Solar Flares Effect on AM Radio

Passage

Over a 2 week period, the quality of AM radio reception of five difference radio stations was recorded. The reception quality was given a quantitative value in the range of 0-8. A value of 0 indicates that the station was received as random static, while a value of 8 indicates that the station was received loud and clear with no interference. As values increase from 0 up to 8, the reception increases accordingly.

The recording of the reception quality was done at a single location. Table 1 identifies the AM radio frequency of each station as well as the distance of the station from the recording location.

Frequency (KHz)	Distance (Transmitter to Receiver in miles)
650	20
710	13
750	45
1040	4
1130	22
Table 1 – AM Radio Transmission Definition Table	

Data was recorded twice daily, at 10AM and 4PM. Tables 3 and 4 show the results of the recorded data for each AM radio frequency at both times.

Frequency (KHz)	Time of Day	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
650	**10AM**	8	7	8	7	7	6	6
	4PM	7	8	8	8	7	7	7
710	**10AM**	9	9	9	9	9	9	9
	4PM	9	9	9	9	9	9	9
750	**10AM**	8	8	7	6	6	4	3
	4PM	8	8	8	8	7	4	4
1040	**10AM**	9	9	9	9	10	9	9
	4PM	9	9	10	10	10	10	10
1130	**10AM**	8	7	8	7	7	6	6
	4PM	7	8	8	8	7	7	7
Table 2 – Week 1 Reception Tabulation								

Frequency (KHz)	Time of Day	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
650	**10AM**	6	4	6	7	8	8	8
	4PM	7	5	6	7	8	9	8
710	**10AM**	8	7	7	8	8	8	9
	4PM	8	7	8	8	8	9	9
750	**10AM**	3	1	3	4	6	7	7
	4PM	4	3	3	5	6	7	8
1040	**10AM**	8	8	9	9	9	9	9
	4PM	9	9	9	9	10	10	10
1130	**10AM**	6	4	6	7	8	8	8
	4PM	7	5	6	7	8	9	8

Table 3 – Week 2 Reception Tabulation

Table 4 shows the solar flare activity for each day of the experiment. The solar activity is the percentage chance that solar flare activity will hit the earth on the given day. So the higher the number, the greater the likelihood of solar flare activity hitting the earth.

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
0	10	10	33	50	66	66	66	75	66	50	33	10	10

Table 4 – Solar Flare Activity Table