

# Hawaiian Volcano Observatory Record Book 1933

This volume is one of a series of record books compiled by the Hawaiian Volcano Observatory (HVO) from 1912 through early 1966. The pages for this volume were transferred by HVO to the Bishop Museum, in Honolulu, Hawai'i, in 1972 and are held at that institution (accession number 1972.265). In 2010, HVO entered a cooperative agreement with Bishop Museum to scan many of the record books in their repository. The scanning was done by HVO volunteer Frances Wong using a flat-bed scanner at a resolution equivalent to 600 dpi. The raw scans were then delivered to HVO volunteer Ben Gaddis, who processed each of the scanned pages by cropping and by adjusting the exposure and contrast using a photo editing program. The scanned and photographed pages for this volume were then combined to form this digital version of the record book. Quality control and posting was done by Tim Orr of the U.S. Geological Survey Alaska Volcano Observatory.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

## JOURNAL

Day	Date	January 1, 1933
Sunday		
Tuesday	" 3,	"
Wednesday	" 4,	"
Saturday	" 7,	"

January 1 Raining & misty at pit. A few rocks were heard falling. Uwekahuna  
9:30-10:15 a.m. road closed. Washed out by yesterday's rain.

January 3 No changes noted at pit. Rain was falling at 9:15 a.m. & the  
8:40-9:50 a.m. wind was light NE. A few rocks fell.

E.G.W.

3-3:30 p.m. Made a quick trip to pit after seeing what appeared to be the  
dust cloud of an avalanche. Blue fume had also shown above rim in  
thick puffs. No sign of any large slide was found though Jones noted  
a couple of fresh yellow scars from broken-off rocks above the canoe  
sill. Dust cloud was probably sunlight through a light mist or steam.

A.E.J. &amp; E.G.W.

January 4 Lt S breeze, low clouds & mist. Some rocks were heard falling.  
8:45-10 a.m. Steam was dense in the pit & blue fume could be detected issuing  
with the steam from some cracks on the floor near the S talus.

E.G.W.

January 7 Measurement of rim cracks showed a very slight widening at four  
points.

Pit was quiet and no changes noted.

During the last month a 'hot spot' has appeared on the N end of  
the NW talus. This is most noticeable in rainy weather, the gravel  
appearing perfectly dry, where all around it the talus is wet. No fume  
or steam can be seen at this spot. In dry weather it appears a somewhat  
lighter gray than the rest of the talus.

A.E.J. &amp; E.G.W.

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Day	Date
Tuesday	January 10, 1933
Thursday	" 12, "
Saturday	" 14, "
Tuesday	" 17, "

January 10

A few rocks were heard trickling from the walls during a 20' watch at the lookout. The South talus is quite wet from steam. There are numerous fresh looking scars of broken-off rocks about the walls.  
Day clear with light NE breeze.

January 12

Low clouds & mist. Lt NE breeze. Four quakes recorded on pit seis. Largest 20-30 mi-showed moderate S tilt & recorded more strongly on N-S component.

E.G.W.

January 14

Measurements of rim cracks showed a total of nine points opening 01 mm. or less out of a total of 25 points.  
A few rocks were heard trickling but as a moderate NE wind was blowing the sound of falling rocks may have been obscured.  
Day clear. Fresh to str NE wind.

A.E.J. &amp; E.G.W.

January 17

Yasunaka reports that he could smell the fumes from the pit while at the tourist stand.  
Little or no fume noticeable all during the week.

A.E.J.

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	January 16, 1933
	Tuesday		" 17, "
	Wednesday		" 18, "
	Thursday		" 19, "
	Friday		" 20, "

## Puna Reconnaissance

January 16

Left Volcano 9 a.m.

Olaa bought camp groceries etc reached Pahoa 11:30 a.m. Recovered & flagged  $\Delta$  Puaa Kokoi - Sts visible Kaliu? & Honuaula. To Kalapana by way of Pahoiki Road. Looked for place to put sta bet Pahoa & Honuaulo. Nothing doing. Reach Kalapana 6 p.m.

January 17

Worked along road from Kalapana to Pahoiki.

January 18

Honuaula &amp; hills above Riffer Co Road.

January 19

Tried to make Heiheiapuku by two different trails. Road overgrown by guava & trails all blocked with aluhi. Gave up at 12 noon & went back to examine hill below road near Kaliu. Wood make a fair staif \_\_\_\_\_

&amp; needed.

January 20

Hakuano &amp; Kuapau.

Leave Kalapana 1:30 p.m.

E.G.W.

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Day	Date	January 21, 1933
Saturday		
Monday		" 23, "
Tuesday		" 24, "
Thursday		" 26, "
Saturday		" 28, "

January 21

Measurement of rim cracks showed 13 points out of a total of 25 opening in slight amounts 1 mm or less.

Since last visited on Sunday Jan 15 there appears to have been very little change at the pit. The NE wall seemed to show some small sliding.

High winds masked the sound of any falling rocks.

A.E.J. &amp; E.G.W.

January 23

Quiet at pit & no changes noted. A fresh NE wind was blowing & 8:30-10 a.m. the sky was partly cloudy. No rocks were heard to fall during a 15' watch at pit.

January 24

Wretched weather at pit. Low cloud & driving rain with fresh 8:15-9:20 a.m. NE wind. Pit was full of steam.

January 26

Another wretched day at pit. Driving rains with fresh NE wind. 8:55-9:30 a.m. A short look in pit revealed no changes. Fume was normal for this type of thick weather.

E.G.W.

January 28

Measurement of rim cracks showed 7 points out of a total of 25 opening very slightly.

Fresh looking dark red gravel in spots on the N wall over the canoe sill showed that there had been some small sliding there. No other changes were noted.

Sky overcast & wind variable.

A.E.J. &amp; E.G.W.

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Day      Monday  
          Tuesday

Date      January 30, 1933  
          "      31,      "

✓ January 30

Leave Volcano 8:15 a.m. Raining. Bought supplies at Olaa Store. Spent two hours at Pahoa waiting for weather to clear. No luck. Reached Kalapana 3 p.m. Heavy rains.

✓ January 31  
Kalapana

Rain in morning. Cleared about 11:30 a.m. Drilled hole & set tablet at  $\Delta$  Sta Moana Hauoe. Drove over to Kaueleau & finally found likely place to put tower. Trees too slippery to climb.

E.G.W.

January 31

Floor of pit covered with steam plumes from heavy rain.

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## JOURNAL

Day	Wednesday	Date	February 1, 1933
	Thursday		" 2, "
	Friday		" 3, "

February 1

Took one helper. After climbing tree at Kaueleau was able to see with a little clearing the needed points except Malama. Think 30' tower with high flag will do trick. Recovered & Flagged Pahoiki  $\Delta$  Sta for Recon.

P.M. examined Puu Kukii at Kapoho for  $\Delta$  point. O.K. Walked down to shore end of Kula fault. Held at mess of broken pahoehoe etc. Kipu Pt on N side fault will make a good station. Found trail coming back which starts from Banana patch at Koae.

J. Hananio &amp; E.G.W.

February 2

Slight amt of fume visible in pit.  
No rocks were heard though no wind.

XXX

Alone to Puu Kaliu. Missed trail & didn't get on top until noon & then had to clear top of Ki plants & ginger. Reached car & lunch at 3 p.m.

E.G.W.

February 3

Cut trail through guavas all morning to Pt on Malauio Crater. Cleared off hill & set tablet. Another so-called lunch at 3.

J. Hananio &amp; E.G.W.

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## JOURNAL

Day	Date
Saturday	February 4, 1933
Sunday	" 5, "
Monday	" 6, "
Tuesday	" 7, "

February 4

Left Kalapana 8:10 a.m.

Examined several high points on either side of Pahoa road but have yet to find anything that will do for station. Reached Volcano 2 p.m.

E.G.W.

Some fume noticeable in shadowed part of pit. A few rocks were heard in a 10 minute interval.

XXX

February 5

9:50-10:30 a.m. Quiet at pit. Only change noted since last week is a small bright orange-yellow scar on the wall just above the center of the fanlike top of the E end of the N talus. A few large gray boulders lie underneath on the talus.

Wind fresh SW & sky partly cloudy.

Note: Crack measurements on Feb. 4 by A.E.J. showed only 5 points opening in very slight amounts.

February 6

8:30-9:15 a.m. Very quiet at pit. Only one rock was heard falling. The air was calm and sky partly cloudy.

Considerable small rocks & gravel on floor under W wall show that there has been peeling off of rocks on that side but no large sliding.

E.G.W.

February 7

Pit quiet. No falling rocks.

A.E.J.

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## JOURNAL

Day	Date	February 11, 1933
Saturday		
Sunday		" 12, "
Saturday		" 18, "
Tuesday		" 21, "
Wednesday		" 22, "

February 11      Went to pit. Rather rainy, steam in pit from rainfall. Steam in cracks near windbreak felt warmer than usual. Eight cracks opened. No sliding or rocktrickling was noted in two hours work about the pit.

February 12      Much steam in Halemaumau, could not see floor. No sliding or rocktrickling noted in ten minutes.

February 18      Six cracks opened 0.40 mm, four closed 0.30 mm. No rocks were heard to fall - very quiet.

A.E.J.

February 21      A slide fell from the E wall of pit at 9:17 a.m. No fume was  
9:17 a.m.      noticed and no rick trickling.

T.A.J.

February 22      A little rock trickling was observed this morning. Very little tilt change has taken place after the v.f. checks of the last 24 hours.

Jones

Day Mon Feb 20 to 24  
SaturdayDate 1933  
February 25, 1933February 20-24

Left HVO 8:30 a.m. February 20 to Kalapana by way of Kapoho.  
Spent week largely in neighborhood of Kula fault region locating  
points for stations.

Yasunaka with help from Honma? cut trees on Honuala Feb. 21.  
Took Iwashita to see tower location at Kauekau on Feb 22.  
Returned to HVO 3 p.m. February 24.

E.G.W.

February 25

Slight am't of fume visible in pit. One rock fell while at  
tourist stand, 12 cracks opened for a total am't of 1.36 mm. (3 closed  
0.15) No noteworthy tilt has taken place at the Tiltmeter.

A.E.J.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Date
Saturday	March 4, 1933
Sunday	" 5, "
Saturday	" 11, "
Monday	" 13, "
Tuesday	" 14, "

March 4 Measurement of rim cracks showed 7 points opening slight amounts of 8:55-10:30 a.m.  $1\frac{1}{2}$  mm or less (aggregate 3.5 mm 25 cr.) out of a total of 25 measured.

Kona weather continues. At the pit the vapor was very dense & rain fell all morning. There were numerous ponds of water on the crater floor. Pit appeared quiet. Made circuit of rim and found that there has been some slumping near the rim at the Postal Cavern tube. Fresh looking scars showed on the S side of the tube.

E.G.W. &amp; A.E.J.

March 5 Sky cloudy with a little rain at time & lt SW breeze.  
9:50-10:15 a.m. Rocks were heard falling frequently, probably loosened by the heavy rain on Mar. 4. Both fume & steam were moderate in quantity. There were numerous small steam jets on the pit floor.

E.G.W.

March 11 A small slide fell from the E end of the N Buttress at 11 a.m. During the week there has been sliding from the NE wall & from the S. Yellow scars appeared on the E wall & fresh debris was seen on the pit floor under the S wall.

Measurement of rim cracks showed 15 points out of a total of 25 opening in slight amounts of  $1\frac{1}{2}$  mm or less.

A.E.J. &amp; E.G.W.

✓ March 13 Left Volcano 10 a.m. Arrived Kalapana 1:15 p.m. Paint signals etc.

✓ March 14 With Hananio to Koae to locate place for tower in land of Kahuwai. Position 240' S along road from monument at road running from Keae-Hilo N Bdy of Kahuwai, about 40' mauka of road.

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Day	Wednesday	Date	March 15, 1933
	Thursday		" 16, "
	Saturday		" 18, "

✓  
March 15

With Hananio to Pahoa Junction & Kaliu. Set tablet at Station.  
Description: Pahoa Junction, about  $\frac{1}{2}$  mile S of and 500 feet makai of R.R. track in the \_\_\_\_\_ pt. On a small hump in the grass covered pahoehoe. This hump is on the highest ground seen southward along track from the junction.

Points visible-- Heiheiahulu  
Kaliu??  
Sand Hill  
Kalepa Pt.

About six trees have to be cut to clear sights.

✓  
March 16

Relocated proposed tower at Kaueleau. Found a better point on road. This location is on 1st Trust Co. Land & is near the cocoanut trees which have served as a landmark. To Malama Crater station. Kaakepa is plainly visible & the cocoanuts at Kaueleau.

✓  
March 17

A.M. painting on signals. Return to Volcano. Arrive HVO 1:30 p.m.

E.G.W.

March 18

9:05-11:30a.m.

Measurement of rim cracks showed 9 points out of a total of 26 opening in slight amounts of  $1\frac{1}{2}$  mm or less.

A measuring point was placed laterally through the crack in a split boulder lying across a crack on E rim.

Fresh cracks were found in the ash at the W end of a crack 6' from SW rim & about 150' E of station on rim. Two small nails were driven in for temporary markers. This small piece appears about to break off.

A slide has recently fallen from the shell-shaped pocket in the NE wall.

Sulphur stain appeared more brilliant & extensive at the top of the 1932 Cone.

TAJ--EGW--AEJ

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Day	Tuesday to Thurs	Date	March 21 to 23,	1933
	Saturday		" 25,	"
	Monday to Friday		2 27-31,	"

✓ March 21

Leave Volcano 10 a.m. Work on way clearing trail to Kaliu. Reach Kalapana 5 p.m.

Leave Kalapana 7 a.m. March 22 to Kapoho. Met Iwashita (contractor) at Kapoho & took him to see site for proposed tower at Kahuwai.

In aft. set monument for station mark at hill mauka side track at 24 Mote station. Stay Kapoho overnight.

March 23 set tablet at Kipu Point. Left Kapoho 2 p.m. & reached Volcano 4:30 p.m.

E.G.W.

March 25

Three small slides of rock were heard. One at 9:35 a.m. was seen 9:05-10:50 a.m. on the S wall & talus, one at 10:16 a.m. on the W end of the N Buttress & one was heard later. The walls show several small fresh-looking scars since last week.

Measurement of rim cracks showed 12 points out of a total of 26 opening in slight amounts of  $2\frac{1}{2}$ mm or less. Both ends of the lens-shaped area about the tourist lookout showed an acceleration of movement, though slight.

The temporary point placed last week on the SW rim opened  $1\frac{1}{2}$ mm. This should be remeasured on Wed of next week.

A.E.J. &amp; E.G.W.

✓ March 27-31

Left Volcano 8:30 a.m. & reached Kapoho 2 p.m. Did some scouting by way & found one point which may be useful close to Pahoa-Kapoho Road. Set monument at Sand Hill after reaching Kapoho. Tuesday drove down to Kumakahi Point & went over proposed lighthouse layout with Eng'r on job. Reached Kalapana 3 p.m. Remainder of day spent in painting signal markers as also was Wed 29th. Thurs took Hawn woman to Olaa Hospital & returned & continued pointing & cutting of signal poles. Left Kalapana 11 a.m. March 31 & reached Volcano 2 p.m.

E.G.W.

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## JOURNAL

Day	Date
Saturday	April 1, 1933
Saturday	" 8, "
Monday	" 10, "

April 1

Measurement of rim cracks showed 12 points out of a total of 26 opening in very slight amounts of 1 mm or less. Most of these points were on the SE & S rim.

No rocks were heard falling and there appears to have been no slides during the week.

Jones worked at installing a non-tilt device on the pit seis. This if found satisfactory is to be used at the Waikii Station.

April 8

Measurement of rim cracks showed little change only 8 points out of a total of 26 opening in very slight amounts of 1 mm or less. 2 points closed a slight amount.

The pit was quiet & there appears to have been no sliding during the week. A dike was noticed running up the SE wall at the notch in the SE buttress. This is roughly in line with the one seen on the NW wall from the Tourist Stand & also the E-W line of fountains of the last eruption.

Sky partly cloudy with light SW breeze.

Blue fume was seen issuing from pit, looking from Uwekahuna toward the pit.

E.G.W. &amp; A.E.J.

April 10

To pit to change inst. Thunder storm with heavy rain. Wind changed 8:50-10 a.m. from SW-NE while at pit.

There were numerous falls of rock from the walls most of them from N wall. A small slide fell from notch at E end of N buttress of 9:35 a.m.

The numerous steam vents on floor were again a beautiful sight. During the letups in the rain with the storm last fall (previously noted) the vents quickly stopped steaming-today no stopping was noticed. This may indicate a cooling of the lava cake of 1931-32. The rain water now being less rapidly evaporated. There was a large pool of water at low place by SE tilt cellar but tilt was unchanged.

E.G.W.

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## JOURNAL

Day	Date
Saturday	April 15, 1933
Sunday	" 16, "
Monday	" 17, "
Tuesday	" 18, "

April 15 All rim cracks were measured. Nine points out of a total of 27  
9:30-10:45 a.m. showed slight openings of  $1\frac{1}{2}$  mm or less. None showed closing.  
Rocks fell occasionally & at 10:35 a.m. a small slide fell from the  
N or NE wall of the pit making a loud noise & raised a small dust cloud.

E.G.W. &amp; A.E.J.

April 16 Measurements of rim cracks showed that nine had opened for a total  
of 0.6 mm or about  $1/4$  of an inch.  
A slide occurred just after 10 a.m. from either the N or NE wall.  
On arriving at the W rim of the pit only a small amount of dust could be  
noticed from the N to NE wall.

A.E.J.

April 17 Inspected pit after examining pit seis record of what appeared  
1:30-2:30 p.m. to be an avalanche tremor.

Found that a strip about 200' wide on the E wall in front of #11  
measuring point was covered with fresh looking grey dust. The scar  
extended from close to the top of the wall to the talus beneath. Very  
little of the material reached the lava floor, most of it remained on  
the talus: #11 point showed a closing of 2 mm. 4 other points close  
by showed openings of  $\frac{1}{2}$  mm. The E end of the canoe sill has also  
been breaking off recently.

Rocks fell from time to time.

✓ April 18 To Puna to meet contractor and go over ground & plans for ob-  
servation tower. Lumber already on job & he expects to finish in  
one week.

E.G.W.

## JOURNAL

Day	Wednesday	Date	April 19, 1933
	Thursday		" 20, "
	Saturday		" 22, "
	Monday		" 24, "

April 19 Nothing new in the way of sliding from the walls was noted. A  
9:25-10:10 a.m. few rocks fell from time to time.

The crack on the SW rim which was noticed as showing fresh crack-  
ing on March 18 is now widening at the rate of  $\frac{1}{2}$  mm every two days. This  
area has been roped off by the Nat'l Park at our suggestion.

E.G.W. &amp; A.E.J.

April 20 Inspected clock & magnets at pit seis station as they had been out  
1:50-3:30 p.m. of order.

Spent some time walking about pit as there were numerous small  
fall of rock & trickling of single rocks from the walls. No large  
slides occurred.

April 22 Measurement of rim cracks showed 14 points out of a total of 27  
9:20-11:40 a.m. opening in slight amounts of 2 mm. or less. Most of this opening  
is in the neighborhood of the Tourist Lookout and it has been suggested  
to Mr. Leavitt to have his rangers inspect this area daily & report to  
us any apparent changes. The stone wall at each end of the Tourist  
Stand showed cracking. This may be old however.

A strong NE wind was blowing & no falling rocks were heard.

✓ April 24 Leave Volcano 10:30 a.m.

Flagged point on Pahoa-Kapoho Road & cleared off trees but doubt  
that we can see station at Pahoa Junction. Some further reconnai-  
sance will have to be made over as far as Makuu. To Kalapana by way  
of Pahoiki. Put flag on trees on mound in Malama Ki forest reserve.  
Stations visible. Kapoho Kaliu, Malama, Kana Kaloloa & probably  
Honuaulo. Honuaulo sight is necessary if this station is to be used.  
Reached Kalapana 5 p.m.

E.G.W.

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Day	Tuesday	Date	April 25, 1933
	Wednesday		" 26, "
	Fri & Sat		" 28-29, "

✓ April 25

Placed signal on Moana Hanae. Two hour job as work is slow with only one helper. Drove up to look for point at Makuu but too rainy & so came back to Honuuala. Was able to see flag in tree placed yesterday at Malama Ki. Drove over to Kapoho & inspected tower at Kahuwai, Honuaula, Kapoho, Kipu, Sand Hill plainly seen. Too much rain to see towards Pahoa. Set tablet near flag at Malama Ki & cleared some brush.

E.G.W. &amp; J.P.H.

✓ April 26

To Makuu with Hananio to locate point for station. Found a good place about  $\frac{1}{4}$  mile mauka of the R.R. station at Makuu. Set tablet & put small flag to identify point. It is about 4 miles makai of the gov't road.

Left Kalapana 6:10 p.m. & reached Volcano 8:05 p.m.

Mrs. A.O.B. visitor over Thursday

E.G.W.

A visit to pit to measure a few rim cracks near the Tourist Stand showed that only a few were opening. A few rocks were heard falling from the pit walls.

A.E.J.

✓ April 28-29

Lv H.V.O. 11:30 a.m. Apr 28. Ar. Kalapana 2 p.m. Computed new figures around point of Makuu. Prove very satisfactory. Men finished cutting trail to Heiheiahulu today. Sat. Set tablet of tower at Kaueleau & placed temporary signal. Erected signal on station at Malama Ki & cleared off trees in line of sight. To Kaliu on way home to clear tree in line with Malama Ki.

Arrived Volcano 7 p.m.

E.G.W.

April 29  
(cont'd)

Ten rim cracks out of 27 opened, 2 closed.  
No sliding or rock trickling was noticed.

A.E.J.

Max opening 2 mm (one crack)  
All-mm. 6.5 aggre. opening of 27 cracks.

T.A.J.

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## JOURNAL

Day	Date
Saturday	May 6, 1933
Mon-Sat	May 1-6, "
Sunday	" 7, "
Wednesday	" 10, "

May 6

Visited Pit. Changed instruments etc. Ranger Christ reported a case of rock trickling ce 8 a.m. H.S.T.

Five cracks had opened and one closed for as follows:

3.5 - 0.5 = 3.0 mm. (result)

The crack movements were near the tourist lookout.

A.E.J.

✓ May 1-6

Left H.V.O. 10:30 a.m. May 1. Picked up Hananio at Kalapana. Erected signal on Hakuwa(?) left for Kapoho. Spent week in erecting signals & clearing off trees at Malama, 24 mile sta. Kamakahi, Kipu and on Thursday with T.A.J.'s to inspect tower at Kahuwai. Centered signal & cemented bronze tablet beneath. Ground at tower is loose Aa & properly anchoring tablet was quite a job. Hananio on pay roll for 5 days 1-5 inclusive.

Returned to H.V.O. 10 a.m. May 6

E.G.W.

May 7

No rock trickling noticed in Pit.

May 10

On a visit to pit noticed fresh scars on east wall of pit. Fresh slide during preceding night. Fresh hair cracks appeared at ends of old cracks near there between 50-100 feet NE of point 28.

One rock fell while listening.

A.E.J.

✓ Lv. H.V.O. 9:30 a.m. Cleared off trees at Keokeo.

R.E.L. &amp; E.G.W.

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Day	Date
Thursday	May 11, 1933
Friday	" 12, "
Saturday	" 13, "
Monday	" 15, "
Tuesday	" 16, "
Wednesday	" 17, "
Thursday	" 18, "

May 11

Placed signal on Makuu Sta & to Honuaula to clear off more trees. Saw too small & must get big one from H.V.O.

May 12

Placed signal on Pahoiki & to Kanakaloea to cut trees. Wretched jungle & saw too light.

May 13

To Kipu to clear out direction to Keo Keo. Arrive Volcano 5 p.m.

May 15

Lv. H.V.O. 10:20 a.m. Cleared off trees at Kokoolau.

May 16

Up at 4 a.m. & occupied Kumukahi. Then to Kanakaloea & finished clearing trees. Occupied Keokeo 4:30-6 p.m.

May 17

Up at 4 & to Pahoiki. Occupied sta. Occupied MalamaKi 4-6:30p.m. Home at 8 p.m.

May 18

Up at 3 a.m. & to Honuaula. Weather cloudy but frequent showers. Had to spend whole day on top. Home at 8:30 p.m.

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Day	Date
Friday	May 19, 1933
Saturday	" 20, "
Monday	" 22, "
Tuesday	" 23, "
Wednesday	" 24, "
Thursday	" 25, "
Friday	" 26, "

May 19 Up at 3 a.m. & occupied Kapoho. Occupied Kahuwai in p.m. Home 8

May 20 Up at 3 a.m. & occupied Kanakaloa. Windy, cold, rain. Returned to H.V.O. 3:30 p.m.

May 22 Lv H.V.O. 10 a.m. Occupied Sand Hill 4:30-6:10 p.m.

May 23 Up at 3 a.m. & occupied Kokoolau. Very calm & hot. Back packed to beach in aft. & occupied Kipu 4:50 p.m.

May 24 6:25 a.m. Kipu. Return to Kapoho. Occupied Makuu after hike from Pahoa cane fields at 4:35 p.m. Home 8:30 p.m.

May 25 Left for Kalapana in a.m. & occupied Kapapau & placed signal at 5:05 p.m.

May 26 Moana Hanae 5:45 a.m. & Kaliu 3:55-6:20 p.m.

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## JOURNAL

Day	Date
Saturday	May 27, 1933
Sunday	" 28, "
Monday	" 29, "
Tuesday	" 30, "

May 27

Heiheiauka. All day job.

E.G.W. &amp; R.E.L.

Cracks measured before this morning's feeble earthquake. No slides were heard except by a party of soldiers, who thought that the pit was about to erupt.

2 closed & 8 opened for an aggregate amount of 4 mm opening.  
27 cracks.

A.E.J.

When making surveys from Heiheiahulu considerable steam was noticed coming from the cracks just <sup>E</sup> of Kalalua Crater & from the vicinity of Napau. These areas were steaming when last visited in 1922.

E.G.W.

May 28

Hakuma 6:15 a.m. &amp; Kanakaloloa 4:45 p.m.

May 29

Return H.V.O. 2 p.m.

R.E.L. &amp; E.G.W.

May 30

Pit quiet. Measured a point on the lookout NE wall, found that it had opened  $\frac{1}{2}$  mm since Saturday's measurement.

A.E.J.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date
Saturday	June 3, 1933
Saturday	" 10, "
Monday	" 12, "
Saturday	" 17, "

June 3

15 cracks opened. 3 cracks closed. Aggregate amt equals 9.5 mm.  
One small slide 9:17 a.m.

T.A.J.

June 10

Measurement of all rim cracks showed only negligible openings at seven points of  $\frac{1}{8}$  mm each.

A few rocks were heard falling & no changes in the walls or floor were observed.

The two cracks which form a crescent shaped block on the S & SW rim, on which are points #26 & 27 which have shown slight openings from time to time, both showed fresh hair cracks throughout their entire length wherever the crack was covered by ash. The length of these cracks is about 800 & 500 feet.

E.G.W. &amp; A.E.J.

June 12

Levels "Spit" to NE Pit & Return.

Rim of pit shows a general lowering since Dec 31/32 of an amount generally less than 1 ft.

The E & NE rim\_s were found to show the same fresh looking hair cracks along fissures 100-150' back from the rim. No measuring points are located on these fissures.

E.G.W. &amp; R.E.L.

June 17

Measurement of rim cracks showed a slight increase in the number opening. Eleven points, (nine of which are in the vicinity of the tourist lookout) showed openings of  $1\frac{1}{2}$  mm or less. The total for all cracks was only 7 mm.

No changes were noted in the pit & no rocks or slides were heard falling.

Fresh NE wind & clear sky.

E.G.W. &amp; A.E.J.

June 24  
9-11:30 a.m. Measurement of rim cracks showed 8 out of a total of 27 opening in slight amounts of 1 mm or less. 6 of the 8 cracks showing opening were in the vicinity of the Tourist Stand.

The E rim of Halemaumau is much cracked for a short distance back from the edge & some small sliding may be expected here before long.

E.G.W.

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## JOURNAL

Day	Date
Saturday	July 1, 1933
Saturday	" 8, "
Thursday-Friday	" 13-14 "
Saturday	" 15, "

July 1 Very quiet at pit. Examination of walls & floor showed that there  
8:50-11:20 a.m. has been little sliding since last visited. No sounds were heard  
of falling rock, etc.

Only 6 points out of a total of 27 showed any opening. This was  
very slight being  $\frac{1}{2}$  mm. in each case.

July 8 Continued quiet at pit. A few rocks have fallen from the S wall  
8:50-11:10 a.m. leaving a small dusty track.

Out of a total of 26 crack points measured only 8 showed any  
movement: 6 opened slightly and 2 closed  $\frac{1}{2}$  mm. each. The movement was  
confined to the SE and S rim.

A dark red patch was seen on the NE wall above the canoe sill.  
This may be dark from moisture or a scar from peeling rocks.

E.G.W.

July 13-14 Visits to the pit--nothing noticed in the way of fume or rock  
trickling.

A.E. Jones

July 15 Measurement of rim cracks showed an increase over the week preced-  
9:30-11:25 a.m. ing in the number of cracks opening. 12 points widened, out of  
a total of 27, 1 for 1 mm. & 11 for  $\frac{1}{2}$  mm. each.

A strong wind was blowing from the NE & any sound of falling  
rocks was obscured. A small slide has fallen from the Uwekahuna wall  
of Kilauea about  $\frac{3}{4}$  mile S along rim from Uwekahuna. No slides of  
any consequence appear to have taken place in the pit.

Prof Kreji accompanied me- also Ranger Fordyce's boy who kept notes.

## JOURNAL

Day	Monday-Tuesday	Date	July 17-18,	1933
	Saturday		" 22	"
	Monday		" 24,	"

July 17-18

## Mauna Loa Notes

Wind on summit from SW.

Only one vent on the NE rift was seen steaming July 18, a.m. Reached rim of Mokuaweoweo at 11 a.m. 18th. Ate lunch. Left rest of party & walked around east rim of crater & then S along 1926 Flow to edge of summit plateau. Prof Kreji & Doerr explored interior of crater. Western walls appeared much scarred by sliding, the rock colours showing brilliantly in places. A slide fell from W rim about 3/4 mile S of the S sta at the summit, at 1 p.m. It raised a large cloud of dust but no sound was heard on the E rim opposite. This is the first slide that I have seen in Mokuaweoweo. Ash on the E rim showed no hair cracks where examined. Blue fume was seen issuing from the usual vents about the 1914 Cone. Except for the sliding from the walls Mokuaweoweo appeared unchanged since last visited Nov. 30/31. Sulphur stains was seen at the base j, and n the N wall that 1/2 mile E of the Summit  $\Delta$  Sta. This may or may not be newly deposited.

The SW rift was partly covered with clouds and a hurried look along its length revealed no new steaming areas.

A small kipuka was noticed on the Aina trail which contained explosive debris, overlain by a flow of old red pahoehoe lava. Stearns noticed this in his "Kau Paper". The "water hole" examined had much less ice than during the year 1925-26.

A small tremor began on H.V.O. seis before 1 p.m. on July 18 and this may or may not have been connected with the slide before mentioned.

Returned to H.V.O. 7 a.m. July 19, 1933.

July 22

9:15-11:20 a.m.

Very quiet at the pit. Little if any sliding from the walls has taken place since last week.

Only five cracks out of a total of 27 showed any opening. This was very slight. Two points on one crack showed very slight closing. Clear day with fresh NE wind.

July 24

9:30-11 a.m.

Continued quiet at pit. Pit seis record had four small quakes, one with moderate NNE tilt. Examined walls for sliding but saw no evidence. A few cracks were measured & showed no change since Saturday July 22.

Worked on N clinoscope & tightened earth spring attachment.

E.G.W.

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## JOURNAL

Day	Monday	Date	July 24, 1933
	Wednesday		" 26, "
	Saturday		" 29, "

July 26

Slides in pit 11:50 a.m. and 0.50 p.m.

T.A.J.

July 29

Pit continues quiet.

9:25-11:10 a.m. Sliding from NE wall reported on July 26 left neither visible scars nor any debris on the floor. They were probably small falls of rock which in this dry windy weather raised considerable dust.

Six out of a total of 27 crack points measured showed very slight widening. Two points indicated a closing of the crack. One crack which opened 1 mm is located about half way between the Sand Spit & the rim of Halemaumau.

Total opening 0.3 mm.

E.G.W.

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## JOURNAL

Day	Saturday	Date	August 5, 1933
	Monday		" 7, "
	Thursday		" 10, "

August 5  
9:40-11:10 a.m. From Uwekahuna the track of a small slide was seen on the S wall of Halemaumau. This was probably the track left by the slide reported by a party from the Military Camp the evening of August 4, 8-9(?) p.m. A small slide also fell between Tuesday August 2 & Wed Aug. 3. The dusty track was noticed on the W end of the N Buttress on the aft of Aug 3.

Crack measurements showed a very slight opening of 8 points confined to the S & SE rim of Halemaumau. Two points showed a very slight closing.

A few rocks were heard falling.

Day clear with strong NE wind.

E.G.W. & A.E.J.

August 7  
9:20-10:30 a.m. A very small slide has left a dusty track at the top of the W wall where the big steam crack enters. One or two rocks were heard falling.

Cracks in the tourist area which had been filled in by workmen have shown dribbling in of the ash for some weeks, giving the appearance of widening. Crack measurements do not show this & it may be due to a drying out of the loose ash etc.

August 10  
9:40-11 a.m. A few rocks fell from the wall at the S corner of the pit Halemaumau at 10:24 a.m. and raised a small cloud of dust. No other rock falls were heard & no noticeable changes were observed.

On Tues August 8 & Wed Aug 9 the pit was quiet when visited between 9 & 11 a.m.

E.G.W.

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## JOURNAL

Day	Date
Saturday	August 12, 1933
Saturday	" 19, "
Saturday	" 26, "

August 12 Measurement of rim cracks about Halemaumau showed opening at only 8:50-11 a.m. three points. The measurement was very slight. Four points showed a closing of the crack. The aggregate movement for the week was zero. Halemaumau remains quiet.

A.E.J. &amp; E.G.W.

August 13 Observation of Halemaumau revealed no changes. This week has 9:40-10:30 a.m. been the most quiet from the standpoint of measurements & observations combined, since arriving at the H.V.O. in July 1931.

E.G.W.

August 19 Halemaumau continues quiet and no changes were observed. 8:40-10:50 a.m. Seven cracks scattered about the SE-S & S<sup>w</sup> rim showed a slight widening during the week, the largest amount being  $1\frac{1}{2}$  mm. Two points showed a very slight closing of the crack.

August 26 Measurement of rim cracks showed only 5 points out of a total of 27 widening in very slight amounts  $\frac{1}{2}$  mm each. These were scattered about the rim of Halemaumau. One point closed  $\frac{1}{2}$  mm. On the NE & N rim a somewhat fresh crack in the ash was noticed about 400' back from the rim. This seems to correspond with cracking on the E, SE, S & SW rims before noted. Halemaumau was quiet and no changes were noted.

E.G.W. &amp; A.E.J.

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## JOURNAL

Day	Friday	Date	September 1, 1933
	Saturday		" 2, "
	Saturday		" 9, "

September 1

During the past 24 hours there has apparently been a slide from the East corner of the pit; about 300 feet NE of Tourist Stand.

A.E.J.

September 2

Six cracks out of a total of 29 points measured showed a slight widening of the points. 2 closed very slightly. 9:10-10:40 a.m.

Two new crack points were marked on Aug 29, on the N rim of Halemaumau about 400' from the rim. These points have two nails on one side of the crack some distance apart and are measured from one nail on the opposite side. This is to detect any movement parallel to the crack. Thus:



Blue fume can be readily observed issuing in puffs from the sulphur area foot SW talus Halemaumau in the afternoon light.

E.G.W. &amp; A.E.J.

September 9

Measurement of rim cracks about Halemaumau showed only 6 points on the E & SE rim opening in very slight amounts. 2 points indicated a very slight closing of the crack. 9:05-11 a.m.

Pit (Halemaumau) continues very quiet with little or no falling of rocks. The walls show no signs of any peeling off and the few dusty scars which can be seen are from slides some months ago. Fume can be seen in the afternoons issuing from the sulphur patch at the foot of the SW talus. It has not been noted rising above the walls though the NW corner of the pit as seen from the H.V.O. has a blue hazy look in the afternoon

E.G.W. &amp; H.Y.

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Day	Monday	Date	September 11, 1933
	Tuesday		" 12, "
	Wednesday		" 13, "
	Thursday-Friday		" 14-15 "
	Saturday		" 16, "
	Mon-Tues-Wed-Thur		" 18,19,20,21,

September 11 Halemaumau quiet and no changes by slides noted. Strong NE wind.  
9:15-10:45 a.m. Got clock contact at Pit seis to working.

September 12 One rock was heard to fall in a 15' watch from E rim. Halemaumau  
9:25-10:36 a.m. otherwise quiet.

September 13 Continued quiet at Halemaumau.  
9:30-11 a.m.

September 14-15 Halemaumau appears to remain quiet. Neither any fresh looking  
9:30-11 a.m. scars are to be seen on the walls nor are any falling rocks heard.  
High winds from the NE may, however, obscure the sound of single rocks falling.

September 16 Halemaumau is still free from rock slides & apparently quiet.  
9:30-11:50 a.m. For some time the wall just above the S Bay has shown increasing quantities of white salts. The sulphur stain on the floor just under the SSE wall seems to slowly increase.  
Crack measurements showed a widening of the crack at 12 points out of a total of 29. One point showed closing. The maximum widening was 1 mm. This widening was general about the rim & not confined to any one sector.

September 18-19-20-21 Halemaumau appeared during these days to be quiet.  
9:30-11 a.m. † A high NE wind was blowing and may have obscured the sound of any falling rocks. No fresh scars were to be seen on the walls.

E.G.W.

Slight shock at 2:30 p.m. rang #1 bell moved points #2 not felt at H.V.O.

Very slight amount of fume visible. First I have been able to see in many months. Fume in N or NE corner of pit.

A.E.J.

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## JOURNAL

Day	Friday	Date	September 22, 1933
	Saturday		" 23, "
	Sunday		" 24, "

September 22  
9:40-10:50 a.m. At 10:23 a.m. a few rocks were heard to fall. No other sounds were heard & no changes noted.

September 23  
9:15-10:55 a.m. A few rocks were heard to fall from the N wall at 10:59 a.m. The dusty track of a moderate slide was seen on the SSW wall of Halemaumau. Fresh debris & dust were seen on the talus & floor underneath.

A slide has fallen from the NE Kilauea wall about  $\frac{1}{2}$  mile W of the Observatory. It left a yellow-orange scar.

Crack measurement showed only a very slight opening at 6 scattered points out of a total of 29. One point indicated a very slight closing of the crack.

September 24  
9:50-11 a.m. Halemaumau was quiet when visited. Seismograph at SE pit Seis station showed SE tilt from the time the record was put on until I left the pit. This is away from the pit in direction but may have been caused by temperature change due to length of time spent in cellar working on clock.

There are numerous tiny fresh scars on the walls of the pit where single rocks have peeled off. No scars of any larger slides were seen.

E.G.W.

Volcano House phoned that they saw the dust from a slide on their side of pit (NE) at 1:08 p.m.

I visited the pit at 2 p.m. to 2:30 p.m. Frequent cases of rock trickling could be heard between gusts of wind. Some apparently were in the notch 400' NE of Tourist Stand.

A.E.J.

Day	Tuesday	Date	September 26, 1933
	Saturday		" 30, "

September 26 At 10:09 a.m., while working at the NW  $\Delta$  sta, a moderately large  
 9:30-11:40 a.m. slide fell from the SSW wall at about 1/3 of the distance to the  
 1:45-3:45 p.m. top. It made a quiet a large dust cloud & considerable noise.

Note: Strong NE wind blew dust cloud down on to pit floor across  
 pit to N wall & then up above rim. From distance this would appear  
 as a slide from N wall. Some rocks were heard falling from the N wall  
 a few minutes later.

Spent afternoon setting marking nails at three new points for crack  
 measurements on the E & NE rim. Blue fume was again plainly visible  
 in the aft light issuing from the sulphur area of the foot of the W talus.

E.G.W.

September 30 At 8:12 a.m. dust from a slide in Halemaumau was seen from the  
 8:55-10:50 a.m. H.V.O. & again at 8:30 a.m. At 8:37-8:45 as seen from Uwekahuna  
 the pit Halemaumau, was quite filled with dust. This was apparently the  
 last of the sliding, which it was reported began between 6 & 7 a.m.  
 this morning, as later only a few rocks were seen to fall & raise some  
 dust at 10:30 a.m. Inspection of the pit showed the sliding to be  
 in the same track as the slides previously reported this week. The  
 floor in the SW bay was partly covered with dust & some fresh debris  
 was seen. None of the slides seemed to be of any great size.

Measurement of rim cracks, 32 in all, showed a very slight opening  
 at 6 scattered points. Four points showed a very slight closing of  
 the crack.

A.E.J. &amp; E.G.W.

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## JOURNAL

Day	Sunday	Date	October 1, 1933
	Monday		" 2, "
	Tuesday		" 3, "
	Friday		" 6, "

October 1

Between 9 & 10 a.m., three clouds of dust at different times were seen rising from a point on the Kilauea wall about 3/4 mile S of Uwekahuna. On reaching the pit (Halemaumau) the scar of a fresh slide was seen at this place.

This scar and fresh debris on the floor can be seen from the Obs.

H.Y. by E.G.W.

October 2

Pit quiet during morning visit. A slide from W Uwekahuna bluff at 4:38 p.m.

A.E.J.

October 3

At 3:15 p.m. blue fume could be seen from the Obs rising above the rim of Halemaumau.

E.G.W.

October 6

During the past 24 hrs a slide has fallen from near the top of the E wall of the pit ca. 500 feet NE of tourist lookout. A noticeable quantity of fresh dust and small rocks is scattered over the E bay of the lava floor. The slide apparently recorded on the Pit seismograph, not on H.V.O. A few rocks were heard falling at 9:50 a.m.

Jones

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## JOURNAL

Day	Date
Saturday	October 7, 1933
Sunday	" 8, "
Monday	" 9, "
Friday	" 18, "

October 7  
9:10-10:50 a.m. Out of a total of 32 points measured 7 indicated a very slight opening of the crack. Two points showed very slight closing. At 8:58 a.m. a small dust cloud was seen rising from the E corner of Halemaumau where there has been some sliding in the last few days. At 10:07 there was a small fall of rock at this point. No dust was seen to rise.

E.G.W. &amp; A.E.J.

October 8 A slide N Uwekahuna bluff point 3/4 mi S of Museum; first at 10:50 a second at 10:58 a.m.

A.E.J.

October 9  
9:40-10:50 a.m. Southerly weather with very light SE-S breeze. Sky cloudy. Air muggy. Humidity 90%. Rocks could be heard falling infrequently. 0.33 inch rain at pit had made no pond at the low place SW of the Seis hut, but strong SW tilt was shown on the Clinoscope. This change in tilt was recorded as beginning Oct 7-8 before the rain began.

October 13 Halemaumau quiet in morning though a high NE wind may have obscured the sound of any falling rocks. The dismantling quake at 3 a.m. seemed to have caused no slides. None of the clinoscopes were dismantled. The W one showed a small tilt, the N none & the SE had been jarred?? 8 mm out of position of day before & failed to return.

At 3:38 p.m. dust was seen in the E corner of Halemaumau rising from a small slide.

E.G.W.

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## JOURNAL

Day	Date
Saturday	October 14, 1933
Friday	" 20, "
Saturday	" 21, "

October 14  
9:15-11 a.m.

Measurement of 32 rim cracks showed 11 points opening in very slight amounts & 2 points showed a very slight closing of the crack. A strong NE wind was blowing & no sounds were heard.

Both the S wall & the wall above the E talus looked dusty & either may have been the place of the slides reported on October 13. Both of these points have had slides in the last few weeks & it is difficult to determine whether any new material has fallen or not.

Jones replaced time clock at the Pit seis cellar.

R.E.L. E.G.W. A.E.J.

October 20

Ranger Christ reported by phone from Makaopuhi that four of his men, working on a trail at Puu Huluhulu, had heard two blasting sounds and then a few seconds later had felt the ground shaking accompanied by a sort of rumble. The pheasants set up a cackling. The time was 10:33 a.m. With Jones went & checked up on this report since no quake large enough to ring any of the bells had occurred. Also walked down to Napau crater examining crack on the way.

Cap't Archer reports no blasting done by his men this day.

E.G.W. & A.E.J.

October 21

Moderate quake at 9:09 a.m. caused several small slides in Halemauau and a slide at the weak place in the Kilauea wall 3/4 mile S of Uwekahuna. The latter raised considerable dust.

Rim cracks were measured between 9:50 & 11:30 a.m. Only three cracks out of a total of 32 showed any opening & one had closed since last measured a week ago. The movement was very slight in each case.

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## JOURNAL

Day	Monday	Date	October 23, 1933
	Tuesday		" 24, "
	Wednesday		" 25, "

October 23

At intervals between 8-11 a.m. blue fume could be seen rising from Halemaumau. This visibility was made possible by the weather which was cloudy with frequent showers & thick steam rising from the pit which mixed with the blue fume & obscured the walls of the pit. The pit was visited at 12 noon & nothing unusual was noted.

October 24

Made a trip along the Chain-of-Craters road inspecting the several craters between 9:30-11:45 a.m. Examined the ground carefully in the vicinity of Puu Huluhulu and found no fresh cracking of any kind. The Puna Rift was clear, though hazy toward the eastern end. Some of this haze may or may not have been steam as it was thickest near the hill about half way to Heiheiahulu. This locality was seen steaming in May of this year. Alealea Crater showed a very fresh scar on the N side beginning at the N end of the platform on the W side. There was also one other fresh looking scar nearby. Puhimau Crater showed some signs of recent sliding in the W end though not so fresh looking as in Alealea.

E.G.W.

October 24-25

Heard a few rocks falling in Pit on both mornings; more on 24th.

XX

October 25  
3:55 p.m.

J. E. Doerr felt a slight jar. On record.

XX

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## JOURNAL

Day	Date
Thursday	October 26, 1933
Saturday	" 28, "
Tuesday	" 31, "

October 26

10:15 a.m.

10:35 a.m.

Small slide S wall of pit.

More dust noted on way back from NE tilt cellar.

XX

Quake at 10:35 Rang. #1 bell. A strong NE wind is raising large clouds of dust in the Kau desert.

E.G.W.

October 28

Measured all rim cracks about the pit with the following results. 4 points opened  $\frac{1}{2}$  mm each; 7 points closed  $\frac{1}{2}$  mm each and one crack on the NE rim showed  $\frac{1}{2}$  mm movement laterally along the crack. The seven points showing closing were confined to the S & SE rim. The four points which opened were on the E & NE rim. Points on the W rim showed no movement & there are no points to the NW of Halemaumau.

October 31

## Mauna Loa Summit

Lv. H.V.O. 8:30 a.m. Ar. end of road 9:30 a.m. Lv 9:45 & arrive Rest House 4:20 p.m. Lt showers on way. Found Williams' party just returned from trip to summit. Had a fine trip & also had enough dinner ready for all. Sleep early but not much. Rather cold. Min  $31^{\circ}$ . Up at 5 a.m. Lv. Rest House 6:45 a.m.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Wednesday	Date	November 1, 1933
	Thursday		" 2, "
	Friday		" 3, "

November 1  
6:45 a.m.

Pukauahi source 1880-81 flow may be sink crater.  $\frac{1}{4}$  mile E of hill called by that name on map. There is fresh looking lava (1889?) broken out from crack in West end of Pukauahi on map. Note also there appears to have been recent cracking, i.e. scars, this point.

Arrive summit (NE end) Mokuaweoweo 1:30 p.m. November 1. All in. I was more thirsty than hungry & Jones the other way. Jones fixed some tomatoes with bacon. A little hard on the stomach. Rested & dozed after getting ice to melting for 2 hours. Then walked across north embayment to drop into main crater.

Steam in puffs from 1914 Cone. Fume quite dense at times from solfataras in sunken area. Central part of crater appeared as usual. Supper consisted entirely of boiled prunes & orange. Early to bed but again not much sleep. Developed headache early after retiring. Jones had a slight headache all afternoon. No quakes felt as yet.

November 2

Up at 6:10 a.m. Nov 2 & breakfast of prunes, orange & coffee with one hardtack. Walked around East Rim as far as Wilkes Camp. Photos by the way. Crater appears but little changed since visited in July of this year. NW & SW dusty & showing some fresh-looking scars.

But little blue fume in central part of crater. It may be slightly more dense about the 1914 cone than in July. Steam coming in puffs from top of 1914 cone. Fume appeared in puffs (wind conve \_\_\_\_\_?) Back to camp & Lt lunch. Lv summit 2:45 p.m. Nov 2. Arrive Resh House 5:50 p.m.

November 3

Min 28 at 6:10 a.m. Nov 3. Lv Rest House 7:45 a.m. Arrive 6 tanks 11:10? a.m. One short rest at 6500 shelter. Cannot get anyone on Park phone from either R.H., 6500 or 6 tanks-Pehea?

Note: In the crater of Lua Poholo in the N end of Mokuaweoweo there is a hill formed by a large block of the W rim having toppled over into this pit crater. When examined on Nov 2 the western side of this fallen wall showed evidence of recent sliding. Was this caused by the quake located on the NE rift of Mauna Loa a week ago?

E.G.W. & A.E.J.

November 4

Measurement of rim cracks showed 7 points out of a total of 32 opening in amounts of 1 mm or less. Four points showed a very slight closing of the crack. One crack on the NE rim moved laterally  $\frac{1}{2}$  mm. Points were scattered.

E.G.W.

Slide W end N sill 9:35 a.m. 7 stained places at edges of bottom. Yellow stain SW & S cone & SE. Yellow at cone has become very conspicuous. Green algae above S and SSE taluses. Small slide heard at 10:43 a.m.

T.A.J.

Weekly Report Oct. 30- Nov. 5, 1933

20 seismic disturbances.

Two very feeble shocks were recorded from unknown distances. One may have been 25 miles distant.

18 tremors were recorded.

Seismic indices (0-12 mi. = 0 ) (12-66 mi. = 0.50)

Weekly seismic index = 5.50

## Tilt

Oct.	30	40	172	m
	31	39	168	l
Nov	1	38	168	l
	2	41	170	m
	3	42	172	st
	4	42	174	m
	5	44	171	m
		41	171	ave. past week
		40	165	cor. ave. week prior
		1	6	
		S	E	slight E by S tilt

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## JOURNAL

Day	Monday	Date	November 6, 1933
	Tuesday		" 7, "
	Wednesday		" 8, "
	Thursday		" 9, "
	Friday		" 10, "
	Saturday		" 11, "

November 6  
9:20 a.m.

Small slide in pit.

E.G.W.

10:44 a.m.

Rocks trickle S. Light rain. Pit very quiet. Steam S talus.

November 7  
11 a.m.

Increase of steam on S talus due to rain. Walls darker from wetness. Quiet.

November 8  
11:31 a.m.

Steam both S & SW talus after rain, and along base of wall between. Walls of pit wet.

November 9  
10 a.m.

Pools of water from 6 plus" rain all over K crater floor. Lakes at SW upper & lower.

Slide 12 noon S in pit. More vapor in pit. 6.75" rain HVO. 5.08" at pit. A curious day. Nove 8 with NE wind in Hilo & SW wind at HVO.

T.A.J.

November 10  
11 a.m.

Pit quiet steam S talus & a little on SW talus. Steam jets near rim N, NW, SW, SE, NE.

T.A.J.

Day Saturday Date November 11, 1933  
 Sunday " 12, "

November 11

A small piece (several hundred tons) fell from just above the lowest part of the Canoe sill-NE corner of pit-pieces rolled about 150 feet down talus.

10:07 a.m.

Rocks were heard falling in NE corner.

A.E.J.

November 12

10:15 a.m.

Vapor thick on S talus.

T.A.J.

Nov. 6 to 12, 1933

During the week there were 40 seis dist.

An earthquake was felt in Hookena district at 7:45 p.m. Nov. 10. It recorded as very feeble at H.V.O. and was 31 mi. distant.

Three v.f. shocks were recorded from 32, 44, &amp; 53 mi.

One v.f. was at an unknown distance (domestic)

35 tremors were recorded from unknown distances.

Seismicity (0 to 12 mi. = 0) (12 to 66 mi = 2.00)

Weekly seismicity = 11.25

Tilt

Nov. 6	--	--	m
7	45	170	m
8	51	171	m
9	56	171	m
10	53	171	m
11	54	172	mm
12	52	169	m
	52	171	ave past
	41	171	ave prior
	11S	Ø	mod S tilt

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Monday	November 13, 1933
Thursday	" 16, "
Saturday	" 25, "

November 13

About 10 to 10:05 a.m. rocks were heard falling from the North, West and South walls.

The East talus appears to have a fresh layer of loose rock-not certain.

XXX

November 16

Heard a rock falling about 10 a.m. probably a small slide from the E wall of Pit. Apparent fresh debris on the North slope of the East talus.

More fume apparent in shaded portions of Pit than I have noticed for months.

A.E.J.

November 25  
10-11 a.m.

Wet spot at S talus. Big NE-SW cracks not only in the middle, but 2 are on East floor. These are equally big gashes headed toward SW cone of 1932. There is possibly 1 such chasm from the base of NW talus also, toward SW cone. This cracking radial from the cone does not appear in the 1932 lake region near the cone. That region shows a lake outline marked by banks, and a cluster of hummock islands.

No rocks falling. Crater in SW cone is egg shaped, with long point of egg toward the exit: terraces in this craterlet SW.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	November 27, 1933
	Tuesday		" 28, "
	Wed-Thur		" 29-30 "

November 27  
10:45 a.m. to  
11:30 a.m.

S talus wet-steaming.  
Cracks ll to edge of flow SE & E. Walls getting dry.  
Wet place in talus under SW rift.  
Stain in bench of lava at border of flow W extends as white stain up the talus.

Pit walls still & silent. Light NE wind.

A pressure ridge is present near edge of floor almost all around. Outside of this is the bench. In some places notably near SW cone, the pressure ridge is replaced by an infacing cliff. At one or two places the pressure ridge (notably NE) lies well under a wide platform. This pressure ridge was probably the last thrust of the live lava/flows pushing away from the cone source. White talus stain is notably absent where the talus is wet with steam at S places: it is abundant in the small NNW talus of fine gravel in several spots.

There is fresh rock on the NE talus.

November 28  
10:15 a.m.

SW wind. Clear.  
Pit unchanged. Where the sunbeams cross the shadow, bluish air.  
Blue fume can not be located. The only motion in the pit is the steam on S talus.

November 29-30  
10 a.m.

No change in pit from S observation point.

T.A.J.

## JOURNAL

Day	Date
Friday	December 1, 1933
Saturday	" 2, "
Sunday	" 3, "

December 1                      No change in pit from S observation point.  
10 a.m.

T.A.J.

December 2-3.                      No change. Rainfall 12/3 at Obsy & Pit about same 0.148 0.13 inches. Coming down much steam coming out of Halenaumau. On arrival none. No rocks falling. No evidence of recent sliding. Tilt changes slight. Too cloudy to see M. Loa.

XXX

## Report for Mauna Loa

December 2                      I saw Mauna Loa near the Observatory when I was coming from  
10:50 p.m.                      Hilo. Very clear without any clouds. Fume was coming out in two columns.

December 3                      I saw that Mauna Loa/<sup>fume</sup> was coming out in one column. Clouds all over  
6 a.m.                      Mauna Loa. Only place where fume was coming out was clear.

H. Y.

Chain of Geysers throwing red hot lava several 100 feet in air in western part of crater. Steam is hanging over crater as light smoke rising & drifting to west. Weather clear above 9,000 feet on western side.

Report of Army fliers. They left top of M. Loa 10:15 a.m. Dec. 3, 1933. They also report that there is no lava flowing outside of crater.

## JOURNAL

Day	Monday	Date	December 4, 1933
	Wednesday		" 6, "
	Monday		" 11, "
	Tuesday		" 12, "

December 4

Between 9:10 and 9:15 p.m. men were awakened at rest house at Puu Ulaula by an earthquake. Observer at Obs'y did not feel it. Probably very local and close to rest house. Report by telephone to A. E. Jones from K. J. Williams relayed by Capt. Wayne Archer. Cant be seen on record-may have been a Mule?

Glow last seen at 10 p.m.

Glow on M. Loa was seen during the night. 2:15 a.m. Dec. 5 and 4:30 a.m. December 5.

December 6

No hair cracking was noticed.

No rocks were heard falling. No recent slides. Tilt changes continue small or unnoticeable.

The fume column from M. Loa was quite high but so thin as to be scarcely noticeable.

A.E.J.

December 11

Seismograms remain singularly quiet. Fume in morn blowing N., slender, two puffs at base, reddish brown. Light NE wind here. Aungst goes up in plane at noon from Hilo. Says it is just like 1903. This checks with my impression: 1903 had the SW rift crack also. Pilot says fts slightly lower, cones bigger. Doerr reports Mok. flow thickening rather than spreading, and pahoe breaks into blocks.

Eng M. de Mello, Mc C. ranch, S. Kona, says Waimea sees glow like a flow to Kona. Nothing on seismogrpah.

December 12

Rumors from Waimea and Kailua last evening of side glow and appearance of flow on Kona side. An officer at Kailua and Manuel de Mello at Mc Candless Ranch, who heard from Waimea.

Plane today, up at noon, reports the one large fountain and flows pouring NE on crater floor. Nothing whatever outside of crater.

## JOURNAL

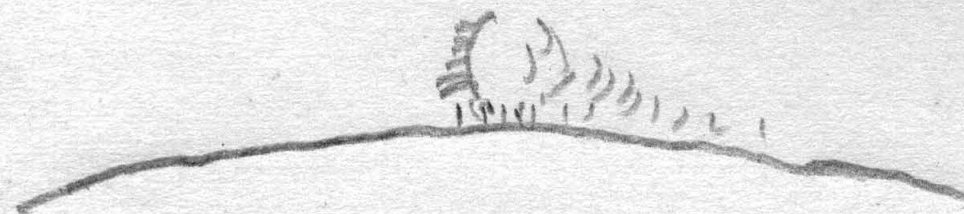
Day	Tuesday	Date	December 12, 1933
	Wednesday		" 13, "
	Thursday		" 14, "

December 13

Night before, one clearing spell, glare at crater, no fume column seen, flare of light up makes wide lighted area on high clouds: about midnight. 8 a.m. small fume column blowing to NW. 11 a.m. fume very faint. Evening glare the width of Mok, wide band of light on cloud above. Same continues all night, later the fume column asserted itself puffing up & lighted over the fountain. The glare was cut off at steep angle by cliff of crater south, unobstructed to extend far on cloud north.

December 14

Crater bright in Mok zone early a.m., wide light on high band above, small normal brown fume blowing to N in morning. There is a wide & high cloud of diffuse brown fume on N, and single jets on the S which move rt and diffuse into the other.



Plane went up: big cone makes 2 streams & an obstruction in front: steam at one side.

There is high cirru stratus.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Sunday Date December 17, 1933  
 Tuesday " 19, "  
 Friday " 29, "

December 17

In early morning the glow was weaker and after daylight, with very clear and perhaps dry conditions, the fume column was thin. The fume formed a long belt to the SE at 7 a.m.

T.A.J.

December 19

Pit very quiet.  
 Honokaa felt a moderate earthquake yesterday between 8:30 & 9:30 a.m. Not recorded here.

A.E.J.

December 29

Notes on clouds forming out of Mokuaweoweo and rising above mt. to slowly evaporate. (color white) Calm air on top

#	time	size	Position	ht ft above	length
1-3	1:57p.	small	3 mi. SW	2,000?	
4	2:04	med	" " "	1-2,000	
5	2:07	m	" " "	2,000	
6	2:09	m	1 1/2 " "	2-3,000	
7	2:10	large	SW crater	1,000	1 min.
8	2:12	l	Central cra	2,000	2 min.
9	2:15	m	1 min SW	3,000	
10	2:16	sm	1/2 min SW	500-1,000	
11	2:16 1/2	l	SW crater	also small one	1 min SW
12	2:18 1/2	sm	" "		
13	2:22	sm	" "		
14	2:23	l	" "	concentrated & rather	6 min continuous
15	2:25	m	1 to 2 mi SW		
16-17	:30	sm	" X	17 developed to large	
18	:32	sm	1/2 " SW		
19	:32	l	Crater		
20	:33		SW crater		
21	2:34 1/2	l	Crater	faded at 136	
22-23	2:37	?	SW & Cent part crater		
24	2:38	l	SW crater	2,000 ft high	
25	:39	mod	" "		
26	:41	sm	2 min SW of crater		
27-28		sm	1 & 1 1/2 mi SW		
29	2:46	X	1 mi SW		
30	2:51		SW part of crater		

December 29  
(cont'd)

31			3 $\frac{1}{2}$ mi. SW
32	2:53		SW part of crater
33	3:55	large	" " " "

These died off slowly until shortly after 3:30 there were none noticed. Appeared to be vapor that collected below the line of sight and shot up 1-2000 feet separated from the mountain and slowly disappeared. No tremors at this time.

A.E.J.