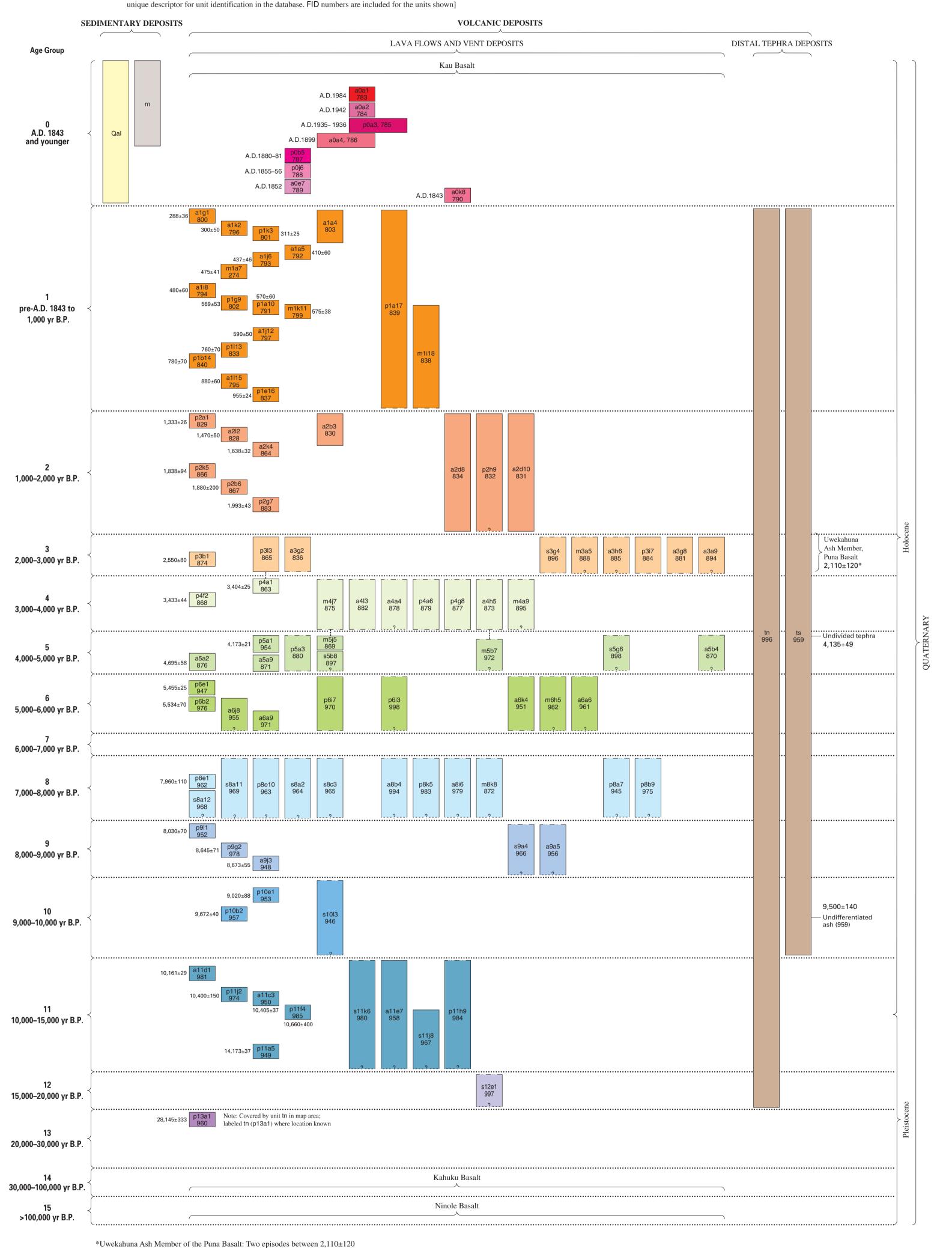
U.S. Department of the Interior U.S. Geological Survey

and 2,770±70 (Dzurisin and others, 1995).

CORRELATION OF MAP UNITS

[Only the unit label for the most common flow type, listed first in the unit description of Map units; Description of Map units, pamphlet), is included in the Correlation of Map Units and table 2. See Description of Map Units for detailed unit age information. Uncalibrated radiocarbon ages are reported in years before present (yr B.P.). Undated flows are correlated with dated flows using superposition; surface exposure; color change due to solar radiation; extent of weathering; tree height, size, and girth; diversity of native plant species; and soil and ash accumulation. Stacking of unit boxes shows direct superposition relations of units in map area; horizontal position of undated flows does not imply age equivalence. **Dashed line with query** along bottom of unit box shows base of flow is concealed. **Dot-dot-dash line** along top or bottom of unit box shows unit is not bounded by units of adjacent age group. In addition to the map unit label, a unique, three-digit flow identification number (FID; for example, FID 831) is assigned to each mapped flow unit to facilitate use of the database (https://doi.org/10.3133/sim2932A); the FID is essential as a



LIST OF MAP UNITS [Some unit exposures on the printed or plotted map are not labeled to avoid obscuring data; use unit color or database (https://doi.org/10.3133/sim2932A) for unit identification. The simplified map unit label is not unique and provides quick access to flow morphology, flow age group, phenocryst mineralogy, and flow number in an age group (table 3); this non-unique unit label may be used for an entirely different unit on a different flank of Mauna Loa. Unit labels are listed by frequency of flow type with the most abundant listed first. We use the term "phenocryst" for any mineral ≥1 mm in maximum diameter. Pyroxene is not an abundant phenocryst in Mauna Loa lava flows; therefore, it is not included in phenocryst mineralogy. In addition to the map unit label, a unique, **three-digit flow** identification number (FID; for example, FID 831) is assigned to each mapped flow unit to facilitate use of the database for the entire Mauna Loa edifice; the FID is essential as a unique descriptor for unit identification in the database] SEDIMENTARY DEPOSITS SURFICIAL DEPOSITS (HOLOCENE) Unconsolidated sedimentary deposits Man-made deposits **VOLCANIC DEPOSITS** LAVA FLOWS AND VENTS Kau Basalt Age Group 0 (A.D. 1843 and younger; Holocene) A.D. 1984 flow—FID 783 **A.D. 1942 flow**—FID 784 A.D. 1935–36 flow—FID 785 A.D. 1899 flow—FID 786 A.D. 1880-81 flow—FID 787 A.D. 1855-56 flow—FID 788 p0j6, a0j6, s0j6 a0e7, p0e7, s0e7 A.D. 1852 flows—FID 789 a0k8, p0k8 A.D. 1843 flow—FID 790 Age Group 1 (pre-A.D. 1843 to 1,000 yr B.P.; Holocene) Keʻāmoku Kīpukakēkake flow—FID 800 a1k2, m1k2, p1k2, s1k2 Puʻukupanaha flow—FID 796





Pana'ewa picrite flow—FID 828

Puʻukāhilikū flow—FID 866

'Āinakahiko flow—FID 867

Flow 834—FID 834

Upper Strip Road flow—FID 883

a2l2, p2l2, s2l2

p2k5, a2k5, s2k5

p2b6, a2b6, s2b6, m2b6

p2g7, a2g7

a2b3, s2b3, p2b3, m2b3 Flow 830—FID 830

a2k4, p2k4, m2k4, s2k4 Upper Waiākea flow—FID 864

Photograph of an outcrop at the Chong Street Bridge in Hilo that provides a cross-sectional view of the 1880–81 (top left), Punahoa (3,406 yr B.P.; flow top right), Homelani (tn; orange-red ash unit under Punahoa and 1880–81 flows), and Waiānuenue (14,173 yr B.P.; foreground lowest unit on floor



Age Group 3 (2,000–3,000 yr B.P.; Holocene)

Flow 836—FID 836

Flow 865—FID 865

Pu'u 7996—FID 896

Flow 888—FID 888

Flow 885—FID 885

Flow 884—FID 884

Flow 881—FID 881

Flow 894—FID 894

Wilder Road flow—FID 954

Flow 880—FID 880

Flow 870—FID 870

Flow 869—FID 869

Pu'u 8400—FID 898

Flow 972—FID 972

Pu'u 7520—FID 897

Flow 998—FID 998

Flow 961—FID 961

Flow 970—FID 970

Age Group 6 (5,000–6,000 yr B.P.; Holocene)

Pu'umaka'ala picrite flow—FID 947

Mountain View flow—FID 976

Waikahe Road flow—FID 951

Waikoloa Ponds flow—FID 982

'Ōla'a Plantation flow—FID 955

Age Group 7 (6,000–7,000 yr B.P.; Pleistocene)

[No units of this age group are found at the surface in the map area]

Age Group 8 (7,000–8,000 yr B.P.; Holocene)

Palakea Flat flow—FID 962

Pu'u 6920 and Pu'u 6480—FID 965

Pu'u 5400—FID 964

Flow 994—FID 994

Flow 983—FID 983

Flow 979—FID 979

Flow 945—FID 945

Flow 872—FID 872

Flow 975—FID 975

Flow 963—FID 963

Pu'umaka'ala Natural Area Reserve flow—FID 971

Waiakeawaena flow—FID 876

a3g2, p3g2, m3g2

p3l3, a3l3

s3g4, a3g4

m3a5, s3a5, p3a5

a3h6

p3i7, a3i7, s3i7, m3i7

a3g8, s3g8

a3a9, m3a9, p3a9

p4f2, a4f2, m4f2, s4f2

a4l3

m4j7, a4j7

m4a9, p4a9, a4a9

p5a3, m5a3, a5a3

s5g6, p5g6

m5b7, p5b7, a5b7, s5b7

m6h5, a6h5

p6i7, a6i7

s8a2

a8b4

p8k5, a8k5

a8i6, p8i6, s8i6

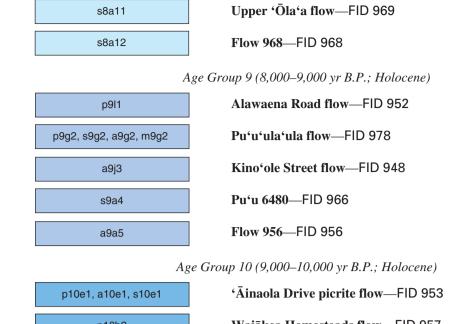
m8k8, a8k8, p8k8

p8e10

Solomons Waterhole flow—FID 874

three-dimensional view of lava stratigraphy. The unit at the top of the falls is the 'Anuenue flow (10,199 yr B.P.). The unit at the base of the falls is the Waiānuenue flow (14,219 yr B.P.). Columnar jointing can be seen at the

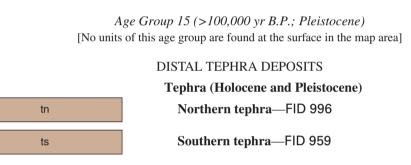
base of the 'Anuenue flow (right side).



Age Group 4 (3,000–4,000 yr B.P.; Holocene)		p10b2	Waiākea Homesteads flow—FID 957
	Punahoa flow—FID 863	s10l3	Puʻu 3500—FID 946
, s4f2	Kīpuka 'Āinahou flow—FID 868	Age Group 11 (10,000–15,000 yr B.P.; Holocene and Pleistocene)	
	Flow 882—FID 882	a11d1, p11d1	Waikoloa Ponds of Wailuku flow—FID 981
	Flow 878—FID 878	p11j2	Flow north of Pu'ulala'au—FID 974
i	Flow 873—FID 873	a11c3	'Anuenue flow—FID 950
i	Flow 879—FID 879	p11f4, a11f4	Mauna Huʻihuʻi flow—FID 985
	Lava north of Keawewai Camp—FID 875	p11a5	Waiānuenue flow—FID 949
4g8	Flow 877—FID 877	s11k6	Kūlani Cone Complex—FID 980
4a9	Flow 895—FID 895	a11e7	Laulā Road flow—FID 958
Age Group 5 (4,000–5,000 yr B.P.; Holocene)		s11j8	Pu'ulala'au cone—FID 967

	l .			
p11a5	Waiānuenue flow—FID 949			
s11k6	Kūlani Cone Complex—FID 980			
a11e7	Laulā Road flow—FID 958			
s11j8	Puʻulalaʻau cone—FID 967			
p11h9	Flow 984—FID 984			
Age Group 12 (15,000–20,000 yr B.P.; Pleistocene)				
s12e1	Hālaʻi Hills flows—FID 997			
Age	Group 13 (20,000–30,000 yr B.P.; Pleistocene)			
p13a1	Kaluiiki flow—Covered by unit tn in map area; labeled tn (p13a1) where subsurface location known. FID 960			
	(proar) where subsurface location known. Fib 900			

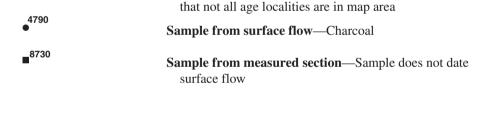
(p13a1) where subsurface location known. F		
Kahuku Basalt		
Group 14 (30,000–100,000 yr B.P.; Pleistocene) of this age group are found at the surface in the map area]		
Ninole Basalt		



EXPLANATION OF MAP SYMBOLS

	Contact —Approximately located. Internal contact defines flows
+++++++++++++++++++++++++++++++++++++++	Fissure—Trace of fissure
	Vent—Trace of vent
	'A'ā and mixed flows
	Spatter
+ + + + + + + + + + + + + + + + + + + +	Ash—Ash (tn or ts) covering flows
MK	Mauna Kea denosits—Evnosed in northern part of man

MK	Mauna Kea deposits—Exposed in northern part of map area
K	Kīlauea Volcano deposits—Exposed in southeast corner of
	map area
4700	Radiocarbon-dated sample locality—Age shown in yr B.P. See table 2 in pamphlet for analytical data; note that not all age localities are in map area





Photograph showing lava fountain erupting from fissure that cuts through Pohaku'ohanalei, at 12,425 ft elevation, Northeast Rift Zone, Mauna Loa, 6:25 a.m., March 25, 1984. Photograph by Jim Griggs, U.S. Geological Survey.



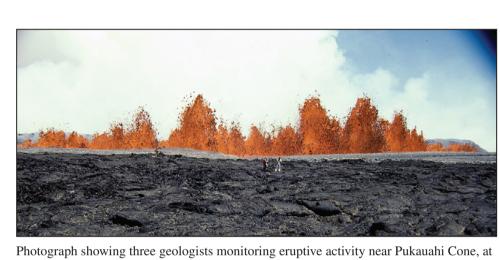
Photograph of eruptive activity near Pukauahi Cone, at approximately 11,000 ft elevation, Northeast Rift Zone, Mauna Loa, 11:30 a.m., March 25, 1984. Lava fountains reach as high as 25–30 m. Photograph by Richard B. Moore, U.S. Geological Survey.



Photograph showing new fissure that began erupting at 11,185 ft (3,409 m) elevation, sending a flow in the Kīlauea Volcano (southeast) direction, Northeast Rift Zone, Mauna Loa, 10:51 a.m., March 25, 1984. Photograph by John P. Lockwood, U.S. Geological



Mauna Loa, 12:23 p.m., April 4, 1984. Photograph by Jim Griggs, U.S. Geological



approximately 11,000 ft elevation, Northeast Rift Zone, Mauna Loa, 11:20 a.m., March 25, 1984. Photograph by Richard B. Moore, U.S. Geological Survey



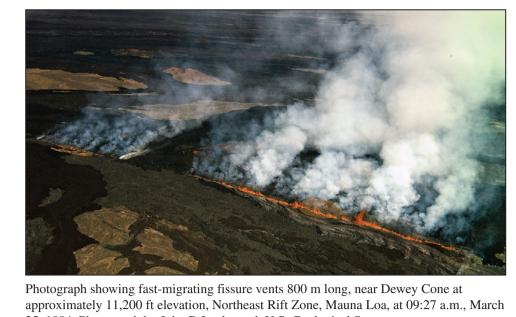
Photograph showing eastern edge of flow front formed by three 'a'ā flows, taken at dawn on the morning of March 26, 1984, Northeast Rift Zone, Mauna Loa. Photograph by Dale Cruikshank, University of Hawaii.



Photograph showing wide-angle view of fissure that opened at approximately 12,000 ft elevation, Northeast Rift Zone, Mauna Loa, March 25, 1984. Active fountaining portion of the fissure was approximately 0.5 km long.



Northeast Rift Zone, Mauna Loa, 1:30 p.m., March 25, 1984. Red dust is result of rock fall associated with eruptive activity at fissure vent. Lava fountains reach as high as 20–30 m. Photograph by Richard B. Moore, U.S. Geological Survey.



25, 1984. Photograph by John P. Lockwood, U.S. Geological Survey.



06:51 a.m., March 25, 1984. Fountain heights are 10–20 m high. White spot below and left of center is helicopter, for scale. Photograph by Jim Griggs, U.S. Geological Survey.



elevation, Northeast Rift Zone, Mauna Loa, March 25, 1984. This vent became the main source of lava for the duration of the eruption. Photograph by John P. Lockwood, U.S.



Photograph showing aerial view of main lava channel, Northeast Rift Zone, Mauna Loa, April 4, 1984. At widest point, channel is approximately 50–60 m across. Photograph by Christina Neal, U.S. Geological Survey.



Northeast Rift Zone, Mauna Loa, March 25, 1984. Lava fountains reach as high as 25 to 30 m. Photograph by Dale Cruikshank, University of Hawaii.



Pukauahi Cone at approximately 11,000 ft elevation, Northeast Rift Zone, Mauna Loa, March 25, 1984. Photograph by Dale Cruikshank, University of Hawaii.

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