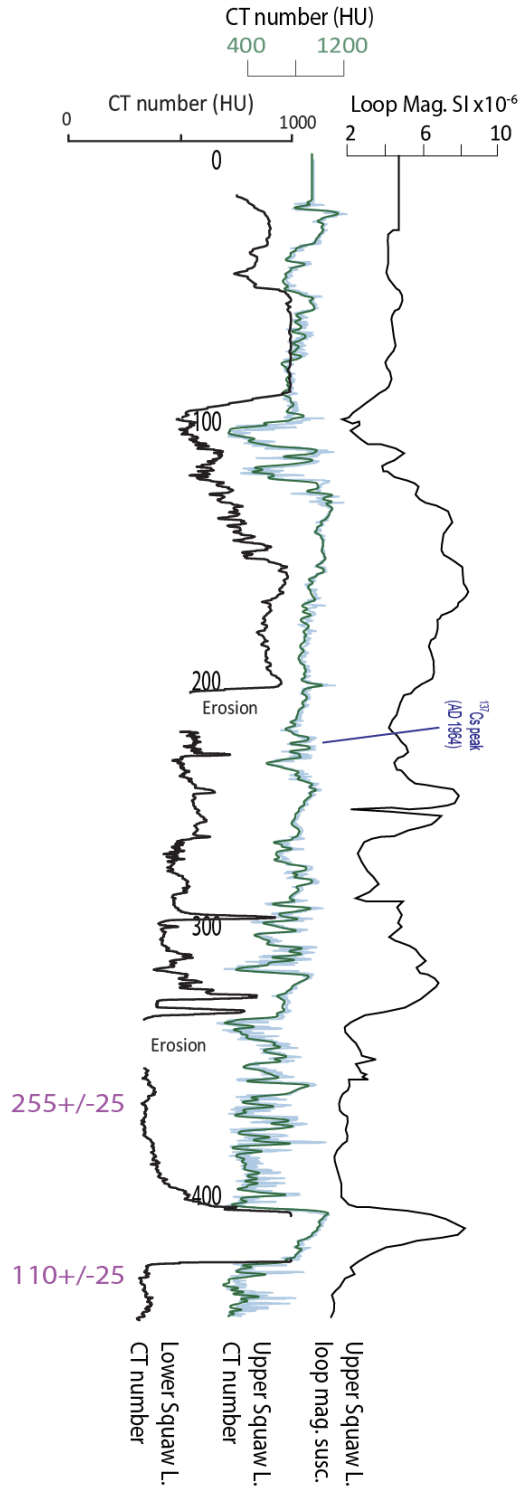


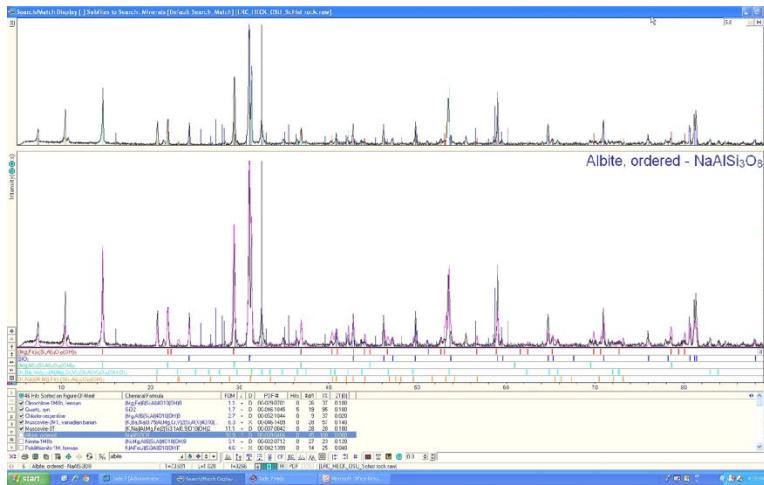
Supplementary Data

1. Comparison between Upper Acorn Woman Lake and Lower Acorn Woman Lake for the identification of a horizon representing 1964. CT number = radiodensity data.

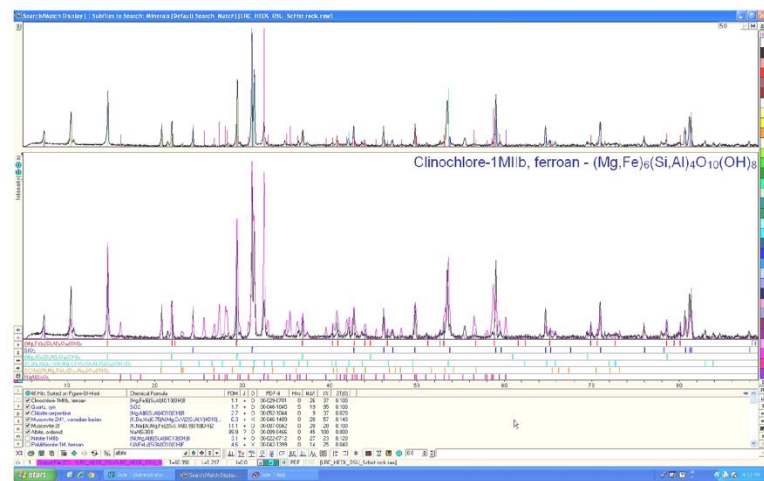


2. XRD Data

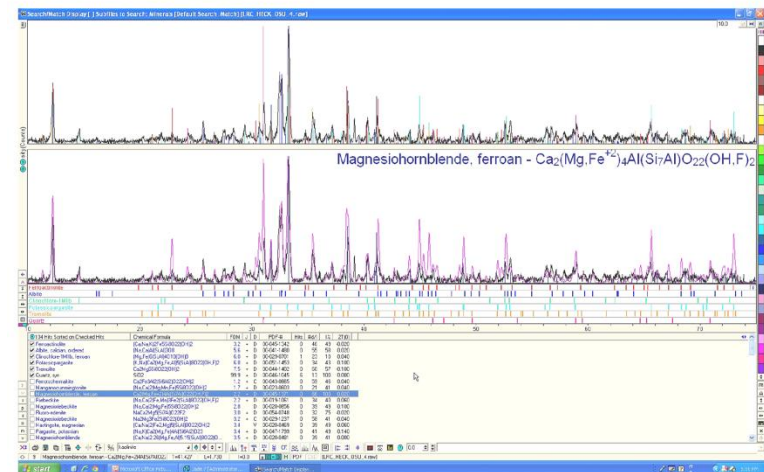
a. JADE software output:



Schist grab2

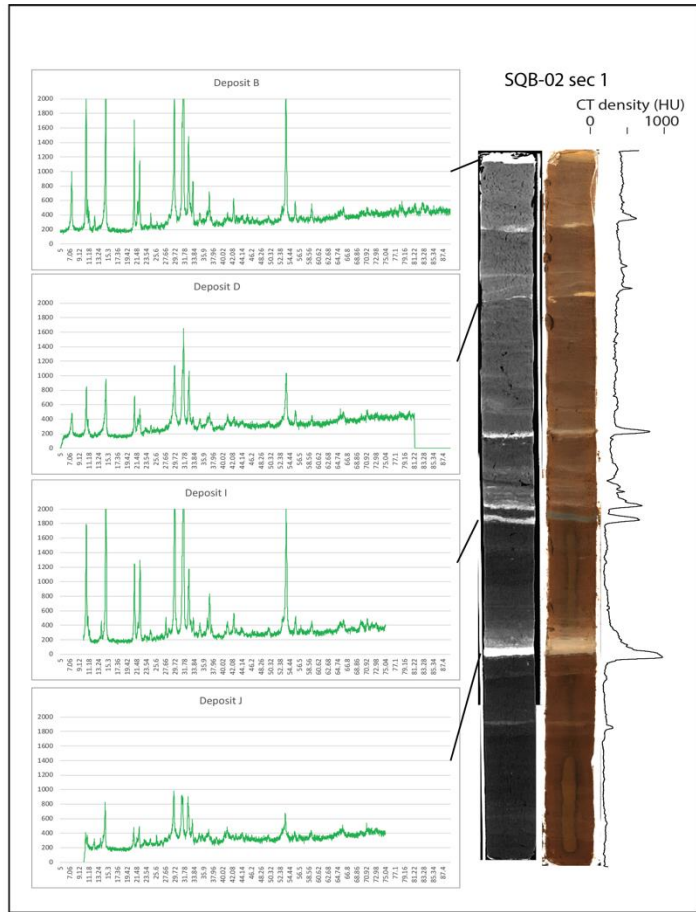
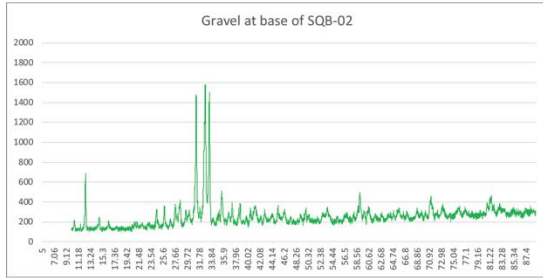
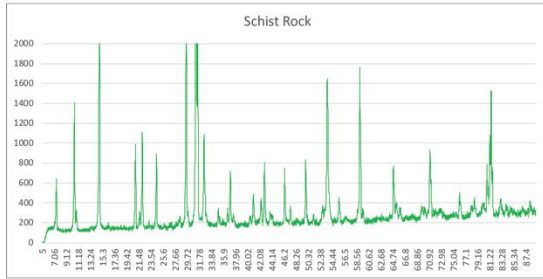
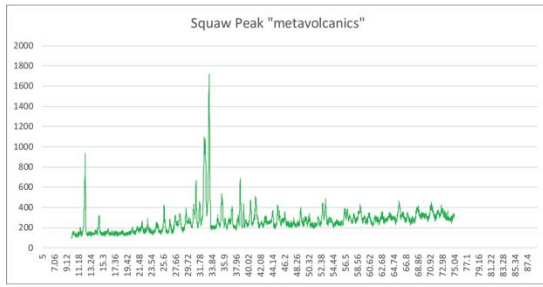


Schist grab1

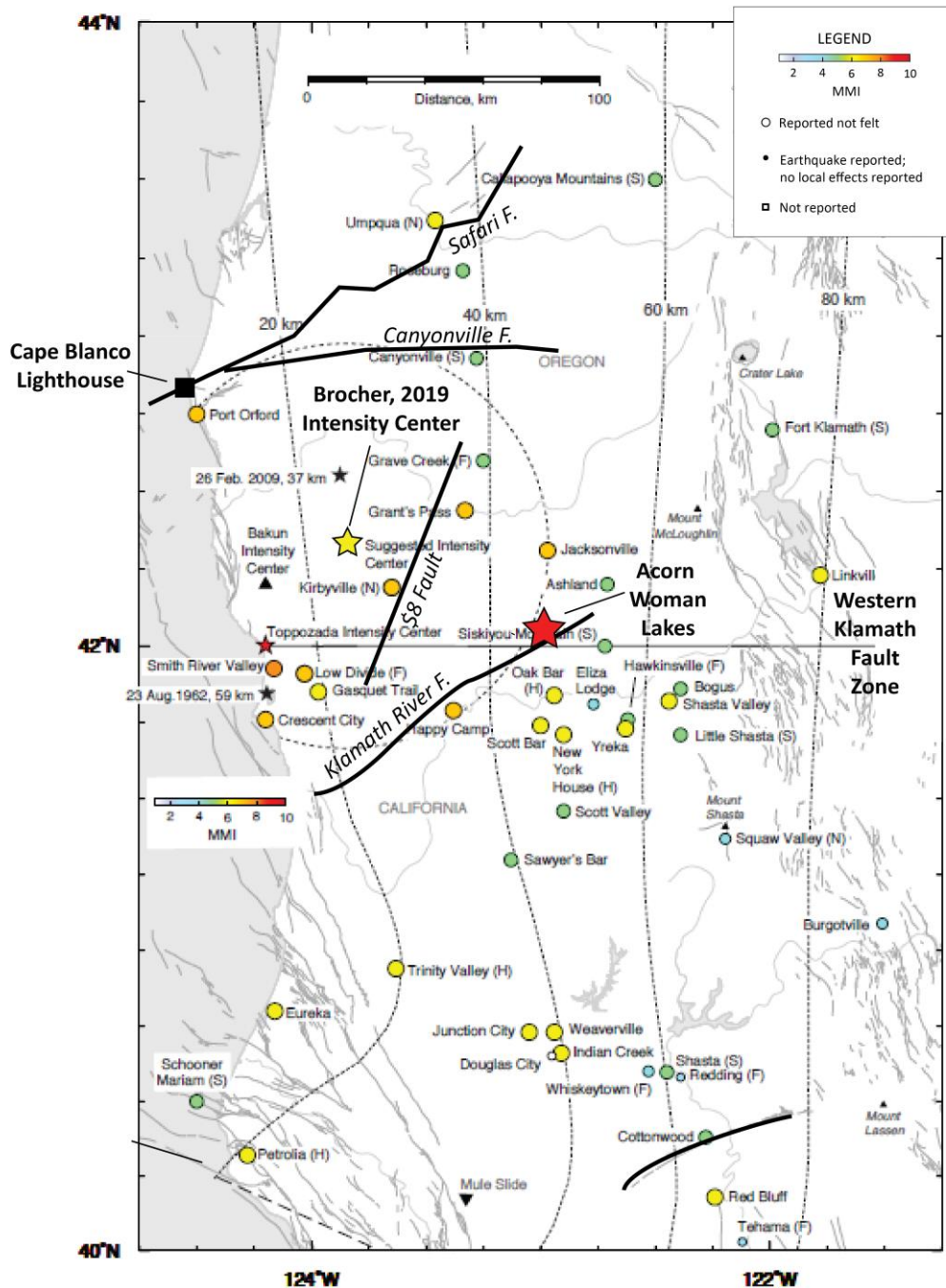


Squaw Peak rock

b. Graphs of XRD data from sediment core samples (see data at the end of this supplement):



3. The 1873 earthquake and regional faults.
 Felt reports do not show dissipation in intensity with distance from the Intensity Centre.



The figure above was adapted from a map of felt reports created by Thomas Brocher (provided as personal communication, 2019) with crustal faults (Klamath River, Canyonville, and Safari Faults) from Wells et al., 2017, and the \$8 fault (Cave Junction Fault) from von Dassow (2018) placed on it. The large red star shows the location of Acorn Woman Lakes. MMI values in the Brocher map are coded by color based on newspaper reports and Felt (F), Light (L), Heavy (H),

and Severe (S) are intensities assigned by Topozada et al. (1981). Reinterpretations of the Felt reports led to minor reassignments of MMI values and the Brocher intensity centre (identified by the yellow star). Also shown are the intensity centers of Topozada et al. (1981) and Bakun (2000).

T. Brocher estimated his intensity centre as follows:

“To estimate an intensity center based on the new intensities, I fit a circle of 70 km radius to enclose all of the MMI VII and VIII intensities, including the new intensity VII assigned to Kirbyville, Oregon. This center is located to the east of both previously proposed intensity centers (Figure 2). Subject to the caveat that we lack intensity observations offshore in this region, the center of this circle lies at 42.3°N and 123.9°W, about 40 km northeast of, but within the 60-km confidence region of the intensity center determined by Topozada and others (1981). This intensity center lies about 35 km to the north east but is within the 67% confidence limit of Bakun’s (2000) intensity center.”

The red fault lines shown on the map above were created by tracing linear features in the topography bounding regions of uplift and sediment ponding (similar to the Eight Dollar Fault setting, von Dassow, 2018). They appear to be conjugate Riedel faults, which are the result of strain and precede strike-slip fault formation. The Klamath Mountain Province is not well understood, and most of these faults are not previously mapped active faults.

4. XRD Data (graphed in 2a,b above):

SQB-02

2Theta	Deposit B	Deposit D	Deposit I	Deposit J	basal gravel	Schist	Squaw Peak
5	172	5				1	
5.02	180	2				4	
5.04	176	5				1	
5.06	166	4				4	
5.08	189	5				1	
5.1	162	2				2	
5.12	164	10				0	
5.14	155	6				1	
5.16	171	12				5	
5.18	163	16				2	
5.2	173	21				1	
5.22	166	38				5	
5.24	188	34				1	
5.26	191	42				1	
5.28	176	40				13	
5.3	158	45				8	
5.32	169	39				13	
5.34	175	57				20	
5.36	173	54				24	
5.38	179	56				27	
5.4	175	70				28	
5.42	180	69				38	
5.44	182	89				47	
5.46	175	70				39	
5.48	188	110				39	
5.5	198	88				54	
5.52	179	98				61	
5.54	162	101				56	
5.56	163	126				54	
5.58	165	123				77	
5.6	181	117				83	
5.62	141	114				73	
5.64	158	116				78	
5.66	167	146				95	
5.68	185	135				88	
5.7	180	127				88	
5.72	170	166				104	
5.74	178	156				121	
5.76	167	143				100	
5.78	166	169				109	
5.8	183	155				110	
5.82	183	158				115	
5.84	175	150				121	

5.86	183	176	125
5.88	189	127	136
5.9	176	160	138
5.92	159	174	151
5.94	177	164	136
5.96	165	144	126
5.98	180	158	126
6	182	159	151
6.02	178	162	115
6.04	195	156	124
6.06	184	164	138
6.08	180	167	137
6.1	191	178	135
6.12	188	137	125
6.14	198	182	155
6.16	194	146	149
6.18	180	174	145
6.2	165	186	144
6.22	172	139	151
6.24	170	153	156
6.26	224	166	143
6.28	212	177	147
6.3	186	173	136
6.32	211	162	142
6.34	179	172	157
6.36	192	163	124
6.38	203	159	146
6.4	200	160	133
6.42	197	147	144
6.44	186	169	148
6.46	211	147	135
6.48	196	191	168
6.5	207	161	135
6.52	199	188	165
6.54	201	184	147
6.56	213	167	156
6.58	216	173	148
6.6	202	168	131
6.62	219	200	143
6.64	204	177	162
6.66	194	164	130
6.68	221	157	154
6.7	194	189	157
6.72	228	180	166
6.74	227	189	134
6.76	188	176	160
6.78	199	185	145
6.8	221	211	144
6.82	210	182	140

6.84	244	182	136
6.86	226	197	152
6.88	206	211	146
6.9	244	184	134
6.92	230	210	154
6.94	229	207	158
6.96	226	207	155
6.98	239	232	168
7	256	231	184
7.02	263	238	159
7.04	283	224	168
7.06	285	219	162
7.08	276	201	189
7.1	300	225	215
7.12	335	272	199
7.14	289	247	190
7.16	341	270	184
7.18	366	277	252
7.2	345	287	247
7.22	402	258	256
7.24	436	265	310
7.26	477	292	329
7.28	445	301	347
7.3	523	284	435
7.32	545	347	495
7.34	582	347	549
7.36	674	392	641
7.38	682	381	581
7.4	804	385	603
7.42	774	411	510
7.44	863	401	390
7.46	924	441	290
7.48	888	431	229
7.5	1001	482	183
7.52	903	452	137
7.54	778	449	128
7.56	720	476	149
7.58	576	443	139
7.6	449	416	148
7.62	330	374	118
7.64	343	361	132
7.66	299	296	133
7.68	285	257	125
7.7	272	263	160
7.72	261	211	140
7.74	240	237	130
7.76	246	230	138
7.78	243	208	134
7.8	251	204	124

7.82	247	201	144
7.84	242	187	128
7.86	265	220	124
7.88	205	198	117
7.9	227	208	106
7.92	208	192	111
7.94	212	189	126
7.96	224	182	136
7.98	228	176	122
8	247	181	138
8.02	222	207	132
8.04	205	178	130
8.06	222	203	123
8.08	193	196	143
8.1	232	169	127
8.12	232	201	126
8.14	209	197	120
8.16	207	168	122
8.18	196	187	109
8.2	189	198	119
8.22	196	182	122
8.24	206	212	123
8.26	229	173	122
8.28	206	179	116
8.3	231	173	115
8.32	215	216	132
8.34	206	183	141
8.36	202	194	137
8.38	200	174	102
8.4	183	155	109
8.42	204	157	109
8.44	221	171	126
8.46	203	185	124
8.48	198	168	144
8.5	209	193	104
8.52	211	170	113
8.54	193	174	115
8.56	224	168	120
8.58	209	171	115
8.6	195	176	124
8.62	204	176	112
8.64	206	184	121
8.66	205	156	115
8.68	207	190	117
8.7	206	196	101
8.72	209	186	116
8.74	195	206	108
8.76	222	171	118
8.78	181	166	125

8.8	191	160	124
8.82	186	178	125
8.84	192	161	119
8.86	203	156	120
8.88	216	174	140
8.9	198	174	109
8.92	173	178	102
8.94	183	169	120
8.96	186	175	108
8.98	202	173	131
9	184	181	118
9.02	199	187	115
9.04	202	181	137
9.06	206	189	123
9.08	175	154	109
9.1	201	181	106
9.12	180	170	130
9.14	216	152	114
9.16	197	181	119
9.18	178	164	135
9.2	218	191	114
9.22	200	157	118
9.24	211	188	109
9.26	210	164	132
9.28	227	180	137
9.3	213	186	122
9.32	196	169	126
9.34	213	169	121
9.36	216	179	120
9.38	209	187	122
9.4	201	196	131
9.42	205	149	136
9.44	211	174	125
9.46	193	165	127
9.48	203	158	142
9.5	218	195	138
9.52	213	172	113
9.54	223	168	140
9.56	224	156	121
9.58	244	192	104
9.6	250	204	125
9.62	219	185	138
9.64	235	205	114
9.66	214	165	130
9.68	206	203	117
9.7	230	172	110
9.72	218	170	117
9.74	218	177	122
9.76	218	189	125

9.78	223	183				146	
9.8	192	192				112	
9.82	220	191				136	
9.84	203	215				114	
9.86	213	205				129	
9.88	227	194				115	
9.9	242	194				142	
9.92	233	200				125	
9.94	219	190				140	
9.96	232	177				131	
9.98	280	211				150	
10	252	199	229	1	130	139	94
10.02	232	170	195	5	111	160	123
10.04	235	199	257	2	123	165	109
10.06	234	191	230	4	122	171	128
10.08	219	187	210	6	138	167	121
10.1	232	202	237	12	112	153	142
10.12	256	212	270	23	124	208	141
10.14	233	232	237	31	116	156	136
10.16	293	235	255	46	139	196	133
10.18	267	234	242	51	138	235	143
10.2	271	219	293	66	142	244	150
10.22	300	250	280	75	142	304	163
10.24	324	225	272	108	124	274	148
10.26	350	238	322	111	136	334	133
10.28	345	250	332	119	150	376	137
10.3	379	256	338	127	145	399	136
10.32	436	244	395	159	134	520	150
10.34	458	289	374	187	139	631	160
10.36	480	329	422	209	157	769	137
10.38	515	329	475	231	164	910	166
10.4	595	319	513	306	178	1146	140
10.42	664	390	535	321	204	1294	135
10.44	725	406	637	348	208	1404	143
10.46	846	410	729	389	208	1345	123
10.48	1069	458	803	397	217	1155	125
10.5	1228	486	916	405	199	918	131
10.52	1524	531	1093	379	192	628	128
10.54	1908	554	1207	298	177	380	137
10.56	2259	601	1412	300	178	296	134
10.58	2353	640	1581	290	159	226	115
10.6	2272	764	1719	273	142	190	139
10.62	1881	795	1790	285	153	221	134
10.64	1547	847	1768	247	109	203	130
10.66	1138	815	1639	266	127	244	119
10.68	754	774	1617	278	126	260	153
10.7	567	667	1365	310	115	234	128
10.72	446	577	1106	278	142	281	122
10.74	407	461	810	312	125	310	134

10.76	408	360	656	352	111	317	115
10.78	396	342	507	345	123	330	139
10.8	405	325	395	322	110	297	130
10.82	368	331	386	373	126	274	123
10.84	433	331	409	326	128	249	101
10.86	486	297	420	342	117	226	118
10.88	578	299	457	303	123	181	129
10.9	594	325	434	301	132	151	132
10.92	617	308	454	262	142	150	138
10.94	556	351	481	258	115	143	119
10.96	541	395	511	224	109	125	130
10.98	494	386	465	222	113	143	140
11	414	397	522	205	112	148	112
11.02	343	328	460	229	133	119	129
11.04	280	355	431	230	132	144	133
11.06	289	285	385	204	127	128	158
11.08	318	243	362	249	131	124	131
11.1	299	236	301	200	117	142	156
11.12	320	205	263	214	134	120	124
11.14	340	227	250	223	115	138	127
11.16	340	212	285	225	127	119	156
11.18	390	209	266	208	122	114	158
11.2	433	220	265	240	135	116	160
11.22	459	222	284	208	125	127	109
11.24	413	233	292	173	139	126	145
11.26	401	227	314	199	119	133	147
11.28	356	265	334	206	132	131	125
11.3	318	221	331	192	123	121	150
11.32	266	227	326	200	134	106	147
11.34	244	232	302	194	140	123	138
11.36	218	205	308	184	133	108	144
11.38	194	203	276	216	106	110	182
11.4	230	191	218	202	133	123	168
11.42	217	199	192	180	129	114	199
11.44	202	159	229	191	131	120	207
11.46	218	176	181	184	133	113	194
11.48	205	188	195	198	180	118	174
11.5	235	176	197	187	141	127	159
11.52	220	174	187	203	153	130	163
11.54	207	190	181	210	149	107	132
11.56	210	182	173	181	135	128	128
11.58	204	168	209	178	121	123	126
11.6	183	161	190	195	119	135	137
11.62	215	172	182	182	108	110	113
11.64	205	197	205	212	128	128	159
11.66	181	174	192	194	108	131	139
11.68	195	154	176	209	123	125	121
11.7	204	162	187	162	121	131	130
11.72	199	178	186	205	117	122	129

11.74	221	157	167	186	118	123	164
11.76	185	168	166	180	105	139	147
11.78	204	184	158	213	146	133	163
11.8	197	167	184	203	124	122	166
11.82	190	163	170	199	116	112	141
11.84	188	147	171	176	133	108	163
11.86	155	146	175	166	124	120	161
11.88	189	159	175	199	124	133	162
11.9	175	164	167	198	125	124	197
11.92	167	184	188	205	127	134	193
11.94	188	148	189	177	141	113	199
11.96	207	158	167	207	141	143	194
11.98	167	176	172	199	147	126	201
12	163	140	182	182	150	137	211
12.02	182	163	182	204	132	108	239
12.04	189	170	170	202	161	115	260
12.06	244	181	168	215	181	130	309
12.08	190	160	182	211	152	132	346
12.1	212	166	169	210	181	141	380
12.12	203	183	170	212	174	116	380
12.14	215	185	162	225	171	142	430
12.16	249	164	162	249	180	116	471
12.18	217	163	189	250	206	121	551
12.2	226	152	181	235	201	132	658
12.22	252	143	186	237	254	114	736
12.24	235	165	194	233	265	107	852
12.26	225	176	158	255	328	134	935
12.28	246	167	164	274	386	114	851
12.3	250	166	178	281	487	129	767
12.32	269	187	152	302	567	118	668
12.34	291	184	172	322	633	134	482
12.36	307	205	199	307	686	138	345
12.38	328	208	165	324	667	126	235
12.4	331	201	166	287	610	147	184
12.42	384	218	203	264	505	137	174
12.44	378	194	199	245	412	132	158
12.46	351	180	179	218	276	108	135
12.48	359	210	148	174	211	131	162
12.5	348	221	178	195	188	128	146
12.52	291	207	178	193	154	122	160
12.54	242	183	154	200	143	124	155
12.56	198	195	172	192	159	120	137
12.58	204	178	179	187	155	128	149
12.6	222	170	186	205	116	115	143
12.62	201	180	200	189	129	134	140
12.64	181	175	166	183	126	119	130
12.66	208	162	173	199	145	117	140
12.68	198	183	190	199	121	124	141
12.7	208	190	199	180	125	139	122

12.72	204	182	178	196	145	125	152
12.74	225	178	180	180	149	136	137
12.76	225	176	183	199	131	125	115
12.78	192	162	188	199	116	141	142
12.8	205	151	192	212	145	125	131
12.82	206	184	175	202	129	134	124
12.84	212	189	188	200	118	120	125
12.86	216	161	155	208	124	109	139
12.88	206	177	149	213	128	123	164
12.9	201	192	182	166	141	124	133
12.92	199	156	172	208	133	140	139
12.94	204	153	184	223	140	129	138
12.96	190	184	200	221	124	122	148
12.98	186	162	190	212	139	147	160
13	238	187	177	203	134	112	125
13.02	175	191	170	198	131	135	122
13.04	212	158	175	199	100	124	146
13.06	191	169	167	210	146	110	127
13.08	203	187	174	207	134	119	129
13.1	206	190	178	184	136	141	132
13.12	192	183	189	215	154	130	160
13.14	224	164	183	229	137	145	150
13.16	205	193	168	221	117	158	126
13.18	213	214	177	229	135	148	136
13.2	221	177	206	200	126	151	139
13.22	244	182	193	227	136	139	154
13.24	209	192	197	227	144	160	168
13.26	230	192	203	219	136	141	154
13.28	224	195	194	218	130	148	150
13.3	236	184	181	210	126	143	136
13.32	218	188	206	226	113	157	112
13.34	211	194	189	209	138	140	143
13.36	220	218	193	239	123	169	150
13.38	231	203	215	197	125	142	152
13.4	249	198	209	219	137	134	138
13.42	254	201	216	219	128	134	146
13.44	208	197	216	219	121	134	148
13.46	239	214	210	242	154	134	137
13.48	239	187	220	215	139	145	131
13.5	255	185	232	227	136	141	139
13.52	234	193	210	223	129	129	156
13.54	239	177	223	202	114	164	140
13.56	258	215	233	244	128	136	143
13.58	265	189	253	231	134	148	146
13.6	241	234	250	250	126	140	142
13.62	230	203	231	274	116	145	144
13.64	238	209	222	277	135	124	134
13.66	257	199	229	291	123	131	139
13.68	213	188	239	328	143	139	141

13.7	240	216	224	288	117	152	146
13.72	231	213	231	308	141	142	131
13.74	263	235	214	277	123	139	152
13.76	253	249	275	241	126	160	144
13.78	218	231	264	277	133	150	138
13.8	243	236	300	242	112	119	147
13.82	222	246	306	265	110	118	145
13.84	249	216	383	224	127	152	136
13.86	245	253	447	220	143	140	125
13.88	271	221	406	223	128	160	151
13.9	275	238	460	196	142	150	134
13.92	276	235	437	220	121	139	145
13.94	256	240	344	190	133	133	168
13.96	289	243	318	238	132	160	171
13.98	286	227	244	245	145	168	141
14	293	227	249	271	126	143	158
14.02	272	230	227	262	128	148	151
14.04	283	266	218	277	136	148	156
14.06	305	249	218	267	125	150	176
14.08	288	248	222	275	150	158	159
14.1	307	258	204	279	145	167	144
14.12	331	279	219	270	123	168	154
14.14	284	274	236	267	136	170	143
14.16	311	275	258	271	155	176	169
14.18	328	241	240	283	125	169	173
14.2	348	258	211	307	139	191	162
14.22	331	285	251	319	155	204	169
14.24	342	281	255	313	137	187	142
14.26	363	299	233	360	151	201	166
14.28	362	314	258	371	133	206	151
14.3	384	318	263	365	149	236	175
14.32	400	313	273	373	163	225	174
14.34	427	329	261	353	148	252	176
14.36	405	354	271	358	155	254	179
14.38	468	354	315	328	147	279	127
14.4	441	371	315	384	155	303	198
14.42	481	338	354	389	170	364	170
14.44	468	376	337	360	163	404	203
14.46	549	416	362	370	152	441	217
14.48	574	416	364	424	178	456	202
14.5	544	413	430	419	166	599	236
14.52	582	404	416	472	160	657	247
14.54	588	417	442	503	170	729	260
14.56	659	420	465	533	167	950	258
14.58	764	475	510	537	168	1201	307
14.6	769	444	548	600	205	1437	305
14.62	843	490	619	668	208	1748	315
14.64	873	502	721	694	225	2124	308
14.66	1006	525	784	754	228	2233	320

14.68	1169	587	860	791	242	2192	280
14.7	1279	665	1043	826	251	2082	197
14.72	1557	646	1194	714	243	1835	189
14.74	1805	652	1435	710	242	1259	154
14.76	2133	767	1674	577	227	856	159
14.78	2403	817	1984	448	172	569	153
14.8	2400	867	2227	398	188	371	156
14.82	2398	878	2414	311	142	286	156
14.84	1998	951	2587	261	125	233	159
14.86	1551	878	2655	275	136	218	137
14.88	1121	923	2561	272	135	215	152
14.9	708	931	2419	228	117	203	145
14.92	550	805	2134	215	131	183	143
14.94	432	669	1810	208	131	191	140
14.96	380	497	1355	226	138	188	170
14.98	344	402	934	203	120	186	125
15	326	326	669	206	130	170	152
15.02	312	292	416	203	128	171	156
15.04	293	287	369	216	133	186	150
15.06	264	229	314	206	127	145	136
15.08	272	243	304	196	121	153	152
15.1	298	235	289	206	129	163	143
15.12	281	209	278	196	100	150	125
15.14	271	279	258	198	114	177	156
15.16	221	255	265	201	127	151	120
15.18	276	179	243	182	134	146	135
15.2	228	239	235	197	155	140	135
15.22	233	203	246	187	129	171	135
15.24	250	229	264	190	110	149	133
15.26	225	171	199	190	135	145	135
15.28	230	190	233	190	130	141	155
15.3	229	187	212	176	116	173	129
15.32	222	183	205	181	130	147	148
15.34	186	206	204	171	150	153	135
15.36	203	184	206	216	135	162	130
15.38	208	180	236	195	132	145	152
15.4	208	177	209	181	137	137	143
15.42	220	157	209	188	125	135	164
15.44	189	178	189	188	122	134	153
15.46	176	175	183	164	134	157	147
15.48	195	178	220	170	136	143	141
15.5	236	191	174	186	139	148	167
15.52	189	192	178	187	120	150	128
15.54	179	178	181	196	128	142	146
15.56	197	165	201	191	140	133	141
15.58	190	171	196	195	141	130	137
15.6	197	180	187	197	110	138	116
15.62	172	184	184	182	130	136	153
15.64	193	184	185	174	112	152	152

