

	Date	Intensity (pFU)
1	11/4/1997	72
2	11/6/1997	490
3	4/20/1998	1,700
4	5/2/1998	150
5	5/6/1998	210
6	8/24/1998	670
7	9/25/1998	44
8	9/30/1998	1,200
9	11/8/1998	11
10	1/23/1999	14
11	4/24/1999	32
12	5/5/1999	14
13	6/2/1999	48
14	6/4/1999	64
15	2/18/2000	13
16	4/4/2000	55
17	6/7/2000	84
18	6/10/2000	46
19	7/14/2000	24,000
20	7/22/2000	17
21	7/28/2000	17
22	8/11/2000	17
23	9/12/2000	320
24	10/16/2000	15
25	10/26/2000	15
26	11/8/2000	14,800
27	11/24/2000	942
28	1/28/2001	49
29	3/29/2001	35
30	4/2/2001	1,110
31	4/10/2001	355

This is a table of 31 solar proton storms (SPS) detected between 1997 and 2001. These storms can cause satellite damage and enhanced radiation exposure to astronauts working in space.

Problem 1 – What is the mean, median and mode for the intensity (in units of pFU) of this sample of SPSs during this period of time?

Problem 2 - What is the median date of the occurrence of these SPSs?

	Date (pFU)	SPE (pFU)	Sum (pFU)
1	11/8/1998	11	11
2	2/18/2000	13	24
3	1/23/1999	14	38
4	5/5/1999	14	52
5	10/16/2000	15	67
6	10/26/2000	15	82
7	7/22/2000	17	99
8	8/11/2000	17	116
9	7/28/2000	17	133
10	4/24/1999	32	165
11	3/29/2001	35	200
12	9/25/1998	44	244
13	6/10/2000	46	290
14	6/2/1999	48	338
15	1/28/2001	49	387
16	4/4/2000	55	442
17	6/4/1999	64	506
18	11/4/1997	72	578
19	6/7/2000	84	662
20	5/2/1998	150	812
21	5/6/1998	210	1022
22	9/12/2000	320	1342
23	4/10/2001	355	1697
24	11/6/1997	490	2187
25	8/24/1998	670	2857
26	11/24/2000	942	3799
27	4/2/2001	1,110	4909
28	9/30/1998	1,200	6109
29	4/20/1998	1,700	7809
30	11/8/2000	14,800	22609
31	7/14/2000	24,000	46609

Students may cut and paste this table into an Excel spreadsheet and perform the necessary calculations on columns 1, 2 and 3 by summing and sorting.

Problem 1 – What is the mean, median and mode for the intensity (in units of pFU) of this sample of SPSs during this period of time?

Answer:

Mean: The mean 'average' value is found by summing all the intensity values in the table (= 46,609) and dividing by 31 to get Average = **1504 pFU**.

Median: First sort the intensity values in ascending order. The median value is the value that splits the list in half. This would be the value for entry number 16 because the list has an odd number of elements. SO the median is **443 pFU**.

Mode: The most often repeated value in pFUs is **17 pFUs**.

Problem 2 - What is the median date of the occurrence of these SPSs?

Answer: Sort the dates in ascending order and select entry number 16, which is **April 4, 2000**.