Statistical Analysis of Climatological Data to Characterize Erosion Potential: 1. Precipitation Events in Western Oregon

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STATISTICAL ANALYSIS OF CLIMATOLOGICAL DATA TO CHARACTERIZE EROSION POTENTIAL: 1. PRECIPITATION EVENTS IN WESTERN OREGON

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ABSTRACT

Periods of precipitation with certain combinations of characteristics (e.g., high intensity rainfall on saturated soil) can lead to appreciable soil loss in western Oregon. In order to assign realistic probabilities to the occurrence of these periods for use in predicting long-term erosion rates, a soil erosion-specific definition of a precipitation event is applied to more than 31 years of hourly wet season precipitation data from Portland, Salem, and Eugene, Oregon. The values of nine characteristics (duration, magnitude, average intensity, maximum intensity, hours between events, and four measures of antecedent rainfall) that are associated with each event are examined.

The statistical analysis of the precipitation event characteristics includes consideration of the marginal distributions and order and return statistics of the individual characteristics as well as joint and conditional distributions of several pairs of characteristics. The order and return statistics provide information about extreme values of individual characteristics, whereas the probabilities of occurrence of some combinations of characteristics are estimated by the joint distributions. Examination of the conditional distributions suggests the types of relationships that exist among the characteristics. The results of these analyses provide general information regarding the types of precipitation events that occur in western Oregon as well as estimates of specific probabilities that are important in the modeling and forecasting of soil erosion in this region.

ACKNOWLEDGMENTS

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1. INTRODUCTION

Measurements conducted over a five-year period on small agricultural watersheds have identified several combinations of rainfall characteristics, soil temperature, and soil moisture status that control the timing and amount of soil loss in western Oregon (Harward et al., 1980). Two examples of such combinations of factors are (a) a rainfall of high intensity and (b) rainfall which occurs when the soil is frozen or saturated from previous rains. To assign realistic probabilities to the occurrence of these conditions, it is first necessary to identify them in the available long-term climatic records. The interpretation of short-term erosion measurements and of comparisons between experimental sites can be enhanced by such analyses.

A cooperative research project was initiated in 1980 between the Departments of Soil Science and Atmospheric Sciences at Oregon State University. The project has three primary objectives:

(a) To determine the combinations of rainfall characteristics, antecedent soil water status, and occurrence of frozen soil which result in soil loss;

(b) To utilize statistical techniques to identify critical conditions in the long-term climatic records; and

(c) To obtain the probabilities of occurrence of some weather events that are important with regard to soil erosion, particularly those events that represent the combined effects of high rainfall intensity, soil saturation, and freezing air temperatures.

The purpose of this report is to summarize the results of analyses of long-term precipitation records for three stations (Portland, Salem, and Eugene) in western Oregon. Similar analyses of precipitation events at two eastern Oregon and Washington stations (Pendleton, Oregon, and Walla Walla, Washington) will be summarized in a separate report. Evaluations of freezing temperature events and the characteristics of joint precipitation and freezing temperature events at the five stations will be presented in future reports.

The approach that has been taken in the study of precipitation records has been to first expend considerable effort in selecting a definition of a precipitation event that is compatible with soil hydrologic processes. Once this definition was chosen, the probabilities of occurrence of events that have significant effects on soil erosion could easily be determined from a record of such events. Furthermore, the characteristics of such events could be examined and related to one another. These evaluations provide useful information regarding the types of precipitation events that are observed in western Oregon and the frequency of occurrence of extreme events.

The report consists of eight sections and five appendices. Section 2 contains a brief description of the precipitation data base. A thorough discussion of the analyses undertaken in the process of selecting an appropriate precipitation event definition is presented in Section 3 and the approach taken in the analysis of the precipitation event data is outlined in Section 4. Section 5 contains a description of the marginal distributions of several precipitation event characteristics as well as of the return statistics for the characteristics and the order statistics for extreme values of the characteristics. Joint and conditional distributions of important combinations of event characteristics are described in Sections 6 and 7, respectively, and a summary of the results and analyses is presented in Section 8. A large amount

of time was devoted to the development of a computer-accessible precipitation event data base; this data base is described in Appendix A. Many of the results of the study are presented in tabular form in the remaining appendices. These results are quite extensive but are provided in this report in the hope that they may serve as a useful reference in the future.

2. PRECIPITATION DATA

The basic precipitation data consist of hourly values of precipitation amount for three National Weather Service (NWS) stations in Oregon: (a) Portland, (b) Salem, and (c) Eugene. The period of record for which data are available is approximately 31½ years at each station, from mid-1948 to December 31, 1979. The resolution of the hourly precipitation values is to the nearest hundredth of an inch, with a minimum value of 0.01 inches. Because of the importance of winter rainfall to hydrologic processes in fall-planted western Oregon lands, the data used in all of the analyses described in this report were restricted to the wet season (October to May). These data were obtained from the National Climatic Center (NCC) in a standard NCC tape format.

As part of the analysis, described in Sections 3 and 4, a new "precipitation event" data base was formed for each station. This step was accomplished by combining the hourly data using a specific definition of a precipitation event. A more complete description of the data and how the data may be accessed is presented in Appendix A.

3. SELECTION OF PRECIPITATION EVENT DEFINITION

3.1 Background

Precipitation data are usually collected and reported as a chronological series of rainfall magnitudes observed for time periods such as hours or days. However, for many applications, the individual values are not of interest. Instead, a more relevant data set may be a condensed form of the original data, consisting of a series of "precipitation events."

Precipitation events can be defined using a set of threshold values of one or more control variables. For example, we may (hypothetically) only be interested in periods of time (events) during which precipitation is recorded for more than eight consecutive hours; the control variable in this case would be precipitation duration. Control variables are used to isolate and combine portions of the precipitation series into discrete units that represent the events of interest. Some examples of control variables are minimum or maximum rainfall intensity, duration, and magnitude. The choice of control variables should result from a conceptual model of the relevant hydrologic processes. For the purposes of estimating runoff from western Oregon lands it would be desirable in selecting a precipitation event definition to consider some aspects of the response of a soil profile to rainfall.

After the important control variables and their threshold values have been identified, the precipitation record can be analyzed and the events of interest isolated. Associated with each event are several characteristics such as magnitude, duration, and intensity, which can be calculated from the original series of observations. Then the probabilities of occurrence of precipitation events that are relevant for soil erosion may be estimated, for example, by selecting those events that are characterized by certain ranges of magnitude or duration.

This approach has not been commonly used in practice. Instead, probability estimates of event characteristics for a wide range of hydrologic settings have often been obtained from a single set of magnitude- (or intensity-) duration-frequency relationships developed from rainfall records using a basic event definition. The resulting tables, curves, or empirical equations have then been assumed to represent the frequency distributions of the characteristics of more complex events and have routinely been used in estimating runoff and sediment production for purposes of hydrologic design. An important objection to this approach is that the time required for a soil profile or a watershed to respond to changes in rainfall amount or intensity is not considered. Thus, two precipitation events separated by a small unit of time, say one hour, may have estimated return periods that are very different (Nguyen and Rousselle, 1981) even though the soil may not have had time to adjust its response between the two events. This situation occurs because the infiltration of water held in surface detention and the increase in infiltration capacity as the profile drains are relatively slow processes. On a larger scale, the response of a watershed to sequences of wet and dry periods is primarily controlled by the time required for overland flow to reach the channel margins and by the hydraulic characteristics of the channel.

Because no general procedure is available for identifying a suitable precipitation event definition for use in rainfall-runoff modeling, an initial study was conducted to provide information regarding the type of precipitation event definition that would be most appropriate for this application. The objective of this initial study was to identify a procedure for selecting combinations of control variables and critical values of the variables which would define the precipitation events that are important to the hydrologic processes of runoff and erosion in western

Oregon. This study consisted of two separate investigations. The first of these was an extensive analysis of the 31½-year record of hourly precipitation magnitudes at Salem, Oregon. The second investigation was an evaluation of the results of studies related to the response of hydrologic systems to precipitation events. These studies are discussed in Sections 3.2 and 3.3, respectively.

3.2 Analysis of the Precipitation Record

The analysis of the wet season (October to May) hourly precipitation data for Salem followed two basic steps. First, the precipitation data were combined into precipitation events using several different definitions. Second, some characteristics of the events formulated under different definitions were compared with one another. The results of these comparisons provided an indication of which definitions would be most appropriate with regard to soil erosion applications.

Two control variables were used to divide the continuous 31½-year precipitation record into precipitation events. These variables are (a) maximum rainfall intensity and (b) separation time (hours between events). Maximum rainfall intensity, I_m, was chosen because of the interaction of rainfall intensity, infiltration rate, and runoff. Separation time, S_t, was chosen because of the importance of antecedent rainfall and the internal drainage of the soil profile in determining the hydrologic response of a watershed to subsequent rainfall events. In this initial study, combinations of three values of I_m (0.01, 0.02, and 0.03 in/hr), and five values of S_t (1, 2, 6, 12, and 24 hours) were used as control variables to divide the record of hourly rainfall values into precipitation events. An event was defined as a series of hours for which (a) the maximum number of consecutive dry hours is less than S_t and (b) the maximum hourly rainfall is greater than or equal to I_m.

Some examples of the implementation of this definition are illustrated in Figure 1. For example, consider the case of I_m = 0.01 in/hr and S_t = 1 hour. Utilization of this definition creates nine events in the 90-hour record shown. An increase in the value of S_t results in the combination of some events into one event, whereas an increase in the value of I_m excludes some events.

The event definitions were applied to the Salem hourly precipitation data and several characteristics were calculated for each of the precipitation events defined. These characteristics include the event duration, magnitude, average intensity, hours between events, and maximum intensity. These characteristics are defined as follows: The duration is the length of the event in hours, from the first hour to the last hour. The magnitude is the total amount of precipitation that occurred during the event, summed over all hours. The average intensity is the average rate of precipitation per hour. It should be noted that

$$\text{magnitude} = (\text{average intensity}) \times (\text{duration}). \tag{1}$$

Hours between events is the total number of dry hours separating the beginning of the event from the end of the previous event. Note that the value of this variable must be greater than or equal to S_t. Finally, maximum intensity is the maximum rainfall during any one hour within the event. A summary of these definitions is given in Table 1 and an example of the computation of the values of the characteristics is presented in Figure 2.

The analysis of the precipitation event characteristics for each event definition included the estimation of "exceedance probabilities" for the characteristics magnitude, duration, and maximum intensity. An exceedance probability for a particular characteristic is defined as the probability of occurrence of an event for which a specified value of the characteristic

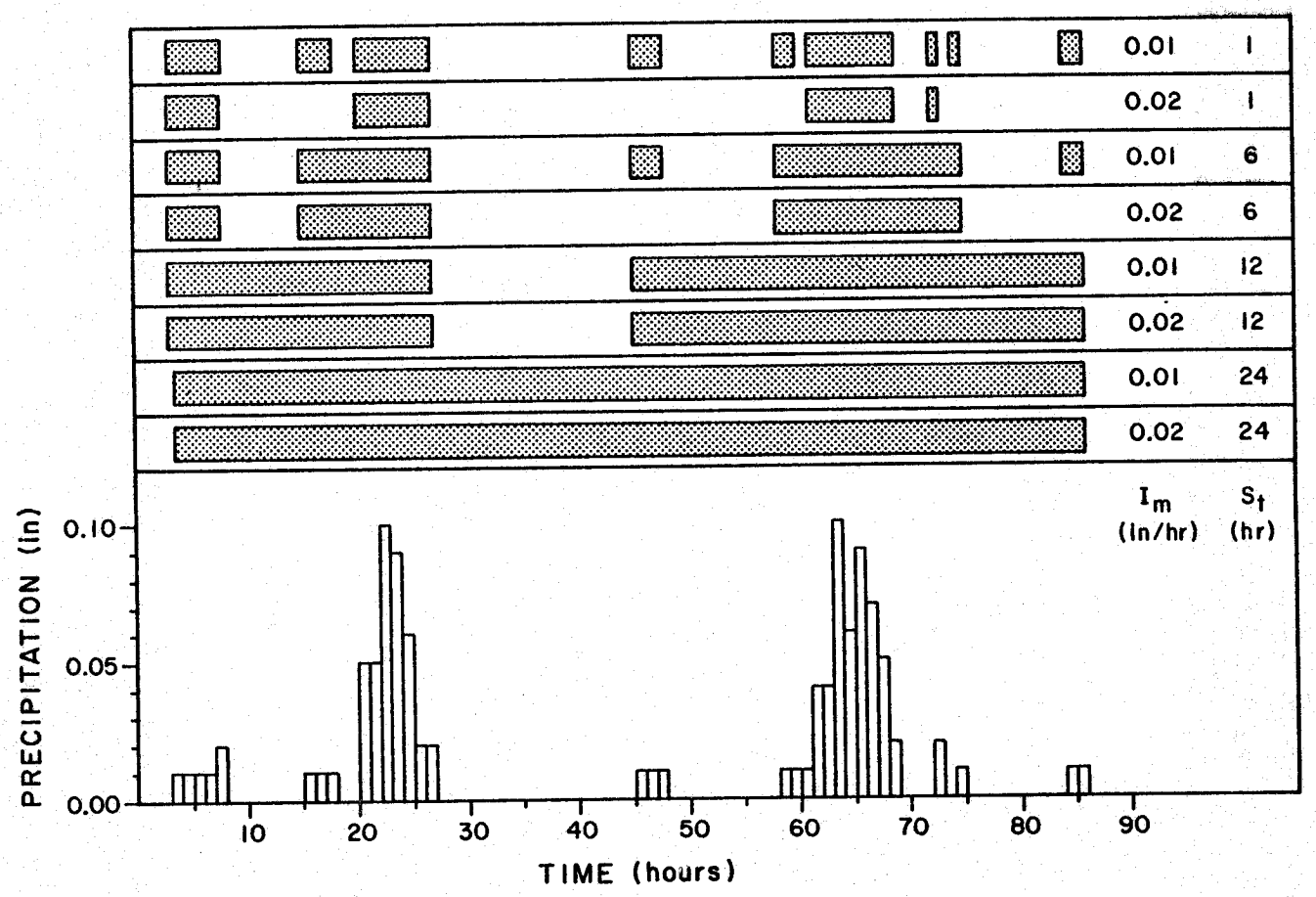


Figure 1. Schematic example of the application of a precipitation event definition with maximum intensity (I_m) and separation time (S_t) as the control variables. See text for further explanation.

Table 1. Definitions of calculated characteristics of precipitation events

F_k = index of first hour of event k in a given year
L_k = index of last hour of event k in a given year
p_i = precipitation recorded during hour i in a given year

Variable Name	Definition	Units	Formula
Duration	Length of event from first hour to last.	hrs	$D_k = (L_k+1) - F_k$
Magnitude	Total amount of precipitation during the event.	in	$M_k = \sum_{i=F_k}^{L_k} p_i$
Average Intensity	Average precipitation intensity during the event.	in/hr	$I_k = \frac{M_k}{D_k}$
Hours Between Events	Number of hours separating the event from the previous event.	hrs	$HB_k = F_k - (L_{k-1}+1)$
Maximum Intensity	Maximum hourly precipitation intensity during the event.	in/hr	$IMAX_k = \max_{F_k \le i \le L_k} \{p_i\}$
Magnitude for Previous 12 Hours	Total amount of precipitation during the 12 hours preceding the event.	in	$M12_k = \sum_{i=F_k-12}^{F_k-1} p_i$
Magnitude for Previous 48 Hours	Total amount of precipitation during the 48 hours preceding the event.	in	$M48_k = \sum_{i=F_k-48}^{F_k-1} p_i$
Magnitude for Previous 168 Hours	Total amount of precipitation during the 168 hours preceding the event.	in	$M168_k = \sum_{i=F_k-168}^{F_k-1} p_i$
Magnitude for Year Preceding the Event	Total amount of precipitation during the year (wet season) before this event.	in	$MYR_k = \sum_{i=1}^{k-1} M_i$

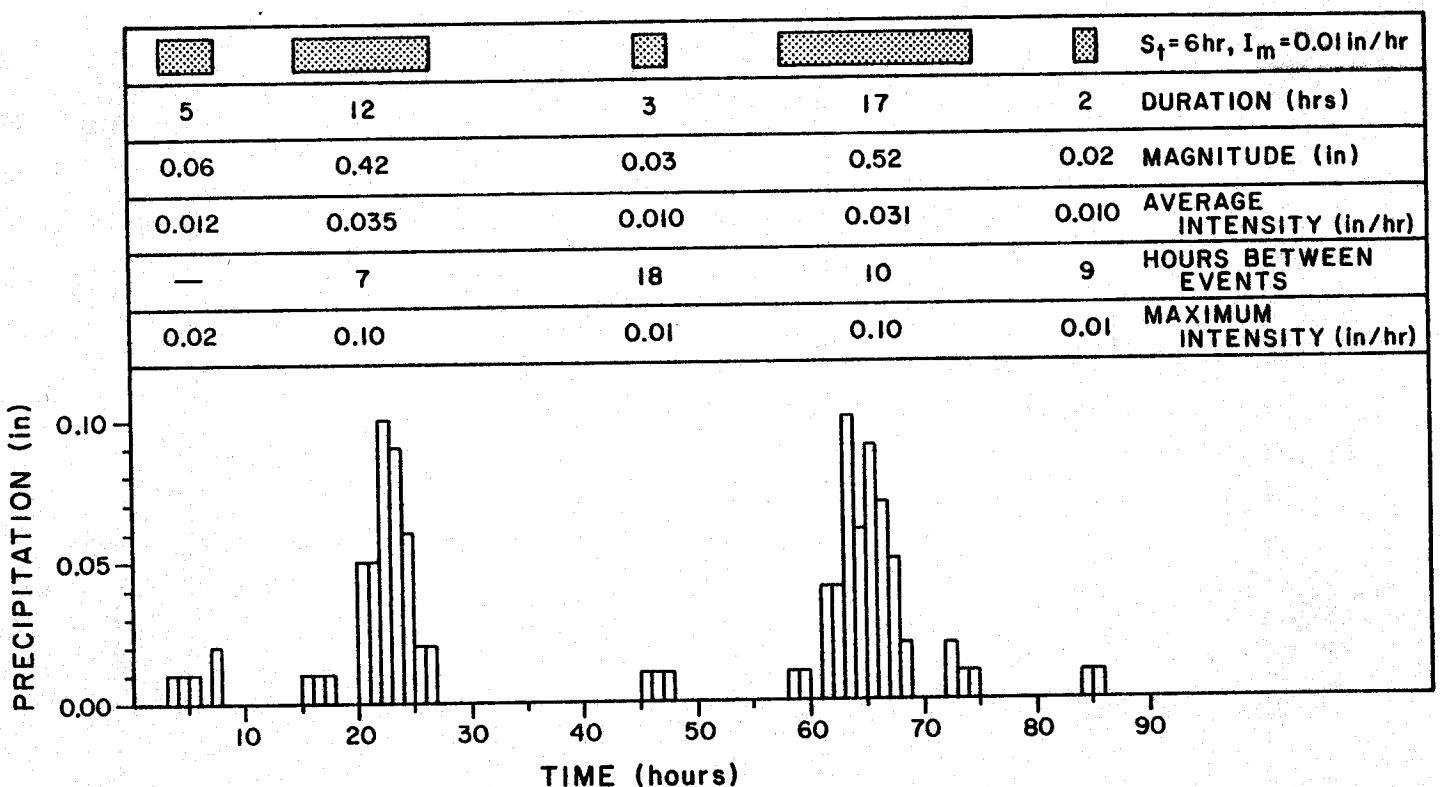


Figure 2. Illustration of the calculation of five precipitation event characteristics for the events in Figure 1 defined using S_t = 6 hours and I_m = 0.01 in/hr.

is exceeded. The estimated values of the exceedance probabilities for precipitation events defined using several values of I_m and S_t are presented in Figure 3. In that figure, the estimated exceedance probabilities for precipitation event magnitude, duration, and maximum intensity are plotted on logarithmic scales. Lines are drawn through the outermost points only.

The results in Figure 3 indicate that the exceedance probabilities for precipitation event magnitude depend only slightly on the value of I_m. However, they depend a great deal on the value of S_t. The estimated probability of occurrence of an event with a magnitude greater than 1.0 inches increases from 2 to 22 percent as S_t increases from 1 to 24 hours (Figures 3a and 3b). Similarly, variations in the value of S_t produce large changes in the estimated exceedance probabilities for precipitation event duration. For example, the length of an event which is exceeded 10 percent of the time is about 1 hour when $S_t = 2$, whereas it is 20 hours when $S_t = 24$ (Figures 3c and 3d). The effect of varying S_t on the estimated exceedance probabilities for maximum intensity (Figures 3e and 3f) is quite small. The largest effects of changing the value of I_m are on the maximum intensity curve for $S_t = 1$, because the probability distribution for maximum intensity strongly depends on whether low intensity events ($I_m = 0.01$ in/hr) are included in the probability calculations. Otherwise, changing I_m appears to have little effect.

Clearly the interpretation of precipitation event characteristics such as duration or average rainfall intensity becomes less certain and, at some point, the characteristics become physically meaningless, as S_t increases. In Figure 1, for example, the average intensity for the single event defined using $S_t = 24$ hr is 0.013 in/hr, whereas the average intensity for the nine events defined using $S_t = 1$ and $I_m = 0.01$ in/hr ranges between 0.010 and 0.059 in/hr.

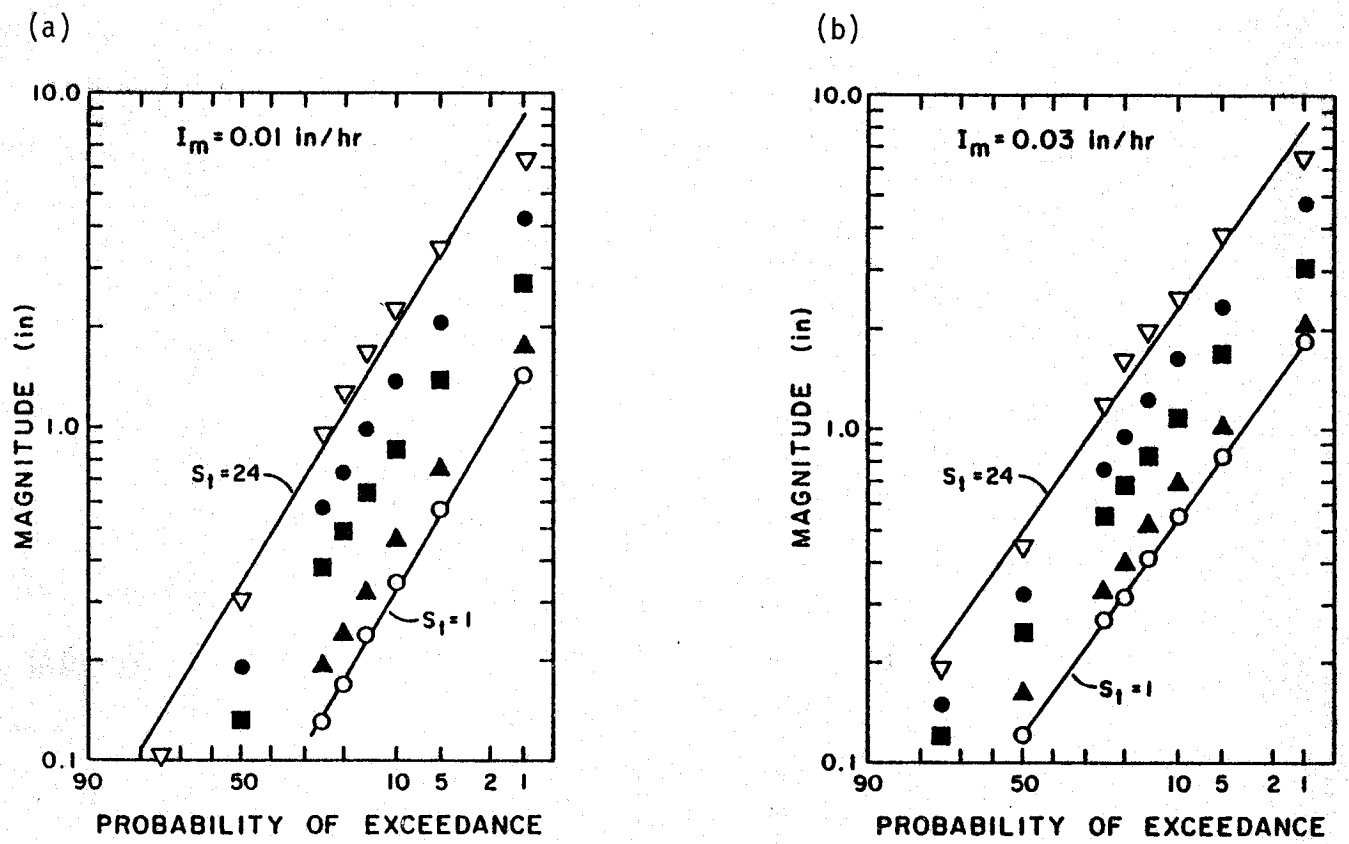
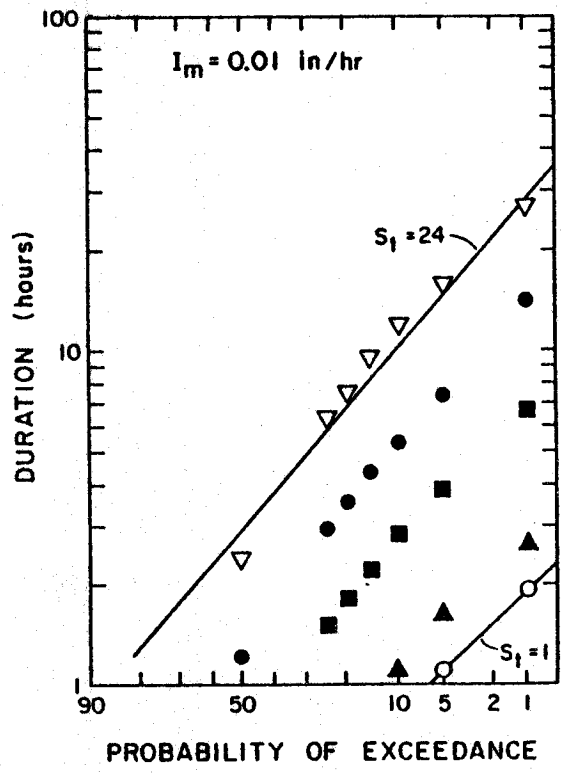


Figure 3. Exceedance probabilities for the values of the precipitation event characteristics at Salem computed using several different event definitions. The results for events defined using five values of S_t (1,2,6,12, and 24 hours) are shown in each graph. The characteristics and values of I_m for each of the graphs are (a) magnitude (I_m=0.01 in/hr); (b) magnitude (I_m=0.03 in/hr); (c) duration (I_m=0.01 in/hr); (d) duration (I_m=0.03 in/hr); (e) maximum intensity (I_m=0.01 in/hr); and (f) maximum intensity (I_m=0.03 in/hr).

(c)



(d)

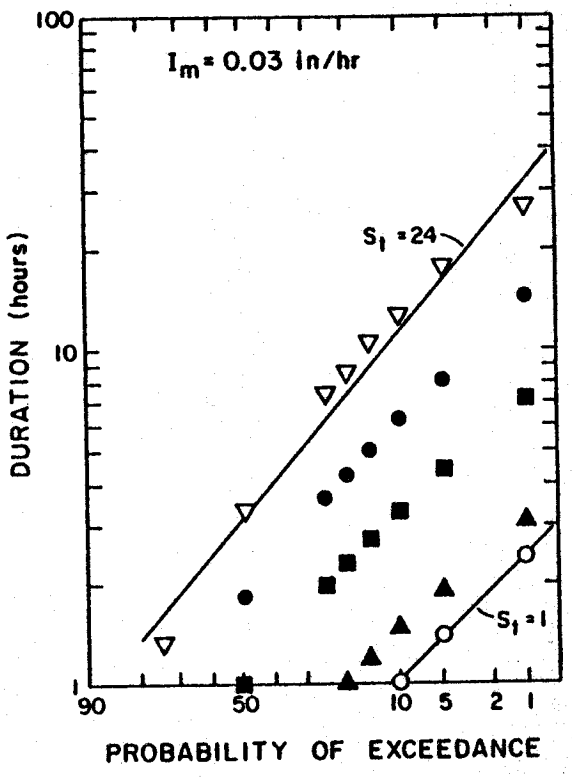
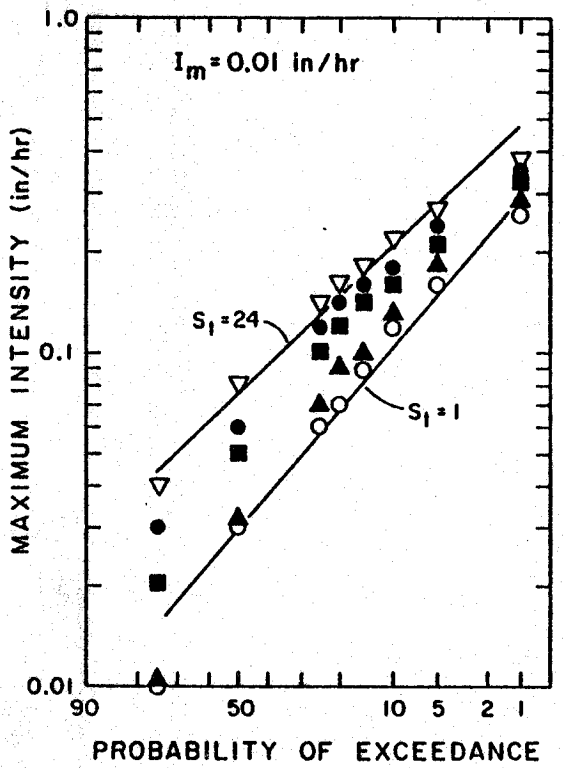


Figure 3 (continued).

(e)



(f)

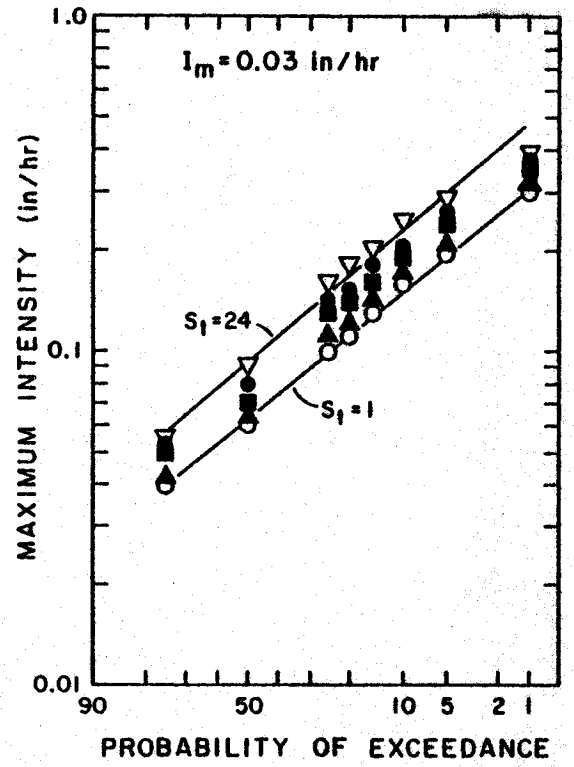


Figure 3 (continued).

3.3 Evaluation of the Hydrologic Response to Precipitation

An alternative approach to the selection of S_t is to consider the way in which hydrologic systems respond to precipitation events. In particular, consider the following simplified description of rainfall-runoff relationships on a small watershed. As rain falls, it is divided among several segments of the hydrologic system: channel precipitation, interception by vegetation, infiltration into the soil, and temporary detention in surface depressions. Overland flow occurs when the net rate of rainfall exceeds the infiltration rate for a sufficient length of time so that the detention storage of the soil is exceeded. Maximum runoff occurs (for a rainfall of uniform intensity) when all portions of the watershed are contributing to channel flow. After the termination of rainfall, runoff and overland flow continue for awhile as surface and channel storage are depleted. Evapotranspiration is active and infiltration continues, eventually reducing surface detention to zero. Soil water in the unsaturated zone reaches the water tables and stream channels causing an initial increase and then a gradual decrease in water table levels. As the water table declines, the infiltration capacity of the soil is increased. This process will progress further before the next precipitation event and the watershed will be closer to the conditions that existed before the event if the time between events is relatively large rather than small.

The combined effects outlined above could be described as the watershed's "memory" of the rainfall event. In this sense, the time separating precipitation events could be considered to be the amount of time the system has had to "recover" from the effects of a rainfall "pulse." If the recovery time for a watershed could be uniquely determined, then that time could be used, on a physical basis, as the value of the control variable S_t in the precipitation event definition. Intuitively, it seems that precipitation events defined in this manner may have occurrence probabilities that would more closely

represent the occurrence probabilities of runoff events because some hydrologic measure has been included in the event definition. To explore this possibility, five infiltration, overland flow, and soil drainage indices were calculated to provide estimates of S_t. The necessary field data were obtained from records for five agricultural watersheds in western Oregon (Harward et al., 1980).

One estimate of S_t is the amount of time required for the infiltration of water held in surface detention (ID). Surface detention can be characterized by the average depth of small depressions (Gayle and Skaggs, 1978). The range in calculated values of ID for four of the five watersheds, based on several characteristic depths of surface detention (D) is from 0.04 to 6.3 hours (Table 2). When D is small, most of the surface water is available for runoff and when rainfall ceases, surface detention is reduced to zero fairly quickly. When D is large, some of the surface water is stored before runoff begins and a longer period of time is required to return surface storage to its initially higher level when rainfall ceases. By defining events using a value of S_t that is greater than ID, it would be possible to ensure that surface storage on a watershed at the start of an event is similar for all events in the record.

A second set of estimates of S_t was obtained from hydrograph analysis. Time-to-peak, recession time, and time-of-concentration were calculated from flow records and watershed characteristics. These three variables collectively describe a few components of the complex response of a watershed to a precipitation event. Time-of-concentration (T_c) represents the time required for the surface runoff from the most remote part of the drainage basin to reach the watershed outlet. If two runoff-producing precipitation events were to occur less than T_c apart, the response of the watershed to

Table 2. Computed values of ID for several characteristic depths of surface storage (D) for four of the experimental watersheds

Watershed	D	ID		
		Infiltrometer†	Small plots†	Field Observations‡
	-mm-	----------hrs----------		
1	2.5	0.04	0.42	0.10
	10.0	0.16	1.6	0.39
	25.0	0.38	4.2	0.98
2	2.5	0.04	0.63	0.16
	10.0	0.16	2.5	0.63
	25.0	0.40	6.3	1.6
3	2.5	0.04	0.63	0.16
	10.0	0.16	2.5	0.63
	25.0	0.40	6.3	1.6
4	2.5	0.04	0.42	0.10
	10.0	0.18	1.6	0.39
	25.0	0.44	4.2	0.98

†Data from Harward et al., 1980.

‡Based on unpublished field data from Department of Soil Science, Oregon State University.

the second event would be different than its response to the first event. This is because the initial hydraulic characteristics of the channel would be different at the beginning of the two events. This effect is best illustrated by a few calculations using a form of Manning's equation. The relative effects of hydraulic radius and Manning's friction factor on T_c can be seen in Table 3. Estimated values of T_c at the five watersheds range between 0.01 and 0.31 hours. By defining precipitation events using a value of S_t that is greater than T_c, it is possible to ensure that any overland flow generated by the previous event has reached the channel outlet or has been temporarily stored in surface depressions. For a given watershed, the shape of the hydrographs for precipitation events defined using a separation time of S_t would depend on whether T_c were greater or less than S_t.

Time-to-peak (T_p) is defined as the length of time between the centroid of the hyetograph and the peak discharge at the watershed outlet. Recession time (T_r) is defined as the length of time between peak discharge and the cessation of direct runoff. Calculated mean values of T_p and T_r for the five watersheds range between 2 and 7 and 4 and 10 hours, respectively (Table 3). The physical interpretation of T_p and T_r is not entirely clear because they result from the interaction of watershed characteristics and the time distribution of rainfall during a storm. However, these parameters are useful for obtaining estimates of the time required for small watersheds to respond to changes in rainfall intensity. For example, consider the data from watershed 4. If the rainfall record were divided into precipitation events using a value of S_t that was less than 5 hours, then the watershed discharge would still be increasing (because of rainfall from a previous event) at the beginning of many of the events. Similarly, if a value less than 3 hours were chosen for S_t, then the watershed discharge at the beginning of many

Table 3. Time-to-peak (T_p), recession time (T_r), and time-of-concentration (T_c) calculated from flow records and watershed characteristics. Time for water table decline (WT) was calculated from well records.

Watershed	Area	Channel length L	Average channel slope, S	Hydraulic radius R	Manning's friction factor, n	T_c †	$\overline{T}_r$ ‡	σ_{T_r}	$\overline{T}_p$	σ_{T_p}	WT § U	WT § D
	ha	m	m/m	m		hrs						
1	0.5	125	0.061	0.06	0.01	0.009	4.7	1.5	2.0	1.0	9	19
					0.03	0.028						
				0.03	0.01	0.015						
					0.03	0.044						
2	1.4	170	0.037	0.08	0.01	0.013	6.5	3.7	6.3	4.6	6	70
					0.03	0.040						
				0.04	0.01	0.021						
					0.03	0.063						
3	2.4	205	0.037	0.16	0.01	0.010	5.9	2.8	5.0	4.0	5	51
					0.03	0.030						
				0.08	0.01	0.016						
					0.03	0.048						
4	6.0	450	0.037	0.14	0.01	0.024	4.6	4.7	2.8	2.6	9	69
					0.03	0.072						
				0.07	0.01	0.038						
					0.03	0.115						
5	285.0	2560	0.031	0.50	0.01	0.065	9.5	7.5	7.1	3.5	--	--
					0.03	0.192						
				0.25	0.01	0.102						
					0.03	0.305						

† $T_c = \frac{Ln}{R^{2/3}S^{1/2}}$ (seconds)

‡ $\overline{T}_r$ and $\overline{T}_p$ are the arithmetic mean values of T_r and T_p, and σ_{T_r} and σ_{T_p} are the standard deviations of T_r and T_p, respectively.

§ U and D are the arithmetic mean values of WT for wells located in upslope and toeslope positions, respectively.

events would still contain a component of direct runoff resulting from the previous precipitation event.

A final class of estimates of S_t was developed from measured rates of water table decline for shallow (1.5 m depth) wells located on watersheds 1, 2, 3, and 4. The available data were classified by two slope positions, U and D, which were located in upper and lower landscape positions, respectively. The time necessary for the water table to fall 25 cm following the end of a rainfall event is designated WT. The significance of this variable is that it indicates the rate of internal drainage and hence the rate of increase in infiltration capacity of the soil after a precipitation event. If a value of S_t that is much smaller than WT were used in the precipitation event definition, then events which occur in midwinter when these soils are wet would arrive so closely in time that the soil would not have time to recover the infiltration capacity that existed before the previous storm. Calculated values of WT for the lower slope positions at the four watersheds range between 20 and 70 hours (Table 3). These times are greater than the values for the upper slope positions. This is because the channel margins of these watersheds are wide and relatively flat which allows a greater amount of surface storage. If we wished to have the infiltration capacity increase between two rainfall events (resulting from a falling water table), it would be appropriate to choose S_t in the range of 20 to 70 hours for watersheds of this size. Selecting a value of $S_t \cong$ WT would be a reasonable approach to characterizing precipitation in regions where poor soil drainage or subsurface stormflow (also called interflow) have large impacts on runoff production.

In summary, runoff may result from short bursts of high intensity rainfall, prolonged low intensity rain, rainfall when the soil is saturated from a previous storm, and combinations of these and other conditions. The critical factor in several cases is the time response of the watershed, a factor which

is controlled by the surface storage, infiltration, and drainage characteristics of the soil as well as by the geometry of the watershed and the hydraulic properties of the channel. Based on the information in Tables 2 and 3, a separation time, S_t, of 6 hours was chosen for use in the definition of the precipitation events described in the remainder of this report. Because the value of I_m did not have a major influence on the distributions of the precipitation event characteristics (except for maximum intensity), a value of 0.01 in/hr was assigned to I_m.

4. ANALYSIS APPROACH

Precipitation event data bases were created for each of the three stations, Portland, Salem, and Eugene, using the definition of a precipitation event selected in Section 3.3. That is, for each station, precipitation events were formulated by grouping together each series of hours for which the maximum number of consecutive dry hours was less than six. The application of this definition (I_m = 0.01 in/hr, S_t = 6 hours) is demonstrated in Figure 1. The precipitation event data bases consist of all of the precipitation events satisfying the event definition that occurred within the 31½-year series of hourly precipitation magnitudes described in Section 2. This resulted in a total of 3645 events at Portland, 3500 at Salem, and 3154 at Eugene.

Several characteristics associated with each precipitation event were calculated from the hourly precipitation amounts. These precipitation event characteristics are listed and defined in Table 1 and an example of the computation of the values of five of the characteristics is presented in Figure 2. Several of the characteristics listed in Table 1 were not considered during the process of selecting a precipitation event definition. These additional characteristics are the precipitation magnitudes for the 12, 48, and 168 hours prior to the beginning of the event and the total precipitation magnitude over all hours in the wet season prior to the beginning of the event. These characteristics were computed as measures of antecedent rainfall and of the amount of moisture in the soil at the beginning of an event. As such, they can be useful in estimating the range in amounts or types of soil loss expected with events of varying duration, intensity, or magnitude, associated with particular levels of antecedent rainfall.

Several types of analyses were applied to the precipitation event data. First, the marginal frequency distribution of each characteristic at each site was examined. Also, the extreme events and return statistics for each characteristic were computed. Next, the frequency distributions of combinations of characteristics (joint distributions) were evaluated to provide estimates of the probabilities of occurrence of some significant events (e.g., the probability of a high intensity precipitation event being preceded by a large amount of precipitation in the past 48 hours). Finally, the conditional distributions of some pairs of characteristics (e.g., average intensity given duration) were examined to investigate the existence of relationships between some characteristics. These analyses are described in Sections 5, 6, and 7.

5. MARGINAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The distributions of the individual precipitation event characteristics are described in this section in terms of (a) marginal empirical frequency distributions; (b) order statistics, or extreme values; and (c) return statistics. Useful information may be obtained from the examination of each of these summaries. For example, the marginal distributions provide general descriptions of the distributional properties of the characteristics, and the order statistics allow estimation of the values of characteristics of the extreme events expected in a 31-year period.

The marginal distributions of the precipitation event characteristics are summarized using diagrams known as box plots (Tukey, 1977). These diagrams provide a simple and useful way of displaying and comparing distributional data. Each point on a box plot represents a particular quantile value of interest. An example showing three box plots (the distributions of duration at Portland, Salem, and Eugene, Oregon) is given in Figure 4. As illustrated in this figure, a box surrounds the region from the lower quartile (the 0.25th quantile) to the upper quartile (the 0.75th quantile), the region which contains the middle half of the observations. The length of this region (the interquartile range) provides an estimate of the variability of the characteristic. The line extending from the upper end of each box represents the upper tail of the distribution and, in this case, contains points marking the 0.90th and 0.99th quantile values (the values of some different quantiles may be presented for other characteristics). Typically, lines also would extend from the bottoms of the boxes, depicting the lower tails of the distributions. However, in this case the distributions are quite positively skewed so that the lower tails are very short and are barely distinguishable from the boxes.

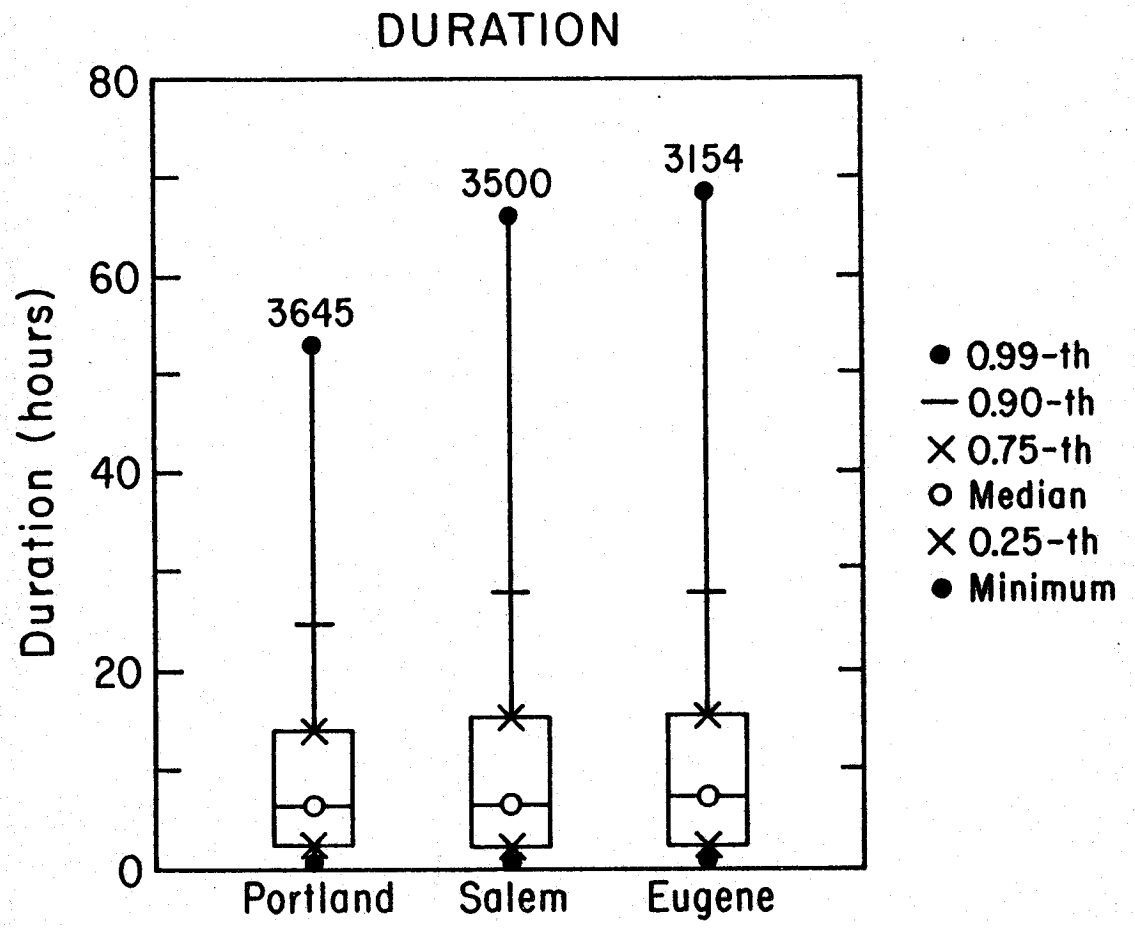


Figure 4. Box plots of duration for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

Another way of describing the distributions of precipitation event characteristics is through the order statistics; that is, the values of the characteristic resequenced from largest to smallest (smallest to largest in the case of hours between events). These statistics can be used to obtain estimates of the extreme values of precipitation event characteristics that could be expected to occur in a 31-year (rounded from 31½-year) period. The values of the characteristics of the most intense, longest lasting, and highest magnitude precipitation events are often of the most interest for soil erosion applications.

The numbers and types of extreme events that can be expected to occur in a given year, as opposed to the 31-year extreme events estimated by the order statistics, are also of interest. These extreme events can be estimated using return statistics. The return statistics for a given precipitation event characteristic are the values of that characteristic that could be expected to occur once, twice, or more often in a given year. Estimation of the return statistics for a particular precipitation event characteristic is accomplished by ordering the events from largest to smallest according to the value of the characteristic (smallest to largest for hours between events) and then listing the characteristics of every 31st event.

The marginal distributions, order statistics, and return statistics for each of the nine precipitation event characteristics at Portland, Salem, and Eugene, Oregon, are described in the following subsections. Because of the large number of tables required for the presentation of the order statistics and return statistics, these tables are located in Appendices B and C,

respectively. The lists of order statistics in Appendix B include the values of all of the characteristics of the events associated with the 100 largest values of a given characteristic, for all characteristics and stations. All of the return statistics for all of the characteristics and stations are listed in Appendix C.

5.1 Duration

The marginal distributions of precipitation event duration at Portland, Salem, and Eugene are illustrated in Figure 4. As shown in this figure, the box plots of duration for the three stations are quite similar. The shapes of the box plots indicate that the distributions are positively skewed, with heavy upper tails. That is, there were a few events at each station that lasted many hours whereas the majority of the events were of fairly short duration. The boxes enclose the region from 2 hours to 14 or 15 hours. Hence, 25 percent of the events lasted 2 hours or less, while 50 percent lasted between 2 and 14 or 15 hours. Only 25 percent lasted longer than 14 or 15 hours.

The duration order statistics are shown graphically in Figure 5. The values displayed in this figure are the durations of the 100 longest-lasting precipitation events at each station. The curves for the three stations in Figure 5 are quite similar to one another, except that the curve for Portland is somewhat below the curves for the other stations. The first order statistic at each station is quite large. However, the values of the following few order statistics rapidly decrease from this value until about the 15th statistic. At that point, the rate of decrease stabilizes and there is a more gradual decline in the value of duration for the subsequent order statistics. A complete listing of the first 100 duration order statistics is presented in Appendix B. The tables in that appendix contain all of the precipitation event characteristics associated with each of the 100 longest-lasting events.

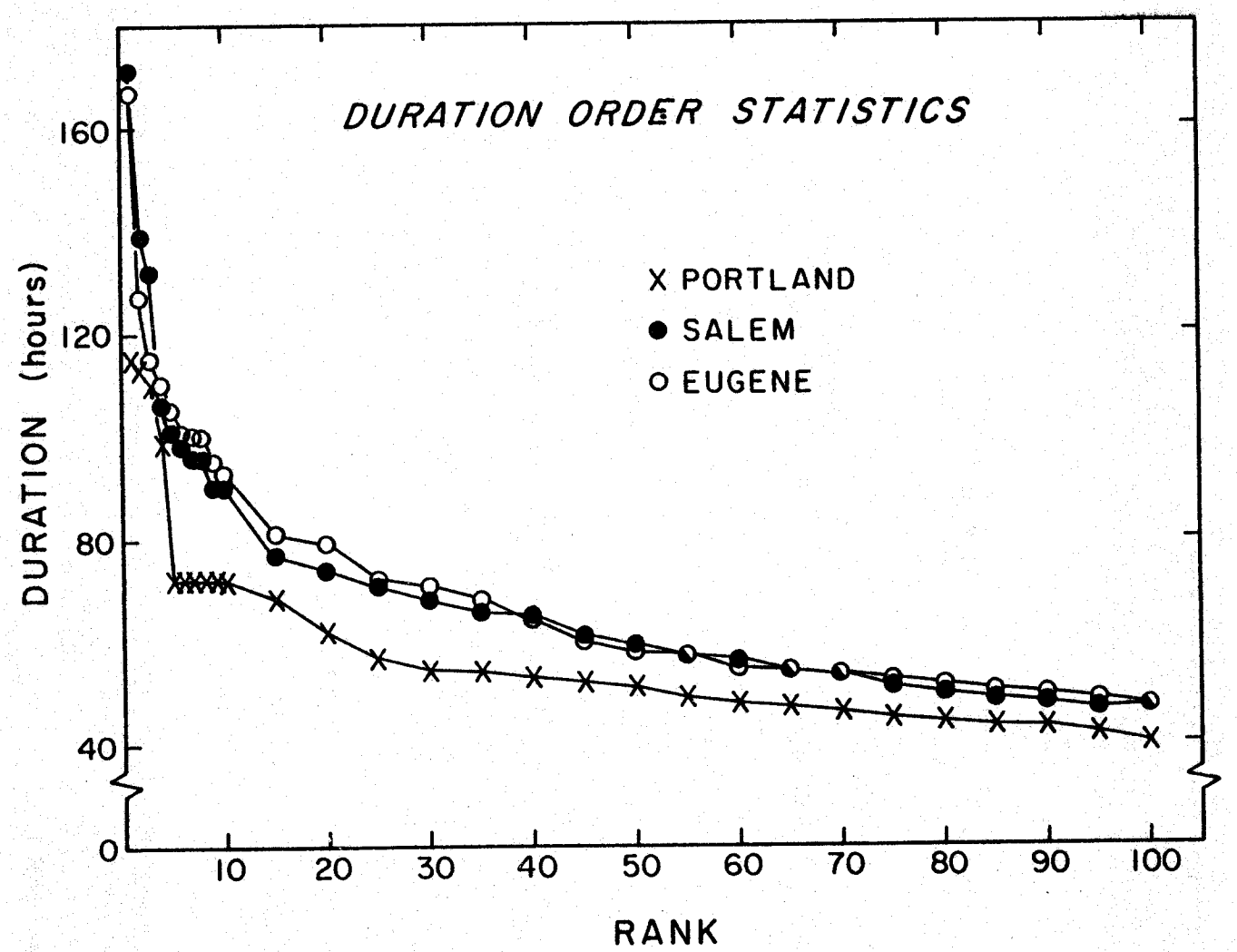


Figure 5. Duration order statistics at Portland, Salem, and Eugene.

Figure 6 presents the first 100 duration return statistics for Portland, Salem, and Eugene. These are the 31st, 62nd, 93rd, etc., largest duration values at the three stations. The first statistic is the duration of an event expected to occur once a year, the second is the duration of an event expected to occur twice a year, ..., and the 100th statistic is the duration of an event expected to occur 100 times per year. Again, the curves for the three stations are quite similar. As was suggested by the box plots, there are a few very large values of duration, but most of the duration return statistics are in a fairly narrow range of smaller values. All of the values beyond the tenth return statistic are less than 25 hours, whereas the first ten statistics range up to nearly 70 hours. A complete listing of the characteristics of the events associated with all of the duration return statistics is presented in Appendix C.

5.2 Magnitude

The box plots representing the distributions of precipitation event magnitude at Portland, Salem, and Eugene are displayed in Figure 7. As was the case for the distributions of duration, these distributions are positively skewed, with relatively few very large magnitude values and relatively many small values. Although the general shapes of the three box plots are similar, there are several differences among them. First, the length of the box increases from Portland to Salem and from Salem to Eugene. This result is due to increasing values of the upper quartiles at the three sites. Similarly, the value of the 0.90th quantile increases from Portland to Salem and from Salem to Eugene. In general, the distribution of magnitude at Eugene appears to have a greater "spread" than the distributions at Portland and Salem.

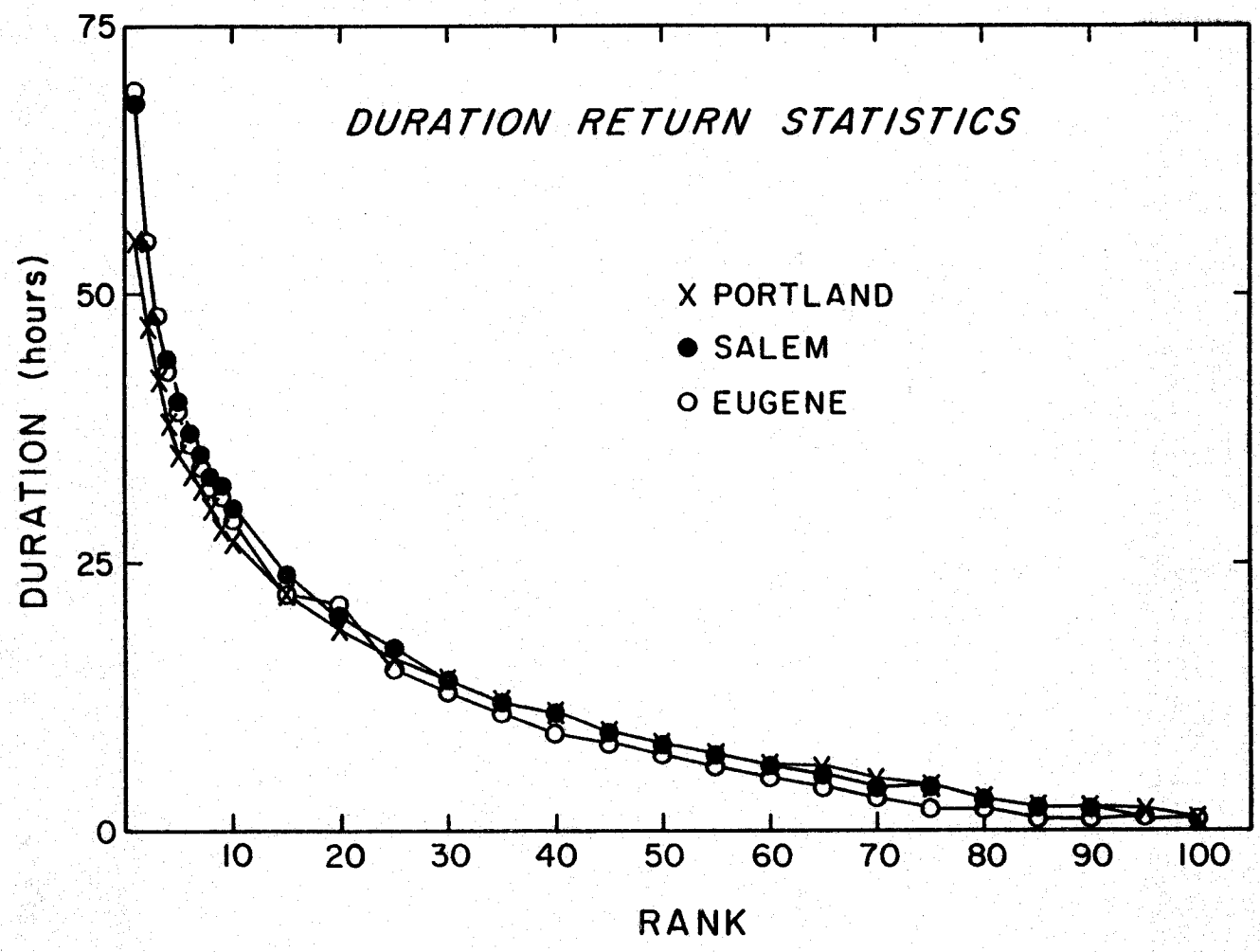


Figure 6. Duration return statistics at Portland, Salem, and Eugene.

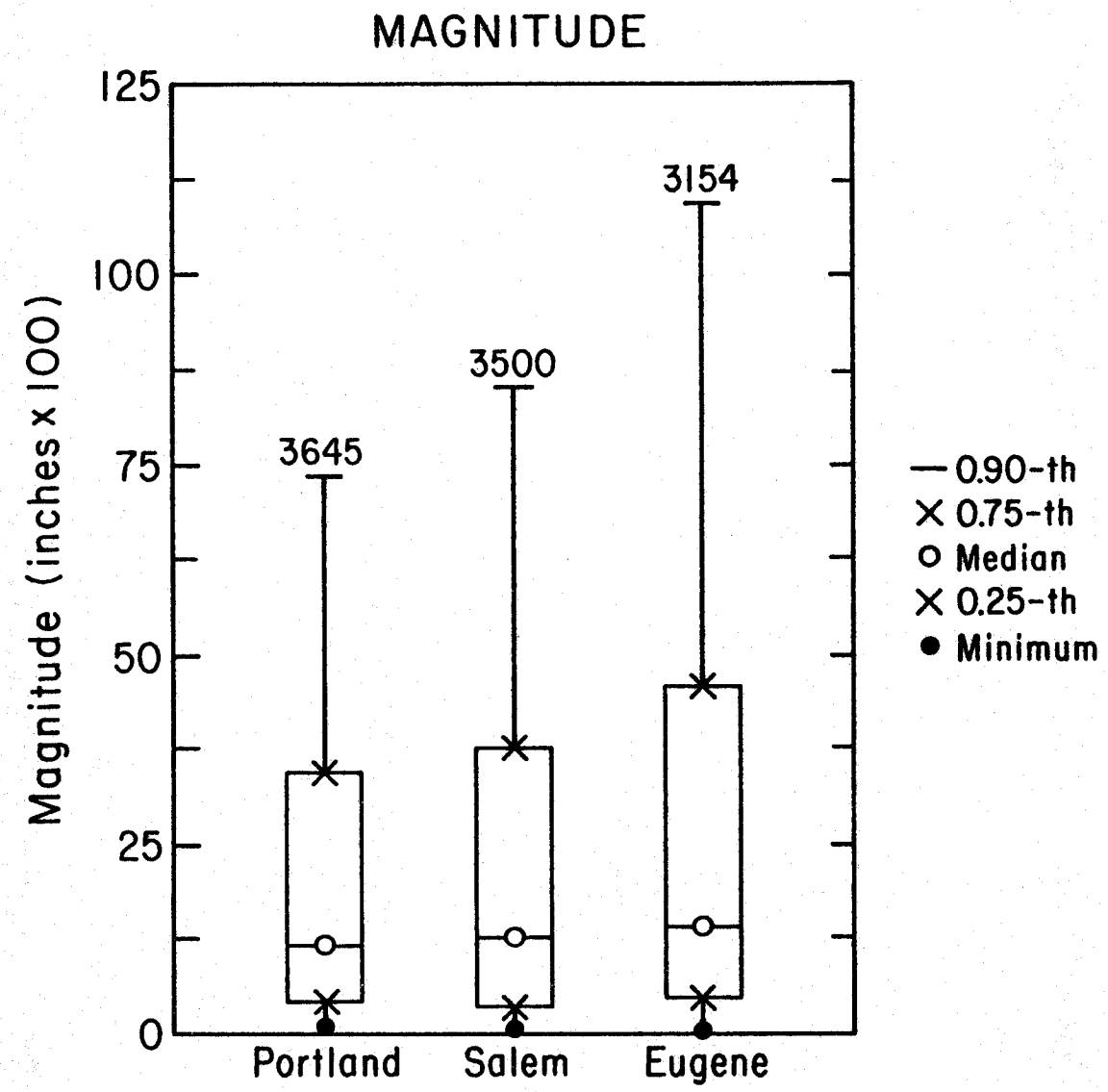


Figure 7. Box plots of magnitude for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

The magnitude order and return statistics are shown graphically in Figures 8 and 9. The curves displayed in these figures exhibit the same basic behavior as the curves for the duration order and return statistics (Figures 5 and 6). That is, after a few very large values for the first statistics and a sharp decline at the beginning, the curves level off or stabilize into trends with gradual downward slopes. Some of the differences among the marginal distributions of magnitude at the three stations are demonstrated by the curves of order statistics. For example, the values of the magnitude order statistics at Eugene are larger than the corresponding values at Salem, which are also larger than the corresponding values at Portland.

A complete list of the magnitude order statistics is presented in Appendix B and the return statistics are listed in Appendix C. Additional information regarding the magnitude values of extreme precipitation events ranked on the values of duration, average intensity, or other characteristics, may be obtained directly from the order statistics for those characteristics, which are also presented in Appendix B. Furthermore, the joint frequencies of occurrence of various combinations of values of magnitude and other precipitation event characteristics are presented and discussed in Section 6.

5.3 Average Intensity

Figure 10 contains the box plots depicting the marginal distributions of average intensity at Portland, Salem, and Eugene. These distributions are positively skewed, as were the distributions of duration and magnitude. However, the skewness of the average intensity distributions is not as extreme as it was for the other two characteristics since the regions below the boxes (which contain 25 percent of the observed values) cover a reasonable portion of the range of possible average intensity values. The positively skewed nature of

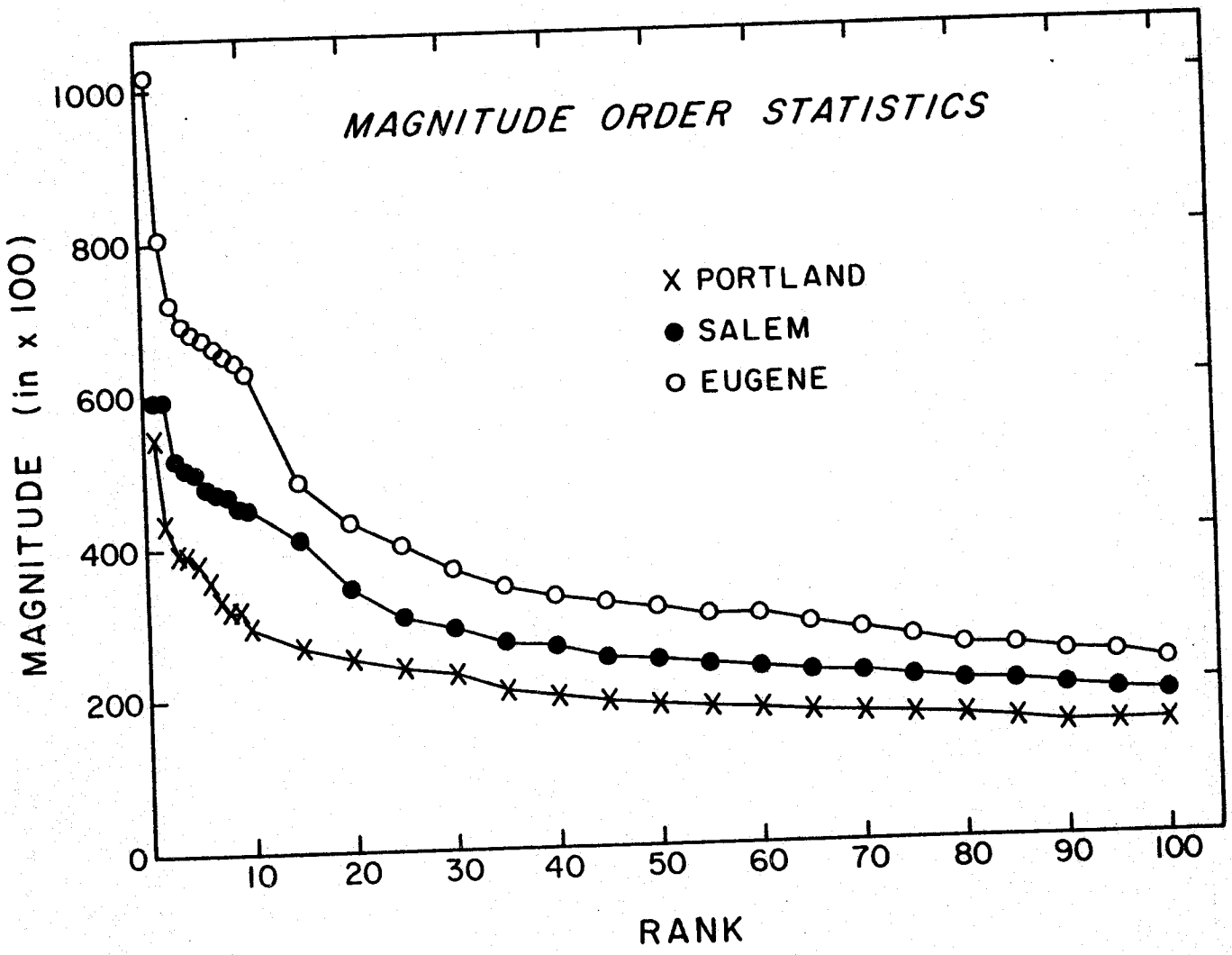


Figure 8. Magnitude order statistics at Portland, Salem, and Eugene.

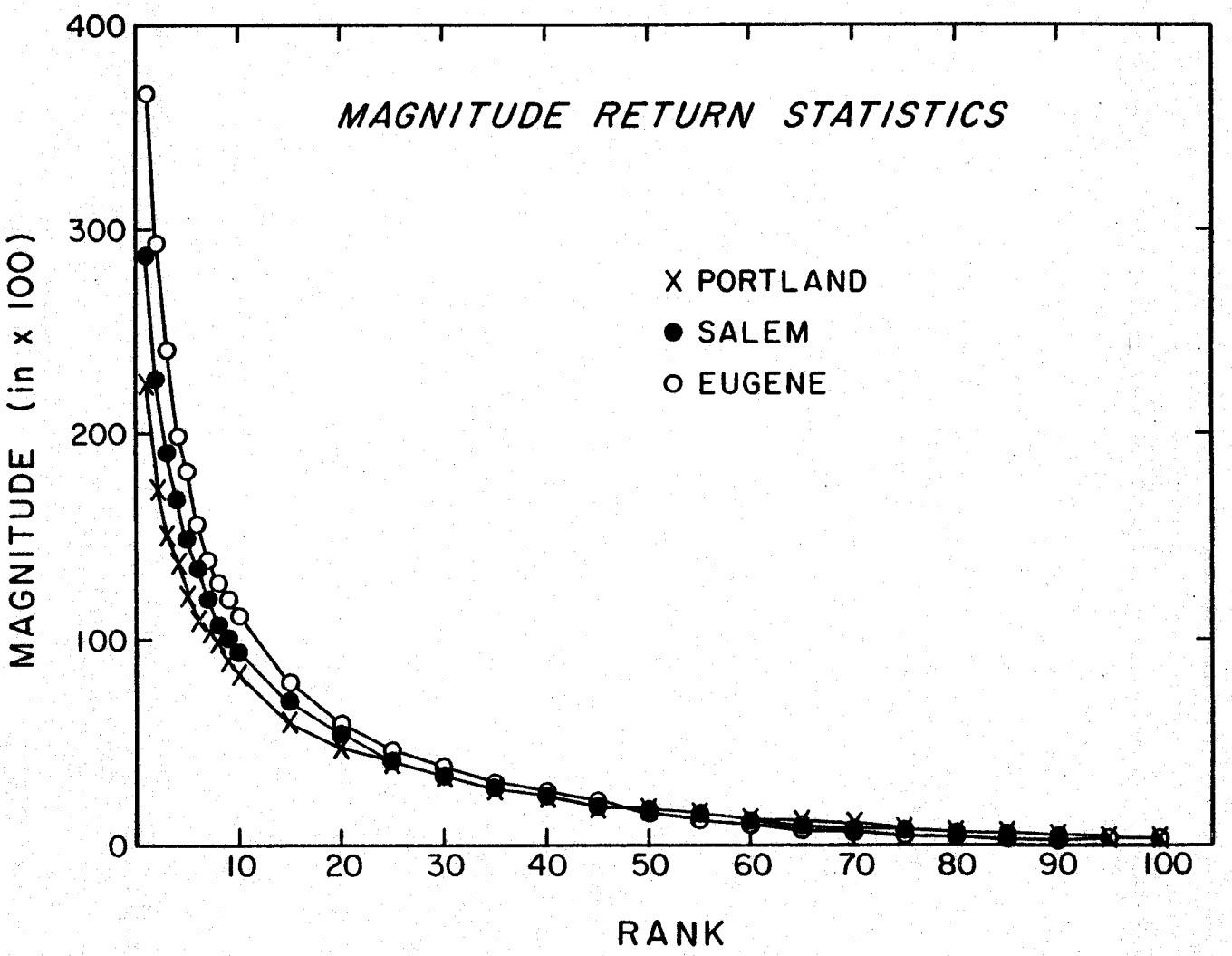


Figure 9. Magnitude return statistics at Portland, Salem, and Eugene.

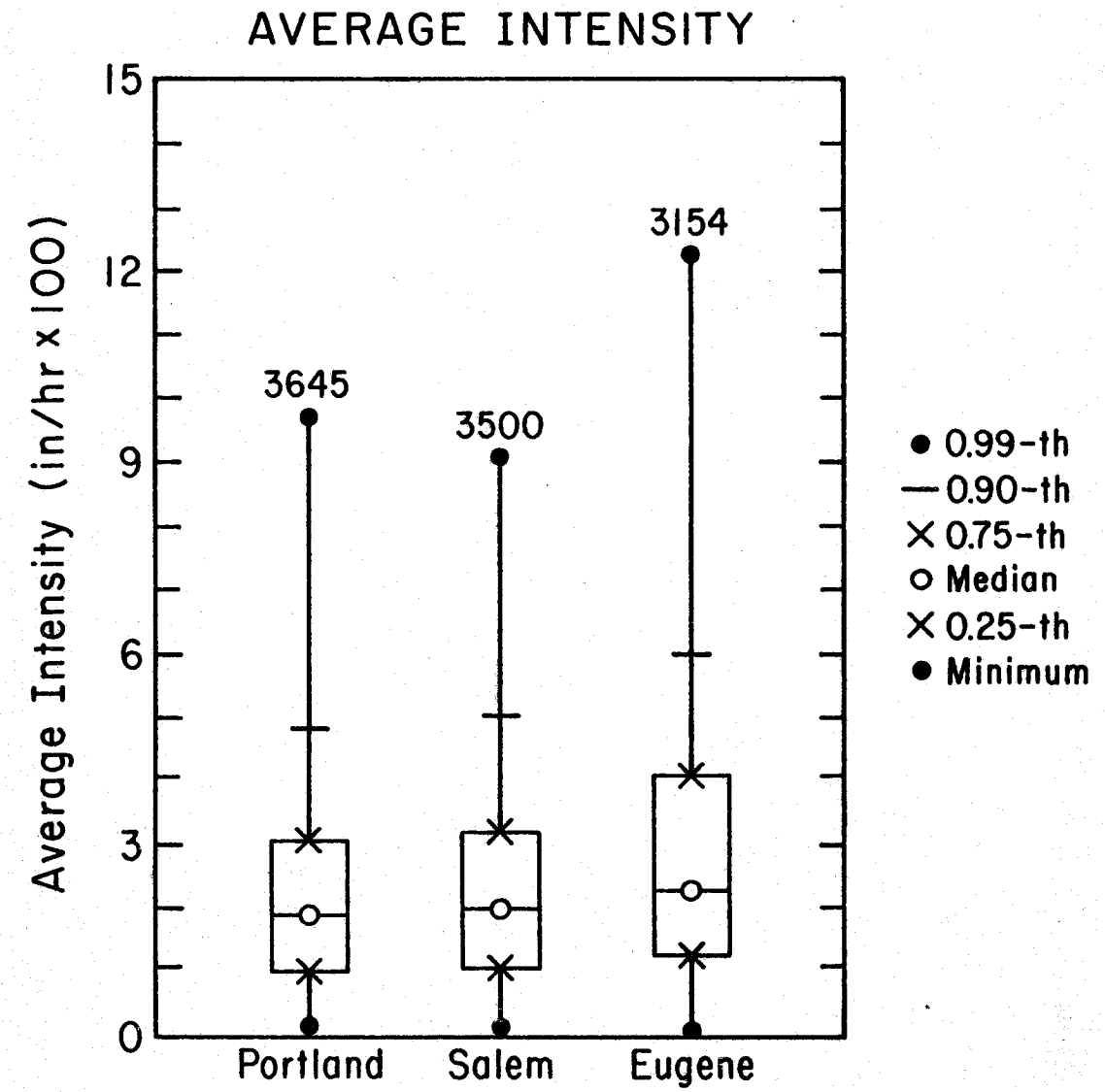


Figure 10. Box plots of average intensity for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

the distributions indicates that some precipitation events can be expected to have very large values of average intensity but that low intensity events can be expected most frequently. Also note that the length of the box for the Eugene distribution is greater than the lengths of the boxes for the distributions at Portland and Salem. As was the case for the distributions of magnitude, the Eugene distribution of average intensity apparently has greater spread than the distributions at the other stations.

Figures 11 and 12 present plots of the first 100 average intensity order and return statistics. The curves in these figures have the same shapes as the order and return statistic curves for the characteristics duration and magnitude. As would be expected based on the box plots (Figure 10), the curve of the average intensity order statistics at Eugene is above the curves for the other two stations. This ordering also holds for the first 50 return statistics.

There are several potential applications of the information presented in this section regarding the precipitation event characteristic average intensity, a characteristic which is used to describe the time distribution of rainfall during a precipitation event. For example, by comparing the statistical distributions of average intensity with a measured value of soil infiltration rate, it is possible to estimate the probability of infiltration being exceeded. This can be accomplished using the return statistics of average intensity listed in Appendix C. Furthermore, the difference between the average intensity for a precipitation event and the infiltration rate of a soil is a measure of the rate of runoff production. When this information is combined with the magnitude of an event, then the rainfall excess (i.e., the amount of rainfall that can move downslope as runoff) can be calculated. The rainfall excess for extreme events can be estimated using the tables of order statistics for magnitude (presented in Appendix B), which also contain the values of average intensity and other

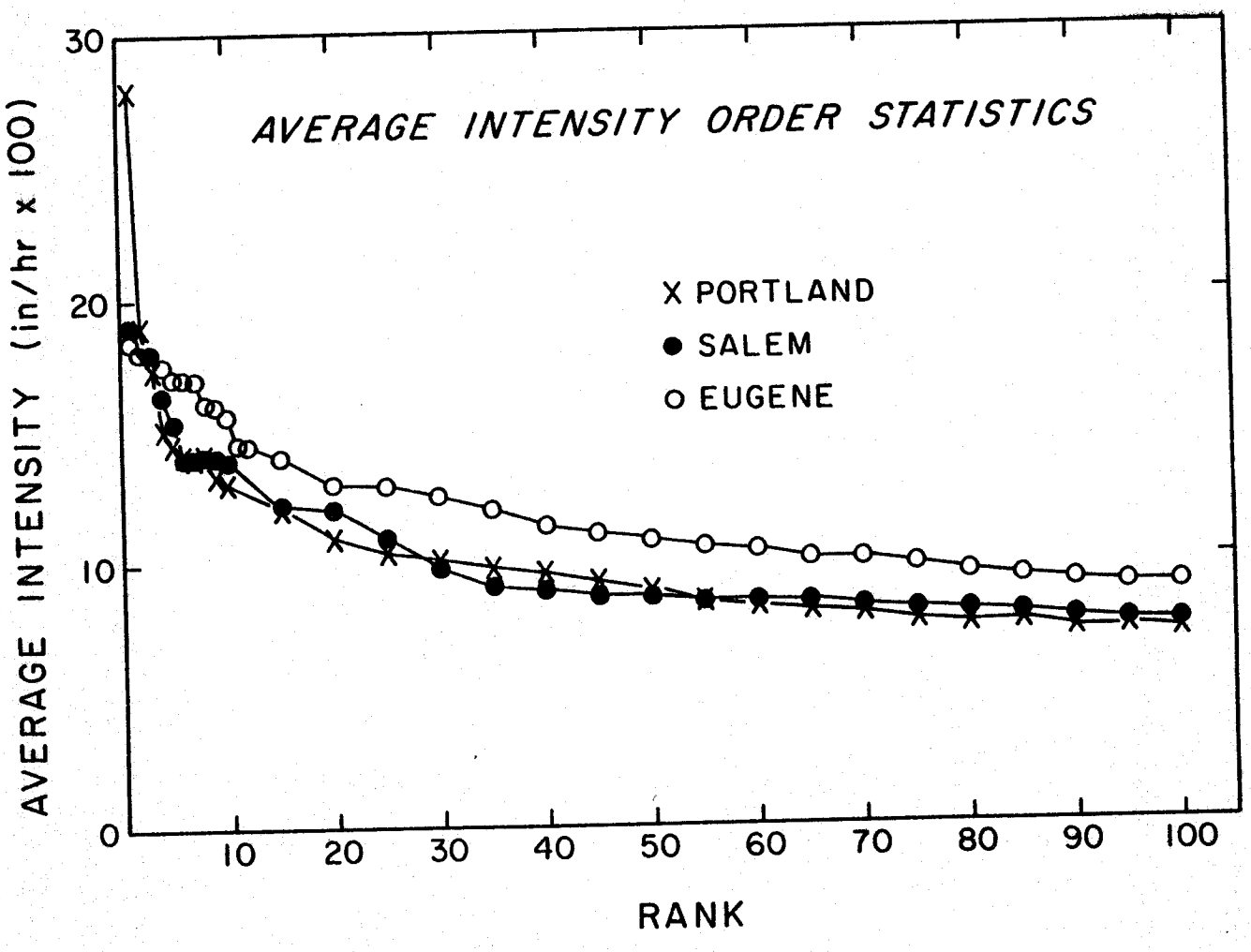


Figure 11. Average intensity order statistics at Portland, Salem, and Eugene.

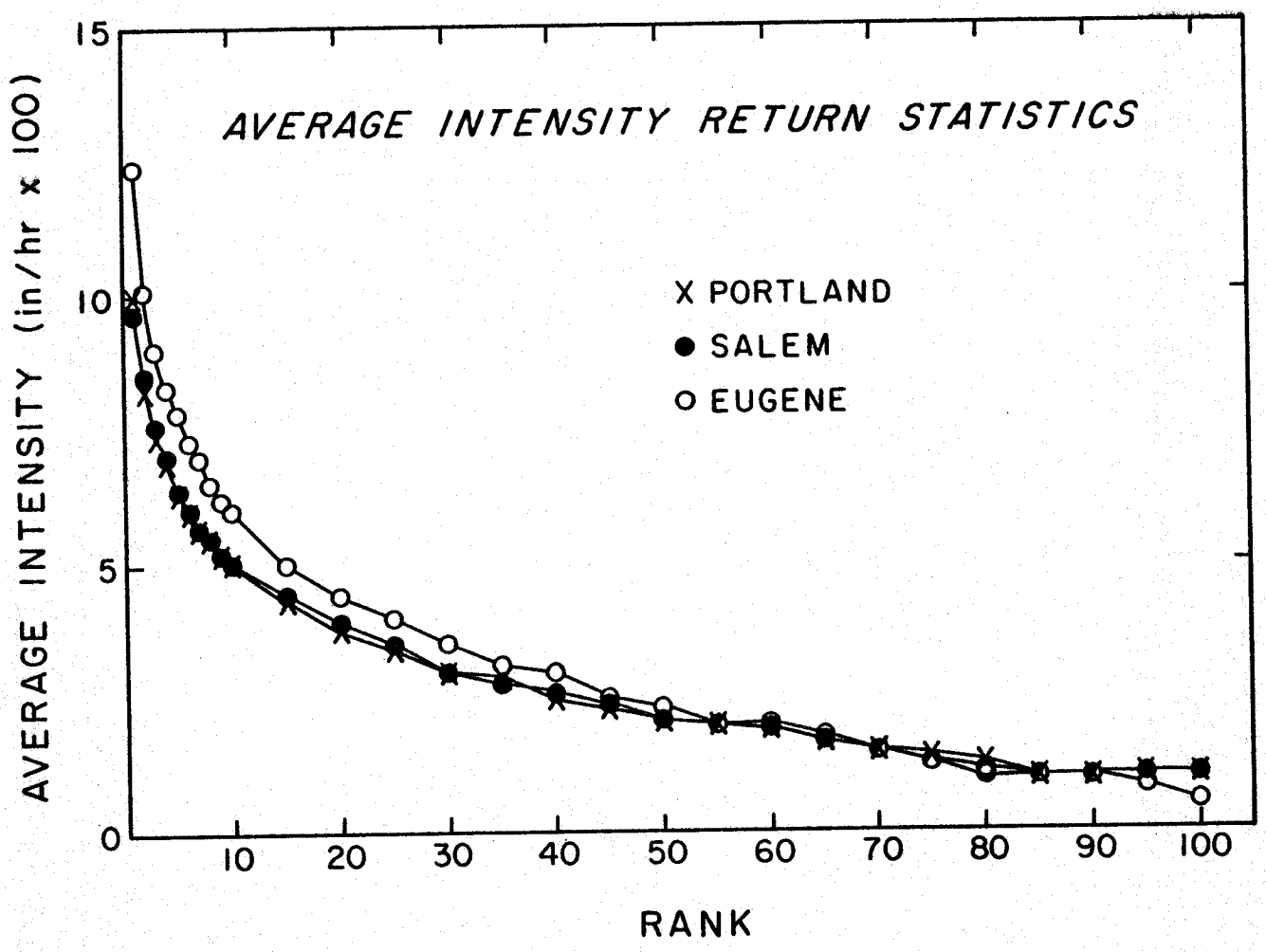


Figure 12. Average intensity return statistics at Portland, Salem, and Eugene.

precipitation event characteristics for the extreme events. The probability of occurrence of precipitation events with particular amounts of rainfall excess can be obtained from the tables of the joint frequency distributions of magnitude and average intensity which are discussed in Section 6 and presented in Appendix D.

5.4 Maximum Intensity

The box plots of the distributions of maximum intensity at Portland, Salem, and Eugene are displayed in Figure 13. As is demonstrated by these plots, the distributions of maximum intensity are very skewed. The plots indicate that at least 25 percent of the events at each station had a maximum intensity of only 0.01 in/hr (the 0.25th quantile value) whereas 1 percent of the events at Eugene had a maximum intensity that was greater than or equal to 0.40 in/hr (the 0.99th quantile value). In fact, the maximum intensity values ranged as high as 0.90 in/hr at Portland (Figure 14). The box plots at the three stations have similar shapes but dissimilar sizes. The box for the Eugene distribution is larger than the box for the Salem distribution, which also is larger than the box for the Portland distribution. This is true of the lengths of the upper tails as well.

The curves of maximum intensity order and return statistics are shown in Figures 14 and 15. In general, the shapes of these curves are similar to the shapes of the curves for the other precipitation event characteristics. One exception is that the values of the first few order statistics for Salem and Eugene do not decline rapidly. Instead, the early trends are gradual. The order statistic curve for Eugene is above the curves for Portland and Salem, as is the curve for the first 50 return statistics at Eugene. Appendix B contains tables of the maximum intensity order statistics. The maximum intensity return statistics are listed in Appendix C.

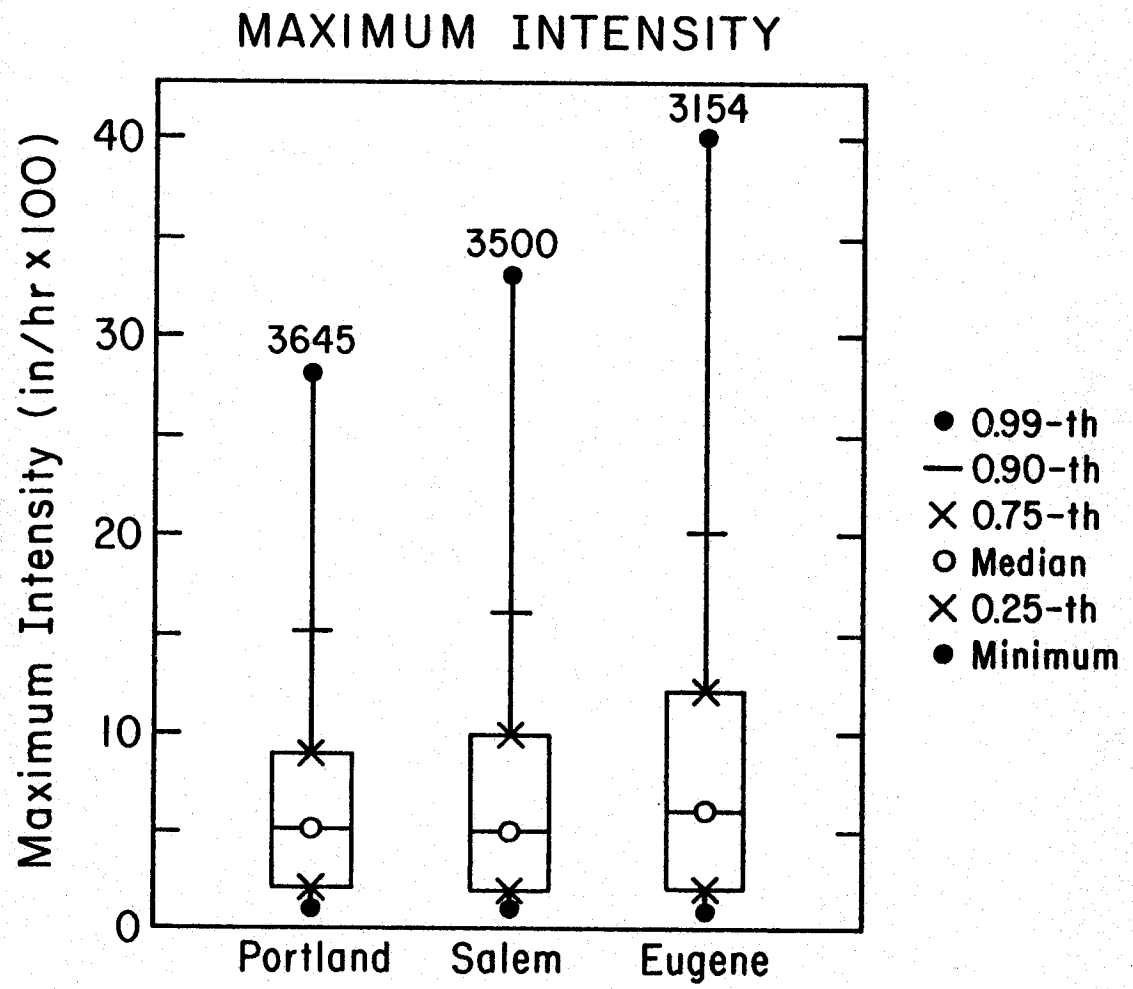


Figure 13. Box plots of maximum intensity for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

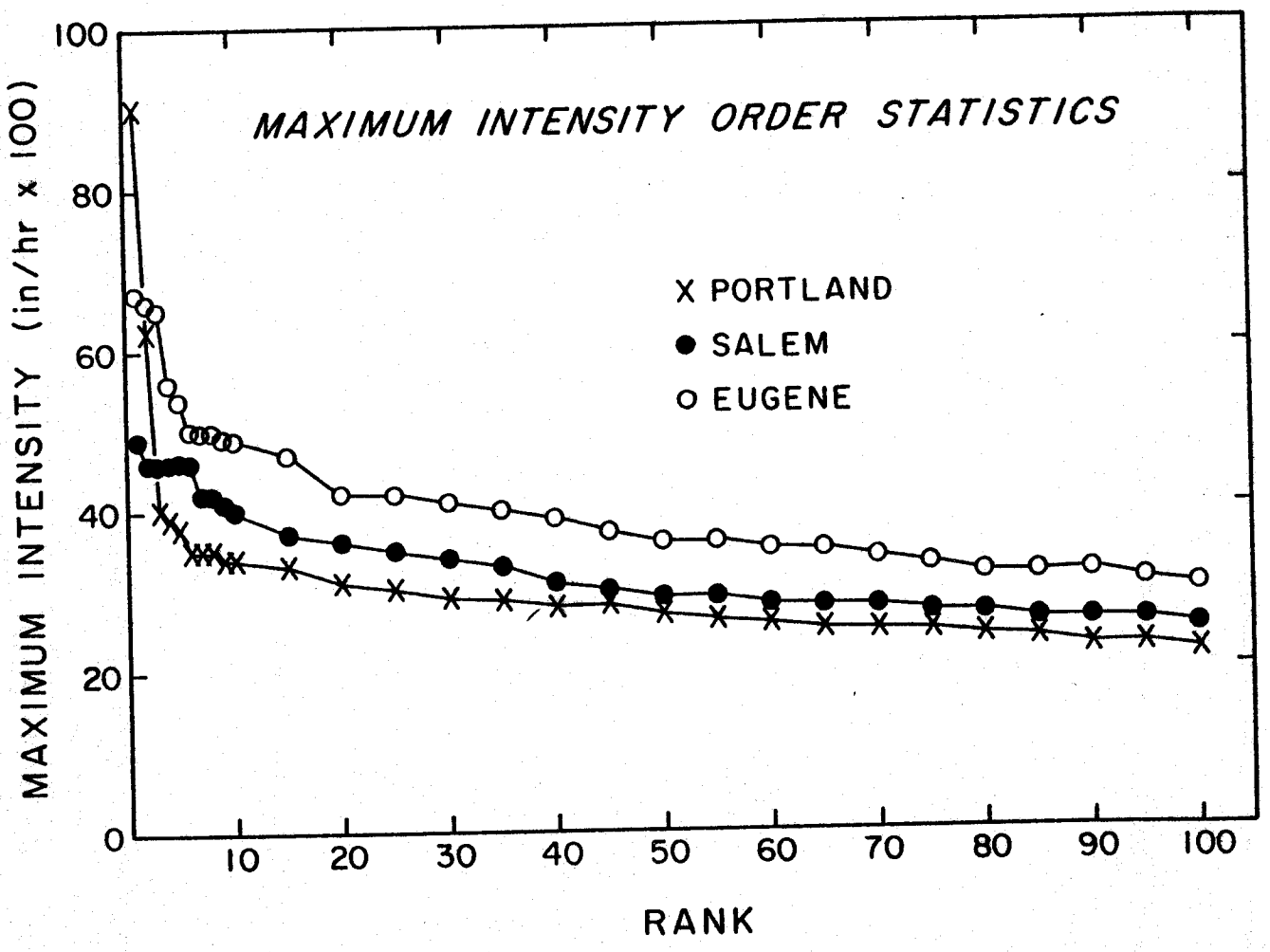


Figure 14. Maximum intensity order statistics at Portland, Salem, and Eugene.

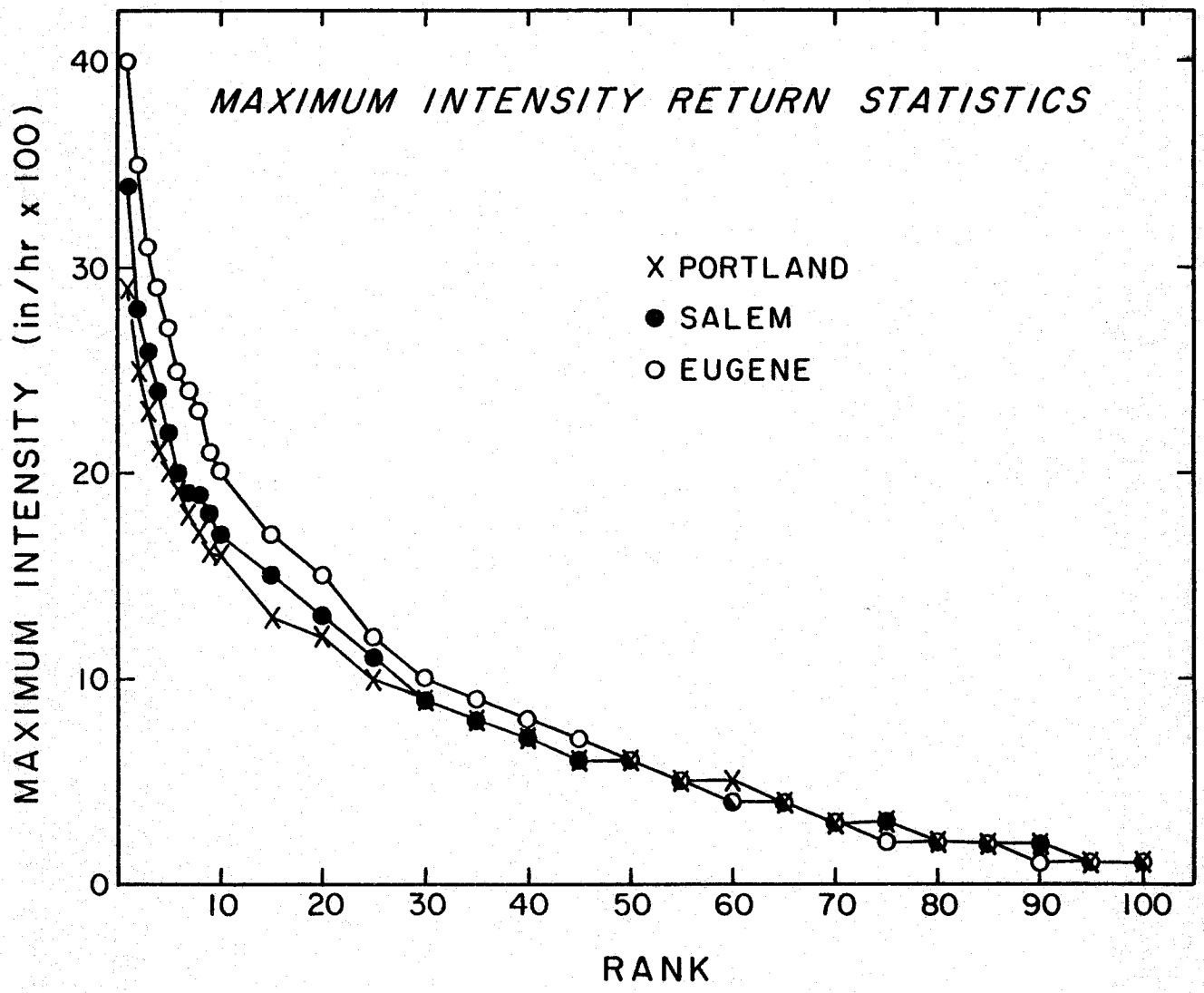


Figure 15. Maximum intensity return statistics at Portland, Salem, and Eugene.

5.5 Hours Between Events

The precipitation event characteristic hours between events (separation time) measures the amount of time that has elapsed since the end of the previous event. As discussed in Section 3, this characteristic provides some information about the extent to which changes in soil and watershed properties have progressed since the last occurrence of precipitation. For this reason, hours between events is more useful when it is considered in conjunction with other precipitation event characteristics. For example, hours between events could be used in a scheme to classify extreme events ranked by magnitude (Appendix B).

The box plots of hours between events for Portland, Salem, and Eugene are shown in Figure 16. The plots for the three stations are quite similar to one another in that all three distributions are very skewed. This indicates that most (about 75 percent) of the wet season precipitation events in western Oregon are separated by less than 50 hours. However, a few (25 percent) are separated by longer periods of time, including some events that have very large separation times.

Figures displaying the order and return statistics of hours between events are not included here. However, the order statistics are fully listed in Appendix B. The return statistics of hours between events are presented in Appendix C.

5.6 Antecedent Rainfall

Because several interacting factors that vary with time have an effect on watershed runoff, it is generally not satisfactory to simply use precipitation magnitude as a predictor of the runoff produced by individual precipitation events. However, runoff estimates can often be improved by considering additional influencing factors such as rainfall intensity, initial soil moisture conditions, and the time of year. The soil moisture condition exisiting at

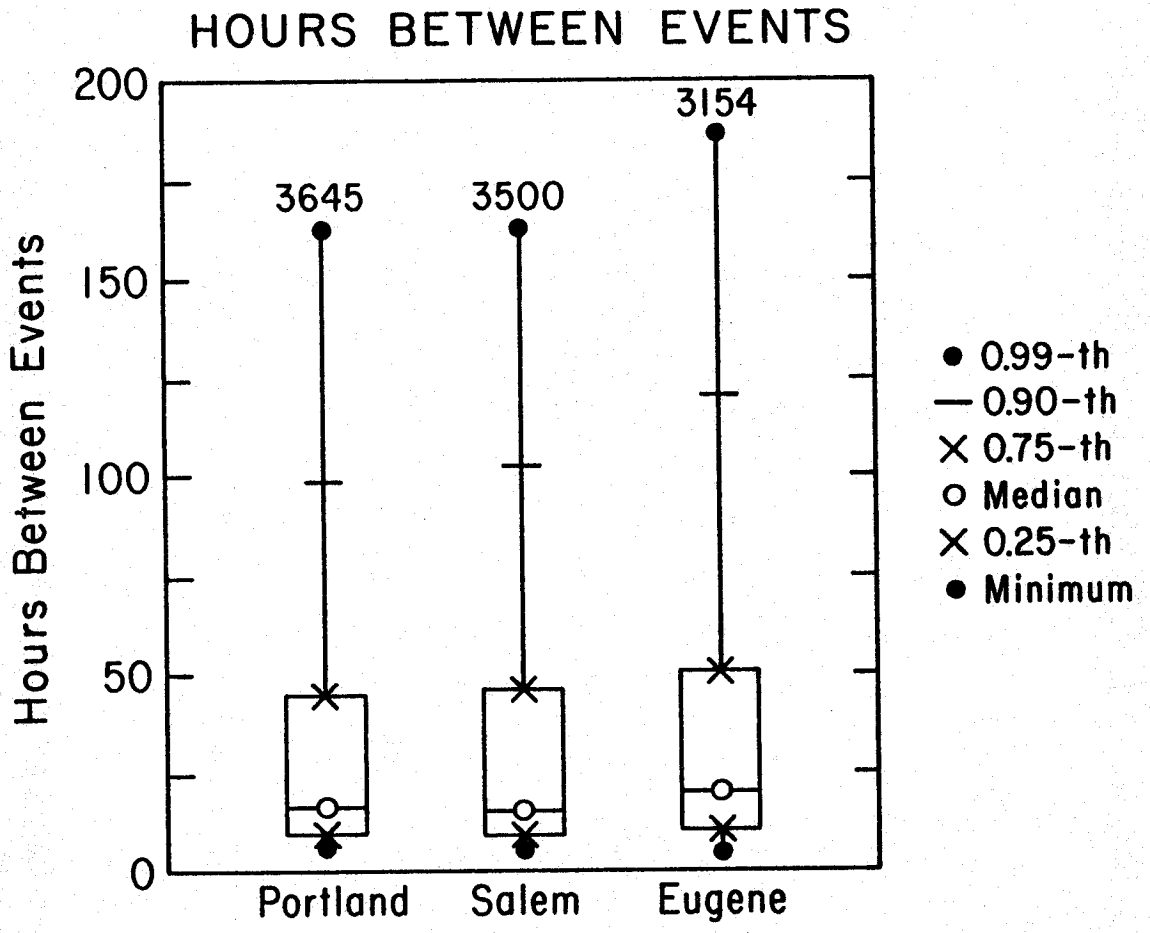


Figure 16. Box plots of hours between events for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

the start of a precipitation event has been shown to be an important factor in controlling runoff from western Oregon lands (Lowery et al., 1982). Although it is not possible to determine the initial soil moisture condition directly from historical precipitation records, this factor can be represented in the analysis of precipitation events in the form of characteristics which can be computed from the historical data.

In this study, four characteristics were defined as measures of initial soil moisture. These characteristics, all measures of antecedent rainfall, are (a) precipitation magnitude for the previous 12 hours (MAG12); (b) precipitation magnitude for the previous 48 hours (MAG48); (c) precipitation magnitude for the previous 168 hours (MAG168); and (d) the total amount of precipitation for the portion of the year (wet season) before the beginning of the event (YRMAG). Box plots depicting the marginal distributions of these characteristics at Portland, Salem, and Eugene are shown in Figures 17-20.

The box plots for MAG12 (Figure 17) indicate that the distributions of this characteristic are extremely skewed. In fact, the minimum, 0.25th quantile, and median values for this variable are all zero, whereas the 0.99th quantile values range up to 0.43 inches. Some of this skewness is caused by the way the precipitation events were defined. Because any precipitation occurrences that were separated by 6 hours or less were combined into a single event, any precipitation included in MAG12 must have occurred between 7 and 12 hours before the event. Since this is a small block of time, it is not surprising that many of the MAG12 values are zero.

The distributions of MAG48 and MAG168, shown in Figures 18 and 19, also are skewed, but are not as extremely skewed as the distributions of MAG12. The box plots for the three sites are quite similar except that the 0.90th and 0.99th quantile values for Eugene are larger than the values for Salem, which are also larger than the values for Portland. The median values for MAG48

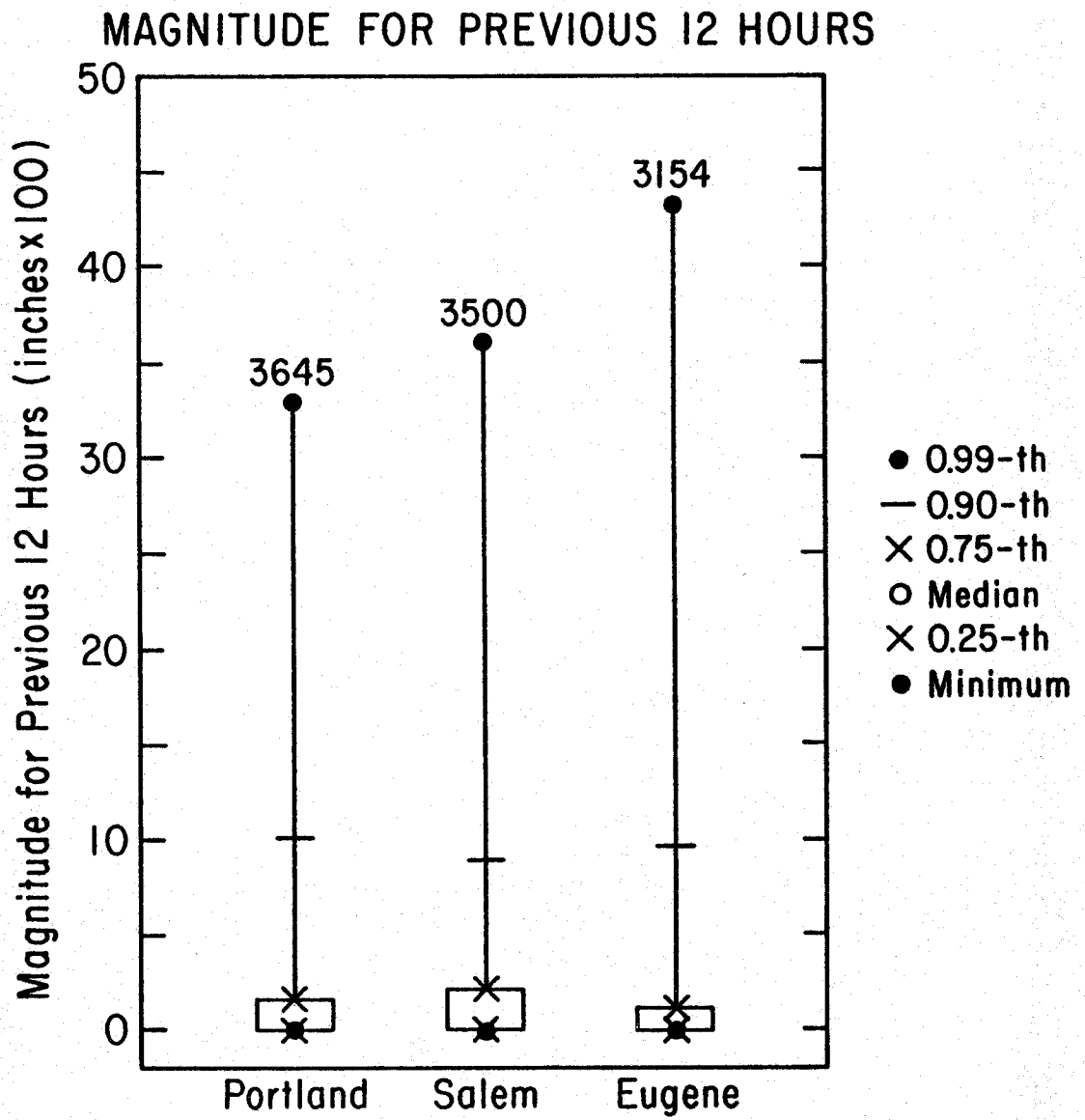


Figure 17. Box plots of magnitude for previous 12 hours (MAG12) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

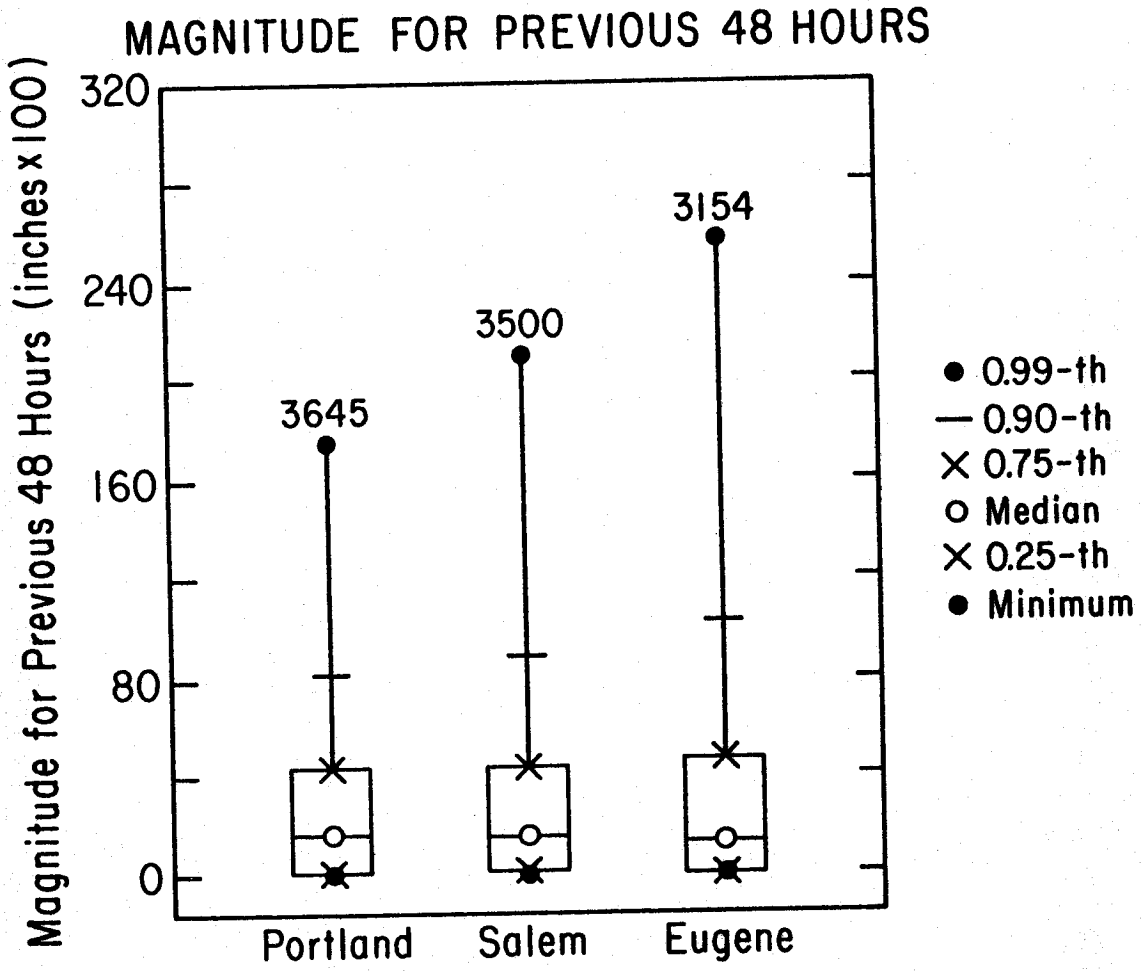


Figure 18. Box plots of magnitude for previous 48 hours (MAG48) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

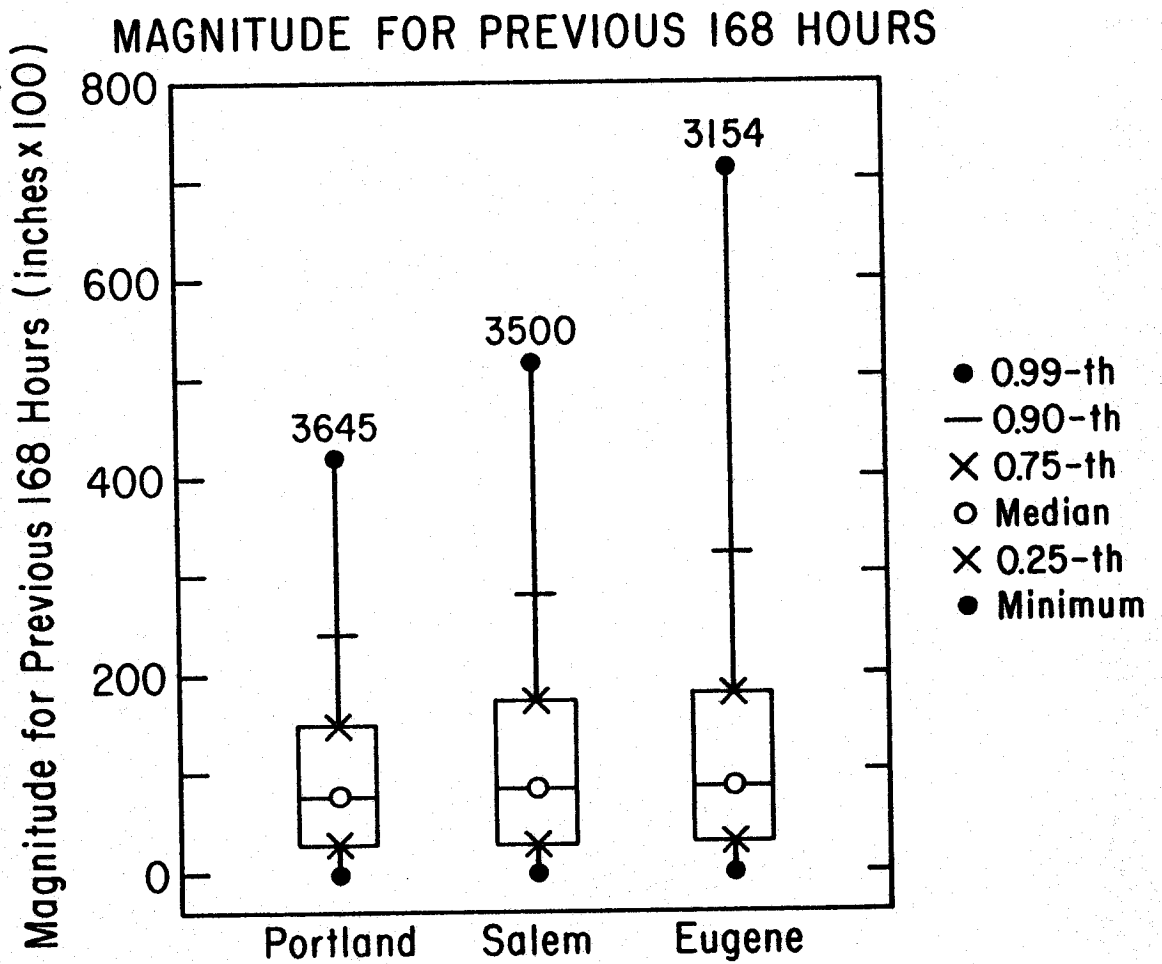


Figure 19. Box plots of magnitude for previous 168 hours (MAG168) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

are near 0.15 inches and the median values for MAG168 are around 0.80 inches.

Figure 20 contains the box plots for the distributions of YRMAG. For each event, the value of YRMAG is the sum of the magnitudes of all of the events which preceded it in the wet season. Thus, the lower quantile values of YRMAG generally represent the value of YRMAG for events that occur early in the season (i.e., events preceded by relatively small amounts of precipitation), whereas the upper quantiles generally represent the value of YRMAG for events that occur late in the season. Although it is not possible, based on the information presented in Figure 20, to identify exactly which portion of the season is represented by each quantile, the data are useful for indicating the distribution of precipitation events throughout the wet season. The following general comments can be made about the distributions of YRMAG: (a) in contrast to the distributions of the other precipitation event characteristics, the distributions of YRMAG are not very skewed; and (b) the spread of the distribution of YRMAG is greater for Eugene than for the other two sites.

The order and return statistics for the antecedent rainfall characteristics are presented in the appendices. Appendix B contains the order statistics of MAG12, MAG48, MAG168, and YRMAG. The return statistics for these variables are presented in Appendix C. Additional information about the values of antecedent rainfall for extreme events ranked by magnitude, duration, and other precipitation event characteristics can be obtained directly from the order statistics for those characteristics, presented in Appendix B. Furthermore, joint frequencies of occurrence for combinations of antecedent rainfall and other precipitation event characteristics are discussed in Section 6 and tables of the joint frequencies are presented in Appendix D.

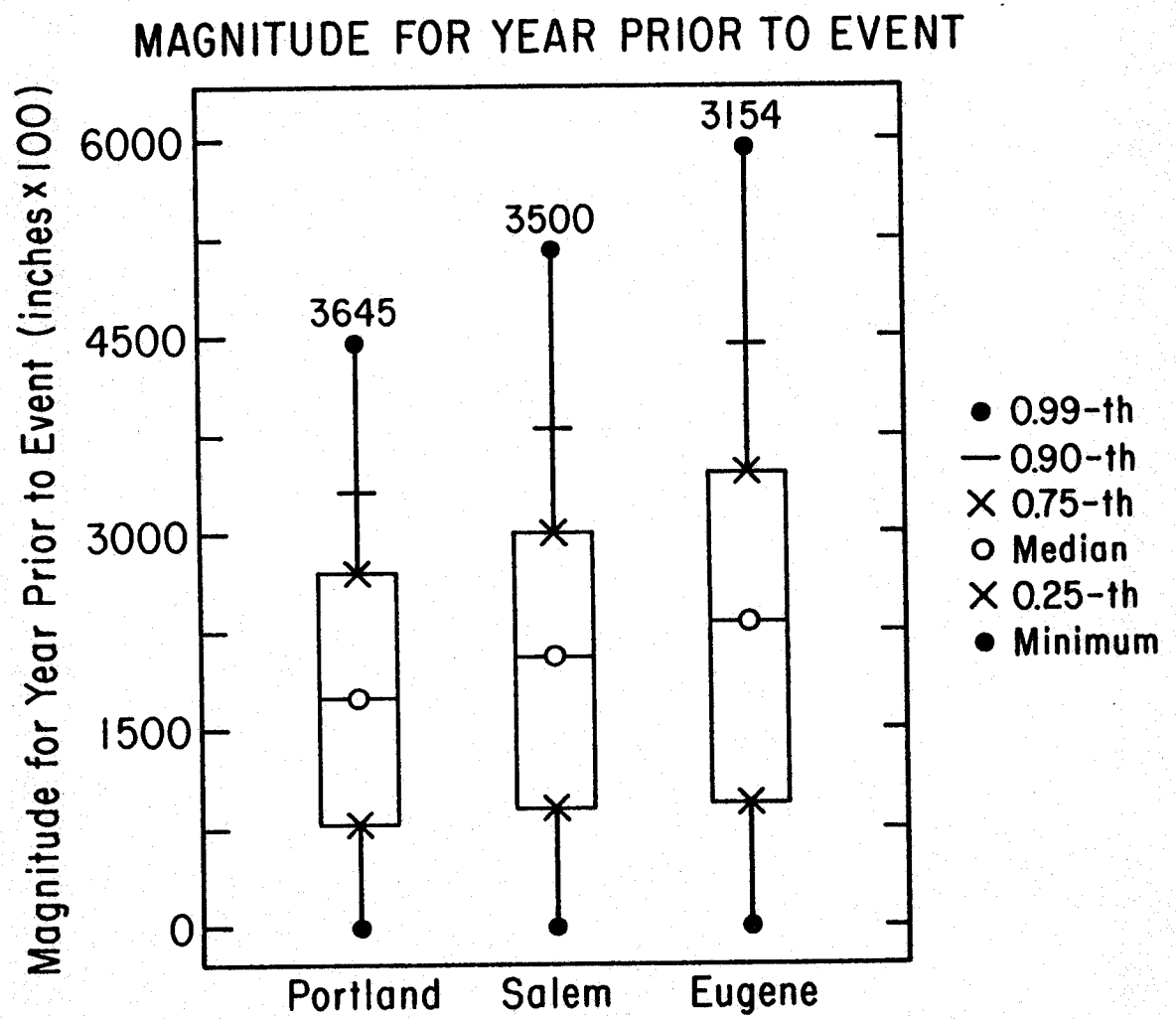


Figure 20. Box plots of magnitude for year prior to event (YRMAG) for Portland, Salem, and Eugene. The number at the top of each box plot is the number of events.

6. JOINT DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The joint frequency distributions of pairs of precipitation event characteristics can be used to obtain estimates of the probabilities of occurrence of events that have particular combinations of values of the two characteristics. For example, it may be of interest to know how frequently large magnitude events occur when the soil is already saturated. The probability of occurrence of this type of event could be estimated from a table of the joint frequency distribution of magnitude and one of the antecedent rainfall characteristics (e.g., MAG48).

Joint frequency distributions are formulated by first dividing the range of values of the characteristics of interest into several categories (in this case, the ranges of all of the precipitation event characteristics were divided into ten categories). Then a matrix can be formed whose columns represent the categories of one characteristic, Y say, and whose rows represent the categories of the other characteristic, X say. The entries in the matrix are the joint frequencies, f_{ij}, where f_{ij} is the number of times the value of X was in category i and the value of characteristic Y was in category j. The joint relative frequencies, p_{ij}, are calculated by dividing the joint frequencies by the total number of events. Total row and column frequencies (which represent the marginal distributions of the row and column variables) are calculated by summing across the rows and columns, respectively, of the joint frequency table.

The joint frequency distributions of several pairs of precipitation event characteristics are discussed in the following subsections. Because of the large number of tables required to present all of the joint frequency distributions of interest at all three sites (Portland, Salem, and Eugene),

only some of the tables for Salem are presented in this section. However, a complete set of tables of the joint distributions of interest at all three sites is presented in Appendix D.

6.1 Magnitude and Antecedent Rainfall

The joint frequency distribution of magnitude and MAG168 is presented in Table 4. Two numerical values are contained in each entry in this table. These are the joint frequency (f_{ij}) and the joint relative frequency (p_{ij}) of each pair of categories. For example, the entries in the second row and third column of Table 4 are 32 and 0.0091. This means that 32 of the 3500 Salem precipitation events had magnitudes that were between 0.50 and 0.75 inches and had between 0.50 and 1.00 inches of precipitation during the 168 hours preceding the event. The joint relative frequency of this pair of categories is 0.0091 (= 32/3500). The entries in the "ROW TOTALS" column are the marginal row frequencies. They are the sums of the joint frequencies and joint relative frequencies across the table. For example, the second set of entries in the "ROW TOTALS" column, 741 and 0.2117, are the total number and overall relative frequency of occurrence of events that had a value of MAG168 that was between 0.50 and 1.00 inches. Similarly, the "COLUMN TOTALS" are the marginal column frequencies.

The highest frequencies in Table 4 are in the upper left corner, the region of the table representing low values of magnitude and low values of MAG168. However, for most applications, this is not the portion of Table 4 (and other joint frequency tables) that is of most interest. For forecasting runoff, the important parts of Table 4 would be the regions where the combined effects of magnitude and MAG168 are large (e.g., where MAG168 is large and magnitude is medium to large). By setting threshold values of both characteristics it is possible to estimate the probabilities of occurrence of particular types of events.

Table 4. Joint frequency distribution of magnitude and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF MAGNITUDE LAST 168 HOURS (INCHES X 100)	LOWER BOUNDS FOR INTERVALS OF MAGNITUDE (INCHES X 100)										
	0	25	50	75	100	125	150	175	200	225 AND ABOVE	ROW TOTALS
0	889 .2540	168 .0480	76 .0217	30 .0086	23 .0066	20 .0057	13 .0037	10 .0029	8 .0023	14 .0040	1251 .3574
50	512 .1463	122 .0349	32 .0091	25 .0071	15 .0043	7 .0020	9 .0026	3 .0009	2 .0006	14 .0040	741 .2117
100	302 .0863	69 .0197	35 .0100	27 .0077	14 .0040	7 .0020	7 .0020	1 .0003	3 .0009	9 .0026	474 .1354
150	173 .0494	61 .0174	34 .0097	21 .0060	12 .0034	5 .0014	2 .0006	3 .0009	4 .0011	10 .0029	325 .0929
200	152 .0434	44 .0126	20 .0057	12 .0034	5 .0014	7 .0020	0 0.0000	6 .0017	1 .0003	3 .0009	250 .0714
250	95 .0271	25 .0071	17 .0049	10 .0029	4 .0011	4 .0011	0 0.0000	1 .0003	2 .0006	5 .0014	163 .0466
300	53 .0151	16 .0046	11 .0031	10 .0029	0 0.0000	0 0.0000	3 .0009	1 .0003	1 .0003	4 .0011	99 .0283
350	43 .0123	15 .0043	7 .0020	5 .0014	1 .0003	0 0.0000	1 .0003	0 0.0000	0 0.0000	0 0.0000	72 .0206
400	32 .0091	6 .0017	2 .0006	4 .0011	2 .0006	0 0.0000	1 .0003	2 .0006	1 .0003	2 .0006	52 .0149
450 AND ABOVE	42 .0120	8 .0023	10 .0029	4 .0011	1 .0003	1 .0003	2 .0006	0 0.0000	3 .0009	2 .0006	73 .0209
COLUMN TOTALS	2293 .6551	534 .1526	244 .0697	148 .0423	77 .0220	51 .0146	38 .0109	27 .0077	25 .0071	63 .0180	

This is accomplished by summing the joint frequencies of the pairs of categories satisfying the threshold values and then dividing by the total number of events. For example, suppose it is of interest to estimate the probability of occurrence of events that produce more than 1.75 inches of rain and that are preceded by 3.00 inches of precipitation, or more, in the past 168 hours. The estimate of this probability, from Table 4, is 0.0046 [= (1+1+4+0+0+0+2+1+2+0+3+2)/3500]. Note that the same answer could have been obtained (except for round-off error) by simply summing the appropriate relative frequencies. The probabilities of occurrence of other combinations of categories of magnitude and MAG168 can be estimated in a similar manner.

Tables of the joint frequency distributions of magnitude with MAG12, MAG48, and YRMAG at Salem are presented in Appendix D. Moreover, Appendix D contains tables of the joint frequency distributions of magnitude with the four antecedent rainfall variables at Portland and Eugene. These tables may be interpreted in the same manner as the table of the joint distribution of magnitude and MAG168 at Salem, which was described here.

6.2 Average Intensity and Antecedent Rainfall

Table 5 contains the joint frequency distribution of average intensity and MAG168 at Salem. As was the case with the frequency distribution of magnitude and MAG168, the largest joint frequencies are in the upper left corner of Table 5. That is, most of the precipitation events had small values of average intensity and small values of MAG168. This characteristic of the joint distribution is a result of the skewed nature of the marginal distributions of average intensity and MAG168. All of the joint frequency distributions of average intensity and antecedent rainfall have this pattern of frequencies.

Table 5. Joint frequency distribution of average intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF MAGNITUDE LAST 168 HOURS (INCHES X 100)	LOWER BOUNDS FOR INTERVALS OF AVERAGE INTENSITY (INCHES PER HOUR X 100) 0	1	2	3	4	5	6	7	8	9 AND ABOVE	ROW TOTALS
0	112 .0320	500 .1429	291 .0831	142 .0406	88 .0251	56 .0160	24 .0069	15 .0043	7 .0020	16 .0046	1251 .3574
50	74 .0211	313 .0894	162 .0463	87 .0249	47 .0134	23 .0066	10 .0029	10 .0029	6 .0017	9 .0026	741 .2117
100	53 .0151	170 .0486	118 .0337	58 .0166	37 .0106	16 .0046	6 .0017	7 .0020	7 .0020	2 .0006	474 .1354
150	25 .0071	113 .0323	80 .0229	43 .0123	29 .0083	14 .0040	7 .0020	7 .0020	5 .0014	2 .0006	325 .0929
200	24 .0069	96 .0274	46 .0131	27 .0077	19 .0054	18 .0051	5 .0014	6 .0017	6 .0017	3 .0009	250 .0714
250	17 .0049	60 .0171	36 .0103	18 .0051	14 .0040	7 .0020	7 .0020	1 .0003	1 .0003	2 .0006	163 .0466
300	15 .0043	28 .0080	15 .0043	14 .0040	12 .0034	6 .0017	1 .0003	2 .0006	1 .0003	5 .0014	99 .0283
350	4 .0011	24 .0069	20 .0057	16 .0046	1 .0003	2 .0006	1 .0003	1 .0003	2 .0006	1 .0003	72 .0206
400	4 .0011	16 .0046	8 .0023	5 .0014	6 .0017	7 .0020	3 .0009	0 0.0000	2 .0006	1 .0003	52 .0149
450 AND ABOVE	7 .0020	22 .0063	17 .0049	8 .0023	9 .0026	6 .0017	0 0.0000	2 .0006	0 0.0000	2 .0006	73 .0209
COLUMN TOTALS	335 .0957	1342 .3834	793 .2266	418 .1194	262 .0749	155 .0443	64 .0183	51 .0146	37 .0106	43 .0123	

The probabilities of occurrence of particular combinations of average intensity and MAG168 values can be estimated using the frequencies in Table 5, as they were for magnitude and MAG168 using the frequencies in Table 4. For example, at Salem, the estimated probability of occurrence of a precipitation event with an average intensity of at least 0.5 in/hr that was preceded by 2.00 or more inches of rain in the last 168 hours is 0.0289 [= (18+5+···+0+2)/3500]. Similar probabilities can be estimated from the other tables of average intensity - antecedent rainfall distributions that are presented in Appendix D.

6.3 Average Intensity and Duration

The joint frequency distribution of average intensity and duration at Salem is presented in Table 6. The pattern of frequencies in this table is such that the highest frequencies are in the upper left corner, whereas the frequencies in the lower right corner are quite small. As with the other joint distributions, the probabilities of occurrence of events with particular combinations of the values of the characteristics can be estimated from the frequencies in Table 6 (e.g., at Salem the estimated probability of occurrence of an event that lasts at least 40 hours and that has an average intensity that is greater than or equal to 0.04 in/hr is 0.0163). Tables of the joint frequency distributions of average intensity and duration at Portland and Eugene are presented in Appendix D.

6.4 Maximum Intensity and Antecedent Rainfall

Table 7 contains the joint frequency distribution of maximum intensity and MAG168 at Salem. This table is qualitatively similar to Tables 4 and 5, which contain the joint frequency distributions of magnitude and average intensity with MAG168 at Salem. That is, most of the Salem events had small

Table 6. Joint frequency distribution of average intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF DURATION (HOURS)	LOWER BOUNDS FOR INTERVALS OF AVERAGE INTENSITY (INCHES PER HOUR X 100) 0	1	2	3	4	5	6	7	8	9 AND ABOVE	ROW TOTALS
0	166 .0474	852 .2434	390 .1114	182 .0520	108 .0309	71 .0203	30 .0086	20 .0057	22 .0063	32 .0091	1873 .5351
8	123 .0351	255 .0729	168 .0480	92 .0263	51 .0146	38 .0109	16 .0046	14 .0040	4 .0011	7 .0020	768 .2194
16	33 .0094	117 .0334	98 .0280	56 .0160	44 .0126	14 .0040	5 .0014	9 .0026	4 .0011	2 .0006	382 .1091
24	9 .0026	68 .0194	60 .0171	23 .0066	12 .0034	11 .0031	6 .0017	3 .0009	3 .0009	0 0.0000	195 .0557
32	3 .0009	29 .0083	38 .0109	28 .0080	17 .0049	5 .0014	3 .0009	4 .0011	0 0.0000	0 0.0000	127 .0363
40	0 0.0000	12 .0034	18 .0051	8 .0023	14 .0040	5 .0014	3 .0009	0 0.0000	1 .0003	0 0.0000	61 .0174
48	1 .0003	6 .0017	5 .0014	10 .0029	3 .0009	6 .0017	0 0.0000	0 0.0000	0 0.0000	2 .0006	33 .0094
56	0 0.0000	0 0.0000	3 .0009	7 .0020	5 .0014	2 .0006	1 .0003	1 .0003	2 .0006	0 0.0000	21 .0060
64	0 0.0000	1 .0003	8 .0023	2 .0006	3 .0009	1 .0003	0 0.0000	0 0.0000	1 .0003	0 0.0000	16 .0046
72 AND ABOVE	0 0.0000	2 .0006	5 .0014	10 .0029	5 .0014	2 .0006	0 0.0000	0 0.0000	0 0.0000	0 0.0000	24 .0069
COLUMN TOTALS	335 .0957	1342 .3834	793 .2266	418 .1194	262 .0749	155 .0443	64 .0183	51 .0146	37 .0106	43 .0123	

Table 7. Joint frequency distribution of maximum intensity and magnitude for previous 168 hours (MAG168) at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF MAGNITUDE LAST 168 HOURS (INCHES X 100)	LOWER BOUNDS FOR INTERVALS OF MAXIMUM INTENSITY (INCHES PER HOUR X 100) 0	4	8	12	16	20	24	28	32	36 AND ABOVE	ROW TOTALS
0	520 .1486	350 .1000	178 .0509	83 .0237	56 .0160	21 .0060	16 .0046	14 .0040	6 .0017	7 .0020	1251 .3574
50	313 .0894	210 .0600	84 .0240	67 .0191	32 .0091	14 .0040	9 .0026	8 .0023	1 .0003	3 .0009	741 .2117
100	176 .0503	125 .0357	65 .0186	44 .0126	32 .0091	19 .0054	5 .0014	3 .0009	2 .0006	3 .0009	474 .1354
150	97 .0277	96 .0274	49 .0140	33 .0094	18 .0051	14 .0040	13 .0037	3 .0009	2 .0006	0 0.0000	325 .0929
200	96 .0274	56 .0160	37 .0106	28 .0080	19 .0054	5 .0014	2 .0006	1 .0003	2 .0006	4 .0011	250 .0714
250	67 .0191	35 .0100	22 .0063	17 .0049	10 .0029	4 .0011	5 .0014	2 .0006	0 0.0000	1 .0003	163 .0466
300	40 .0114	18 .0051	12 .0034	14 .0040	5 .0014	3 .0009	3 .0009	1 .0003	2 .0006	1 .0003	99 .0283
350	25 .0071	19 .0054	13 .0037	8 .0023	2 .0006	3 .0009	0 0.0000	0 0.0000	0 0.0000	2 .0006	72 .0206
400	17 .0049	11 .0031	8 .0023	6 .0017	6 .0017	1 .0003	1 .0003	0 0.0000	2 .0006	0 0.0000	52 .0149
450 AND ABOVE	19 .0054	23 .0066	8 .0023	11 .0031	7 .0020	2 .0006	2 .0006	0 0.0000	0 0.0000	1 .0003	73 .0209
COLUMN TOTALS	1370 .3914	943 .2694	476 .1360	311 .0889	187 .0534	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063	

values of maximum intensity and small values of MAG168. This also is true of the tables of the joint distributions of maximum intensity and MAG12, MAG48, and YRMAG at Salem, and of the joint distributions of maximum intensity and the four antecedent rainfall variables at Portland and Eugene. All of these tables are presented in Appendix D.

6.5 Maximum Intensity and Duration

As shown in Table 8, the joint frequency distribution of maximum intensity and duration at Salem is characterized by a pattern of frequencies that reflects the skewness of the marginal distributions of the two characteristics. More than 33 percent of the precipitation events at Salem lasted less than 8 hours and had a maximum intensity that was less than 0.04 in/hr. Only 4.4 percent of the events lasted at least 32 hours and had a maximum intensity of 0.16 in/hr or more. The results for Portland and Eugene (presented in Appendix D) are similar.

6.6 Maximum Intensity and Magnitude

The joint frequency distribution of maximum intensity and magnitude at Salem, shown in Table 9, is very much like the joint distribution of maximum intensity and duration presented in Table 8. That is, very few of the precipitation events at Salem had large values of magnitude and large values of maximum intensity; on the contrary, most of the events had small values of both characteristics. Of 3500 events at Salem, 1365 (39.00 percent) produced less than 0.25 inches of precipitation and had a maximum hourly rainfall that was less than 0.04 inches. Only 642 (18.34 percent) of the events had a magnitude value that was greater than or equal to 0.50 inches and had a maximum intensity of at least 0.08 in/hr; only 111 events (3.17 percent) produced 1.25 or more inches of

Table 8. Joint frequency distribution of maximum intensity and duration at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF DURATION (HOURS)	LOWER BOUNDS FOR INTERVALS OF MAXIMUM INTENSITY (INCHES PER HOUR X 100)										
	0	4	8	12	16	20	24	28	32	36 AND ABOVE	ROW TOTALS
0	1181 .3374	452 .1291	144 .0411	56 .0160	24 .0069	4 .0011	8 .0023	1 .0003	0 0.0000	3 .0009	1873 .5351
8	160 .0457	293 .0837	151 .0431	86 .0246	39 .0111	20 .0057	9 .0026	4 .0011	2 .0006	4 .0011	768 .2194
16	21 .0060	129 .0369	83 .0237	71 .0203	42 .0120	14 .0040	9 .0026	5 .0014	3 .0009	5 .0014	382 .1091
24	6 .0017	50 .0143	50 .0143	39 .0111	29 .0083	12 .0034	8 .0023	0 0.0000	1 .0003	0 0.0000	195 .0557
32	1 .0003	14 .0040	32 .0091	34 .0097	18 .0051	12 .0034	7 .0020	6 .0017	2 .0006	1 .0003	127 .0363
40	0 0.0000	4 .0011	9 .0026	15 .0043	16 .0046	5 .0014	3 .0009	5 .0014	2 .0006	2 .0006	61 .0174
48	1 .0003	0 0.0000	4 .0011	2 .0006	7 .0020	6 .0017	4 .0011	2 .0006	3 .0009	4 .0011	33 .0094
56	0 0.0000	0 0.0000	1 .0003	3 .0009	2 .0006	4 .0011	4 .0011	3 .0009	1 .0003	3 .0009	21 .0060
64	0 0.0000	0 0.0000	1 .0003	3 .0009	4 .0011	1 .0003	2 .0006	4 .0011	1 .0003	0 0.0000	16 .0046
72 AND ABOVE	0 0.0000	1 .0003	1 .0003	2 .0006	6 .0017	8 .0023	2 .0006	2 .0006	2 .0006	0 0.0000	24 .0069
COLUMN TOTALS	1370 .3914	943 .2694	476 .1360	311 .0889	187 .0534	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063	

Table 9. Joint frequency distribution of maximum intensity and magnitude at Salem. The top number in each entry is the joint frequency and the lower number is the joint relative frequency (n=3500).

LOWER BOUNDS FOR INTERVALS OF MAGNITUDE (INCHES X 100)	LOWER BOUNDS FOR INTERVALS OF MAXIMUM INTENSITY (INCHES PER HOUR X 100)										
	0	4	8	12	16	20	24	28	32	36 AND ABOVE	ROW TOTALS
0	1365 .3900	725 .2071	156 .0446	37 .0106	9 .0026	1 .0003	0 0.0000	0 0.0000	0 0.0000	0 0.0000	2293 .6551
25	3 .0009	189 .0540	186 .0531	96 .0274	42 .0120	9 .0026	8 .0023	0 0.0000	0 0.0000	1 .0003	534 .1526
50	2 .0006	23 .0066	78 .0223	77 .0220	32 .0091	13 .0037	12 .0034	2 .0006	0 0.0000	5 .0014	244 .0697
75	0 0.0000	5 .0014	33 .0094	43 .0123	32 .0091	23 .0066	6 .0017	3 .0009	0 0.0000	3 .0009	148 .0423
100	0 0.0000	1 .0003	16 .0046	28 .0080	16 .0046	7 .0020	5 .0014	2 .0006	2 .0006	0 0.0000	77 .0220
125	0 0.0000	0 0.0000	5 .0014	11 .0031	17 .0049	6 .0017	4 .0011	3 .0009	4 .0011	1 .0003	51 .0146
150	0 0.0000	0 0.0000	2 .0006	8 .0023	11 .0031	3 .0009	4 .0011	7 .0020	0 0.0000	3 .0009	38 .0109
175	0 0.0000	0 0.0000	0 0.0000	4 .0011	10 .0029	5 .0014	4 .0011	2 .0006	1 .0003	1 .0003	27 .0077
200	0 0.0000	0 0.0000	0 0.0000	6 .0017	2 .0006	8 .0023	3 .0009	2 .0006	3 .0009	1 .0003	25 .0071
225 AND ABOVE	0 0.0000	0 0.0000	0 0.0000	1 .0003	16 .0046	11 .0031	10 .0029	11 .0031	7 .0020	7 .0020	63 .0180
COLUMN TOTALS	1370 .3914	943 .2694	476 .1360	311 .0889	187 .0534	86 .0246	56 .0160	32 .0091	17 .0049	22 .0063	

precipitation with a maximum intensity of 0.20 in/hr or more. The joint frequency distributions of maximum intensity and magnitude at Portland and Eugene are qualitatively similar to the distribution at Salem. The tables of these distributions are contained in Appendix D.

7. CONDITIONAL DISTRIBUTIONS OF PRECIPITATION EVENT CHARACTERISTICS

The conditional distributions of pairs of precipitation event characteristics can provide indications of the types of interactions and relationships that exist between the characteristics. A conditional distribution is formulated by first selecting the subset of events for which one characteristic, X say, has a particular value, x say. Then the conditional distribution of a second characteristic, Y say, given X=x is simply the distribution of Y for the subset of events.

As in the case of the marginal distributions considered in Section 5, the conditional distributions described in this section are characterized by their quantile values (e.g., the values of the 0.25th, 0.50th, 0.75th, and 0.90th quantiles of the distributions). However, instead of using box plots, the quantiles are displayed as in Figure 21. This figure contains the quantile values of the conditional distributions of magnitude given many different values of duration, at Salem, Each curve in Figure 21 represents a different quantile of the distributions. For example, the points on the lowest curve represent the 0.25th quantile values of the frequency distributions of magnitude for events lasting 1, 2, 3, ..., 80 hours. Note that the observations for some larger values of duration have been grouped to ensure that each set of quantile values is based on at least 10 events. This procedure also was followed for the other conditional distributions considered in this section. The curves have been smoothed using a 3-point smoothing algorithm to make the trends more visible.

The conditional distributions of six pairs of precipitation event characteristics at Salem are described in the following subsections. Each of these sets of distributions is represented using a diagram similar to Figure 21.

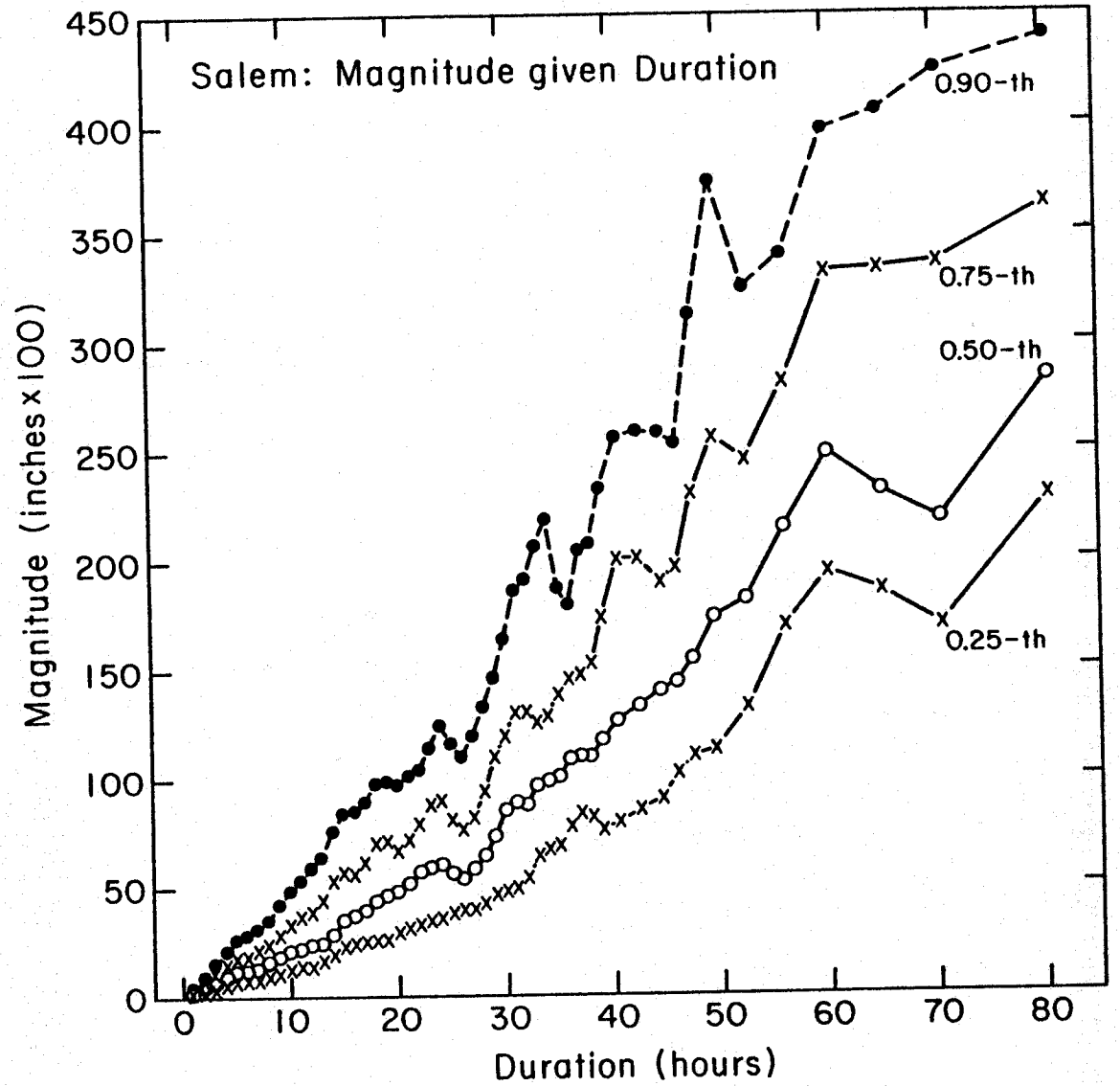


Figure 21. Quantile values of the conditional distributions of magnitude given duration, at Salem.

The corresponding figures for Portland and Eugene are not presented here because they are quite similar to the figures for Salem. The small differences in the distributions at the three stations are not of importance since the purpose of examining the conditional distributions is to obtain general (as opposed to quantitative) indications of the types of relationships that exist between the precipitation event characteristics. However, tables of the quantile values for three sets of conditional distributions (average intensity given duration, maximum intensity given duration, and maximum intensity given magnitude) at Portland, Salem, and Eugene, are presented in Appendix E.

7.1 Magnitude given Duration

Figure 21 displays the quantiles of the conditional distributions of magnitude given duration at Salem. The curves in this figure indicate that there is a very strong relationship between these two precipitation event characteristics: as the value of duration increases, the values of all of the conditional quantiles increase as well. For example, the median magnitude for events with a duration of 20 hours is about 0.50 inches, whereas the median magnitude for events lasting 40 hours is about 1.25 inches, more than twice as large. The only exceptions to this upward trend are for very large values of duration, where the sample sizes are small. It also appears that the variability of magnitude increases with increasing duration. This is indicated by the increasing distance between the 0.75th and 0.25th quantile values of magnitude (the interquartile range) with increasing duration. The existence of a relationship between magnitude and duration is not surprising. Naturally, the longer it rains the greater the expected precipitation accumulation.

7.2 Average Intensity given Duration

The trend in the quantile values of average intensity given duration at Salem (Figure 22) is not as strong as the trend for magnitude given duration.

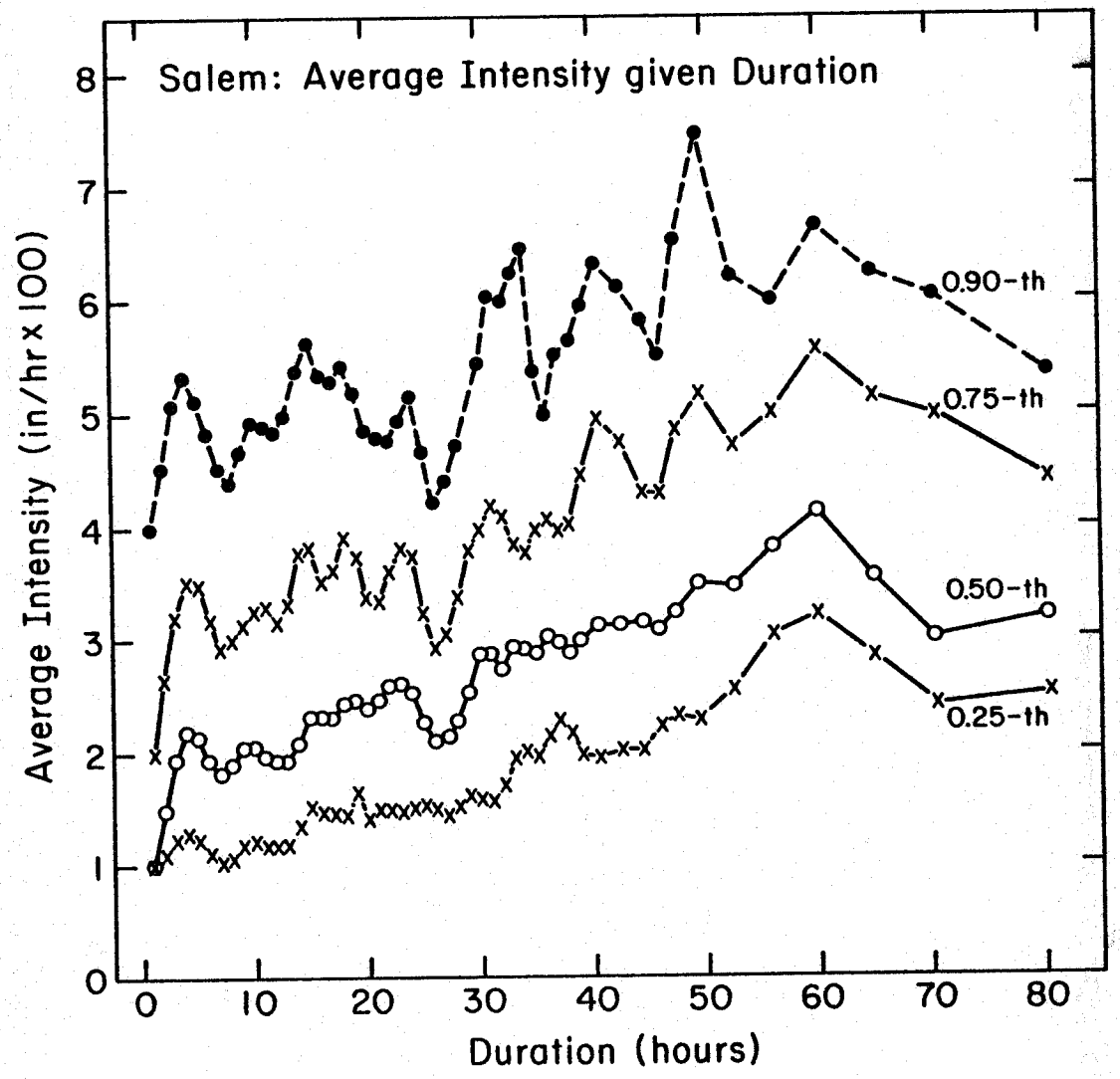


Figure 22. Quantile values of the conditional distributions of average intensity given duration, at Salem.

However, there clearly is a relationship between these two variables, as is evidenced by the gradual increase in the conditional average intensity quantiles with increasing values of duration. The median value of average intensity for events lasting 10 hours is only about 0.02 in/hr, whereas the median value for events lasting 40 hours is greater than 0.03 in/hr. The trends for other quantiles have a similar slope.

The existence of this relationship between average intensity and duration could not have been anticipated. Although average intensity is functionally related to duration [Eq. (1)], it also is functionally related to magnitude. Thus, without prior knowledge of the type of relationship existing between magnitude and duration, it is not possible to assume the form of relationship between average intensity and duration. For example, if it were true that magnitude is directly proportional to duration (a plausible assumption, based on Figure 21), then average intensity would be a constant, independent of duration. Tables listing the quantile values of the conditional distributions of average intensity given duration at Portland, Salem, and Eugene are presented in Appendix E.

7.3 Average Intensity given Magnitude

Quantiles of the conditional distributions of average intensity given magnitude at Salem are presented in Figure 23. There is, once again, some evidence of a relationship between these two characteristics. As the conditioning value of magnitude increases, so do the conditional quantile values of average intensity. For the same reasons outlined in Section 7.2 for the relationship between average intensity and duration, the existence of this relationship could not have been anticipated.

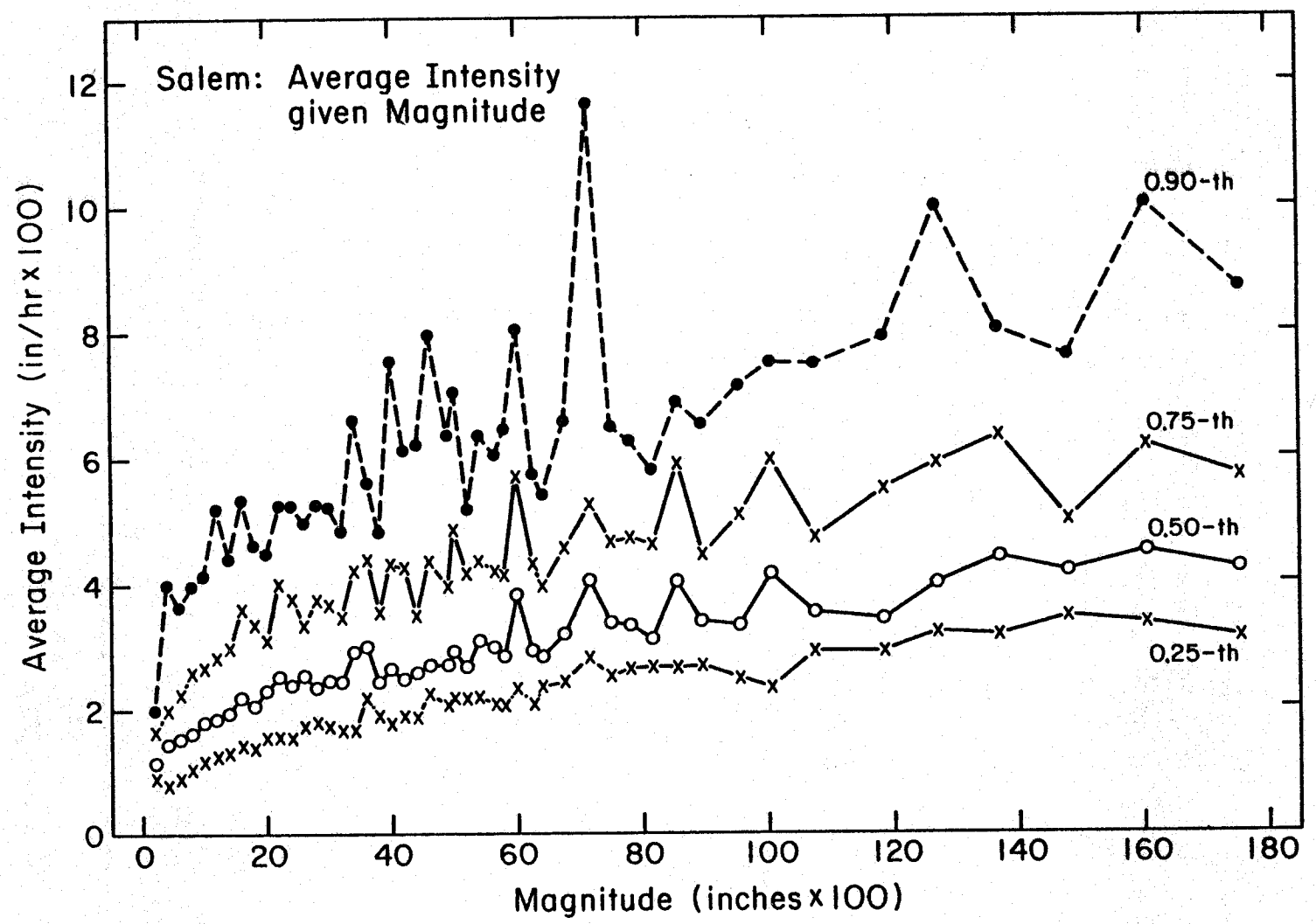


Figure 23. Quantile values of the conditional distributions of average intensity given magnitude, at Salem. Only every second point is plotted.

7.4 Average Intensity given Maximum Intensity

Figure 24 contains the quantile values for the conditional distributions of average intensity given maximum intensity. As indicated by the curves in this figure, these two characteristics are not independent. First, the conditional quantile values of average intensity increase with increasing values of maximum intensity. Second, the variability of average intensity increases (as evidenced by the increasing interquartile range) with increasing maximum intensity. Apparently, the precipitation contribution made by the hour with the largest magnitude can be used as an index of the overall characteristics of a precipitation event.

7.5 Maximum Intensity given Duration

The quantile values of the conditional distributions of maximum intensity given duration are presented in Figure 25. The curves in Figure 25 indicate that there is a very strong relationship between maximum intensity and duration. That is, the probability of a large maximum intensity value is greater for precipitation events that last a long time than it is for short-duration events. For example, less than 25 percent of the events that lasted 10 hours had maximum intensity values that were greater than 0.10 in/hr. However, this percentage is greater than 75 for events that lasted 40 hours. Tables of the quantile values of the conditional distributions of maximum intensity given duration at Portland, Salem, and Eugene are presented in Appendix E.

7.6 Maximum Intensity given Magnitude

There also is an apparent dependency between the values of maximum intensity and magnitude for the Salem precipitation events, as illustrated in Figure 26. The conditional quantile values of maximum intensity steadily

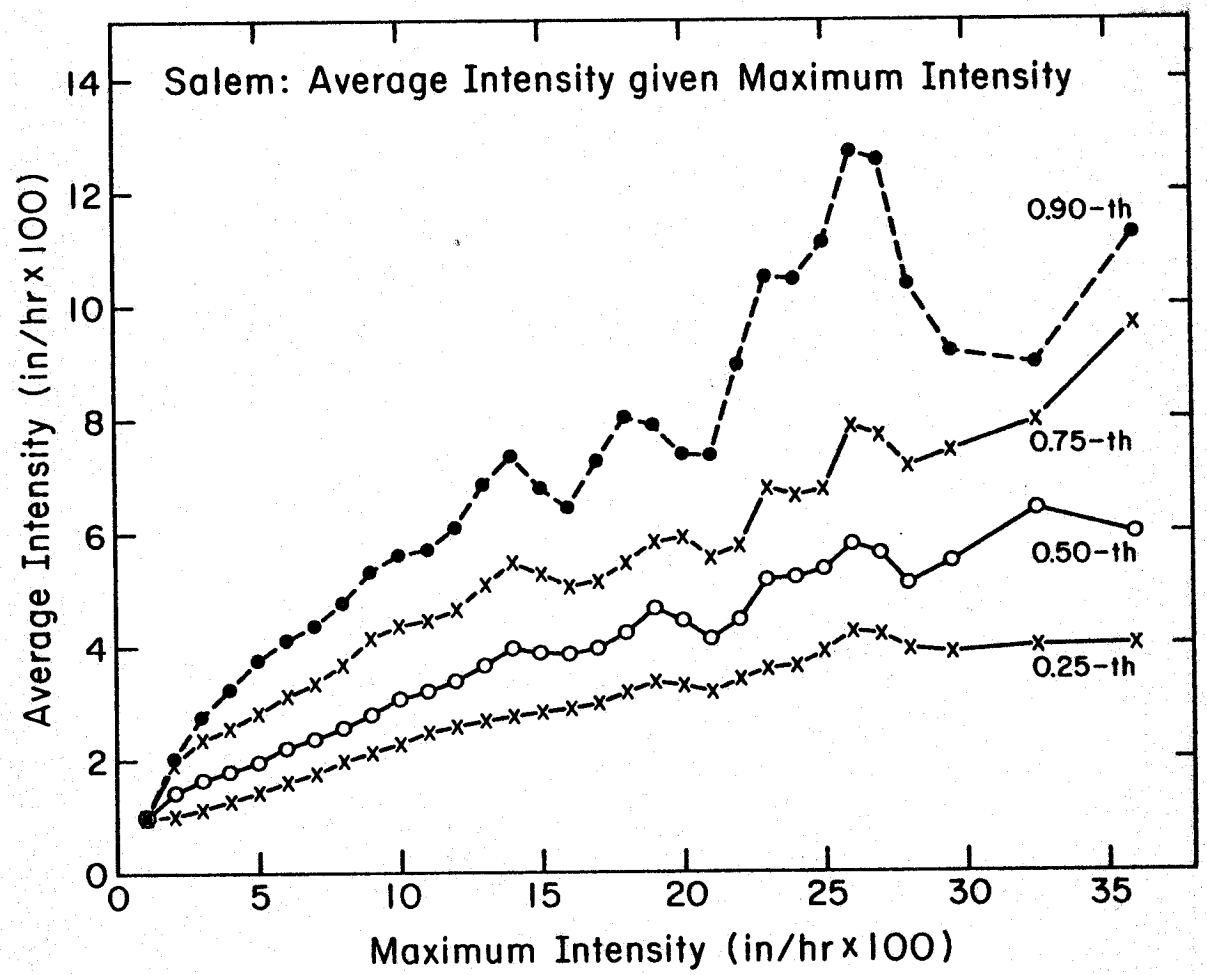


Figure 24. Quantile values of the conditional distributions of average intensity given maximum intensity, at Salem.

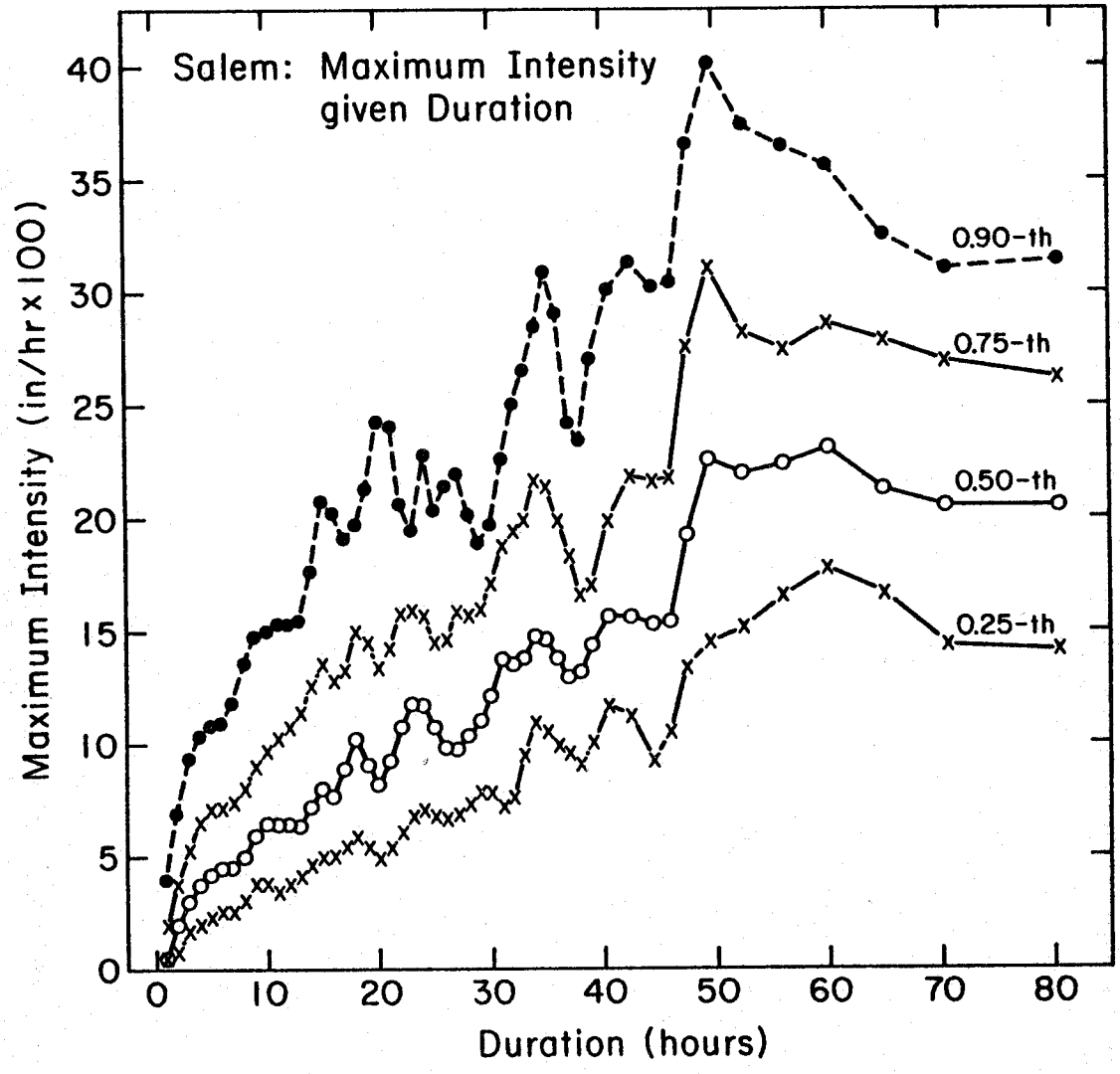


Figure 25. Quantile values of the conditional distributions of maximum intensity given duration, at Salem.

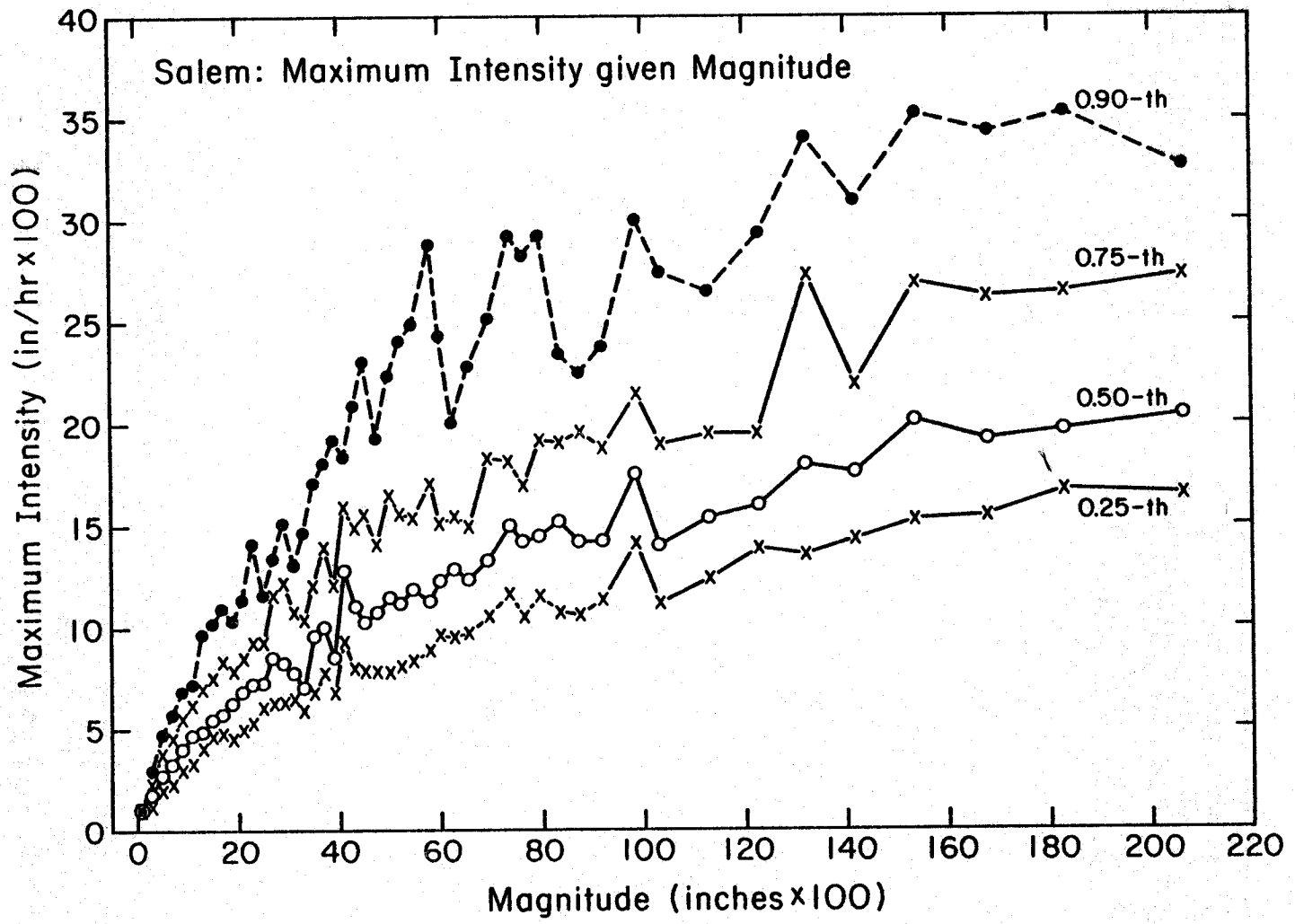


Figure 26. Quantile values of the conditional distributions of maximum intensity given magnitude, at Salem. Only every second point is plotted.

increase with increasing magnitude. Furthermore, for magnitude values that are less than 0.40 inches, the interquartile range of the conditional distributions of maximum intensity becomes larger as the conditioning value of magnitude increases. For example, the interquartile range is about 0.03 in/hr for the distribution of maximum intensity given that the magnitude is 0.10 inches, whereas it is about 0.05 in/hr given that the magnitude is 0.40 inches. At the same time, the conditional medians increase from 0.04 to 0.13 in/hr. Tables of the quantile values of the distributions of maximum intensity given magnitude at Portland, Salem, and Eugene are presented in Appendix E.

8. SUMMARY AND CONCLUSIONS

The results presented in the preceding sections provide a general statistical description of precipitation events in western Oregon as well as estimates of particular probabilities that are of importance in the modeling and forecasting of soil erosion. Some general conclusions regarding the characteristics of precipitation events in western Oregon include the following:

(a) The marginal distributions of the characteristics are quite positively skewed. That is, precipitation events with relatively small values of the characteristics occur most frequently and events with large values of the characteristics occur relatively infrequently.

(b) The most extreme values of the precipitation event characteristics generally are much larger than the values for less extreme events, as evidenced by the curves of order and return statistics presented in Section 5.

(c) The values of some pairs of precipitation event characteristics are not independent. For example, the values of precipitation event magnitude, average intensity, and maximum intensity are all related to the duration of the precipitation event.

Although these conclusions are based on the analysis of precipitation events defined using a soil erosion - specific definition, they also characterize precipitation events formulated using some other definitions (e.g., the "basic" precipitation event definition, with I_m = 0.01 in/hr and S_t = 1 hour). Furthermore, the methodology outlined in this report is general and could be applied to the analysis of other types of precipitation events (defined, perhaps, for other types of applications) at any location of interest.

The more specific results described in this report are applicable only to precipitation events that are defined using the soil erosion - specific definition considered here (I_m = 0.01 in/hr, S_t = 6 hours), at three locations in western Oregon (Portland, Salem, and Eugene). As such, these results will be useful in estimating the probabilities of occurrence of several types of precipitation events that significantly influence soil loss in western Oregon. The detailed tables of results presented in the appendices will enhance research efforts toward the development of more accurate predictions of long-term erosion rates for this region.

REFERENCES

Gayle, G. A., and R. W. Skaggs, 1978: Surface storage on bedded cultivated lands. Transactions of ASAE, 21, 102-104, 109.

Harward, M. E., G. F. Kling, and J. D. Istok (eds.), 1980: Erosion, Sediment, and Water Quality in the High Winter Rainfall Zone of the Northwestern U.S., Corvallis, Oregon State University, Oregon Agricultural Experiment Station Special Report No. 602, 220 pp.

Lowery, B., G. F. Kling, and J. A. Vomocil, 1982: Overland flow from sloping land: Effects of perched water tables and subsurface drains. Journal of the Soil Science Society of America, 46, 93-99.

Nguyen, V.-T.-V., and J. Rousselle, 1981: A stochastic model for the time distribution of hourly rainfall depth. Water Resources Research, 17, 399-409.

Tukey, J. W., 1977: Exploratory Data Analysis, Reading, Mass., Addison-Wesley, 688 pp.

APPENDICES

Table of Contents

APPENDIX A

Data Base Description

Hourly precipitation data from Portland, Salem, and Eugene, Oregon, for mid-1948 through 1979 were used to create the records of precipitation events described and analyzed in this report. These data were obtained from the National Climatic Center (NOAA, U.S. Department of Commerce) at Asheville, North Carolina. The original data tapes that were obtained from the National Climatic Center are stored at the Climatic Research Institute at Oregon State University (OSU).

The hourly data were combined according to the event definition described in Section 3, and an event parameter file was created for each of the three sites. The files consist of individual data records for each precipitation event at a site during the period of the data record. All of the precipitation characteristics that were evaluated in this study are included in the record for each event. The data files are binary and are presently archived on magnetic tape at the OSU Computer Center under the file names PRT61 (Portland events), SAL61 (Salem events), and EUG61 (Eugene events). Copies of the files, on magnetic tape, also will be stored by the OSU Department of Soil Science at the conclusion of this project.

The archived data files may be retrieved from tape and copied onto direct access files by submitting the computer routine ARCHYR which is stored under user number GAUI5C. Before submitting ARCHYR it is first necessary to edit that routine to retrieve the desired data files under the appropriate user number. That is, the USER, CHARGE, TITLE, and RETRIEV statements in ARCHYR must be changed. The RETRIEV statement is of the form

RETRIEV,RF=pfn1/pfn2/pfn3/...,R.

For example, the statement

```
RETRIEV,RF=SAL61/PRT61,R.
```

would cause the files SAL61 and PRT61 to be retrieved and stored as direct access files.

Each record on the binary event data files contains the following ten parameters (in the order listed):

(1) Hour the event ended, counting from January 1, 1900 (integer)

(2) Event duration, in hours (integer)

(3) Event magnitude, in hundredths of an inch (integer)

(4) Average intensity, in hundredths of an inch per hour (floating point)

(5) Hours since previous event ended (integer)

(6) Maximum intensity, in hundredths of an inch per hour (integer)

(7) Precipitation magnitude for previous 12 hours, in hundredths of an inch (integer)

(8) Precipitation magnitude for previous 48 hours, in hundredths of an inch (integer)

(9) Precipitation magnitude for previous 168 hours, in hundredths of an inch (integer)

(10) Precipitation magnitude for the year prior to the beginning of the event, in hundredths of an inch (integer).

Note that average intensity is the only floating point variable.

APPENDIX B

Order Statistics

The following tables contain "order statistics" for each of the precipitation event characteristics at each of three sites (Portland, Salem, and Eugene, Oregon). These statistics are the values of the event characteristics for the 100 events with the largest values (or smallest values, for hours between events) of the characteristic of interest. For example, the duration order statistics are formulated by sorting the events in order of decreasing duration and listing the characteristics of the first 100 of the ordered events. The tables of order statistics are organized by characteristic, with separate tables for each site. An index listing the location of each table is given in the table of contents for the appendices (p. 79).

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY DURATION

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	16 1974	17	115	544	4.7	278	23	0	0	0	2462
2	DECEMBER	30 1965	12	114	434	3.8	9	14	7	77	181	1061
3	JANUARY	20 1970	10	110	328	3.0	31	21	0	53	311	1764
4	JANUARY	20 1964	3	99	320	3.2	7	20	20	43	94	1484
5	NOVEMBER	17 1950	23	72	376	5.2	7	23	1	15	23	846
6	JANUARY	10 1959	5	72	270	3.8	49	16	0	0	29	1311
7	MARCH	30 1963	10	72	268	3.7	14	17	0	19	82	2272
8	NOVEMBER	12 1951	13	72	190	2.6	35	18	0	2	35	716
9	DECEMBER	26 1954	5	72	141	2.0	27	16	0	17	17	1086
10	APRIL	22 1955	7	72	73	1.0	13	5	0	16	122	2534
11	DECEMBER	8 1952	22	71	171	2.4	18	28	0	43	146	314
12	JANUARY	4 1966	14	70	260	3.7	25	26	0	6	440	1501
13	JANUARY	27 1970	17	70	160	2.3	8	14	14	111	574	2423
14	JANUARY	4 1956	23	69	387	5.6	13	29	0	54	121	2462
15	JANUARY	31 1958	12	69	171	2.5	16	17	0	53	143	1758
16	DECEMBER	16 1950	22	69	165	2.4	66	20	0	0	38	1798
17	DECEMBER	14 1973	7	64	184	2.9	7	21	10	10	103	1585
18	JANUARY	28 1967	10	63	190	3.0	10	14	6	26	154	1924
19	DECEMBER	5 1967	17	63	163	2.6	11	19	0	41	112	740
20	NOVEMBER	15 1966	12	62	186	3.0	22	38	0	137	143	469
21	OCTOBER	30 1977	23	62	84	1.4	58	14	0	0	66	132
22	JANUARY	9 1953	14	61	319	5.2	7	25	1	2	133	994
23	DECEMBER	12 1969	19	61	213	3.5	14	23	0	23	58	678
24	NOVEMBER	12 1968	17	59	167	2.8	27	23	0	107	190	741
25	DECEMBER	5 1968	12	57	237	4.2	47	33	0	0	65	1130
26	DECEMBER	23 1964	5	56	394	7.0	24	24	0	90	183	1066
27	JANUARY	26 1964	8	56	278	5.0	21	29	0	8	298	1833
28	DECEMBER	5 1951	0	56	207	3.7	11	28	0	83	263	1257
29	FEBRUARY	24 1957	12	56	198	3.5	44	16	0	4	5	1322
30	DECEMBER	11 1958	14	55	159	2.9	51	13	0	0	71	897
31	FEBRUARY	24 1979	19	55	133	2.4	8	16	10	13	97	1386
32	DECEMBER	28 1972	8	55	122	2.2	34	18	0	59	417	1213
33	JANUARY	7 1950	21	54	202	3.7	37	26	0	18	86	1311
34	DECEMBER	13 1966	16	54	121	2.2	15	13	0	76	243	1289
35	DECEMBER	22 1957	3	54	100	1.9	6	10	41	135	197	1020
36	MAY	14 1978	19	53	197	3.7	24	18	0	23	23	3071
37	DECEMBER	21 1969	10	53	173	3.3	19	12	0	25	174	1046
38	OCTOBER	30 1975	8	53	149	2.8	11	10	0	27	135	327
39	OCTOBER	9 1962	12	53	141	2.7	16	16	0	18	56	56
40	JANUARY	17 1951	7	53	112	2.1	7	12	39	135	179	2518
41	FEBRUARY	13 1954	17	52	262	5.0	272	14	0	0	0	2682
42	MARCH	9 1966	19	52	165	3.2	16	21	0	65	112	2351
43	JANUARY	26 1953	10	52	145	2.8	35	20	0	62	395	1962
44	MARCH	16 1957	7	52	125	2.4	12	6	0	13	268	2115
45	FEBRUARY	26 1978	3	52	60	1.2	14	9	0	1	1	2433
46	JANUARY	20 1950	18	51	292	5.7	14	12	0	3	142	1823
47	DECEMBER	21 1953	1	51	239	4.7	16	16	0	36	38	1468
48	NOVEMBER	24 1949	11	51	237	4.6	193	25	0	0	0	390
49	JANUARY	16 1956	5	51	230	4.5	24	19	0	35	74	3028
50	JANUARY	16 1971	17	51	201	3.9	6	12	9	49	225	1843

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY DURATION

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	FEBRUARY	1 1963	7	51	133	2.6	31	25	0	25	25	1623
52	OCTOBER	4 1950	16	51	76	1.5	3277	10	0	0	0	0
53	MARCH	17 1953	1	50	100	2.0	58	9	0	0	37	2590
54	JANUARY	28 1965	23	49	171	3.5	13	22	0	59	239	2276
55	NOVEMBER	13 1965	5	49	139	2.8	8	9	17	45	76	416
56	DECEMBER	25 1965	8	49	137	2.8	53	12	0	0	42	924
57	MARCH	12 1961	16	49	100	2.0	6	9	4	44	162	2931
58	JANUARY	19 1953	17	48	184	3.8	7	15	13	95	253	1577
59	FEBRUARY	21 1956	16	48	171	3.6	7	15	2	6	30	3650
60	MARCH	30 1960	14	48	147	3.1	17	27	0	22	31	2081
61	FEBRUARY	9 1958	17	48	82	1.7	9	10	1	12	19	1948
62	FEBRUARY	11 1961	1	47	290	6.2	11	18	0	49	155	2083
63	DECEMBER	5 1966	12	47	213	4.5	28	25	0	25	110	904
64	FEBRUARY	25 1950	0	47	190	4.0	6	18	8	10	25	2623
65	MAY	3 1977	17	47	100	2.1	142	19	0	0	19	1173
66	FEBRUARY	12 1969	7	47	84	1.8	11	8	0	128	192	3195
67	DECEMBER	30 1968	21	47	77	1.6	6	6	1	59	216	2050
68	APRIL	12 1955	17	46	161	3.5	8	21	5	53	55	2310
69	MAY	6 1979	1	46	151	3.3	146	29	0	0	22	2076
70	NOVEMBER	28 1961	10	46	103	2.2	58	9	0	0	224	639
71	FEBRUARY	17 1953	3	46	102	2.2	8	15	1	7	9	2362
72	NOVEMBER	19 1954	14	46	96	2.1	7	14	35	101	252	698
73	JANUARY	25 1975	21	45	236	5.2	11	12	0	42	45	2073
74	JANUARY	21 1972	0	45	226	5.0	6	20	12	78	90	1889
75	DECEMBER	21 1973	12	45	153	3.4	41	14	0	3	307	1952
76	DECEMBER	24 1968	7	45	149	3.3	27	15	0	3	158	1834
77	DECEMBER	7 1966	19	45	96	2.1	9	13	2	197	320	1117
78	DECEMBER	28 1977	0	45	30	.7	105	5	0	7	28	1600
79	NOVEMBER	24 1960	21	44	355	8.1	7	30	11	46	323	743
80	DECEMBER	27 1955	1	44	152	3.5	28	12	0	9	441	2256
81	JANUARY	9 1971	1	44	123	2.8	159	13	0	0	4	1606
82	NOVEMBER	23 1977	19	44	123	2.8	75	11	0	0	27	451
83	DECEMBER	5 1952	5	44	59	1.3	16	7	0	38	87	255
84	APRIL	27 1953	14	44	56	1.3	64	5	0	0	40	3030
85	FEBRUARY	7 1951	18	43	155	3.6	31	34	0	5	111	3080
86	JANUARY	4 1976	19	43	109	2.5	74	20	0	0	58	1554
87	JANUARY	17 1953	10	43	104	2.4	8	12	5	9	272	1473
88	MARCH	10 1954	14	43	79	1.8	9	16	22	117	117	3256
89	DECEMBER	30 1977	8	43	52	1.2	87	6	0	2	30	1630
90	DECEMBER	27 1967	7	43	30	.7	53	2	0	0	128	1134
91	NOVEMBER	19 1955	7	42	248	5.9	29	21	0	10	26	818
92	FEBRUARY	27 1976	12	42	202	4.8	11	32	0	70	108	2348
93	APRIL	20 1965	5	42	170	4.0	8	14	2	2	11	2862
94	MAY	2 1949	8	42	136	3.2	207	15	0	0	0	1864
95	NOVEMBER	4 1964	19	42	109	2.6	12	10	0	33	61	117
96	APRIL	17 1960	0	42	81	1.9	8	21	32	85	124	2327
97	FEBRUARY	16 1970	17	41	253	6.2	50	14	0	0	37	2808
98	DECEMBER	22 1971	3	41	177	4.3	148	10	0	0	44	1251
99	FEBRUARY	8 1978	3	41	110	2.7	15	24	0	25	159	2265
100	NOVEMBER	7 1974	16	40	179	4.5	22	15	0	10	26	224

OVERALL ORDER STATISTICS AT SALEM
SORTED BY DURATION

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	27 1970	19	171	592	3.5	7	34	19	114	444	2398
2	DECEMBER	31 1965	14	139	496	3.6	6	21	2	73	184	1219
3	DECEMBER	22 1957	7	132	445	3.4	11	17	0	33	51	898
4	FEBRUARY	26 1957	7	106	361	3.4	180	19	0	0	0	1436
5	JANUARY	20 1964	5	101	452	4.5	12	22	0	23	112	1693
6	MARCH	31 1963	8	98	468	4.8	13	22	0	14	84	2400
7	JANUARY	31 1958	12	96	421	4.4	54	28	0	0	111	1988
8	JANUARY	19 1953	14	96	409	4.3	40	19	0	8	323	1704
9	NOVEMBER	16 1973	14	90	470	5.2	6	35	4	150	442	884
10	MARCH	9 1957	3	90	338	3.8	15	23	0	57	63	1860
11	JANUARY	11 1971	14	87	134	1.5	18	9	0	2	2	2019
12	OCTOBER	23 1970	0	85	193	2.3	17	18	0	48	48	49
13	JANUARY	16 1971	17	82	235	2.9	9	20	5	38	159	2176
14	MARCH	5 1960	17	79	237	3.0	10	18	3	5	22	1743
15	DECEMBER	5 1951	19	77	296	3.8	12	29	0	78	295	1455
16	DECEMBER	8 1952	21	77	289	3.8	7	19	1	91	199	415
17	NOVEMBER	25 1970	14	76	264	3.5	45	22	0	5	70	642
18	JANUARY	14 1970	23	76	193	2.5	47	12	0	0	135	1844
19	APRIL	22 1955	7	75	105	1.4	16	6	0	10	189	2676
20	JANUARY	4 1966	16	74	311	4.2	8	24	1	51	498	1717
21	DECEMBER	19 1961	12	73	247	3.4	15	23	0	27	105	902
22	MARCH	12 1961	16	73	175	2.4	10	13	5	15	193	3389
23	JANUARY	10 1959	5	72	413	5.7	15	27	0	2	81	1493
24	NOVEMBER	25 1955	12	72	213	3.0	9	20	1	3	247	1111
25	NOVEMBER	17 1950	22	71	593	8.4	11	31	0	21	23	1171
26	JANUARY	6 1956	0	71	396	5.6	11	34	37	87	112	2702
27	MARCH	30 1955	19	70	153	2.2	47	15	0	0	80	2179
28	FEBRUARY	17 1970	19	69	304	4.4	51	30	0	0	9	3166
29	OCTOBER	31 1977	3	69	167	2.4	57	16	0	0	40	67
30	DECEMBER	10 1971	21	68	160	2.4	46	25	0	3	172	1108
31	APRIL	25 1975	12	68	122	1.8	85	10	0	0	38	3134
32	DECEMBER	19 1960	1	67	228	3.4	8	13	2	2	27	1269
33	DECEMBER	25 1954	23	67	150	2.2	20	16	0	10	10	1219
34	DECEMBER	13 1973	19	66	262	4.0	86	28	0	0	130	1947
35	FEBRUARY	26 1958	12	66	196	3.0	27	24	0	29	73	2917
36	MAY	6 1979	19	66	186	2.8	149	15	0	0	28	2253
37	NOVEMBER	15 1963	21	66	182	2.8	46	18	0	3	177	688
38	DECEMBER	5 1967	19	65	280	4.3	12	20	0	64	250	877
39	NOVEMBER	13 1965	19	65	263	4.0	6	17	22	73	122	465
40	DECEMBER	22 1974	10	65	178	2.7	8	29	5	23	85	1300
41	JANUARY	11 1969	14	63	243	3.9	25	16	1	115	210	2579
42	FEBRUARY	19 1949	3	62	516	8.3	8	32	11	102	333	2501
43	NOVEMBER	25 1960	3	62	398	6.4	26	40	0	57	276	815
44	JANUARY	27 1953	3	62	222	3.6	44	20	0	8	534	2393
45	OCTOBER	29 1950	2	61	291	4.8	13	26	0	85	110	664
46	MARCH	9 1966	19	61	247	4.0	6	25	25	85	156	2731
47	DECEMBER	16 1970	17	61	215	3.5	17	20	0	10	56	1352
48	NOVEMBER	12 1968	19	61	205	3.4	34	29	0	16	134	804
49	DECEMBER	16 1950	9	60	122	2.0	20	9	0	1	65	2361
50	MAY	7 1963	7	59	288	4.9	7	16	5	10	67	3324

OVERALL ORDER STATISTICS AT SALEM
SORTED BY DURATION

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER	23 1964	5	58	503	8.7	10	36	13	163	237	1374
52	JANUARY	21 1972	5	58	416	7.2	8	28	13	64	73	2047
53	FEBRUARY	13 1954	17	58	344	5.9	23	28	0	2	2	2786
54	OCTOBER	3 1951	11	57	242	4.2	3123	38	0	0	0	0
55	JANUARY	17 1951	9	57	177	3.1	7	12	23	152	215	3043
56	DECEMBER	10 1953	5	57	136	2.4	13	20	0	170	290	1295
57	JANUARY	28 1967	3	56	298	5.3	6	25	3	16	160	1869
58	DECEMBER	12 1969	12	56	242	4.3	13	27	0	40	84	849
59	JANUARY	16 1956	10	56	219	3.9	17	21	0	44	87	3361
60	JANUARY	18 1970	21	56	202	3.6	9	15	11	79	274	2084
61	DECEMBER	7 1954	10	56	164	2.9	15	12	0	7	9	861
62	APRIL	13 1955	1	55	216	3.9	10	21	4	21	21	2382
63	DECEMBER	21 1969	12	55	184	3.3	20	17	0	41	210	1278
64	MARCH	17 1953	3	55	165	3.0	49	28	0	0	66	3212
65	DECEMBER	5 1966	12	54	280	5.2	13	22	0	41	102	855
66	APRIL	28 1962	19	54	199	3.7	50	23	0	0	18	2600
67	NOVEMBER	15 1966	1	54	186	3.4	18	25	0	126	168	393
68	FEBRUARY	22 1949	17	54	166	3.1	32	16	0	108	628	3017
69	OCTOBER	4 1950	16	53	171	3.2	3299	28	0	0	0	0
70	NOVEMBER	5 1973	19	53	161	3.0	58	16	0	0	69	281
71	FEBRUARY	13 1975	17	52	86	1.7	6	10	2	25	130	2322
72	DECEMBER	20 1953	19	51	257	5.0	19	19	0	32	39	1470
73	FEBRUARY	2 1952	1	51	239	4.7	9	38	1	78	94	2625
74	NOVEMBER	27 1971	5	51	140	2.7	6	16	10	97	98	652
75	MARCH	25 1976	19	51	131	2.6	9	14	4	56	102	3156
76	NOVEMBER	16 1954	5	51	96	1.9	8	22	5	13	117	524
77	JANUARY	16 1974	17	50	476	9.5	6	26	45	221	323	3233
78	FEBRUARY	11 1961	1	50	452	9.0	12	26	0	41	122	2225
79	JANUARY	7 1950	18	50	294	5.9	37	37	0	8	91	1381
80	NOVEMBER	11 1951	14	50	260	5.2	27	38	0	5	27	756
81	NOVEMBER	17 1953	5	50	231	4.6	11	35	0	7	37	433
82	MARCH	26 1956	14	50	100	2.0	7	9	18	42	121	4895
83	JANUARY	27 1969	16	50	99	2.0	199	11	0	0	0	3023
84	DECEMBER	29 1951	22	50	98	2.0	7	20	8	76	116	2002
85	JANUARY	11 1950	10	49	207	4.2	11	35	0	50	331	1704
86	FEBRUARY	3 1963	10	49	176	3.6	12	46	0	142	215	1890
87	FEBRUARY	19 1976	3	49	96	2.0	7	20	6	79	152	2467
88	MARCH	2 1962	21	49	42	.9	6	8	4	19	81	1923
89	JANUARY	13 1974	19	48	263	5.5	276	33	0	0	0	2910
90	JANUARY	28 1965	23	48	262	5.5	9	24	1	41	294	2702
91	MAY	2 1949	10	48	185	3.9	20	19	0	15	19	3557
92	MARCH	30 1960	14	48	143	3.0	7	18	1	20	25	2260
93	OCTOBER	31 1956	10	48	122	2.5	6	15	5	24	175	493
94	APRIL	27 1959	16	48	55	1.1	169	3	0	0	0	3496
95	FEBRUARY	20 1968	5	47	319	6.8	12	30	0	76	76	2277
96	OCTOBER	24 1951	8	47	224	4.8	12	46	0	16	133	505
97	NOVEMBER	19 1955	12	47	219	4.7	20	27	0	25	41	889
98	MARCH	10 1954	17	47	146	3.1	9	16	19	103	103	3474
99	DECEMBER	1 1950	13	47	140	3.0	58	19	0	0	147	1944
100	NOVEMBER	12 1970	12	47	138	2.9	24	12	0	19	109	434

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY DURATION

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	15 1971	21	167	525	3.1	7	14	3	15	15	2425
2	DECEMBER	23 1964	8	127	1015	8.0	60	37	0	0	70	1572
3	JANUARY	24 1950	17	115	256	2.2	8	15	4	68	292	2024
4	DECEMBER	22 1957	5	110	807	7.3	7	45	30	103	109	806
5	DECEMBER	7 1953	10	105	268	2.6	22	26	0	15	55	963
6	DECEMBER	31 1965	16	101	452	4.5	7	18	7	19	222	1303
7	FEBRUARY	18 1949	16	100	483	4.8	74	19	0	0	162	2193
8	DECEMBER	13 1948	8	100	366	3.7	7	20	1	8	284	1136
9	JANUARY	29 1967	19	95	397	4.2	12	23	0	17	387	2557
10	JANUARY	20 1964	21	93	721	7.8	14	65	0	98	162	1826
11	MARCH	6 1960	8	93	344	3.7	14	14	0	2	18	1780
12	NOVEMBER	18 1950	5	92	673	7.3	12	35	0	10	18	1344
13	DECEMBER	30 1964	16	92	299	3.3	12	14	0	192	1262	2972
14	DECEMBER	31 1970	3	82	424	5.2	9	25	1	24	32	1980
15	JANUARY	22 1972	7	81	608	7.5	6	40	2	155	163	2733
16	NOVEMBER	13 1964	7	80	331	4.1	14	29	0	44	103	261
17	NOVEMBER	14 1957	21	80	167	2.1	7	20	6	62	63	376
18	NOVEMBER	16 1966	3	79	502	6.4	19	40	0	117	221	428
19	DECEMBER	19 1961	19	79	361	4.6	29	26	0	26	137	1550
20	JANUARY	11 1950	18	79	196	2.5	11	28	0	194	225	1522
21	DECEMBER	23 1955	8	78	663	8.5	13	41	0	296	418	2187
22	OCTOBER	29 1950	17	77	600	7.8	19	26	0	37	71	603
23	DECEMBER	17 1977	5	77	459	6.0	6	23	71	326	514	1994
24	JANUARY	10 1959	16	77	379	4.9	11	42	0	6	79	1501
25	FEBRUARY	26 1958	19	72	292	4.1	29	25	0	49	81	3532
26	MARCH	6 1951	8	72	208	2.9	53	20	0	0	29	4075
27	MARCH	31 1963	7	71	458	6.5	8	41	18	100	174	2611
28	NOVEMBER	25 1970	5	71	310	4.4	39	49	0	2	47	740
29	DECEMBER	18 1960	17	71	224	3.2	107	25	0	0	3	1407
30	JANUARY	22 1952	17	71	178	2.5	10	14	1	4	59	2397
31	NOVEMBER	24 1961	7	69	649	9.4	79	31	0	0	24	571
32	FEBRUARY	7 1979	23	69	340	4.9	12	34	0	4	4	1278
33	JANUARY	28 1969	3	69	241	3.5	63	13	0	0	30	3389
34	DECEMBER	12 1968	3	68	407	6.0	27	39	0	22	327	1659
35	DECEMBER	5 1951	11	68	281	4.1	14	44	0	33	356	1333
36	APRIL	16 1963	16	67	193	2.9	14	11	0	88	154	3335
37	NOVEMBER	16 1948	21	67	162	2.4	45	17	0	3	3	408
38	MAY	6 1979	19	65	239	3.7	143	29	0	0	28	3009
39	JANUARY	4 1966	7	64	644	10.1	12	37	0	101	470	1756
40	JANUARY	19 1953	17	64	251	3.9	7	20	16	90	252	1544
41	JANUARY	25 1965	10	64	243	3.8	13	20	0	14	16	3666
42	FEBRUARY	16 1958	16	63	387	6.1	32	36	0	51	222	3064
43	DECEMBER	2 1970	17	63	222	3.5	59	17	0	0	349	1157
44	JANUARY	29 1954	7	62	428	6.9	10	21	2	109	255	2499
45	MAY	7 1963	7	60	328	5.5	9	27	7	12	73	3650
46	NOVEMBER	12 1951	18	60	237	4.0	8	42	30	56	57	637
47	JANUARY	6 1976	10	59	303	5.1	10	56	2	30	62	2158
48	DECEMBER	14 1973	19	59	287	4.9	17	34	0	30	222	2531
49	FEBRUARY	18 1953	7	59	202	3.4	7	24	16	30	30	2401
50	FEBRUARY	2 1963	1	58	252	4.3	7	17	2	40	44	1664

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY DURATION

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER	9	1952	0	58	194	3.3	7	25	36	141	303	507
52	MARCH	17	1953	5	58	146	2.5	52	14	0	0	71	2699
53	JANUARY	24	1970	1	57	350	6.1	7	25	1	42	330	2493
54	FEBRUARY	10	1960	5	57	293	5.1	21	27	0	72	245	1369
55	MARCH	13	1971	16	57	198	3.5	14	29	0	85	105	4220
56	NOVEMBER	16	1973	3	56	377	6.7	8	33	14	188	595	1218
57	DECEMBER	25	1954	14	56	92	1.6	22	7	0	3	3	987
58	JANUARY	17	1974	1	55	689	12.5	8	39	73	238	311	3778
59	NOVEMBER	25	1960	5	55	684	12.4	37	67	0	12	197	683
60	OCTOBER	31	1956	7	55	247	4.5	30	25	0	3	337	578
61	DECEMBER	5	1967	10	55	243	4.4	17	32	0	90	222	918
62	JANUARY	12	1973	19	55	228	4.1	33	24	0	4	11	1621
63	NOVEMBER	29	1971	16	55	168	3.1	8	22	18	314	428	1112
64	JANUARY	18	1960	1	55	106	1.9	18	9	0	3	71	857
65	DECEMBER	10	1971	21	54	255	4.7	6	30	30	35	341	1621
66	DECEMBER	2	1964	7	54	232	4.3	26	31	63	71	452	1077
67	FEBRUARY	4	1949	16	54	83	1.5	35	6	0	1	15	1860
68	JANUARY	21	1967	16	53	367	6.9	84	30	0	0	55	2170
69	JANUARY	9	1953	3	53	241	4.5	7	25	4	4	89	1051
70	JANUARY	31	1961	5	53	228	4.3	136	27	0	0	6	1985
71	OCTOBER	11	1962	21	53	192	3.6	9	20	2	79	258	305
72	FEBRUARY	27	1972	23	53	181	3.4	18	26	0	82	243	3876
73	DECEMBER	18	1949	18	53	169	3.2	7	17	28	64	90	973
74	JANUARY	14	1950	10	53	123	2.3	11	17	0	89	411	1718
75	MARCH	25	1975	1	52	190	3.7	8	11	1	149	463	3665
76	JANUARY	9	1968	21	52	176	3.4	61	18	0	0	25	1352
77	MAY	26	1960	7	52	156	3.0	10	13	1	16	93	3376
78	APRIL	21	1955	7	52	78	1.5	60	8	0	0	161	2363
79	DECEMBER	6	1971	8	51	274	5.4	15	33	0	32	200	1312
80	JANUARY	16	1956	3	51	263	5.2	27	19	0	36	124	3838
81	APRIL	10	1971	3	51	252	4.9	38	23	0	2	2	4805
82	MARCH	10	1954	19	51	127	2.5	7	17	1	86	86	3382
83	JANUARY	18	1971	8	50	299	6.0	9	34	9	174	501	2950
84	FEBRUARY	26	1976	12	50	287	5.7	6	29	2	28	113	3481
85	DECEMBER	27	1958	21	50	165	3.3	17	14	0	38	107	1250
86	OCTOBER	18	1950	8	50	164	3.3	38	17	0	22	22	309
87	FEBRUARY	21	1956	16	49	305	6.2	7	25	1	4	36	4454
88	NOVEMBER	9	1973	16	49	230	4.7	12	18	0	66	387	624
89	DECEMBER	30	1951	7	49	150	3.1	6	19	1	149	205	1941
90	FEBRUARY	11	1979	19	49	147	3.0	6	23	7	15	357	1631
91	MARCH	9	1951	15	49	93	1.9	7	20	7	96	235	4304
92	JANUARY	29	1965	0	48	328	6.8	14	27	0	40	271	3923
93	NOVEMBER	5	1973	14	48	315	6.6	46	28	0	3	95	243
94	MARCH	27	1962	10	48	233	4.9	6	18	85	182	286	3170
95	JANUARY	18	1951	8	48	218	4.5	10	15	2	84	224	3045
96	NOVEMBER	19	1955	14	48	206	4.3	16	40	0	46	60	783
97	NOVEMBER	28	1949	1	48	152	3.2	12	16	0	18	207	572
98	MARCH	22	1953	12	48	129	2.7	6	14	12	43	202	2901
99	APRIL	15	1978	23	48	121	2.5	150	10	0	0	11	4285
100	NOVEMBER	9	1963	5	47	319	6.8	20	25	0	61	123	362

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAGNITUDE

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	16 1974	17	115	544	4.7	278	23	0	0	0	2462
2	DECEMBER	30 1965	12	114	434	3.8	9	14	7	77	181	1061
3	DECEMBER	23 1964	5	56	394	7.0	24	24	0	90	183	1066
4	JANUARY	4 1956	23	69	387	5.6	13	29	0	54	121	2462
5	NOVEMBER	17 1950	23	72	376	5.2	7	23	1	15	23	846
6	NOVEMBER	24 1960	21	44	355	8.1	7	30	11	46	323	743
7	JANUARY	20 1970	10	110	328	3.0	31	21	0	53	311	1764
8	JANUARY	20 1964	3	99	320	3.2	7	20	20	43	94	1484
9	JANUARY	9 1953	14	61	319	5.2	7	25	1	2	133	994
10	JANUARY	20 1950	18	51	292	5.7	14	12	0	3	142	1823
11	FEBRUARY	11 1961	1	47	290	6.2	11	18	0	49	155	2083
12	NOVEMBER	16 1973	1	35	282	8.1	6	35	28	81	459	910
13	JANUARY	26 1964	8	56	278	5.0	21	29	0	8	298	1833
14	JANUARY	10 1959	5	72	270	3.8	49	16	0	0	29	1311
15	MARCH	30 1963	10	72	268	3.7	14	17	0	19	82	2272
16	DECEMBER	13 1977	14	27	267	9.9	11	32	0	77	172	1151
17	FEBRUARY	19 1968	17	38	264	6.9	7	31	43	77	77	1908
18	FEBRUARY	13 1954	17	52	262	5.0	272	14	0	0	0	2682
19	JANUARY	4 1966	14	70	260	3.7	25	26	0	6	440	1501
20	FEBRUARY	16 1970	17	41	253	6.2	50	14	0	0	37	2808
21	OCTOBER	9 1955	19	37	253	6.8	15	21	0	23	109	109
22	JANUARY	23 1970	7	36	249	6.9	14	90	0	105	376	2140
23	NOVEMBER	19 1955	7	42	248	5.9	29	21	0	10	26	818
24	FEBRUARY	10 1949	7	20	244	12.2	15	20	0	22	105	1341
25	NOVEMBER	9 1973	14	26	240	9.2	37	30	0	8	139	454
26	DECEMBER	21 1953	1	51	239	4.7	16	16	0	36	38	1468
27	DECEMBER	5 1968	12	57	237	4.2	47	33	0	0	65	1130
28	NOVEMBER	24 1949	11	51	237	4.6	193	25	0	0	0	390
29	JANUARY	25 1975	21	45	236	5.2	11	12	0	42	45	2073
30	JANUARY	16 1956	5	51	230	4.5	24	19	0	35	74	3028
31	JANUARY	21 1972	0	45	226	5.0	6	20	12	78	90	1889
32	DECEMBER	12 1969	19	61	213	3.5	14	23	0	23	58	678
33	DECEMBER	5 1966	12	47	213	4.5	28	25	0	25	110	904
34	DECEMBER	5 1951	0	56	207	3.7	11	28	0	83	263	1257
35	OCTOBER	23 1951	8	21	206	9.8	13	35	0	117	174	463
36	JANUARY	7 1950	21	54	202	3.7	37	26	0	18	86	1311
37	FEBRUARY	27 1976	12	42	202	4.8	11	32	0	70	108	2348
38	JANUARY	16 1971	17	51	201	3.9	6	12	9	49	225	1843
39	JANUARY	13 1975	7	23	201	8.7	61	18	0	0	84	1751
40	DECEMBER	21 1955	17	14	199	14.2	9	32	17	157	260	2030
41	FEBRUARY	24 1957	12	56	198	3.5	44	16	0	4	5	1322
42	MAY	14 1978	19	53	197	3.7	24	18	0	23	23	3071
43	JANUARY	5 1954	1	32	196	6.1	9	17	4	37	70	1824
44	OCTOBER	11 1959	5	18	191	10.6	33	33	0	37	73	73
45	NOVEMBER	12 1951	13	72	190	2.6	35	18	0	2	35	716
46	JANUARY	28 1967	10	63	190	3.0	10	14	6	26	154	1924
47	FEBRUARY	25 1950	0	47	190	4.0	6	18	8	10	25	2623
48	DECEMBER	21 1972	12	26	187	7.2	8	27	4	67	233	825
49	NOVEMBER	4 1969	19	16	187	11.7	113	35	0	0	9	302
50	NOVEMBER	15 1966	12	62	186	3.0	22	38	0	137	143	469

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAGNITUDE

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	NOVEMBER	20	1962	14	25	185	7.4	9	28	1	17	79	747
52	DECEMBER	14	1973	7	64	184	2.9	7	21	10	10	103	1585
53	JANUARY	19	1953	17	48	184	3.8	7	15	13	95	253	1577
54	DECEMBER	28	1973	0	38	181	4.8	42	13	0	40	238	2190
55	NOVEMBER	7	1974	16	40	179	4.5	22	15	0	10	26	224
56	DECEMBER	2	1977	19	29	179	6.2	58	29	0	0	191	784
57	MAY	6	1963	16	39	178	4.6	12	13	0	1	49	2969
58	DECEMBER	10	1968	10	30	178	5.9	9	16	4	40	277	1407
59	DECEMBER	22	1971	3	41	177	4.3	148	10	0	0	44	1251
60	JANUARY	22	1954	14	39	177	4.5	65	16	0	0	200	2249
61	DECEMBER	4	1975	10	32	174	5.4	31	25	0	12	146	898
62	NOVEMBER	21	1974	14	21	174	8.3	11	18	0	62	204	627
63	DECEMBER	21	1969	10	53	173	3.3	19	12	0	25	174	1046
64	DECEMBER	8	1952	22	71	171	2.4	18	28	0	43	146	314
65	JANUARY	31	1958	12	69	171	2.5	16	17	0	53	143	1758
66	JANUARY	28	1965	23	49	171	3.5	13	22	0	59	239	2276
67	FEBRUARY	21	1956	16	48	171	3.6	7	15	2	6	30	3650
68	APRIL	20	1965	5	42	170	4.0	8	14	2	2	11	2862
69	NOVEMBER	25	1977	16	32	168	5.3	13	21	0	76	140	574
70	NOVEMBER	8	1968	19	25	168	6.7	14	25	0	21	69	572
71	NOVEMBER	12	1968	17	59	167	2.8	27	23	0	107	190	741
72	JANUARY	27	1954	23	26	167	6.4	12	18	0	43	252	2501
73	DECEMBER	2	1979	7	24	167	7.0	29	26	0	2	46	823
74	DECEMBER	16	1950	22	69	165	2.4	66	20	0	0	38	1798
75	MARCH	9	1966	19	52	165	3.2	16	21	0	65	112	2351
76	OCTOBER	19	1979	10	32	164	5.1	33	14	0	12	41	41
77	NOVEMBER	22	1961	5	22	164	7.5	7	20	3	3	29	418
78	DECEMBER	5	1967	17	63	163	2.6	11	19	0	41	112	740
79	NOVEMBER	15	1963	7	36	163	4.5	6	28	3	3	142	565
80	NOVEMBER	24	1964	17	34	162	4.8	15	13	0	25	25	349
81	OCTOBER	10	1953	3	17	162	9.5	27	30	0	8	8	35
82	APRIL	12	1955	17	46	161	3.5	8	21	5	53	55	2310
83	JANUARY	27	1970	17	70	160	2.3	8	14	14	111	574	2423
84	DECEMBER	11	1958	14	55	159	2.9	51	13	0	0	71	897
85	NOVEMBER	20	1960	17	29	158	5.4	20	20	0	72	237	539
86	FEBRUARY	7	1951	18	43	155	3.6	31	34	0	5	111	3080
87	FEBRUARY	14	1959	17	39	155	4.0	70	22	0	0	102	2158
88	MARCH	7	1957	10	28	155	5.5	7	16	9	62	76	1734
89	JANUARY	24	1965	7	31	154	5.0	33	18	0	6	20	2056
90	DECEMBER	21	1973	12	45	153	3.4	41	14	0	3	307	1952
91	MARCH	28	1974	14	38	153	4.0	38	20	0	8	8	4072
92	DECEMBER	27	1955	1	44	152	3.5	28	12	0	9	441	2256
93	DECEMBER	12	1959	10	37	152	4.1	8	23	1	14	48	757
94	FEBRUARY	3	1963	5	36	152	4.2	11	12	0	124	158	1756
95	NOVEMBER	16	1953	14	21	152	7.2	9	23	2	23	44	472
96	MAY	6	1979	1	46	151	3.3	146	29	0	0	22	2076
97	DECEMBER	27	1974	5	25	151	6.0	24	20	0	1	108	1306
98	NOVEMBER	26	1971	10	20	150	7.5	15	14	0	57	104	599
99	OCTOBER	30	1975	8	53	149	2.8	11	10	0	27	135	327
100	DECEMBER	24	1968	7	45	149	3.3	27	15	0	3	158	1834

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAGNITUDE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	NOVEMBER 17 1950	22	71	593	8.4	11	31	0	21	23	1171
2	JANUARY 27 1970	19	171	592	3.5	7	34	19	114	444	2398
3	FEBRUARY 19 1949	3	62	516	8.3	8	32	11	102	333	2501
4	DECEMBER 23 1964	5	58	503	8.7	10	36	13	163	237	1374
5	DECEMBER 31 1965	14	139	496	3.6	6	21	2	73	184	1219
6	JANUARY 16 1974	17	50	476	9.5	6	26	45	221	323	3233
7	NOVEMBER 16 1973	14	90	470	5.2	6	35	4	150	442	884
8	MARCH 31 1963	8	98	468	4.8	13	22	0	14	84	2400
9	JANUARY 20 1964	5	101	452	4.5	12	22	0	23	112	1693
10	FEBRUARY 11 1961	1	50	452	9.0	12	26	0	41	122	2225
11	DECEMBER 22 1957	7	132	445	3.4	11	17	0	33	51	898
12	JANUARY 31 1958	12	96	421	4.4	54	28	0	0	111	1988
13	JANUARY 21 1972	5	58	416	7.2	8	28	13	64	73	2047
14	JANUARY 10 1959	5	72	413	5.7	15	27	0	2	81	1493
15	JANUARY 19 1953	14	96	409	4.3	40	19	0	8	323	1704
16	NOVEMBER 25 1960	3	62	398	6.4	26	40	0	57	276	815
17	JANUARY 6 1956	0	71	396	5.6	11	34	37	87	112	2702
18	FEBRUARY 26 1957	7	106	361	3.4	180	19	0	0	0	1436
19	OCTOBER 10 1955	0	41	350	8.5	16	28	0	37	67	67
20	FEBRUARY 13 1954	17	58	344	5.9	23	28	0	2	2	2786
21	MARCH 9 1957	3	90	338	3.8	15	23	0	57	63	1860
22	FEBRUARY 20 1968	5	47	319	6.8	12	30	0	76	76	2277
23	JANUARY 4 1966	16	74	311	4.2	8	24	1	51	498	1717
24	FEBRUARY 21 1956	12	45	307	6.8	6	24	8	11	42	4027
25	FEBRUARY 17 1970	19	69	304	4.4	51	30	0	0	9	3166
26	JANUARY 28 1967	3	56	298	5.3	6	25	3	16	160	1869
27	DECEMBER 5 1951	19	77	296	3.8	12	29	0	78	295	1455
28	JANUARY 7 1950	18	50	294	5.9	37	37	0	8	91	1381
29	OCTOBER 29 1950	2	61	291	4.8	13	26	0	85	110	664
30	DECEMBER 8 1952	21	77	289	3.8	7	19	1	91	199	415
31	MAY 7 1963	7	59	288	4.9	7	16	5	10	67	3324
32	DECEMBER 5 1967	19	65	280	4.3	12	20	0	64	250	877
33	DECEMBER 5 1966	12	54	280	5.2	13	22	0	41	102	855
34	APRIL 9 1971	17	40	268	6.7	15	17	0	7	8	3801
35	FEBRUARY 10 1949	16	34	267	7.9	9	19	2	21	164	2116
36	DECEMBER 4 1968	21	37	266	7.2	49	28	0	0	50	1272
37	NOVEMBER 25 1970	14	76	264	3.5	45	22	0	5	70	642
38	NOVEMBER 13 1965	19	65	263	4.0	6	17	22	73	122	465
39	JANUARY 13 1974	19	48	263	5.5	276	33	0	0	0	2910
40	DECEMBER 13 1973	19	66	262	4.0	86	28	0	0	130	1947
41	JANUARY 28 1965	23	48	262	5.5	9	24	1	41	294	2702
42	NOVEMBER 11 1951	14	50	260	5.2	27	38	0	5	27	756
43	DECEMBER 20 1953	19	51	257	5.0	19	19	0	32	39	1470
44	NOVEMBER 20 1958	0	44	257	5.8	77	19	0	0	158	658
45	DECEMBER 19 1961	12	73	247	3.4	15	23	0	27	105	902
46	MARCH 9 1966	19	61	247	4.0	6	25	25	85	156	2731
47	DECEMBER 31 1970	3	38	247	6.5	6	20	29	146	167	1770
48	JANUARY 11 1969	14	63	243	3.9	25	16	1	115	210	2579
49	OCTOBER 3 1951	11	57	242	4.2	3123	38	0	0	0	0
50	DECEMBER 12 1969	12	56	242	4.3	13	27	0	40	84	849

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAGNITUDE

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER	10 1968	10	28	242	8.6	34	18	0	4	275	1547
52	JANUARY	28 1954	1	33	240	7.3	7	17	2	85	243	2499
53	FEBRUARY	2 1952	1	51	239	4.7	9	38	1	78	94	2625
54	MARCH	5 1960	17	79	237	3.0	10	18	3	5	22	1743
55	JANUARY	16 1971	17	82	235	2.9	9	20	5	38	159	2176
56	NOVEMBER	25 1977	16	32	234	7.3	13	35	0	78	165	585
57	FEBRUARY	14 1959	14	31	234	7.5	62	21	0	0	75	2611
58	NOVEMBER	17 1953	5	50	231	4.6	11	35	0	7	37	433
59	JANUARY	20 1953	14	14	230	16.4	10	46	10	165	480	2113
60	NOVEMBER	9 1973	14	40	229	5.7	31	19	0	10	173	452
61	DECEMBER	19 1960	1	67	228	3.4	8	13	2	2	27	1269
62	NOVEMBER	7 1974	14	40	227	5.7	23	19	0	4	45	220
63	DECEMBER	15 1977	16	42	226	5.4	7	28	33	144	323	1340
64	OCTOBER	24 1951	8	47	224	4.8	12	46	0	16	133	505
65	OCTOBER	19 1979	21	43	223	5.2	33	18	0	5	10	10
66	JANUARY	27 1953	3	62	222	3.6	44	20	0	8	534	2393
67	MARCH	28 1974	12	39	221	5.7	37	27	0	13	13	4959
68	DECEMBER	4 1975	7	26	220	8.5	41	34	0	9	163	1192
69	JANUARY	16 1956	10	56	219	3.9	17	21	0	44	87	3361
70	NOVEMBER	19 1955	12	47	219	4.7	20	27	0	25	41	889
71	APRIL	13 1955	1	55	216	3.9	10	21	4	21	21	2382
72	DECEMBER	27 1955	1	46	216	4.7	27	14	0	33	509	2439
73	DECEMBER	16 1970	17	61	215	3.5	17	20	0	10	56	1352
74	NOVEMBER	23 1953	1	34	214	6.3	11	26	0	14	278	711
75	NOVEMBER	25 1955	12	72	213	3.0	9	20	1	3	247	1111
76	JANUARY	25 1964	21	46	213	4.6	18	15	0	60	503	2232
77	JANUARY	28 1959	0	33	213	6.5	11	19	0	3	153	2273
78	NOVEMBER	26 1962	14	27	208	7.7	8	23	36	94	170	1012
79	JANUARY	11 1950	10	49	207	4.2	11	35	0	50	331	1704
80	DECEMBER	21 1973	10	43	207	4.8	50	15	0	0	448	2491
81	NOVEMBER	20 1978	3	37	206	5.6	41	20	0	2	9	129
82	NOVEMBER	12 1968	19	61	205	3.4	34	29	0	16	134	804
83	MAY	14 1978	23	43	203	4.7	6	14	14	33	49	3174
84	JANUARY	18 1970	21	56	202	3.6	9	15	11	79	274	2084
85	DECEMBER	12 1959	14	36	202	5.6	17	30	0	15	35	401
86	FEBRUARY	25 1976	7	27	200	7.4	18	20	0	36	131	2600
87	NOVEMBER	21 1974	17	24	200	8.3	17	15	0	15	164	628
88	NOVEMBER	5 1969	3	22	200	9.1	112	35	0	0	11	444
89	APRIL	28 1962	19	54	199	3.7	50	23	0	0	18	2600
90	FEBRUARY	26 1958	12	66	196	3.0	27	24	0	29	73	2917
91	OCTOBER	23 1970	0	85	193	2.3	17	18	0	48	48	49
92	JANUARY	14 1970	23	76	193	2.5	47	12	0	0	135	1844
93	JANUARY	24 1965	1	29	191	6.6	12	17	0	26	31	2437
94	FEBRUARY	27 1976	14	46	190	4.1	9	27	1	200	255	2800
95	MAY	17 1972	19	46	189	4.1	11	22	0	2	2	3903
96	MAY	6 1979	19	66	186	2.8	149	15	0	0	28	2253
97	NOVEMBER	15 1966	1	54	186	3.4	18	25	0	126	168	393
98	OCTOBER	23 1963	10	39	186	4.8	28	29	0	31	32	59
99	DECEMBER	21 1955	17	15	186	12.4	7	25	26	194	312	2193
100	MAY	2 1949	10	48	185	3.9	20	19	0	15	19	3557

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY MAGNITUDE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER 23 1964	8	127	1015	8.0	60	37	0	0	70	1572
2	DECEMBER 22 1957	5	110	807	7.3	7	45	30	103	109	806
3	JANUARY 20 1964	21	93	721	7.8	14	65	0	98	162	1826
4	JANUARY 17 1974	1	55	689	12.5	8	39	73	238	311	3778
5	NOVEMBER 25 1960	5	55	684	12.4	37	67	0	12	197	683
6	NOVEMBER 18 1950	5	92	673	7.3	12	35	0	10	18	1344
7	DECEMBER 23 1955	8	78	663	8.5	13	41	0	296	418	2187
8	NOVEMBER 24 1961	7	69	649	9.4	79	31	0	0	24	571
9	JANUARY 4 1966	7	64	644	10.1	12	37	0	101	470	1756
10	FEBRUARY 11 1961	1	46	628	13.7	17	48	0	16	81	2376
11	JANUARY 22 1972	7	81	608	7.5	6	40	2	155	163	2733
12	OCTOBER 29 1950	17	77	600	7.8	19	26	0	37	71	603
13	JANUARY 15 1971	21	167	525	3.1	7	14	3	15	15	2425
14	NOVEMBER 16 1966	3	79	502	6.4	19	40	0	117	221	428
15	FEBRUARY 18 1949	16	100	483	4.8	74	19	0	0	162	2193
16	DECEMBER 17 1977	5	77	459	6.0	6	23	71	326	514	1994
17	MARCH 31 1963	7	71	458	6.5	8	41	18	100	174	2611
18	DECEMBER 31 1965	16	101	452	4.5	7	18	7	19	222	1303
19	DECEMBER 27 1955	3	46	430	9.3	34	26	0	10	936	2856
20	JANUARY 29 1954	7	62	428	6.9	10	21	2	109	255	2499
21	DECEMBER 31 1970	3	82	424	5.2	9	25	1	24	32	1980
22	NOVEMBER 25 1977	21	39	420	10.8	7	66	15	129	230	714
23	DECEMBER 12 1968	3	68	407	6.0	27	39	0	22	327	1659
24	OCTOBER 10 1955	3	31	403	13.0	30	28	0	5	30	30
25	JANUARY 29 1967	19	95	397	4.2	12	23	0	17	387	2557
26	JANUARY 8 1976	5	33	392	11.9	9	32	1	145	334	2461
27	FEBRUARY 16 1958	16	63	387	6.1	32	36	0	51	222	3064
28	JANUARY 10 1959	16	77	379	4.9	11	42	0	6	79	1501
29	NOVEMBER 16 1973	3	56	377	6.7	8	33	14	188	595	1218
30	JANUARY 21 1967	16	53	367	6.9	84	30	0	0	55	2170
31	DECEMBER 13 1948	8	100	366	3.7	7	20	1	8	284	1136
32	DECEMBER 19 1961	19	79	361	4.6	29	26	0	26	137	1550
33	JANUARY 24 1970	1	57	350	6.1	7	25	1	42	330	2493
34	OCTOBER 19 1979	10	34	345	10.1	88	45	0	0	30	30
35	MARCH 6 1960	8	93	344	3.7	14	14	0	2	18	1780
36	FEBRUARY 7 1979	23	69	340	4.9	12	34	0	4	4	1278
37	NOVEMBER 23 1953	5	40	335	8.4	11	28	0	20	166	569
38	NOVEMBER 13 1964	7	80	331	4.1	14	29	0	44	103	261
39	MAY 7 1963	7	60	328	5.5	9	27	7	12	73	3650
40	JANUARY 29 1965	0	48	328	6.8	14	27	0	40	271	3923
41	DECEMBER 1 1975	5	36	326	9.1	49	38	0	0	63	1125
42	FEBRUARY 14 1959	12	25	324	13.0	79	30	0	0	82	2758
43	JANUARY 6 1978	10	33	322	9.8	30	50	0	38	131	2728
44	NOVEMBER 20 1978	10	43	321	7.5	29	42	0	7	9	142
45	NOVEMBER 9 1963	5	47	319	6.8	20	25	0	61	123	362
46	NOVEMBER 5 1973	14	48	315	6.6	46	28	0	3	95	243
47	NOVEMBER 27 1971	1	35	314	9.0	12	32	0	80	114	798
48	DECEMBER 5 1966	12	36	313	8.7	7	32	8	27	119	1183
49	JANUARY 28 1959	1	35	312	8.9	20	47	0	2	75	2329
50	NOVEMBER 25 1970	5	71	310	4.4	39	49	0	2	47	740

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY MAGNITUDE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER 13 1977	19	26	307	11.8	11	30	0	164	285	1687
52	FEBRUARY 21 1956	16	49	305	6.2	7	25	1	4	36	4454
53	JANUARY 6 1976	10	59	303	5.1	10	56	2	30	62	2158
54	DECEMBER 4 1979	0	27	302	11.2	39	40	0	205	244	1421
55	DECEMBER 4 1968	21	27	300	11.1	35	27	0	1	93	1332
56	DECEMBER 30 1964	16	92	299	3.3	12	14	0	192	1262	2972
57	JANUARY 18 1971	8	50	299	6.0	9	34	9	174	501	2950
58	DECEMBER 20 1953	12	46	299	6.5	20	25	0	34	41	1348
59	DECEMBER 4 1975	16	21	299	14.2	21	50	0	6	344	1457
60	JANUARY 12 1959	1	17	299	17.6	6	54	5	124	445	1885
61	MARCH 2 1972	19	39	294	7.5	16	21	0	69	373	4126
62	FEBRUARY 10 1960	5	57	293	5.1	21	27	0	72	245	1369
63	FEBRUARY 26 1958	19	72	292	4.1	29	25	0	49	81	3532
64	DECEMBER 14 1973	19	59	287	4.9	17	34	0	30	222	2531
65	FEBRUARY 26 1976	12	50	287	5.7	6	29	2	28	113	3481
66	DECEMBER 5 1951	11	68	281	4.1	14	44	0	33	356	1333
67	JANUARY 27 1950	16	38	280	7.4	32	20	0	12	265	2280
68	JANUARY 11 1969	8	34	278	8.2	6	22	57	113	221	2786
69	JANUARY 12 1972	3	33	278	8.4	12	29	0	55	69	2295
70	NOVEMBER 19 1958	19	29	276	9.5	82	32	0	0	164	740
71	DECEMBER 6 1971	8	51	274	5.4	15	33	0	32	200	1312
72	DECEMBER 7 1953	10	105	268	2.6	22	26	0	15	55	963
73	DECEMBER 21 1969	12	31	266	8.6	9	28	2	70	212	1288
74	JANUARY 16 1956	3	51	263	5.2	27	19	0	36	124	3838
75	MAY 17 1972	5	32	263	8.2	7	31	2	2	2	5471
76	DECEMBER 12 1969	3	25	258	10.3	10	49	3	59	100	806
77	JANUARY 24 1950	17	115	256	2.2	8	15	4	68	292	2024
78	DECEMBER 10 1971	21	54	255	4.7	6	30	30	35	341	1621
79	NOVEMBER 26 1962	12	24	255	10.6	82	37	0	0	70	981
80	NOVEMBER 7 1974	12	35	254	7.3	22	21	0	10	23	171
81	FEBRUARY 2 1963	1	58	252	4.3	7	17	2	40	44	1664
82	APRIL 10 1971	3	51	252	4.9	38	23	0	2	2	4805
83	MARCH 28 1974	14	41	252	6.1	39	27	0	10	10	6292
84	JANUARY 19 1953	17	64	251	3.9	7	20	16	90	252	1544
85	NOVEMBER 12 1965	12	40	249	6.2	10	20	0	29	73	430
86	OCTOBER 31 1956	7	55	247	4.5	30	25	0	3	337	578
87	DECEMBER 27 1974	7	21	245	11.7	95	48	0	0	155	1451
88	JANUARY 25 1965	10	64	243	3.8	13	20	0	14	16	3666
89	DECEMBER 5 1967	10	55	243	4.4	17	32	0	90	222	918
90	DECEMBER 17 1972	19	36	242	6.7	19	24	0	1	11	625
91	NOVEMBER 21 1973	5	34	242	7.1	48	42	0	0	462	1604
92	JANUARY 28 1969	3	69	241	3.5	63	13	0	0	30	3389
93	JANUARY 9 1953	3	53	241	4.5	7	25	4	4	89	1051
94	MAY 6 1979	19	65	239	3.7	143	29	0	0	28	3009
95	NOVEMBER 12 1951	18	60	237	4.0	8	42	30	56	57	637
96	JANUARY 25 1970	12	29	235	8.1	6	26	40	225	469	2843
97	MARCH 27 1962	10	48	233	4.9	6	18	85	182	286	3170
98	DECEMBER 2 1964	7	54	232	4.3	26	31	63	71	452	1077
99	NOVEMBER 9 1973	16	49	230	4.7	12	18	0	66	387	624
100	DECEMBER 21 1973	8	42	229	5.5	48	22	0	0	434	3020

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY INTENSITY

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	OCTOBER	10	1976	17	1	28	28.0	7	28	3	17	17	26
2	MAY	7	1956	21	2	38	19.0	61	30	0	0	50	4419
3	MAY	26	1958	19	4	69	17.3	46	34	0	7	16	3011
4	MAY	9	1956	19	3	45	15.0	43	30	0	38	88	4457
5	MAY	1	1965	17	2	29	14.5	8	17	3	6	7	3053
6	DECEMBER	21	1955	17	14	199	14.2	9	32	17	157	260	2030
7	FEBRUARY	11	1961	12	1	14	14.0	9	14	19	241	423	2373
8	DECEMBER	32	1953	0	1	14	14.0	83	12	0	0	48	1773
9	JANUARY	20	1953	10	8	106	13.3	10	24	1	121	317	1761
10	APRIL	7	1958	17	2	26	13.0	68	19	0	0	31	2693
11	MARCH	13	1971	14	1	13	13.0	15	13	0	90	221	2951
12	FEBRUARY	19	1962	17	1	13	13.0	44	13	0	2	108	1784
13	OCTOBER	18	1958	10	2	25	12.5	13	14	0	18	18	44
14	FEBRUARY	10	1949	7	20	244	12.2	15	20	0	22	105	1341
15	OCTOBER	22	1954	17	2	24	12.0	7	21	4	122	209	316
16	APRIL	1	1964	14	1	12	12.0	15	12	0	7	7	2487
17	NOVEMBER	4	1969	19	16	187	11.7	113	35	0	0	9	302
18	DECEMBER	16	1957	7	2	23	11.5	21	13	0	1	8	831
19	OCTOBER	25	1955	17	10	110	11.0	18	28	0	4	5	409
20	MAY	8	1953	17	2	22	11.0	7	14	1	25	53	3182
21	MAY	6	1973	19	1	11	11.0	13	11	0	1	8	2293
22	MARCH	20	1964	19	4	43	10.8	6	28	10	10	35	2431
23	OCTOBER	11	1959	5	18	191	10.6	33	33	0	37	73	73
24	FEBRUARY	1	1961	21	11	115	10.5	31	26	0	29	111	1813
25	OCTOBER	10	1954	3	5	52	10.4	42	19	0	1	6	6
26	FEBRUARY	17	1953	17	5	51	10.2	10	15	11	83	111	2464
27	NOVEMBER	5	1962	12	3	30	10.0	9	21	13	49	49	380
28	NOVEMBER	17	1953	14	2	20	10.0	8	19	2	165	204	637
29	JANUARY	24	1970	3	2	20	10.0	17	10	0	243	575	2389
30	APRIL	4	1958	19	1	10	10.0	47	10	0	0	46	2683
31	MAY	16	1974	19	1	10	10.0	7	10	5	31	71	4597
32	MAY	21	1949	17	1	10	10.0	22	10	0	43	44	2044
33	NOVEMBER	13	1968	17	1	10	10.0	12	10	0	45	365	916
34	DECEMBER	13	1977	14	27	267	9.9	11	32	0	77	172	1151
35	OCTOBER	23	1951	8	21	206	9.8	13	35	0	117	174	463
36	MAY	20	1968	0	15	147	9.8	115	62	0	0	29	2790
37	MAY	1	1976	19	3	29	9.7	75	20	0	0	12	3087
38	NOVEMBER	26	1962	1	15	144	9.6	7	28	30	90	277	1023
39	OCTOBER	10	1953	3	17	162	9.5	27	30	0	8	8	35
40	OCTOBER	2	1962	17	4	38	9.5	3086	29	0	0	0	0
41	MAY	4	1956	16	4	38	9.5	17	23	0	9	24	4378
42	FEBRUARY	4	1953	7	2	19	9.5	8	14	23	94	160	2276
43	DECEMBER	2	1948	7	12	112	9.3	13	22	0	30	102	405
44	JANUARY	10	1979	12	16	149	9.3	19	40	0	5	5	675
45	NOVEMBER	9	1973	14	26	240	9.2	37	30	0	8	139	454
46	MAY	11	1963	21	2	18	9.0	6	13	9	9	224	3193
47	DECEMBER	31	1958	21	1	9	9.0	8	9	2	6	102	1285
48	FEBRUARY	10	1977	12	1	9	9.0	8	9	4	4	4	474
49	MARCH	18	1976	23	1	9	9.0	7	9	30	39	112	2678
50	JANUARY	13	1950	16	11	97	8.8	10	16	2	5	338	1686

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY INTENSITY

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	13 1975	7	23	201	8.7	61	18	0	0	84	1751
52	JANUARY	1 1949	3	7	60	8.6	33	13	0	63	93	1037
53	OCTOBER	29 1968	7	2	17	8.5	92	12	0	0	4	460
54	MAY	27 1979	14	2	17	8.5	89	11	0	0	3	2296
55	DECEMBER	2 1972	7	7	59	8.4	67	21	0	0	107	465
56	MARCH	22 1971	7	5	42	8.4	163	17	0	0	2	3001
57	FEBRUARY	26 1957	3	16	134	8.4	6	28	3	85	207	1524
58	OCTOBER	21 1951	22	13	108	8.3	6	25	4	25	89	355
59	NOVEMBER	21 1974	14	21	174	8.3	11	18	0	62	204	627
60	JANUARY	4 1975	1	13	107	8.2	11	21	0	10	51	1512
61	OCTOBER	11 1968	12	10	82	8.2	10	16	5	62	110	110
62	OCTOBER	17 1968	19	5	41	8.2	53	20	0	0	232	337
63	NOVEMBER	23 1948	18	7	57	8.1	32	15	0	9	104	238
64	DECEMBER	3 1970	10	9	73	8.1	11	14	0	24	139	897
65	NOVEMBER	24 1960	21	44	355	8.1	7	30	11	46	323	743
66	NOVEMBER	16 1973	1	35	282	8.1	6	35	28	81	459	910
67	OCTOBER	8 1950	13	9	72	8.0	24	21	0	23	218	218
68	NOVEMBER	28 1973	10	6	48	8.0	10	24	1	35	151	1405
69	APRIL	23 1979	21	5	40	8.0	8	15	2	19	47	2014
70	APRIL	6 1950	18	2	16	8.0	24	11	0	15	37	3368
71	NOVEMBER	17 1975	1	1	8	8.0	7	8	4	45	128	693
72	JANUARY	17 1961	1	1	8	8.0	20	8	0	65	114	1694
73	FEBRUARY	22 1962	7	1	8	8.0	61	8	0	0	56	1797
74	DECEMBER	23 1971	21	15	119	7.9	17	16	0	86	178	1429
75	OCTOBER	26 1966	12	8	61	7.6	78	27	0	0	157	227
76	NOVEMBER	22 1959	14	10	76	7.6	25	18	0	76	198	592
77	NOVEMBER	25 1954	5	5	38	7.6	131	13	0	0	83	794
78	NOVEMBER	26 1971	10	20	150	7.5	15	14	0	57	104	599
79	DECEMBER	11 1948	18	10	75	7.5	11	25	0	63	237	764
80	OCTOBER	16 1956	12	10	75	7.5	84	15	0	0	36	36
81	OCTOBER	20 1963	12	6	45	7.5	61	15	0	0	12	50
82	OCTOBER	21 1967	5	6	45	7.5	56	15	0	0	12	229
83	JANUARY	25 1958	7	2	15	7.5	10	13	6	75	103	1690
84	NOVEMBER	11 1977	17	2	15	7.5	34	13	0	11	50	308
85	FEBRUARY	8 1955	10	17	127	7.5	14	16	0	34	59	1639
86	NOVEMBER	22 1961	5	22	164	7.5	7	20	3	3	29	418
87	NOVEMBER	20 1962	14	25	185	7.4	9	28	1	17	79	747
88	FEBRUARY	12 1970	21	5	37	7.4	135	17	0	0	101	2771
89	NOVEMBER	23 1953	1	6	44	7.3	6	11	35	136	356	844
90	MARCH	10 1957	1	3	22	7.3	9	18	3	115	362	2029
91	MAY	20 1949	18	3	22	7.3	11	17	0	22	22	2022
92	OCTOBER	1 1953	16	3	22	7.3	7	16	5	5	5	5
93	OCTOBER	30 1963	16	3	22	7.3	7	11	12	12	74	282
94	MARCH	8 1954	10	16	117	7.3	178	12	0	0	0	3139
95	MARCH	15 1967	10	20	146	7.3	29	15	0	26	40	2432
96	JANUARY	10 1969	17	14	102	7.3	14	21	0	51	311	2579
97	MAY	26 1953	5	4	29	7.3	7	20	5	5	95	3364
98	FEBRUARY	27 1965	21	4	29	7.3	6	19	2	60	73	2691
99	NOVEMBER	16 1953	14	21	152	7.2	9	23	2	23	44	472
100	DECEMBER	6 1950	5	13	94	7.2	37	16	0	27	149	1647

OVERALL ORDER STATISTICS AT SALEM
SORTED BY INTENSITY

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	NOVEMBER	4 1978	1	3	57	19.0	18	46	0	2	35	39
2	OCTOBER	15 1951	16	4	72	18.0	17	41	0	42	129	372
3	DECEMBER	31 1953	23	1	18	18.0	82	18	0	0	37	1767
4	JANUARY	20 1953	14	14	230	16.4	10	46	10	165	480	2113
5	OCTOBER	18 1958	10	3	46	15.3	15	27	0	22	22	39
6	MAY	26 1958	17	2	28	14.0	47	26	0	0	25	3785
7	JANUARY	22 1965	7	1	14	14.0	6	14	6	12	17	2423
8	MARCH	21 1949	15	1	14	14.0	19	14	0	58	155	3413
9	APRIL	24 1979	19	1	14	14.0	29	14	0	39	59	2211
10	OCTOBER	25 1955	17	9	125	13.9	330	22	0	0	0	452
11	OCTOBER	7 1969	21	6	79	13.2	127	29	0	0	44	44
12	OCTOBER	10 1948	23	9	116	12.9	73	23	0	0	58	65
13	OCTOBER	11 1968	14	13	164	12.6	8	38	3	31	63	63
14	DECEMBER	21 1955	17	15	186	12.4	7	25	26	194	312	2193
15	OCTOBER	8 1950	10	6	73	12.2	32	19	0	14	331	331
16	OCTOBER	28 1949	10	4	48	12.0	11	24	0	17	20	182
17	JANUARY	27 1956	1	3	36	12.0	11	19	0	16	201	3895
18	APRIL	1 1976	12	1	12	12.0	28	12	0	60	94	3369
19	MAY	13 1960	12	1	12	12.0	6	12	4	53	92	2905
20	NOVEMBER	7 1966	16	1	12	12.0	40	12	0	4	23	229
21	APRIL	20 1976	7	1	12	12.0	6	12	8	23	51	3492
22	MARCH	10 1957	1	2	23	11.5	9	20	7	114	404	2205
23	MAY	1 1976	17	2	23	11.5	75	12	0	0	11	3569
24	NOVEMBER	5 1962	14	3	34	11.3	9	23	10	27	27	482
25	DECEMBER	7 1950	0	4	44	11.0	15	26	0	98	298	2274
26	OCTOBER	20 1971	12	1	11	11.0	15	11	0	137	166	167
27	NOVEMBER	25 1949	7	2	21	10.5	26	14	0	130	210	603
28	OCTOBER	23 1973	3	4	40	10.0	40	27	0	43	79	160
29	FEBRUARY	23 1968	23	1	10	10.0	14	10	0	81	552	2758
30	DECEMBER	9 1948	13	6	59	9.8	6	26	2	17	206	1284
31	JANUARY	14 1954	10	3	29	9.7	108	25	0	0	36	2019
32	JANUARY	16 1974	17	50	476	9.5	6	26	45	221	323	3233
33	DECEMBER	13 1965	14	2	19	9.5	31	10	0	1	32	1016
34	DECEMBER	16 1973	12	18	166	9.2	10	15	3	44	306	2253
35	NOVEMBER	5 1969	3	22	200	9.1	112	35	0	0	11	444
36	OCTOBER	17 1956	21	11	100	9.1	12	29	0	39	55	89
37	FEBRUARY	11 1961	1	50	452	9.0	12	26	0	41	122	2225
38	OCTOBER	21 1967	7	8	72	9.0	56	24	0	0	12	192
39	FEBRUARY	16 1959	17	1	9	9.0	7	9	9	96	355	2941
40	FEBRUARY	13 1979	3	1	9	9.0	8	9	9	57	340	1416
41	OCTOBER	28 1963	17	1	9	9.0	9	9	25	50	253	312
42	FEBRUARY	13 1972	8	1	9	9.0	9	9	8	16	31	2601
43	DECEMBER	30 1977	14	1	9	9.0	9	9	3	43	72	1720
44	NOVEMBER	8 1962	1	7	61	8.7	53	24	0	0	61	516
45	DECEMBER	23 1964	5	58	503	8.7	10	36	13	163	237	1374
46	DECEMBER	2 1948	14	18	156	8.7	7	26	1	31	171	983
47	JANUARY	1 1963	17	3	26	8.7	40	17	0	8	145	1610
48	DECEMBER	10 1968	10	28	242	8.6	34	18	0	4	275	1547
49	DECEMBER	11 1977	8	16	138	8.6	16	34	0	13	73	1035
50	OCTOBER	27 1979	3	8	69	8.6	13	18	0	87	230	461

OVERALL ORDER STATISTICS AT SALEM
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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	1 1949	6	10	86	8.6	30	20	0	89	123	1726
52	OCTOBER	20 1979	12	10	86	8.6	6	13	29	217	233	233
53	OCTOBER	10 1955	0	41	350	8.5	16	28	0	37	67	67
54	FEBRUARY	17 1953	19	8	68	8.5	7	22	27	178	208	3059
55	FEBRUARY	27 1979	10	6	51	8.5	31	18	0	14	120	1692
56	DECEMBER	23 1961	8	4	34	8.5	8	18	1	8	433	1335
57	MAY	14 1974	10	4	34	8.5	68	15	0	0	11	5509
58	OCTOBER	17 1968	17	4	34	8.5	47	12	0	0	357	417
59	NOVEMBER	27 1954	14	2	17	8.5	16	14	0	4	33	835
60	FEBRUARY	22 1966	17	2	17	8.5	54	14	0	0	46	2539
61	MAY	27 1958	23	2	17	8.5	13	13	0	29	54	3814
62	MAY	24 1953	19	2	17	8.5	25	9	0	58	217	4094
63	FEBRUARY	19 1951	22	2	17	8.5	9	9	4	15	84	4091
64	DECEMBER	4 1975	7	26	220	8.5	41	34	0	9	163	1192
65	NOVEMBER	17 1950	22	71	593	8.4	11	31	0	21	23	1171
66	NOVEMBER	21 1974	17	24	200	8.3	17	15	0	15	164	628
67	OCTOBER	28 1963	7	6	50	8.3	72	18	0	0	203	262
68	FEBRUARY	19 1949	3	62	516	8.3	8	32	11	102	333	2501
69	JANUARY	10 1979	12	16	132	8.3	25	18	0	1	18	769
70	MAY	12 1971	21	5	41	8.2	435	18	0	0	0	4198
71	NOVEMBER	23 1948	17	5	41	8.2	31	17	0	2	126	762
72	FEBRUARY	26 1971	16	5	41	8.2	6	14	13	82	133	3025
73	DECEMBER	21 1961	7	21	172	8.2	9	37	10	121	365	1162
74	MARCH	22 1971	7	6	49	8.2	158	18	0	0	5	3569
75	FEBRUARY	8 1950	8	7	57	8.1	21	19	0	46	162	2694
76	MAY	20 1960	3	5	40	8.0	12	16	0	5	68	2969
77	DECEMBER	6 1967	21	5	40	8.0	21	14	0	122	402	1157
78	FEBRUARY	16 1950	14	2	16	8.0	9	15	4	50	169	2923
79	NOVEMBER	17 1977	14	1	8	8.0	30	8	0	8	114	420
80	FEBRUARY	20 1952	11	1	8	8.0	12	8	0	72	112	3111
81	JANUARY	12 1959	3	17	135	7.9	6	17	4	120	500	1920
82	NOVEMBER	9 1958	12	15	119	7.9	15	34	0	29	135	358
83	DECEMBER	3 1970	14	12	95	7.9	11	28	0	52	202	1108
84	FEBRUARY	10 1949	16	34	267	7.9	9	19	2	21	164	2116
85	JANUARY	2 1951	16	20	157	7.9	54	30	0	0	90	2646
86	NOVEMBER	2 1948	0	18	141	7.8	14	24	0	25	40	226
87	NOVEMBER	6 1975	21	16	125	7.8	18	32	0	2	8	555
88	JANUARY	18 1954	3	9	70	7.8	10	23	1	94	167	2186
89	OCTOBER	27 1969	3	13	101	7.8	45	33	0	4	23	306
90	NOVEMBER	26 1962	14	27	208	7.7	8	23	36	94	170	1012
91	OCTOBER	10 1953	5	19	146	7.7	184	31	0	0	0	61
92	FEBRUARY	24 1961	17	6	46	7.7	47	16	0	0	109	2971
93	JANUARY	1 1949	3	14	107	7.6	8	26	34	86	209	1812
94	OCTOBER	21 1975	10	13	99	7.6	35	20	0	1	34	140
95	NOVEMBER	20 1960	17	7	53	7.6	6	36	12	48	300	735
96	FEBRUARY	14 1959	14	31	234	7.5	62	21	0	0	75	2611
97	DECEMBER	24 1964	3	12	90	7.5	10	19	9	303	674	1877
98	JANUARY	22 1954	8	12	90	7.5	7	14	19	35	237	2291
99	JANUARY	14 1974	10	8	60	7.5	7	13	1	227	263	3173
100	JANUARY	21 1968	1	4	30	7.5	6	13	3	12	202	1759

OVERALL ORDER STATISTICS AT EUGENE
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY 14 1974	10	7	128	18.3	13	32	0	156	183	3650
2	MAY 18 1957	10	1	18	18.0	10	18	15	61	135	3639
3	JANUARY 12 1959	1	17	299	17.6	6	54	5	124	445	1885
4	DECEMBER 24 1964	1	11	193	17.5	6	41	23	467	1015	2587
5	APRIL 8 1972	7	6	102	17.0	12	36	0	79	263	5152
6	JANUARY 4 1966	16	2	34	17.0	7	22	20	469	870	2400
7	OCTOBER 19 1959	23	2	34	17.0	197	17	0	0	0	161
8	MAY 20 1968	12	3	43	16.0	15	24	0	52	52	3283
9	NOVEMBER 4 1965	3	1	16	16.0	6	16	75	114	114	357
10	OCTOBER 7 1969	21	5	78	15.6	124	35	0	0	42	42
11	NOVEMBER 4 1969	19	11	160	14.5	95	31	0	0	4	422
12	NOVEMBER 4 1978	3	4	58	14.5	138	44	0	0	22	29
13	NOVEMBER 30 1978	16	8	114	14.3	16	34	0	92	105	568
14	DECEMBER 4 1975	16	21	299	14.2	21	50	0	6	344	1457
15	MARCH 3 1973	17	2	28	14.0	6	26	9	14	229	2483
16	NOVEMBER 3 1972	14	10	138	13.8	26	50	0	33	78	164
17	FEBRUARY 11 1961	1	46	628	13.7	17	48	0	16	81	2376
18	OCTOBER 31 1952	15	2	27	13.5	25	25	0	4	15	35
19	DECEMBER 5 1970	14	3	40	13.3	7	22	2	27	306	1463
20	OCTOBER 10 1955	3	31	403	13.0	30	28	0	5	30	30
21	JANUARY 25 1975	23	12	156	13.0	29	36	0	20	25	2253
22	FEBRUARY 14 1959	12	25	324	13.0	79	30	0	0	82	2758
23	NOVEMBER 19 1966	12	9	116	12.9	32	29	0	2	504	932
24	DECEMBER 19 1955	14	17	219	12.9	7	40	3	92	246	1968
25	DECEMBER 2 1967	10	7	90	12.9	30	22	0	11	135	828
26	OCTOBER 31 1973	16	6	77	12.8	73	23	0	0	30	160
27	MARCH 30 1974	7	15	190	12.7	9	36	20	238	314	6596
28	OCTOBER 18 1958	10	3	38	12.7	14	19	0	25	25	43
29	JANUARY 17 1974	1	55	689	12.5	8	39	73	238	311	3778
30	OCTOBER 30 1955	12	2	25	12.5	8	13	1	13	73	522
31	NOVEMBER 25 1960	5	55	684	12.4	37	67	0	12	197	683
32	FEBRUARY 20 1977	14	4	49	12.3	193	41	0	0	0	429
33	JANUARY 6 1966	0	18	216	12.0	14	36	0	390	862	2434
34	NOVEMBER 11 1961	5	5	60	12.0	16	19	0	12	12	485
35	JANUARY 8 1976	5	33	392	11.9	9	32	1	145	334	2461
36	OCTOBER 7 1962	17	13	154	11.8	26	42	0	14	72	72
37	DECEMBER 13 1977	19	26	307	11.8	11	30	0	164	285	1687
38	DECEMBER 27 1974	7	21	245	11.7	95	48	0	0	155	1451
39	JANUARY 29 1958	7	14	163	11.6	7	32	26	91	201	2500
40	DECEMBER 26 1951	13	7	79	11.3	67	18	0	0	56	1792
41	DECEMBER 4 1979	0	27	302	11.2	39	40	0	205	244	1421
42	DECEMBER 4 1968	21	27	300	11.1	35	27	0	1	93	1332
43	MAY 24 1953	19	4	44	11.0	26	39	0	66	186	3649
44	MAY 17 1974	17	2	22	11.0	25	21	0	33	78	7163
45	OCTOBER 5 1963	19	2	22	11.0	13	21	0	13	13	13
46	APRIL 7 1978	17	1	11	11.0	48	11	0	0	215	4274
47	APRIL 3 1954	21	1	11	11.0	11	11	0	100	102	3686
48	NOVEMBER 25 1977	21	39	420	10.8	7	66	15	129	230	714
49	FEBRUARY 22 1972	0	4	43	10.8	50	24	0	0	41	3641
50	OCTOBER 17 1970	23	4	43	10.8	282	20	0	0	0	8

OVERALL ORDER STATISTICS AT EUGENE
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	OCTOBER 5 1950	2	4	43	10.8	10	18	2	132	153	153
52	NOVEMBER 26 1962	12	24	255	10.6	82	37	0	0	70	981
53	APRIL 5 1978	5	5	53	10.6	9	37	14	18	152	4209
54	DECEMBER 23 1972	21	9	95	10.6	6	23	1	118	644	1280
55	NOVEMBER 17 1954	5	15	158	10.5	10	32	3	68	188	526
56	MAY 7 1956	3	8	84	10.5	19	30	0	10	38	5528
57	OCTOBER 17 1968	19	4	42	10.5	47	21	0	0	294	349
58	JANUARY 8 1961	5	10	104	10.4	37	32	0	16	90	1778
59	DECEMBER 12 1969	3	25	258	10.3	10	49	3	59	100	806
60	FEBRUARY 6 1960	23	7	72	10.3	38	20	0	28	173	1297
61	FEBRUARY 1 1961	23	8	82	10.3	34	31	0	127	228	2213
62	OCTOBER 19 1979	10	34	345	10.1	88	45	0	0	30	30
63	FEBRUARY 16 1974	17	11	111	10.1	7	24	32	83	112	4923
64	JANUARY 4 1966	7	64	644	10.1	12	37	0	101	470	1756
65	APRIL 11 1955	7	9	90	10.0	11	26	0	35	35	2105
66	FEBRUARY 27 1976	14	7	70	10.0	18	37	0	140	315	3768
67	MAY 26 1953	3	7	70	10.0	26	20	0	44	175	3693
68	MAY 27 1958	21	4	40	10.0	44	24	0	2	66	4454
69	FEBRUARY 21 1961	14	4	40	10.0	7	14	11	11	129	3218
70	OCTOBER 24 1977	16	3	30	10.0	31	20	0	27	27	96
71	MARCH 17 1952	18	3	30	10.0	78	14	0	0	6	3213
72	APRIL 4 1975	17	1	10	10.0	25	10	0	12	48	3903
73	DECEMBER 12 1969	12	1	10	10.0	8	10	1	261	358	1064
74	OCTOBER 22 1963	12	11	108	9.8	32	18	0	13	13	60
75	JANUARY 16 1964	10	9	88	9.8	14	36	0	12	122	1738
76	DECEMBER 24 1972	16	9	88	9.8	10	20	21	102	573	1375
77	JANUARY 6 1978	10	33	322	9.8	30	50	0	38	131	2728
78	MAY 9 1967	10	8	78	9.8	221	16	0	0	0	3772
79	APRIL 17 1979	0	7	68	9.7	6	15	13	64	138	2810
80	NOVEMBER 19 1958	19	29	276	9.5	82	32	0	0	164	740
81	DECEMBER 21 1952	18	2	19	9.5	12	18	0	16	40	829
82	JANUARY 9 1969	17	12	113	9.4	39	28	0	61	108	2673
83	NOVEMBER 24 1961	7	69	649	9.4	79	31	0	0	24	571
84	DECEMBER 27 1955	3	46	430	9.3	34	26	0	10	936	2856
85	NOVEMBER 29 1968	14	3	28	9.3	61	13	0	0	70	1245
86	NOVEMBER 6 1968	21	7	65	9.3	28	17	0	16	88	687
87	NOVEMBER 3 1965	21	11	102	9.3	10	26	12	12	30	255
88	NOVEMBER 10 1960	19	12	110	9.2	180	18	0	0	0	195
89	OCTOBER 7 1959	23	6	55	9.2	3185	27	0	0	0	0
90	OCTOBER 11 1968	19	18	164	9.1	17	30	0	42	55	55
91	JANUARY 4 1975	1	13	118	9.1	56	21	0	0	33	1729
92	DECEMBER 1 1975	5	36	326	9.1	49	38	0	0	63	1125
93	APRIL 14 1957	16	7	63	9.0	6	24	13	30	70	3281
94	FEBRUARY 13 1967	8	5	45	9.0	42	18	0	17	17	2996
95	JANUARY 12 1956	21	4	36	9.0	33	19	0	11	253	3802
96	APRIL 23 1958	17	4	36	9.0	19	18	0	41	133	4339
97	NOVEMBER 29 1977	3	3	27	9.0	31	15	0	34	629	1172
98	OCTOBER 23 1977	5	3	27	9.0	380	11	0	0	0	69
99	NOVEMBER 27 1971	1	35	314	9.0	12	32	0	80	114	798
100	JANUARY 28 1959	1	35	312	8.9	20	47	0	2	75	2329

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAX RATE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY 23 1970	7	36	249	6.9	14	90	0	105	376	2140
2	MAY 20 1968	0	15	147	9.8	115	62	0	0	29	2790
3	JANUARY 10 1979	12	16	149	9.3	19	40	0	5	5	675
4	MARCH 23 1958	23	7	49	7.0	6	39	1	16	71	2565
5	NOVEMBER 15 1966	12	62	186	3.0	22	38	0	137	143	469
6	NOVEMBER 16 1973	1	35	282	8.1	6	35	28	81	459	910
7	OCTOBER 23 1951	8	21	206	9.8	13	35	0	117	174	463
8	NOVEMBER 4 1969	19	16	187	11.7	113	35	0	0	9	302
9	FEBRUARY 7 1951	18	43	155	3.6	31	34	0	5	111	3080
10	FEBRUARY 11 1951	19	36	107	3.0	28	34	0	30	197	3268
11	JANUARY 18 1974	17	18	106	5.9	30	34	0	107	544	3006
12	MAY 26 1958	19	4	69	17.3	46	34	0	7	16	3011
13	DECEMBER 5 1968	12	57	237	4.2	47	33	0	0	65	1130
14	OCTOBER 11 1959	5	18	191	10.6	33	33	0	37	73	73
15	DECEMBER 26 1957	1	12	69	5.8	14	33	0	16	246	1138
16	FEBRUARY 27 1976	12	42	202	4.8	11	32	0	70	108	2348
17	DECEMBER 13 1977	14	27	267	9.9	11	32	0	77	172	1151
18	DECEMBER 26 1964	7	18	87	4.8	12	32	0	90	592	1550
19	DECEMBER 21 1955	17	14	199	14.2	9	32	17	157	260	2030
20	FEBRUARY 19 1968	17	38	264	6.9	7	31	43	77	77	1908
21	DECEMBER 10 1953	5	30	127	4.2	7	31	14	73	292	1302
22	MAY 7 1979	21	16	49	3.1	8	31	11	86	167	2243
23	NOVEMBER 24 1960	21	44	355	8.1	7	30	11	46	323	743
24	NOVEMBER 9 1973	14	26	240	9.2	37	30	0	8	139	454
25	DECEMBER 5 1963	21	26	91	3.5	195	30	0	0	0	868
26	OCTOBER 10 1953	3	17	162	9.5	27	30	0	8	8	35
27	MARCH 11 1970	17	15	79	5.3	80	30	0	0	101	3196
28	MAY 9 1956	19	3	45	15.0	43	30	0	38	88	4457
29	MAY 7 1956	21	2	38	19.0	61	30	0	0	50	4419
30	JANUARY 4 1956	23	69	387	5.6	13	29	0	54	121	2462
31	JANUARY 26 1964	8	56	278	5.0	21	29	0	8	298	1833
32	MAY 6 1979	1	46	151	3.3	146	29	0	0	22	2076
33	MAY 24 1973	19	35	94	2.7	23	29	0	1	2	2327
34	DECEMBER 2 1977	19	29	179	6.2	58	29	0	0	191	784
35	OCTOBER 2 1962	17	4	38	9.5	3086	29	0	0	0	0
36	DECEMBER 8 1952	22	71	171	2.4	18	28	0	43	146	314
37	DECEMBER 5 1951	0	56	207	3.7	11	28	0	83	263	1257
38	NOVEMBER 15 1963	7	36	163	4.5	6	28	3	3	142	565
39	NOVEMBER 20 1962	14	25	185	7.4	9	28	1	17	79	747
40	FEBRUARY 26 1957	3	16	134	8.4	6	28	3	85	207	1524
41	NOVEMBER 26 1962	1	15	144	9.6	7	28	30	90	277	1023
42	NOVEMBER 20 1965	8	12	44	3.7	12	28	0	77	137	655
43	OCTOBER 25 1955	17	10	110	11.0	18	28	0	4	5	409
44	MARCH 20 1964	19	4	43	10.8	6	28	10	10	35	2431
45	OCTOBER 10 1976	17	1	28	28.0	7	28	3	17	17	26
46	MARCH 30 1960	14	48	147	3.1	17	27	0	22	31	2081
47	DECEMBER 22 1974	3	32	76	2.4	14	27	0	31	109	1229
48	DECEMBER 21 1972	12	26	187	7.2	8	27	4	67	233	825
49	OCTOBER 25 1979	1	24	87	3.6	19	27	0	41	235	276
50	NOVEMBER 15 1975	14	23	49	2.1	7	27	13	38	82	626

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAX RATE

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	NOVEMBER	6 1958	14	21	88	4.2	8	27	22	100	154	280
52	OCTOBER	19 1954	16	15	74	4.9	54	27	0	0	16	113
53	OCTOBER	26 1966	12	8	61	7.6	78	27	0	0	157	227
54	JANUARY	4 1966	14	70	260	3.7	25	26	0	6	440	1501
55	JANUARY	7 1950	21	54	202	3.7	37	26	0	18	86	1311
56	OCTOBER	2 1957	19	27	82	3.0	3161	26	0	0	0	0
57	DECEMBER	2 1979	7	24	167	7.0	29	26	0	2	46	823
58	DECEMBER	21 1961	7	21	139	6.6	22	26	0	98	279	1093
59	NOVEMBER	16 1948	22	18	42	2.3	6	26	5	42	53	97
60	FEBRUARY	1 1961	21	11	115	10.5	31	26	0	29	111	1813
61	MAY	6 1966	5	8	44	5.5	223	26	0	0	0	2801
62	JANUARY	9 1953	14	61	319	5.2	7	25	1	2	133	994
63	NOVEMBER	24 1949	11	51	237	4.6	193	25	0	0	0	390
64	FEBRUARY	1 1963	7	51	133	2.6	31	25	0	25	25	1623
65	DECEMBER	5 1966	12	47	213	4.5	28	25	0	25	110	904
66	MARCH	1 1955	17	39	93	2.4	9	25	3	60	70	1849
67	NOVEMBER	18 1974	19	36	147	4.1	179	25	0	0	0	423
68	MARCH	25 1962	7	35	145	4.1	22	25	0	14	42	2037
69	DECEMBER	4 1975	10	32	174	5.4	31	25	0	12	146	898
70	NOVEMBER	27 1949	2	26	97	3.7	18	25	0	71	249	639
71	NOVEMBER	8 1968	19	25	168	6.7	14	25	0	21	69	572
72	APRIL	30 1952	14	25	68	2.7	23	25	0	8	34	2976
73	FEBRUARY	8 1950	5	20	66	3.3	6	25	6	42	71	2357
74	OCTOBER	21 1951	22	13	108	8.3	6	25	4	25	89	355
75	NOVEMBER	30 1962	12	13	87	6.7	8	25	1	1	243	1176
76	DECEMBER	11 1948	18	10	75	7.5	11	25	0	63	237	764
77	DECEMBER	23 1964	5	56	394	7.0	24	24	0	90	183	1066
78	FEBRUARY	8 1978	3	41	110	2.7	15	24	0	25	159	2265
79	DECEMBER	24 1949	8	40	115	2.9	9	24	5	11	73	1023
80	NOVEMBER	4 1965	8	33	138	4.2	152	24	0	0	20	203
81	MARCH	17 1958	19	23	45	2.0	27	24	0	1	1	2494
82	NOVEMBER	24 1950	2	15	95	6.3	59	24	0	0	152	1288
83	OCTOBER	10 1953	19	10	42	4.2	6	24	57	162	170	197
84	JANUARY	20 1953	10	8	106	13.3	10	24	1	121	317	1761
85	NOVEMBER	28 1973	10	6	48	8.0	10	24	1	35	151	1405
86	MARCH	1 1973	12	6	39	6.5	6	24	28	29	124	1909
87	JANUARY	16 1974	17	115	544	4.7	278	23	0	0	0	2462
88	NOVEMBER	17 1950	23	72	376	5.2	7	23	1	15	23	846
89	DECEMBER	12 1969	19	61	213	3.5	14	23	0	23	58	678
90	NOVEMBER	12 1968	17	59	167	2.8	27	23	0	107	190	741
91	DECEMBER	12 1959	10	37	152	4.1	8	23	1	14	48	757
92	FEBRUARY	9 1960	10	35	129	3.7	25	23	0	92	176	1558
93	JANUARY	10 1950	16	27	146	5.4	7	23	3	45	249	1535
94	NOVEMBER	11 1973	19	26	57	2.2	7	23	29	238	384	729
95	MARCH	12 1972	19	23	98	4.3	16	23	0	75	147	2883
96	NOVEMBER	16 1953	14	21	152	7.2	9	23	2	23	44	472
97	JANUARY	20 1967	3	20	105	5.3	8	23	4	7	61	1774
98	JANUARY	28 1956	0	15	105	7.0	50	23	0	10	113	3470
99	MAY	4 1956	16	4	38	9.5	17	23	0	9	24	4378
100	JANUARY	28 1965	23	49	171	3.5	13	22	0	59	239	2276

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAX RATE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER 6 1953	3	35	150	4.3	7	49	7	65	114	1085
2	FEBRUARY 3 1963	10	49	176	3.6	12	46	0	142	215	1890
3	OCTOBER 24 1951	8	47	224	4.8	12	46	0	16	133	505
4	NOVEMBER 13 1958	7	20	97	4.9	33	46	0	9	229	500
5	JANUARY 20 1953	14	14	230	16.4	10	46	10	165	480	2113
6	NOVEMBER 4 1978	1	3	57	19.0	18	46	0	2	35	39
7	DECEMBER 26 1957	10	21	78	3.7	15	42	0	28	371	1380
8	MAY 15 1977	19	20	75	3.8	11	42	0	5	39	1301
9	OCTOBER 15 1951	16	4	72	18.0	17	41	0	42	129	372
10	NOVEMBER 25 1960	3	62	398	6.4	26	40	0	57	276	815
11	OCTOBER 3 1951	11	57	242	4.2	3123	38	0	0	0	0
12	FEBRUARY 2 1952	1	51	239	4.7	9	38	1	78	94	2625
13	NOVEMBER 11 1951	14	50	260	5.2	27	38	0	5	27	756
14	OCTOBER 11 1968	14	13	164	12.6	8	38	3	31	63	63
15	JANUARY 7 1950	18	50	294	5.9	37	37	0	8	91	1381
16	DECEMBER 21 1961	7	21	172	8.2	9	37	10	121	365	1162
17	MAY 31 1967	1	16	44	2.8	6	37	1	12	15	3190
18	APRIL 12 1957	14	15	58	3.9	141	37	0	0	34	2649
19	DECEMBER 23 1964	5	58	503	8.7	10	36	13	163	237	1374
20	DECEMBER 11 1955	23	43	128	3.0	18	36	0	99	245	1753
21	OCTOBER 7 1960	1	9	51	5.7	13	36	0	28	28	28
22	NOVEMBER 20 1960	17	7	53	7.6	6	36	12	48	300	735
23	NOVEMBER 16 1973	14	90	470	5.2	6	35	4	150	442	884
24	NOVEMBER 17 1953	5	50	231	4.6	11	35	0	7	37	433
25	JANUARY 11 1950	10	49	207	4.2	11	35	0	50	331	1704
26	NOVEMBER 25 1977	16	32	234	7.3	13	35	0	78	165	585
27	NOVEMBER 5 1969	3	22	200	9.1	112	35	0	0	11	444
28	JANUARY 27 1970	19	171	592	3.5	7	34	19	114	444	2398
29	JANUARY 6 1956	0	71	396	5.6	11	34	37	87	112	2702
30	NOVEMBER 27 1949	18	40	130	3.3	20	34	0	21	229	624
31	NOVEMBER 29 1971	1	36	130	3.6	7	34	6	137	237	792
32	DECEMBER 4 1975	7	26	220	8.5	41	34	0	9	163	1192
33	DECEMBER 11 1977	8	16	138	8.6	16	34	0	13	73	1035
34	NOVEMBER 9 1958	12	15	119	7.9	15	34	0	29	135	358
35	JANUARY 13 1974	19	48	263	5.5	276	33	0	0	0	2910
36	OCTOBER 27 1969	3	13	101	7.8	45	33	0	4	23	306
37	FEBRUARY 19 1949	3	62	516	8.3	8	32	11	102	333	2501
38	DECEMBER 3 1979	3	44	182	4.1	26	32	0	2	47	989
39	NOVEMBER 6 1975	21	16	125	7.8	18	32	0	2	8	555
40	NOVEMBER 17 1950	22	71	593	8.4	11	31	0	21	23	1171
41	OCTOBER 10 1953	5	19	146	7.7	184	31	0	0	0	61
42	FEBRUARY 17 1970	19	69	304	4.4	51	30	0	0	9	3166
43	FEBRUARY 20 1968	5	47	319	6.8	12	30	0	76	76	2277
44	DECEMBER 12 1959	14	36	202	5.6	17	30	0	15	35	401
45	NOVEMBER 18 1974	21	36	153	4.3	182	30	0	0	0	464
46	NOVEMBER 18 1960	12	33	134	4.1	9	30	2	42	267	561
47	NOVEMBER 18 1979	7	23	82	3.6	7	30	5	37	37	702
48	JANUARY 2 1951	16	20	157	7.9	54	30	0	0	90	2646
49	DECEMBER 27 1974	5	20	149	7.5	96	30	0	0	178	1478
50	DECEMBER 5 1951	19	77	296	3.8	12	29	0	78	295	1455

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAX RATE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER 22 1974	10	65	178	2.7	8	29	5	23	85	1300
52	NOVEMBER 12 1968	19	61	205	3.4	34	29	0	16	134	804
53	JANUARY 6 1961	16	45	157	3.5	97	29	0	0	15	1545
54	OCTOBER 23 1963	10	39	186	4.8	28	29	0	31	32	59
55	MARCH 12 1971	3	21	103	4.9	15	29	0	109	168	3348
56	NOVEMBER 29 1951	0	15	58	3.9	14	29	0	46	156	1270
57	OCTOBER 17 1956	21	11	100	9.1	12	29	0	39	55	89
58	OCTOBER 7 1969	21	6	79	13.2	127	29	0	0	44	44
59	JANUARY 31 1958	12	96	421	4.4	54	28	0	0	111	1988
60	DECEMBER 13 1973	19	66	262	4.0	86	28	0	0	130	1947
61	JANUARY 21 1972	5	58	416	7.2	8	28	13	64	73	2047
62	FEBRUARY 13 1954	17	58	344	5.9	23	28	0	2	2	2786
63	MARCH 17 1953	3	55	165	3.0	49	28	0	0	66	3212
64	OCTOBER 4 1950	16	53	171	3.2	3299	28	0	0	0	0
65	DECEMBER 15 1977	16	42	226	5.4	7	28	33	144	323	1340
66	OCTOBER 10 1955	0	41	350	8.5	16	28	0	37	67	67
67	FEBRUARY 24 1950	19	41	164	4.0	8	28	2	7	35	2958
68	DECEMBER 4 1968	21	37	266	7.2	49	28	0	0	50	1272
69	FEBRUARY 17 1953	3	33	163	4.9	6	28	29	45	45	2896
70	DECEMBER 3 1970	14	12	95	7.9	11	28	0	52	202	1108
71	OCTOBER 10 1961	5	11	68	6.2	68	28	0	7	20	20
72	JANUARY 10 1959	5	72	413	5.7	15	27	0	2	81	1493
73	DECEMBER 12 1969	12	56	242	4.3	13	27	0	40	84	849
74	NOVEMBER 19 1955	12	47	219	4.7	20	27	0	25	41	889
75	FEBRUARY 27 1976	14	46	190	4.1	9	27	1	200	255	2800
76	MARCH 28 1974	12	39	221	5.7	37	27	0	13	13	4959
77	DECEMBER 23 1949	18	34	108	3.2	30	27	0	1	157	1112
78	NOVEMBER 29 1973	16	34	67	2.0	16	27	0	25	196	1726
79	MARCH 11 1970	10	9	54	6.0	89	27	0	0	76	3558
80	OCTOBER 23 1973	3	4	40	10.0	40	27	0	43	79	160
81	OCTOBER 18 1958	10	3	46	15.3	15	27	0	22	22	39
82	OCTOBER 29 1950	2	61	291	4.8	13	26	0	85	110	664
83	JANUARY 16 1974	17	50	476	9.5	6	26	45	221	323	3233
84	FEBRUARY 11 1961	1	50	452	9.0	12	26	0	41	122	2225
85	OCTOBER 3 1967	19	35	99	2.8	6	26	2	7	7	7
86	NOVEMBER 23 1953	1	34	214	6.3	11	26	0	14	278	711
87	JANUARY 29 1967	21	32	88	2.8	9	26	4	250	335	2167
88	DECEMBER 20 1955	19	24	121	5.0	6	26	22	142	191	2072
89	DECEMBER 2 1948	14	18	156	8.7	7	26	1	31	171	983
90	APRIL 6 1963	10	16	56	3.5	6	26	38	65	257	2960
91	JANUARY 1 1949	3	14	107	7.6	8	26	34	86	209	1812
92	MARCH 18 1959	17	10	67	6.7	17	26	0	4	38	3088
93	OCTOBER 14 1965	12	8	50	6.3	29	26	1	15	15	86
94	DECEMBER 9 1948	13	6	59	9.8	6	26	2	17	206	1284
95	DECEMBER 7 1950	0	4	44	11.0	15	26	0	98	298	2274
96	MAY 26 1958	17	2	28	14.0	47	26	0	0	25	3785
97	DECEMBER 10 1971	21	68	160	2.4	46	25	0	3	172	1108
98	MARCH 9 1966	19	61	247	4.0	6	25	25	85	156	2731
99	JANUARY 28 1967	3	56	298	5.3	6	25	3	16	160	1869
100	NOVEMBER 15 1966	1	54	186	3.4	18	25	0	126	168	393

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY MAX RATE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	NOVEMBER 25 1960	5	55	684	12.4	37	67	0	12	197	683
2	NOVEMBER 25 1977	21	39	420	10.8	7	66	15	129	230	714
3	JANUARY 20 1964	21	93	721	7.8	14	65	0	98	162	1826
4	JANUARY 6 1976	10	59	303	5.1	10	56	2	30	62	2158
5	JANUARY 12 1959	1	17	299	17.6	6	54	5	124	445	1885
6	JANUARY 6 1978	10	33	322	9.8	30	50	0	38	131	2728
7	DECEMBER 4 1975	16	21	299	14.2	21	50	0	6	344	1457
8	NOVEMBER 3 1972	14	10	138	13.8	26	50	0	33	78	164
9	NOVEMBER 25 1970	5	71	310	4.4	39	49	0	2	47	740
10	DECEMBER 12 1969	3	25	258	10.3	10	49	3	59	100	806
11	FEBRUARY 11 1961	1	46	628	13.7	17	48	0	16	81	2376
12	DECEMBER 27 1974	7	21	245	11.7	95	48	0	0	155	1451
13	DECEMBER 26 1964	7	17	143	8.4	8	48	25	242	1245	2829
14	DECEMBER 16 1970	21	38	226	5.9	9	47	4	87	134	1686
15	JANUARY 28 1959	1	35	312	8.9	20	47	0	2	75	2329
16	DECEMBER 22 1957	5	110	807	7.3	7	45	30	103	109	806
17	OCTOBER 19 1979	10	34	345	10.1	88	45	0	0	30	30
18	DECEMBER 5 1951	11	68	281	4.1	14	44	0	33	356	1333
19	NOVEMBER 4 1978	3	4	58	14.5	138	44	0	0	22	29
20	JANUARY 10 1959	16	77	379	4.9	11	42	0	6	79	1501
21	NOVEMBER 12 1951	18	60	237	4.0	8	42	30	56	57	637
22	NOVEMBER 20 1978	10	43	321	7.5	29	42	0	7	9	142
23	MARCH 25 1976	5	35	218	6.2	21	42	0	110	235	4173
24	NOVEMBER 21 1973	5	34	242	7.1	48	42	0	0	462	1604
25	DECEMBER 24 1965	10	25	152	6.1	40	42	0	4	17	1098
26	OCTOBER 7 1962	17	13	154	11.8	26	42	0	14	72	72
27	DECEMBER 23 1955	8	78	663	8.5	13	41	0	296	418	2187
28	MARCH 31 1963	7	71	458	6.5	8	41	18	100	174	2611
29	DECEMBER 24 1964	1	11	193	17.5	6	41	23	467	1015	2587
30	FEBRUARY 20 1977	14	4	49	12.3	193	41	0	0	0	429
31	JANUARY 22 1972	7	81	608	7.5	6	40	2	155	163	2733
32	NOVEMBER 16 1966	3	79	502	6.4	19	40	0	117	221	428
33	NOVEMBER 19 1955	14	48	206	4.3	16	40	0	46	60	783
34	DECEMBER 4 1979	0	27	302	11.2	39	40	0	205	244	1421
35	DECEMBER 19 1955	14	17	219	12.9	7	40	3	92	246	1968
36	DECEMBER 12 1968	3	68	407	6.0	27	39	0	22	327	1659
37	JANUARY 17 1974	1	55	689	12.5	8	39	73	238	311	3778
38	MARCH 30 1960	19	43	190	4.4	8	39	4	35	55	2539
39	NOVEMBER 14 1958	7	41	138	3.4	65	39	0	0	242	576
40	OCTOBER 15 1971	7	21	60	2.9	23	39	0	2	2	2
41	MAY 24 1953	19	4	44	11.0	26	39	0	66	186	3649
42	DECEMBER 1 1975	5	36	326	9.1	49	38	0	0	63	1125
43	FEBRUARY 18 1974	21	26	214	8.2	27	38	0	130	223	5034
44	NOVEMBER 10 1975	12	19	143	7.5	19	38	0	27	131	700
45	DECEMBER 23 1964	8	127	1015	8.0	60	37	0	0	70	1572
46	JANUARY 4 1966	7	64	644	10.1	12	37	0	101	470	1756
47	NOVEMBER 26 1962	12	24	255	10.6	82	37	0	0	70	981
48	FEBRUARY 27 1976	14	7	70	10.0	18	37	0	140	315	3768
49	APRIL 5 1978	5	5	53	10.6	9	37	14	18	152	4209
50	FEBRUARY 16 1958	16	63	387	6.1	32	36	0	51	222	3064

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY MAX RATE

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY 16 1954	8	31	197	6.4	12	36	0	40	64	1922
52	JANUARY 6 1966	0	18	216	12.0	14	36	0	390	862	2434
53	DECEMBER 4 1978	14	17	110	6.5	27	36	0	3	231	694
54	MARCH 30 1974	7	15	190	12.7	9	36	20	238	314	6596
55	JANUARY 25 1975	23	12	156	13.0	29	36	0	20	25	2253
56	JANUARY 16 1964	10	9	88	9.8	14	36	0	12	122	1738
57	APRIL 8 1972	7	6	102	17.0	12	36	0	79	263	5152
58	NOVEMBER 18 1950	5	92	673	7.3	12	35	0	10	18	1344
59	APRIL 28 1962	14	47	213	4.5	51	35	0	0	17	3496
60	MARCH 12 1974	7	25	147	5.9	8	35	23	36	157	5850
61	DECEMBER 21 1961	10	24	141	5.9	15	35	0	138	498	1911
62	NOVEMBER 7 1975	19	17	56	3.3	8	35	24	50	50	619
63	DECEMBER 6 1974	16	10	64	6.4	41	35	0	4	54	855
64	MAY 14 1957	3	10	62	6.2	12	35	0	12	61	3516
65	OCTOBER 7 1969	21	5	78	15.6	124	35	0	0	42	42
66	FEBRUARY 7 1979	23	69	340	4.9	12	34	0	4	4	1278
67	DECEMBER 14 1973	19	59	287	4.9	17	34	0	30	222	2531
68	JANUARY 18 1971	8	50	299	6.0	9	34	9	174	501	2950
69	OCTOBER 23 1951	9	26	153	5.9	11	34	0	62	121	411
70	APRIL 6 1979	12	16	90	5.6	94	34	0	0	8	2546
71	NOVEMBER 15 1975	10	16	84	5.3	12	34	0	26	194	869
72	NOVEMBER 11 1973	17	14	112	8.0	7	34	38	78	612	918
73	JANUARY 27 1960	10	11	93	8.5	25	34	5	11	17	1005
74	NOVEMBER 30 1978	16	8	114	14.3	16	34	0	92	105	568
75	NOVEMBER 16 1973	3	56	377	6.7	8	33	14	188	595	1218
76	DECEMBER 6 1971	8	51	274	5.4	15	33	0	32	200	1312
77	OCTOBER 27 1967	21	21	152	7.2	52	33	0	0	73	346
78	DECEMBER 5 1967	10	55	243	4.4	17	32	0	90	222	918
79	JANUARY 18 1970	10	46	199	4.3	12	32	0	73	230	2231
80	JANUARY 13 1974	14	46	183	4.0	267	32	0	0	0	3467
81	DECEMBER 5 1966	12	36	313	8.7	7	32	8	27	119	1183
82	NOVEMBER 27 1971	1	35	314	9.0	12	32	0	80	114	798
83	JANUARY 8 1976	5	33	392	11.9	9	32	1	145	334	2461
84	NOVEMBER 19 1958	19	29	276	9.5	82	32	0	0	164	740
85	FEBRUARY 15 1961	10	19	88	4.6	8	32	2	46	729	3089
86	DECEMBER 26 1957	7	16	87	5.4	22	32	0	34	719	1653
87	NOVEMBER 17 1954	5	15	158	10.5	10	32	3	68	188	526
88	JANUARY 29 1958	7	14	163	11.6	7	32	26	91	201	2500
89	JANUARY 8 1961	5	10	104	10.4	37	32	0	16	90	1778
90	JANUARY 14 1974	10	7	128	18.3	13	32	0	156	183	3650
91	NOVEMBER 24 1961	7	69	649	9.4	79	31	0	0	24	571
92	DECEMBER 2 1964	7	54	232	4.3	26	31	63	71	452	1077
93	MAY 17 1972	5	32	263	8.2	7	31	2	2	2	5471
94	DECEMBER 1 1961	5	30	120	4.0	37	31	0	8	342	1261
95	OCTOBER 20 1979	17	23	169	7.3	7	31	8	345	375	375
96	MAY 14 1969	7	21	106	5.0	243	31	0	0	0	4716
97	NOVEMBER 4 1969	19	11	160	14.5	95	31	0	0	4	422
98	FEBRUARY 1 1961	23	8	82	10.3	34	31	0	127	228	2213
99	DECEMBER 10 1971	21	54	255	4.7	6	30	30	35	341	1621
100	JANUARY 21 1967	16	53	367	6.9	84	30	0	0	55	2170

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY HRS BTWN

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER	22 1957	3	54	100	1.9	6	10	41	135	197	1020
2	JANUARY	16 1971	17	51	201	3.9	6	12	9	49	225	1843
3	MARCH	12 1961	16	49	100	2.0	6	9	4	44	162	2931
4	FEBRUARY	25 1950	0	47	190	4.0	6	18	8	10	25	2623
5	DECEMBER	30 1968	21	47	77	1.6	6	6	1	59	216	2050
6	JANUARY	21 1972	0	45	226	5.0	6	20	12	78	90	1889
7	DECEMBER	17 1972	16	40	134	3.4	6	10	4	4	44	596
8	NOVEMBER	15 1963	7	36	163	4.5	6	28	3	3	142	565
9	NOVEMBER	16 1973	1	35	282	8.1	6	35	28	81	459	910
10	OCTOBER	28 1961	1	35	127	3.6	6	16	1	23	70	162
11	NOVEMBER	25 1955	14	35	123	3.5	6	18	1	56	308	1126
12	JANUARY	14 1970	12	31	95	3.1	6	11	33	125	229	1669
13	OCTOBER	6 1950	3	30	119	4.0	6	21	3	74	76	76
14	FEBRUARY	10 1959	3	30	79	2.6	6	9	2	20	28	2079
15	NOVEMBER	15 1977	3	30	46	1.5	6	8	4	61	93	384
16	APRIL	2 1974	5	30	39	1.3	6	6	26	85	275	4339
17	OCTOBER	28 1950	17	29	107	3.7	6	20	29	93	141	518
18	NOVEMBER	13 1957	8	29	93	3.2	6	12	16	66	75	428
19	APRIL	10 1971	1	28	135	4.8	6	12	31	52	67	3205
20	MARCH	14 1966	16	28	50	1.8	6	12	22	25	252	2541
21	OCTOBER	6 1949	17	28	45	1.6	6	15	12	111	111	111
22	APRIL	27 1959	16	27	15	.6	6	2	5	17	17	2837
23	NOVEMBER	14 1958	8	25	46	1.8	6	15	4	89	225	590
24	MARCH	1 1977	14	25	37	1.5	6	7	23	79	192	704
25	DECEMBER	16 1973	14	24	98	4.1	6	16	12	68	234	1809
26	NOVEMBER	10 1971	23	24	54	2.3	6	10	37	43	101	367
27	DECEMBER	1 1966	19	24	38	1.6	6	10	4	48	68	845
28	JANUARY	5 1965	10	24	36	1.5	6	6	4	19	161	1854
29	DECEMBER	23 1973	1	24	30	1.3	6	7	5	94	313	2110
30	DECEMBER	29 1951	17	23	62	2.7	6	20	6	25	30	1656
31	JANUARY	31 1969	19	23	56	2.4	6	10	1	57	115	2942
32	APRIL	9 1974	21	23	34	1.5	6	8	1	1	55	4424
33	DECEMBER	11 1955	21	20	82	4.1	6	18	33	74	238	1688
34	FEBRUARY	8 1950	5	20	66	3.3	6	25	6	42	71	2357
35	APRIL	25 1967	21	20	48	2.4	6	10	2	2	12	2939
36	NOVEMBER	29 1973	12	20	12	.6	6	4	48	76	198	1453
37	DECEMBER	22 1967	19	19	57	3.0	6	7	10	45	98	1075
38	MARCH	30 1967	17	19	40	2.1	6	13	6	33	69	2759
39	JANUARY	30 1965	0	19	38	2.0	6	9	15	135	391	2447
40	JANUARY	9 1970	17	18	91	5.1	6	10	9	13	21	1453
41	FEBRUARY	4 1979	5	18	45	2.5	6	6	11	14	14	939
42	NOVEMBER	16 1948	22	18	42	2.3	6	26	5	42	53	97
43	DECEMBER	18 1956	3	18	31	1.7	6	13	1	15	121	907
44	OCTOBER	3 1951	5	17	52	3.1	6	16	25	103	103	103
45	MARCH	22 1955	7	17	36	2.1	6	10	3	3	4	2028
46	NOVEMBER	16 1962	3	17	32	1.9	6	11	10	13	205	688
47	FEBRUARY	26 1957	3	16	134	8.4	6	28	3	85	207	1524
48	FEBRUARY	28 1974	7	16	104	6.5	6	12	3	50	101	3668
49	NOVEMBER	12 1973	17	16	44	2.8	6	11	27	92	370	786
50	MARCH	29 1957	7	16	40	2.5	6	5	13	13	19	2303

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY HRS BTWN

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	MAY	21 1964	3	16	11	.7	6	3	16	16	19	2730
52	MARCH	18 1975	16	15	67	4.5	6	13	1	44	98	2986
53	NOVEMBER	9 1967	17	15	42	2.8	6	17	4	21	21	493
54	JANUARY	11 1971	10	15	29	1.9	6	8	20	28	148	1754
55	NOVEMBER	3 1948	18	15	24	1.6	6	9	0	0	0	0
56	MARCH	31 1963	7	15	23	1.5	6	7	29	188	308	2540
57	FEBRUARY	22 1971	17	15	23	1.5	6	4	1	1	62	2506
58	MAY	21 1960	17	15	15	1.0	6	3	16	101	144	2868
59	MAY	17 1972	7	14	74	5.3	6	16	20	35	35	3496
60	FEBRUARY	25 1971	8	14	48	3.4	6	6	7	15	72	2544
61	NOVEMBER	9 1964	12	14	32	2.3	6	6	5	6	116	232
62	MARCH	7 1960	12	14	24	1.7	6	9	3	17	98	1880
63	NOVEMBER	25 1979	0	14	14	1.0	6	5	25	92	178	777
64	FEBRUARY	12 1952	1	14	13	.9	6	8	14	14	32	2362
65	OCTOBER	21 1951	22	13	108	8.3	6	25	4	25	89	355
66	JANUARY	22 1956	0	13	35	2.7	6	8	6	24	323	3373
67	FEBRUARY	13 1975	5	13	30	2.3	6	9	27	109	161	2538
68	JANUARY	13 1953	14	13	23	1.8	6	7	17	83	449	1441
69	MARCH	15 1968	7	13	19	1.5	6	5	20	55	66	2392
70	NOVEMBER	11 1964	5	13	15	1.2	6	6	4	37	96	269
71	FEBRUARY	22 1972	21	13	9	.7	6	3	20	20	91	2380
72	MARCH	7 1966	0	12	62	5.2	6	9	3	29	58	2289
73	NOVEMBER	10 1957	21	12	38	3.2	6	8	9	9	9	362
74	MARCH	3 1971	12	12	26	2.2	6	6	7	16	137	2667
75	FEBRUARY	2 1978	3	12	23	1.9	6	6	30	91	107	2197
76	NOVEMBER	25 1967	8	12	11	.9	6	3	3	12	16	617
77	JANUARY	14 1961	14	12	7	.6	6	2	6	30	81	1622
78	NOVEMBER	23 1974	12	11	63	5.7	6	12	2	111	390	813
79	DECEMBER	17 1967	19	11	26	2.4	6	6	1	3	13	980
80	JANUARY	13 1959	1	11	14	1.3	6	5	16	98	372	1683
81	APRIL	15 1976	17	11	12	1.1	6	4	4	12	69	2950
82	MAY	1 1964	19	11	12	1.1	6	4	8	39	74	2649
83	MAY	1 1963	21	11	12	1.1	6	2	1	9	36	2945
84	APRIL	11 1974	17	11	11	1.0	6	8	3	12	74	4461
85	MARCH	15 1971	7	11	4	.4	6	1	7	56	234	2997
86	FEBRUARY	12 1979	1	10	44	4.4	6	12	2	54	211	1198
87	OCTOBER	10 1953	19	10	42	4.2	6	24	57	162	170	197
88	JANUARY	12 1958	17	10	41	4.1	6	13	21	47	91	1370
89	MARCH	18 1952	10	10	23	2.3	6	7	16	16	71	2734
90	MAY	27 1969	12	10	22	2.2	6	11	8	16	16	3745
91	NOVEMBER	7 1977	7	10	5	.5	6	2	6	20	73	288
92	NOVEMBER	22 1953	12	9	53	5.9	6	12	37	84	321	791
93	JANUARY	11 1953	14	9	46	5.1	6	12	34	56	366	1358
94	MARCH	2 1950	19	9	42	4.7	6	7	4	4	198	2868
95	NOVEMBER	14 1975	7	9	34	3.8	6	10	4	4	67	592
96	JANUARY	30 1950	3	9	28	3.1	6	9	1	6	113	2258
97	DECEMBER	30 1954	1	9	23	2.6	6	8	4	51	192	1278
98	OCTOBER	14 1971	17	9	22	2.4	6	16	3	7	7	7
99	DECEMBER	18 1979	16	9	21	2.3	6	7	36	90	112	1204
100	FEBRUARY	15 1961	14	9	19	2.1	6	8	28	52	387	2461

OVERALL ORDER STATISTICS AT SALEM
SORTED BY HRS BTWN

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER	31	1965	14	139	496	3.6	6	21	2	73	184	1219
2	NOVEMBER	16	1973	14	90	470	5.2	6	35	4	150	442	884
3	NOVEMBER	13	1965	19	65	263	4.0	6	17	22	73	122	465
4	MARCH	9	1966	19	61	247	4.0	6	25	25	85	156	2731
5	JANUARY	28	1967	3	56	298	5.3	6	25	3	16	160	1869
6	FEBRUARY	13	1975	17	52	86	1.7	6	10	2	25	130	2322
7	NOVEMBER	27	1971	5	51	140	2.7	6	16	10	97	98	652
8	JANUARY	16	1974	17	50	476	9.5	6	26	45	221	323	3233
9	MARCH	2	1962	21	49	42	.9	6	8	4	19	81	1923
10	OCTOBER	31	1956	10	48	122	2.5	6	15	5	24	175	493
11	FEBRUARY	3	1951	22	47	100	2.1	6	15	5	5	5	3600
12	DECEMBER	30	1964	5	46	78	1.7	6	10	1	40	559	2097
13	FEBRUARY	21	1956	12	45	307	6.8	6	24	8	11	42	4027
14	MAY	14	1978	23	43	203	4.7	6	14	14	33	49	3174
15	JANUARY	17	1954	7	41	116	2.8	6	18	3	51	73	2070
16	MARCH	21	1975	14	40	49	1.2	6	12	6	119	233	2913
17	NOVEMBER	16	1960	5	39	76	1.9	6	13	4	89	193	483
18	DECEMBER	31	1970	3	38	247	6.5	6	20	29	146	167	1770
19	DECEMBER	2	1966	5	37	74	2.0	6	8	10	13	34	771
20	MARCH	25	1958	16	36	32	.9	6	7	12	40	82	3292
21	MARCH	18	1975	14	35	167	4.8	6	18	1	42	46	2722
22	OCTOBER	3	1967	19	35	99	2.8	6	26	2	7	7	7
23	FEBRUARY	23	1968	7	35	82	2.3	6	15	6	91	475	2676
24	DECEMBER	24	1968	14	35	61	1.7	6	9	29	70	112	2054
25	DECEMBER	24	1955	1	35	52	1.5	6	13	7	220	497	2387
26	NOVEMBER	1	1955	3	34	110	3.2	6	15	2	39	220	672
27	FEBRUARY	17	1953	3	33	163	4.9	6	28	29	45	45	2896
28	MARCH	4	1956	3	33	117	3.5	6	13	1	58	96	4543
29	NOVEMBER	14	1958	23	33	61	1.8	6	7	5	97	268	597
30	FEBRUARY	3	1968	10	31	142	4.6	6	18	15	89	209	2014
31	OCTOBER	24	1970	12	31	57	1.8	6	17	23	119	241	242
32	OCTOBER	6	1950	2	29	146	5.0	6	25	17	146	171	171
33	NOVEMBER	13	1964	7	29	95	3.3	6	17	12	52	81	338
34	OCTOBER	31	1950	1	28	70	2.5	6	19	23	159	406	982
35	APRIL	8	1972	21	27	89	3.3	6	18	17	67	139	3653
36	APRIL	2	1958	19	26	63	2.4	6	18	4	12	43	3367
37	NOVEMBER	24	1949	2	25	159	6.4	6	19	30	47	55	444
38	FEBRUARY	9	1958	16	25	57	2.3	6	7	5	72	85	2494
39	DECEMBER	20	1955	19	24	121	5.0	6	26	22	142	191	2072
40	NOVEMBER	24	1963	1	24	34	1.4	6	12	1	21	87	957
41	DECEMBER	23	1971	21	23	91	4.0	6	17	8	107	149	1628
42	NOVEMBER	6	1953	10	23	48	2.1	6	7	20	20	40	346
43	APRIL	20	1961	0	23	45	2.0	6	19	9	42	64	4003
44	FEBRUARY	17	1962	16	23	41	1.8	6	10	16	20	136	1801
45	OCTOBER	21	1961	14	23	18	.8	6	6	2	2	2	138
46	APRIL	19	1965	8	22	100	4.5	6	10	8	9	12	3297
47	NOVEMBER	8	1970	7	22	31	1.4	6	7	3	24	59	384
48	FEBRUARY	26	1955	21	22	25	1.1	6	6	9	17	17	1862
49	NOVEMBER	17	1954	8	21	111	5.3	6	24	12	77	192	620
50	MAY	5	1959	12	21	59	2.8	6	12	4	4	40	3591

OVERALL ORDER STATISTICS AT SALEM
SORTED BY HRS BTWN

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	FEBRUARY 25 1961	21	21	51	2.4	6	12	46	46	154	3017
52	DECEMBER 17 1972	14	20	93	4.7	6	10	12	15	33	617
53	MARCH 24 1952	8	20	67	3.4	6	11	3	3	49	3410
54	JANUARY 24 1956	8	20	59	3.0	6	12	18	74	240	3820
55	DECEMBER 21 1963	5	20	58	2.9	6	8	19	74	74	1227
56	DECEMBER 13 1966	23	20	55	2.8	6	12	14	74	249	1386
57	NOVEMBER 14 1960	8	20	48	2.4	6	17	10	45	145	435
58	FEBRUARY 15 1950	0	20	24	1.2	6	5	6	82	176	2870
59	MARCH 14 1966	14	19	78	4.1	6	17	1	30	278	3008
60	APRIL 18 1978	8	19	25	1.3	6	4	3	30	83	2958
61	APRIL 23 1958	12	19	22	1.2	6	4	3	20	201	3701
62	MARCH 27 1950	18	19	16	.8	6	5	12	24	95	3609
63	OCTOBER 11 1962	19	18	84	4.7	6	18	1	61	236	268
64	APRIL 29 1961	19	18	82	4.6	6	24	2	2	43	4159
65	DECEMBER 17 1973	12	18	72	4.0	6	16	55	182	472	2419
66	JANUARY 17 1978	5	18	41	2.3	6	12	17	41	109	2142
67	NOVEMBER 9 1962	10	18	24	1.3	6	5	4	65	126	581
68	JANUARY 12 1959	3	17	135	7.9	6	17	4	120	500	1920
69	OCTOBER 27 1961	3	17	83	4.9	6	25	2	32	76	212
70	FEBRUARY 16 1959	8	17	82	4.8	6	15	11	208	308	2859
71	NOVEMBER 9 1967	17	17	34	2.0	6	6	2	21	21	504
72	FEBRUARY 5 1950	10	17	17	1.0	6	5	7	58	94	2590
73	MAY 2 1963	7	17	17	1.0	6	5	3	13	38	3285
74	APRIL 6 1963	10	16	56	3.5	6	26	38	65	257	2960
75	APRIL 27 1953	7	16	56	3.5	6	11	16	23	38	3717
76	NOVEMBER 1 1950	21	16	52	3.3	6	14	9	70	483	1074
77	MAY 31 1967	1	16	44	2.8	6	37	1	12	15	3190
78	OCTOBER 26 1975	16	16	36	2.3	6	12	2	34	164	303
79	DECEMBER 30 1975	16	16	35	2.2	6	7	23	30	187	1729
80	JANUARY 7 1953	14	15	89	5.9	6	15	3	3	128	1230
81	NOVEMBER 20 1962	12	15	61	4.1	6	12	1	3	96	843
82	OCTOBER 6 1949	16	15	43	2.9	6	18	4	57	57	57
83	NOVEMBER 19 1953	19	15	27	1.8	6	11	5	8	246	672
84	DECEMBER 5 1961	1	15	26	1.7	6	5	1	6	99	766
85	NOVEMBER 27 1973	14	15	19	1.3	6	3	6	48	322	1707
86	JANUARY 19 1970	17	14	75	5.4	6	16	11	117	424	2286
87	NOVEMBER 22 1973	1	14	61	4.4	6	16	29	171	505	1530
88	DECEMBER 6 1974	19	14	59	4.2	6	22	9	13	63	1020
89	OCTOBER 7 1960	21	14	48	3.4	6	14	50	79	79	79
90	APRIL 12 1972	12	14	44	3.1	6	15	1	14	207	3756
91	DECEMBER 26 1969	16	14	26	1.9	6	9	17	31	381	1659
92	JANUARY 6 1965	10	14	25	1.8	6	9	1	31	119	2281
93	OCTOBER 3 1957	5	14	16	1.1	6	5	26	33	33	33
94	MARCH 22 1957	1	14	15	1.1	6	3	1	27	94	2443
95	FEBRUARY 2 1978	23	13	37	2.8	6	12	8	102	119	2397
96	FEBRUARY 1 1970	7	13	6	.5	6	2	19	41	288	3031
97	MAY 18 1953	19	12	57	4.8	6	17	1	1	18	3878
98	JANUARY 14 1969	7	12	32	2.7	6	9	4	61	462	2883
99	NOVEMBER 15 1977	5	12	30	2.5	6	7	10	58	76	382
100	NOVEMBER 4 1979	17	12	29	2.4	6	9	10	21	62	627

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY HRS BTWN

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	22 1972	7	81	608	7.5	6	40	2	155	163	2733
2	DECEMBER	17 1977	5	77	459	6.0	6	23	71	326	514	1994
3	DECEMBER	10 1971	21	54	255	4.7	6	30	30	35	341	1621
4	FEBRUARY	26 1976	12	50	287	5.7	6	29	2	28	113	3481
5	DECEMBER	30 1951	7	49	150	3.1	6	19	1	149	205	1941
6	FEBRUARY	11 1979	19	49	147	3.0	6	23	7	15	357	1631
7	MARCH	27 1962	10	48	233	4.9	6	18	85	182	286	3170
8	MARCH	22 1953	12	48	129	2.7	6	14	12	43	202	2901
9	JANUARY	27 1970	12	42	185	4.4	6	18	40	275	648	3078
10	JANUARY	17 1973	7	41	121	3.0	6	16	3	3	294	1911
11	OCTOBER	24 1970	19	36	129	3.6	6	16	47	113	220	228
12	FEBRUARY	10 1949	21	35	139	4.0	6	16	1	17	188	2048
13	JANUARY	11 1969	8	34	278	8.2	6	22	57	113	221	2786
14	NOVEMBER	24 1964	19	34	135	4.0	6	18	7	35	35	627
15	NOVEMBER	1 1955	5	34	130	3.8	6	21	25	38	98	547
16	FEBRUARY	3 1963	14	31	158	5.1	6	26	27	187	296	1916
17	APRIL	26 1970	7	31	69	2.2	6	12	4	46	98	4085
18	MARCH	20 1975	3	31	50	1.6	6	8	48	195	282	3466
19	FEBRUARY	28 1971	7	30	48	1.6	6	8	59	87	146	3956
20	JANUARY	25 1970	12	29	235	8.1	6	26	40	225	469	2843
21	DECEMBER	28 1951	0	29	70	2.4	6	14	68	79	135	1871
22	MAY	13 1951	6	28	74	2.6	6	12	1	22	47	4594
23	DECEMBER	9 1969	16	26	31	1.2	6	10	14	14	31	727
24	APRIL	19 1965	7	25	128	5.1	6	14	2	2	9	4591
25	APRIL	7 1972	12	25	78	3.1	6	19	1	124	185	5074
26	FEBRUARY	21 1957	0	25	16	.6	6	2	1	1	9	1856
27	MAY	23 1953	12	24	70	2.9	6	18	10	53	116	3579
28	NOVEMBER	27 1973	23	24	51	2.1	6	13	8	56	408	2017
29	MARCH	1 1966	7	24	33	1.4	6	10	17	20	26	3025
30	NOVEMBER	4 1950	0	22	52	2.4	6	7	0	2	565	1265
31	JANUARY	14 1966	19	22	26	1.2	6	5	1	9	59	2728
32	FEBRUARY	18 1976	5	20	91	4.6	6	26	1	95	229	3339
33	OCTOBER	30 1950	19	20	56	2.8	6	15	58	378	641	1203
34	NOVEMBER	17 1953	12	20	34	1.7	6	8	23	73	95	476
35	MARCH	24 1952	9	20	30	1.5	6	4	1	1	75	3288
36	MARCH	22 1949	3	20	11	.6	6	4	5	41	152	3103
37	JANUARY	20 1953	19	19	113	5.9	6	18	4	166	397	1795
38	JANUARY	19 1951	8	19	78	4.1	6	15	5	201	407	3263
39	MARCH	7 1960	8	18	112	6.2	6	30	4	178	346	2124
40	NOVEMBER	12 1973	17	18	112	6.2	6	19	48	174	584	1030
41	JANUARY	22 1954	21	18	97	5.4	6	18	2	3	320	2247
42	MAY	2 1957	14	18	63	3.5	6	16	19	29	30	3392
43	NOVEMBER	13 1951	18	18	59	3.3	6	7	12	157	293	874
44	JANUARY	17 1954	8	18	40	2.2	6	6	24	197	237	2119
45	MARCH	2 1964	16	18	27	1.5	6	9	8	55	68	2943
46	MARCH	3 1957	3	18	16	.9	6	6	2	2	311	2293
47	MAY	5 1965	14	18	15	.8	6	8	2	4	11	4800
48	JANUARY	12 1959	1	17	299	17.6	6	54	5	124	445	1885
49	MARCH	14 1970	14	17	48	2.8	6	9	7	19	114	3818
50	FEBRUARY	13 1979	14	17	45	2.6	6	10	10	59	449	1791

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY HRS BTWN

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	FEBRUARY 22 1979	21	17	15	.9	6	4	1	43	227	2063
52	JANUARY 17 1978	10	16	123	7.7	6	26	4	57	168	3266
53	OCTOBER 20 1950	15	16	11	.7	6	4	27	96	263	550
54	JANUARY 10 1965	19	15	111	7.4	6	12	2	36	195	3539
55	DECEMBER 30 1977	0	15	57	3.8	6	17	12	16	137	2603
56	FEBRUARY 7 1958	3	15	39	2.6	6	12	1	11	33	2822
57	OCTOBER 31 1979	3	15	27	1.8	6	7	33	50	218	785
58	MARCH 10 1950	13	15	22	1.5	6	10	2	42	59	3204
59	NOVEMBER 26 1951	6	14	93	6.6	6	22	3	6	42	977
60	OCTOBER 9 1959	3	14	71	5.1	6	10	2	57	57	57
61	DECEMBER 12 1977	5	14	53	3.8	6	11	80	138	232	1634
62	MARCH 26 1971	21	14	40	2.9	6	11	25	90	218	4677
63	NOVEMBER 15 1958	3	14	26	1.9	6	14	4	138	315	714
64	FEBRUARY 18 1951	7	14	18	1.3	6	4	14	14	142	3997
65	DECEMBER 18 1969	5	14	14	1.0	6	4	1	58	401	1204
66	FEBRUARY 2 1978	21	13	68	5.2	6	16	27	102	124	3665
67	MAY 11 1961	3	13	50	3.8	6	22	22	94	143	4540
68	JANUARY 10 1972	7	13	28	2.2	6	6	17	29	41	2267
69	NOVEMBER 13 1952	17	13	19	1.5	6	11	14	45	55	117
70	NOVEMBER 5 1962	12	13	15	1.2	6	7	5	5	10	638
71	DECEMBER 23 1971	19	12	25	2.1	6	7	12	53	66	2164
72	NOVEMBER 1 1976	12	12	25	2.1	6	4	9	13	62	187
73	APRIL 9 1954	1	12	13	1.1	6	6	16	16	216	3802
74	DECEMBER 23 1973	12	12	4	.3	6	1	7	38	421	3261
75	DECEMBER 24 1964	1	11	193	17.5	6	41	23	467	1015	2587
76	MARCH 16 1975	14	11	69	6.3	6	19	13	15	18	3202
77	FEBRUARY 17 1970	16	11	55	5.0	6	19	17	150	164	3569
78	FEBRUARY 15 1967	8	11	52	4.7	6	16	2	58	75	3054
79	JANUARY 13 1978	19	11	46	4.2	6	18	8	53	102	3151
80	FEBRUARY 16 1959	1	11	36	3.3	6	8	20	320	426	3112
81	NOVEMBER 10 1973	8	11	26	2.4	6	6	3	219	611	854
82	DECEMBER 1 1952	19	11	20	1.8	6	7	3	32	32	236
83	DECEMBER 15 1950	1	11	20	1.8	6	4	8	34	77	2521
84	JANUARY 1 1950	19	11	12	1.1	6	3	1	25	85	1291
85	MAY 7 1962	3	11	8	.7	6	2	12	12	84	3793
86	FEBRUARY 11 1969	19	11	7	.6	6	2	4	46	228	4094
87	JANUARY 14 1953	16	11	5	.5	6	2	31	106	381	1449
88	NOVEMBER 14 1960	7	10	86	8.6	6	26	3	32	148	343
89	NOVEMBER 17 1948	13	10	47	4.7	6	10	6	81	165	570
90	NOVEMBER 28 1961	10	10	8	.8	6	6	7	33	682	1253
91	DECEMBER 23 1972	21	9	95	10.6	6	23	1	118	644	1280
92	DECEMBER 6 1950	23	9	36	4.0	6	20	17	53	274	2408
93	JANUARY 30 1952	10	9	33	3.7	6	17	1	6	33	2608
94	APRIL 4 1954	12	9	28	3.1	6	6	11	111	113	3697
95	MAY 16 1977	17	9	22	2.4	6	9	2	12	18	1676
96	APRIL 20 1958	8	9	21	2.3	6	7	2	6	109	4273
97	APRIL 28 1972	14	9	20	2.2	6	9	5	5	27	5449
98	DECEMBER 31 1962	7	9	10	1.1	6	3	4	18	18	1560
99	JANUARY 24 1966	5	9	5	.6	6	1	2	6	23	2781
100	MAY 6 1960	23	8	46	5.8	6	11	6	6	38	3126

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAG12

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	NOVEMBER	9	1968	3	1	1	1.0	7	1	64	175	217	740
2	OCTOBER	10	1953	19	10	42	4.2	6	24	57	162	170	197
3	DECEMBER	2	1948	15	2	10	5.0	6	7	56	117	180	517
4	NOVEMBER	29	1973	12	20	12	.6	6	4	48	76	198	1453
5	MARCH	26	1962	3	13	60	4.6	7	10	48	145	187	2182
6	FEBRUARY	28	1976	5	10	6	.6	7	4	48	197	285	2550
7	FEBRUARY	20	1968	7	8	15	1.9	6	9	46	264	341	2172
8	MAY	10	1956	5	5	16	3.2	6	9	45	45	133	4502
9	NOVEMBER	26	1971	17	1	2	2.0	6	2	45	163	250	749
10	JANUARY	14	1950	5	6	16	2.7	7	5	44	101	323	1783
11	FEBRUARY	9	1960	21	6	4	.7	6	2	44	129	282	1687
12	FEBRUARY	8	1950	14	2	3	1.5	7	2	44	81	136	2423
13	FEBRUARY	19	1968	17	38	264	6.9	7	31	43	77	77	1908
14	OCTOBER	8	1969	14	9	16	1.8	8	6	43	66	95	98
15	DECEMBER	22	1955	7	6	17	2.8	9	9	43	273	459	2229
16	JANUARY	2	1964	3	6	9	1.5	6	4	43	94	151	1292
17	MARCH	22	1971	16	2	6	3.0	6	5	42	42	42	3043
18	DECEMBER	22	1957	3	54	100	1.9	6	10	41	135	197	1020
19	MARCH	1	1961	14	1	1	1.0	6	1	40	48	175	2752
20	JANUARY	17	1951	7	53	112	2.1	7	12	39	135	179	2518
21	DECEMBER	12	1948	23	21	30	1.4	7	12	38	120	292	839
22	NOVEMBER	26	1962	14	5	4	.8	8	2	38	234	420	1167
23	NOVEMBER	10	1971	23	24	54	2.3	6	10	37	43	101	367
24	NOVEMBER	22	1953	12	9	53	5.9	6	12	37	84	321	791
25	MARCH	13	1972	7	4	6	1.5	8	3	37	98	204	2981
26	DECEMBER	18	1979	16	9	21	2.3	6	7	36	90	112	1204
27	NOVEMBER	19	1954	14	46	96	2.1	7	14	35	101	252	698
28	MARCH	9	1957	5	36	137	3.8	7	12	35	167	231	1889
29	MAY	27	1958	17	12	16	1.3	10	8	35	69	85	3080
30	NOVEMBER	23	1953	1	6	44	7.3	6	11	35	136	356	844
31	JANUARY	1	1949	1	14	40	2.9	8	10	34	60	153	1097
32	JANUARY	11	1953	14	9	46	5.1	6	12	34	56	366	1358
33	NOVEMBER	17	1953	5	9	13	1.4	6	6	34	161	196	624
34	APRIL	8	1950	17	5	7	1.4	7	5	34	81	100	3449
35	JANUARY	14	1970	12	31	95	3.1	6	11	33	125	229	1669
36	DECEMBER	10	1971	3	22	30	1.4	7	6	33	89	279	1095
37	DECEMBER	11	1955	21	20	82	4.1	6	18	33	74	238	1688
38	MARCH	5	1960	14	9	12	1.3	7	4	33	67	81	1863
39	MARCH	12	1970	5	3	8	2.7	9	4	33	79	180	3275
40	MARCH	24	1958	7	2	2	1.0	6	1	33	52	106	2614
41	DECEMBER	27	1974	14	1	4	4.0	7	4	33	151	228	1457
42	FEBRUARY	8	1951	2	1	3	3.0	7	3	33	144	266	3235
43	DECEMBER	6	1963	7	1	2	2.0	8	2	33	91	91	959
44	APRIL	17	1960	0	42	81	1.9	8	21	32	85	124	2327
45	APRIL	10	1971	1	28	135	4.8	6	12	31	52	67	3205
46	NOVEMBER	10	1958	1	6	10	1.7	7	4	31	105	318	485
47	DECEMBER	1	1964	10	4	10	2.5	7	4	31	105	313	762
48	FEBRUARY	18	1953	7	4	6	1.5	9	2	31	120	162	2515
49	JANUARY	28	1959	3	17	18	1.1	7	4	30	73	231	1988
50	DECEMBER	11	1968	10	16	42	2.6	7	11	30	182	418	1585

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAG12

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	NOVEMBER	26	1962	1	15	144	9.6	7	28	30	90	277	1023
52	FEBRUARY	2	1978	3	12	23	1.9	6	6	30	91	107	2197
53	MAY	20	1960	21	11	35	3.2	7	14	30	66	136	2833
54	DECEMBER	4	1953	8	10	4	.4	7	2	30	84	135	1093
55	NOVEMBER	30	1966	12	6	5	.8	6	1	30	43	63	840
56	MARCH	18	1976	23	1	9	9.0	7	9	30	39	112	2678
57	OCTOBER	28	1950	17	29	107	3.7	6	20	29	93	141	518
58	NOVEMBER	11	1973	19	26	57	2.2	7	23	29	238	384	729
59	MAY	18	1972	8	19	14	.7	7	4	29	104	109	3570
60	MARCH	31	1963	7	15	23	1.5	6	7	29	188	308	2540
61	MAY	2	1976	5	3	4	1.3	7	2	29	29	40	3116
62	OCTOBER	31	1976	14	2	7	3.5	6	6	29	29	62	127
63	NOVEMBER	16	1973	1	35	282	8.1	6	35	28	81	459	910
64	FEBRUARY	15	1961	14	9	19	2.1	6	8	28	52	387	2461
65	MARCH	1	1973	12	6	39	6.5	6	24	28	29	124	1909
66	MAY	5	1956	5	4	3	.8	10	1	28	47	62	4416
67	MAY	6	1966	12	1	1	1.0	7	1	28	44	44	2845
68	MARCH	3	1950	2	1	1	1.0	6	1	28	46	174	2910
69	NOVEMBER	12	1973	17	16	44	2.8	6	11	27	92	370	786
70	DECEMBER	1	1978	10	14	10	.7	7	2	27	78	142	417
71	FEBRUARY	13	1975	5	13	30	2.3	6	9	27	109	161	2538
72	DECEMBER	24	1972	16	11	59	5.4	7	13	27	117	485	1154
73	NOVEMBER	21	1960	8	7	28	4.0	9	7	27	158	342	697
74	NOVEMBER	19	1959	5	3	13	4.3	7	7	27	108	111	503
75	DECEMBER	30	1964	7	1	1	1.0	6	1	27	57	289	1749
76	NOVEMBER	20	1958	16	35	37	1.1	7	4	26	94	229	730
77	APRIL	2	1974	5	30	39	1.3	6	6	26	85	275	4339
78	OCTOBER	28	1969	10	22	34	1.5	7	6	26	45	67	263
79	FEBRUARY	16	1974	19	13	12	.9	7	3	26	51	112	3458
80	MAY	22	1953	8	8	4	.5	6	1	26	58	121	3336
81	OCTOBER	11	1959	14	2	7	3.5	7	6	26	191	264	264
82	MAY	15	1978	3	2	4	2.0	6	2	26	171	220	3268
83	FEBRUARY	9	1969	21	18	67	3.7	7	22	25	106	130	3128
84	OCTOBER	19	1958	14	18	43	2.4	10	12	25	43	43	69
85	OCTOBER	3	1951	5	17	52	3.1	6	16	25	103	103	103
86	MAY	7	1963	16	17	37	2.2	7	11	25	178	211	3147
87	OCTOBER	7	1950	3	15	23	1.5	9	6	25	121	195	195
88	NOVEMBER	25	1979	0	14	14	1.0	6	5	25	92	178	777
89	FEBRUARY	3	1968	14	11	41	3.7	9	8	25	131	244	1763
90	DECEMBER	30	1952	7	9	22	2.4	7	13	25	84	90	836
91	DECEMBER	2	1972	17	2	11	5.5	9	8	25	59	120	524
92	JANUARY	11	1969	3	2	2	1.0	9	1	25	137	389	2681
93	DECEMBER	7	1967	8	2	2	1.0	9	1	25	71	265	963
94	NOVEMBER	7	1971	16	1	2	2.0	8	2	25	38	93	322
95	OCTOBER	18	1968	5	1	2	2.0	9	2	25	41	252	378
96	MAY	24	1974	21	6	12	2.0	7	4	24	42	70	4677
97	JANUARY	14	1954	21	6	9	1.5	6	3	24	28	41	2073
98	NOVEMBER	24	1948	8	5	8	1.6	9	3	24	57	139	295
99	OCTOBER	22	1970	5	3	5	1.7	6	2	24	70	142	167
100	NOVEMBER	21	1960	16	1	7	7.0	6	7	24	170	354	725

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	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER	4	1975	16	2	7	3.5	6	5	84	220	370	1412
2	OCTOBER	9	1969	19	38	105	2.8	7	22	66	79	123	123
3	DECEMBER	7	1953	7	19	60	3.2	8	14	55	150	241	1235
4	DECEMBER	17	1973	12	18	72	4.0	6	16	55	182	472	2419
5	DECEMBER	5	1968	7	5	5	1.0	6	2	52	266	310	1538
6	DECEMBER	10	1968	17	2	10	5.0	6	5	52	242	503	1789
7	NOVEMBER	8	1962	10	2	4	2.0	6	3	52	61	122	577
8	DECEMBER	12	1977	3	12	24	2.0	7	17	51	147	208	1173
9	OCTOBER	7	1960	21	14	48	3.4	6	14	50	79	79	79
10	DECEMBER	22	1955	7	7	8	1.1	8	5	50	272	498	2379
11	FEBRUARY	25	1950	3	1	1	1.0	7	1	49	164	171	3122
12	DECEMBER	16	1977	7	10	22	2.2	6	6	47	225	544	1566
13	JANUARY	17	1958	10	4	11	2.8	6	3	47	72	265	1854
14	OCTOBER	19	1958	17	22	75	3.4	9	18	46	68	68	85
15	FEBRUARY	25	1961	21	21	51	2.4	6	12	46	46	154	3017
16	JANUARY	1	1949	21	11	3	.3	6	1	46	193	315	1919
17	JANUARY	16	1974	17	50	476	9.5	6	26	45	221	323	3233
18	NOVEMBER	10	1958	12	17	14	.8	7	4	45	140	252	477
19	NOVEMBER	2	1964	1	8	14	1.8	6	6	45	53	93	146
20	JANUARY	22	1954	21	5	3	.6	7	1	45	125	304	2381
21	DECEMBER	24	1964	10	1	2	2.0	6	2	45	189	764	1967
22	OCTOBER	19	1971	19	2	5	2.5	6	3	44	138	162	162
23	MARCH	20	1949	1	1	1	1.0	6	1	42	55	176	3390
24	NOVEMBER	15	1948	6	9	23	2.6	8	10	40	78	78	568
25	MAY	20	1960	19	9	18	2.0	7	5	40	45	104	3009
26	DECEMBER	1	1978	5	7	15	2.1	6	7	40	77	141	476
27	OCTOBER	10	1955	14	6	12	2.0	8	10	40	349	417	417
28	OCTOBER	23	1973	17	6	2	.3	7	1	40	40	119	200
29	APRIL	6	1963	10	16	56	3.5	6	26	38	65	257	2960
30	JANUARY	6	1956	0	71	396	5.6	11	34	37	87	112	2702
31	OCTOBER	20	1968	16	8	8	1.0	6	4	37	61	201	513
32	DECEMBER	1	1964	19	6	18	3.0	7	6	37	160	390	971
33	NOVEMBER	26	1962	14	27	208	7.7	8	23	36	94	170	1012
34	JANUARY	12	1953	3	6	12	2.0	7	7	36	75	343	1570
35	JANUARY	10	1959	14	2	7	3.5	6	4	36	246	488	1906
36	DECEMBER	9	1955	10	7	4	.6	8	1	35	101	270	1749
37	DECEMBER	3	1948	3	6	2	.3	8	1	35	157	276	1139
38	JANUARY	26	1975	5	1	5	5.0	8	5	35	162	195	2127
39	JANUARY	1	1949	3	14	107	7.6	8	26	34	86	209	1812
40	OCTOBER	18	1968	1	1	1	1.0	6	1	34	34	388	451
41	DECEMBER	15	1977	16	42	226	5.4	7	28	33	144	323	1340
42	FEBRUARY	28	1971	3	28	34	1.2	8	6	33	89	174	3066
43	NOVEMBER	12	1951	17	21	20	1.0	7	6	33	162	270	1016
44	NOVEMBER	24	1948	16	14	9	.6	8	4	33	43	132	803
45	JANUARY	20	1970	8	10	37	3.7	6	15	32	141	432	2361
46	DECEMBER	7	1970	3	10	29	2.9	6	16	32	63	295	1267
47	JANUARY	9	1953	3	30	176	5.9	8	17	31	92	200	1319
48	DECEMBER	24	1972	16	11	20	1.8	8	8	31	138	508	1184
49	NOVEMBER	24	1949	2	25	159	6.4	6	19	30	47	55	444
50	DECEMBER	10	1948	23	25	137	5.5	9	15	30	76	203	1343

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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS LAST	SINCE EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	21 1968	12	5	2	.4	6		1	30	40	210	1789
52	DECEMBER	27 1974	14	1	3	3.0	8		3	30	149	256	1627
53	APRIL	17 1958	19	1	2	2.0	8		2	30	101	148	3604
54	DECEMBER	31 1970	3	38	247	6.5	6		20	29	146	167	1770
55	DECEMBER	24 1968	14	35	61	1.7	6		9	29	70	112	2054
56	FEBRUARY	17 1953	3	33	163	4.9	6		28	29	45	45	2896
57	FEBRUARY	1 1974	14	21	45	2.1	8		25	29	108	179	3962
58	FEBRUARY	15 1971	17	17	47	2.8	7		13	29	36	74	2817
59	NOVEMBER	22 1973	1	14	61	4.4	6		16	29	171	505	1530
60	JANUARY	15 1954	8	13	22	1.7	9		7	29	29	51	2048
61	OCTOBER	20 1979	12	10	86	8.6	6		13	29	217	233	233
62	DECEMBER	5 1978	7	9	4	.4	9		1	29	77	209	568
63	FEBRUARY	12 1958	12	7	36	5.1	8		18	29	101	239	2652
64	MAY	3 1977	14	4	6	1.5	7		5	29	96	99	1252
65	NOVEMBER	1 1976	17	3	4	1.3	8		2	29	77	79	180
66	FEBRUARY	6 1970	21	2	2	1.0	7		1	29	111	149	3155
67	JANUARY	13 1973	19	1	1	1.0	7		1	29	189	282	1620
68	APRIL	30 1961	5	2	3	1.5	8		2	28	84	89	4241
69	JANUARY	19 1951	8	39	116	3.0	7		9	27	153	361	3220
70	DECEMBER	30 1952	7	10	36	3.6	8		9	27	94	110	1061
71	FEBRUARY	27 1974	7	10	4	.4	6		1	27	89	134	4460
72	FEBRUARY	17 1953	19	8	68	8.5	7		22	27	178	208	3059
73	NOVEMBER	8 1968	19	8	16	2.0	6		4	27	118	174	788
74	DECEMBER	20 1961	1	4	13	3.3	8		7	27	128	352	1149
75	DECEMBER	28 1973	1	1	1	1.0	6		1	27	76	161	2840
76	OCTOBER	14 1951	19	1	1	1.0	6		1	27	48	128	371
77	DECEMBER	21 1955	17	15	186	12.4	7		25	26	194	312	2193
78	APRIL	20 1965	7	15	53	3.5	7		21	26	108	112	3397
79	OCTOBER	3 1957	5	14	16	1.1	6		5	26	33	33	33
80	JANUARY	2 1963	10	10	34	3.4	7		8	26	26	171	1636
81	NOVEMBER	14 1951	6	7	4	.6	6		2	26	64	334	1085
82	DECEMBER	16 1949	5	4	10	2.5	7		4	26	31	59	986
83	JANUARY	3 1951	0	3	7	2.3	6		3	26	157	237	2803
84	JANUARY	27 1974	19	2	2	1.0	6		1	26	36	57	3840
85	MAY	27 1961	7	2	2	1.0	7		1	26	41	96	4481
86	MARCH	9 1966	19	61	247	4.0	6		25	25	85	156	2731
87	OCTOBER	9 1962	10	32	113	3.5	7		16	25	90	130	130
88	MARCH	5 1956	17	30	29	1.0	7		5	25	118	191	4660
89	DECEMBER	22 1972	17	22	83	3.8	7		20	25	179	396	998
90	OCTOBER	27 1961	19	9	23	2.6	6		9	25	110	157	295
91	MARCH	22 1971	23	6	10	1.7	9		4	25	49	49	3618
92	DECEMBER	6 1971	3	2	3	1.5	6		2	25	126	183	1105
93	OCTOBER	28 1963	17	1	9	9.0	9		9	25	50	253	312
94	DECEMBER	3 1970	21	1	1	1.0	6		1	25	109	253	1203
95	NOVEMBER	12 1973	14	46	179	3.9	7		18	24	173	419	705
96	FEBRUARY	22 1972	14	7	24	3.4	6		6	24	24	92	2712
97	APRIL	14 1963	21	4	9	2.3	6		5	24	69	116	3164
98	OCTOBER	22 1954	19	1	2	2.0	7		2	24	151	256	343
99	JANUARY	17 1951	9	57	177	3.1	7		12	23	152	215	3043
100	OCTOBER	24 1970	12	31	57	1.8	6		17	23	119	241	242

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	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	NOVEMBER	31	1978	0	2	8	4.0	6	6	86	152	219	682
2	MARCH	27	1962	10	48	233	4.9	6	18	85	182	286	3170
3	JANUARY	6	1966	19	12	19	1.6	7	5	83	250	1023	2650
4	DECEMBER	12	1977	5	14	53	3.8	6	11	80	138	232	1634
5	OCTOBER	8	1969	21	17	50	2.9	7	21	78	78	120	120
6	NOVEMBER	4	1965	3	1	16	16.0	6	16	75	114	114	357
7	JANUARY	17	1974	1	55	689	12.5	8	39	73	238	311	3778
8	DECEMBER	17	1977	5	77	459	6.0	6	23	71	326	514	1994
9	OCTOBER	8	1962	7	8	25	3.1	6	6	71	168	226	226
10	DECEMBER	4	1979	12	10	87	8.7	27	28	69	234	320	1723
11	DECEMBER	28	1951	0	29	70	2.4	6	14	68	79	135	1871
12	MARCH	13	1974	3	14	48	3.4	7	11	65	181	240	5997
13	JANUARY	26	1975	14	8	5	.6	7	2	65	156	181	2409
14	DECEMBER	2	1964	7	54	232	4.3	26	31	63	71	452	1077
15	OCTOBER	23	1951	23	7	2	.3	6	1	60	179	265	564
16	NOVEMBER	11	1961	12	1	2	2.0	7	2	60	72	72	545
17	FEBRUARY	28	1971	7	30	48	1.6	6	8	59	87	146	3956
18	OCTOBER	30	1950	19	20	56	2.8	6	15	58	378	641	1203
19	JANUARY	11	1969	8	34	278	8.2	6	22	57	113	221	2786
20	JANUARY	5	1975	19	1	1	1.0	6	1	56	206	284	1989
21	NOVEMBER	11	1960	3	1	1	1.0	7	1	55	110	110	305
22	APRIL	5	1978	16	4	12	3.0	7	8	53	71	205	4262
23	JANUARY	18	1972	17	2	2	1.0	6	1	53	155	174	2731
24	DECEMBER	25	1965	21	28	46	1.6	7	8	50	152	169	1250
25	FEBRUARY	21	1968	19	2	2	1.0	6	1	49	152	323	2604
26	MARCH	20	1975	3	31	50	1.6	6	8	48	195	282	3466
27	NOVEMBER	12	1973	17	18	112	6.2	6	19	48	174	584	1030
28	MAY	21	1968	3	8	12	1.5	7	8	48	100	100	3331
29	OCTOBER	24	1970	19	36	129	3.6	6	16	47	113	220	228
30	OCTOBER	28	1967	8	2	8	4.0	9	4	45	152	180	498
31	NOVEMBER	5	1969	5	1	2	2.0	9	2	44	160	161	582
32	FEBRUARY	23	1972	8	26	99	3.8	7	20	43	43	82	3684
33	NOVEMBER	22	1973	3	15	25	1.7	7	11	43	242	525	1846
34	OCTOBER	18	1970	10	3	15	5.0	8	8	43	43	43	51
35	FEBRUARY	28	1979	3	8	33	4.1	6	19	41	56	129	2178
36	FEBRUARY	11	1961	14	4	28	7.0	9	11	41	532	702	3004
37	JANUARY	27	1970	12	42	185	4.4	6	18	40	275	648	3078
38	JANUARY	25	1970	12	29	235	8.1	6	26	40	225	469	2843
39	APRIL	19	1970	12	10	4	.4	7	1	40	46	46	4033
40	OCTOBER	23	1956	12	1	2	2.0	7	2	40	96	271	337
41	FEBRUARY	3	1978	5	1	1	1.0	6	1	40	167	192	3733
42	FEBRUARY	18	1970	1	1	2	2.0	8	2	39	194	219	3624
43	JANUARY	23	1954	3	1	1	1.0	6	1	39	100	249	2344
44	NOVEMBER	11	1973	17	14	112	8.0	7	34	38	78	612	918
45	MARCH	7	1970	14	8	40	5.0	7	14	38	68	97	3727
46	FEBRUARY	19	1974	12	6	10	1.7	8	5	38	214	437	5248
47	FEBRUARY	25	1972	0	32	93	2.9	7	19	37	142	155	3783
48	DECEMBER	21	1972	12	4	33	8.3	6	20	37	160	505	1129
49	NOVEMBER	19	1953	21	3	3	1.0	6	1	37	39	154	549
50	JANUARY	16	1956	10	2	4	2.0	6	2	37	214	340	4101

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51	OCTOBER	8 1959	7	1	2	2.0	8	2	37	55	55	55
52	DECEMBER	9 1952	0	58	194	3.3	7	25	36	141	303	507
53	NOVEMBER	28 1964	5	26	111	4.3	7	16	36	135	305	897
54	JANUARY	13 1973	12	9	59	6.6	8	24	35	185	232	1849
55	MARCH	16 1968	17	5	4	.8	7	2	34	63	188	2941
56	FEBRUARY	8 1965	21	1	2	2.0	7	2	34	34	47	4311
57	DECEMBER	22 1972	14	19	117	6.2	8	21	33	170	538	1162
58	OCTOBER	31 1979	3	15	27	1.8	6	7	33	50	218	785
59	NOVEMBER	6 1973	19	21	65	3.1	8	14	32	292	398	558
60	OCTOBER	6 1950	8	20	45	2.3	9	12	32	107	196	196
61	OCTOBER	7 1977	7	18	37	2.1	7	30	32	32	32	32
62	FEBRUARY	16 1974	17	11	111	10.1	7	24	32	83	112	4923
63	JANUARY	5 1961	19	5	10	2.0	7	4	32	64	67	1752
64	DECEMBER	14 1974	21	2	2	1.0	7	1	32	187	323	1242
65	NOVEMBER	4 1950	2	2	2	1.0	50	1	32	50	483	1317
66	FEBRUARY	10 1971	5	1	8	8.0	7	8	32	34	138	3632
67	DECEMBER	13 1966	17	1	1	1.0	7	1	32	60	315	1875
68	JANUARY	14 1953	16	11	5	.5	6	2	31	106	381	1449
69	DECEMBER	22 1957	5	110	807	7.3	7	45	30	103	109	806
70	NOVEMBER	12 1951	18	60	237	4.0	8	42	30	56	57	637
71	DECEMBER	10 1971	21	54	255	4.7	6	30	30	35	341	1621
72	JANUARY	11 1952	8	16	17	1.1	7	5	30	129	223	2316
73	MARCH	12 1964	16	14	68	4.9	7	11	30	104	183	3204
74	MARCH	18 1952	6	5	5	1.0	6	3	30	30	36	3243
75	NOVEMBER	15 1954	17	18	48	2.7	7	13	29	86	151	470
76	NOVEMBER	10 1971	19	12	28	2.3	8	8	29	103	168	531
77	DECEMBER	18 1949	18	53	169	3.2	7	17	28	64	90	973
78	DECEMBER	13 1959	1	2	3	1.5	7	2	28	122	146	515
79	FEBRUARY	3 1963	14	31	158	5.1	6	26	27	187	296	1916
80	OCTOBER	28 1974	21	17	93	5.5	8	17	27	40	40	55
81	OCTOBER	20 1950	15	16	11	.7	6	4	27	96	263	550
82	FEBRUARY	2 1978	21	13	68	5.2	6	16	27	102	124	3665
83	DECEMBER	3 1962	3	1	1	1.0	8	1	27	177	239	1444
84	JANUARY	29 1958	7	14	163	11.6	7	32	26	91	201	2500
85	APRIL	11 1955	23	8	7	.9	8	2	26	96	125	2195
86	NOVEMBER	16 1973	19	7	7	1.0	9	3	26	277	742	1595
87	FEBRUARY	1 1964	3	6	6	1.0	7	4	26	38	113	2813
88	MAY	3 1977	17	4	2	.5	7	1	26	80	109	1614
89	NOVEMBER	1 1955	5	34	130	3.8	6	21	25	38	98	547
90	DECEMBER	26 1964	7	17	143	8.4	8	48	25	242	1245	2829
91	MARCH	26 1971	21	14	40	2.9	6	11	25	90	218	4677
92	NOVEMBER	29 1978	16	13	38	2.9	7	10	25	67	67	530
93	MARCH	22 1950	14	12	45	3.8	9	19	25	53	232	3476
94	DECEMBER	10 1977	5	4	10	2.5	6	7	25	29	139	1513
95	JANUARY	17 1954	8	18	40	2.2	6	6	24	197	237	2119
96	NOVEMBER	7 1975	19	17	56	3.3	8	35	24	50	50	619
97	DECEMBER	22 1968	23	1	1	1.0	8	1	24	42	166	2335
98	MARCH	12 1974	7	25	147	5.9	8	35	23	36	157	5850
99	FEBRUARY	1 1974	14	21	63	3.0	9	30	23	83	129	4701
100	NOVEMBER	17 1953	12	20	34	1.7	6	8	23	73	95	476

OVERALL ORDER STATISTICS AT PORTLAND
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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER	22 1955	7	6	17	2.8	9	9	43	273	459	2229
2	DECEMBER	14 1977	12	8	57	7.1	13	17	0	267	400	1418
3	FEBRUARY	20 1968	7	8	15	1.9	6	9	46	264	341	2172
4	OCTOBER	10 1955	17	8	26	3.3	14	10	0	252	362	362
5	FEBRUARY	17 1970	7	6	10	1.7	8	3	4	246	290	3061
6	JANUARY	24 1970	3	2	20	10.0	17	10	0	243	575	2389
7	FEBRUARY	11 1961	12	1	14	14.0	9	14	19	241	423	2373
8	NOVEMBER	10 1973	10	6	35	5.8	15	16	0	240	379	694
9	JANUARY	24 1970	10	2	14	7.0	6	11	20	239	565	2409
10	NOVEMBER	11 1973	19	26	57	2.2	7	23	29	238	384	729
11	NOVEMBER	26 1962	14	5	4	.8	8	2	38	234	420	1167
12	DECEMBER	22 1955	16	1	1	1.0	7	1	16	233	460	2246
13	DECEMBER	24 1964	17	26	84	3.2	11	13	0	225	502	1460
14	DECEMBER	15 1977	17	19	73	3.8	11	17	0	215	450	1475
15	FEBRUARY	21 1968	3	11	45	4.1	9	8	8	207	356	2187
16	OCTOBER	24 1951	7	9	8	.9	14	3	0	206	374	669
17	JANUARY	15 1975	5	32	68	2.1	15	6	0	201	274	1952
18	JANUARY	21 1950	16	12	26	2.2	9	8	6	199	316	2115
19	DECEMBER	7 1966	19	45	96	2.1	9	13	2	197	320	1117
20	FEBRUARY	28 1976	5	10	6	.6	7	4	48	197	285	2550
21	NOVEMBER	20 1955	7	1	1	1.0	23	1	0	193	258	1066
22	NOVEMBER	6 1969	16	14	10	.7	11	3	0	192	195	494
23	DECEMBER	22 1972	16	17	56	3.3	10	17	7	191	420	1012
24	JANUARY	26 1975	19	5	26	5.2	16	11	0	191	281	2309
25	OCTOBER	11 1959	14	2	7	3.5	7	6	26	191	264	264
26	MARCH	31 1963	7	15	23	1.5	6	7	29	188	308	2540
27	JANUARY	22 1972	5	9	17	1.9	20	5	0	187	310	2115
28	NOVEMBER	5 1969	14	3	5	1.7	17	2	0	187	190	489
29	NOVEMBER	21 1962	3	1	1	1.0	12	1	0	186	255	932
30	JANUARY	5 1954	19	1	2	2.0	18	2	0	183	247	2020
31	DECEMBER	11 1968	10	16	42	2.6	7	11	30	182	418	1585
32	DECEMBER	28 1973	7	1	5	5.0	7	5	10	181	267	2371
33	MAY	7 1963	16	17	37	2.2	7	11	25	178	211	3147
34	DECEMBER	4 1977	12	16	16	1.0	25	4	0	178	221	963
35	JANUARY	22 1954	21	1	2	2.0	6	2	23	177	331	2426
36	DECEMBER	22 1971	14	1	1	1.0	9	1	7	176	177	1428
37	NOVEMBER	9 1968	3	1	1	1.0	7	1	64	175	217	740
38	NOVEMBER	22 1974	19	9	12	1.3	21	5	0	174	378	801
39	NOVEMBER	27 1962	7	7	3	.4	9	1	3	172	369	1171
40	NOVEMBER	25 1949	7	3	12	4.0	16	6	0	171	237	627
41	MAY	15 1978	3	2	4	2.0	6	2	26	171	220	3268
42	JANUARY	8 1950	5	1	1	1.0	7	1	16	171	236	1513
43	NOVEMBER	21 1960	16	1	7	7.0	6	7	24	170	354	725
44	JANUARY	10 1959	14	3	4	1.3	6	2	17	169	281	1581
45	MARCH	27 1962	3	15	29	1.9	9	5	14	168	245	2242
46	MARCH	9 1957	5	36	137	3.8	7	12	35	167	231	1889
47	DECEMBER	3 1979	3	10	20	2.0	10	6	17	167	178	990
48	NOVEMBER	17 1953	14	2	20	10.0	8	19	2	165	204	637
49	NOVEMBER	24 1961	3	23	57	2.5	22	7	0	164	193	582
50	OCTOBER	20 1979	17	22	30	1.4	9	8	1	164	205	205

OVERALL ORDER STATISTICS AT PORTLAND
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	DECEMBER 14 1969	12	33	98	3.0	7	13	2	163	257	891
52	NOVEMBER 15 1963	16	2	7	3.5	7	4	9	163	214	728
53	NOVEMBER 26 1971	17	1	2	2.0	6	2	45	163	250	749
54	OCTOBER 10 1953	19	10	42	4.2	6	24	57	162	170	197
55	NOVEMBER 17 1953	5	9	13	1.4	6	6	34	161	196	624
56	APRIL 20 1965	16	2	5	2.5	8	3	14	160	176	3032
57	NOVEMBER 21 1960	8	7	28	4.0	9	7	27	158	342	697
58	FEBRUARY 17 1970	19	3	9	3.0	9	7	5	158	300	3071
59	DECEMBER 21 1955	17	14	199	14.2	9	32	17	157	260	2030
60	JANUARY 25 1965	8	19	47	2.5	7	11	1	154	174	2210
61	FEBRUARY 4 1968	5	6	27	4.5	9	10	11	154	285	1804
62	JANUARY 5 1966	0	1	1	1.0	8	1	12	152	342	1761
63	DECEMBER 27 1974	14	1	4	4.0	7	4	33	151	228	1457
64	DECEMBER 31 1970	7	3	5	1.7	9	3	23	150	260	1600
65	JANUARY 24 1954	7	18	30	1.7	15	7	0	149	281	2428
66	JANUARY 11 1979	17	15	13	.9	14	2	0	149	154	824
67	FEBRUARY 28 1976	23	5	4	.8	13	2	0	149	291	2556
68	MAY 21 1968	12	21	29	1.4	15	8	0	147	151	2937
69	APRIL 28 1962	14	11	9	.8	20	2	0	147	169	2582
70	JANUARY 29 1967	12	19	52	2.7	8	8	5	146	218	2114
71	MARCH 16 1967	8	6	2	.3	17	1	0	146	184	2578
72	DECEMBER 31 1970	14	1	1	1.0	6	1	5	146	263	1605
73	NOVEMBER 29 1971	7	40	62	1.6	22	10	0	145	252	751
74	MARCH 26 1962	3	13	60	4.6	7	10	48	145	187	2182
75	JANUARY 21 1970	5	12	48	4.0	8	15	9	145	385	2092
76	APRIL 11 1971	0	11	19	1.7	12	7	0	145	194	3340
77	MARCH 29 1974	7	6	21	3.5	12	7	0	144	161	4225
78	FEBRUARY 4 1963	0	4	3	.8	14	1	0	144	310	1908
79	FEBRUARY 8 1951	2	1	3	3.0	7	3	33	144	266	3235
80	JANUARY 6 1966	1	19	100	5.3	7	17	1	143	333	1762
81	FEBRUARY 22 1956	7	3	4	1.3	12	2	0	143	196	3821
82	JANUARY 29 1954	7	7	10	1.4	25	4	0	142	339	2668
83	FEBRUARY 7 1970	1	1	2	2.0	7	2	21	142	186	2769
84	NOVEMBER 26 1964	23	32	85	2.7	21	10	0	140	187	511
85	DECEMBER 17 1973	21	2	3	1.5	14	2	0	139	374	1949
86	NOVEMBER 15 1966	12	62	186	3.0	22	38	0	137	143	469
87	DECEMBER 5 1951	22	14	18	1.3	8	10	2	137	387	1464
88	JANUARY 11 1969	3	2	2	1.0	9	1	25	137	389	2681
89	MARCH 9 1957	14	1	3	3.0	8	3	16	137	360	2026
90	NOVEMBER 23 1953	1	6	44	7.3	6	11	35	136	356	844
91	DECEMBER 22 1957	3	54	100	1.9	6	10	41	135	197	1020
92	JANUARY 17 1951	7	53	112	2.1	7	12	39	135	179	2518
93	JANUARY 30 1965	0	19	38	2.0	6	9	15	135	391	2447
94	MAY 15 1978	14	4	10	2.5	7	8	4	134	224	3272
95	JANUARY 26 1953	17	1	2	2.0	7	2	18	134	346	2107
96	MARCH 17 1967	14	23	35	1.5	7	8	1	133	184	2580
97	FEBRUARY 8 1955	21	4	11	2.8	6	9	3	133	184	1766
98	APRIL 13 1955	19	5	21	4.2	21	12	0	132	216	2471
99	DECEMBER 21 1973	19	2	5	2.5	6	4	1	132	331	2105
100	FEBRUARY 3 1968	14	11	41	3.7	9	8	25	131	244	1763

OVERALL ORDER STATISTICS AT SALEM
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	FEBRUARY 11 1961	12	4	18	4.5	8	15	10	396	562	2677
2	OCTOBER 10 1955	14	6	12	2.0	8	10	40	349	417	417
3	JANUARY 22 1972	0	7	18	2.6	12	5	0	326	482	2463
4	DECEMBER 24 1964	3	12	90	7.5	10	19	9	303	674	1877
5	NOVEMBER 25 1960	14	1	1	1.0	11	1	0	290	518	1213
6	FEBRUARY 12 1961	8	12	8	.7	8	3	18	289	579	2695
7	FEBRUARY 22 1956	12	12	29	2.4	11	9	0	285	336	4334
8	FEBRUARY 21 1968	14	23	80	3.5	10	14	6	278	395	2596
9	DECEMBER 22 1955	7	7	8	1.1	8	5	50	272	498	2379
10	DECEMBER 5 1968	7	5	5	1.0	6	2	52	266	310	1538
11	FEBRUARY 11 1949	8	2	3	1.5	15	2	0	266	355	2383
12	DECEMBER 7 1966	16	43	90	2.1	8	20	17	261	377	1135
13	DECEMBER 11 1968	14	13	33	2.5	8	10	10	252	426	1799
14	APRIL 10 1971	5	1	1	1.0	12	1	0	251	275	4069
15	JANUARY 29 1967	21	32	88	2.8	9	26	4	250	335	2167
16	JANUARY 10 1959	14	2	7	3.5	6	4	36	246	488	1906
17	DECEMBER 10 1968	17	2	10	5.0	6	5	52	242	503	1789
18	NOVEMBER 27 1962	7	8	10	1.3	10	5	5	235	369	1220
19	FEBRUARY 15 1959	10	8	14	1.8	11	3	0	234	296	2845
20	DECEMBER 15 1973	8	26	44	1.7	11	5	0	232	275	2209
21	JANUARY 29 1954	16	23	43	1.9	16	7	0	232	448	2739
22	JANUARY 22 1953	17	28	50	1.8	23	5	0	230	641	2343
23	JANUARY 14 1974	10	8	60	7.5	7	13	1	227	263	3173
24	DECEMBER 16 1977	7	10	22	2.2	6	6	47	225	544	1566
25	DECEMBER 21 1953	3	1	1	1.0	7	1	1	224	289	1727
26	DECEMBER 12 1969	19	1	1	1.0	6	1	19	222	314	1091
27	JANUARY 16 1974	17	50	476	9.5	6	26	45	221	323	3233
28	DECEMBER 24 1955	1	35	52	1.5	6	13	7	220	497	2387
29	DECEMBER 4 1975	16	2	7	3.5	6	5	84	220	370	1412
30	APRIL 11 1971	16	27	83	3.1	7	11	1	217	276	4070
31	OCTOBER 20 1979	12	10	86	8.6	6	13	29	217	233	233
32	NOVEMBER 10 1973	8	4	24	6.0	15	12	0	217	400	681
33	NOVEMBER 23 1953	17	4	10	2.5	13	5	0	214	278	925
34	DECEMBER 27 1955	10	1	1	1.0	8	1	6	213	509	2655
35	MARCH 29 1974	7	7	40	5.7	12	10	0	212	234	5180
36	FEBRUARY 16 1959	8	17	82	4.8	6	15	11	208	308	2859
37	DECEMBER 13 1969	7	4	7	1.8	8	2	1	206	312	1092
38	JANUARY 20 1964	17	4	11	2.8	8	5	8	205	477	2145
39	JANUARY 28 1959	17	2	8	4.0	16	7	0	205	366	2486
40	MARCH 30 1974	12	18	108	6.0	11	20	0	204	274	5220
41	FEBRUARY 14 1954	10	1	3	3.0	16	3	0	201	346	3130
42	FEBRUARY 27 1976	14	46	190	4.1	9	27	1	200	255	2800
43	NOVEMBER 5 1969	19	11	14	1.3	6	6	7	200	208	644
44	NOVEMBER 22 1974	17	7	16	2.3	18	7	0	200	364	828
45	JANUARY 11 1959	3	8	7	.9	6	3	7	199	495	1913
46	OCTOBER 29 1950	16	7	27	3.9	6	8	10	196	383	955
47	DECEMBER 21 1955	17	15	186	12.4	7	25	26	194	312	2193
48	JANUARY 1 1949	21	11	3	.3	6	1	46	193	315	1919
49	JANUARY 29 1965	16	10	23	2.3	7	6	3	193	541	2964
50	DECEMBER 21 1973	17	1	4	4.0	7	4	3	193	467	2698

OVERALL ORDER STATISTICS AT SALEM
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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	25 1965	12	28	62	2.2	7	13	18	191	222	2628
52	DECEMBER	24 1964	10	1	2	2.0	6	2	45	189	764	1967
53	JANUARY	13 1973	19	1	1	1.0	7	1	29	189	282	1620
54	JANUARY	8 1956	1	5	8	1.6	11	2	0	187	622	3278
55	OCTOBER	13 1968	7	30	85	2.8	11	9	0	186	218	227
56	APRIL	13 1955	23	12	23	1.9	9	5	10	185	237	2598
57	OCTOBER	11 1955	14	7	23	3.3	17	6	0	183	418	429
58	DECEMBER	17 1973	12	18	72	4.0	6	16	55	182	472	2419
59	JANUARY	5 1966	19	17	89	5.2	11	10	0	181	434	2028
60	DECEMBER	22 1972	17	22	83	3.8	7	20	25	179	396	998
61	NOVEMBER	17 1953	21	2	3	1.5	15	2	0	179	251	664
62	FEBRUARY	17 1953	19	8	68	8.5	7	22	27	178	208	3059
63	DECEMBER	12 1948	15	8	3	.4	6	1	1	177	350	1548
64	FEBRUARY	11 1969	8	26	50	1.9	11	9	0	176	204	3451
65	MARCH	31 1963	19	3	7	2.3	8	5	1	174	482	2868
66	NOVEMBER	12 1973	14	46	179	3.9	7	18	24	173	419	705
67	DECEMBER	17 1977	5	15	26	1.7	7	5	13	172	562	1588
68	MAY	18 1972	3	1	3	3.0	6	3	1	172	191	4092
69	JANUARY	11 1979	19	1	3	3.0	7	3	16	172	173	941
70	NOVEMBER	22 1973	1	14	61	4.4	6	16	29	171	505	1530
71	JANUARY	12 1972	14	1	1	1.0	6	1	4	171	226	1980
72	DECEMBER	10 1953	5	57	136	2.4	13	20	0	170	290	1295
73	FEBRUARY	10 1960	3	4	2	.5	7	1	2	170	348	1601
74	DECEMBER	14 1969	10	21	99	4.7	7	20	7	168	309	1099
75	JANUARY	12 1972	7	2	4	2.0	8	3	2	168	222	1976
76	NOVEMBER	27 1962	16	1	3	3.0	7	3	1	168	326	1230
77	MARCH	19 1975	17	18	24	1.3	9	8	22	167	212	2889
78	DECEMBER	12 1948	0	15	68	4.5	11	13	0	167	338	1480
79	JANUARY	26 1975	17	6	11	1.8	6	3	5	167	200	2132
80	JANUARY	20 1953	14	14	230	16.4	10	46	10	165	480	2113
81	JANUARY	3 1951	19	6	6	1.0	13	5	0	164	244	2810
82	NOVEMBER	20 1958	19	4	3	.8	15	1	0	164	314	915
83	MARCH	9 1957	14	2	7	3.5	9	6	15	164	398	2198
84	FEBRUARY	25 1950	3	1	1	1.0	7	1	49	164	171	3122
85	DECEMBER	23 1964	5	58	503	8.7	10	36	13	163	237	1374
86	DECEMBER	13 1977	14	27	143	5.3	8	18	1	162	232	1197
87	NOVEMBER	12 1951	17	21	20	1.0	7	6	33	162	270	1016
88	JANUARY	26 1975	5	1	5	5.0	8	5	35	162	195	2127
89	DECEMBER	1 1964	19	6	18	3.0	7	6	37	160	390	971
90	OCTOBER	31 1950	1	28	70	2.5	6	19	23	159	406	982
91	DECEMBER	3 1948	16	1	1	1.0	12	1	0	158	273	1141
92	DECEMBER	3 1948	3	6	2	.3	8	1	35	157	276	1139
93	JANUARY	3 1951	0	3	7	2.3	6	3	26	157	237	2803
94	OCTOBER	6 1950	21	9	14	1.6	9	5	20	156	317	317
95	DECEMBER	24 1969	8	1	1	1.0	13	1	0	156	391	1628
96	FEBRUARY	3 1963	21	1	1	1.0	10	1	3	156	391	2066
97	DECEMBER	23 1973	3	27	17	.6	7	2	4	155	455	2702
98	NOVEMBER	26 1955	19	19	53	2.8	11	8	0	154	286	1324
99	JANUARY	19 1951	8	39	116	3.0	7	9	27	153	361	3220
100	JANUARY	20 1950	18	11	55	5.0	6	13	2	153	254	2199

OVERALL ORDER STATISTICS AT EUGENE
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	FEBRUARY 11 1961	14	4	28	7.0	9	11	41	532	702	3004
2	JANUARY 4 1966	16	2	34	17.0	7	22	20	469	870	2400
3	DECEMBER 24 1964	1	11	193	17.5	6	41	23	467	1015	2587
4	JANUARY 9 1976	5	12	17	1.4	12	7	0	392	725	2853
5	JANUARY 6 1966	0	18	216	12.0	14	36	0	390	862	2434
6	DECEMBER 27 1955	16	7	5	.7	6	2	15	382	1030	3286
7	OCTOBER 30 1950	19	20	56	2.8	6	15	58	378	641	1203
8	FEBRUARY 12 1961	3	4	11	2.8	10	5	14	369	718	3032
9	OCTOBER 20 1979	17	23	169	7.3	7	31	8	345	375	375
10	DECEMBER 17 1977	5	77	459	6.0	6	23	71	326	514	1994
11	NOVEMBER 23 1953	17	2	4	2.0	9	2	13	325	428	904
12	FEBRUARY 15 1959	8	9	30	3.3	11	6	0	324	399	3082
13	FEBRUARY 16 1959	1	11	36	3.3	6	8	20	320	426	3112
14	FEBRUARY 19 1949	1	3	4	1.3	7	2	19	319	483	2676
15	NOVEMBER 29 1971	16	55	168	3.1	8	22	18	314	428	1112
16	DECEMBER 5 1966	23	1	1	1.0	9	1	18	313	426	1496
17	DECEMBER 5 1968	14	7	5	.7	10	3	4	300	387	1632
18	DECEMBER 6 1975	21	28	96	3.4	26	11	0	299	631	1756
19	FEBRUARY 22 1956	5	7	29	4.1	6	5	17	298	333	4759
20	DECEMBER 23 1955	8	78	663	8.5	13	41	0	296	418	2187
21	FEBRUARY 17 1958	17	17	28	1.6	9	9	3	294	527	3451
22	JANUARY 21 1964	5	2	2	1.0	6	1	7	294	819	2547
23	DECEMBER 20 1953	21	1	1	1.0	8	1	4	294	333	1647
24	NOVEMBER 6 1973	19	21	65	3.1	8	14	32	292	398	558
25	JANUARY 12 1972	17	1	3	3.0	12	3	0	278	347	2573
26	NOVEMBER 16 1973	19	7	7	1.0	9	3	26	277	742	1595
27	JANUARY 27 1970	12	42	185	4.4	6	18	40	275	648	3078
28	DECEMBER 13 1969	5	1	2	2.0	15	2	0	267	364	1074
29	DECEMBER 12 1969	12	1	10	10.0	8	10	1	261	358	1064
30	OCTOBER 11 1955	10	3	13	4.3	28	9	0	260	420	433
31	DECEMBER 22 1969	23	14	100	7.1	21	30	0	258	408	1554
32	NOVEMBER 27 1962	5	4	10	2.5	13	5	0	255	319	1236
33	JANUARY 6 1966	19	12	19	1.6	7	5	83	250	1023	2650
34	DECEMBER 31 1970	16	2	6	3.0	11	4	0	250	448	2404
35	NOVEMBER 27 1977	17	18	38	2.1	27	10	0	249	628	1134
36	APRIL 11 1971	14	25	90	3.6	9	17	3	246	254	5057
37	JANUARY 28 1950	14	7	3	.4	15	2	0	243	429	2560
38	DECEMBER 19 1972	14	35	125	3.6	7	23	6	242	253	867
39	JANUARY 18 1974	21	21	101	4.8	23	19	0	242	1000	4467
40	DECEMBER 26 1964	7	17	143	8.4	8	48	25	242	1245	2829
41	NOVEMBER 22 1973	3	15	25	1.7	7	11	43	242	525	1846
42	MARCH 29 1974	7	8	52	6.5	9	18	6	241	262	6544
43	JANUARY 29 1965	10	3	3	1.0	7	2	4	240	585	4251
44	JANUARY 17 1974	1	55	689	12.5	8	39	73	238	311	3778
45	MARCH 30 1974	7	15	190	12.7	9	36	20	238	314	6596
46	DECEMBER 4 1979	12	10	87	8.7	27	28	69	234	320	1723
47	NOVEMBER 13 1965	19	22	79	3.6	10	20	4	229	303	679
48	DECEMBER 25 1964	7	10	49	4.9	19	18	0	228	1208	2780
49	FEBRUARY 8 1979	19	4	6	1.5	17	2	0	228	344	1618
50	JANUARY 25 1970	12	29	235	8.1	6	26	40	225	469	2843

OVERALL ORDER STATISTICS AT EUGENE
SORTED BY MAG48

	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	JANUARY	30	1958	23	27	148	5.5	12	24	0	224	364	2663
52	NOVEMBER	13	1973	10	10	76	7.6	8	22	5	224	569	1142
53	MAY	18	1972	8	6	6	1.0	22	2	0	224	265	5734
54	FEBRUARY	19	1974	19	1	1	1.0	6	1	10	224	444	5258
55	JANUARY	23	1972	16	24	88	3.7	8	16	1	223	765	3341
56	NOVEMBER	25	1970	14	2	5	2.5	7	3	2	223	315	1050
57	NOVEMBER	10	1973	8	11	26	2.4	6	6	3	219	611	854
58	MARCH	25	1976	14	1	1	1.0	8	1	5	218	419	4391
59	FEBRUARY	19	1974	12	6	10	1.7	8	5	38	214	437	5248
60	JANUARY	16	1956	10	2	4	2.0	6	2	37	214	340	4101
61	NOVEMBER	30	1973	5	11	20	1.8	10	12	6	211	376	2250
62	JANUARY	7	1978	14	4	12	3.0	24	4	0	211	389	3050
63	JANUARY	5	1975	19	1	1	1.0	6	1	56	206	284	1989
64	DECEMBER	4	1979	0	27	302	11.2	39	40	0	205	244	1421
65	OCTOBER	4	1967	17	3	4	1.3	22	2	0	204	238	238
66	JANUARY	19	1951	8	19	78	4.1	6	15	5	201	407	3263
67	MARCH	4	1956	21	4	12	3.0	8	6	1	201	268	5150
68	JANUARY	17	1954	8	18	40	2.2	6	6	24	197	237	2119
69	JANUARY	12	1969	23	14	120	8.6	24	15	0	197	493	3064
70	MAY	2	1949	11	1	8	8.0	8	8	20	196	200	3425
71	MARCH	20	1975	3	31	50	1.6	6	8	48	195	282	3466
72	JANUARY	11	1950	18	79	196	2.5	11	28	0	194	225	1522
73	FEBRUARY	18	1970	1	1	2	2.0	8	2	39	194	219	3624
74	OCTOBER	27	1956	5	1	2	2.0	6	2	16	193	408	575
75	DECEMBER	30	1964	16	92	299	3.3	12	14	0	192	1262	2972
76	MARCH	31	1974	23	13	49	3.8	26	14	0	190	504	6786
77	OCTOBER	12	1968	14	11	30	2.7	8	10	8	190	208	219
78	MARCH	14	1974	21	31	218	7.0	10	20	16	189	236	6045
79	NOVEMBER	16	1973	3	56	377	6.7	8	33	14	188	595	1218
80	FEBRUARY	3	1963	14	31	158	5.1	6	26	27	187	296	1916
81	DECEMBER	14	1974	21	2	2	1.0	7	1	32	187	323	1242
82	MARCH	31	1960	7	6	22	3.7	7	11	4	186	245	2729
83	OCTOBER	26	1956	21	10	48	4.8	8	13	12	185	360	527
84	JANUARY	13	1973	12	9	59	6.6	8	24	35	185	232	1849
85	JANUARY	27	1970	19	1	1	1.0	6	1	7	185	789	3263
86	FEBRUARY	23	1968	3	10	70	7.0	9	15	15	184	361	2642
87	JANUARY	7	1956	23	4	15	3.8	14	8	0	184	442	3733
88	MARCH	27	1962	10	48	233	4.9	6	18	85	182	286	3170
89	FEBRUARY	26	1957	7	22	127	5.8	9	26	6	182	309	2164
90	MARCH	13	1974	3	14	48	3.4	7	11	65	181	240	5997
91	DECEMBER	4	1977	3	11	18	1.6	12	4	0	180	247	1381
92	DECEMBER	4	1977	14	4	3	.8	7	1	8	180	235	1399
93	OCTOBER	9	1962	7	12	54	4.5	12	11	0	179	251	251
94	OCTOBER	23	1951	23	7	2	.3	6	1	60	179	265	564
95	DECEMBER	15	1974	7	3	2	.7	7	1	2	179	325	1244
96	JANUARY	16	1968	23	23	131	5.7	12	16	0	178	331	1731
97	MARCH	7	1960	8	18	112	6.2	6	30	4	178	346	2124
98	DECEMBER	3	1962	3	1	1	1.0	8	1	27	177	239	1444
99	JANUARY	21	1964	14	2	9	4.5	6	5	2	175	821	2549
100	JANUARY	11	1959	3	2	5	2.5	9	3	12	175	440	1880

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAG168

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER 26 1964	7	18	87	4.8	12	32	0	90	592	1550
2	DECEMBER 25 1964	1	2	6	3.0	6	3	11	113	586	1544
3	JANUARY 24 1970	3	2	20	10.0	17	10	0	243	575	2389
4	JANUARY 27 1970	17	70	160	2.3	8	14	14	111	574	2423
5	DECEMBER 27 1964	21	25	53	2.1	13	10	0	93	571	1637
6	JANUARY 24 1970	10	2	14	7.0	6	11	20	239	565	2409
7	JANUARY 20 1974	12	1	1	1.0	41	1	0	54	560	3112
8	DECEMBER 28 1964	12	8	13	1.6	6	6	6	107	545	1690
9	JANUARY 18 1974	17	18	106	5.9	30	34	0	107	544	3006
10	JANUARY 8 1956	3	2	9	4.5	17	6	0	107	530	2956
11	DECEMBER 17 1977	1	19	36	1.9	12	6	0	108	523	1548
12	DECEMBER 17 1977	7	1	1	1.0	6	1	15	57	515	1584
13	DECEMBER 17 1977	17	2	13	6.5	7	7	1	38	511	1585
14	DECEMBER 30 1965	21	2	5	2.5	6	3	18	76	509	1495
15	DECEMBER 24 1964	17	26	84	3.2	11	13	0	225	502	1460
16	JANUARY 9 1956	14	8	16	2.0	27	4	0	11	497	2965
17	DECEMBER 24 1972	16	11	59	5.4	7	13	27	117	485	1154
18	DECEMBER 23 1972	21	19	86	4.5	11	10	0	125	467	1068
19	DECEMBER 31 1965	16	1	1	1.0	18	1	0	59	462	1500
20	DECEMBER 22 1955	16	1	1	1.0	7	1	16	233	460	2246
21	NOVEMBER 16 1973	1	35	282	8.1	6	35	28	81	459	910
22	DECEMBER 22 1955	7	6	17	2.8	9	9	43	273	459	2229
23	JANUARY 14 1953	10	5	4	.8	14	2	0	48	452	1464
24	DECEMBER 15 1977	17	19	73	3.8	11	17	0	215	450	1475
25	DECEMBER 18 1977	19	1	2	2.0	25	2	0	33	450	1598
26	JANUARY 13 1953	14	13	23	1.8	6	7	17	83	449	1441
27	DECEMBER 24 1955	1	13	9	.7	20	3	0	89	447	2247
28	DECEMBER 27 1955	1	44	152	3.5	28	12	0	9	441	2256
29	JANUARY 7 1956	7	28	107	3.8	29	17	0	85	441	2849
30	JANUARY 4 1966	14	70	260	3.7	25	26	0	6	440	1501
31	JANUARY 10 1956	0	4	3	.8	6	1	12	25	438	2981
32	NOVEMBER 21 1950	0	5	13	2.6	19	8	0	53	437	1275
33	DECEMBER 29 1964	7	10	14	1.4	9	4	10	66	427	1703
34	JANUARY 12 1953	19	9	25	2.8	7	7	8	103	424	1416
35	FEBRUARY 11 1961	12	1	14	14.0	9	14	19	241	423	2373
36	DECEMBER 22 1972	16	17	56	3.3	10	17	7	191	420	1012
37	NOVEMBER 26 1962	14	5	4	.8	8	2	38	234	420	1167
38	DECEMBER 11 1968	10	16	42	2.6	7	11	30	182	418	1585
39	DECEMBER 28 1972	8	55	122	2.2	34	18	0	59	417	1213
40	JANUARY 12 1953	3	6	12	2.0	8	4	20	91	412	1404
41	FEBRUARY 13 1961	17	32	31	1.0	21	4	0	119	410	2387
42	NOVEMBER 14 1973	8	14	56	4.0	12	12	0	68	405	854
43	FEBRUARY 23 1968	5	26	61	2.3	15	13	0	59	404	2235
44	FEBRUARY 21 1968	12	2	3	1.5	7	2	20	114	401	2232
45	DECEMBER 14 1977	12	8	57	7.1	13	17	0	267	400	1418
46	JANUARY 22 1953	19	29	95	3.3	27	19	0	107	399	1867
47	NOVEMBER 13 1973	7	7	24	3.4	6	7	1	92	399	830
48	JANUARY 10 1956	23	14	9	.6	9	3	1	19	396	2984
49	JANUARY 26 1953	10	52	145	2.8	35	20	0	62	395	1962
50	JANUARY 30 1965	0	19	38	2.0	6	9	15	135	391	2447

OVERALL ORDER STATISTICS AT PORTLAND
SORTED BY MAG168

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	NOVEMBER	20 1950	0	9	53	5.9	41	20	0	15	391	1222
52	JANUARY	11 1969	14	1	3	3.0	9	3	2	104	391	2683
53	NOVEMBER	23 1974	12	11	63	5.7	6	12	2	111	390	813
54	JANUARY	11 1969	3	2	2	1.0	9	1	25	137	389	2681
55	DECEMBER	5 1951	22	14	18	1.3	8	10	2	137	387	1464
56	FEBRUARY	15 1961	14	9	19	2.1	6	8	28	52	387	2461
57	JANUARY	21 1970	5	12	48	4.0	8	15	9	145	385	2092
58	NOVEMBER	17 1966	21	5	10	2.0	22	6	0	62	385	717
59	NOVEMBER	11 1973	19	26	57	2.2	7	23	29	238	384	729
60	FEBRUARY	15 1961	0	15	43	2.9	16	9	0	30	384	2418
61	MARCH	11 1957	1	6	12	2.0	18	9	0	62	382	2051
62	DECEMBER	10 1966	19	2	2	1.0	7	1	11	74	381	1287
63	MARCH	12 1957	16	4	11	2.8	7	6	7	51	380	2102
64	JANUARY	22 1964	12	4	5	1.3	8	2	1	21	380	1825
65	DECEMBER	22 1961	21	10	24	2.4	29	14	0	121	379	1232
66	NOVEMBER	10 1973	10	6	35	5.8	15	16	0	240	379	694
67	MARCH	13 1957	3	1	1	1.0	10	1	6	50	379	2113
68	JANUARY	22 1964	0	1	1	1.0	13	1	0	26	379	1824
69	MARCH	12 1957	5	17	39	2.3	10	15	7	37	378	2063
70	NOVEMBER	22 1974	19	9	12	1.3	21	5	0	174	378	801
71	DECEMBER	6 1951	7	3	5	1.7	6	3	3	119	378	1482
72	DECEMBER	24 1961	5	23	59	2.6	8	22	18	24	377	1256
73	NOVEMBER	16 1966	19	4	8	2.0	8	4	18	112	377	709
74	JANUARY	23 1970	7	36	249	6.9	14	90	0	105	376	2140
75	OCTOBER	24 1951	7	9	8	.9	14	3	0	206	374	669
76	NOVEMBER	28 1949	16	3	5	1.7	7	4	20	109	374	764
77	DECEMBER	17 1973	21	2	3	1.5	14	2	0	139	374	1949
78	JANUARY	13 1959	1	11	14	1.3	6	5	16	98	372	1683
79	JANUARY	12 1950	18	9	4	.4	11	1	0	4	371	1682
80	JANUARY	21 1964	10	3	8	2.7	10	4	4	84	371	1816
81	NOVEMBER	12 1973	17	16	44	2.8	6	11	27	92	370	786
82	JANUARY	8 1966	14	16	14	.9	25	6	0	14	370	1871
83	JANUARY	11 1950	23	1	1	1.0	29	1	0	89	370	1681
84	NOVEMBER	27 1962	7	7	3	.4	9	1	3	172	369	1171
85	JANUARY	6 1966	21	7	9	1.3	13	2	0	101	367	1862
86	JANUARY	11 1953	14	9	46	5.1	6	12	34	56	366	1358
87	NOVEMBER	13 1968	17	1	10	10.0	12	10	0	45	365	916
88	JANUARY	20 1964	21	6	12	2.0	11	5	0	125	364	1804
89	NOVEMBER	21 1973	5	32	62	1.9	91	8	0	0	362	1192
90	OCTOBER	10 1955	17	8	26	3.3	14	10	0	252	362	362
91	MARCH	10 1957	1	3	22	7.3	9	18	3	115	362	2029
92	MARCH	9 1957	14	1	3	3.0	8	3	16	137	360	2026
93	NOVEMBER	13 1968	5	3	8	2.7	9	5	15	108	357	908
94	FEBRUARY	21 1968	3	11	45	4.1	9	8	8	207	356	2187
95	NOVEMBER	23 1953	1	6	44	7.3	6	11	35	136	356	844
96	NOVEMBER	30 1949	0	12	22	1.8	21	4	0	33	355	769
97	JANUARY	24 1950	8	12	4	.3	14	1	0	34	355	2175
98	NOVEMBER	21 1960	16	1	7	7.0	6	7	24	170	354	725
99	JANUARY	25 1972	3	24	19	.8	16	3	0	32	353	2164
100	OCTOBER	11 1955	12	6	16	2.7	13	7	0	131	353	388

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAG168

	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	JANUARY	18 1974	19	18	73	4.1	31	15	0	151	799	3709
2	DECEMBER	26 1964	7	19	65	3.4	8	11	18	115	784	1992
3	DECEMBER	25 1964	3	5	23	4.6	13	8	0	119	766	1969
4	DECEMBER	28 1964	1	32	40	1.3	11	9	0	88	764	2057
5	DECEMBER	24 1964	10	1	2	2.0	6	2	45	189	764	1967
6	JANUARY	20 1974	1	1	1	1.0	29	1	0	73	694	3782
7	DECEMBER	24 1964	3	12	90	7.5	10	19	9	303	674	1877
8	JANUARY	22 1953	17	28	50	1.8	23	5	0	230	641	2343
9	NOVEMBER	20 1950	7	1	2	2.0	6	2	17	25	639	1789
10	NOVEMBER	21 1950	1	5	6	1.2	14	4	0	27	632	1791
11	FEBRUARY	22 1949	17	54	166	3.1	32	16	0	108	628	3017
12	JANUARY	8 1956	1	5	8	1.6	11	2	0	187	622	3278
13	NOVEMBER	20 1950	0	8	25	3.1	42	8	0	23	614	1764
14	FEBRUARY	13 1961	10	18	44	2.4	8	7	1	88	587	2703
15	JANUARY	9 1956	10	6	16	2.7	28	4	0	12	583	3286
16	NOVEMBER	18 1973	14	1	5	5.0	47	5	0	0	582	1354
17	DECEMBER	18 1977	8	20	19	1.0	7	5	6	72	579	1614
18	FEBRUARY	12 1961	8	12	8	.7	8	3	18	289	579	2695
19	JANUARY	12 1959	23	1	1	1.0	7	1	2	141	566	2057
20	JANUARY	12 1959	14	1	2	2.0	11	2	0	142	564	2055
21	FEBRUARY	15 1961	16	33	94	2.8	20	20	0	45	563	2747
22	DECEMBER	17 1977	5	15	26	1.7	7	5	13	172	562	1588
23	FEBRUARY	11 1961	12	4	18	4.5	8	15	10	396	562	2677
24	DECEMBER	30 1964	5	46	78	1.7	6	10	1	40	559	2097
25	FEBRUARY	23 1968	23	1	10	10.0	14	10	0	81	552	2758
26	JANUARY	9 1956	19	2	2	1.0	7	1	13	24	549	3302
27	DECEMBER	16 1977	7	10	22	2.2	6	6	47	225	544	1566
28	JANUARY	29 1965	16	10	23	2.3	7	6	3	193	541	2964
29	JANUARY	24 1972	3	6	5	.8	10	2	8	47	539	2523
30	JANUARY	27 1953	3	62	222	3.6	44	20	0	8	534	2393
31	JANUARY	25 1972	7	14	19	1.4	13	4	0	47	533	2528
32	JANUARY	12 1950	10	7	5	.7	17	2	0	60	530	1911
33	JANUARY	10 1956	19	12	12	1.0	12	3	0	18	529	3304
34	JANUARY	23 1964	5	4	10	2.5	9	4	2	66	520	2222
35	NOVEMBER	25 1960	14	1	1	1.0	11	1	0	290	518	1213
36	DECEMBER	27 1955	1	46	216	4.7	27	14	0	33	509	2439
37	DECEMBER	27 1955	10	1	1	1.0	8	1	6	213	509	2655
38	DECEMBER	24 1972	16	11	20	1.8	8	8	31	138	508	1184
39	NOVEMBER	22 1973	1	14	61	4.4	6	16	29	171	505	1530
40	JANUARY	25 1964	21	46	213	4.6	18	15	0	60	503	2232
41	DECEMBER	10 1968	17	2	10	5.0	6	5	52	242	503	1789
42	JANUARY	1 1966	5	5	2	.4	11	1	0	73	501	1715
43	JANUARY	12 1959	3	17	135	7.9	6	17	4	120	500	1920
44	JANUARY	23 1972	12	17	42	2.5	19	12	0	71	500	2481
45	DECEMBER	11 1952	16	14	27	1.9	17	12	0	121	499	825
46	JANUARY	4 1966	16	74	311	4.2	8	24	1	51	498	1717
47	DECEMBER	22 1955	7	7	8	1.1	8	5	50	272	498	2379
48	DECEMBER	24 1955	1	35	52	1.5	6	13	7	220	497	2387
49	JANUARY	22 1964	17	19	52	2.7	7	19	4	33	497	2170
50	JANUARY	11 1959	3	8	7	.9	6	3	7	199	495	1913

OVERALL ORDER STATISTICS AT SALEM
SORTED BY MAG168

	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	APRIL 1 1963	17	1	5	5.0	20	5	0	16	489	2875
52	JANUARY 10 1959	14	2	7	3.5	6	4	36	246	488	1906
53	NOVEMBER 1 1950	21	16	52	3.3	6	14	9	70	483	1074
54	JANUARY 21 1964	14	11	14	1.3	10	3	6	137	483	2156
55	JANUARY 22 1972	0	7	18	2.6	12	5	0	326	482	2463
56	MARCH 31 1963	19	3	7	2.3	8	5	1	174	482	2868
57	JANUARY 20 1953	14	14	230	16.4	10	46	10	165	480	2113
58	APRIL 3 1963	7	7	12	1.7	32	3	0	5	480	2880
59	JANUARY 20 1964	17	4	11	2.8	8	5	8	205	477	2145
60	FEBRUARY 17 1961	14	21	22	1.0	25	5	0	84	476	2841
61	DECEMBER 23 1972	21	18	103	5.7	9	24	6	127	476	1081
62	FEBRUARY 23 1968	7	35	82	2.3	6	15	6	91	475	2676
63	NOVEMBER 21 1973	5	33	171	5.2	30	15	0	5	474	1359
64	OCTOBER 31 1950	23	9	22	2.4	12	7	0	78	473	1052
65	DECEMBER 17 1973	12	18	72	4.0	6	16	55	182	472	2419
66	JANUARY 13 1969	12	4	4	1.0	10	1	10	67	470	2879
67	DECEMBER 21 1973	17	1	4	4.0	7	4	3	193	467	2698
68	JANUARY 14 1969	7	12	32	2.7	6	9	4	61	462	2883
69	JANUARY 15 1953	0	22	71	3.2	7	18	6	120	460	1633
70	JANUARY 13 1950	15	12	69	5.8	16	12	0	8	460	1916
71	DECEMBER 23 1957	14	9	10	1.1	23	6	0	83	459	1343
72	DECEMBER 23 1973	3	27	17	.6	7	2	4	155	455	2702
73	JANUARY 6 1966	19	8	26	3.3	16	7	0	104	451	2117
74	JANUARY 30 1965	16	8	5	.6	16	3	0	54	449	2987
75	DECEMBER 12 1952	2	2	2	1.0	9	1	1	67	449	852
76	DECEMBER 21 1973	10	43	207	4.8	50	15	0	0	448	2491
77	JANUARY 29 1954	16	23	43	1.9	16	7	0	232	448	2739
78	DECEMBER 24 1957	21	21	27	1.3	10	5	1	27	446	1353
79	APRIL 3 1963	23	6	10	1.7	9	4	5	12	445	2892
80	JANUARY 19 1951	19	1	1	1.0	11	1	0	105	445	3336
81	JANUARY 27 1970	19	171	592	3.5	7	34	19	114	444	2398
82	NOVEMBER 16 1973	14	90	470	5.2	6	35	4	150	442	884
83	JANUARY 7 1956	8	29	180	6.2	29	18	7	109	442	3098
84	JANUARY 8 1966	17	1	3	3.0	13	3	0	34	438	2164
85	FEBRUARY 29 1976	1	1	1	1.0	10	1	5	101	438	3002
86	FEBRUARY 26 1956	17	7	14	2.0	19	5	0	53	437	4464
87	JANUARY 5 1966	19	17	89	5.2	11	10	0	181	434	2028
88	DECEMBER 23 1961	8	4	34	8.5	8	18	1	8	433	1335
89	JANUARY 20 1970	8	10	37	3.7	6	15	32	141	432	2361
90	FEBRUARY 28 1976	14	7	6	.9	7	5	6	115	432	2996
91	DECEMBER 22 1961	21	1	1	1.0	37	1	0	21	432	1334
92	DECEMBER 8 1966	3	4	9	2.3	8	3	2	89	431	1225
93	JANUARY 12 1969	23	11	57	5.2	21	9	0	70	428	2822
94	JANUARY 8 1966	3	5	21	4.2	26	10	0	26	428	2143
95	DECEMBER 11 1968	14	13	33	2.5	8	10	10	252	426	1799
96	FEBRUARY 28 1976	1	1	6	6.0	9	6	1	131	426	2990
97	FEBRUARY 18 1954	8	1	1	1.0	6	1	21	64	426	3213
98	JANUARY 19 1970	17	14	75	5.4	6	16	11	117	424	2286
99	DECEMBER 6 1951	7	5	9	1.8	6	3	3	152	423	1751
100	DECEMBER 28 1972	1	46	101	2.2	36	10	0	20	421	1204

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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	DECEMBER 30 1964	16	92	299	3.3	12	14	0	192	1262	2972
2	DECEMBER 26 1964	7	17	143	8.4	8	48	25	242	1245	2829
3	DECEMBER 25 1964	7	10	49	4.9	19	18	0	228	1208	2780
4	JANUARY 19 1974	17	1	1	1.0	19	1	0	101	1031	4568
5	DECEMBER 27 1955	16	7	5	.7	6	2	15	382	1030	3286
6	JANUARY 6 1966	19	12	19	1.6	7	5	83	250	1023	2650
7	DECEMBER 24 1964	1	11	193	17.5	6	41	23	467	1015	2587
8	JANUARY 18 1974	21	21	101	4.8	23	19	0	242	1000	4467
9	DECEMBER 23 1955	19	1	6	6.0	9	6	1	66	974	2850
10	DECEMBER 27 1955	3	46	430	9.3	34	26	0	10	936	2856
11	JANUARY 20 1974	17	2	3	1.5	22	2	0	11	919	4569
12	JANUARY 8 1966	8	11	32	2.9	27	7	0	52	914	2669
13	DECEMBER 23 1957	17	6	6	1.0	30	2	0	99	888	1613
14	JANUARY 4 1966	16	2	34	17.0	7	22	20	469	870	2400
15	JANUARY 6 1966	0	18	216	12.0	14	36	0	390	862	2434
16	JANUARY 24 1964	0	25	39	1.6	10	7	18	48	857	2558
17	DECEMBER 24 1957	17	16	34	2.1	9	8	4	18	850	1619
18	JANUARY 25 1972	7	13	32	2.5	27	16	0	79	822	3429
19	JANUARY 21 1964	14	2	9	4.5	6	5	2	175	821	2549
20	JANUARY 21 1964	5	2	2	1.0	6	1	7	294	819	2547
21	DECEMBER 18 1977	10	1	1	1.0	28	1	0	114	819	2453
22	JANUARY 27 1970	19	1	1	1.0	6	1	7	185	789	3263
23	JANUARY 23 1972	16	24	88	3.7	8	16	1	223	765	3341
24	JANUARY 25 1964	3	23	111	4.8	29	16	2	33	745	2597
25	NOVEMBER 16 1973	19	7	7	1.0	9	3	26	277	742	1595
26	FEBRUARY 13 1961	16	22	43	2.0	14	5	0	135	729	3043
27	FEBRUARY 15 1961	10	19	88	4.6	8	32	2	46	729	3089
28	FEBRUARY 14 1961	7	6	3	.5	10	2	5	49	726	3086
29	JANUARY 9 1976	5	12	17	1.4	12	7	0	392	725	2853
30	DECEMBER 26 1957	7	16	87	5.4	22	32	0	34	719	1653
31	FEBRUARY 12 1961	3	4	11	2.8	10	5	14	369	718	3032
32	JANUARY 10 1976	19	2	2	1.0	36	1	0	17	712	2870
33	NOVEMBER 21 1950	6	2	10	5.0	25	9	0	30	703	2047
34	JANUARY 12 1976	5	27	93	3.4	8	20	2	4	702	2872
35	FEBRUARY 11 1961	14	4	28	7.0	9	11	41	532	702	3004
36	NOVEMBER 17 1973	19	2	2	1.0	23	1	0	77	699	1602
37	OCTOBER 31 1950	21	8	6	.8	17	2	0	105	693	1259
38	NOVEMBER 20 1950	2	5	29	5.8	6	10	1	52	684	2018
39	NOVEMBER 19 1950	16	1	1	1.0	34	1	0	102	683	2017
40	NOVEMBER 28 1961	10	10	8	.8	6	6	7	33	682	1253
41	DECEMBER 23 1972	5	1	1	1.0	14	1	0	150	654	1279
42	NOVEMBER 17 1966	19	4	2	.5	35	1	0	56	653	930
43	NOVEMBER 27 1961	17	27	33	1.2	56	8	0	0	649	1220
44	JANUARY 27 1970	12	42	185	4.4	6	18	40	275	648	3078
45	JANUARY 20 1971	1	33	143	4.3	8	16	7	170	645	3249
46	DECEMBER 23 1972	21	9	95	10.6	6	23	1	118	644	1280
47	OCTOBER 30 1950	19	20	56	2.8	6	15	58	378	641	1203
48	NOVEMBER 10 1973	19	5	38	7.6	6	18	14	108	634	880
49	DECEMBER 6 1975	21	28	96	3.4	26	11	0	299	631	1756
50	NOVEMBER 29 1977	3	3	27	9.0	31	15	0	34	629	1172

OVERALL ORDER STATISTICS AT EUGENE
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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	NOVEMBER	27 1977	17	18	38	2.1	27	10	0	249	628	1134
52	JANUARY	26 1972	21	2	2	1.0	35	1	0	32	622	3461
53	JANUARY	14 1969	7	12	38	3.2	21	17	0	120	613	3184
54	NOVEMBER	11 1973	17	14	112	8.0	7	34	38	78	612	918
55	NOVEMBER	10 1973	8	11	26	2.4	6	6	3	219	611	854
56	JANUARY	21 1971	16	8	3	.4	30	1	0	76	608	3392
57	JANUARY	30 1970	3	7	17	2.4	48	5	0	0	604	3264
58	NOVEMBER	16 1973	3	56	377	6.7	8	33	14	188	595	1218
59	APRIL	3 1974	10	1	2	2.0	7	2	2	68	588	6904
60	JANUARY	29 1965	10	3	3	1.0	7	2	4	240	585	4251
61	NOVEMBER	12 1973	17	18	112	6.2	6	19	48	174	584	1030
62	DECEMBER	24 1972	16	9	88	9.8	10	20	21	102	573	1375
63	NOVEMBER	13 1973	10	10	76	7.6	8	22	5	224	569	1142
64	NOVEMBER	4 1950	0	22	52	2.4	6	7	0	2	565	1265
65	JANUARY	10 1966	14	3	18	6.0	50	8	0	0	565	2701
66	JANUARY	13 1976	7	16	13	.8	9	4	19	95	561	2965
67	DECEMBER	11 1971	7	1	3	3.0	9	3	2	143	560	1876
68	JANUARY	15 1969	19	22	59	2.7	14	13	0	38	549	3222
69	DECEMBER	10 1966	7	24	79	3.3	27	6	0	89	548	1718
70	OCTOBER	25 1979	3	9	70	7.8	11	17	0	22	548	578
71	APRIL	3 1974	1	42	69	1.6	9	11	13	49	543	6835
72	APRIL	3 1963	0	3	8	2.7	62	5	0	0	540	3069
73	DECEMBER	22 1972	14	19	117	6.2	8	21	33	170	538	1162
74	OCTOBER	24 1979	7	7	11	1.6	18	3	0	23	537	567
75	JANUARY	31 1954	10	4	4	1.0	47	2	0	0	537	2927
76	DECEMBER	12 1971	19	29	120	4.1	7	17	3	130	535	1879
77	APRIL	3 1963	7	1	2	2.0	6	2	8	8	531	3077
78	FEBRUARY	17 1961	14	16	24	1.5	36	6	0	30	528	3177
79	FEBRUARY	17 1958	17	17	28	1.6	9	9	3	294	527	3451
80	OCTOBER	23 1979	5	3	10	3.3	6	4	1	13	527	557
81	NOVEMBER	22 1973	3	15	25	1.7	7	11	43	242	525	1846
82	OCTOBER	22 1979	21	8	8	1.0	6	4	5	7	519	549
83	NOVEMBER	30 1977	17	4	2	.5	34	1	0	27	518	1199
84	MARCH	4 1972	14	11	12	1.1	31	4	0	96	517	4420
85	DECEMBER	17 1977	5	77	459	6.0	6	23	71	326	514	1994
86	OCTOBER	22 1979	7	3	5	1.7	35	3	0	138	514	544
87	DECEMBER	3 1964	1	5	4	.8	14	2	0	137	509	1309
88	DECEMBER	21 1972	12	4	33	8.3	6	20	37	160	505	1129
89	MARCH	31 1974	23	13	49	3.8	26	14	0	190	504	6786
90	NOVEMBER	19 1966	12	9	116	12.9	32	29	0	2	504	932
91	JANUARY	22 1971	7	1	1	1.0	15	1	0	3	504	3395
92	JANUARY	18 1971	8	50	299	6.0	9	34	9	174	501	2950
93	DECEMBER	21 1961	10	24	141	5.9	15	35	0	138	498	1911
94	JANUARY	17 1969	7	15	78	5.2	21	26	0	59	495	3281
95	JANUARY	16 1959	10	14	66	4.7	91	9	0	0	495	2184
96	JANUARY	12 1969	23	14	120	8.6	24	15	0	197	493	3064
97	JANUARY	1 1965	3	1	1	1.0	11	1	0	119	491	3271
98	FEBRUARY	20 1949	23	9	8	.9	36	2	0	6	487	2680
99	APRIL	3 1963	21	1	2	2.0	13	2	0	10	486	3079
100	FEBRUARY	19 1949	1	3	4	1.3	7	2	19	319	483	2676

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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	MAY	24 1974	21	6	12	2.0	7	4	24	42	70	4677
2	MAY	24 1974	8	10	42	4.2	101	10	0	0	28	4635
3	MAY	19 1974	17	2	2	1.0	24	1	0	26	86	4633
4	MAY	18 1974	16	11	26	2.4	34	7	0	15	64	4607
5	MAY	16 1974	19	1	10	10.0	7	10	5	31	71	4597
6	MAY	30 1956	23	4	28	7.0	101	12	0	0	37	4591
7	MAY	16 1974	10	24	31	1.3	24	8	0	19	51	4566
8	MAY	26 1956	14	6	37	6.2	180	21	0	0	0	4554
9	MAY	18 1956	19	1	3	3.0	148	3	0	0	8	4551
10	MAY	12 1956	14	2	2	1.0	16	1	0	25	130	4549
11	MAY	14 1974	10	17	19	1.1	29	12	0	4	32	4547
12	MAY	12 1974	12	2	4	2.0	29	2	0	14	28	4543
13	MAY	11 1974	5	9	14	1.6	9	4	1	14	14	4529
14	MAY	10 1974	12	9	3	.3	8	1	9	11	11	4526
15	MAY	11 1956	21	8	24	3.0	8	10	1	68	137	4525
16	MAY	11 1956	5	1	1	1.0	15	1	0	67	146	4524
17	MAY	10 1956	12	1	6	6.0	6	6	16	61	149	4518
18	MAY	9 1974	19	5	11	2.2	295	4	0	0	0	4515
19	APRIL	27 1974	7	1	1	1.0	12	1	0	15	37	4514
20	APRIL	26 1974	17	2	10	5.0	9	8	1	9	30	4504
21	APRIL	26 1974	7	1	1	1.0	21	1	0	15	31	4503
22	MAY	10 1956	5	5	16	3.2	6	9	45	45	133	4502
23	APRIL	25 1974	8	6	8	1.3	19	2	0	14	23	4495
24	APRIL	24 1974	7	2	7	3.5	21	5	0	11	16	4488
25	APRIL	23 1974	8	8	11	1.4	75	5	0	0	5	4477
26	APRIL	19 1974	21	6	5	.8	191	2	0	0	0	4472
27	APRIL	11 1974	17	11	11	1.0	6	8	3	12	74	4461
28	APRIL	11 1974	0	3	3	1.0	24	2	0	34	71	4458
29	MAY	9 1956	19	3	45	15.0	43	30	0	38	88	4457
30	APRIL	9 1974	21	23	34	1.5	6	8	1	1	55	4424
31	APRIL	8 1974	16	1	1	1.0	46	1	0	2	60	4423
32	APRIL	6 1974	17	2	2	1.0	15	1	0	7	108	4421
33	APRIL	6 1974	0	1	1	1.0	8	1	6	33	172	4420
34	MAY	7 1956	21	2	38	19.0	61	30	0	0	50	4419
35	MAY	5 1956	5	4	3	.8	10	1	28	47	62	4416
36	APRIL	5 1974	14	4	6	1.5	19	3	0	32	168	4414
37	APRIL	4 1974	16	8	27	3.4	13	9	0	9	178	4387
38	APRIL	3 1974	19	5	5	1.0	14	4	0	19	263	4382
39	APRIL	3 1974	0	9	4	.4	9	1	1	55	306	4378
40	MAY	4 1956	16	4	38	9.5	17	23	0	9	24	4378
41	MAY	3 1956	19	3	9	3.0	121	4	0	0	35	4369
42	APRIL	28 1956	14	4	15	3.8	26	13	0	20	20	4354
43	APRIL	2 1974	5	30	39	1.3	6	6	26	85	275	4339
44	APRIL	27 1956	8	7	20	2.9	479	4	0	0	0	4334
45	APRIL	7 1956	3	7	9	1.3	56	3	0	0	14	4325
46	APRIL	4 1956	12	1	3	3.0	46	3	0	4	53	4322
47	APRIL	2 1956	12	2	4	2.0	16	2	0	5	51	4318
48	APRIL	1 1956	19	1	2	2.0	27	2	0	5	64	4316
49	MARCH	31 1974	17	5	26	5.2	27	10	0	67	249	4313
50	MARCH	31 1956	14	1	3	3.0	8	3	2	24	119	4313

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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	MARCH	31 1956	5	2	2	1.0	10	1	6	22	134	4311
52	MARCH	30 1956	17	16	22	1.4	21	7	0	20	149	4289
53	MARCH	29 1956	5	1	1	1.0	6	1	19	19	155	4288
54	MARCH	28 1956	21	3	19	6.3	51	12	0	0	136	4269
55	MARCH	26 1956	16	12	11	.9	8	3	13	81	181	4258
56	MARCH	30 1974	10	13	67	5.2	13	12	0	112	182	4246
57	MARCH	25 1956	19	8	25	3.1	6	9	10	93	156	4233
58	MARCH	29 1974	7	6	21	3.5	12	7	0	144	161	4225
59	MARCH	25 1956	5	40	93	2.3	12	6	0	8	63	4140
60	MAY	28 1951	13	2	8	4.0	19	5	0	3	18	4138
61	MAY	27 1951	16	1	3	3.0	71	3	0	0	15	4135
62	MARCH	23 1956	1	4	6	1.5	9	3	1	37	57	4134
63	MAY	24 1951	16	1	2	2.0	26	2	0	13	13	4133
64	MARCH	22 1956	12	1	1	1.0	20	1	0	49	56	4133
65	MAY	23 1951	13	7	11	1.6	6	4	2	2	2	4122
66	MAY	23 1951	0	1	2	2.0	256	2	0	0	0	4120
67	MAY	12 1951	7	1	1	1.0	11	1	0	21	78	4119
68	MAY	11 1951	18	7	7	1.0	9	3	6	14	71	4112
69	MAY	11 1951	2	8	14	1.8	89	5	0	0	110	4098
70	MARCH	21 1956	16	32	56	1.8	261	9	0	0	0	4077
71	MARCH	28 1974	14	38	153	4.0	38	20	0	8	8	4072
72	MARCH	9 1956	10	5	5	1.0	29	4	0	34	176	4072
73	MARCH	25 1974	10	4	8	2.0	207	3	0	0	0	4064
74	MARCH	16 1974	14	15	16	1.1	18	5	0	50	166	4048
75	MAY	7 1951	1	17	57	3.4	46	13	0	10	73	4041
76	MARCH	8 1956	1	10	34	3.4	52	9	0	0	153	4038
77	MARCH	5 1956	10	14	30	2.1	13	13	0	82	146	4008
78	MARCH	15 1974	5	31	52	1.7	16	4	0	58	116	3996
79	MAY	4 1951	10	10	53	5.3	58	15	0	0	131	3988
80	MAY	1 1951	15	5	15	3.0	6	8	2	5	116	3973
81	MAY	1 1951	3	1	2	2.0	24	2	0	3	114	3971
82	APRIL	30 1951	2	1	1	1.0	11	1	0	62	113	3970
83	APRIL	29 1951	15	3	2	.7	19	1	0	96	111	3968
84	MARCH	13 1974	7	16	30	1.9	8	5	17	65	89	3966
85	MAY	29 1961	21	4	4	1.0	58	1	0	0	57	3943
86	MARCH	12 1974	7	12	49	4.1	19	14	0	32	87	3917
87	MARCH	4 1956	7	37	106	2.9	8	15	1	17	54	3902
88	MAY	27 1961	7	23	46	2.0	65	10	0	0	72	3897
89	MAY	23 1961	14	1	2	2.0	14	2	0	9	70	3895
90	MARCH	2 1956	10	20	16	.8	16	3	0	3	56	3886
91	MAY	23 1961	0	5	9	1.8	39	3	0	27	61	3886
92	MARCH	11 1974	0	16	32	2.0	25	6	0	3	57	3885
93	FEBRUARY	29 1956	23	1	1	1.0	21	1	0	18	60	3885
94	FEBRUARY	29 1956	1	3	2	.7	8	1	7	21	62	3883
95	MARCH	9 1974	5	1	3	3.0	32	3	0	2	73	3882
96	MARCH	7 1974	21	4	2	.5	25	1	0	3	108	3880
97	MARCH	6 1974	16	2	2	1.0	15	1	0	48	210	3878
98	MARCH	5 1974	23	1	1	1.0	7	1	20	47	212	3877
99	FEBRUARY	28 1956	14	9	16	1.8	7	5	2	15	83	3867
100	FEBRUARY	27 1956	21	11	5	.5	18	2	0	13	161	3862

OVERALL ORDER STATISTICS AT SALEM
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	DATE EVENT ENDED	HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	MAY 24 1974	17	1	1	1.0	11	1	0	12	22	5587
2	MAY 24 1974	5	5	12	2.4	102	6	0	0	10	5575
3	MAY 19 1974	19	3	6	2.0	27	4	0	4	60	5569
4	MAY 18 1974	12	4	4	1.0	42	2	0	6	56	5565
5	MAY 16 1974	14	2	6	3.0	9	4	3	16	61	5559
6	MAY 16 1974	3	2	3	1.5	11	2	0	47	58	5556
7	MAY 15 1974	14	6	13	2.2	23	5	0	34	45	5543
8	MAY 14 1974	10	4	34	8.5	68	15	0	0	11	5509
9	MAY 11 1974	10	4	10	2.5	7	7	1	1	1	5499
10	MAY 10 1974	23	1	1	1.0	377	1	0	0	0	5498
11	APRIL 25 1974	5	3	3	1.0	24	2	0	2	22	5495
12	APRIL 24 1974	1	1	1	1.0	16	1	0	10	21	5494
13	APRIL 23 1974	8	15	10	.7	63	4	0	0	11	5484
14	APRIL 20 1974	3	1	1	1.0	8	1	9	10	10	5483
15	APRIL 19 1974	17	4	9	2.3	9	6	1	1	1	5474
16	APRIL 19 1974	5	1	1	1.0	183	1	0	0	0	5473
17	APRIL 11 1974	12	9	19	2.1	7	8	1	5	63	5454
18	APRIL 10 1974	21	1	1	1.0	30	1	0	31	62	5453
19	APRIL 9 1974	14	3	4	1.3	9	2	14	29	67	5449
20	APRIL 9 1974	1	6	27	4.5	45	9	0	3	42	5422
21	APRIL 8 1974	0	7	8	1.1	11	4	0	10	75	5414
22	APRIL 6 1974	5	2	3	1.5	6	2	1	20	123	5411
23	APRIL 5 1974	21	1	1	1.0	8	1	2	19	175	5410
24	APRIL 5 1974	12	1	2	2.0	26	2	0	20	188	5408
25	APRIL 4 1974	10	4	17	4.3	14	7	0	10	248	5391
26	APRIL 3 1974	16	2	3	1.5	11	2	0	9	390	5388
27	APRIL 3 1974	3	1	1	1.0	9	1	2	36	413	5387
28	APRIL 2 1974	17	15	7	.5	7	2	1	52	421	5380
29	APRIL 1 1974	19	1	1	1.0	6	1	19	51	420	5379
30	APRIL 1 1974	12	26	51	2.0	21	9	0	108	382	5328
31	MAY 30 1956	23	7	46	6.6	97	15	0	0	11	5255
32	MAY 26 1956	14	7	11	1.6	323	5	0	0	0	5244
33	MAY 12 1956	21	2	15	7.5	25	13	0	18	69	5229
34	MARCH 30 1974	12	18	108	6.0	11	20	0	204	274	5220
35	MAY 11 1956	17	7	18	2.6	18	10	0	22	62	5211
36	MAY 10 1956	17	1	1	1.0	11	1	0	21	63	5210
37	MAY 10 1956	5	4	21	5.3	48	6	0	0	49	5189
38	MARCH 29 1974	7	7	40	5.7	12	10	0	212	234	5180
39	MAY 8 1956	1	5	9	1.8	25	3	0	20	40	5180
40	MAY 6 1956	19	1	1	1.0	10	1	8	24	39	5179
41	MAY 6 1956	7	5	19	3.8	18	7	0	13	20	5160
42	MAY 5 1956	8	10	5	.5	7	3	6	15	24	5155
43	MAY 4 1956	16	6	8	1.3	17	4	0	7	16	5147
44	MAY 3 1956	17	8	7	.9	115	2	0	0	9	5140
45	APRIL 28 1956	14	6	9	1.5	303	6	0	0	0	5131
46	APRIL 15 1956	17	1	1	1.0	105	1	0	0	38	5130
47	APRIL 11 1956	7	13	38	2.9	85	7	0	0	15	5092
48	APRIL 7 1956	5	6	15	2.5	141	7	0	0	27	5077
49	APRIL 1 1956	1	47	71	1.5	29	8	0	11	140	5006
50	MARCH 28 1956	21	3	11	3.7	53	6	0	0	155	4995

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	DATE EVENT ENDED			HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	MARCH	28	1974	12	39	221	5.7	37	27	0	13	13	4959
52	MARCH	25	1974	8	6	13	2.2	203	5	0	0	0	4946
53	MARCH	16	1974	16	5	33	6.6	11	14	0	47	277	4913
54	MARCH	16	1974	0	1	1	1.0	19	1	0	85	277	4912
55	MARCH	26	1956	14	50	100	2.0	7	9	18	42	121	4895
56	MARCH	24	1956	5	7	25	3.6	6	6	4	23	96	4870
57	MAY	23	1951	13	7	19	2.7	6	4	10	10	10	4868
58	MARCH	23	1956	16	3	4	1.3	12	2	0	47	92	4866
59	MAY	23	1951	0	2	10	5.0	235	6	0	0	0	4858
60	MARCH	23	1956	1	14	14	1.0	8	4	5	72	78	4852
61	MARCH	22	1956	3	15	36	2.4	12	9	0	38	42	4816
62	MARCH	15	1974	3	33	98	3.0	12	11	0	133	179	4814
63	MAY	13	1951	2	27	66	2.4	8	11	1	32	133	4792
64	MAY	11	1951	16	6	13	2.2	8	10	11	19	122	4779
65	MARCH	21	1956	0	16	38	2.4	23	8	0	4	4	4778
66	MARCH	19	1956	8	2	4	2.0	153	3	0	0	1	4774
67	MARCH	12	1956	21	1	1	1.0	80	1	0	0	84	4773
68	MAY	11	1951	1	7	19	2.7	98	7	0	0	114	4760
69	MARCH	9	1956	12	4	16	4.0	15	9	0	68	215	4757
70	MARCH	8	1956	17	2	2	1.0	11	1	0	66	251	4755
71	MARCH	8	1956	5	18	66	3.7	42	15	0	9	205	4689
72	MARCH	13	1974	7	38	141	3.7	19	15	0	37	84	4673
73	MARCH	5	1956	17	30	29	1.0	7	5	25	118	191	4660
74	MAY	6	1951	16	22	101	4.6	22	12	0	13	37	4659
75	MAY	4	1951	21	4	2	.5	14	1	0	16	88	4657
76	MAY	4	1951	2	2	11	5.5	6	10	1	5	106	4646
77	MAY	3	1951	18	1	1	1.0	14	1	0	4	105	4645
78	MAY	3	1951	3	8	4	.5	29	1	0	3	101	4641
79	MAY	1	1951	15	1	1	1.0	6	1	2	11	100	4640
80	MAY	1	1951	8	5	2	.4	6	1	3	11	98	4638
81	MARCH	10	1974	21	17	37	2.2	23	7	0	1	51	4636
82	MARCH	9	1974	5	1	1	1.0	85	1	0	0	50	4635
83	APRIL	30	1951	21	8	9	1.1	23	5	0	7	89	4629
84	APRIL	29	1951	14	1	1	1.0	8	1	6	72	88	4628
85	APRIL	29	1951	5	3	6	2.0	13	5	0	82	82	4622
86	APRIL	28	1951	13	4	20	5.0	6	11	20	62	62	4602
87	MARCH	5	1974	16	19	46	2.4	8	8	1	4	192	4589
88	MARCH	4	1974	12	1	1	1.0	21	1	0	3	199	4588
89	MARCH	3	1974	14	2	3	1.5	33	2	0	10	214	4585
90	MARCH	2	1974	3	29	31	1.1	16	7	0	93	186	4554
91	MARCH	4	1956	3	33	117	3.5	6	13	1	58	96	4543
92	APRIL	28	1951	2	19	62	3.3	668	7	0	0	0	4540
93	MARCH	30	1951	11	7	6	.9	7	3	1	19	25	4534
94	MARCH	29	1951	22	21	19	.9	86	4	0	0	6	4515
95	MARCH	25	1951	10	4	6	1.5	90	2	0	0	5	4509
96	MARCH	21	1951	13	2	2	1.0	14	1	0	3	60	4507
97	MARCH	20	1951	21	4	3	.8	111	2	0	0	57	4504
98	MARCH	2	1956	12	28	58	2.1	18	6	0	5	116	4485
99	FEBRUARY	29	1956	14	5	2	.4	22	1	0	5	126	4483
100	MAY	29	1961	17	3	5	1.7	56	3	0	0	55	4483

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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
1	MAY	24 1974	5	7	4	.6	100	1	0	0	27	7190
2	MAY	19 1974	19	4	5	1.3	45	4	0	22	91	7185
3	MAY	17 1974	17	2	22	11.0	25	21	0	33	78	7163
4	MAY	16 1974	14	33	47	1.4	18	14	0	22	34	7116
5	MAY	14 1974	12	3	22	7.3	45	13	0	2	12	7094
6	MAY	12 1974	12	1	2	2.0	24	2	0	7	10	7092
7	MAY	11 1974	10	5	7	1.4	37	4	0	3	3	7085
8	MAY	9 1974	17	1	3	3.0	353	3	0	0	0	7082
9	APRIL	31 1974	0	3	19	6.3	18	10	0	0	30	7063
10	APRIL	24 1974	3	6	30	5.0	12	16	0	25	33	7033
11	APRIL	23 1974	8	10	25	2.5	80	14	0	0	8	7008
12	APRIL	19 1974	14	2	8	4.0	95	4	0	0	9	7000
13	APRIL	15 1974	14	4	9	2.3	93	4	0	0	67	6991
14	APRIL	11 1974	12	4	8	2.0	27	4	0	10	67	6983
15	APRIL	10 1974	5	1	4	4.0	14	4	0	55	75	6979
16	APRIL	9 1974	14	3	6	2.0	12	5	0	49	90	6973
17	APRIL	9 1974	0	6	49	8.2	47	16	0	0	61	6924
18	APRIL	6 1974	19	1	1	1.0	8	1	2	7	137	6923
19	APRIL	6 1974	10	1	2	2.0	18	2	0	5	135	6921
20	APRIL	5 1974	14	3	5	1.7	29	3	0	10	320	6916
21	APRIL	4 1974	7	2	10	5.0	19	7	0	36	425	6906
22	APRIL	3 1974	10	1	2	2.0	7	2	2	68	588	6904
23	APRIL	3 1974	1	42	69	1.6	9	11	13	49	543	6835
24	MARCH	31 1974	23	13	49	3.8	26	14	0	190	504	6786
25	MARCH	30 1974	7	15	190	12.7	9	36	20	238	314	6596
26	MARCH	29 1974	7	8	52	6.5	9	18	6	241	262	6544
27	MARCH	28 1974	14	41	252	6.1	39	27	0	10	10	6292
28	MARCH	25 1974	7	5	10	2.0	202	4	0	0	0	6282
29	MARCH	16 1974	16	8	19	2.4	35	9	0	91	449	6263
30	MARCH	14 1974	21	31	218	7.0	10	20	16	189	236	6045
31	MARCH	13 1974	3	14	48	3.4	7	11	65	181	240	5997
32	MARCH	12 1974	7	25	147	5.9	8	35	23	36	157	5850
33	MARCH	10 1974	21	6	34	5.7	6	16	2	2	123	5816
34	MARCH	10 1974	10	2	2	1.0	62	1	0	0	121	5814
35	MARCH	7 1974	17	2	5	2.5	42	4	0	39	225	5809
36	MAY	22 1972	3	2	6	3.0	14	4	0	17	288	5757
37	MAY	21 1972	12	2	5	2.5	6	3	1	12	283	5752
38	MAY	21 1972	3	1	1	1.0	7	1	11	11	282	5751
39	MAY	20 1972	19	3	11	3.7	56	5	0	0	271	5740
40	MAY	18 1972	8	6	6	1.0	22	2	0	224	265	5734
41	MARCH	5 1974	21	18	116	6.4	69	16	0	0	329	5693
42	MAY	30 1956	19	4	34	8.5	94	21	0	0	24	5671
43	MAY	26 1956	17	9	24	2.7	342	7	0	0	0	5647
44	MAY	12 1956	1	2	2	1.0	8	1	4	31	125	5645
45	MAY	11 1956	16	1	4	4.0	32	4	0	27	123	5641
46	MAY	10 1956	7	6	27	4.5	46	11	0	1	124	5614
47	MAY	8 1956	3	3	2	.7	21	1	0	84	122	5612
48	MARCH	2 1974	7	36	109	3.0	12	14	0	114	285	5584
49	MAY	7 1956	3	8	84	10.5	19	30	0	10	38	5528
50	MAY	6 1956	0	2	6	3.0	18	4	0	22	32	5522

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	DATE EVENT ENDED		HOUR	DURATION (HOURS)	MAGNITUDE (IN X 100)	AVERAGE INTENSITY (IN/HR X 100)	HOURS SINCE LAST EVENT	MAXIMUM INTENSITY (IN/HR X 100)	MAGNITUDE LAST 12 HRS (IN X 100)	MAGNITUDE LAST 48 HRS (IN X 100)	MAGNITUDE LAST 168 HRS (IN X 100)	MAGNITUDE YEAR SO FAR (IN X 100)
51	MAY	5 1956	3	5	4	.8	12	2	0	28	28	5518
52	MAY	4 1956	10	4	18	4.5	20	9	0	10	10	5500
53	MAY	3 1956	10	4	10	2.5	418	7	0	0	0	5490
54	FEBRUARY	28 1974	7	19	103	5.4	11	26	0	131	222	5481
55	APRIL	15 1956	19	3	9	3.0	93	4	0	0	63	5481
56	APRIL	11 1956	19	2	2	1.0	14	1	0	61	84	5479
57	MAY	17 1972	5	32	263	8.2	7	31	2	2	2	5471
58	MAY	15 1972	14	1	2	2.0	406	2	0	0	0	5469
59	MAY	30 1971	21	2	8	4.0	29	6	0	1	81	5455
60	MAY	29 1971	14	1	1	1.0	76	1	0	0	80	5454
61	APRIL	28 1972	14	9	20	2.2	6	9	5	5	27	5449
62	APRIL	28 1972	0	4	5	1.3	84	2	0	0	36	5444
63	APRIL	24 1972	7	12	22	1.8	62	6	0	0	14	5422
64	APRIL	11 1956	3	9	61	6.8	81	13	0	0	23	5418
65	APRIL	21 1972	5	4	14	3.5	104	6	0	0	48	5408
66	APRIL	16 1972	17	7	5	.7	12	3	0	43	132	5403
67	APRIL	7 1956	10	11	23	2.1	126	12	0	0	14	5395
68	APRIL	1 1956	17	1	2	2.0	26	2	0	30	145	5393
69	MAY	26 1971	8	19	79	4.2	14	12	0	1	30	5375
70	MAY	25 1971	0	1	1	1.0	100	1	0	0	29	5374
71	APRIL	15 1972	23	7	43	6.1	65	13	0	0	106	5360
72	FEBRUARY	27 1974	1	23	131	5.7	15	20	0	8	102	5350
73	MAY	20 1971	19	11	29	2.6	99	8	0	0	65	5345
74	FEBRUARY	25 1974	10	10	8	.8	56	3	0	0	294	5342
75	MARCH	31 1956	14	31	60	1.9	34	6	0	1	106	5333
76	MARCH	28 1956	21	1	1	1.0	45	1	0	12	111	5332
77	MAY	16 1971	5	13	65	5.0	68	14	0	0	22	5280
78	APRIL	12 1972	23	24	84	3.5	20	23	0	5	315	5276
79	APRIL	11 1972	3	4	5	1.3	43	2	0	4	332	5271
80	FEBRUARY	22 1974	17	38	83	2.2	32	15	0	11	419	5259
81	MAY	12 1971	19	4	22	5.5	197	14	0	0	0	5258
82	FEBRUARY	19 1974	19	1	1	1.0	6	1	10	224	444	5258
83	APRIL	9 1972	3	8	17	2.1	13	5	0	140	336	5254
84	MAY	4 1971	10	2	6	3.0	230	4	0	0	0	5252
85	FEBRUARY	19 1974	12	6	10	1.7	8	5	38	214	437	5248
86	MARCH	28 1956	0	43	94	2.2	18	12	13	38	62	5238
87	APRIL	24 1971	19	7	15	2.1	24	8	0	6	41	5237
88	APRIL	23 1971	12	1	2	2.0	6	2	4	11	87	5235
89	APRIL	23 1971	5	5	4	.8	16	2	0	7	84	5231
90	MARCH	24 1956	10	5	11	2.2	49	4	0	0	24	5227
91	APRIL	22 1971	7	2	7	3.5	39	5	0	16	77	5224
92	MARCH	22 1956	5	2	6	3.0	29	5	0	18	18	5221
93	APRIL	20 1971	14	7	16	2.3	6	7	4	4	61	5208
94	APRIL	20 1971	1	1	4	4.0	56	4	0	0	57	5204
95	MARCH	20 1956	21	12	18	1.5	291	6	0	0	0	5203
96	MARCH	8 1956	7	11	18	1.6	51	5	0	0	275	5185
97	APRIL	17 1971	17	13	39	3.0	10	18	17	18	108	5165
98	MARCH	5 1956	17	9	23	2.6	10	8	6	167	275	5162
99	APRIL	8 1972	7	6	102	17.0	12	36	0	79	263	5152
100	MARCH	4 1956	21	4	12	3.0	8	6	1	201	268	5150