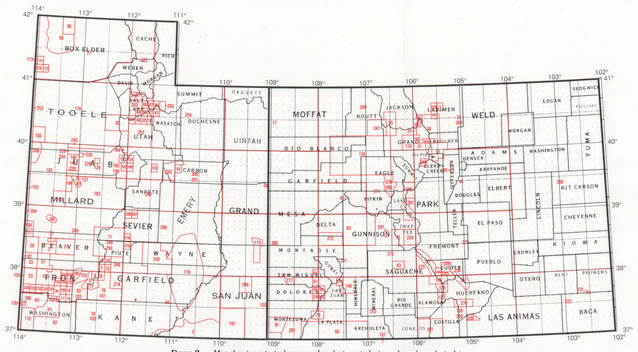
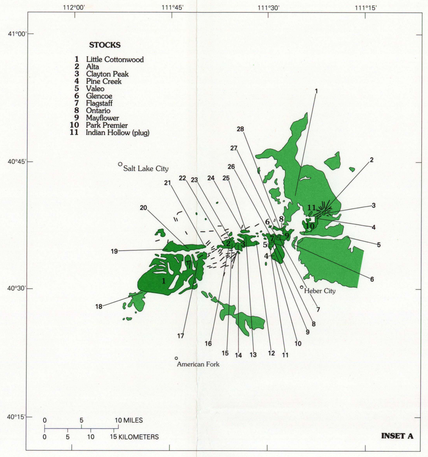
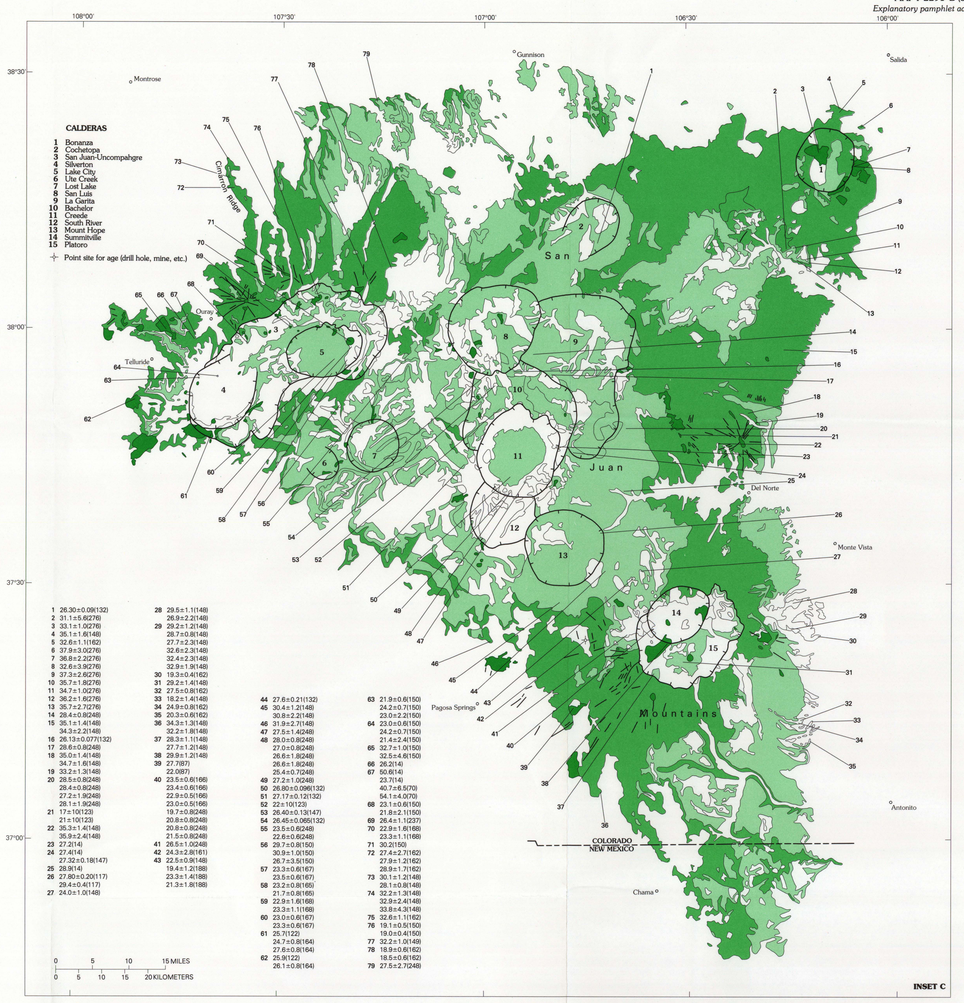


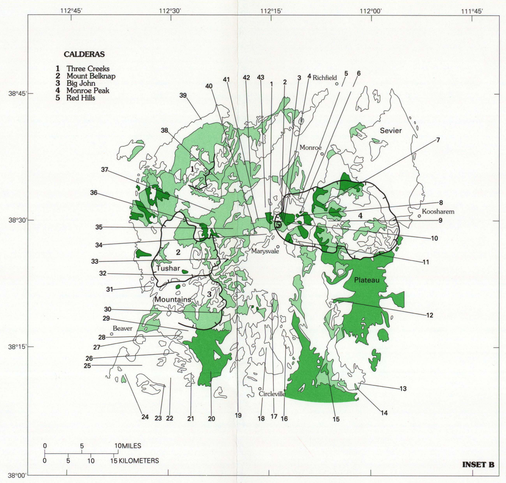
Figure 2. — Map showing principal sources of geologic, petrologic, and geochronologic data.



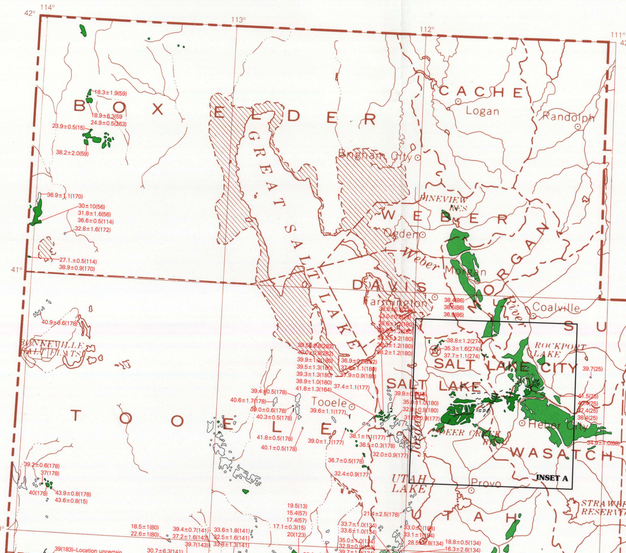
1	37.3±1.3(42)	
	34.8±1.3(42)	
2	36.9±1.3(42)	
3	37.1±1.3(42)	
4	34.8±1.2(42)	
	36.1±1.0(42)	
5	33.6±1.0(68)	
6	36.0±1.1(68)	
7	36.5±1.3(42)	
	36.6±1.3(42)	
8	38.8±1.5(42)	
	42.3±1.6(42)	
9	35.5±1.6(42)	
	40.8±1.2(42)	
10	37.8±1.1(68)	
	36.1±1.3(42)	
11	41.3±1.6(42)	
12	41.2±3.0(68)	
	40.9±2.2(68)	
	37.7±1.5(68)	
	35.7±1.2(42)	
13	33.8±1.2(42)	
14	34.5±(99)	
	40(123)	
	40(123)	
15	33.2±1.0(68)	
	36.0±1.1(68)	
16	33.5±1.0(68)	
	31.7±1.5(68)	
17	26.2±0.8(68)	
18	38.3±1.1(68)	
19	24.5±0.6(68)	
	24.1±0.6(68)	
	25.5±0.8(68)	
	26.1±0.8(68)	
	31.9±0.9(68)	
20	27.4±0.8(164)	
21	29.1±1.4(68)	
	26.9±0.5(113)	
22	33.7±0.7(113)	
23	33.7±0.9(68)	
	32.7±0.9(68)	
	32.9±1.0(68)	
	34.4±1.0(68)	
24	32.4±1.0(42)	
	32.5±1.0(42)	
25	32.9±1.2(42)	
	47.8±1.9(42)	
	47.9±2.3(42)	
26	40.7±1.2(42)	
27	34.3±1.3(42)	
	34.9±1.1(42)	
	34.2±1.3(42)	
	34.6±1.3(42)	
28	35.4±1.4(42)	

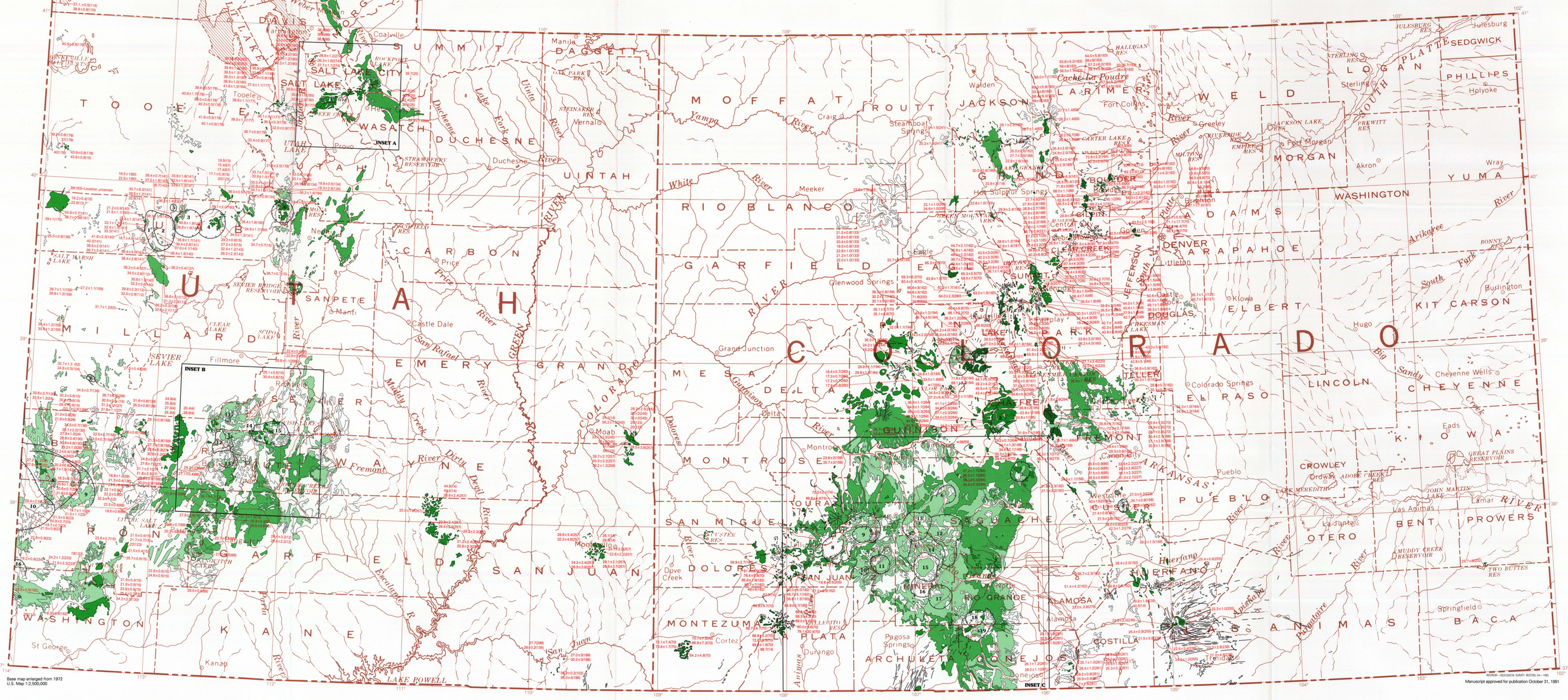


1	26.30±0.09(132)	
2	31.1±5.6(276)	
3	33.1±1.0(276)	
4	36.1±1.6(148)	
5	32.6±1.1(162)	
6	37.9±3.0(276)	
7	36.8±2.2(276)	
8	32.6±3.9(276)	
9	37.3±2.6(276)	
10	35.7±1.8(276)	
11	34.7±1.0(276)	
12	36.2±1.6(276)	
13	35.7±2.7(276)	
14	28.4±0.8(248)	
15	35.1±1.4(148)	
	34.3±2.2(148)	
16	26.13±0.077(132)	
17	28.6±0.8(248)	
18	35.0±1.4(148)	
	34.7±1.6(148)	
19	33.2±1.3(148)	
20	28.5±0.8(248)	
	28.4±0.8(248)	
	27.2±1.9(248)	
	28.1±1.9(248)	
21	17±1(0123)	
	21±1(0123)	
22	35.3±1.4(148)	
	35.9±2.4(148)	
23	27.2(14)	
24	27.4(14)	
	27.32±0.18(147)	
25	28.9(14)	
26	27.80±0.20(117)	
	29.4±0.4(117)	
27	24.0±1.0(148)	
	29.5±1.1(148)	
	26.9±2.2(148)	
29	29.2±1.2(148)	
	28.7±0.8(148)	
	27.7±2.3(148)	
	32.6±2.3(148)	
	32.4±2.3(148)	
	32.9±1.9(148)	
30	19.3±0.4(162)	
31	29.2±1.4(148)	
32	27.5±0.8(162)	
33	18.2±1.4(148)	
34	24.9±0.8(162)	
35	20.3±0.6(162)	
36	34.3±1.3(148)	
	32.2±1.8(148)	
37	28.3±1.1(148)	
	27.7±1.2(148)	
38	29.9±1.2(148)	
39	27.7(87)	
	22.0(87)	
40	23.5±0.6(166)	
	23.4±0.6(166)	
	22.9±0.5(166)	
	23.0±0.5(166)	
	19.7±0.8(248)	
	20.8±0.8(248)	
	20.8±0.8(248)	
	21.5±0.8(248)	
41	26.5±1.0(248)	
42	24.3±2.8(161)	
43	22.5±0.9(148)	
	19.4±1.2(188)	
	23.3±1.4(188)	
	21.3±1.8(188)	
44	27.6±0.2(1132)	
45	30.4±1.2(148)	
	30.8±2.2(148)	
46	31.9±2.7(148)	
47	27.5±1.4(248)	
48	28.0±0.8(248)	
	27.0±0.8(248)	
	26.6±1.8(248)	
	26.6±1.8(248)	
	25.4±0.7(248)	
49	27.2±1.0(248)	
50	26.80±0.096(132)	
51	27.17±0.12(132)	
52	22±1(0123)	
53	26.40±0.13(147)	
54	26.45±0.065(132)	
55	23.5±0.6(248)	
	22.6±0.6(248)	
56	29.7±0.8(150)	
	30.9±1.0(150)	
	26.7±3.5(150)	
57	23.3±0.6(167)	
	23.5±0.6(167)	
58	23.2±0.8(166)	
	21.7±0.8(165)	
59	22.9±1.6(168)	
	23.3±1.1(168)	
60	23.0±0.6(167)	
	23.3±0.6(167)	
61	25.7(122)	
	24.7±0.8(164)	
	27.6±0.8(164)	
62	25.9(122)	
	26.1±0.8(164)	
63	21.9±0.6(150)	
	24.2±0.7(150)	
	23.0±2.2(150)	
64	23.0±0.6(150)	
	24.2±0.7(150)	
	21.4±2.4(150)	
65	32.7±1.0(150)	
	32.5±4.6(150)	
66	26.2(14)	
67	50.6(14)	
	23.7(14)	
	40.7±6.5(70)	
	54.1±4.0(70)	
68	23.1±0.6(150)	
	21.8±2.1(150)	
69	26.4±1.1(237)	
70	22.9±1.6(168)	
	23.3±1.1(168)	
71	30.2(150)	
72	27.4±2.7(162)	
	27.9±1.2(162)	
	28.8±1.7(162)	
73	30.1±1.2(148)	
	28.1±0.8(148)	
74	32.2±1.3(148)	
	32.9±2.4(148)	
	33.8±4.3(148)	
75	32.6±1.1(162)	
76	19.1±0.5(150)	
	19.0±0.4(150)	
77	32.2±1.1(0149)	
78	18.9±0.6(162)	
	18.5±0.6(162)	
79	27.5±2.7(248)	



1	18.9(22)	
	17.7(22)	
	15.3±0.8(251)	
	18.5±0.8(251)	
2	19.9±1.1(218)	
	20.2±0.9(251)	
3	18.9±0.7(172)	
4	19.5±0.7(251)	
	21.3±0.9(251)	
	21.4±0.9(251)	
	20.4±0.9(251)	
	21.6±0.9(251)	
5	21.3±0.7(218)	
	15.3±0.7(218)	
6	20.1(23)	
	22.4(22)	
	25.2(22)	
	16.4(22)	
	23.9(22)	
	20.9±1.1(251)	
	27.8±3.9(251)	
	21.4±1.0(251)	
	21.6±0.9(251)	
	21.6±1.1(251)	
7	21.5±0.8(213)	
	20.0±3.4(218)	
8	22.3(22)	
	19.6(22)	
	22.8(22)	
	25.4(22)	
9	21.1(218)	
10	22.9(22)	
	27.9(22)	
	21.9(22)	
	27.7(22)	
	25.8(22)	
	23.9(22)	
	26.0(22)	
	22.1±4.4(72)	
	18.1±0.8(72)	
	23.3±4.7(72)	
	19.0±1.0(72)	
	22.4±0.7(164)	
	23.3±2.6(251)	
	19.0±0.8(251)	
11	31.9(22)	
	28.7(22)	
12	25.4±0.92(216)	
13	23.4±0.4(88)	
14	20.8±0.5(73)	
15	25.8±0.4(88)	
16	21.1±0.2(28)	
17	29.9±2.6(130)	
18	26.7±0.8(88)	
19	27.0±1.2(251)	
20	22.8±0.4(88)	
21	22.9±0.4(88)	
22	23.5±0.4(88)	
23	23.0±0.4(88)	
24	22.7±0.4(88)	
25	25.0±0.8(88)	
26	22.4±0.4(88)	
27	23.2±0.3(28)	
	21.7±0.8(251)	
	22.1±0.8(251)	
28	22.4±0.4(88)	
29	22.3±0.4(88)	
30	16.1±0.7(251)	
	17.1±0.8(251)	
	19.4±0.8(251)	
31	20.3±0.9(111)	
32	21.8±1.0(251)	
	23.7±3.6(251)	
	28.9±1.4(251)	
33	16.6±0.7(72)	
34	20.5(22)	
	19.5(22)	
	20.5(22)	
35	22.6(22)	
	16.4(22)	
36	24.1±1.2(251)	
37	17.2±0.7(47)	
38	27.4±1.3(251)	
	26.9±2.2(251)	
	28.9±1.5(251)	
	32.1±1.4(251)	
	30.6±1.3(251)	
39	33.6±2.6(130)	
40	18.0±0.8(251)	
41	19.6±0.8(251)	
	18.8±1.7(251)	
42	18.3±1.1(47)	
43	30.8±3.0(164)	





Base map enlarged from 1972 U.S. Map 1:2,500,000

SCALE 1:1 000 000

NATIONAL GEODETIC VERTICAL DATUM OF 1929

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1993
Manuscript approved for publication October 31, 1991

MODE OF ORIGIN AND AGE MAP

MAPS SHOWING DISTRIBUTION, COMPOSITION, AND AGE OF EARLY AND MIDDLE CENOZOIC VOLCANIC CENTERS IN COLORADO AND UTAH

By
Robert G. Luedke
1993

EXPLANATION

- Other volcanic rocks — 16-58 Ma
- Ash-flow tuff — 16-58 Ma
- Dominantly volcaniclastic unit — 16-58 Ma
- Intrusive mass — 16-58 Ma
- Volcanic rocks — Pre-58 Ma (Cimarron Ridge and Golden areas, Colorado)
- Intrusive mass — Pre-58 Ma (principally in Colorado mineral belt)
- Dike, sill — 16-58 Ma
- Dike, sill — Pre-58 Ma (principally in Colorado mineral belt)
- 33.5±1.2(24) Radiometric age in Ma — Number in parentheses indicates data source. Leader indicates point source.
- Caldera — Numbered and listed by state in Table 1.
- Contact

Table 1.— Calderas numbered and listed by state

	COLORADO		UTAH
1	Grizzly Peak	1	Thomas
2	Mount Aetna	2	Dugway Valley
3	Bonanza	3	Keg
4	Johnson Gulch	4	Desert
5	Rosita	5	Flint Spring
6	Cochetopa	6	Unnamed
7	San Juan-Uncompahgre	7	Crystal Peak
8	Silverton	8	Indian Peak
9	Lake City	9	Pine Valley
10	Ute Creek	10	White Rock
11	Lost Lake	11	Three Creeks
12	La Garita	12	Mount Belknap
13	San Luis	13	Big John
14	Bachelor	14	Red Hills
15	Creede	15	Monroe Peak
16	South River	16	Pine Park
17	Mount Hope		
18	Summitville		
19	Platoro		