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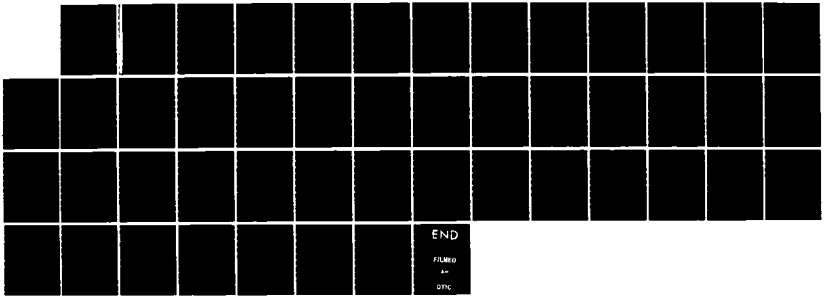

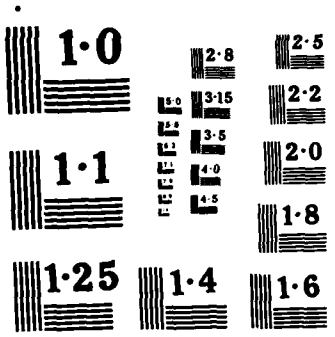

NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

(12)

TGAL-85-6

FINAL TECHNICAL REPORT

Task 4

Soviet Seismicity Study

Contract Number MDA903-84-C-0289
with
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ABSTRACT

A working INGRES database 'sov' has been established at the Center for Seismic Studies which contains the seismicity data reported in the annual Soviet publications, '*Earthquakes in the USSR in 1973*', etc. for the 1973 through 1979 time period. The total information reported is documented with the exception of reports of a local intensity measures which are simply noted as being available. The data have been extensively reviewed for seismological consistency and have been related to the available National Earthquake Information Service (NEIS) and International Seismological Center (ISC) epicenter data files available at the Center for Seismic Studies. A working cross-reference is thus available for all events reported by both the Soviet bulletins and the other two data sources. The files are compatible with other CSS databases but include extensions to document additional data available from the Soviet reports. All events have been regionalized in accordance with the exclusive geographical regions defined in Soviet publications and summary data are presented both annually and by the primary Soviet regions.

Discussion: 1973-1975 Data

Data from the annual Soviet bulletins for 1973 through 1975 were transcribed to computer files by the Seismic Data Analysis Center data services group a number of years ago and were available in a relatively standard bulletin format at the initiation of this effort. This original database was transferred to the INGRES "sov" database. The data were extended to include data such as origin id's, event id's and other parameters of the CSS standard data files. A number of systematic corrections and extensions were required to provide for the systematic retention of information contained in the Soviet bulletins which are relatively unique to this dataset. The primary corrections and extensions are as follows:

(1) The original time data was maintained in a YYMMDD and HHMMSS.T form which has been translated to the EPOCH time of the CSS system, and is also retained for user convenience.

(2) Apparently as an artifact of a processing difficulty with the Flinn-Engdahl region assignment program at the time of original data entry, essentially all coordinates were modified by .001 or .002 degrees which were arbitrarily corrected to reflect the appropriate rounded values.

(3) A subset of the data reported in the Soviet bulletins in degree, minute, and second form which was erroneously entered in decimal degree form was corrected. This occurred only in the Northern Tien Shan region (IIIa), which is also the only region not exclusively defined in the newer Soviet regionalization scheme. It is totally contained in the Central Asia Kazakhstan region (III), but still is reported and handled as a separate region in the Soviet bulletin and in the present database. This, and other discrepancies were pointed out by Simpson (1983).

(4) All data have been assigned a region designator which is exclusive for the overall Soviet regionalization scheme, except as noted above and also extended to include an assignment for those events which are actually external to the defined areas. A map of the regions used is given in Figure 1 and the corresponding region number and names are listed in the first of a series of tables which are slightly reformatted forms of relations presently retained in the working database.

(5) A unique, chronologically ordered, origin identifier was given to all reported origins in the Soviet bulletins. A corresponding event identifier was originally assigned equal to the origin identifier which has been subsequently modified to account for duplicate reports of the same event by differing subgroups within the Soviet reporting system. Both the origin and event identifiers are used further to document correlations with events of the NEIS and ISC databases and their associated origin and event identifiers which provide access to other associated data available in those databases.

(6) All events have been compared against the NEIS database and preliminary associations have been established for all events with origin times within one minute with latitude and longitude differences of less than five degrees. This appears to rather reliably establish that the same event is under consideration. An arbitrarily large region, approximately five degrees external to the defined Soviet region, was extracted and used in the comparison to assure that near-border events would be associated if available from the NEIS dataset. Summary data for regions external to the primary Soviet region are thus not complete nor necessarily meaningful for any dataset other than the reported Soviet seismicity.

(7) Not all available data was entered by the SDAC effort and thus the present dataset for 1973 through 1975 is relatively incomplete compared to the

1976 through 1979 data discussed in more detail below. This primarily effects additional subregion assignments, full detail of reported depths and magnitudes in some regions, and documentation of additional comments. Since only the NEIS dataset is available for comparison and it is relatively limited compared to the more complete ISC data available for 1976 on this is not considered a critical problem of the database.

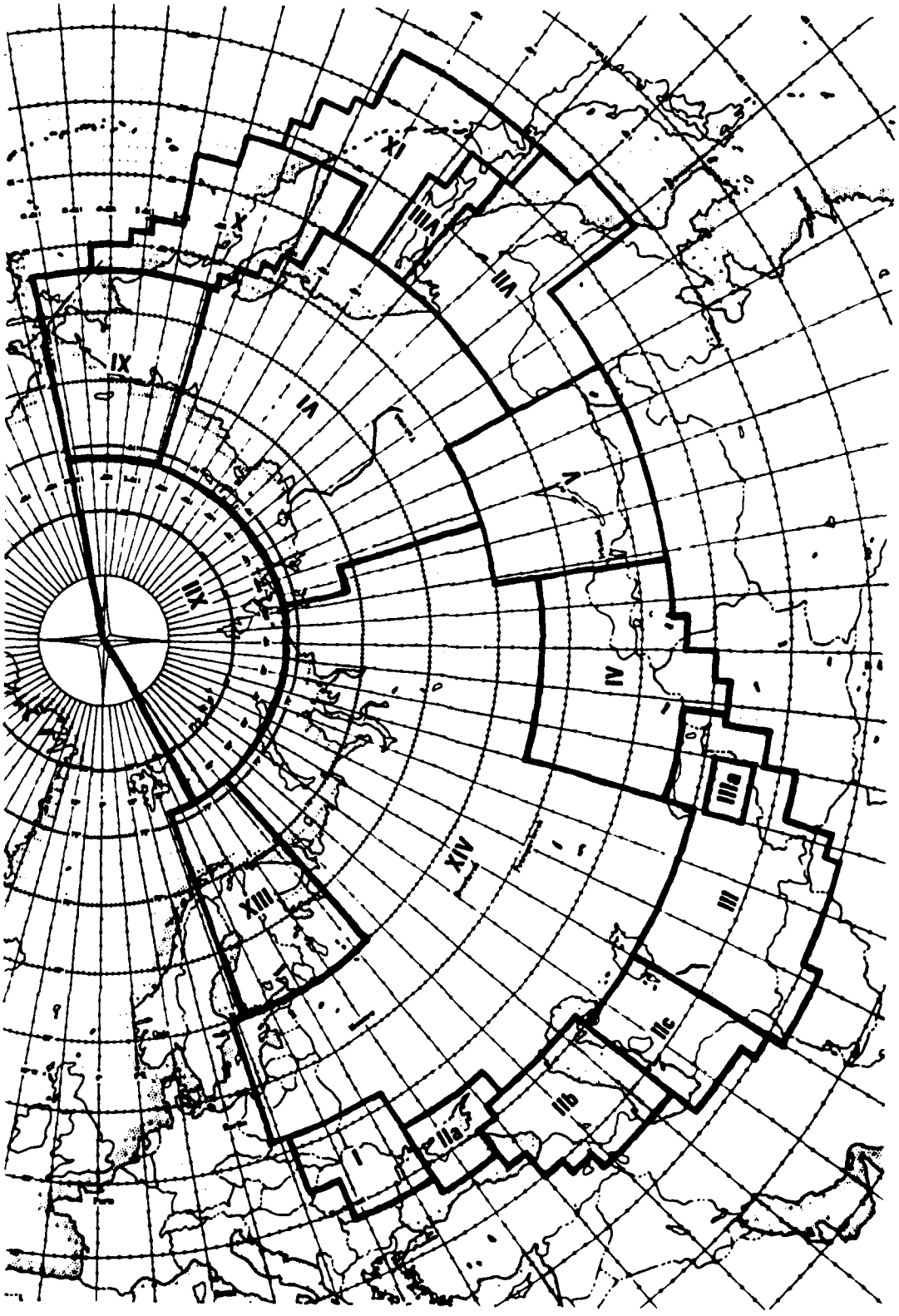

Figure 1. Seismic Regions of the Soviet Union.

Discussion: 1976-1979 Data

The data for 1976 through 1979 have been directly entered into the database with almost complete retention of the reported Soviet analysis. It is further cross-referenced event by event to the original page of the source material, as suggested by Simpson (1983), and fully commented with respect to additional reported information. The only data systematically excluded is the report of a local intensity measure which is included with some events. This is simply noted as a "remark" that additional data is contained in the report. The additional attributes used to carry the information are defined in the second of the series of tables which follow.

While these same attributes are consistent throughout the 1973-1979 dataset, there are a number for which no data were available in the SDAC files for 1973-1976. This includes the "ssevn", "ssrgn", "adepth", and the special magnitudes which are entered but not fully documented even in the 1976-1979 data owing to apparent inconsistencies in the reporting procedures, table labels, and explanitory footnotes which need to be reviewed in detail. A number of conventions were used in the data entry, hopefully in a consistent manner, to fully convey the reported data as far as possible, they include:

(1) Depth is given in km, the numerically larger in the case of a range, and the central value if so stated. The actual depth report is carried in the "adepth" attribute when ranges, central value and limits, or other information is reported. The full information is thus available by reviewing both "depth" and "adepth". Depths actually reported as 0 as opposed to no report, have been assigned as -0.1 to minimize impact on collation depth difference errors and to flag as a reported depth rather than a null value.

(2) The larger of the K value if a range is given is entered, normally with the "remark" giving the actual report.

(3) If only an alphanumeric subregion is given it is noted in a "remark".

(4) All magnitude data must at present be used with caution since the descriptive materials have not been reviewed. There are a number of inconsistencies in table headings which appear to be largely a lack of convention in the use of lower and upper case, etc. A specific review of the accompanying text or perhaps other sources will be necessary to resolve these data. The numeric data have been rather arbitrarily, but systematically entered, and with the comments and reference back to the original document these should be resolveable.

(5) For ease of comparison and review with the original data sources and other datasets not in INGRES form the date and time data have been maintained in the redundant forms necessary to relate EPOCH and the more conventional forms of printed data.

(6) In the case of the collated events, adequate data to allow independent review based simply on the collation results are retained as well as the appropriate event and origin identifiers which allow full data extraction from any of the original sources. One should note that in summary data at this stage of the analysis duplications in reports (either in the Soviet or the NEIS or ISC data) result in multiple associations at the "origin" level; the Soviet "event" identifier in general has been modified to reflect the apparent single "event" described by the multiple "origins" of any of the input sources. This has not been extensively reviewed nor confirmed. A number of apparent duplicate entries in the NEIS database were encountered in the collation process and, to the extent discovered, they were eliminated.

Summary

Summaries of the resultant data, generally segregated by region, for the current working database follow. These tables are currently maintained as separate relations within the working database and will be modified and upgraded as additional data are entered and additional analyses become available. These tables are slightly reformatted copies of the direct prints of the corresponding relations which are based on exhaustive summaries relative to the appropriate attributes to assure that any extraneous values would be revealed. The table names and associated explanitory comments follow. These relations have been generated largely to review the data for internal consistency but are retained as generally useful documentation of the extent of detail within the dataset to assist other users.

The actual primary data relations are maintained as relations of the form "soXX" and "coXX" for the Soviet and collation results respectively, where XX=year.

Table Name	Comments
srgnnames	A summary of the "srgn" attribute and the associated Soviet Region Names (srgn) used throughout the database. These designators have been assigned based on the reported latitude and longitude of all Soviet reported events and all other non-Soviet data contained in the "sov" working database. The "IN", "OUT", and "TOTAL" designators are not proper attribute names but have been added for summarizing purposes.
attnames	A summary of the name, type, and definition of the attributes used in the database in addition to those of the standard CSS attributes in other databases. The "s" prefix indicates a Soviet based attribute and many are directly comparable to the normal attribute, eg. "sorid" serves the same function as "orid" from other databases such as the NEIS.
srgnext	A summary of the non-Soviet data used for comparison with the Soviet data. The 1980 data has been extracted in preparation for comparison which has not yet been accomplished. These data are an extraction from the EVENTS database. Note that the data external to the Soviet regions is arbitrary and is only used to assure that near border events can be associated.
srgnso	A summary of the Soviet data entered into the database, by region, annually.
srgnni	A summary of the NEIS (1973-1975), and ISC (1976-1979) data, by region, annually.
srgnco	A summary of the "collated" events resulting from the comparison with the NEIS and ISC datasets. Note that events located external to the primary Soviet defined region are only included if reported by the Soviets and all region assignment is based upon the reported Soviet epicenters.
srgnnc	A summary of the NEIS and ISC events not collated with Soviet reported events. Note that this is limited to those events within the defined Soviet region, based obviously on the NEIS or ISC coordinates. The numerous other external events are not summarized since they are irrelevant to the present effort.
srgntot	A summary of the previous four tables of collation results. nitot = NEIS or ISC total nctot = NEIS or ISC not collated nnctot = NEIS or ISC collated sotot = Soviet dataset cotot = Collated total snctot = Soviet non-collated events.
srgnXX	Annual summaries as above, XX=year

Table Name	Comments
kasum	An accumulative summary of reported events with "K" values larger than a specified value. Note that "K" is very systematically reported, only 1140 out of 35,154 with no report (k=0), but that it is obviously incomplete below 8 which is borne out by the definitions of what data are to be generally included in the annual publications.
kcoasum	A similar summary for the "collated" data. Note that at large values of k, the collated data exceeds the totals of the previous summary. This results from the multiple reports of the larger events when summaries are based on "origin" counts, as all these tables are!
srgnmag	A summary by region of all events with reported magnitudes. The summary includes a count of any event with any reported magnitude. Note that the predominance of the magnitude reporting is limited to the "bm" (M), and the multiple reports frequently given in region IX, Kurile and Sea of Okhotsk. The data are a mix of ML, MPV and mpv, MPH and mph, MSH and msh, which vary with regional conventions. This data needs review but it is clearly a very small subset of data. MAGNITUDE SIMPLY ISN'T REPORTED ROUTINELY, and if it is the corresponding "K" value frequently isn't!
cnsum	A summary of the various "classes" of accuracy included in the dataset. In general they represent location error limits; a < 5 km b <10 km A <25 km B <50 km In the case of the dual indicators, presently entered as the single numeric value, the initial designator applies to the location and the second to the depth with a slightly different interpretation as follows; a < 5 km b <10 km B <15 km H <25 km c >25 km These codes need to be separated and systematically entered in another form possibly associated with some additional notations derived from the "adepth" attribute which contains similar quantifying information relative to depth validity. It is also noted that nulls are not properly handled, ie. (blank and underscore both are null values).

Table Name	Comments
ombksum	A summary of the NEIS or ISC event magnitudes and the number and average of the associated Soviet K values at that magnitude from the collated event dataset.
dasum	An accumulative summary of the reported Soviet depths. Note that the <0.5 category includes the no report and 0 km depth reports and includes almost half of the data.
lltdsum	A summary of the latitude-longitude and time-depth differences observed in the collated dataset. The data are pseudo graphically displayed with event latitude and longitude differences of less than, equal to, and greater than 0.05 degrees indicated with respect to the Soviet location. Thus the count of events located north and west of the Soviet location by more than 0.05 degrees are at the upper left, events within 0.05 degrees in both latitude and longitude are central, etc. The time and depth differences with 5 second and 5 kilometer breakpoints are similarly shown, as below. North North North Shallow Shallow Shallow West East Early Late West Central East Early Central Late West East Early Late South South South Deep Deep Deep
lltdreg	A summary of the latitude-longitude and time-depth differences observed in the collated dataset, as above, with respect to region. The relative changes between regions tentatively would indicate significant location biases exist between the internal and external networks which varies regionally. This is apparent in the final three entries which are in percentage for the areas with the larger numbers of collated events. Much of the activity is near the borders and thus is relatively outside the "internal" network and the locations may indeed be relatively poor.

Conclusions

A working database of Soviet seismicity data for the period 1973 through 1979 has been established and is available on the INGRES database system at the Center for Seismic Studies.

The entire dataset has been compared to other databases available and preliminary correlations which are believed to be reliable have been made.

Although not formally integrated with the official database structure it is compatible and transfers of data content have been reliably accomplished. It is recognized that the database still contains errors, undoubtedly both of a systematic and independent nature, but considering the size and detail they will not preclude effective use for further study. Further, they will probably be revealed more quickly and completely by use. There has been no proof reading or confirmation of original data entry other than that revealed by consistency reviews of acceptable values within attributes and by the correlation processes applied to date.

The correlation and cross reference of event and origin identifiers established within the "sov" database are thought to be the first which relate events between databases as compared to within databases. They should be easily transportable to establish and extend the linkage of the epicenter data of the Soviet summaries to the arrivals of the other databases, particularly the ISC, and more importantly to the digital waveform databases of the CSS.

Suggested Future Work

In view of time and fiscal restraints the primary effort has been placed on the original and complete entry of the later data, at the expense of the complete review and extension of all data attributes of the 1973 through 1975 data. The annual summaries for 1980 and 1981 have now been published and should be entered into the database. Although a full review and extension of the 1973-1975 data is also appropriate, again the more recent data is considered more relevant and this data entry has been recently proposed.

Extension of the data correlation with other sources of more complete event lists such as those prepared by the Air Force Technical Applications Center is recommended.

A number of relatively systematic reviews and upgrades of the dataset are needed to more completely document the data presently entered but not thoroughly evaluated as follows:

(1) The "depth", "adepth", and "class" attributes need to be reviewed for internal consistency and to establish additional, more definitive quantitative information regarding depth validity.

(2) The magnitude annotations need to be reviewed and possibly an additional attribute established to document types.

(3) The preliminary collations of events with the NEIS and ISC data sources and the "sevid" and "sorid" annotations need to be reviewed and additional judgements of the best associations should be established. At present only the apparent fact of association is established without regard to the relative merit of the source in the case of multiple associations. This further has been manually accomplished and the systematic review of correct event and origin id modification has not been confirmed in detail.

(4) The conventional Flinn-Engdahl region annotations in the 1973-1975 data are considered suspect because of the rounding errors encountered in the original data files and no assignments have been established for the 1976-1979 data in the present files.

(5) Obviously, in addition to the detail of extending and confirming the validity of the database itself, the actual use and investigation of the wealth of additional geophysical data it makes available relevant to monitoring underground nuclear test ban treaties should be exploited to the fullest. The integration into the recognized database stuctures should be accomplished but is is presently considered to be immediately useable as indicated by the preliminary technical summaries presented.

Acknowledgements

It is a pleasure to acknowledge the dedicated, knowledgeable, and tireless efforts of Barbara Dillard-Ruben who performed most of the tedious data entry; as a matter of fact, including the 1973 through 1975 data which was completed several years ago. The facilities and support of the Center for Seismic Studies have also been indispensable in accomplishing this work.

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Simpson, D. W. (1983). (Personal communication).

srgnnames table	
srgn	*name*
I	Carpathians
IIa	Crimea West Kuban
IIb	Caucasus
IIc	Western Turkmeniya
III	Central Asia Kazakhstan
IIIa	Northern Tien Shan
IV	Altay Sayany
V	Baykal Region
VI	Yakutiya Northeast
VII	Coastal Amur Region
VIII	Sakhalin
IX	Kuril Sea of Okhotsk
X	Kamchatka
XI	Chukotka
XII	Arctic Basin
XIII	Baltic Shield
XIV	European USSR Urals Siberia
IN	Within defined USSR Regions
OI	West or south of Region I
OIIa	South of Region IIa
OIIb	South of Region IIb
OIIc	South of Region IIc
OIII	South of Region III
OIV	South of Region IV
OV	South of Region V
OVII	South of Region VII
OIX	South of Region IX
OX	South of Region X
OXI	South or east of Region XI
OXII	West or east of Region XII
OXIII	West of Region XIII
OXIV	West of Region XIV
OUT	Outside defined USSR Regions
TOTAL	Total inside and outside

LEGEND: Seismic Regions of the Soviet Union, See Figure 1.

altnames table		
name	type	def
ssevn	i2	soviet subregion event number
srgn	c5	soviet region number
ssrgn	i2	soviet subregion number
bm	f4	big m (M) (CAUTION!!)
nbm	f4	number stations for big m (M)
ml	f4	local magnitude (ML) (CAUTION!!)
mpv	f4	mpv and MPV etc. (CAUTION!!)
mph	f4	mph and MPH etc. (CAUTION!!)
msh	f4	msh and MSH etc. (CAUTION!!)
k	f4	soviet energy class
adepth	c7	ascii depth (where ranges etc. are given)
ymd	i4	year month day two digits each-YYMMDD
hms	f8	hour minute seconds-generally to tenths-HHMMSS.T
class	c1	class of location accuracy-depth also in some areas
sorid	i4	soviet origin id-initially chrono with increment of 10-- UNIQUE
sevid	i4	soviet event id-initially=sorid-(both modified for dupes etc.)
ladif	f4	latitude difference in collation data soviet-other (<=5 deg)
lodif	f4	longitude difference in collation data soviet-other (<=5 deg)
tidif	f4	origin time difference in collation data soviet-other (<=60 s)
dedif	f4	depth difference in collation data soviet-other
dtime	f8	decimal seconds into a day-used with date to go to EPOCH

LEGEND: Attribute names, data type, and definitions used in the dataset.

srgnext table									
srgn	1973	1974	1975	1976	1977	1978	1979	1980	total
I	15	9	13	14	42	41	60	25	219
IIa	3	2	3	1	1	1	1	1	13
IIb	21	15	39	67	39	31	22	19	253
IIc	12	5	4	21	19	9	17	7	94
III	117	223	170	434	383	463	221	165	2176
IIIa	0	0	0	0	0	0	0	0	0
IV	10	26	14	16	14	23	19	20	142
V	3	7	3	7	7	3	11	9	50
VI	7	10	4	7	4	8	7	5	52
VII	19	2	8	7	10	7	7	8	68
VIII	17	6	0	4	5	8	2	8	50
IX	353	192	368	352	513	948	576	371	3673
X	91	84	113	106	58	81	73	88	694
XI	5	15	0	1	0	0	1	1	23
XII	14	1	9	7	4	5	8	10	58
XIII	0	0	0	20	10	16	12	6	64
XIV	12	5	4	19	9	8	12	20	89
IN	699	602	752	1083	1118	1652	1049	763	7718
OI	163	220	366	3164	2772	2662	3394	2243	14984
OIIa	4	6	9	22	19	32	23	11	126
OIIb	34	26	47	68	85	53	36	39	388
OIIc	13	6	9	17	24	91	85	13	258
OIII	30	18	95	99	114	90	53	39	538
OIV	26	13	25	23	46	19	35	55	242
OV	21	9	6	108	15	45	33	25	260
OVII	58	62	67	360	411	608	698	498	2762
OIX	308	263	168	750	762	1466	1311	1318	6346
OX	37	34	30	22	62	25	34	21	265
OXI	322	306	237	317	339	337	336	313	2507
OXII	5	4	3	26	14	8	10	13	83
OXIII	7	14	7	43	28	69	47	28	243
OXIV	39	35	32	555	501	489	864	587	3102
OUT	1067	1016	1101	5572	5192	5994	6959	5203	32104
TOTAL	1766	1618	1853	6655	6310	7646	8008	5966	39822

LEGEND: Annual summaries of the non-Soviet data used for comparison. From EVENTS database, generally NEIS for 1973-1975, ISC for later years.

srgnso table								
srgn	1973	1974	1975	1976	1977	1978	1979	total
I	17	18	18	14	16	16	33	132
IIa	6	11	12	15	25	20	6	95
IIb	149	229	327	507	372	327	285	2196
IIc	252	601	500	784	765	827	501	4230
III	1525	1677	1879	1756	1692	1940	2084	12553
IIIa	107	91	140	117	162	180	312	1109
IV	115	109	132	284	143	167	132	1082
V	291	226	238	206	173	207	301	1642
VI	305	338	337	356	330	355	330	2351
VII	44	66	103	69	80	146	152	660
VIII	49	30	26	26	29	36	29	225
IX	1144	701	1107	733	574	1163	580	6002
X	331	354	371	407	270	343	255	2331
XI	5	8	14	24	23	18	28	120
XII	10	3	4	5	1	3	7	33
XIII	0	1	0	0	0	0	0	1
XIV	0	1	0	1	0	1	0	3
IN	4350	4464	5208	5304	4655	5749	5035	34765
OI	3	2	2	0	0	0	0	7
OIIa	0	1	0	0	0	1	0	2
OIIb	6	9	13	33	18	20	18	117
OIIc	6	9	19	8	14	7	14	77
OIII	1	1	8	0	0	1	1	12
OIV	9	9	17	9	9	7	7	67
OV	4	6	9	7	5	4	5	40
OVII	0	0	17	0	0	0	0	17
OIX	2	2	14	2	5	2	4	31
OX	2	2	2	1	0	1	1	9
OXI	0	0	9	0	0	0	0	9
OXII	0	0	0	0	0	0	0	0
OXIII	0	0	0	0	0	0	0	0
OXIV	0	0	1	0	0	0	0	1
OUT	33	41	111	60	51	43	50	389
TOTAL	4383	4505	5319	5364	4706	5792	5085	35154

LEGEND: Soviet data entered into the database, by region and year.

srgnni table

srgn	1973	1974	1975	1976	1977	1978	1979	total
I	15	9	13	14	42	41	60	194
IIa	3	2	3	1	1	1	1	12
IIb	21	15	39	67	39	31	22	234
IIc	12	5	4	21	19	9	17	87
III	117	223	170	434	383	463	221	2011
IIIa	0	0	0	0	0	0	0	0
IV	10	26	14	16	14	23	19	122
V	3	7	3	7	7	3	11	41
VI	7	10	4	7	4	8	7	47
VII	19	2	8	7	10	7	7	60
VIII	17	6	0	4	5	8	2	42
IX	353	192	368	352	513	948	576	3302
X	91	84	113	106	58	81	73	606
XI	5	15	0	1	0	0	1	22
XII	14	1	9	7	4	5	8	48
XIII	0	0	0	20	10	16	12	58
XIV	12	5	4	19	9	8	12	69
IN	699	602	752	1083	1118	1652	1049	6955
OI	163	220	366	3164	2772	2662	3394	12741
OIIa	4	6	9	22	19	32	23	115
OIIb	34	26	47	68	85	53	36	349
OIIc	13	6	9	17	24	91	85	245
OIII	30	18	95	99	114	90	53	499
OIV	26	13	25	23	46	19	35	187
OV	21	9	6	106	15	45	33	235
OVII	58	62	67	360	411	608	698	2264
OIX	308	263	168	750	762	1466	1311	5028
OX	37	34	30	22	62	25	34	244
OXI	322	306	237	317	339	337	336	2194
OXII	5	4	3	26	14	8	10	70
OXIII	7	14	7	43	28	69	47	215
OXIV	39	35	32	555	501	489	864	2515
OUT	1067	1016	1101	5572	5192	5994	6959	26901
TOTAL	1766	1618	1853	6655	6310	7646	8008	33856

LEGEND: A Summary of the NEIS (1973-1975), and ISC (1976-1979) data. Note data external to Soviet regions is arbitrary and is only used to assure that near border events can be associated.

srgneo Table

srgn	1973	1974	1975	1976	1977	1978	1979	total
I	11	7	10	10	11	8	22	79
IIa	2	1	2	0	1	1	0	7
IIb	19	14	35	56	33	26	22	205
IIc	8	4	3	16	17	8	16	72
III	102	198	155	392	353	446	205	1851
IIIa	3	2	3	0	0	0	4	12
IV	4	10	5	5	1	6	4	35
V	2	6	2	5	4	3	11	33
VI	4	7	3	5	3	5	6	33
VII	13	2	5	4	7	3	2	36
VIII	12	4	1	2	4	9	2	34
IX	359	189	350	318	498	866	506	3086
X	79	76	97	95	58	86	66	557
XI	5	8	0	1	0	0	1	15
XII	7	1	5	3	1	3	7	27
XIII	0	0	0	0	0	0	0	0
XIV	0	0	0	0	0	0	0	0
IN	630	529	676	912	991	1470	874	6082
OI	3	0	1	0	0	0	0	4
OIIa	0	0	0	0	0	1	0	1
OIIb	3	2	9	10	4	7	2	37
OIIc	3	0	1	1	4	0	1	10
OIII	0	1	7	0	0	0	0	8
OIV	0	0	3	0	1	1	1	6
OV	0	0	2	1	0	0	1	4
OVII	0	0	4	0	0	0	0	4
OIX	1	1	4	2	4	0	2	14
OX	0	0	0	0	0	1	0	1
OXI	0	0	1	0	0	0	0	1
OXII	0	0	0	0	0	0	0	0
OXIII	0	0	0	0	0	0	0	0
OXIV	0	0	0	0	0	0	0	0
OUT	10	4	32	14	13	10	7	90
TOTAL	640	533	708	926	1004	1480	881	6172

LEGEND: A Summary of the "collated" events resulting from the comparison with the NEIS and ISC datasets. Note that events located external to the primary Soviet defined regions are only included if reported by the Soviets and all region assignment is based upon the reported Soviet epicenters.

srgnnc table

srgn	1973	1974	1975	1976	1977	1978	1979	total
I	4	2	3	4	31	33	38	115
IIa	1	1	1	1	0	0	1	5
IIb	1	1	6	7	4	6	3	28
IIc	4	1	1	4	3	0	2	15
III	15	24	12	50	43	24	19	187
IIIa	0	0	0	0	0	0	0	0
IV	6	16	10	13	13	20	16	94
V	1	1	0	2	3	0	0	7
VI	3	4	1	3	2	5	2	20
VII	6	0	3	2	4	4	5	24
VIII	4	1	0	2	0	0	0	7
IX	10	6	22	44	35	101	82	300
X	13	8	18	10	4	3	6	62
XI	0	7	0	0	0	0	0	7
XII	7	0	4	5	3	2	1	22
XIII	0	0	0	20	10	16	12	58
XIV	12	5	4	19	9	8	11	68
IN	87	77	85	186	164	222	198	1019
OI	0	0	0	0	0	0	0	0
OIIa	0	0	0	0	0	0	0	0
OIIb	0	0	0	0	0	0	0	0
OIIc	0	0	0	0	0	0	0	0
OIII	0	0	0	0	0	0	0	0
OIV	0	0	0	0	0	0	0	0
OV	0	0	0	0	0	0	0	0
OVII	0	0	0	0	0	0	0	0
OIX	0	0	0	0	0	0	0	0
OX	0	0	0	0	0	0	0	0
OXI	0	0	0	0	0	0	0	0
OXII	0	0	0	0	0	0	0	0
OXIII	0	0	0	0	0	0	0	0
OXIV	0	0	0	0	0	0	0	0
OUT	0	0	0	0	0	0	0	0
TOTAL	87	77	85	186	164	222	198	1019

LEGEND: A summary of the NEIS and ISC events not collated with Soviet reported events. Note that this is limited to those events within the defined Soviet region, based obviously on the NEIS or ISC coordinates. The numerous other external events are not summarized since they are irrelevant to the present effort.

srgntot table

srgn	nitot	nctot	nnctot	sotot	cotot	snctot
I	194	115	79	132	79	53
IIa	12	5	7	95	7	88
IIb	234	28	206	2196	205	1991
IIc	87	15	72	4230	72	4158
III	2011	187	1824	12553	1851	10702
IIIa	0	0	0	1109	12	1097
IV	122	94	28	1082	35	1047
V	41	7	34	1642	33	1609
VI	47	20	27	2351	33	2318
VII	60	24	36	660	36	624
VIII	42	7	35	225	34	191
IX	3302	300	3002	6002	3086	2916
X	606	62	544	2331	557	1774
XI	22	7	15	120	15	105
XII	48	22	26	33	27	6
XIII	58	58	0	1	0	1
XIV	69	68	1	3	0	3
IN	6955	1019	5936	34765	6082	28683
OI	12741	0	12741	7	4	3
OIIa	115	0	115	2	1	1
OIIb	349	0	349	117	37	80
OIIc	245	0	245	77	10	67
OIII	499	0	499	12	8	4
OIV	187	0	187	67	6	61
OV	235	0	235	40	4	36
OVII	2264	0	2264	17	4	13
OIX	5028	0	5028	31	14	17
OX	244	0	244	9	1	8
OXI	2194	0	2194	9	1	8
OXII	70	0	70	0	0	0
OXIII	215	0	215	0	0	0
OXIV	2515	0	2515	1	0	1
OUT	26901	0	26901	389	90	299
TOTAL	33856	1019	32837	35154	6172	28982

LEGEND: A summary of the previous four tables of collation results;
nitot = NEIS or ISC total
nctot = NEIS or ISC not collated
nnctot = NEIS or ISC collated
sotot = Soviet dataset
cotot = Collated total
snctot = Soviet non-collated events.

srgn73 table						
srgn	ni73	nc73	nnc73	so73	co73	snc73
I	15	4	11	17	11	6
IIa	3	1	2	6	2	4
IIb	21	1	20	149	19	130
IIc	12	4	8	252	8	244
III	117	15	102	1525	102	1423
IIIa	0	0	0	107	3	104
IV	10	6	4	115	4	111
V	3	1	2	291	2	289
VI	7	3	4	305	4	301
VII	19	6	13	44	13	31
VIII	17	4	13	49	12	37
IX	353	10	343	1144	359	785
X	91	13	78	331	79	252
XI	5	0	5	5	5	0
XII	14	7	7	10	7	3
XIII	0	0	0	0	0	0
XIV	12	12	0	0	0	0
IN	699	87	612	4350	630	3720
OI	163	0	163	3	3	0
OIIa	4	0	4	0	0	0
OIIb	34	0	34	6	3	3
OIIc	13	0	13	6	3	3
OIII	30	0	30	1	0	1
OIV	26	0	26	9	0	9
OV	21	0	21	4	0	4
OVII	58	0	58	0	0	0
OIX	308	0	308	2	1	1
OX	37	0	37	2	0	2
OXI	322	0	322	0	0	0
OXII	5	0	5	0	0	0
OXIII	7	0	7	0	0	0
OXIV	39	0	39	0	0	0
OUT	1067	0	1067	33	10	23
TOTAL	1766	87	1679	4383	640	3743

LEGEND: A summary of the 1973 collation results;
ni73 = NEIS or ISC total
nc73 = NEIS or ISC not collated
nnc73 = NEIS or ISC collated
so73 = Soviet dataset
co73 = Collated total
snc73 = Soviet non-collated events.

srgn74 table						
srgn	ni74	nc74	nnc74	so74	co74	snc74
I	9	2	7	18	7	11
IIa	2	1	1	11	1	10
IIb	15	1	14	229	14	215
IIc	5	1	4	601	4	597
III	223	24	199	1677	198	1479
IIIa	0	0	0	91	2	89
IV	26	16	10	109	10	99
V	7	1	6	226	6	220
VI	10	4	6	338	7	331
VII	2	0	2	66	2	64
VIII	6	1	5	30	4	26
IX	192	6	186	701	189	512
X	84	8	76	354	76	278
XI	15	7	8	8	8	0
XII	1	0	1	3	1	2
XIII	0	0	0	1	0	1
XIV	5	5	0	1	0	1
IN	602	77	525	4464	529	3935
OI	220	0	220	2	0	2
OIIa	6	0	6	1	0	1
OIIb	26	0	26	9	2	7
OIIc	6	0	6	9	0	9
OIII	18	0	18	1	1	0
OIV	13	0	13	9	0	9
OV	9	0	9	6	0	6
OVII	62	0	62	0	0	0
OIX	263	0	263	2	1	1
OX	34	0	34	2	0	2
OXI	306	0	306	0	0	0
OXII	4	0	4	0	0	0
OXIII	14	0	14	0	0	0
OXIV	35	0	35	0	0	0
OUT	1016	0	1016	41	4	37
TOTAL	1618	77	1541	4505	533	3972

LEGEND: A summary of the 1974 collation results;
ni74 = NEIS or ISC total
nc74 = NEIS or ISC not collated
nnc74 = NEIS or ISC collated
so74 = Soviet dataset
co74 = Collated total
snc74 = Soviet non-collated events.

srgn75 table						
srgn	ni75	nc75	nnc75	so75	co75	snc75
I	13	3	10	18	10	8
IIa	3	1	2	12	2	10
IIb	39	6	33	327	35	292
IIc	4	1	3	500	3	497
III	170	12	158	1879	155	1724
IIIa	0	0	0	140	3	137
IV	14	10	4	132	5	127
V	3	0	3	238	2	236
VI	4	1	3	337	3	334
VII	8	3	5	103	5	98
VIII	0	0	0	26	1	25
IX	368	22	346	1107	350	757
X	113	18	95	371	97	274
XI	0	0	0	14	0	14
XII	9	4	5	4	5	-1
XIII	0	0	0	0	0	0
XIV	4	4	0	0	0	0
IN	752	85	667	5208	676	4532
OI	366	0	366	2	1	1
OIIa	9	0	9	0	0	0
OIIb	47	0	47	13	9	4
OIIc	9	0	9	19	1	18
OIII	95	0	95	8	7	1
OIV	25	0	25	17	3	14
OV	6	0	6	9	2	7
OVII	67	0	67	17	4	13
OIX	168	0	168	14	4	10
OX	30	0	30	2	0	2
OXI	237	0	237	9	1	8
OXII	3	0	3	0	0	0
OXIII	7	0	7	0	0	0
OXIV	32	0	32	1	0	1
OUT	1101	0	1101	111	32	79
TOTAL	1853	85	1768	5319	708	4611

LEGEND: A summary of the 1975 collation results;
ni75 = NEIS or ISC total
nc75 = NEIS or ISC not collated
nnc75 = NEIS or ISC collated
so75 = Soviet dataset
co75 = Collated total
snc75 = Soviet non-collated events.

srgn76 table						
srgn	ni76	nc76	nnc76	so76	co76	snc76
I	14	4	10	14	10	4
IIa	1	1	0	15	0	15
IIb	67	7	60	507	56	451
IIc	21	4	17	784	16	768
III	434	50	384	1756	392	1364
IIIa	0	0	0	117	0	117
IV	16	13	3	284	5	279
V	7	2	5	206	5	201
VI	7	3	4	356	5	351
VII	7	2	5	69	4	65
VIII	4	2	2	26	2	24
IX	352	44	308	733	318	415
X	106	10	96	407	95	312
XI	1	0	1	24	1	23
XII	7	5	2	5	3	2
XIII	20	20	0	0	0	0
XIV	19	19	0	1	0	1
IN	1083	186	897	5304	912	4392
OI	3164	0	3164	0	0	0
OIIa	22	0	22	0	0	0
OIIb	68	0	68	33	10	23
OIIc	17	0	17	8	1	7
OIII	99	0	99	0	0	0
OIV	23	0	23	9	0	9
OV	106	0	106	7	1	6
OVII	360	0	360	0	0	0
OIX	750	0	750	2	2	0
OX	22	0	22	1	0	1
OXI	317	0	317	0	0	0
OXII	26	0	26	0	0	0
OXIII	43	0	43	0	0	0
OXIV	555	0	555	0	0	0
OUT	5572	0	5572	60	14	46
TOTAL	6655	186	6469	5364	926	4438

LEGEND: A summary of the 1976 collation results;
ni76 = NEIS or ISC total
nc76 = NEIS or ISC not collated
nnc76 = NEIS or ISC collated
so76 = Soviet dataset
co76 = Collated total
snc76 = Soviet non-collated events.

srgn77 table						
srgn	ni77	nc77	nnc77	so77	co77	snc77
I	42	31	11	16	11	5
IIa	1	0	1	25	1	24
IIb	39	4	35	372	33	339
IIc	19	3	16	765	17	748
III	383	43	340	1692	353	1339
IIIa	0	0	0	162	0	162
IV	14	13	1	143	1	142
V	7	3	4	173	4	169
VI	4	2	2	330	3	327
VII	10	4	6	80	7	73
VIII	5	0	5	29	4	25
IX	513	35	478	574	498	76
X	58	4	54	270	58	212
XI	0	0	0	23	0	23
XII	4	3	1	1	1	0
XIII	10	10	0	0	0	0
XIV	9	9	0	0	0	0
IN	1118	164	954	4655	991	3664
OI	2772	0	2772	0	0	0
OIIa	19	0	19	0	0	0
OIIb	85	0	85	18	4	14
OIIc	24	0	24	14	4	10
OIII	114	0	114	0	0	0
OIV	46	0	46	9	1	8
OV	15	0	15	5	0	5
OVII	411	0	411	0	0	0
OIX	762	0	762	5	4	1
OX	62	0	62	0	0	0
OXI	339	0	339	0	0	0
OXII	14	0	14	0	0	0
OXIII	28	0	28	0	0	0
OXIV	501	0	501	0	0	0
OUT	5192	0	5192	51	13	38
TOTAL	6310	164	6146	4706	1004	3702

LEGEND: A summary of the 1977 collation results:
- ni77 = NEIS or ISC total
- nc77 = NEIS or ISC not collated
- nnc77 = NEIS or ISC collated
- so77 = Soviet dataset
- co77 = Collated total
- snc77 = Soviet non-collated events.

srgn78 table						
srgn	ni78	nc78	nnc78	so78	co78	snc78
I	41	33	8	16	8	8
IIa	1	0	1	20	1	19
IIb	31	6	25	327	28	301
IIc	9	0	9	827	8	819
III	463	24	439	1940	446	1494
IIIa	0	0	0	180	0	180
IV	23	20	3	167	6	161
V	3	0	3	207	3	204
VI	8	5	3	355	5	350
VII	7	4	3	146	3	143
VIII	8	0	8	36	9	27
IX	948	101	847	1163	866	297
X	81	3	78	343	86	257
XI	0	0	0	18	0	18
XII	5	2	3	3	3	0
XIII	16	16	0	0	0	0
XIV	8	8	0	1	0	1
IN	1652	222	1430	5749	1470	4279
OI	2662	0	2662	0	0	0
OIIa	32	0	32	1	1	0
OIIb	53	0	53	20	7	13
OIIc	91	0	91	7	0	7
OIII	90	0	90	1	0	1
OIV	19	0	19	7	1	6
OV	45	0	45	4	0	4
OVII	608	0	608	0	0	0
OIX	1466	0	1466	2	0	2
OX	25	0	25	1	1	0
OXI	337	0	337	0	0	0
OXII	8	0	8	0	0	0
OXIII	69	0	69	0	0	0
OXIV	489	0	489	0	0	0
OUT	5994	0	5994	43	10	33
TOTAL	7646	222	7424	5792	1480	4312

LEGEND: A summary of the 1978 collation results;
ni78 = NEIS or ISC total
nc78 = NEIS or ISC not collated
nnc78 = NEIS or ISC collated
so78 = Soviet dataset
co78 = Collated total
snc78 = Soviet non-collated events.

srgn79 table						
srgn	ni79	nc79	nnc79	so79	co79	snc79
I	60	38	22	33	22	11
IIa	1	1	0	6	0	6
IIb	22	3	19	285	22	263
IIc	17	2	15	501	16	485
III	221	19	202	2084	205	1879
IIIa	0	0	0	312	4	308
IV	19	16	3	132	4	128
V	11	0	11	301	11	290
VI	7	2	5	330	6	324
VII	7	5	2	152	2	150
VIII	2	0	2	29	2	27
IX	576	82	494	580	506	74
X	73	6	67	255	66	189
XI	1	0	1	28	1	27
XII	8	1	7	7	7	0
XIII	12	12	0	0	0	0
XIV	12	11	1	0	0	0
IN	1049	198	851	5035	874	4161
OI	3394	0	3394	0	0	0
OIIa	23	0	23	0	0	0
OIIb	36	0	36	18	2	16
OIIc	85	0	85	14	1	13
OIII	53	0	53	1	0	1
OIV	35	0	35	7	1	6
OV	33	0	33	5	1	4
OVII	698	0	698	0	0	0
OIX	1311	0	1311	4	2	2
OX	34	0	34	1	0	1
OXI	336	0	336	0	0	0
OXII	10	0	10	0	0	0
OXIII	47	0	47	0	0	0
OXIV	864	0	864	0	0	0
OUT	6959	0	6959	50	7	43
TOTAL	8008	198	7810	5085	881	4204

LEGEND: A summary of the 1979 collation results;
ni79 = NEIS or ISC total
nc79 = NEIS or ISC not collated
nnc79 = NEIS or ISC collated
so79 = Soviet dataset
co79 = Collated total
snc79 = Soviet non-collated events.

kasum table

k	1973	1974	1975	1976	1977	1978	1979	total
>= 0	4383	4505	5319	5364	4706	5792	5085	35154
>= 3	4202	4398	5121	5235	4563	5555	4940	34014
>= 4	4200	4398	5121	5229	4563	5550	4940	34001
>= 5	4190	4394	5121	5205	4549	5518	4940	33917
>= 6	4178	4381	5109	5153	4505	5465	4929	33720
>= 7	4154	4320	5034	5053	4420	5355	4833	33169
>= 8	4097	4175	4899	4858	4168	5115	4688	32000
>= 9	3738	3746	4328	4352	3580	4473	4041	28258
>=10	1707	1698	1597	1955	1373	1891	1521	11742
>=11	483	573	458	643	404	568	453	3582
>=12	142	224	132	216	129	155	142	1140
>=13	34	77	36	49	40	36	42	314
>=14	6	21	5	14	11	13	7	77
>=15	0	6	3	5	3	5	1	23
>=16	0	3	1	3	0	1	0	8
>=17	0	0	0	2	0	0	0	2

kcoasum table

k	co1973	co1974	co1975	co1976	co1977	co1978	co1979	cotota
>= 0	640	533	708	926	1004	1480	881	6172
>= 3	500	450	522	826	878	1278	744	5198
>= 4	499	450	522	826	878	1278	744	5197
>= 5	496	450	522	826	876	1278	744	5192
>= 6	494	450	514	826	870	1278	744	5192
>= 7	494	449	504	826	868	1278	744	5176
>= 8	494	449	500	826	868	1278	744	5163
>= 9	490	448	500	826	868	1278	744	5154
>=10	464	426	460	721	551	833	479	3934
>=11	278	336	289	460	295	404	294	2356
>=12	150	232	143	205	108	141	127	1106
>=13	58	115	52	47	40	33	41	386
>=14	12	43	4	14	11	13	7	104
>=15	0	15	0	5	3	5	1	29
>=16	0	7	0	3	0	1	0	11
>=17	0	0	0	2	0	0	0	2

LEGEND: Accumulative summaries of Soviet reported events with "K" values larger than a specified value. Upper table is total, and the lower for the collated events. At large k values the collated result exceeds the total due to multiple reports.

srgnmag table						
srgn	kgt0	bmgt0	mlgt0	mpvgt0	mphgt0	mshgt0
I	62	27	3	15	0	30
IIa	0	0	0	0	0	0
IIb	81	77	20	10	0	0
IIc	188	188	0	0	0	0
III	112	99	10	3	0	0
IIIa	0	0	0	0	0	0
IV	6	4	1	2	0	0
V	11	7	1	4	0	0
VI	8	9	0	1	0	1
VII	9	7	1	10	6	11
VIII	9	8	10	2	0	3
IX	437	81	507	179	131	296
X	112	51	33	48	4	5
XI	0	0	1	0	0	0
XII	1	4	2	13	0	0
XIII	0	0	0	0	0	0
XIV	0	0	0	0	0	0
IN	1036	562	589	287	141	346
OI	0	0	0	0	0	0
OIIa	0	0	0	0	0	0
OIIb	11	11	5	3	0	0
OIIc	9	9	0	0	0	0
OIII	0	0	0	0	0	0
OIV	0	0	0	0	0	0
OV	2	1	0	1	0	0
OVII	0	0	0	0	0	0
OIX	1	0	2	1	1	2
OX	0	0	0	0	0	0
OXI	0	0	0	0	0	0
OXII	0	0	0	0	0	0
OXIII	0	0	0	0	0	0
OXIV	0	0	0	0	0	0
OUT	23	21	7	5	1	2
TOTAL	1059	583	596	292	142	348

LEGEND: A summary by region of all events with reported magnitude. The notation "bm" (M) and the multiple reports frequently given in region IX, Kurile and Sea of Okhotsk are a mix of Ml; MPV and mpv; MPH and mph; and MSH and msh, which vary with regional convention. These data need review.

cnsum table								
clnm	1973	1974	1975	1976	1977	1978	1979	total
	0	0	1	0	608	552	624	1785
0-B/H	0	0	0	2	3	8	0	13
1-a/B	0	0	0	169	92	74	0	335
2-a/b	0	0	0	237	176	146	0	559
3-b/B	0	0	0	7	2	13	0	22
4-b/H	0	1	0	25	24	23	0	73
5-H/H	0	0	0	3	4	12	0	19
6-c/c	0	0	0	3	1	6	0	10
7-B/B	0	0	0	1	1	1	0	3
8-b/b	0	0	0	1	1	10	0	12
9-a/a	0	0	0	2	0	9	0	11
A	1356	1773	1670	1902	1596	2096	1987	12380
B	1300	1538	1897	1477	1281	1604	1293	10390
a	511	119	496	304	337	444	517	2728
b	545	499	462	625	579	719	664	4093
c	0	0	0	0	0	71	0	71
h	0	0	2	2	1	4	0	9
	671	575	791	604	0	0	0	2641
total	4383	4505	5319	5364	4706	5792	5085	35154

LEGEND: A summary of the classes of accuracy included in the dataset. In general they represent location error limits;

a < 5 km
b <10 km
A <25 km
B <50 km

In the case of the dual indicators, presently entered as the single numeric value, the initial designator applies to the location and the second to the depth with a slightly different interpretation as follows;

a < 5 km
b <10 km
B <15 km
H <25 km
c >25 km.

ombksum table		
omb	kct	kav
-1.00	1842	10.1
3.00	2	10.0
3.10	7	10.3
3.20	1	11.0
3.30	15	10.1
3.40	8	10.4
3.50	17	10.5
3.60	19	10.5
3.70	28	10.7
3.80	54	10.4
3.90	64	10.6
4.00	87	10.4
4.10	125	10.5
4.20	192	10.5
4.30	257	10.6
4.40	283	10.6
4.50	310	10.8
4.60	363	11.0
4.70	341	10.9
4.80	316	11.0
4.90	223	11.2
5.00	197	11.3
5.10	124	11.6
5.20	85	11.6
5.30	68	12.3
5.40	42	11.9
5.50	43	12.6
5.60	20	12.7
5.70	21	11.0
5.80	17	11.5
5.90	8	14.4
6.00	5	12.6
6.10	7	12.1
6.20	5	12.4
6.30	0	0.0
6.40	1	16.0
6.50	1	16.0

LEGEND: A summary of the NEIS or ISC event magnitudes and the number and average of the associated Soviet K values at that magnitude from the collated event dataset. The low averages at magnitude 5.7 and 5.8 are real quirks of the dataset.

dasum table									
Depth	1973	1974	1975	1976	1977	1978	1979	Total	Percent
<= 0.5 km	1507	2134	2156	2890	2410	2688	2246	16031	45.6
<= 5.0 km	1685	2299	2436	3048	2648	2939	2513	17568	50.0
<= 10.0 km	1877	2464	2751	3327	2862	3208	2801	19290	54.9
<= 15.0 km	1992	2548	2840	3407	2976	3347	2982	20092	57.2
<= 20.0 km	2147	2666	2971	3620	3148	3523	3143	21218	60.4
<= 25.0 km	2313	2731	3048	3687	3189	3583	3263	21814	62.1
<= 30.0 km	2559	2939	3745	4092	3321	3794	3371	23821	67.8
<= 60.0 km	3433	3440	4200	4340	3711	4688	3794	27606	78.5
<=100.0 km	3707	3721	4490	4564	3947	4901	4039	29369	83.5
<=200.0 km	4135	4208	5038	5097	4451	5539	4733	33201	94.4
<=300.0 km	4347	4484	5303	5349	4686	5773	5059	35001	99.6
<=400.0 km	4366	4491	5311	5356	4693	5785	5072	35074	99.8
<=500.0 km	4379	4503	5315	5362	4701	5790	5080	35130	99.9
<=600.0 km	4383	4505	5319	5364	4706	5792	5085	35154	100.0

LEGEND: An accumulative summary of the reported Soviet depths. Note that the <0.5 category includes the no report and 0 km depth reports and include almost half of the data.

lltdsum table							
	lat/long			time/depth			
source	llnw llw llsw	lln llc lls	llne lle llse	tdes tde tded	tds tdc tdd	tdls tdl tdld	total
1973	238	33	37	6	126	4	
	71	84	24	2	186	1	
	67	32	54	4	285	26	640
1974	138	31	53	7	69	1	
	52	51	51	4	99	2	
	46	40	71	6	310	35	533
1975	239	42	53	17	105	3	
	50	62	53	1	211	5	
	61	45	103	10	313	43	708
1976	211	38	112	35	152	9	
	71	34	77	10	141	5	
	114	63	208	18	410	146	926
1977	146	35	112	13	218	8	
	51	260	83	8	322	6	
	113	50	154	12	340	77	1004
1978	374	53	101	48	402	38	
	98	305	92	9	447	12	
	157	78	224	12	399	113	1480
1979	138	32	91	40	134	2	
	58	258	65	9	375	8	
	68	38	133	5	258	50	881
Total	1484	262	559	166	1206	65	
	449	1054	445	43	1781	39	
	626	346	947	67	2315	490	6172
Percent	24	4	9	2	19	1	
	7	17	7	0	28	0	
	10	5	15	1	37	7	100

LEGEND: An annual summary of the latitude/longitude and time/depth differences observed in the collated dataset. Counts of events with latitude and longitude differences of less than, equal to and greater than 0.05 degrees with respect to the Soviet location are shown. Counts of events with time and depth differences with 5 second and 5 kilometer breakpoints are shown, as below:

llnw	Northwest	lln	North	llne	Northeast
llw	West	llc	Central	lle	East
llsw	Southwest	lls	South	llse	Southeast
tdes	Early,Shallow	tds	Shallow	tdls	Late,Shallow
tde	Early	tdc	Central	tdl	Late
tded	Early,Deep	tdd	Deep	tdld	Late,Deep

lltdreg table							
	lat/long			time/depth			
srgn	llnw llw llsw	lln llc lls	llne lle llse	tdes tde tded	tds tdc tdd	tdls tdl tdld	total
I	13	8	16	1	21	1	
	17	7	8	4	15	0	
	5	2	3	2	34	1	79
IIa	1	1	1	0	1	0	
	0	2	1	0	2	0	
	0	1	0	0	4	0	7
IIb	23	19	76	0	8	0	
	8	28	14	2	23	3	
	15	5	17	11	80	78	205
IIc	11	4	17	0	8	1	
	5	5	5	0	14	1	
	12	3	10	1	26	21	72
III	123	51	264	71	304	17	
	68	91	261	3	216	3	
	293	159	541	23	958	256	1851
IIIa	0	2	1	0	1	0	
	0	0	1	0	1	0	
	0	1	7	1	9	0	12
IV	1	3	2	0	1	0	
	2	12	2	0	3	0	
	3	3	7	3	26	2	35
V	9	2	5	0	11	0	
	3	3	3	0	3	0	
	2	1	5	0	18	1	33
VI	4	1	2	0	2	0	
	7	4	2	0	4	0	
	8	0	5	1	22	4	33
VII	9	1	3	0	14	0	
	2	4	5	0	9	0	
	5	4	3	1	12	0	36
VIII	8	2	5	0	9	0	
	1	6	9	0	9	1	
	1	0	2	0	14	1	34
IX	945	132	109	83	687	39	
	267	839	105	32	1386	28	
	240	145	304	11	786	34	3086
X	321	27	27	10	126	6	
	62	30	20	2	75	2	
	29	11	30	5	261	70	557

lltdreg table (continued)							
	lat/long			time/depth			
srgn	llnw llw llsw	lln llc lls	llne lle llse	tdes tde tded	tds tdc tdd	tdls tdl tdld	total
XI	0	1	2	0	0	0	
	0	7	2	0	1	1	
	2	0	1	0	13	0	15
XII	6	0	8	0	4	0	
	3	8	1	0	9	0	
	0	1	0	0	13	1	27
III	6	2	14	3	16	0	
Percent	3	4	14	0	11	0	
	15	8	29	1	51	13	100
IX	30	4	3	2	22	1	
Percent	8	27	3	1	44	0	
	7	4	9	0	25	1	100
X	57	4	4	1	22	1	
Percent	11	5	3	0	13	0	
	5	1	5	0	46	12	100

LEGEND: A regional summary of the latitude/longitude and time/ depth differences observed in the collated dataset. Counts of events with latitude and longitude differences of less than, equal to and greater than 0.05 degrees with respect to the Soviet location are shown. Counts of time and depth differences with 5 second and 5 kilometer breakpoints are similarly shown, as below:

llnw	Northwest	lln	North	llne	Northeast
llw	West	llc	Central	lle	East
llsw	Southwest	lls	South	llse	Southeast

tdes	Early,Shallow	tds	Shallow	tdls	Late,Shallow
tde	Early	tdc	Central	tdl	Late
tded	Early,Deep	tdd	Deep	tdld	Late,Deep

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