30          04/19   04:00    5000
## 193          01:30          04/21   24:00   10000
## 194          14:15          04/30   14:23    4000
## 195          22:30          04/30   23:20    2000
## 196          23:50          05/03   00:10    2800
## 197          01:50          05/16   03:30    9000
## 198          00:00          05/22   00:30   14000
## 199          12:50          05/27   13:50   14000
## 200          11:35          07/07   20:00   14000
## 201          19:46          07/09   20:40    1000
## 202          21:15          07/16   05:00    5000
## 203          07:30          07/17   07:45    3500
## 204          07:55          07/18   08:45   14000
## 205          20:55          07/18   21:40    6000
## 206          16:40          07/19   17:10    5000
## 207          21:30          07/20   22:20   10000
## 208          00:50          07/23   04:00   11000
## 209          22:27          07/26   23:30   14000
## 210          12:10          07/29   12:45    4200
## 211          19:20          08/03   20:30   14000
## 212          02:20          08/14   24:00    1000
## 213          06:15          08/16   09:30   14000
## 214          12:20          08/17   21:00   14000
## 215          01:45          08/24   03:25    5000
## 216          16:55          09/07   16:22   14000
## 217          15:19          09/10   16:00   14000
## 218          13:35          09/27   14:30   14000
## 219          18:10          10/13   18:40   14000
## 220          00:19          10/14   02:00    1700
## 221          14:35          10/14   16:50   14000
## 222          23:06          10/28   01:20   14000
## 223          13:20          11/10   03:00   14000
## 224          03:20          11/10   06:00    3000
## 225          16:15          11/11   17:50   14000
## 226          20:05          11/24   20:45   14000
## 227          21:45          12/19   22:30   14000
## 228          04:20          12/22   04:50    5500
## 229          19:10          01/20   20:00   14000
## 230          22:20          01/27   22:26   11000
## 231          12:25          03/18   13:45    4500
## 232          13:55          03/18   14:10   14000
## 233          02:30          03/19   03:15   14000
## 234          07:25          04/22   08:22    3500
## 235          23:12          05/27   23:45   14000
## 236          01:00          05/29   00:30    1000
## 237          01:10          05/29   08:00   13000
## 238          03:00          05/31   08:00    1000
```

## 239	00:00	06/05	00:00	????
## 240	00:00	06/16	03:00	14000
## 241	22:50	06/18	05:30	10000
## 242	14:10	07/10	16:10	4000
## 243	11:15	08/19	12:00	14000
## 244	04:10	10/21	04:55	5000
## 245	07:00	10/26	09:15	8000
## 246	17:45	10/26	19:40	14000
## 247	11:10	10/29	24:00	14000
## 248	20:55	10/29	24:00	11000
## 249	22:55	11/02	00:50	14000
## 250	00:00	11/02	00:00	????
## 251	17:30	11/03	01:00	12000
## 252	01:15	11/03	01:25	3000
## 253	10:00	11/03	12:30	6000
## 254	00:00	11/04	00:00	????
## 255	20:00	11/04	24:00	10000
## 256	00:00	11/09	00:00	????
## 257	00:00	11/11	00:00	????
## 258	09:35	11/13	10:50	14000
## 259	09:05	11/17	09:20	4000
## 260	00:00	11/18	00:00	????
## 261	10:15	11/18	11:30	5000
## 262	11:00	12/02	12:00	14000
## 263	03:40	01/05	03:50	9000
## 264	00:00	01/06	00:00	14000
## 265	04:15	01/07	06:15	14000
## 266	10:35	01/07	11:35	14000
## 267	13:05	04/06	16:00	8000
## 268	10:25	04/08	12:50	3000
## 269	13:30	04/08	14:00	6000
## 270	04:20	04/11	05:35	14000
## 271	23:13	06/02	23:55	14000
## 272	16:48	06/03	17:10	12000
## 273	07:50	06/04	09:55	14000
## 274	22:07	06/22	22:30	10000
## 275	06:30	06/23	08:55	14000
## 276	19:00	07/23	19:35	10000
## 277	15:00	07/26	22:25	1000
## 278	13:20	07/30	20:30	1000
## 279	07:10	07/31	11:30	1000
## 280	09:15	08/08	09:22	14000
## 281	00:45	09/13	21:00	14000
## 282	17:15	09/19	18:15	14000
## 283	03:12	10/24	03:21	14000
## 284	06:40	10/30	07:40	4000
## 285	05:55	11/01	07:25	3000
## 286	15:55	11/03	16:30	14000
## 287	03:35	11/03	04:10	2000

## 288	01:50	11/06	02:45	6000
## 289	16:25	11/08	20:00	14000
## 290	17:35	11/09	18:10	14000
## 291	02:25	11/10	03:40	14000
## 292	00:07	12/04	04:30	10000
## 293	20:05	12/08	20:10	14000
## 294	16:35	12/29	17:00	14000
## 295	23:45	12/31	04:20	5000
## 296	00:45	01/01	02:25	14000
## 297	11:20	01/04	11:35	13000
## 298	06:15	01/15	09:30	14000
## 299	23:00	01/15	00:00	3000
## 300	09:25	01/17	16:00	14000
## 301	09:20	01/19	00:00	5300
## 302	10:00	01/17	10:35	6100
## 303	07:15	01/20	16:30	14000
## 304	11:40	02/01	11:50	8000
## 305	22:40	03/02	23:00	14000
## 306	00:20	03/03	01:10	14000
## 307	17:52	05/06	18:03	5000
## 308	17:00	05/13	02:10	5000
## 309	03:20	05/17	03:35	4500
## 310	12:50	06/03	15:00	10000
## 311	20:25	06/16	21:40	9000
## 312	16:30	07/07	16:40	4000
## 313	22:15	07/09	23:00	14000
## 314	14:15	07/13	15:05	14000
## 315	11:00	07/14	12:54	3000
## 316	11:50	07/17	13:45	7000
## 317	13:50	07/24	22:30	14000
## 318	22:35	07/24	22:40	1000
## 319	05:20	07/27	06:45	1000
## 320	07:45	07/27	08:30	2500
## 321	07:40	07/30	20:00	9000
## 322	14:15	08/01	14:50	14000
## 323	01:30	08/22	03:35	8000
## 324	17:15	08/23	13:00	12000
## 325	15:00	08/23	19:30	13000
## 326	11:10	08/29	11:14	10000
## 327	11:40	08/31	12:10	6000
## 328	22:10	08/31	23:00	14000
## 329	03:20	09/03	05:15	2000
## 330	10:40	09/06	00:00	1500
## 331	18:05	09/08	00:00	12000
## 332	19:45	09/09	22:00	10000
## 333	21:45	09/10	01:00	14000
## 334	13:10	09/11	15:15	3000
## 335	20:20	09/15	06:00	1100
## 336	16:20	05/02	01:00	1000

```
## 337          08:45                07/06    17:18    14000
## 338          15:45                08/16    22:15    14000
## 339          20:40                08/26    21:00     7000
## 340          17:35                11/05    19:20    14000
## 341          10:35                11/06    11:05    14000
## 342          17:45                11/06    19:25     4000
## 343          10:50                12/05    20:00    14000
## 344          02:00                12/06    03:30     1000
## 345          08:30                12/06    09:45     4000
## 346          19:00                12/08    24:00    16000
## 347          02:45                12/13    10:40    12000
## 348          22:30                12/14    23:40    14000
## 349          06:55                01/25    23:30    14000
## 350          13:02                05/19    13:05    16000
## 351          01:05                12/31    01:22    16000
## 352          19:05                03/25    19:20    12000
## 353          14:23                04/26    14:39     7600
## 354          09:20                08/01    17:30     2000
## 355          18:35                08/07    19:50    14000
## 356          06:05                08/18    07:45    13000
## 357          09:15                01/13    10:05    16000
## 358          12:20                01/27    12:35    16000
## 359          17:50                02/13    18:00    16000
## 360          02:10                02/15    07:00    16000
## 361          12:50                02/24    15:10     1000
## 362          14:30                03/07    15:00    16000
## 363          20:00                03/08    08:30    16000
## 364          21:00                05/10    04:00    16000
## 365          21:10                05/30    13:40    16000
## 366          08:00                06/02    08:25    15000
## 367          07:00                06/04    13:45    16000
## 368          22:00                06/07    01:30    16000
## 369          06:45                06/07    18:00    16000
## 370          06:15                08/02    07:30    16000
## 371          04:15                08/05    17:00    13000
## 372          18:10                08/08    20:10     6000
## 373          08:20                08/09    08:35    16000
## 374          02:00                09/06    23:40    14000
## 375          22:30                09/07    15:40    16000
## 376          11:05                09/22    24:00    14000
## 377          12:50                09/24    22:45    16000
## 378          05:30                09/25    06:00    16000
## 379          13:15                10/21    13:50    16000
## 380          13:30                11/09    17:00    16000
## 381          07:15                11/27    24:00    10000
## 382          03:00                12/21    08:15    16000
## 383          18:45                12/25    18:55    14000
## 384          15:00                01/02    15:45    16000
## 385          15:00                01/20    02:45    16000
```

## 386	04:00	01/24	15:00	16000
## 387	18:30	01/28	04:45	16000
## 388	04:00	03/05	12:20	16000
## 389	01:00	03/08	19:00	16000
## 390	04:10	03/09	06:05	14000
## 391	17:55	03/11	12:30	14000
## 392	17:35	03/13	24:00	16000
## 393	00:20	03/18	01:20	16000
## 394	00:40	03/24	10:40	16000
## 395	23:15	03/26	23:55	16000
## 396	21:45	03/27	22:30	4000
## 397	12:20	04/09	13:00	16000
## 398	02:30	04/15	02:50	16000
## 399	01:40	05/17	06:20	16000
## 400	17:00	07/04	17:20	14000
## 401	22:40	07/05	23:50	3000
## 402	23:10	07/07	03:40	16000
## 403	16:35	07/08	22:00	16000
## 404	16:45	07/13	09:00	14000
## 405	14:40	07/18	05:00	12000
## 406	05:30	07/19	06:20	5000
## 407	02:30	07/23	21:40	16000
## 408	20:00	08/31	23:45	16000
## 409	23:55	09/28	10:15	16000
## 410	01:50	10/22	11:15	1000
## 411	22:00	01/17	01:30	1000
## 412	07:00	03/15	21:30	14000
## 413	07:10	04/11	15:00	10000
## 414	18:00	04/18	19:10	16000
## 415	20:25	04/21	22:12	14000
## 416	02:20	05/13	03:00	16000
## 417	16:15	05/13	19:10	16000
## 418	01:16	05/14	02:35	16000
## 419	01:49	05/15	07:30	16000
## 420	13:10	05/24	06:00	16000
## 421	03:35	06/21	05:15	14000
## 422	01:53	06/28	03:26	14000
## 423	20:57	07/04	21:27	11000
## 424	02:01	08/06	02:11	14000
## 425	20:25	08/18	03:05	1800
## 426	02:34	08/31	04:00	14000
## 427	22:29	09/06	22:34	5000
## 428	21:53	09/30	21:00	14000
## 429	20:46	10/02	21:10	10000
## 430	07:00	10/05	14:46	16000
## 431	07:23	10/11	11:43	14000
## 432	18:47	10/14	05:15	2100
## 433	21:33	10/22	22:08	14000
## 434	15:08	10/25	22:32	16000

## 435	03:01	10/26	04:00	14000
## 436	09:34	10/26	10:10	14000
## 437	18:12	10/27	18:36	14000
## 438	04:41	10/28	11:51	14000
## 439	15:24	10/28	15:29	14000
## 440	05:10	11/04	08:00	16000
## 441	10:26	11/07	20:40	16000
## 442	10:39	11/19	20:20	14000
## 443	22:18	11/30	09:20	1800
## 444	12:45	12/05	13:00	4200
## 445	20:48	12/05	21:35	14000
## 446	07:43	12/07	08:36	14000
## 447	03:55	12/12	21:30	12000
## 448	08:23	12/20	13:24	1500
## 449	17:31	12/28	18:05	16000
## 450	17:41	01/04	18:47	9000
## 451	19:03	01/05	09:00	6500
## 452	07:57	01/06	22:30	14000
## 453	18:33	01/08	21:00	14000
## 454	22:24	01/20	22:36	14000
## 455	02:16	02/18	02:51	2000
## 456	08:05	02/20	08:29	12000
## 457	00:56	02/25	11:28	14000
## 458	18:24	03/04	20:10	16000
## 459	13:33	03/05	17:10	16000
## 460	07:52	03/25	11:30	1700
## 461	00:12	03/29	00:48	14000
## 462	17:59	03/30	09:58	14000
## 463	13:42	04/03	08:10	14000
## 464	18:49	04/03	06:40	2400
## 465	14:02	04/04	14:07	14000
## 466	13:05	04/18	22:50	14000
## 467	16:24	05/07	23:18	16000
## 468	03:21	05/08	05:26	16000
## 469	02:40	05/09	04:30	14000
## 470	04:32	05/10	08:37	16000
## 471	12:58	06/10	15:00	16000
## 472	22:14	06/12	22:35	14000
## 473	07:44	07/30	08:00	6300
## 474	18:58	08/02	05:00	1000
## 475	10:37	08/22	11:18	14000
## 476	15:20	08/25	16:02	14000
## 477	20:43	08/25	21:00	14000
## 478	17:05	08/28	22:08	16000
## 479	11:12	09/01	22:35	16000
## 480	00:05	09/09	13:00	11000
## 481	17:45	09/11	12:00	14000
## 482	05:10	09/20	05:30	14000
## 483	06:13	09/22	06:50	16000

```
## 484            23:41                09/23  23:47    14000
## 485            20:54                09/24  23:48    16000
## 486            21:34                10/02  21:56     3300
## 487            18:11                10/10  18:33     2500
## 488            12:33                10/21  13:01    14000
## 489            16:57                11/08  17:18    14000
## 490            14:27                12/13  14:51    14000
## 491            04:09                12/17  04:19     2900
## 492            05:00                12/17  05:09    14000
## 493            22:31                12/18  22:54     5100
## 494            12:05                12/21  12:28    14000
## 495            02:33                03/03  02:37     8100
## 496            08:00                03/06  11:30     4700
## 497            00:10                03/10  00:27    14000
## 498            10:30                03/11  14:50     1000
## 499            09:00                03/06  11:47    14000
## 500            03:21                04/26  03:33     8000
## 501            22:24                05/05  23:14    14000
## 502            03:00                05/12  03:04    14000
## 503            20:23                06/09  22:35     2300
## 504            05:26                06/14  05:41     3000
## 505            17:42                06/18  19:40     3700
## 506            02:33                06/21  21:20     5500
## 507            18:20                06/22  21:55    14000
## 508            08:35                06/25  16:30    14000
## 509            16:08                07/01  20:47     1000
## 510            07:07                08/22  07:18    14000
## 511            04:54                09/18  09:52    14000
## 512            18:23                09/21  01:46    14000
## 513            14:07                11/04  15:14    14000
## 514            13:21                11/09  13:27    14000
## 515            08:45                12/16  08:57     5300
## 516            01:18                12/23  01:23    12000
## 517            11:50                12/28  21:45    14000
## 518            00:55                01/02  03:08     1100
## 519            20:28                02/05  23:31     1650
## 520            22:35                02/05  22:55     5200
## 521            14:20                05/04  14:34    14000
## 522            17:00                05/24  20:50     1500
## 523            18:21                08/15  18:28    11000
## 524            <NA>                  <NA>   <NA>     <NA>
## 525            <NA>                  <NA>   <NA>     <NA>
##      end_freq Location      NOAA Importance CME_date   CME_time CME_CPA
## 1        <NA>     <NA>      <NA>      <NA>       <NA>       <NA>    <NA>
## 2          II  bursts  observed        by      Wind spacecraft,
## 3         Oct    2006       the     start       and        end   times
## 4       using     both      Wind       and    STEREO               <NA>
## 5        <NA>     <NA>      <NA>      <NA>       <NA>       <NA>    <NA>
## 6        <NA>     <NA>      <NA>      <NA>       <NA>       <NA>    <NA>
```

```
## 7           <NA>      <NA>     <NA>     <NA>     <NA>      <NA>    <NA>
## 8           CME                <NA>     <NA>     <NA>      <NA>    <NA>
## 9           <NA>      <NA>     <NA>     <NA>     <NA>      <NA>    <NA>
## 10          Imp       Date     Time      CPA    Width      Spd
## 11          (6)       (7)      (8)       (9)     (10)      (11)    (12)
## 12          <NA>      <NA>     <NA>     <NA>     <NA>      <NA>    <NA>
## 13          4000     S25E16    8026     M1.3    04/01     15:18     74
## 14          1000     S28E19    8027     C6.8    04/07     14:27    <NA>
## 15            80     N21W08    8038     C1.3    05/12     05:30    <NA>
## 16           500     N05W12    8040     M1.3    05/21     21:00    263
## 17          2000     S29E25    8088     C1.4    09/23     22:02    133
## 18           250     S20W13    8100     C8.6    11/03     05:28    240
## 19          5000     S16W21    8100     M4.2    11/03     11:11    233
## 20           100     S14W33    8100     X2.1    11/04     06:10    <NA>
## 21           100     S18W63    8100     X9.4    11/06     12:10    <NA>
## 22          7000     N17E63    8113     X2.6    11/27     13:56     98
## 23          8000     N25W52    8116     B9.4    12/13     00:26    278
## 24         10000     N21E25    8141     C1.1    01/25     15:26    <NA>
## 25          7000      SW90     <NA>     <NA>    03/29     03:48    <NA>
## 26            35     S22W90    8194     M1.4    04/20     10:07    284
## 27           200     S17E90    8210     X1.2    04/23     05:55    <NA>
## 28          2600     S10E90    8210     C8.9    04/24     08:55    100
## 29          1000     S16E50    8210     X1.0    04/27     08:56    <NA>
## 30          2000     S18E20    8210     M6.8    04/29     16:58    <NA>
## 31          3000     S15W15    8210     X1.1    05/02     14:06    <NA>
## 32          5000     S11W65    8210     X2.7    05/06     08:29    309
## 33           400     S14W89    8210     M7.7    05/09     03:35    262
## 34          1000     N32W90    8214     B6.6    05/11     21:55    208
## 35          3000     N29W46    8222     B7.9    05/19     10:27    268
## 36          1000     N19W62    8226     C7.5    05/27     13:45    175
## 37          4000     N16E86    8243     M1.4    06/11     10:28    123
## 38            50     S22W90    8232     M1.0    06/16     18:27    341
## 39          1800      Back     <NA>     <NA>    06/20     18:20    <NA>
## 40          2000     N16W46    8243     C2.9    06/22     05:01    265
## 41          4000     S25E47    8373     C4.4    11/02     14:18    116
## 42            50     N22W18    8375     M8.4    11/05     20:44    <NA>
## 43          1000      BACK     <NA>     <NA>    11/06     02:18    159
## 44          6000     NE90b     <NA>     C1.0    11/07     01:54    296
## 45          8000     S21W37    <NA>     C5.9    11/08     11:54    264
## 46          5000     N19E64    8415     M8.0    12/18     18:09    <NA>
## 47          1500     NW90b     <NA>     <NA>    04/24     13:31    <NA>
## 48           200     N15E32    8525     M4.4    05/03     06:06    <NA>
## 49            70      W90b     <NA>     <NA>    05/27     11:06    <NA>
## 50           400     NW90b     <NA>     <NA>    06/01     19:37    <NA>
## 51            60     N17W69    8552     M3.9    06/04     07:26    289
## 52           400     N38E90    <NA>     C8.8    06/11     11:26     35
## 53          2000     N22E37    8592     M1.7    06/22     18:54    <NA>
## 54          2000      BACK     <NA>     <NA>    06/23     06:06    264
## 55          2000     N23E42    8596     M1.7    06/23     07:31    <NA>
```

```
## 56     1500    N22W44    8592    C3.5    06/28    21:30    336
## 57     2000    S14E01    8603    M1.6    06/29    19:54    <NA>
## 58     1000    SW90b     8603    C7.6    07/05    02:54    284
## 59    12000    S26W14    8674    X1.1    08/28    18:26    120
## 60     1000    S36W24    8679    C2.1    09/03    00:06    184
## 61     2000    NW90b     <NA>    <NA>    09/10    07:54     18
## 62     4000    N11E32    8731    X1.8    10/14    09:26    <NA>
## 63    10000    N03E38    <NA>    <NA>    10/18    00:06     40
## 64     4000    N17E38    8766    M3.8    11/16    03:06     81
## 65     7000    N08W39    8759    M1.8    11/16    05:30    285
## 66      500    S19E11    8831    M3.9    01/18    17:54    <NA>
## 67     1100    S31W17    8841    C4.7    01/28    20:12    <NA>
## 68     2900    N26E52    8858    X1.2    02/05    19:54     60
## 69       20    N25E26    8858    M1.3    02/08    09:30    <NA>
## 70     8000    N31E04    8858    C7.3    02/10    02:30    <NA>
## 71      400    N26W23    8858    M1.7    02/12    04:31    <NA>
## 72      100    S29E07    8872    M1.3    02/17    21:30    <NA>
## 73     1200    NW90b     <NA>    C1.1    02/18    09:54    286
## 74     6000    S20W58    8882    M6.5    03/02    13:54    235
## 75     4500    S22E77    8906    M1.2    03/07    16:30    120
## 76    10000    S00E90    8932    C2.3    03/27    07:31    129
## 77     9000    N16W66    8933    C9.7    04/04    16:32    <NA>
## 78     1000    S14W01    8948    M3.1    04/10    00:30    <NA>
## 79     6000    S50W30    altr    FILA    04/18    14:54    195
## 80     1000    S17W87    8970    M6.8    05/04    11:26    235
## 81     2500    S17W87    8970    M1.5    05/05    15:50    <NA>
## 82      500    W90b      <NA>    <NA>    05/07    20:50    <NA>
## 83     7000    E90b      <NA>    <NA>    05/12    23:26    <NA>
## 84       40    S24W67    8993    C7.8    05/15    16:26    257
## 85     8000    N16E60    9026    M7.6    06/02    21:30     69
## 86       40    N20E18    9026    X2.3    06/06    15:54    <NA>
## 87     1000    N22W38    9026    M5.2    06/10    17:08    <NA>
## 88     2500    N20W65    9041    M1.8    06/15    20:06    298
## 89     1000    N22W72    9041    M3.5    06/17    03:28    298
## 90     1900    N42E60    <NA>    <NA>    06/18    21:30      8
## 91     2000    N26W72    9042    M3.0    06/23    14:54    282
## 92     2500    N16W55    9046    M1.9    06/25    07:54    262
## 93     1000    N18E49    9077    M5.7    07/10    21:50     67
## 94     1000    N18E27    9077    X1.0    07/11    13:27    <NA>
## 95     1000    N19W61    9070    M1.5    07/12    20:30    281
## 96       80    N22W07    9077    X5.7    07/14    10:54    <NA>
## 97     2000    N14W56    9085    M3.7    07/22    11:54    259
## 98     2000    NW90b     <NA>    <NA>    08/11    07:31    273
## 99       60    S19W06    DSF     M1.0    09/12    11:54    <NA>
## 100    1000    NE90b     <NA>    <NA>    09/12    17:30    <NA>
## 101     400    N14W07    9165    M5.9    09/16    05:18    <NA>
## 102    1500    N14W46    9165    M5.1    09/19    08:50    283
## 103    1000    N09W18    9169    M1.8    09/25    02:50    <NA>
## 104    1250    N25W90    9177    <NA>    10/05    18:26    323
```

##	105	1000	N03W90	9182	M2.5	10/16	07:27	<NA>
##	106	300	N09W63	9199	C4.0	10/25	08:26	<NA>
##	107	2500	N02W02	9213	C3.2	11/03	18:26	<NA>
##	108	200	N10W77	9213	M7.4	11/08	23:06	271
##	109	40	S11E10	9221	M1.0	<NA>	<NA>	<NA>
##	110	2000	S14E05	9227	C4.4	11/12	14:50	257
##	111	9000	S26W40	9238	C5.4	11/23	06:06	<NA>
##	112	3000	S20E60	9239	C7.9	11/23	21:30	124
##	113	100	N20W05	9236	X2.0	11/24	05:30	<NA>
##	114	200	N22W07	9236	X2.3	11/24	15:30	<NA>
##	115	3000	N21W14	9236	X1.8	11/24	22:06	<NA>
##	116	3000	N07E50	9240	M8.2	11/25	01:31	<NA>
##	117	2000	N20W23	9236	X1.9	11/25	19:31	<NA>
##	118	4000	N20W27	9236	<NA>	11/25	21:30	345
##	119	7000	N18W38	9236	X4.0	11/26	17:06	<NA>
##	120	1900	Back	<NA>	<NA>	12/28	12:06	<NA>
##	121	6000	S07E40	9313	M1.2	01/20	19:31	<NA>
##	122	500	S07E46	9313	M7.7	01/20	21:30	<NA>
##	123	400	S23W57	9320	C1.6	01/26	12:06	276
##	124	200	S04W59	9313	M1.5	01/28	15:54	<NA>
##	125	5500	N24W57	9346	C6.5	02/11	01:31	<NA>
##	126	4000	N27W42	9368	M6.7	03/10	04:26	297
##	127	1500	BACK	<NA>	<NA>	03/12	05:50	233
##	128	1000	N14E17	9393	C7.3	03/27	02:06	154
##	129	1500	N15E14	9393	C5.6	03/27	17:06	46
##	130	60	N20W19	9393	X1.7	03/29	10:26	<NA>
##	131	5000	N20W70	9393	X1.1	04/02	11:26	270
##	132	250	N19W72	9393	X20.	04/02	22:06	261
##	133	400	S21E83	9415	X1.2	04/03	03:26	108
##	134	3000	S21E68	9415	M1.6	04/04	09:50	86
##	135	7500	N14W85	9393	M8.4	04/05	09:06	283
##	136	230	S21E31	9415	X5.6	04/06	19:30	<NA>
##	137	100	S21W04	9415	M7.9	04/09	15:54	<NA>
##	138	100	S23W09	9415	X2.3	04/10	05:30	<NA>
##	139	1500	S22W27	9415	M2.3	04/11	13:31	<NA>
##	140	7000	S19W43	9415	X2.0	04/12	10:31	<NA>
##	141	40	S20W85	9415	X14.	04/15	14:06	245
##	142	100	SW90b	<NA>	C2.2	04/18	02:30	<NA>
##	143	20	N20W05	9433	M1.5	04/26	12:30	<NA>
##	144	280	NW90b	<NA>	<NA>	05/07	12:06	286
##	145	1000	S17E00	9455	M3.0	05/13	02:21	190
##	146	1000	E90b	9481	<NA>	05/30	00:06	70
##	147	3000	S26E41	9502	M6.3	06/15	10:31	185
##	148	3500	W90b	<NA>	<NA>	06/15	15:56	<NA>
##	149	200	Back	<NA>	<NA>	08/15	23:54	<NA>
##	150	170	S17E34	9591	X5.3	08/25	16:50	<NA>
##	151	10000	N15E44	9601	M3.0	08/30	21:26	82
##	152	7500	S23E90	9607	M2.5	09/03	18:35	127
##	153	6000	S21W49	9608	M1.5	09/15	11:54	263

```
## 154    2000    S13E15     9616      C8.9    09/16    14:30    131
## 155    5400    S14E04     9616      M1.5    09/17    08:54    198
## 156   10000    N09W11     9631      M1.5    09/20    19:31    306
## 157      30    S16E23     9632      X2.6    09/24    10:30    <NA>
## 158      80    S15W40       EP      C9.5    09/27    08:06    224
## 159     150    S24W81     9628      M9.1    10/01    05:30    <NA>
## 160     500     SW90b     <NA>     <NA>    10/05    10:30    <NA>
## 161     200    S28E08     9653      M1.4    10/09    11:30    <NA>
## 162    2000    S28E08     9653     <NA>    <NA>    <NA>    <NA>
## 163      50      BACK     <NA>     <NA>    <NA>    <NA>    <NA>
## 164    1300    N16W18     9661      X1.6    10/19    01:27    <NA>
## 165      30    N15W29     9661      X1.6    10/19    16:50    <NA>
## 166    1200    S21E18     9672      M6.7    10/22    15:06    <NA>
## 167      30    S16W21     9672      X1.3    10/25    15:26    <NA>
## 168      70    N06W18     9684      X1.0    11/04    16:35    <NA>
## 169    1700    S13E42     9704      M2.8    11/17    05:30    <NA>
## 170    1000    S25W67     9698      M3.8    11/22    20:30    <NA>
## 171      40    S17W36     9704      M9.9    11/22    23:30    <NA>
## 172     750     SW90b     <NA>     <NA>    12/11    09:54    263
## 173    1000     SE90b     <NA>     <NA>    12/25    11:30    <NA>
## 174     150    N08W54     9742      M7.1    12/26    05:30    281
## 175     350    S26E90     9756      X3.4    12/28    20:30    <NA>
## 176    1500      BACK     <NA>     <NA>    12/29    20:30    297
## 177      90     NE90b     <NA>     <NA>    01/08    17:54    <NA>
## 178     100    S28W83     9772      M4.4    01/14    05:35    <NA>
## 179    3000     Back?     <NA>     <NA>    01/27    12:30    <NA>
## 180   11000      BACK     <NA>     <NA>    02/01    19:54    350
## 181    1500    N16W79     9825      M3.9    02/21    12:54    275
## 182    8000    S11E90     9866      M2.3    03/10    23:06    <NA>
## 183    2200    S15E45     <NA>      M5.0    03/11    23:30    <NA>
## 184    6000    S08W03     9866      M2.2    03/15    23:06    <NA>
## 185    1000    S20E24     9871      C3.1    03/17    04:06    141
## 186    1000    S15W22     9873      M1.0    03/18    02:54    <NA>
## 187     500    S09W90     9866      M1.6    03/22    11:06    <NA>
## 188    2000    S00W90     9866      M1.6    03/22    12:30    243
## 189   12000    N15W14     9893      M8.2    04/10    13:27    340
## 190    8000    N19W57     9893      C9.6    04/14    07:50    323
## 191    1500    S15W01     9906      M1.2    04/15    03:50    <NA>
## 192      40    S14W34     9906      M2.6    04/17    08:26    <NA>
## 193      60    S14W84     9906      X1.5    04/21    01:27    <NA>
## 194    2500    S16E77     9934      C3.2    04/30    14:26     92
## 195     500      W90b     <NA>     <NA>    04/30    23:26    254
## 196     900      E90b     9937     <NA>    05/02    23:18    119
## 197    2000    S22E01     9948      C4.5    05/16    00:50    <NA>
## 198    8000    S25W64     9948      C9.7    05/22    00:06    230
## 199    5000    N18E18     9967      C3.7    05/27    13:27     49
## 200     200    S19W90    10017      M1.0    07/07    11:30    277
## 201     650      W90b     <NA>     <NA>    07/09    19:31    <NA>
## 202     175    N19W01    10030      M1.8    07/15    21:30     14
```

```
## 203   2000   N21W17   10030   M8.5   07/17   07:31    36
## 204   1500   N19W30   10030   X1.8   07/18   08:06   <NA>
## 205   3000    E90b    10036   C3.3   07/18   19:31   <NA>
## 206   1000   S15E90   <NA>    <NA>   07/19   16:30   <NA>
## 207   2000    SE90b   10039   X3.3   07/20   22:06   <NA>
## 208    400   S13E72   10039   X4.8   07/23   00:42   <NA>
## 209   2000   S19E26   10039   M8.7   07/26   22:06   <NA>
## 210   1300   N10W15   FILA    <NA>   07/29   12:07    13
## 211   2000   S16W76   10039   X1.0   08/03   19:31   259
## 212     30   N09W54   10061   M2.3   08/14   02:30   297
## 213    300   N07W83   10061   M2.4   08/16   06:06   293
## 214     60   S14E20   10069   M5.2   08/16   12:30   <NA>
## 215    400   S02W81   10069   X3.1   08/24   01:27   <NA>
## 216     30   N09E28   10102   C5.2   09/05   16:54   <NA>
## 217   8500   S10E43   10105   M2.9   09/10   15:30   127
## 218   8000   N13E45   10134   M1.8   09/27   13:56    64
## 219   4000   S07W54   10150   C4.7   10/13   19:35   252
## 220    500   S13E75   10159   M2.2   10/13   23:54   107
## 221   1200    NE90b   <NA>    C4.5   10/14   14:54   <NA>
## 222    300    SE90b   <NA>    <NA>   10/27   23:18   <NA>
## 223    100   S12W29   10180   M4.6   11/09   13:31   <NA>
## 224    300   S12W37   10180   M2.4   11/10   03:30   203
## 225    600   S13W60   10180   M1.8   11/11   15:54   212
## 226   7000   N20E35   <NA>    <NA>   11/24   20:30   <NA>
## 227   1500   N15W09   10229   M2.7   12/19   22:06   <NA>
## 228   3500   N23W42   10223   M1.1   12/22   03:30   328
## 229   6000   N34W26   FILA    C1.7   01/20   18:30   315
## 230   8000   S17W23   FILA    C2.4   01/27   22:23   205
## 231    500   S15W46   10314   X1.5   03/18   12:30   263
## 232   7000    S90b    <NA>    <NA>   03/18   13:54   <NA>
## 233   6000    SW90b   <NA>    <NA>   03/19   02:30   <NA>
## 234    700    NE90b   <NA>    <NA>   04/22   07:36    87
## 235   2000   S07W17   10365   X1.3   05/27   23:50   <NA>
## 236    200   S06W21   10365   X3.6   05/28   00:50   <NA>
## 237    200   S06W37   10365   X1.2   05/29   01:27   <NA>
## 238    150   S07W65   10365   M9.3   05/31   02:30   <NA>
## 239   ????    W90b    <NA>    <NA>   06/05   20:06   230
## 240    400   S07E80   10386   X1.3   06/15   23:54   <NA>
## 241    200   S08E59   10386   M6.8   06/17   23:18   <NA>
## 242    400   N13W90   10397   M3.6   <NA>    <NA>    <NA>
## 243   1000   S10W57   10431   M2.7   08/19   10:30   262
## 244   1000    SE90b   <NA>    <NA>   10/21   03:54   <NA>
## 245   1500   S15E44   10486   X1.2   10/26   06:54   108
## 246   1500   N02W38   10484   X1.2   10/26   17:54   270
## 247     40   S16E08   10486   X17.   10/28   11:30   <NA>
## 248    500   S15W02   10486   X10.   10/29   20:54   <NA>
## 249   2000   S12W60   10486   M3.2   11/01   23:06   254
## 250   ????    SW90b   <NA>    <NA>   11/02   09:30   <NA>
## 251    250   S14W56   10486   X8.3   11/02   17:30   <NA>
```

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## 252      1500      N10W83      10488      X2.7      11/03      01:59      304
## 253       400      N08W77      10488      X3.9      11/03      10:06      293
## 254      ????       Back?       <NA>      <NA>      11/04      12:06      <NA>
## 255       200      S19W83      10486      X28.      11/04      19:54      <NA>
## 256      ????        E90b       <NA>      <NA>      11/09      06:30      <NA>
## 257      ????        W90b       <NA>      <NA>      11/11      02:30      <NA>
## 258      4000      N12E90      10501      M1.4      11/13      09:30       49
## 259      1500      S01E33      10501      M4.2      11/17      09:26       72
## 260      ????      N00E18      10501      M3.9      11/18      08:50      <NA>
## 261      2000      S16E90      10508      M4.5      11/18      09:50       95
## 262      9000      S14W70      10508      C7.2      12/02      10:50      261
## 263      2500      S12E38      10536      M6.9      <NA>       <NA>      <NA>
## 264      2000      N05E90      10537      M5.8      01/06      08:53       88
## 265       750      N02E82      10537      M4.5      01/07      04:06       78
## 266      1500      N06E75      10537      M8.3      01/07      10:30       81
## 267       300      S18E15      10588      M2.4      04/06      13:31      <NA>
## 268       500      S15W11      10588      C7.4      04/08      10:30      <NA>
## 269      3000      S19W08      10588      C1.3      04/08      13:31      198
## 270       500      S14W47      10588      C9.6      04/11      04:30      203
## 271      2100        W90b       <NA>      <NA>      06/02      23:15      287
## 272      5000        W90b       <NA>      <NA>      06/03      16:50      303
## 273      2500        W90b       <NA>      <NA>      06/04      07:50      309
## 274      7000      S12W24      10635      C1.7      <NA>       <NA>      <NA>
## 275      5000      S09W21      10635      C2.5      <NA>       <NA>      <NA>
## 276      2500      N04W05      10652      C4.1      07/23      19:31      209
## 277        28      N08W33      10652      M1.1      07/25      14:54      <NA>
## 278        50      N00W90      10652      C2.1      07/29      12:06      <NA>
## 279       200      N05W89      10652      C8.4      07/31      05:54      259
## 280      7000        BACK       <NA>      <NA>      08/08      08:54      <NA>
## 281        40      N03E49      10672      M4.8      09/12      00:36      <NA>
## 282      2500      N03W58      10672      M1.9      <NA>       <NA>      <NA>
## 283      8000      N11E19      10687      C1.7      10/24      03:54       26
## 284      1000      N13W22      10691      M4.2      10/30      06:54      <NA>
## 285       400        W90b       <NA>      <NA>      11/01      06:06      266
## 286      3400      N09E38      10696      M5.0      11/03      16:06      <NA>
## 287      1200      N09E45      10696      M1.6      11/03      03:54       91
## 288       700      N09E05      10696      M3.6      11/06      02:06      351
## 289        60      N09W17      10696      X2.0      11/07      16:54      <NA>
## 290      5000      N08W51      10696      M8.9      11/09      17:26      <NA>
## 291      1000      N09W49      10696      X2.5      11/10      02:26      <NA>
## 292        60      N08W02      10708      M1.5      12/03      00:26      <NA>
## 293      8000      N08W03      10709      C2.5      12/08      20:26      <NA>
## 294      4500      N04E62      10715      M2.3      12/29      16:45       71
## 295       700      N04E46      10715      M4.2      12/30      22:30      <NA>
## 296       450      N06E34      10715      X1.7      01/01      00:54      <NA>
## 297      6000      N05W11      10715      C7.3      <NA>       <NA>      <NA>
## 298       250      N16E04      10720      M8.6      01/15      06:30      <NA>
## 299        40      N15W05      10720      X2.6      01/15      23:06      <NA>
## 300        30      N15W25      10720      X2.0      01/17      09:30      <NA>
```

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## 301      40    N15W51   10720    X1.3   01/19   08:29   <NA>
## 302    1500    N15W25   10720    X3.8   01/17   09:54   <NA>
## 303      25    N14W61   10720    X7.1   01/20   06:54   <NA>
## 304    4000    BACK      <NA>    <NA>   02/01   11:06   <NA>
## 305    5500    S05E90   10758    C8.0   05/02   22:26    105
## 306    1500    S05E90   10758    <NA>   05/03   00:26     82
## 307    4000    S09E29   10758    C8.5   05/06   17:28   <NA>
## 308      40    N12E11   10759    M8.0   05/13   17:12   <NA>
## 309    1500    BACK      <NA>    <NA>   05/17   03:06    252
## 310     270    N15E90   10775    M1.0   06/03   12:32   <NA>
## 311    1000    N08W90   10775    M4.0   <NA>    <NA>    <NA>
## 312    2000    N09E03   10786    M4.9   07/07   17:06   <NA>
## 313     600    N12W28   10786    M2.8   07/09   22:30   <NA>
## 314    1000    N11W90   10786    M5.0   07/13   14:30   <NA>
## 315     800    N11W90   10786    X1.2   07/14   10:54   <NA>
## 316     300    BACK      <NA>    <NA>   07/17   11:30   <NA>
## 317     150    BACK      <NA>    <NA>   07/24   13:54   <NA>
## 318     700    BACK      <NA>    <NA>   07/24   22:30   <NA>
## 319     450    N11E90   10792    M3.7   07/27   04:54   <NA>
## 320    1000    NE90b     <NA>    <NA>   07/27   07:54     65
## 321      80    N12E60   10792    X1.3   07/30   06:50   <NA>
## 322    4500    N13E32   10792    M1.0   08/01   14:30     83
## 323     550    S11W54   10798    M2.6   08/22   01:31   <NA>
## 324      40    S13W65   10798    M5.6   08/22   17:30   <NA>
## 325     400    S14W90   10798    M2.7   08/23   14:54   <NA>
## 326    6000    BACK      <NA>    <NA>   08/29   10:54   <NA>
## 327     800    N13W13   10803    C2.0   08/31   11:30   <NA>
## 328    6000    BACK      <NA>    <NA>   08/31   22:30   <NA>
## 329     500    BACK      <NA>    <NA>   09/03   03:12   <NA>
## 330      60    S07E81    <NA>    C2.7   09/05   09:48   <NA>
## 331     200    S11E77   10808    X1.7   <NA>    <NA>    <NA>
## 332      50    S12E67   10808    X6.2   09/09   19:48   <NA>
## 333     300    S13E47   10808    X2.1   09/10   21:52   <NA>
## 334     350    S16E39   10808    M3.0   09/11   13:00   <NA>
## 335      35    S09E10   10808    X1.5   09/13   20:00   <NA>
## 336     200    S09E08   10876    C1.8   04/30   09:54   <NA>
## 337     300    S09W34   10898    M2.5   07/06   08:54   <NA>
## 338     400    S16W08   10904    C3.6   08/16   16:30   <NA>
## 339    2000    S10E08   10905    C2.5   08/26   20:57    164
## 340     400    E90b      <NA>    <NA>   11/05   17:54     39
## 341    6000    E90b      <NA>    <NA>   11/06   10:30     77
## 342     300    E90b      <NA>    C8.8   11/06   17:54   <NA>
## 343     250    S07E68   10930    X9.0   <NA>    <NA>    <NA>
## 344     200    S07E69   10930    M1.1   <NA>    <NA>    <NA>
## 345     600    S04E63   10930    M6.0   <NA>    <NA>    <NA>
## 346      30    S05E64   10930    X6.5   <NA>    <NA>    <NA>
## 347     150    S06W23   10930    X3.4   12/13   02:54   <NA>
## 348    1500    S06W46   10930    X1.5   12/14   22:30   <NA>
## 349      90    S08E90   10940    C6.3   01/25   06:54   <NA>
```

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## 350  13000   N07W06   10956    B9.5   05/19   13:24   260
## 351   6000   S08E81   10980    C8.3   12/31   01:31    92
## 352    800   S13E78   10989    M1.7   03/25   19:31    98
## 353   4900   N08E09    <NA>    B3.8   04/26   14:30    65
## 354    700   N20E36   11092    C3.2    <NA>    <NA>   <NA>
## 355    700   N11E34   11093    M1.0   08/07   18:36   <NA>
## 356    700   N18W88   11099    C4.5   08/18   05:48   255
## 357   3500     E90b    <NA>    <NA>   01/13   09:36    79
## 358   8000   N12W87   11149    C1.2   01/27   12:36   255
## 359   8000   S20E04   11158    M6.6   02/13   18:36   359
## 360    400   S20W12   11158    X2.2   02/15   02:24   <NA>
## 361    700   N15E87   11163    M3.5   02/24   07:48    70
## 362   7000   N10E18   11166    M1.9   03/07   14:48   354
## 363    200   N31W53   11164    M3.7   03/07   20:00   <NA>
## 364    900   N16E88    <NA>    C5.4   05/09   20:57    55
## 365     90   S19E72   11227    C8.7   05/29   21:24   107
## 366   4000   S19E25   11227    C3.7   06/02   08:12   <NA>
## 367    300     W90b   11222    <NA>   06/04   06:48   <NA>
## 368     25     W90b   11222    <NA>   06/04   22:05   <NA>
## 369    250   S21W54   11226    M2.5   06/07   06:49   <NA>
## 370   3000   N14W15   11261    M1.4   08/02   06:36   288
## 371     60   N19W36   11261    M9.3   08/04   04:12   <NA>
## 372    400   N16W61   11263    M3.5   08/08   18:12   305
## 373   4000   N17W69   11263    X6.9   08/09   08:12   <NA>
## 374    200   N14W07   11283    M5.3   09/06   02:24   <NA>
## 375    150   N14W18   11283    X2.1   09/06   23:05   <NA>
## 376     70   N09E89   11302    X1.4   09/22   10:48   <NA>
## 377    300   N10E56   11302    M7.1   09/24   12:48   <NA>
## 378   8000   N11E47   11302    M7.4   09/25   05:12    98
## 379   6500   N05W79   11319    M1.3   10/21   13:25   252
## 380    400   N24E35   11343    M1.1   11/09   13:36   <NA>
## 381     50   N17W49   11353    C1.2   11/26   07:12   <NA>
## 382    400     BACK    <NA>    <NA>   12/21   03:12   <NA>
## 383   7000   S22W26   11387    M4.0   12/25   18:48   247
## 384   4000     BACK    <NA>    <NA>   01/02   15:12   <NA>
## 385    100   N32E22   11402    M3.2   01/19   14:36   <NA>
## 386     40   N28W21   11402    M8.7   01/23   04:00   <NA>
## 387    150   N27W71   11402    X1.7   01/27   18:27   <NA>
## 388    400   N17E52   11429    X1.1   03/05   04:00   <NA>
## 389     30   N17E27   11429    X5.4   03/07   00:24   <NA>
## 390   1000   N15W03   11429    M6.3   03/09   04:26   <NA>
## 391     30   N17W24   11429    M8.4   03/10   18:00   <NA>
## 392    200   N17W66   11429    M7.9   03/13   17:36   <NA>
## 393    200     BACK    <NA>    <NA>   03/18   00:24   <NA>
## 394    300     BACK    <NA>    <NA>   03/24   00:24   <NA>
## 395   1500     BACK    <NA>    <NA>   03/26   23:12   <NA>
## 396   1500     BACK    <NA>    <NA>   03/27   22:00   261
## 397   5000   N20W65   11451    C3.9   04/09   12:36   <NA>
## 398   4000   N10E90   11461    C1.7   04/15   02:24    79
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## 399       300    N11W76     11476      M5.1     05/17     01:48     <NA>
## 400      8000    N14W34     11513      M1.8     07/04     17:24     <NA>
## 401       800    S12W46     11515      M1.6     07/05     22:00      220
## 402       300    S13W59     11515      X1.1     07/06     23:24     <NA>
## 403       300    S17W74     11515      M6.9     07/08     16:54      212
## 404       250    S15W01     11520      X1.4     07/12     16:48     <NA>
## 405       150    S28W65     11520      C9.9     07/17     13:48      255
## 406       600    S13W88     11520      M7.7     07/19     05:24     <NA>
## 407        20    S17W132    11520      <NA>     07/23     02:36     <NA>
## 408       400    S25E59     11563      C8.1     08/31     20:00     <NA>
## 409       250    N06W34     11577      C3.7     09/28     00:12     <NA>
## 410       200    S10E76     11598      M1.3     10/21     20:57       83
## 411       200    S33W64     11650      C2.2     01/16     19:00      211
## 412       100    N11E12     11692      M1.1     03/15     07:12     <NA>
## 413       200    N09E12     11719      M6.5     04/11     07:24     <NA>
## 414      4000    N11W83     11719      C6.5     04/18     18:24      284
## 415      1700    S19W53     11723      C2.7     04/21     20:36      255
## 416      2000    N11E90     11748      X1.7     05/13     02:00     <NA>
## 417       300    N11E85     11748      X2.8     05/13     16:07     <NA>
## 418       700    N08E77     11748      X3.2     05/14     01:25     <NA>
## 419       250    N12E64     11748      X1.2     05/15     01:48     <NA>
## 420       150    N15W70     11745      M5.0     05/22     13:25     <NA>
## 421      2000    S16E73     11777      M2.9     06/21     03:12      123
## 422       400    S18W19     11777      C4.4     06/28     02:00     <NA>
## 423      2900    S14E62     11787      C6.8     07/04     20:12      111
## 424     11000    N27E25        EP      B4.5     08/06     02:12       48
## 425       150    S05W30     11818      M1.4     08/17     19:12     <NA>
## 426        50    N15E46     11836      C8.3     08/30     02:48     <NA>
## 427      2000    N10E104      DIM      <NA>     09/06     20:48       90
## 428        60    N17W29        EP      C1.3     09/29     22:12     <NA>
## 429      5200    N20W85       DIM      C1.2     10/02     20:36      309
## 430       200    S22E118    11865      <NA>     10/05     07:09     <NA>
## 431       100    N21E103    11869      <NA>     10/11     07:24     <NA>
## 432       600      <NA>      <NA>      <NA>     10/13     14:12     <NA>
## 433       650    N04W01     11875      M4.2     10/22     21:48     <NA>
## 434       200    S06E69     11882      X2.1     10/25     15:12     <NA>
## 435       200    N09W44     11875      C4.5     10/26     03:12      271
## 436      5000    N08W49     11875      M1.3     10/26     09:48      286
## 437      1700    N06W70     11875      C9.1     10/27     18:12      308
## 438       200    N08W71     11875      M5.1     10/28     04:48      315
## 439      9000    S06E28     11882      M4.4     10/28     15:36     <NA>
## 440       450    N03W165    11875      <NA>     11/04     05:12     <NA>
## 441       100    N02E151    11899      <NA>     11/07     10:36     <NA>
## 442       100    S14W70     11893      X1.0     11/19     10:36     <NA>
## 443       100    N06W183    11899      <NA>     11/29     17:24      251
## 444      1600    S20E119      DIM      <NA>     12/05     10:24      133
## 445      2500      <NA>      <NA>      <NA>      <NA>      <NA>     <NA>
## 446      3000    S16W49     11909      M1.2     12/07     07:36     <NA>
## 447        70    S23W46     11912      C4.6     12/12     03:36      214
```

```
## 448     400     <NA>       <NA>     <NA>    12/20    04:36    255
## 449     500     S15W125    11928    <NA>    12/28    17:36    <NA>
## 450     100     <NA>       <NA>     <NA>    <NA>     <NA>     <NA>
## 451     100     <NA>       <NA>     <NA>    <NA>     <NA>     <NA>
## 452      80     S15W112    11936    <NA>    01/06    08:00    <NA>
## 453      60     S15W11     11943    X1.2    01/07    18:24    <NA>
## 454    8000     S07E67     DIM      C3.6    01/20    22:00    <NA>
## 455     900     S24W43     EP       <NA>    02/18    01:36    <NA>
## 456    7700     S15W73     11976    M3.0    02/20    08:00    <NA>
## 457     100     S13E82     11990    X4.9    02/25    01:25    <NA>
## 458    2000     N13W170    12005    <NA>    03/04    18:48    <NA>
## 459     500     N14E180    <NA>     <NA>    03/05    13:48    <NA>
## 460     400     S23W130    EP       <NA>    03/25    05:36    261
## 461    2200     N11W23     12017    M2.6    03/28    23:48    325
## 462     200     S08W152    12011    <NA>    03/29    18:12    <NA>
## 463      60     N11E53     12027    M6.5    04/02    13:36    <NA>
## 464     200     <NA>       <NA>     <NA>    <NA>     <NA>     <NA>
## 465   11000     N13E26     12027    C8.3    04/04    14:12     54
## 466     150     S20W34     12036    M7.3    04/18    13:25    <NA>
## 467     200     N11E53     12027    <NA>    05/07    16:24    <NA>
## 468    1100     S09W108    12051    <NA>    05/08    03:24    <NA>
## 469     500     S11W122    12051    <NA>    05/09    02:48    <NA>
## 470     400     S11W136    12051    <NA>    05/10    04:36    <NA>
## 471    1000     S17E82     12087    X1.5    06/10    13:30    <NA>
## 472    6000     S20W55     12085    M3.1    06/12    22:12    233
## 473    4500     N10E30     EP?      C1.5    07/30    07:00     13
## 474     150     S10E11     12127    M1.5    08/01    18:36    <NA>
## 475    6000     N12E01     12146    C2.2    08/22    11:12    <NA>
## 476    4000     N05W36     12146    M2.0    08/25    15:36    <NA>
## 477    7200     N07W43     12146    M3.9    08/25    20:48    273
## 478     600     S19E162    12157    <NA>    08/28    17:24    <NA>
## 479     600     N14E127    12158    <NA>    09/01    11:12    <NA>
## 480     100     N12E29     12158    M4.5    09/09    00:06    <NA>
## 481     100     N14E02     12158    X1.6    09/10    18:00    <NA>
## 482    9700     S11W89     12164    <NA>    09/20    05:24    292
## 483    4900     N14W142    12158    <NA>    09/22    06:12    342
## 484   12000     S13E33     12172    M2.3    09/23    23:36    109
## 485     500     N13E179    EP       <NA>    09/24    21:30    <NA>
## 486    1900     S17W82     12173    M7.3    10/02    19:12    264
## 487    1500     S20W51     EP       C3.0    10/10    16:12    309
## 488    8900     S18E36     12192    C4.4    10/21    12:48    152
## 489    7800     W90b       12203    <NA>    11/08    16:36    305
## 490    3900     W90b       <NA>     <NA>    12/13    14:24    <NA>
## 491    2100     S11E33     12241    M1.1    12/17    02:00    107
## 492   11500     S20E09     12242    M8.7    12/17    05:00    <NA>
## 493    1300     S11E15     12241    M6.9    12/19    01:04    <NA>
## 494    7400     S14W25     12241    M1.0    12/21    12:12    <NA>
## 495    3600     W90b       12290    M8.2    03/03    01:48    329
## 496     200     S20E87     12297    M1.5    03/06    07:12     83
```

```
## 497    6200   S18E45   12297     M5.8   03/10   00:00    <NA>
## 498     250   S15E23   12297     M2.6   03/11   08:24      62
## 499     400   SW90b    <NA>      <NA>   03/24   08:24    <NA>
## 500    4600    W90b    <NA>      <NA>   04/26   03:24    <NA>
## 501     500   N15E79   12339     X2.7   05/05   22:24    <NA>
## 502    6400    W90b    <NA>      <NA>   05/12   02:48     286
## 503     200   S03E25   12364     C2.8   06/09   20:12      77
## 504    1250   S12W34   12365     C5.9   06/14   04:12     199
## 505     500   N15E50   12371     M3.0   06/18   17:24    <NA>
## 506     150   N12E13   12371     M2.0   06/21   02:36    <NA>
## 507     300   N12W08   12371     M6.5   06/22   18:36    <NA>
## 508     150   N09W42   12371     M7.9   06/25   08:36    <NA>
## 509     150    W90b    <NA>      <NA>   07/01   14:36    <NA>
## 510    7300   S15E13   12403     M1.2   08/22   07:12    <NA>
## 511     400   S21W10   12415     C2.6   09/18   05:00     201
## 512     300   S20W24   12415     M2.1   09/20   18:12    <NA>
## 513     440   N09W04   12443     M3.7   11/04   14:48    <NA>
## 514    9000   S11E41   12449     M3.9   11/09   13:25     142
## 515    3800   S13W04   12468     C6.6   12/16   09:36    <NA>
## 516    6700   S22E63   12473     M4.7   12/23   01:25      98
## 517     180   S23W11   12473     M1.8   12/28   12:12    <NA>
## 518     300   S25W82   12473     M2.3   01/01   23:24    <NA>
## 519     500    <NA>    <NA>      <NA>    <NA>    <NA>    <NA>
## 520    1900    <NA>    <NA>      <NA>   02/05   21:24     193
## 521   10500   N06W61   12535     C1.3   05/04   14:12     255
## 522     700    <NA>    <NA>      <NA>    <NA>    <NA>    <NA>
## 523    3400    <NA>    <NA>      <NA>   08/15   17:24      75
## 524    <NA>    <NA>    <NA>      <NA>    <NA>    <NA>    <NA>
## 525    <NA>    <NA>    <NA>      <NA>    <NA>    <NA>    <NA>
##     CME_width CME_speed Plots Halo Lower_bound
## 1        <NA>      <NA>  <NA>   No          NA
## 2        <NA>      <NA>  <NA>   No          NA
## 3         and             <NA>   No          NA
## 4        <NA>      <NA>  <NA>   No          NA
## 5        <NA>      <NA>  <NA>   No          NA
## 6        <NA>      <NA>  <NA>   No          NA
## 7        <NA>      <NA>  <NA>   No          NA
## 8        <NA>      <NA>  <NA>   No          NA
## 9        <NA>      <NA>  <NA>   No          NA
## 10       <NA>      <NA>  <NA>   No          NA
## 11       (13)      (14)  (15)   No          NA
## 12       <NA>      <NA>  <NA>   No          NA
## 13         79       312  PHTX   No          NA
## 14        360       878  PHTX  Yes          NA
## 15        360       464  PHTX  Yes          NA
## 16        165       296  PHTX   No          NA
## 17        155       712  PHTX   No          NA
## 18        109       227  PHTX   No          NA
## 19        122       352  PHTX   No          NA
```

```
## 20     360    785  PHTX  Yes        NA
## 21     360   1556  PHTX  Yes        NA
## 22      91    441  PHTX   No        NA
## 23      73    191  PHTX   No        NA
## 24     360    693  PHTX  Yes        NA
## 25     360   1397  PHTX  Yes        NA
## 26     165   1863  PHTX   No        NA
## 27     360   1691  PHTX  Yes        NA
## 28      84   1184  PHTX   No        NA
## 29     360   1385  PHTX  Yes        NA
## 30     360   1374  PHTX  Yes        NA
## 31     360    938  PHTX  Yes        NA
## 32     190   1099  PHTX   No        NA
## 33     178   2331  PHTX   No        NA
## 34    >301    830  PHTX   No        NA
## 35     139    801  PHTX   No        NA
## 36     268    878  PHTX   No        NA
## 37     177   1223  PHTX   No        NA
## 38     281   1484  PHTX   No        NA
## 39     360    964  PHTX  Yes        NA
## 40      59    206  PHTX   No        NA
## 41     169    661  PHTX   No        NA
## 42     360   1118  PHTX  Yes        NA
## 43    >160    405  PHTX   No        NA
## 44      19    381  PHTX   No        NA
## 45     196    559  PHTX   No        NA
## 46     360   1749  PHTX  Yes        NA
## 47     360   1495  PHTX  Yes        NA
## 48     360   1584  PHTX  Yes        NA
## 49     360   1691  PHTX  Yes        NA
## 50     360   1772  PHTX  Yes        NA
## 51     150   2230  PHTX   No        NA
## 52    >181   1569  PHTX   No        NA
## 53     360   1133  PHTX  Yes        NA
## 54    >154    450  PHTX   No        NA
## 55     360   1006  PHTX  Yes        NA
## 56    >184    903  PHTX   No        NA
## 57     360    560  PHTX  Yes        NA
## 58     190    670  PHTX   No        NA
## 59     245    462  PHTX   No        NA
## 60     175    512  PHTX   No        NA
## 61     125   1467  PHTX   No        NA
## 62     360   1250  PHTX  Yes        NA
## 63      87    247  PHTX   No        NA
## 64      98    636  PHTX   No        NA
## 65     129    712  PHTX   No        NA
## 66     360    739  PHTX  Yes        NA
## 67     360   1177  PHTX  Yes        NA
## 68      76    632  PHTX   No        NA
```

```
## 69    360   1079  PHTX  Yes        NA
## 70    360    944  PHTX  Yes        NA
## 71    360   1107  PHTX  Yes        NA
## 72    360    728  PHTX  Yes        NA
## 73    118    890  PHTX   No        NA
## 74     76    835  PHTX   No        NA
## 75    108    644  PHTX   No        NA
## 76     90    487  PHTX   No        NA
## 77    360   1188  PHTX  Yes        NA
## 78    360    409  PHTX  Yes        NA
## 79    105    668  PHTX   No        NA
## 80   >170   1404  PHTX   No        NA
## 81    360   1594  PHTX  Yes        NA
## 82    360   1781  PHTX  Yes        NA
## 83    360   2604  PHTX  Yes        NA
## 84   >165   1212  PHTX   No        NA
## 85    104    547  PHTX   No        NA
## 86    360   1119  PHTX  Yes        NA
## 87    360   1108  PHTX  Yes        NA
## 88    116   1081  PHTX   No        NA
## 89    133    857  PHTX   No        NA
## 90     49    459  PHTX   No        NA
## 91   >198    847  PHTX   No        NA
## 92    165   1617  PHTX   No        NA
## 93   >289   1352  PHTX   No        NA
## 94    360   1078  PHTX  Yes        NA
## 95    101    820  PHTX   No        NA
## 96    360   1674  PHTX  Yes        NA
## 97   >229   1230  PHTX   No        NA
## 98     70   1071  PHTX   No        NA
## 99    360   1550  PHTX  Yes        NA
## 100   360   1053  PHTX  Yes        NA
## 101   360   1215  PHTX  Yes        NA
## 102    76    766  PHTX   No        NA
## 103   360    587  PHTX  Yes        NA
## 104    86   1046  PHTX   No        NA
## 105   360   1336  PHTX  Yes        NA
## 106   360    770  PHTX  Yes        NA
## 107   360    291  PHTX  Yes        NA
## 108  >170   1738  PHTX   No        NA
## 109  <NA>   <NA>  PHTX   No        NA
## 110    50    581  PHTX   No        NA
## 111   360    492  PHTX  Yes        NA
## 112   148   1198  PHTX   No        NA
## 113   360   1289  PHTX  Yes        NA
## 114   360   1245  PHTX  Yes        NA
## 115   360   1005  PHTX  Yes        NA
## 116   360   2519  PHTX  Yes        NA
## 117   360    671  PHTX  Yes        NA
```

```
## 118      59     388  PHTX   No        NA
## 119     360     980  PHTX  Yes        NA
## 120     360     930  PHTX  Yes        NA
## 121     360     839  PHTX  Yes        NA
## 122     360    1507  PHTX  Yes        NA
## 123     176     928  PHTX   No        NA
## 124     360     916  PHTX  Yes        NA
## 125     360    1183  PHTX  Yes        NA
## 126      81     819  PHTX   No        NA
## 127      48     829  PHTX   No        NA
## 128      60     300  PHTX   No        NA
## 129      66     340  PHTX   No        NA
## 130     360     942  PHTX  Yes        NA
## 131      80     992  PHTX   No        NA
## 132     244    2505  PHTX   No        NA
## 133     292    1613  PHTX   No        NA
## 134      89    1065  PHTX   No        NA
## 135     205    1750  PHTX   No        NA
## 136     360    1270  PHTX  Yes        NA
## 137     360    1192  PHTX  Yes        NA
## 138     360    2411  PHTX  Yes        NA
## 139     360    1103  PHTX  Yes        NA
## 140     360    1184  PHTX  Yes        NA
## 141     167    1199  PHTX   No        NA
## 142     360    2465  PHTX  Yes        NA
## 143     360    1006  PHTX  Yes        NA
## 144     205    1223  PHTX   No        NA
## 145     132     527  PHTX   No        NA
## 146     216    2087  PHTX   No        NA
## 147     119    1090  PHTX   No        NA
## 148     360    1701  PHTX  Yes        NA
## 149     360    1575  PHTX  Yes        NA
## 150     360    1433  PHTX  Yes        NA
## 151      76     351  PHTX   No        NA
## 152     207    1352  PHTX   No        NA
## 153     130     478  PHTX   No        NA
## 154      68     584  PHTX   No        NA
## 155     166    1009  PHTX   No        NA
## 156     207     446  PHTX   No        NA
## 157     360    2402  PHTX  Yes        NA
## 158     138     669  PHTX   No        NA
## 159     360    1405  PHTX  Yes        NA
## 160     360    1537  PHTX  Yes        NA
## 161     360     973  PHTX  Yes        NA
## 162    <NA>    <NA>  PHTX   No        NA
## 163    <NA>    <NA>  PHTX   No        NA
## 164     360     558  PHTX  Yes        NA
## 165     360     901  PHTX  Yes        NA
## 166     360    1336  PHTX  Yes        NA
```

```
## 167    360    1092  PHTX   Yes        NA
## 168    360    1810  PHTX   Yes        NA
## 169    360    1379  PHTX   Yes        NA
## 170    360    1443  PHTX   Yes        NA
## 171    360    1437  PHTX   Yes        NA
## 172    121     891  PHTX    No        NA
## 173    360    1773  PHTX   Yes        NA
## 174   >212    1446  PHTX    No        NA
## 175    360    2216  PHTX   Yes        NA
## 176   >211     819  PHTX    No        NA
## 177    360    1794  PHTX   Yes        NA
## 178    360    1492  PHTX   Yes        NA
## 179    360    1136  PHTX   Yes        NA
## 180     89     448  PHTX    No        NA
## 181    108     358  PHTX    No        NA
## 182    360    1429  PHTX   Yes        NA
## 183    360     950  PHTX   Yes        NA
## 184    360     957  PHTX   Yes        NA
## 185     56     658  PHTX    No        NA
## 186    360     989  PHTX   Yes        NA
## 187    360    1750  PHTX   Yes        NA
## 188    120     875  PHTX    No        NA
## 189    159     650  PHTX    No        NA
## 190     76     757  PHTX    No        NA
## 191    360     720  PHTX   Yes        NA
## 192    360    1240  PHTX   Yes        NA
## 193    360    2393  PHTX   Yes        NA
## 194     90     618  PHTX    No        NA
## 195    199    1103  PHTX    No        NA
## 196     99     902  PHTX    No        NA
## 197    360     600  PHTX   Yes        NA
## 198    186    1246  PHTX    No        NA
## 199   >161    1106  PHTX    No        NA
## 200   >228    1423  PHTX    No        NA
## 201    360    1076  PHTX   Yes        NA
## 202   >188    1300  PHTX    No        NA
## 203    177     716  PHTX    No        NA
## 204    360    1099  PHTX   Yes        NA
## 205    360    2191  PHTX   Yes        NA
## 206    360    2047  PHTX   Yes        NA
## 207    360    1941  PHTX   Yes        NA
## 208    360    2285  PHTX   Yes        NA
## 209    360     818  PHTX   Yes        NA
## 210   >236     562  PHTX    No        NA
## 211    138    1150  PHTX    No        NA
## 212    133    1309  PHTX    No        NA
## 213    162    1378  PHTX    No        NA
## 214    360    1585  PHTX   Yes        NA
## 215    360    1913  PHTX   Yes        NA
```

```
## 216     360     1748    PHTX    Yes         NA
## 217      38      273    PHTX    No          NA
## 218      64      591    PHTX    No          NA
## 219     141      373    PHTX    No          NA
## 220     264     1009    PHTX    No          NA
## 221     360     1694    PHTX    Yes         NA
## 222     360     2115    PHTX    Yes         NA
## 223     360     1838    PHTX    Yes         NA
## 224     282     1670    PHTX    No          NA
## 225      93     1083    PHTX    No          NA
## 226     360     1077    PHTX    Yes         NA
## 227     360     1092    PHTX    Yes         NA
## 228     272     1071    PHTX    No          NA
## 229     105      733    PHTX    No          NA
## 230     267     1053    PHTX    No          NA
## 231     209     1601    PHTX    No          NA
## 232     360     1042    PHTX    Yes         NA
## 233     360     1342    PHTX    Yes         NA
## 234     171      918    PHTX    No          NA
## 235     360      964    PHTX    Yes         NA
## 236     360     1366    PHTX    Yes         NA
## 237     360     1237    PHTX    Yes         NA
## 238     360     1835    PHTX    Yes         NA
## 239     239     1458    PHTX    No          NA
## 240     360     2053    PHTX    Yes         NA
## 241     360     1813    PHTX    Yes         NA
## 242    <NA>     <NA>    PHTX    No          NA
## 243     111      468    PHTX    No          NA
## 244     360     1484    PHTX    Yes         NA
## 245    >207     1371    PHTX    No          NA
## 246    >171     1537    PHTX    No          NA
## 247     360     2459    PHTX    Yes         NA
## 248     360     2029    PHTX    Yes         NA
## 249     >93      899    PHTX    No          NA
## 250     360     2036    PHTX    Yes         NA
## 251     360     2598    PHTX    Yes         NA
## 252      65      827    PHTX    No          NA
## 253     103     1420    PHTX    No          NA
## 254     360     1208    PHTX    Yes         NA
## 255     360     2657    PHTX    Yes         NA
## 256     360     2008    PHTX    Yes         NA
## 257     360     1359    PHTX    Yes         NA
## 258     217     1141    PHTX    No          NA
## 259    >242     1061    PHTX    No          NA
## 260     360     1660    PHTX    Yes         NA
## 261    >197     1824    PHTX    No          NA
## 262    >150     1393    PHTX    No          NA
## 263    <NA>     <NA>    PHTX    No          NA
## 264     166     1469    PHTX    No          NA
```

```
## 265      171     1581   PHTX    No      NA
## 266      182     1822   PHTX    No      NA
## 267      360     1368   PHTX    Yes     NA
## 268      360     1068   PHTX    Yes     NA
## 269       92      959   PHTX    No      NA
## 270      314     1645   PHTX    No      NA
## 271      136     1102   PHTX    No      NA
## 272      179     1226   PHTX    No      NA
## 273     >273     1306   PHTX    No      NA
## 274     <NA>     <NA>   PHTX    No      NA
## 275     <NA>     <NA>   PHTX    No      NA
## 276      100      874   PHTX    No      NA
## 277      360     1333   PHTX    Yes     NA
## 278      360     1180   PHTX    Yes     NA
## 279     >197     1192   PHTX    No      NA
## 280      360     1004   PHTX    Yes     NA
## 281      360     1328   PHTX    Yes     NA
## 282     <NA>     <NA>   PHTX    No      NA
## 283     >109      417   PHTX    No      NA
## 284      360      422   PHTX    Yes     NA
## 285      146      925   PHTX    No      NA
## 286      360     1068   PHTX    Yes     NA
## 287     >239      918   PHTX    No      NA
## 288     >214     1111   PHTX    No      NA
## 289      360     1759   PHTX    Yes     NA
## 290      360     2000   PHTX    Yes     NA
## 291      360     3387   PHTX    Yes     NA
## 292      360     1216   PHTX    Yes     NA
## 293      360      611   PHTX    Yes     NA
## 294      140      774   PHTX    No      NA
## 295      360     1035   PHTX    Yes     NA
## 296      360      832   PHTX    Yes     NA
## 297     <NA>     <NA>   PHTX    No      NA
## 298      360     2049   PHTX    Yes     NA
## 299      360     2861   PHTX    Yes     NA
## 300      360     2094   PHTX    Yes     NA
## 301      360     2020   PHTX    Yes     NA
## 302      360     2547   PHTX    Yes     NA
## 303      360      882   PHTX    Yes     NA
## 304      360     1380   PHTX    Yes     NA
## 305      148      955   PHTX    No      NA
## 306      >66      978   PHTX    No      NA
## 307      360     1128   PHTX    Yes     NA
## 308      360     1689   PHTX    Yes     NA
## 309       89      311   PHTX    No      NA
## 310      360     1679   PHTX    Yes     NA
## 311     <NA>     <NA>   PHTX    No      NA
## 312      360      683   PHTX    Yes     NA
## 313      360     1540   PHTX    Yes     NA
```

```
## 314    360   1423  PHTX  Yes   NA
## 315    360   2115  PHTX  Yes   NA
## 316    360   1527  PHTX  Yes   NA
## 317    360   2528  PHTX  Yes   NA
## 318    360   1234  PHTX  Yes   NA
## 319    360   1787  PHTX  Yes   NA
## 320     51    533  PHTX   No   NA
## 321    360   1968  PHTX  Yes   NA
## 322     93    984  PHTX   No   NA
## 323    360   1194  PHTX  Yes   NA
## 324    360   2378  PHTX  Yes   NA
## 325    360   1929  PHTX  Yes   NA
## 326    360   1600  PHTX  Yes   NA
## 327    360    825  PHTX  Yes   NA
## 328    360   1808  PHTX  Yes   NA
## 329    360   1672  PHTX  Yes   NA
## 330    360   2326  PHTX  Yes   NA
## 331   <NA>  <NA>  PHTX   No   NA
## 332    360   2257  PHTX  Yes   NA
## 333    360   1893  PHTX  Yes   NA
## 334    360   1922  PHTX  Yes   NA
## 335    360   1866  PHTX  Yes   NA
## 336    360    544  PHTX  Yes   NA
## 337    360    911  PHTX  Yes   NA
## 338    360    888  PHTX  Yes   NA
## 339    208    786  PHTX   No   NA
## 340    196   1398  PHTX   No   NA
## 341     55    829  PHTX   No   NA
## 342    360   1994  PHTX  Yes   NA
## 343   <NA>  <NA>  PHTX   No   NA
## 344   <NA>  <NA>  PHTX   No   NA
## 345   <NA>  <NA>  PHTX   No   NA
## 346   <NA>  <NA>  PHTX   No   NA
## 347    360   1774  PHTX  Yes   NA
## 348    360   1042  PHTX  Yes   NA
## 349    360   1367  PHTX  Yes   NA
## 350    106    958  PHTX   No   NA
## 351    164    995  PHTX   No   NA
## 352    112   1103  PHTX   No   NA
## 353    281    515  PHTX   No   NA
## 354   <NA>  <NA>  PHTX   No   NA
## 355    360    871  PHTX  Yes   NA
## 356    184   1471  PHTX   No   NA
## 357    122    664  PHTX   No   NA
## 358     43    349  PHTX   No   NA
## 359    276    373  PHTX   No   NA
## 360    360    669  PHTX  Yes   NA
## 361    158   1186  PHTX   No   NA
## 362    261    698  PHTX   No   NA
```

```
## 363    360    2125    PHTX    Yes    NA
## 364    292    1318    PHTX    No     NA
## 365    186    1407    PHTX    No     NA
## 366    360     976    PHTX    Yes    NA
## 367    360    1407    PHTX    Yes    NA
## 368    360    2425    PHTX    Yes    NA
## 369    360    1255    PHTX    Yes    NA
## 370    268     712    PHTX    No     NA
## 371    360    1315    PHTX    Yes    NA
## 372    237    1343    PHTX    No     NA
## 373    360    1610    PHTX    Yes    NA
## 374    360     782    PHTX    Yes    NA
## 375    360     575    PHTX    Yes    NA
## 376    360    1905    PHTX    Yes    NA
## 377    360    1915    PHTX    Yes    NA
## 378    193     788    PHTX    No     NA
## 379    109     317    PHTX    No     NA
## 380    360     907    PHTX    Yes    NA
## 381    360     933    PHTX    Yes    NA
## 382    360    1064    PHTX    Yes    NA
## 383    125     366    PHTX    No     NA
## 384    360    1138    PHTX    Yes    NA
## 385    360    1120    PHTX    Yes    NA
## 386    360    2175    PHTX    Yes    NA
## 387    360    2508    PHTX    Yes    NA
## 388    360    1531    PHTX    Yes    NA
## 389    360    2684    PHTX    Yes    NA
## 390    360     950    PHTX    Yes    NA
## 391    360    1296    PHTX    Yes    NA
## 392    360    1884    PHTX    Yes    NA
## 393    360    1210    PHTX    Yes    NA
## 394    360    1152    PHTX    Yes    NA
## 395    360    1390    PHTX    Yes    NA
## 396    101     622    PHTX    No     NA
## 397    360     921    PHTX    Yes    NA
## 398    173    1220    PHTX    No     NA
## 399    360    1582    PHTX    Yes    NA
## 400    360     662    PHTX    Yes    NA
## 401     94     980    PHTX    No     NA
## 402    360    1828    PHTX    Yes    NA
## 403    157    1495    PHTX    No     NA
## 404    360     885    PHTX    Yes    NA
## 405    176     958    PHTX    No     NA
## 406    360    1631    PHTX    Yes    NA
## 407    360    2003    PHTX    Yes    NA
## 408    360    1442    PHTX    Yes    NA
## 409    360     947    PHTX    Yes    NA
## 410    243     496    PHTX    No     NA
## 411    250     648    PHTX    No     NA
```

```
## 412    360    1063    PHTX    Yes    NA
## 413    360     861    PHTX    Yes    NA
## 414    199     495    PHTX     No    NA
## 415    212     562    PHTX     No    NA
## 416    360    1270    PHTX    Yes    NA
## 417    360    1850    PHTX    Yes    NA
## 418    360    2625    PHTX    Yes    NA
## 419    360    1366    PHTX    Yes    NA
## 420    360    1466    PHTX    Yes    NA
## 421   >207    1900    PHTX     No    NA
## 422    360    1037    PHTX    Yes    NA
## 423    188     468    PHTX     No    NA
## 424    207     441    PHTX     No    NA
## 425    360    1202    PHTX    Yes    NA
## 426    360     949    PHTX    Yes    NA
## 427    182     734    PHTX     No    NA
## 428    360    1179    PHTX    Yes    NA
## 429    263     619    PHTX     No    NA
## 430    360     964    PHTX    Yes    NA
## 431    360    1200    PHTX    Yes    NA
## 432     83     293    PHTX     No    NA
## 433    360     459    PHTX    Yes    NA
## 434    360    1081    PHTX    Yes    NA
## 435    208     473    PHTX     No    NA
## 436    141     460    PHTX     No    NA
## 437    189     795    PHTX     No    NA
## 438    156    1201    PHTX     No    NA
## 439    360     812    PHTX    Yes    NA
## 440    360    1040    PHTX    Yes    NA
## 441    360    1405    PHTX    Yes    NA
## 442    360     740    PHTX    Yes    NA
## 443    188     465    PHTX     No    NA
## 444    148     549    PHTX     No    NA
## 445    ---    <NA>    PHTX     No    NA
## 446    360    1085    PHTX    Yes    NA
## 447    276    1002    PHTX     No    NA
## 448     26     337    PHTX     No    NA
## 449    360    1118    PHTX    Yes    NA
## 450    ---    <NA>    PHTX     No    NA
## 451    ---    <NA>    PHTX     No    NA
## 452    360    1402    PHTX    Yes    NA
## 453    360    1830    PHTX    Yes    NA
## 454    360     721    PHTX    Yes    NA
## 455    360     779    PHTX    Yes    NA
## 456    360     948    PHTX    Yes    NA
## 457    360    2147    PHTX    Yes    NA
## 458    360     794    PHTX    Yes    NA
## 459    360     828    PHTX    Yes    NA
## 460    223     651    PHTX     No    NA
```

```
## 461      138      514    PHTX    No        NA
## 462      360      528    PHTX    Yes       NA
## 463      360     1471    PHTX    Yes       NA
## 464      ---     <NA>    PHTX    No        NA
## 465       96      467    PHTX    No        NA
## 466      360     1203    PHTX    Yes       NA
## 467      360      923    PHTX    Yes       NA
## 468      360      847    PHTX    Yes       NA
## 469      360     1099    PHTX    Yes       NA
## 470      360     1086    PHTX    Yes       NA
## 471      360     1469    PHTX    Yes       NA
## 472      186      684    PHTX    No        NA
## 473      254      700    PHTX    No        NA
## 474     360h      789    PHTX    Yes       NA
## 475      360      600    PHTX    Yes       NA
## 476      360      555    PHTX    Yes       NA
## 477      177      711    PHTX    No        NA
## 478      360      766    PHTX    Yes       NA
## 479      360     1901    PHTX    Yes       NA
## 480      360      920    PHTX    Yes       NA
## 481      360     1267    PHTX    Yes       NA
## 482       87      426    PHTX    No        NA
## 483      252      618    PHTX    No        NA
## 484      134      331    PHTX    No        NA
## 485      360     1350    PHTX    Yes       NA
## 486      159      513    PHTX    No        NA
## 487     >210      782    PHTX    No        NA
## 488      142      260    PHTX    No        NA
## 489      141      426    PHTX    No        NA
## 490      360     2222    PHTX    Yes       NA
## 491      108      869    PHTX    No        NA
## 492      360      587    PHTX    Yes       NA
## 493      360     1195    PHTX    Yes       NA
## 494      360      669    PHTX    Yes       NA
## 495      213      764    PHTX    No        NA
## 496      155      880    PHTX    No        NA
## 497      360      995    PHTX    Yes       NA
## 498       93      530    PHTX    No        NA
## 499      360     1794    PHTX    Yes       NA
## 500      360      820    PHTX    Yes       NA
## 501      360      715    PHTX    Yes       NA
## 502      250      772    PHTX    No        NA
## 503      262     1036    PHTX    No        NA
## 504      195     1228    PHTX    No        NA
## 505      360     1305    PHTX    Yes       NA
## 506      360     1366    PHTX    Yes       NA
## 507      360     1209    PHTX    Yes       NA
## 508      360     1627    PHTX    Yes       NA
## 509      360     1435    PHTX    Yes       NA
```

```
## 510       360       547   PHTX   Yes        NA
## 511       131       823   PHTX    No        NA
## 512       360      1239   PHTX   Yes        NA
## 513       360       578   PHTX   Yes        NA
## 514       273      1041   PHTX    No        NA
## 515       360       579   PHTX   Yes        NA
## 516        89       520   PHTX    No        NA
## 517       360      1212   PHTX   Yes        NA
## 518       360      1730   PHTX   Yes        NA
## 519       ---      <NA>   PHTX    No        NA
## 520       155       445   PHTX    No        NA
## 521       134       390   PHTX    No        NA
## 522       ---      <NA>   PHTX    No        NA
## 523        98       633   PHTX    No        NA
## 524      <NA>      <NA>   <NA>    No        NA
## 525      <NA>      <NA>   <NA>    No        NA
```

```
NASA$Lower_bound[grepl(">", NASA$CME_width)] <- "Yes"
NASA[c("Lower_bound")][is.na(NASA[c("Lower_bound")])] <- "No"
NASA$CME_width[grepl(">", NASA$CME_width)] <- NASA$CME_width
```

```
## Warning in NASA$CME_width[grepl(">", NASA$CME_width)] <- NASA$CME_width:
## number of items to replace is not a multiple of replacement length
```

```
NASA <- tail(NASA, 513) %>%
  head(511)
NASA
```

```
##       start_date start_time end_date end_time start_freq end_freq Location
## 13   1997/04/01      14:00    04/01    14:15       8000     4000   S25E16
## 14   1997/04/07      14:30    04/07    17:30      11000     1000   S28E19
## 15   1997/05/12      05:15    05/14    16:00      12000       80   N21W08
## 16   1997/05/21      20:20    05/21    22:00       5000      500   N05W12
## 17   1997/09/23      21:53    09/23    22:16       6000     2000   S29E25
## 18   1997/11/03      05:15    11/03    12:00      14000      250   S20W13
## 19   1997/11/03      10:30    11/03    11:30      14000     5000   S16W21
## 20   1997/11/04      06:00    11/05    04:30      14000      100   S14W33
## 21   1997/11/06      12:20    11/07    08:30      14000      100   S18W63
## 22   1997/11/27      13:30    11/27    14:00      14000     7000   N17E63
## 23   1997/12/12      22:45    12/12    23:20      14000     8000   N25W52
## 24   1998/01/25      15:03    01/25    15:18      14000    10000   N21E25
## 25   1998/03/29      03:40    03/29    03:52      14000     7000     SW90
## 26   1998/04/20      10:25    04/22    06:00      10000       35   S22W90
## 27   1998/04/23      06:00    04/23    15:30      14000      200   S17E90
## 28   1998/04/24      09:17    04/24    09:25       4700     2600   S10E90
## 29   1998/04/27      09:20    04/27    10:00      10000     1000   S16E50
## 30   1998/04/29      16:30    04/29    17:00      10000     2000   S18E20
## 31   1998/05/02      14:25    05/02    14:50       5000     3000   S15W15
## 32   1998/05/06      08:25    05/06    08:35      14000     5000   S11W65
## 33   1998/05/09      03:35    05/09    10:00       9000      400   S14W89
## 34   1998/05/11      21:40    05/11    22:00      10000     1000   N32W90
## 35   1998/05/19      10:00    05/19    11:30      14000     3000   N29W46
## 36   1998/05/27      13:30    05/27    14:20       4000     1000   N19W62
## 37   1998/06/11      10:15    06/11    10:20       8000     4000   N16E86
## 38   1998/06/16      18:20    06/17    21:00      12000       50   S22W90
## 39   1998/06/20      19:39    06/20    20:00       2600     1800     Back
## 40   1998/06/22      07:15    06/22    09:20       6000     2000   N16W46
## 41   1998/11/02      14:00    11/02    14:40      14000     4000   S25E47
## 42   1998/11/05      22:00    11/07    08:00       5000       50   N22W18
## 43   1998/11/06      03:00    11/06    05:30       5000     1000     BACK
## 44   1998/11/07      00:20    11/07    00:50      14000     6000    NE90b
## 45   1998/11/08      11:20    11/08    11:30      10000     8000   S21W37
## 46   1998/12/18      17:50    12/18    18:15      14000     5000   N19E64
## 47   1999/04/24      13:50    04/24    00:00       3700     1500    NW90b
## 48   1999/05/03      05:50    05/03    08:45       8000      200   N15E32
## 49   1999/05/27      10:55    05/28    10:00      14000       70     W90b
## 50   1999/06/01      18:50    06/02    09:00      14000      400    NW90b
## 51   1999/06/04      07:05    06/05    01:00      14000       60   N17W69
## 52   1999/06/11      11:45    06/11    17:00      14000      400   N38E90
## 53   1999/06/22      18:25    06/22    18:40       3000     2000   N22E37
## 54   1999/06/23      05:50    06/23    07:10      12000     2000     BACK
## 55   1999/06/23      07:07    06/23    07:14      14000     2000   N23E42
## 56   1999/06/28      21:03    06/28    21:10       3500     1500   N22W44
## 57   1999/06/29      19:20    06/29    19:55      14000     2000   S14E01
## 58   1999/07/05      03:10    07/05    04:05       2000     1000     SW90b
## 59   1999/08/28      18:25    08/28    18:33      16000    12000   S26W14
```

```
## 60   1999/09/03    03:00    09/03    04:10     2000     1000    S36W24
## 61   1999/09/10    07:30    09/10    07:35     5500     2000     NW90b
## 62   1999/10/14    09:10    10/14    10:00    14000     4000    N11E32
## 63   1999/10/17    23:27    10/17    23:33    11500    10000    N03E38
## 64   1999/11/16    03:27    11/16    03:48     7000     4000    N17E38
## 65   1999/11/16    05:17    11/16    05:34    14000     7000    N08W39
## 66   2000/01/18    17:31    01/18    22:00    14000      500    S19E11
## 67   2000/01/28    20:20    01/28    20:24     2200     1100    S31W17
## 68   2000/02/05    19:34    02/05    19:34     5800     2900    N26E52
## 69   2000/02/08    09:05    02/11    02:20    12000       20    N25E26
## 70   2000/02/10    01:55    02/10    02:00    14000     8000    N31E04
## 71   2000/02/12    03:55    02/12    09:20     4000      400    N26W23
## 72   2000/02/17    20:42    02/18    22:12    14000      100    S29E07
## 73   2000/02/18    09:44    02/18    09:54     2000     1200     NW90b
## 74   2000/03/02    13:50    03/02    14:03    14000     6000    S20W58
## 75   2000/03/07    16:24    03/07    16:48    14000     4500    S22E77
## 76   2000/03/27    06:56    03/27    06:58    14000    10000    S00E90
## 77   2000/04/04    15:45    04/04    16:00    14000     9000    N16W66
## 78   2000/04/09    23:15    04/09    23:45     4500     1000    S14W01
## 79   2000/04/18    15:00    04/18    16:00    14000     6000    S50W30
## 80   2000/05/04    11:10    05/04    13:00     6500     1000    S17W87
## 81   2000/05/05    16:35    05/05    17:30    14000     2500    S17W87
## 82   2000/05/07    21:15    05/07    24:00    14000      500     W90b
## 83   2000/05/12    23:34    05/12    23:42    14000     7000     E90b
## 84   2000/05/15    16:47    05/16    14:00     4800       40    S24W67
## 85   2000/06/02    22:00    06/02    22:15    14000     8000    N16E60
## 86   2000/06/06    15:20    06/08    09:00    14000       40    N20E18
## 87   2000/06/10    17:15    06/10    18:45    10000     1000    N22W38
## 88   2000/06/15    19:52    06/15    19:56     5000     2500    N20W65
## 89   2000/06/17    03:00    06/17    04:15    14000     1000    N22W72
## 90   2000/06/19    01:19    06/19    01:22     3800     1900    N42E60
## 91   2000/06/23    14:40    06/22    15:05    14000     2000    N26W72
## 92   2000/06/25    08:10    06/25    09:00    12000     2500    N16W55
## 93   2000/07/10    22:00    07/10    23:30    14000     1000    N18E49
## 94   2000/07/11    13:00    07/11    13:30    12000     1000    N18E27
## 95   2000/07/12    20:05    07/12    20:35     6000     1000    N19W61
## 96   2000/07/14    10:30    07/15    14:30    14000       80    N22W07
## 97   2000/07/22    11:45    07/22    12:45    14000     2000    N14W56
## 98   2000/08/11    11:35    08/11    11:59     2800     2000     NW90b
## 99   2000/09/12    12:00    09/13    12:20    14000       60    S19W06
## 100  2000/09/12    18:15    09/12    19:00     2000     1000     NE90b
## 101  2000/09/16    04:30    09/16    10:30    14000      400    N14W07
## 102  2000/09/19    08:45    09/19    10:20    12000     1500    N14W46
## 103  2000/09/25    02:20    09/25    03:00    14000     1000    N09W18
## 104  2000/10/05    22:10    10/05    22:35     5000     1250    N25W90
## 105  2000/10/16    07:10    10/16    08:00    14000     1000    N03W90
## 106  2000/10/25    09:30    10/25    24:00    10000      300    N09W63
## 107  2000/11/03    18:35    11/03    18:45     4000     2500    N02W02
## 108  2000/11/08    23:20    11/09    12:00     4000      200    N10W77
```

```
## 109 2000/11/09    16:15    11/11    04:00    10000       40    S11E10
## 110 2000/11/12    14:25    11/12    14:40     3000     2000    S14E05
## 111 2000/11/23    08:16    11/23    08:35    14000     9000    S26W40
## 112 2000/11/23    21:00    11/23    21:06     3500     3000    S20E60
## 113 2000/11/24    05:10    11/24    15:00    14000      100    N20W05
## 114 2000/11/24    15:25    11/24    22:00    14000      200    N22W07
## 115 2000/11/24    22:24    11/24    22:36     4000     3000    N21W14
## 116 2000/11/25    01:25    11/25    02:25    14000     3000    N07E50
## 117 2000/11/25    19:00    11/25    19:35     6000     2000    N20W23
## 118 2000/11/25    19:55    11/25    20:25    13000     4000    N20W27
## 119 2000/11/26    17:00    11/26    17:15    14000     7000    N18W38
## 120 2000/12/28    12:40    12/28    13:38    14000     1900      Back
## 121 2001/01/20    19:12    01/20    19:16    14000     6000    S07E40
## 122 2001/01/20    21:30    01/20    24:00    14000      500    S07E46
## 123 2001/01/26    12:06    01/26    14:20    14000      400    S23W57
## 124 2001/01/28    15:45    01/28    17:00    14000      200    S04W59
## 125 2001/02/11    01:40    02/11    01:55    12000     5500    N24W57
## 126 2001/03/10    04:18    03/10    04:32    14000     4000    N27W42
## 127 2001/03/12    05:35    03/12    05:45     3000     1500      BACK
## 128 2001/03/27    02:35    03/27    03:15     6000     1000    N14E17
## 129 2001/03/27    15:00    03/27    15:20     4000     1500    N15E14
## 130 2001/03/29    10:12    03/30    06:00     4000       60    N20W19
## 131 2001/04/02    11:30    04/02    12:00    14000     5000    N20W70
## 132 2001/04/02    22:05    04/03    02:30    14000      250    N19W72
## 133 2001/04/03    03:40    04/03    07:25    14000      400    S21E83
## 134 2001/04/04    09:50    04/04    10:10    13000     3000    S21E68
## 135 2001/04/05    00:00    04/05    00:00    14000     7500    N14W85
## 136 2001/04/06    19:35    04/07    01:50    14000      230    S21E31
## 137 2001/04/09    15:53    04/10    01:00    12000      100    S21W04
## 138 2001/04/10    05:24    04/10    24:00    14000      100    S23W09
## 139 2001/04/11    13:15    04/11    14:15    14000     1500    S22W27
## 140 2001/04/12    10:20    04/12    10:40    14000     7000    S19W43
## 141 2001/04/15    14:05    04/16    13:00    14000       40    S20W85
## 142 2001/04/18    02:55    04/18    14:00     1000      100      SW90b
## 143 2001/04/26    12:40    04/28    05:00     5000       20    N20W05
## 144 2001/05/07    12:00    05/07    13:50     2000      280      NW90b
## 145 2001/05/12    23:52    05/13    00:12     3000     1000    S17E00
## 146 2001/05/30    00:25    05/30    01:38    14000     1000       E90b
## 147 2001/06/15    10:50    06/15    11:15     7000     3000    S26E41
## 148 2001/06/15    16:05    06/15    16:20    14000     3500       W90b
## 149 2001/08/16    00:10    08/15    08:40     5400      200      Back
## 150 2001/08/25    16:50    08/25    23:00     8000      170    S17E34
## 151 2001/08/30    20:43    08/30    20:47    12000    10000    N15E44
## 152 2001/09/03    18:48    09/03    19:00    12000     7500    S23E90
## 153 2001/09/15    11:50    09/15    12:05    14000     6000    S21W49
## 154 2001/09/16    13:50    09/16    14:10     3000     2000    S13E15
## 155 2001/09/17    08:35    09/17    08:47    14000     5400    S14E04
## 156 2001/09/20    18:43    09/20    18:57    14000    10000    N09W11
## 157 2001/09/24    10:45    09/25    20:00     7000       30    S16E23
```

```
## 158 2001/09/27    08:15   09/28   07:00    4000      80    S15W40
## 159 2001/10/01    07:00   10/01   18:30    1000     150    S24W81
## 160 2001/10/05    11:35   10/05   12:55    1400     500     SW90b
## 161 2001/10/09    11:15   10/09   16:00    8000     200    S28E08
## 162 2001/10/09    11:20   10/09   11:55   14000    2000    S28E08
## 163 2001/10/09    13:10   10/09   23:00    5000      50     BACK
## 164 2001/10/19    01:15   10/19   02:25   14000    1300    N16W18
## 165 2001/10/19    16:45   10/21   16:40   14000      30    N15W29
## 166 2001/10/22    15:15   10/22   17:40    8000    1200    S21E18
## 167 2001/10/25    15:30   10/27   23:00   14000      30    S16W21
## 168 2001/11/04    16:30   11/06   11:00   14000      70    N06W18
## 169 2001/11/17    05:35   11/17   06:40   11000    1700    S13E42
## 170 2001/11/22    20:50   11/22   22:23    8000    1000    S25W67
## 171 2001/11/22    22:40   11/24   02:30   14000      40    S17W36
## 172 2001/12/11    12:45   12/11   17:00    4500     750     SW90b
## 173 2001/12/25    11:25   12/25   12:40   14000    1000     SE90b
## 174 2001/12/26    05:20   12/27   05:00   14000     150    N08W54
## 175 2001/12/28    20:35   12/29   03:00   14000     350    S26E90
## 176 2001/12/29    20:45   12/29   21:05    3000    1500     BACK
## 177 2002/01/08    18:30   01/09   24:00   14000      90     NE90b
## 178 2002/01/14    06:25   01/14   21:30   12000     100    S28W83
## 179 2002/01/27    12:49   01/27   13:25   14000    3000    Back?
## 180 2002/02/01    19:23   02/01   19:31   14000   11000     BACK
## 181 2002/02/21    12:35   02/21   12:50    4000    1500    N16W79
## 182 2002/03/11    00:00   03/11   00:15   14000    8000    S11E90
## 183 2002/03/12    00:00   03/12   02:20   14000    2200    S15E45
## 184 2002/03/15    22:45   03/15   23:30   14000    6000    S08W03
## 185 2002/03/17    06:00   03/17   06:35    3000    1000    S20E24
## 186 2002/03/18    02:55   03/18   05:35   14000    1000    S15W22
## 187 2002/03/22    11:30   03/22   12:40   14000     500    S09W90
## 188 2002/03/22    13:10   03/22   13:35    3000    2000    S00W90
## 189 2002/04/10    12:59   04/10   13:02   13000   12000    N15W14
## 190 2002/04/14    07:50   04/14   08:10   14000    8000    N19W57
## 191 2002/04/15    03:35   04/15   04:15   11000    1500    S15W01
## 192 2002/04/17    08:30   04/19   04:00    5000      40    S14W34
## 193 2002/04/21    01:30   04/21   24:00   10000      60    S14W84
## 194 2002/04/30    14:15   04/30   14:23    4000    2500    S16E77
## 195 2002/04/30    22:30   04/30   23:20    2000     500      W90b
## 196 2002/05/02    23:50   05/03   00:10    2800     900      E90b
## 197 2002/05/16    01:50   05/16   03:30    9000    2000    S22E01
## 198 2002/05/22    00:00   05/22   00:30   14000    8000    S25W64
## 199 2002/05/27    12:50   05/27   13:50   14000    5000    N18E18
## 200 2002/07/07    11:35   07/07   20:00   14000     200    S19W90
## 201 2002/07/09    19:46   07/09   20:40    1000     650      W90b
## 202 2002/07/15    21:15   07/16   05:00    5000     175    N19W01
## 203 2002/07/17    07:30   07/17   07:45    3500    2000    N21W17
## 204 2002/07/18    07:55   07/18   08:45   14000    1500    N19W30
## 205 2002/07/18    20:55   07/18   21:40    6000    3000      E90b
## 206 2002/07/19    16:40   07/19   17:10    5000    1000    S15E90
```

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## 207 2002/07/20    21:30   07/20   22:20   10000   2000    SE90b
## 208 2002/07/23    00:50   07/23   04:00   11000    400    S13E72
## 209 2002/07/26    22:27   07/26   23:30   14000   2000    S19E26
## 210 2002/07/29    12:10   07/29   12:45    4200   1300    N10W15
## 211 2002/08/03    19:20   08/03   20:30   14000   2000    S16W76
## 212 2002/08/14    02:20   08/14   24:00    1000     30    N09W54
## 213 2002/08/16    06:15   08/16   09:30   14000    300    N07W83
## 214 2002/08/16    12:20   08/17   21:00   14000     60    S14E20
## 215 2002/08/24    01:45   08/24   03:25    5000    400    S02W81
## 216 2002/09/05    16:55   09/07   16:22   14000     30    N09E28
## 217 2002/09/10    15:19   09/10   16:00   14000   8500    S10E43
## 218 2002/09/27    13:35   09/27   14:30   14000   8000    N13E45
## 219 2002/10/13    18:10   10/13   18:40   14000   4000    S07W54
## 220 2002/10/14    00:19   10/14   02:00    1700    500    S13E75
## 221 2002/10/14    14:35   10/14   16:50   14000   1200    NE90b
## 222 2002/10/27    23:06   10/28   01:20   14000    300    SE90b
## 223 2002/11/09    13:20   11/10   03:00   14000    100    S12W29
## 224 2002/11/10    03:20   11/10   06:00    3000    300    S12W37
## 225 2002/11/11    16:15   11/11   17:50   14000    600    S13W60
## 226 2002/11/24    20:05   11/24   20:45   14000   7000    N20E35
## 227 2002/12/19    21:45   12/19   22:30   14000   1500    N15W09
## 228 2002/12/22    04:20   12/22   04:50    5500   3500    N23W42
## 229 2003/01/20    19:10   01/20   20:00   14000   6000    N34W26
## 230 2003/01/27    22:20   01/27   22:26   11000   8000    S17W23
## 231 2003/03/18    12:25   03/18   13:45    4500    500    S15W46
## 232 2003/03/18    13:55   03/18   14:10   14000   7000    S90b
## 233 2003/03/19    02:30   03/19   03:15   14000   6000    SW90b
## 234 2003/04/22    07:25   04/22   08:22    3500    700    NE90b
## 235 2003/05/27    23:12   05/27   23:45   14000   2000    S07W17
## 236 2003/05/28    01:00   05/29   00:30    1000    200    S06W21
## 237 2003/05/29    01:10   05/29   08:00   13000    200    S06W37
## 238 2003/05/31    03:00   05/31   08:00    1000    150    S07W65
## 239 2003/06/05    00:00   06/05   00:00    ????    ????   W90b
## 240 2003/06/16    00:00   06/16   03:00   14000    400    S07E80
## 241 2003/06/17    22:50   06/18   05:30   10000    200    S08E59
## 242 2003/07/10    14:10   07/10   16:10    4000    400    N13W90
## 243 2003/08/19    11:15   08/19   12:00   14000   1000    S10W57
## 244 2003/10/21    04:10   10/21   04:55    5000   1000    SE90b
## 245 2003/10/26    07:00   10/26   09:15    8000   1500    S15E44
## 246 2003/10/26    17:45   10/26   19:40   14000   1500    N02W38
## 247 2003/10/28    11:10   10/29   24:00   14000     40    S16E08
## 248 2003/10/29    20:55   10/29   24:00   11000    500    S15W02
## 249 2003/11/01    22:55   11/02   00:50   14000   2000    S12W60
## 250 2003/11/02    00:00   11/02   00:00    ????    ????   SW90b
## 251 2003/11/02    17:30   11/03   01:00   12000    250    S14W56
## 252 2003/11/03    01:15   11/03   01:25    3000   1500    N10W83
## 253 2003/11/03    10:00   11/03   12:30    6000    400    N08W77
## 254 2003/11/04    00:00   11/04   00:00    ????    ????   Back?
## 255 2003/11/04    20:00   11/04   24:00   10000    200    S19W83
```

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## 256 2003/11/09    00:00    11/09    00:00    ????    ????    E90b
## 257 2003/11/11    00:00    11/11    00:00    ????    ????    W90b
## 258 2003/11/13    09:35    11/13    10:50   14000    4000   N12E90
## 259 2003/11/17    09:05    11/17    09:20    4000    1500   S01E33
## 260 2003/11/18    00:00    11/18    00:00    ????    ????   N00E18
## 261 2003/11/18    10:15    11/18    11:30    5000    2000   S16E90
## 262 2003/12/02    11:00    12/02    12:00   14000    9000   S14W70
## 263 2004/01/05    03:40    01/05    03:50    9000    2500   S12E38
## 264 2004/01/06    00:00    01/06    00:00   14000    2000   N05E90
## 265 2004/01/07    04:15    01/07    06:15   14000     750   N02E82
## 266 2004/01/07    10:35    01/07    11:35   14000    1500   N06E75
## 267 2004/04/06    13:05    04/06    16:00    8000     300   S18E15
## 268 2004/04/08    10:25    04/08    12:50    3000     500   S15W11
## 269 2004/04/08    13:30    04/08    14:00    6000    3000   S19W08
## 270 2004/04/11    04:20    04/11    05:35   14000     500   S14W47
## 271 2004/06/02    23:13    06/02    23:55   14000    2100    W90b
## 272 2004/06/03    16:48    06/03    17:10   12000    5000    W90b
## 273 2004/06/04    07:50    06/04    09:55   14000    2500    W90b
## 274 2004/06/22    22:07    06/22    22:30   10000    7000   S12W24
## 275 2004/06/23    06:30    06/23    08:55   14000    5000   S09W21
## 276 2004/07/23    19:00    07/23    19:35   10000    2500   N04W05
## 277 2004/07/25    15:00    07/26    22:25    1000      28   N08W33
## 278 2004/07/29    13:20    07/30    20:30    1000      50   N00W90
## 279 2004/07/31    07:10    07/31    11:30    1000     200   N05W89
## 280 2004/08/08    09:15    08/08    09:22   14000    7000    BACK
## 281 2004/09/12    00:45    09/13    21:00   14000      40   N03E49
## 282 2004/09/19    17:15    09/19    18:15   14000    2500   N03W58
## 283 2004/10/24    03:12    10/24    03:21   14000    8000   N11E19
## 284 2004/10/30    06:40    10/30    07:40    4000    1000   N13W22
## 285 2004/11/01    05:55    11/01    07:25    3000     400    W90b
## 286 2004/11/03    15:55    11/03    16:30   14000    3400   N09E38
## 287 2004/11/03    03:35    11/03    04:10    2000    1200   N09E45
## 288 2004/11/06    01:50    11/06    02:45    6000     700   N09E05
## 289 2004/11/07    16:25    11/08    20:00   14000      60   N09W17
## 290 2004/11/09    17:35    11/09    18:10   14000    5000   N08W51
## 291 2004/11/10    02:25    11/10    03:40   14000    1000   N09W49
## 292 2004/12/03    00:07    12/04    04:30   10000      60   N08W02
## 293 2004/12/08    20:05    12/08    20:10   14000    8000   N08W03
## 294 2004/12/29    16:35    12/29    17:00   14000    4500   N04E62
## 295 2004/12/30    23:45    12/31    04:20    5000     700   N04E46
## 296 2005/01/01    00:45    01/01    02:25   14000     450   N06E34
## 297 2005/01/04    11:20    01/04    11:35   13000    6000   N05W11
## 298 2005/01/15    06:15    01/15    09:30   14000     250   N16E04
## 299 2005/01/15    23:00    01/15    00:00    3000      40   N15W05
## 300 2005/01/17    09:25    01/17    16:00   14000      30   N15W25
## 301 2005/01/19    09:20    01/19    00:00    5300      40   N15W51
## 302 2005/01/17    10:00    01/17    10:35    6100    1500   N15W25
## 303 2005/01/20    07:15    01/20    16:30   14000      25   N14W61
## 304 2005/02/01    11:40    02/01    11:50    8000    4000    BACK
```

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## 305 2005/05/02    22:40    03/02    23:00    14000    5500    S05E90
## 306 2005/05/03    00:20    03/03    01:10    14000    1500    S05E90
## 307 2005/05/06    17:52    05/06    18:03     5000    4000    S09E29
## 308 2005/05/13    17:00    05/13    02:10     5000      40    N12E11
## 309 2005/05/17    03:20    05/17    03:35     4500    1500     BACK
## 310 2005/06/03    12:50    06/03    15:00    10000     270    N15E90
## 311 2005/06/16    20:25    06/16    21:40     9000    1000    N08W90
## 312 2005/07/07    16:30    07/07    16:40     4000    2000    N09E03
## 313 2005/07/09    22:15    07/09    23:00    14000     600    N12W28
## 314 2005/07/13    14:15    07/13    15:05    14000    1000    N11W90
## 315 2005/07/14    11:00    07/14    12:54     3000     800    N11W90
## 316 2005/07/17    11:50    07/17    13:45     7000     300     BACK
## 317 2005/07/24    13:50    07/24    22:30    14000     150     BACK
## 318 2005/07/24    22:35    07/24    22:40     1000     700     BACK
## 319 2005/07/27    05:20    07/27    06:45     1000     450    N11E90
## 320 2005/07/27    07:45    07/27    08:30     2500    1000     NE90b
## 321 2005/07/30    07:40    07/30    20:00     9000      80    N12E60
## 322 2005/08/01    14:15    08/01    14:50    14000    4500    N13E32
## 323 2005/08/22    01:30    08/22    03:35     8000     550    S11W54
## 324 2005/08/22    17:15    08/23    13:00    12000      40    S13W65
## 325 2005/08/23    15:00    08/23    19:30    13000     400    S14W90
## 326 2005/08/29    11:10    08/29    11:14    10000    6000     BACK
## 327 2005/08/31    11:40    08/31    12:10     6000     800    N13W13
## 328 2005/08/31    22:10    08/31    23:00    14000    6000     BACK
## 329 2005/09/03    03:20    09/03    05:15     2000     500     BACK
## 330 2005/09/05    10:40    09/06    00:00     1500      60    S07E81
## 331 2005/09/07    18:05    09/08    00:00    12000     200    S11E77
## 332 2005/09/09    19:45    09/09    22:00    10000      50    S12E67
## 333 2005/09/10    21:45    09/10    01:00    14000     300    S13E47
## 334 2005/09/11    13:10    09/11    15:15     3000     350    S16E39
## 335 2005/09/13    20:20    09/15    06:00     1100      35    S09E10
## 336 2006/04/30    16:20    05/02    01:00     1000     200    S09E08
## 337 2006/07/06    08:45    07/06    17:18    14000     300    S09W34
## 338 2006/08/16    15:45    08/16    22:15    14000     400    S16W08
## 339 2006/08/26    20:40    08/26    21:00     7000    2000    S10E08
## 340 2006/11/05    17:35    11/05    19:20    14000     400     E90b
## 341 2006/11/06    10:35    11/06    11:05    14000    6000     E90b
## 342 2006/11/06    17:45    11/06    19:25     4000     300     E90b
## 343 2006/12/05    10:50    12/05    20:00    14000     250    S07E68
## 344 2006/12/06    02:00    12/06    03:30     1000     200    S07E69
## 345 2006/12/06    08:30    12/06    09:45     4000     600    S04E63
## 346 2006/12/06    19:00    12/08    24:00    16000      30    S05E64
## 347 2006/12/13    02:45    12/13    10:40    12000     150    S06W23
## 348 2006/12/14    22:30    12/14    23:40    14000    1500    S06W46
## 349 2007/01/25    06:55    01/25    23:30    14000      90    S08E90
## 350 2007/05/19    13:02    05/19    13:05    16000   13000    N07W06
## 351 2007/12/31    01:05    12/31    01:22    16000    6000    S08E81
## 352 2008/03/25    19:05    03/25    19:20    12000     800    S13E78
## 353 2008/04/26    14:23    04/26    14:39     7600    4900    N08E09
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## 354 2010/08/01    09:20    08/01    17:30     2000     700    N20E36
## 355 2010/08/07    18:35    08/07    19:50    14000     700    N11E34
## 356 2010/08/18    06:05    08/18    07:45    13000     700    N18W88
## 357 2011/01/13    09:15    01/13    10:05    16000    3500     E90b
## 358 2011/01/27    12:20    01/27    12:35    16000    8000    N12W87
## 359 2011/02/13    17:50    02/13    18:00    16000    8000    S20E04
## 360 2011/02/15    02:10    02/15    07:00    16000     400    S20W12
## 361 2011/02/24    12:50    02/24    15:10     1000     700    N15E87
## 362 2011/03/07    14:30    03/07    15:00    16000    7000    N10E18
## 363 2011/03/07    20:00    03/08    08:30    16000     200    N31W53
## 364 2011/05/09    21:00    05/10    04:00    16000     900    N16E88
## 365 2011/05/29    21:10    05/30    13:40    16000      90    S19E72
## 366 2011/06/02    08:00    06/02    08:25    15000    4000    S19E25
## 367 2011/06/04    07:00    06/04    13:45    16000     300     W90b
## 368 2011/06/04    22:00    06/07    01:30    16000      25     W90b
## 369 2011/06/07    06:45    06/07    18:00    16000     250    S21W54
## 370 2011/08/02    06:15    08/02    07:30    16000    3000    N14W15
## 371 2011/08/04    04:15    08/05    17:00    13000      60    N19W36
## 372 2011/08/08    18:10    08/08    20:10     6000     400    N16W61
## 373 2011/08/09    08:20    08/09    08:35    16000    4000    N17W69
## 374 2011/09/06    02:00    09/06    23:40    14000     200    N14W07
## 375 2011/09/06    22:30    09/07    15:40    16000     150    N14W18
## 376 2011/09/22    11:05    09/22    24:00    14000      70    N09E89
## 377 2011/09/24    12:50    09/24    22:45    16000     300    N10E56
## 378 2011/09/25    05:30    09/25    06:00    16000    8000    N11E47
## 379 2011/10/21    13:15    10/21    13:50    16000    6500    N05W79
## 380 2011/11/09    13:30    11/09    17:00    16000     400    N24E35
## 381 2011/11/26    07:15    11/27    24:00    10000      50    N17W49
## 382 2011/12/21    03:00    12/21    08:15    16000     400     BACK
## 383 2011/12/25    18:45    12/25    18:55    14000    7000    S22W26
## 384 2012/01/02    15:00    01/02    15:45    16000    4000     BACK
## 385 2012/01/19    15:00    01/20    02:45    16000     100    N32E22
## 386 2012/01/23    04:00    01/24    15:00    16000      40    N28W21
## 387 2012/01/27    18:30    01/28    04:45    16000     150    N27W71
## 388 2012/03/05    04:00    03/05    12:20    16000     400    N17E52
## 389 2012/03/07    01:00    03/08    19:00    16000      30    N17E27
## 390 2012/03/09    04:10    03/09    06:05    14000    1000    N15W03
## 391 2012/03/10    17:55    03/11    12:30    14000      30    N17W24
## 392 2012/03/13    17:35    03/13    24:00    16000     200    N17W66
## 393 2012/03/18    00:20    03/18    01:20    16000     200     BACK
## 394 2012/03/24    00:40    03/24    10:40    16000     300     BACK
## 395 2012/03/26    23:15    03/26    23:55    16000    1500     BACK
## 396 2012/03/27    21:45    03/27    22:30     4000    1500     BACK
## 397 2012/04/09    12:20    04/09    13:00    16000    5000    N20W65
## 398 2012/04/15    02:30    04/15    02:50    16000    4000    N10E90
## 399 2012/05/17    01:40    05/17    06:20    16000     300    N11W76
## 400 2012/07/04    17:00    07/04    17:20    14000    8000    N14W34
## 401 2012/07/05    22:40    07/05    23:50     3000     800    S12W46
## 402 2012/07/06    23:10    07/07    03:40    16000     300    S13W59
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## 403 2012/07/08      16:35   07/08   22:00    16000      300    S17W74
## 404 2012/07/12      16:45   07/13   09:00    14000      250    S15W01
## 405 2012/07/17      14:40   07/18   05:00    12000      150    S28W65
## 406 2012/07/19      05:30   07/19   06:20     5000      600    S13W88
## 407 2012/07/23      02:30   07/23   21:40    16000       20    S17W132
## 408 2012/08/31      20:00   08/31   23:45    16000      400    S25E59
## 409 2012/09/27      23:55   09/28   10:15    16000      250    N06W34
## 410 2012/10/22      01:50   10/22   11:15     1000      200    S10E76
## 411 2013/01/16      22:00   01/17   01:30     1000      200    S33W64
## 412 2013/03/15      07:00   03/15   21:30    14000      100    N11E12
## 413 2013/04/11      07:10   04/11   15:00    10000      200    N09E12
## 414 2013/04/18      18:00   04/18   19:10    16000     4000    N11W83
## 415 2013/04/21      20:25   04/21   22:12    14000     1700    S19W53
## 416 2013/05/13      02:20   05/13   03:00    16000     2000    N11E90
## 417 2013/05/13      16:15   05/13   19:10    16000      300    N11E85
## 418 2013/05/14      01:16   05/14   02:35    16000      700    N08E77
## 419 2013/05/15      01:49   05/15   07:30    16000      250    N12E64
## 420 2013/05/22      13:10   05/24   06:00    16000      150    N15W70
## 421 2013/06/21      03:35   06/21   05:15    14000     2000    S16E73
## 422 2013/06/28      01:53   06/28   03:26    14000      400    S18W19
## 423 2013/07/04      20:57   07/04   21:27    11000     2900    S14E62
## 424 2013/08/06      02:01   08/06   02:11    14000    11000    N27E25
## 425 2013/08/17      20:25   08/18   03:05     1800      150    S05W30
## 426 2013/08/30      02:34   08/31   04:00    14000       50    N15E46
## 427 2013/09/06      22:29   09/06   22:34     5000     2000    N10E104
## 428 2013/09/29      21:53   09/30   21:00    14000       60    N17W29
## 429 2013/10/02      20:46   10/02   21:10    10000     5200    N20W85
## 430 2013/10/05      07:00   10/05   14:46    16000      200    S22E118
## 431 2013/10/11      07:23   10/11   11:43    14000      100    N21E103
## 432 2013/10/13      18:47   10/14   05:15     2100      600    <NA>
## 433 2013/10/22      21:33   10/22   22:08    14000      650    N04W01
## 434 2013/10/25      15:08   10/25   22:32    16000      200    S06E69
## 435 2013/10/26      03:01   10/26   04:00    14000      200    N09W44
## 436 2013/10/26      09:34   10/26   10:10    14000     5000    N08W49
## 437 2013/10/27      18:12   10/27   18:36    14000     1700    N06W70
## 438 2013/10/28      04:41   10/28   11:51    14000      200    N08W71
## 439 2013/10/28      15:24   10/28   15:29    14000     9000    S06E28
## 440 2013/11/04      05:10   11/04   08:00    16000      450    N03W165
## 441 2013/11/07      10:26   11/07   20:40    16000      100    N02E151
## 442 2013/11/19      10:39   11/19   20:20    14000      100    S14W70
## 443 2013/11/29      22:18   11/30   09:20     1800      100    N06W183
## 444 2013/12/05      12:45   12/05   13:00     4200     1600    S20E119
## 445 2013/12/05      20:48   12/05   21:35    14000     2500    <NA>
## 446 2013/12/07      07:43   12/07   08:36    14000     3000    S16W49
## 447 2013/12/12      03:55   12/12   21:30    12000       70    S23W46
## 448 2013/12/20      08:23   12/20   13:24     1500      400    <NA>
## 449 2013/12/28      17:31   12/28   18:05    16000      500    S15W125
## 450 2014/01/04      17:41   01/04   18:47     9000      100    <NA>
## 451 2014/01/04      19:03   01/05   09:00     6500      100    <NA>
```

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## 452 2014/01/06    07:57  01/06  22:30  14000     80  S15W112
## 453 2014/01/07    18:33  01/08  21:00  14000     60   S15W11
## 454 2014/01/20    22:24  01/20  22:36  14000   8000   S07E67
## 455 2014/02/18    02:16  02/18  02:51   2000    900   S24W43
## 456 2014/02/20    08:05  02/20  08:29  12000   7700   S15W73
## 457 2014/02/25    00:56  02/25  11:28  14000    100   S13E82
## 458 2014/03/04    18:24  03/04  20:10  16000   2000  N13W170
## 459 2014/03/05    13:33  03/05  17:10  16000    500  N14E180
## 460 2014/03/25    07:52  03/25  11:30   1700    400  S23W130
## 461 2014/03/29    00:12  03/29  00:48  14000   2200   N11W23
## 462 2014/03/29    17:59  03/30  09:58  14000    200  S08W152
## 463 2014/04/02    13:42  04/03  08:10  14000     60   N11E53
## 464 2014/04/02    18:49  04/03  06:40   2400    200     <NA>
## 465 2014/04/04    14:02  04/04  14:07  14000  11000   N13E26
## 466 2014/04/18    13:05  04/18  22:50  14000    150   S20W34
## 467 2014/05/07    16:24  05/07  23:18  16000    200   N11E53
## 468 2014/05/08    03:21  05/08  05:26  16000   1100  S09W108
## 469 2014/05/09    02:40  05/09  04:30  14000    500  S11W122
## 470 2014/05/10    04:32  05/10  08:37  16000    400  S11W136
## 471 2014/06/10    12:58  06/10  15:00  16000   1000   S17E82
## 472 2014/06/12    22:14  06/12  22:35  14000   6000   S20W55
## 473 2014/07/30    07:44  07/30  08:00   6300   4500   N10E30
## 474 2014/08/01    18:58  08/02  05:00   1000    150   S10E11
## 475 2014/08/22    10:37  08/22  11:18  14000   6000   N12E01
## 476 2014/08/25    15:20  08/25  16:02  14000   4000   N05W36
## 477 2014/08/25    20:43  08/25  21:00  14000   7200   N07W43
## 478 2014/08/28    17:05  08/28  22:08  16000    600  S19E162
## 479 2014/09/01    11:12  09/01  22:35  16000    600  N14E127
## 480 2014/09/09    00:05  09/09  13:00  11000    100   N12E29
## 481 2014/09/10    17:45  09/11  12:00  14000    100   N14E02
## 482 2014/09/20    05:10  09/20  05:30  14000   9700   S11W89
## 483 2014/09/22    06:13  09/22  06:50  16000   4900  N14W142
## 484 2014/09/23    23:41  09/23  23:47  14000  12000   S13E33
## 485 2014/09/24    20:54  09/24  23:48  16000    500  N13E179
## 486 2014/10/02    21:34  10/02  21:56   3300   1900   S17W82
## 487 2014/10/10    18:11  10/10  18:33   2500   1500   S20W51
## 488 2014/10/21    12:33  10/21  13:01  14000   8900   S18E36
## 489 2014/11/08    16:57  11/08  17:18  14000   7800     W90b
## 490 2014/12/13    14:27  12/13  14:51  14000   3900     W90b
## 491 2014/12/17    04:09  12/17  04:19   2900   2100   S11E33
## 492 2014/12/17    05:00  12/17  05:09  14000  11500   S20E09
## 493 2014/12/18    22:31  12/18  22:54   5100   1300   S11E15
## 494 2014/12/21    12:05  12/21  12:28  14000   7400   S14W25
## 495 2015/03/03    02:33  03/03  02:37   8100   3600     W90b
## 496 2015/03/06    08:00  03/06  11:30   4700    200   S20E87
## 497 2015/03/10    00:10  03/10  00:27  14000   6200   S18E45
## 498 2015/03/11    10:30  03/11  14:50   1000    250   S15E23
## 499 2015/03/24    09:00  03/06  11:47  14000    400    SW90b
## 500 2015/04/26    03:21  04/26  03:33   8000   4600     W90b
```

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## 501 2015/05/05      22:24     05/05     23:14     14000      500     N15E79
## 502 2015/05/12      03:00     05/12     03:04     14000     6400      W90b
## 503 2015/06/09      20:23     06/09     22:35      2300      200     S03E25
## 504 2015/06/14      05:26     06/14     05:41      3000     1250     S12W34
## 505 2015/06/18      17:42     06/18     19:40      3700      500     N15E50
## 506 2015/06/21      02:33     06/21     21:20      5500      150     N12E13
## 507 2015/06/22      18:20     06/22     21:55     14000      300     N12W08
## 508 2015/06/25      08:35     06/25     16:30     14000      150     N09W42
## 509 2015/07/01      16:08     07/01     20:47      1000      150      W90b
## 510 2015/08/22      07:07     08/22     07:18     14000     7300     S15E13
## 511 2015/09/18      04:54     09/18     09:52     14000      400     S21W10
## 512 2015/09/20      18:23     09/21     01:46     14000      300     S20W24
## 513 2015/11/04      14:07     11/04     15:14     14000      440     N09W04
## 514 2015/11/09      13:21     11/09     13:27     14000     9000     S11E41
## 515 2015/12/16      08:45     12/16     08:57      5300     3800     S13W04
## 516 2015/12/23      01:18     12/23     01:23     12000     6700     S22E63
## 517 2015/12/28      11:50     12/28     21:45     14000      180     S23W11
## 518 2016/01/02      00:55     01/02     03:08      1100      300     S25W82
## 519 2016/02/05      20:28     02/05     23:31      1650      500      <NA>
## 520 2016/02/05      22:35     02/05     22:55      5200     1900      <NA>
## 521 2016/05/04      14:20     05/04     14:34     14000    10500     N06W61
## 522 2016/05/24      17:00     05/24     20:50      1500      700      <NA>
## 523 2016/08/15      18:21     08/15     18:28     11000     3400      <NA>
##       NOAA Importance CME_date CME_time CME_CPA CME_width CME_speed Plots
## 13    8026      M1.3    04/01    15:18      74        79       312  PHTX
## 14    8027      C6.8    04/07    14:27    <NA>       360       878  PHTX
## 15    8038      C1.3    05/12    05:30    <NA>       360       464  PHTX
## 16    8040      M1.3    05/21    21:00     263       165       296  PHTX
## 17    8088      C1.4    09/23    22:02     133       155       712  PHTX
## 18    8100      C8.6    11/03    05:28     240       109       227  PHTX
## 19    8100      M4.2    11/03    11:11     233       122       352  PHTX
## 20    8100      X2.1    11/04    06:10    <NA>       360       785  PHTX
## 21    8100      X9.4    11/06    12:10    <NA>       360      1556  PHTX
## 22    8113      X2.6    11/27    13:56      98        91       441  PHTX
## 23    8116      B9.4    12/13    00:26     278        73       191  PHTX
## 24    8141      C1.1    01/25    15:26    <NA>       360       693  PHTX
## 25    <NA>      <NA>    03/29    03:48    <NA>       360      1397  PHTX
## 26    8194      M1.4    04/20    10:07     284       165      1863  PHTX
## 27    8210      X1.2    04/23    05:55    <NA>       360      1691  PHTX
## 28    8210      C8.9    04/24    08:55     100        84      1184  PHTX
## 29    8210      X1.0    04/27    08:56    <NA>       360      1385  PHTX
## 30    8210      M6.8    04/29    16:58    <NA>       360      1374  PHTX
## 31    8210      X1.1    05/02    14:06    <NA>       360       938  PHTX
## 32    8210      X2.7    05/06    08:29     309       190      1099  PHTX
## 33    8210      M7.7    05/09    03:35     262       178      2331  PHTX
## 34    8214      B6.6    05/11    21:55     208      <NA>       830  PHTX
## 35    8222      B7.9    05/19    10:27     268       139       801  PHTX
## 36    8226      C7.5    05/27    13:45     175       268       878  PHTX
## 37    8243      M1.4    06/11    10:28     123       177      1223  PHTX
```

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## 38   8232    M1.0    06/16   18:27   341     281     1484    PHTX
## 39   <NA>    <NA>    06/20   18:20   <NA>    360     964     PHTX
## 40   8243    C2.9    06/22   05:01   265     59      206     PHTX
## 41   8373    C4.4    11/02   14:18   116     169     661     PHTX
## 42   8375    M8.4    11/05   20:44   <NA>    360     1118    PHTX
## 43   <NA>    <NA>    11/06   02:18   159     <NA>    405     PHTX
## 44   <NA>    C1.0    11/07   01:54   296     19      381     PHTX
## 45   <NA>    C5.9    11/08   11:54   264     196     559     PHTX
## 46   8415    M8.0    12/18   18:09   <NA>    360     1749    PHTX
## 47   <NA>    <NA>    04/24   13:31   <NA>    360     1495    PHTX
## 48   8525    M4.4    05/03   06:06   <NA>    360     1584    PHTX
## 49   <NA>    <NA>    05/27   11:06   <NA>    360     1691    PHTX
## 50   <NA>    <NA>    06/01   19:37   <NA>    360     1772    PHTX
## 51   8552    M3.9    06/04   07:26   289     150     2230    PHTX
## 52   <NA>    C8.8    06/11   11:26   35      and     1569    PHTX
## 53   8592    M1.7    06/22   18:54   <NA>    360     1133    PHTX
## 54   <NA>    <NA>    06/23   06:06   264     <NA>    450     PHTX
## 55   8596    M1.7    06/23   07:31   <NA>    360     1006    PHTX
## 56   8592    C3.5    06/28   21:30   336     <NA>    903     PHTX
## 57   8603    M1.6    06/29   19:54   <NA>    360     560     PHTX
## 58   8603    C7.6    07/05   02:54   284     190     670     PHTX
## 59   8674    X1.1    08/28   18:26   120     245     462     PHTX
## 60   8679    C2.1    09/03   00:06   184     175     512     PHTX
## 61   <NA>    <NA>    09/10   07:54   18      125     1467    PHTX
## 62   8731    X1.8    10/14   09:26   <NA>    360     1250    PHTX
## 63   <NA>    <NA>    10/18   00:06   40      87      247     PHTX
## 64   8766    M3.8    11/16   03:06   81      98      636     PHTX
## 65   8759    M1.8    11/16   05:30   285     129     712     PHTX
## 66   8831    M3.9    01/18   17:54   <NA>    360     739     PHTX
## 67   8841    C4.7    01/28   20:12   <NA>    360     1177    PHTX
## 68   8858    X1.2    02/05   19:54   60      76      632     PHTX
## 69   8858    M1.3    02/08   09:30   <NA>    360     1079    PHTX
## 70   8858    C7.3    02/10   02:30   <NA>    360     944     PHTX
## 71   8858    M1.7    02/12   04:31   <NA>    360     1107    PHTX
## 72   8872    M1.3    02/17   21:30   <NA>    360     728     PHTX
## 73   <NA>    C1.1    02/18   09:54   286     118     890     PHTX
## 74   8882    M6.5    03/02   13:54   235     76      835     PHTX
## 75   8906    M1.2    03/07   16:30   120     108     644     PHTX
## 76   8932    C2.3    03/27   07:31   129     90      487     PHTX
## 77   8933    C9.7    04/04   16:32   <NA>    360     1188    PHTX
## 78   8948    M3.1    04/10   00:30   <NA>    360     409     PHTX
## 79   altr    FILA    04/18   14:54   195     105     668     PHTX
## 80   8970    M6.8    05/04   11:26   235     <NA>    1404    PHTX
## 81   8970    M1.5    05/05   15:50   <NA>    360     1594    PHTX
## 82   <NA>    <NA>    05/07   20:50   <NA>    360     1781    PHTX
## 83   <NA>    <NA>    05/12   23:26   <NA>    360     2604    PHTX
## 84   8993    C7.8    05/15   16:26   257     <NA>    1212    PHTX
## 85   9026    M7.6    06/02   21:30   69      104     547     PHTX
## 86   9026    X2.3    06/06   15:54   <NA>    360     1119    PHTX
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## 87    9026    M5.2   06/10   17:08   <NA>    360    1108   PHTX
## 88    9041    M1.8   06/15   20:06   298     116    1081   PHTX
## 89    9041    M3.5   06/17   03:28   298     133     857   PHTX
## 90    <NA>    <NA>   06/18   21:30     8      49     459   PHTX
## 91    9042    M3.0   06/23   14:54   282    <NA>     847   PHTX
## 92    9046    M1.9   06/25   07:54   262     165    1617   PHTX
## 93    9077    M5.7   07/10   21:50    67    <NA>    1352   PHTX
## 94    9077    X1.0   07/11   13:27   <NA>    360    1078   PHTX
## 95    9070    M1.5   07/12   20:30   281     101     820   PHTX
## 96    9077    X5.7   07/14   10:54   <NA>    360    1674   PHTX
## 97    9085    M3.7   07/22   11:54   259    <NA>    1230   PHTX
## 98    <NA>    <NA>   08/11   07:31   273     70     1071   PHTX
## 99     DSF    M1.0   09/12   11:54   <NA>    360    1550   PHTX
## 100   <NA>    <NA>   09/12   17:30   <NA>    360    1053   PHTX
## 101   9165    M5.9   09/16   05:18   <NA>    360    1215   PHTX
## 102   9165    M5.1   09/19   08:50   283     76      766   PHTX
## 103   9169    M1.8   09/25   02:50   <NA>    360     587   PHTX
## 104   9177    <NA>   10/05   18:26   323     86     1046   PHTX
## 105   9182    M2.5   10/16   07:27   <NA>    360    1336   PHTX
## 106   9199    C4.0   10/25   08:26   <NA>    360     770   PHTX
## 107   9213    C3.2   11/03   18:26   <NA>    360     291   PHTX
## 108   9213    M7.4   11/08   23:06   271    (13)    1738   PHTX
## 109   9221    M1.0   <NA>    <NA>    <NA>   <NA>    <NA>   PHTX
## 110   9227    C4.4   11/12   14:50   257     50      581   PHTX
## 111   9238    C5.4   11/23   06:06   <NA>    360     492   PHTX
## 112   9239    C7.9   11/23   21:30   124     148    1198   PHTX
## 113   9236    X2.0   11/24   05:30   <NA>    360    1289   PHTX
## 114   9236    X2.3   11/24   15:30   <NA>    360    1245   PHTX
## 115   9236    X1.8   11/24   22:06   <NA>    360    1005   PHTX
## 116   9240    M8.2   11/25   01:31   <NA>    360    2519   PHTX
## 117   9236    X1.9   11/25   19:31   <NA>    360     671   PHTX
## 118   9236    <NA>   11/25   21:30   345     59      388   PHTX
## 119   9236    X4.0   11/26   17:06   <NA>    360     980   PHTX
## 120   <NA>    <NA>   12/28   12:06   <NA>    360     930   PHTX
## 121   9313    M1.2   01/20   19:31   <NA>    360     839   PHTX
## 122   9313    M7.7   01/20   21:30   <NA>    360    1507   PHTX
## 123   9320    C1.6   01/26   12:06   276     176     928   PHTX
## 124   9313    M1.5   01/28   15:54   <NA>    360     916   PHTX
## 125   9346    C6.5   02/11   01:31   <NA>    360    1183   PHTX
## 126   9368    M6.7   03/10   04:26   297     81      819   PHTX
## 127   <NA>    <NA>   03/12   05:50   233     48      829   PHTX
## 128   9393    C7.3   03/27   02:06   154     60      300   PHTX
## 129   9393    C5.6   03/27   17:06    46     66      340   PHTX
## 130   9393    X1.7   03/29   10:26   <NA>    360     942   PHTX
## 131   9393    X1.1   04/02   11:26   270     80      992   PHTX
## 132   9393    X20.   04/02   22:06   261     244    2505   PHTX
## 133   9415    X1.2   04/03   03:26   108     292    1613   PHTX
## 134   9415    M1.6   04/04   09:50    86     89     1065   PHTX
## 135   9393    M8.4   04/05   09:06   283     205    1750   PHTX
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## 136  9415   X5.6    04/06   19:30   <NA>    360    1270   PHTX
## 137  9415   M7.9    04/09   15:54   <NA>    360    1192   PHTX
## 138  9415   X2.3    04/10   05:30   <NA>    360    2411   PHTX
## 139  9415   M2.3    04/11   13:31   <NA>    360    1103   PHTX
## 140  9415   X2.0    04/12   10:31   <NA>    360    1184   PHTX
## 141  9415   X14.    04/15   14:06    245    167    1199   PHTX
## 142  <NA>   C2.2    04/18   02:30   <NA>    360    2465   PHTX
## 143  9433   M1.5    04/26   12:30   <NA>    360    1006   PHTX
## 144  <NA>   <NA>    05/07   12:06    286    205    1223   PHTX
## 145  9455   M3.0    05/13   02:21    190    132     527   PHTX
## 146  9481   <NA>    05/30   00:06     70    216    2087   PHTX
## 147  9502   M6.3    06/15   10:31    185    119    1090   PHTX
## 148  <NA>   <NA>    06/15   15:56   <NA>    360    1701   PHTX
## 149  <NA>   <NA>    08/15   23:54   <NA>    360    1575   PHTX
## 150  9591   X5.3    08/25   16:50   <NA>    360    1433   PHTX
## 151  9601   M3.0    08/30   21:26     82     76     351   PHTX
## 152  9607   M2.5    09/03   18:35    127    207    1352   PHTX
## 153  9608   M1.5    09/15   11:54    263    130     478   PHTX
## 154  9616   C8.9    09/16   14:30    131     68     584   PHTX
## 155  9616   M1.5    09/17   08:54    198    166    1009   PHTX
## 156  9631   M1.5    09/20   19:31    306    207     446   PHTX
## 157  9632   X2.6    09/24   10:30   <NA>    360    2402   PHTX
## 158    EP   C9.5    09/27   08:06    224    138     669   PHTX
## 159  9628   M9.1    10/01   05:30   <NA>    360    1405   PHTX
## 160  <NA>   <NA>    10/05   10:30   <NA>    360    1537   PHTX
## 161  9653   M1.4    10/09   11:30   <NA>    360     973   PHTX
## 162  9653   <NA>    <NA>    <NA>    <NA>   <NA>    <NA>   PHTX
## 163  <NA>   <NA>    <NA>    <NA>    <NA>   <NA>    <NA>   PHTX
## 164  9661   X1.6    10/19   01:27   <NA>    360     558   PHTX
## 165  9661   X1.6    10/19   16:50   <NA>    360     901   PHTX
## 166  9672   M6.7    10/22   15:06   <NA>    360    1336   PHTX
## 167  9672   X1.3    10/25   15:26   <NA>    360    1092   PHTX
## 168  9684   X1.0    11/04   16:35   <NA>    360    1810   PHTX
## 169  9704   M2.8    11/17   05:30   <NA>    360    1379   PHTX
## 170  9698   M3.8    11/22   20:30   <NA>    360    1443   PHTX
## 171  9704   M9.9    11/22   23:30   <NA>    360    1437   PHTX
## 172  <NA>   <NA>    12/11   09:54    263    121     891   PHTX
## 173  <NA>   <NA>    12/25   11:30   <NA>    360    1773   PHTX
## 174  9742   M7.1    12/26   05:30    281   <NA>    1446   PHTX
## 175  9756   X3.4    12/28   20:30   <NA>    360    2216   PHTX
## 176  <NA>   <NA>    12/29   20:30    297     79     819   PHTX
## 177  <NA>   <NA>    01/08   17:54   <NA>    360    1794   PHTX
## 178  9772   M4.4    01/14   05:35   <NA>    360    1492   PHTX
## 179  <NA>   <NA>    01/27   12:30   <NA>    360    1136   PHTX
## 180  <NA>   <NA>    02/01   19:54    350     89     448   PHTX
## 181  9825   M3.9    02/21   12:54    275    108     358   PHTX
## 182  9866   M2.3    03/10   23:06   <NA>    360    1429   PHTX
## 183  <NA>   M5.0    03/11   23:30   <NA>    360     950   PHTX
## 184  9866   M2.2    03/15   23:06   <NA>    360     957   PHTX
```

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## 185  9871    C3.1   03/17   04:06   141    56    658   PHTX
## 186  9873    M1.0   03/18   02:54   <NA>   360   989   PHTX
## 187  9866    M1.6   03/22   11:06   <NA>   360   1750  PHTX
## 188  9866    M1.6   03/22   12:30   243    120   875   PHTX
## 189  9893    M8.2   04/10   13:27   340    159   650   PHTX
## 190  9893    C9.6   04/14   07:50   323    76    757   PHTX
## 191  9906    M1.2   04/15   03:50   <NA>   360   720   PHTX
## 192  9906    M2.6   04/17   08:26   <NA>   360   1240  PHTX
## 193  9906    X1.5   04/21   01:27   <NA>   360   2393  PHTX
## 194  9934    C3.2   04/30   14:26   92     90    618   PHTX
## 195  <NA>    <NA>   04/30   23:26   254    199   1103  PHTX
## 196  9937    <NA>   05/02   23:18   119    99    902   PHTX
## 197  9948    C4.5   05/16   00:50   <NA>   360   600   PHTX
## 198  9948    C9.7   05/22   00:06   230    186   1246  PHTX
## 199  9967    C3.7   05/27   13:27   49     360   1106  PHTX
## 200 10017    M1.0   07/07   11:30   277    360   1423  PHTX
## 201  <NA>    <NA>   07/09   19:31   <NA>   360   1076  PHTX
## 202 10030    M1.8   07/15   21:30   14     165   1300  PHTX
## 203 10030    M8.5   07/17   07:31   36     177   716   PHTX
## 204 10030    X1.8   07/18   08:06   <NA>   360   1099  PHTX
## 205 10036    C3.3   07/18   19:31   <NA>   360   2191  PHTX
## 206  <NA>    <NA>   07/19   16:30   <NA>   360   2047  PHTX
## 207 10039    X3.3   07/20   22:06   <NA>   360   1941  PHTX
## 208 10039    X4.8   07/23   00:42   <NA>   360   2285  PHTX
## 209 10039    M8.7   07/26   22:06   <NA>   360   818   PHTX
## 210  FILA    <NA>   07/29   12:07   13     155   562   PHTX
## 211 10039    X1.0   08/03   19:31   259    138   1150  PHTX
## 212 10061    M2.3   08/14   02:30   297    133   1309  PHTX
## 213 10061    M2.4   08/16   06:06   293    162   1378  PHTX
## 214 10069    M5.2   08/16   12:30   <NA>   360   1585  PHTX
## 215 10069    X3.1   08/24   01:27   <NA>   360   1913  PHTX
## 216 10102    C5.2   09/05   16:54   <NA>   360   1748  PHTX
## 217 10105    M2.9   09/10   15:30   127    38    273   PHTX
## 218 10134    M1.8   09/27   13:56   64     64    591   PHTX
## 219 10150    C4.7   10/13   19:35   252    141   373   PHTX
## 220 10159    M2.2   10/13   23:54   107    264   1009  PHTX
## 221  <NA>    C4.5   10/14   14:54   <NA>   360   1694  PHTX
## 222  <NA>    <NA>   10/27   23:18   <NA>   360   2115  PHTX
## 223 10180    M4.6   11/09   13:31   <NA>   360   1838  PHTX
## 224 10180    M2.4   11/10   03:30   203    282   1670  PHTX
## 225 10180    M1.8   11/11   15:54   212    93    1083  PHTX
## 226  <NA>    <NA>   11/24   20:30   <NA>   360   1077  PHTX
## 227 10229    M2.7   12/19   22:06   <NA>   360   1092  PHTX
## 228 10223    M1.1   12/22   03:30   328    272   1071  PHTX
## 229  FILA    C1.7   01/20   18:30   315    105   733   PHTX
## 230  FILA    C2.4   01/27   22:23   205    267   1053  PHTX
## 231 10314    X1.5   03/18   12:30   263    209   1601  PHTX
## 232  <NA>    <NA>   03/18   13:54   <NA>   360   1042  PHTX
## 233  <NA>    <NA>   03/19   02:30   <NA>   360   1342  PHTX
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## 234  <NA>    <NA>    04/22   07:36    87    171    918   PHTX
## 235 10365   X1.3    05/27   23:50   <NA>   360    964   PHTX
## 236 10365   X3.6    05/28   00:50   <NA>   360   1366   PHTX
## 237 10365   X1.2    05/29   01:27   <NA>   360   1237   PHTX
## 238 10365   M9.3    05/31   02:30   <NA>   360   1835   PHTX
## 239  <NA>    <NA>    06/05   20:06   230    239   1458   PHTX
## 240 10386   X1.3    06/15   23:54   <NA>   360   2053   PHTX
## 241 10386   M6.8    06/17   23:18   <NA>   360   1813   PHTX
## 242 10397   M3.6    <NA>    <NA>    <NA>   <NA>   <NA>   PHTX
## 243 10431   M2.7    08/19   10:30   262    111    468   PHTX
## 244  <NA>    <NA>    10/21   03:54   <NA>   360   1484   PHTX
## 245 10486   X1.2    10/26   06:54   108    109   1371   PHTX
## 246 10484   X1.2    10/26   17:54   270    122   1537   PHTX
## 247 10486   X17.    10/28   11:30   <NA>   360   2459   PHTX
## 248 10486   X10.    10/29   20:54   <NA>   360   2029   PHTX
## 249 10486   M3.2    11/01   23:06   254    360    899   PHTX
## 250  <NA>    <NA>    11/02   09:30   <NA>   360   2036   PHTX
## 251 10486   X8.3    11/02   17:30   <NA>   360   2598   PHTX
## 252 10488   X2.7    11/03   01:59   304     65    827   PHTX
## 253 10488   X3.9    11/03   10:06   293    103   1420   PHTX
## 254  <NA>    <NA>    11/04   12:06   <NA>   360   1208   PHTX
## 255 10486   X28.    11/04   19:54   <NA>   360   2657   PHTX
## 256  <NA>    <NA>    11/09   06:30   <NA>   360   2008   PHTX
## 257  <NA>    <NA>    11/11   02:30   <NA>   360   1359   PHTX
## 258 10501   M1.4    11/13   09:30    49    217   1141   PHTX
## 259 10501   M4.2    11/17   09:26    72    360   1061   PHTX
## 260 10501   M3.9    11/18   08:50   <NA>   360   1660   PHTX
## 261 10508   M4.5    11/18   09:50    95     91   1824   PHTX
## 262 10508   C7.2    12/02   10:50   261     73   1393   PHTX
## 263 10536   M6.9    <NA>    <NA>    <NA>   <NA>   <NA>   PHTX
## 264 10537   M5.8    01/06   08:53    88    166   1469   PHTX
## 265 10537   M4.5    01/07   04:06    78    171   1581   PHTX
## 266 10537   M8.3    01/07   10:30    81    182   1822   PHTX
## 267 10588   M2.4    04/06   13:31   <NA>   360   1368   PHTX
## 268 10588   C7.4    04/08   10:30   <NA>   360   1068   PHTX
## 269 10588   C1.3    04/08   13:31   198     92    959   PHTX
## 270 10588   C9.6    04/11   04:30   203    314   1645   PHTX
## 271  <NA>    <NA>    06/02   23:15   287    136   1102   PHTX
## 272  <NA>    <NA>    06/03   16:50   303    179   1226   PHTX
## 273  <NA>    <NA>    06/04   07:50   309    360   1306   PHTX
## 274 10635   C1.7    <NA>    <NA>    <NA>   <NA>   <NA>   PHTX
## 275 10635   C2.5    <NA>    <NA>    <NA>   <NA>   <NA>   PHTX
## 276 10652   C4.1    07/23   19:31   209    100    874   PHTX
## 277 10652   M1.1    07/25   14:54   <NA>   360   1333   PHTX
## 278 10652   C2.1    07/29   12:06   <NA>   360   1180   PHTX
## 279 10652   C8.4    07/31   05:54   259    360   1192   PHTX
## 280  <NA>    <NA>    08/08   08:54   <NA>   360   1004   PHTX
## 281 10672   M4.8    09/12   00:36   <NA>   360   1328   PHTX
## 282 10672   M1.9    <NA>    <NA>    <NA>   <NA>   <NA>   PHTX
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## 283 10687    C1.7   10/24  03:54    26   165    417  PHTX
## 284 10691    M4.2   10/30  06:54  <NA>   360    422  PHTX
## 285  <NA>    <NA>   11/01  06:06   266   146    925  PHTX
## 286 10696    M5.0   11/03  16:06  <NA>   360   1068  PHTX
## 287 10696    M1.6   11/03  03:54    91   360    918  PHTX
## 288 10696    M3.6   11/06  02:06   351    84   1111  PHTX
## 289 10696    X2.0   11/07  16:54  <NA>   360   1759  PHTX
## 290 10696    M8.9   11/09  17:26  <NA>   360   2000  PHTX
## 291 10696    X2.5   11/10  02:26  <NA>   360   3387  PHTX
## 292 10708    M1.5   12/03  00:26  <NA>   360   1216  PHTX
## 293 10709    C2.5   12/08  20:26  <NA>   360    611  PHTX
## 294 10715    M2.3   12/29  16:45    71   140    774  PHTX
## 295 10715    M4.2   12/30  22:30  <NA>   360   1035  PHTX
## 296 10715    X1.7   01/01  00:54  <NA>   360    832  PHTX
## 297 10715    C7.3   <NA>   <NA>  <NA>  <NA>   <NA>  PHTX
## 298 10720    M8.6   01/15  06:30  <NA>   360   2049  PHTX
## 299 10720    X2.6   01/15  23:06  <NA>   360   2861  PHTX
## 300 10720    X2.0   01/17  09:30  <NA>   360   2094  PHTX
## 301 10720    X1.3   01/19  08:29  <NA>   360   2020  PHTX
## 302 10720    X3.8   01/17  09:54  <NA>   360   2547  PHTX
## 303 10720    X7.1   01/20  06:54  <NA>   360    882  PHTX
## 304  <NA>    <NA>   02/01  11:06  <NA>   360   1380  PHTX
## 305 10758    C8.0   05/02  22:26   105   148    955  PHTX
## 306 10758    <NA>   05/03  00:26    82   360    978  PHTX
## 307 10758    C8.5   05/06  17:28  <NA>   360   1128  PHTX
## 308 10759    M8.0   05/13  17:12  <NA>   360   1689  PHTX
## 309  <NA>    <NA>   05/17  03:06   252    89    311  PHTX
## 310 10775    M1.0   06/03  12:32  <NA>   360   1679  PHTX
## 311 10775    M4.0   <NA>   <NA>  <NA>  <NA>   <NA>  PHTX
## 312 10786    M4.9   07/07  17:06  <NA>   360    683  PHTX
## 313 10786    M2.8   07/09  22:30  <NA>   360   1540  PHTX
## 314 10786    M5.0   07/13  14:30  <NA>   360   1423  PHTX
## 315 10786    X1.2   07/14  10:54  <NA>   360   2115  PHTX
## 316  <NA>    <NA>   07/17  11:30  <NA>   360   1527  PHTX
## 317  <NA>    <NA>   07/24  13:54  <NA>   360   2528  PHTX
## 318  <NA>    <NA>   07/24  22:30  <NA>   360   1234  PHTX
## 319 10792    M3.7   07/27  04:54  <NA>   360   1787  PHTX
## 320  <NA>    <NA>   07/27  07:54    65    51    533  PHTX
## 321 10792    X1.3   07/30  06:50  <NA>   360   1968  PHTX
## 322 10792    M1.0   08/01  14:30    83    93    984  PHTX
## 323 10798    M2.6   08/22  01:31  <NA>   360   1194  PHTX
## 324 10798    M5.6   08/22  17:30  <NA>   360   2378  PHTX
## 325 10798    M2.7   08/23  14:54  <NA>   360   1929  PHTX
## 326  <NA>    <NA>   08/29  10:54  <NA>   360   1600  PHTX
## 327 10803    C2.0   08/31  11:30  <NA>   360    825  PHTX
## 328  <NA>    <NA>   08/31  22:30  <NA>   360   1808  PHTX
## 329  <NA>    <NA>   09/03  03:12  <NA>   360   1672  PHTX
## 330  <NA>    C2.7   09/05  09:48  <NA>   360   2326  PHTX
## 331 10808    X1.7   <NA>   <NA>  <NA>  <NA>   <NA>  PHTX
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## 332 10808      X6.2    09/09    19:48    <NA>     360     2257   PHTX
## 333 10808      X2.1    09/10    21:52    <NA>     360     1893   PHTX
## 334 10808      M3.0    09/11    13:00    <NA>     360     1922   PHTX
## 335 10808      X1.5    09/13    20:00    <NA>     360     1866   PHTX
## 336 10876      C1.8    04/30    09:54    <NA>     360      544   PHTX
## 337 10898      M2.5    07/06    08:54    <NA>     360      911   PHTX
## 338 10904      C3.6    08/16    16:30    <NA>     360      888   PHTX
## 339 10905      C2.5    08/26    20:57     164     208      786   PHTX
## 340  <NA>      <NA>    11/05    17:54      39     196     1398   PHTX
## 341  <NA>      <NA>    11/06    10:30      77      55      829   PHTX
## 342  <NA>      C8.8    11/06    17:54    <NA>     360     1994   PHTX
## 343 10930      X9.0    <NA>     <NA>     <NA>    <NA>     <NA>   PHTX
## 344 10930      M1.1    <NA>     <NA>     <NA>    <NA>     <NA>   PHTX
## 345 10930      M6.0    <NA>     <NA>     <NA>    <NA>     <NA>   PHTX
## 346 10930      X6.5    <NA>     <NA>     <NA>    <NA>     <NA>   PHTX
## 347 10930      X3.4    12/13    02:54    <NA>     360     1774   PHTX
## 348 10930      X1.5    12/14    22:30    <NA>     360     1042   PHTX
## 349 10940      C6.3    01/25    06:54    <NA>     360     1367   PHTX
## 350 10956      B9.5    05/19    13:24     260     106      958   PHTX
## 351 10980      C8.3    12/31    01:31      92     164      995   PHTX
## 352 10989      M1.7    03/25    19:31      98     112     1103   PHTX
## 353  <NA>      B3.8    04/26    14:30      65     281      515   PHTX
## 354 11092      C3.2    <NA>     <NA>     <NA>    <NA>     <NA>   PHTX
## 355 11093      M1.0    08/07    18:36    <NA>     360      871   PHTX
## 356 11099      C4.5    08/18    05:48     255     184     1471   PHTX
## 357  <NA>      <NA>    01/13    09:36      79     122      664   PHTX
## 358 11149      C1.2    01/27    12:36     255      43      349   PHTX
## 359 11158      M6.6    02/13    18:36     359     276      373   PHTX
## 360 11158      X2.2    02/15    02:24    <NA>     360      669   PHTX
## 361 11163      M3.5    02/24    07:48      70     158     1186   PHTX
## 362 11166      M1.9    03/07    14:48     354     261      698   PHTX
## 363 11164      M3.7    03/07    20:00    <NA>     360     2125   PHTX
## 364  <NA>      C5.4    05/09    20:57      55     292     1318   PHTX
## 365 11227      C8.7    05/29    21:24     107     186     1407   PHTX
## 366 11227      C3.7    06/02    08:12    <NA>     360      976   PHTX
## 367 11222      <NA>    06/04    06:48    <NA>     360     1407   PHTX
## 368 11222      <NA>    06/04    22:05    <NA>     360     2425   PHTX
## 369 11226      M2.5    06/07    06:49    <NA>     360     1255   PHTX
## 370 11261      M1.4    08/02    06:36     288     268      712   PHTX
## 371 11261      M9.3    08/04    04:12    <NA>     360     1315   PHTX
## 372 11263      M3.5    08/08    18:12     305     237     1343   PHTX
## 373 11263      X6.9    08/09    08:12    <NA>     360     1610   PHTX
## 374 11283      M5.3    09/06    02:24    <NA>     360      782   PHTX
## 375 11283      X2.1    09/06    23:05    <NA>     360      575   PHTX
## 376 11302      X1.4    09/22    10:48    <NA>     360     1905   PHTX
## 377 11302      M7.1    09/24    12:48    <NA>     360     1915   PHTX
## 378 11302      M7.4    09/25    05:12      98     193      788   PHTX
## 379 11319      M1.3    10/21    13:25     252     109      317   PHTX
## 380 11343      M1.1    11/09    13:36    <NA>     360      907   PHTX
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## 381 11353      C1.2     11/26    07:12    <NA>      360       933    PHTX
## 382  <NA>      <NA>     12/21    03:12    <NA>      360      1064    PHTX
## 383 11387      M4.0     12/25    18:48     247      125       366    PHTX
## 384  <NA>      <NA>     01/02    15:12    <NA>      360      1138    PHTX
## 385 11402      M3.2     01/19    14:36    <NA>      360      1120    PHTX
## 386 11402      M8.7     01/23    04:00    <NA>      360      2175    PHTX
## 387 11402      X1.7     01/27    18:27    <NA>      360      2508    PHTX
## 388 11429      X1.1     03/05    04:00    <NA>      360      1531    PHTX
## 389 11429      X5.4     03/07    00:24    <NA>      360      2684    PHTX
## 390 11429      M6.3     03/09    04:26    <NA>      360       950    PHTX
## 391 11429      M8.4     03/10    18:00    <NA>      360      1296    PHTX
## 392 11429      M7.9     03/13    17:36    <NA>      360      1884    PHTX
## 393  <NA>      <NA>     03/18    00:24    <NA>      360      1210    PHTX
## 394  <NA>      <NA>     03/24    00:24    <NA>      360      1152    PHTX
## 395  <NA>      <NA>     03/26    23:12    <NA>      360      1390    PHTX
## 396  <NA>      <NA>     03/27    22:00     261      101       622    PHTX
## 397 11451      C3.9     04/09    12:36    <NA>      360       921    PHTX
## 398 11461      C1.7     04/15    02:24      79      173      1220    PHTX
## 399 11476      M5.1     05/17    01:48    <NA>      360      1582    PHTX
## 400 11513      M1.8     07/04    17:24    <NA>      360       662    PHTX
## 401 11515      M1.6     07/05    22:00     220       94       980    PHTX
## 402 11515      X1.1     07/06    23:24    <NA>      360      1828    PHTX
## 403 11515      M6.9     07/08    16:54     212      157      1495    PHTX
## 404 11520      X1.4     07/12    16:48    <NA>      360       885    PHTX
## 405 11520      C9.9     07/17    13:48     255      176       958    PHTX
## 406 11520      M7.7     07/19    05:24    <NA>      360      1631    PHTX
## 407 11520      <NA>     07/23    02:36    <NA>      360      2003    PHTX
## 408 11563      C8.1     08/31    20:00    <NA>      360      1442    PHTX
## 409 11577      C3.7     09/28    00:12    <NA>      360       947    PHTX
## 410 11598      M1.3     10/21    20:57      83      243       496    PHTX
## 411 11650      C2.2     01/16    19:00     211      250       648    PHTX
## 412 11692      M1.1     03/15    07:12    <NA>      360      1063    PHTX
## 413 11719      M6.5     04/11    07:24    <NA>      360       861    PHTX
## 414 11719      C6.5     04/18    18:24     284      199       495    PHTX
## 415 11723      C2.7     04/21    20:36     255      212       562    PHTX
## 416 11748      X1.7     05/13    02:00    <NA>      360      1270    PHTX
## 417 11748      X2.8     05/13    16:07    <NA>      360      1850    PHTX
## 418 11748      X3.2     05/14    01:25    <NA>      360      2625    PHTX
## 419 11748      X1.2     05/15    01:48    <NA>      360      1366    PHTX
## 420 11745      M5.0     05/22    13:25    <NA>      360      1466    PHTX
## 421 11777      M2.9     06/21    03:12     123      360      1900    PHTX
## 422 11777      C4.4     06/28    02:00    <NA>      360      1037    PHTX
## 423 11787      C6.8     07/04    20:12     111      188       468    PHTX
## 424    EP      B4.5     08/06    02:12      48      207       441    PHTX
## 425 11818      M1.4     08/17    19:12    <NA>      360      1202    PHTX
## 426 11836      C8.3     08/30    02:48    <NA>      360       949    PHTX
## 427   DIM      <NA>     09/06    20:48      90      182       734    PHTX
## 428    EP      C1.3     09/29    22:12    <NA>      360      1179    PHTX
## 429   DIM      C1.2     10/02    20:36     309      263       619    PHTX
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## 430 11865    <NA>   10/05   07:09   <NA>    360    964   PHTX
## 431 11869    <NA>   10/11   07:24   <NA>    360   1200   PHTX
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## 433 11875    M4.2   10/22   21:48   <NA>    360    459   PHTX
## 434 11882    X2.1   10/25   15:12   <NA>    360   1081   PHTX
## 435 11875    C4.5   10/26   03:12    271    208    473   PHTX
## 436 11875    M1.3   10/26   09:48    286    141    460   PHTX
## 437 11875    C9.1   10/27   18:12    308    189    795   PHTX
## 438 11875    M5.1   10/28   04:48    315    156   1201   PHTX
## 439 11882    M4.4   10/28   15:36   <NA>    360    812   PHTX
## 440 11875    <NA>   11/04   05:12   <NA>    360   1040   PHTX
## 441 11899    <NA>   11/07   10:36   <NA>    360   1405   PHTX
## 442 11893    X1.0   11/19   10:36   <NA>    360    740   PHTX
## 443 11899    <NA>   11/29   17:24    251    188    465   PHTX
## 444   DIM    <NA>   12/05   10:24    133    148    549   PHTX
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## 446 11909    M1.2   12/07   07:36   <NA>    360   1085   PHTX
## 447 11912    C4.6   12/12   03:36    214    276   1002   PHTX
## 448  <NA>    <NA>   12/20   04:36    255     26    337   PHTX
## 449 11928    <NA>   12/28   17:36   <NA>    360   1118   PHTX
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## 452 11936    <NA>   01/06   08:00   <NA>    360   1402   PHTX
## 453 11943    X1.2   01/07   18:24   <NA>    360   1830   PHTX
## 454   DIM    C3.6   01/20   22:00   <NA>    360    721   PHTX
## 455    EP    <NA>   02/18   01:36   <NA>    360    779   PHTX
## 456 11976    M3.0   02/20   08:00   <NA>    360    948   PHTX
## 457 11990    X4.9   02/25   01:25   <NA>    360   2147   PHTX
## 458 12005    <NA>   03/04   18:48   <NA>    360    794   PHTX
## 459  <NA>    <NA>   03/05   13:48   <NA>    360    828   PHTX
## 460    EP    <NA>   03/25   05:36    261    223    651   PHTX
## 461 12017    M2.6   03/28   23:48    325    138    514   PHTX
## 462 12011    <NA>   03/29   18:12   <NA>    360    528   PHTX
## 463 12027    M6.5   04/02   13:36   <NA>    360   1471   PHTX
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## 465 12027    C8.3   04/04   14:12     54     96    467   PHTX
## 466 12036    M7.3   04/18   13:25   <NA>    360   1203   PHTX
## 467 12027    <NA>   05/07   16:24   <NA>    360    923   PHTX
## 468 12051    <NA>   05/08   03:24   <NA>    360    847   PHTX
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## 471 12087    X1.5   06/10   13:30   <NA>    360   1469   PHTX
## 472 12085    M3.1   06/12   22:12    233    186    684   PHTX
## 473   EP?    C1.5   07/30   07:00     13    254    700   PHTX
## 474 12127    M1.5   08/01   18:36   <NA>   360h    789   PHTX
## 475 12146    C2.2   08/22   11:12   <NA>    360    600   PHTX
## 476 12146    M2.0   08/25   15:36   <NA>    360    555   PHTX
## 477 12146    M3.9   08/25   20:48    273    177    711   PHTX
## 478 12157    <NA>   08/28   17:24   <NA>    360    766   PHTX
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## 481 12158    X1.6   09/10   18:00   <NA>   360   1267   PHTX
## 482 12164    <NA>   09/20   05:24    292    87    426   PHTX
## 483 12158    <NA>   09/22   06:12    342   252    618   PHTX
## 484 12172    M2.3   09/23   23:36    109   134    331   PHTX
## 485    EP    <NA>   09/24   21:30   <NA>   360   1350   PHTX
## 486 12173    M7.3   10/02   19:12    264   159    513   PHTX
## 487    EP    C3.0   10/10   16:12    309   360    782   PHTX
## 488 12192    C4.4   10/21   12:48    152   142    260   PHTX
## 489 12203    <NA>   11/08   16:36    305   141    426   PHTX
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## 491 12241    M1.1   12/17   02:00    107   108    869   PHTX
## 492 12242    M8.7   12/17   05:00   <NA>   360    587   PHTX
## 493 12241    M6.9   12/19   01:04   <NA>   360   1195   PHTX
## 494 12241    M1.0   12/21   12:12   <NA>   360    669   PHTX
## 495 12290    M8.2   03/03   01:48    329   213    764   PHTX
## 496 12297    M1.5   03/06   07:12     83   155    880   PHTX
## 497 12297    M5.8   03/10   00:00   <NA>   360    995   PHTX
## 498 12297    M2.6   03/11   08:24     62    93    530   PHTX
## 499  <NA>    <NA>   03/24   08:24   <NA>   360   1794   PHTX
## 500  <NA>    <NA>   04/26   03:24   <NA>   360    820   PHTX
## 501 12339    X2.7   05/05   22:24   <NA>   360    715   PHTX
## 502  <NA>    <NA>   05/12   02:48    286   250    772   PHTX
## 503 12364    C2.8   06/09   20:12     77   262   1036   PHTX
## 504 12365    C5.9   06/14   04:12    199   195   1228   PHTX
## 505 12371    M3.0   06/18   17:24   <NA>   360   1305   PHTX
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## 510 12403    M1.2   08/22   07:12   <NA>   360    547   PHTX
## 511 12415    C2.6   09/18   05:00    201   131    823   PHTX
## 512 12415    M2.1   09/20   18:12   <NA>   360   1239   PHTX
## 513 12443    M3.7   11/04   14:48   <NA>   360    578   PHTX
## 514 12449    M3.9   11/09   13:25    142   273   1041   PHTX
## 515 12468    C6.6   12/16   09:36   <NA>   360    579   PHTX
## 516 12473    M4.7   12/23   01:25     98    89    520   PHTX
## 517 12473    M1.8   12/28   12:12   <NA>   360   1212   PHTX
## 518 12473    M2.3   01/01   23:24   <NA>   360   1730   PHTX
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