

# Hawaiian Volcano Observatory Record Book 1938

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	Wednesday	Date	January 5, 1938
	Sunday		" 9, "
	Friday		" 14, "
	Friday		" 21, "
	Saturday		" 22, "

January 5  
1:25 p.m.

Dust slide occurred on the north side of Halemaumau rim.

M.K.

January 9  
3:46 p.m.

Dust slide N corner pit, with quake.

T.A.J.

January 14  
9:25 a.m.

A big slide occurred on the North wall of Halemaumau at exactly 9:25 a.m. Falling stones could be heard very clearly. A great cloud of dust lingered there for quite a while.

W.P.

Slide N corner exceptionally strong, noise heard at Wingate house.

Craik

January 21  
9:45 a.m.

Slide, N rim.

XXX

January 22  
10:03 p.m.†

Sliding in Pit accompanying earthquake reported heard from Military Camp

H.H.W.

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

Hawaiian Volcano Observatory

JOURNAL

Day	Saturday	Date	January 22, 1938
	Monday		" 24, "

January 22

If my calculations are right, the epicenter of big quake was about 83 miles from Honolulu,  $40\pm$  from Lahaina and  $\pm 50$  miles from Kahului. Of course this is highly inaccurate but a depth worked out on this basis comes to 70 miles.

The Fordham University Report in the paper was given in Central Standard Time which is  $4\frac{1}{2}$  hrs ahead of us.

Time given was 2:45 and 2:53 a.m. C.S.T.

"P" waves should have reached N.Y. at 2h44m12 $\pm$ s C.S.T. using time of origin for quake as 10 h 02m 46 $\pm$ s H.S.T., and the "S" waves should have arrived at 2h 53m 04s $\pm$ .

In view of fact that the first "P" waves were probably very weak by the time they reached N.Y. it becomes quite possible that the first few seconds did not visibly record making up the difference between 2:44:12 and 2:45.

It was our quake all right and a beautiful check on everything, I think.

H.H.W.

January 24

Slide noted at Alealea Crater on south wall about one quarter distance around from tourist stand.

New slide at Alealea, product of quake.

XXX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Tuesday	Date	February 8, 1938
	Wednesday	"	9, "
	Monday	"	14, "
	Saturday	"	19, "
	Sunday	"	20, "

February 8

Sometime between yesterday and this morning, there was a moderate slide from the SE wall of Pit. Fresh scars still show on wall about 300 feet below the rim and rocks are still trickling down this morning.

H.Y.

February 9

9:11 a.m.  
4:22 p.m.

Continuous rock slides from wall of Halemaumau N.  
Dust slide occurred from wall of Pit.

W.P.

February 14

9:42 a.m.

Rocks were trickling from N wall of Pit.

H.Y.

February 19

On February 19 between 4:10 and 4:40 p.m. there was more or less constant trickling of rocks from the wall above the canoe sill, with two small slides at 4:20 and 4:28 p.m.

E.G.W.

February 20

11:25 a.m.  
12:07 p.m.  
12:10 p.m.

Dust slide occurred from N wall of Halemaumau  
Slide on the N.E. wall of Pit.  
Dust in pit.

W.P.

JOURNAL

Day Monday  
Friday

Date February 21, 1938  
" 25, "

February 21  
11:10 a.m.

Slide NE rim Halemaumau. ~~and~~

B.F.M.

11:30 a.m.

Dust slide from NE rim of Halemaumau.

XXX

12:05 p.m.

Dust rising from NE rim.

February 25  
9:53 a.m.

Slide below N rim.

B.F.M.

## JOURNAL

Day	Tuesday	Date	March 8, 1938
	Sunday	"	20, "
	Tuesday	"	22, "
	Friday	"	25, "

March 8

K.J. Williams reports a slide in Devil's Throat sometime between March 4-8.

This slide is opposite and slightly to the left of the center of the stone wall, and about 30 to 40 feet below the rim.

4:34 p.m.

Slide N.E. side of Halemaumau.

B.F.M.

March 20

While examining the fire pit at Halemaumau at about 1:20 p.m. on the 19th, it appeared that a slide had recently occurred on the northeast rim which had taken away the old northeast station and its pipe marker. The air was quite full of steam and mist, but I am convinced the signal has fallen in.

E.G.W.

March 22

Slide at pit 10:19 a.m. Kaneaki heard rocks falling. I was in W station cellar reading the tilt. Second slide at 10:30 a.m. from below N rim. Moderate. I saw it from SE edge. First slide must have been from same place.

H.Y.

March 25

The following slides were noted during crack measurement trip around the pit the forenoon of Friday, March 25, 1938

10:23 a.m.

Small slide from N wall about 100 feet from bottom of pit.

10:55 a.m.

Slide from W wall of pit about  $\frac{1}{2}$  way down made dust.

10:59 a.m.

Slide from W wall of pit made dust.

11:03 a.m.

Trickle of rocks from N wall of pit.

11:06 a.m.

Moderate slide from W wall of pit raised dust.

11:11 a.m.

Moderate slide from W wall of pit raised dust.

11:20 a.m.

Slide from W wall of pit.

11:20 a.m.

Trickle of rocks from N wall of pit.

S.S.

3:15 p.m.

Slide from N W wall.

4:15 p.m.

Dust slide from N wall.

XX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Saturday	March 26, 1938
Tuesday	" 29, "
Wednesday	" 30, "

March 26

10:20 p.m.

Dr. Jaggar reports hearing big noise of rocks falling in Halemaumau.

H.Y.

March 29

1:25 p.m.

Museum.

Slide occurred from the W rim of Halemaumau. Was heard at

2:20 p.m.

Slide from N rim of Halemaumau. Heard at Museum.

M.K.

March 30

9:25 a.m.

Museum.

Slide occurred from NE or NW side of Halemaumau. Heard at

W.P.&amp;M.K.

5:43 p.m.

Slide at Halemaumau. Dust cloud showed up from NE edge.

H.Y.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Sunday	Date	April 3, 1938
	Wednesday		" 6, "
	Thursday		" 7, "
	Sunday		" 17, "

April 3

9:25 a.m. Dust slide NW wall of Halemaumau  
 11:24 a.m. Dust slide NE wall of Halemaumau  
 2:06 p.m. Dust slide NE wall of Halemaumau  
 2:10 p.m. Same

W.P.

April 6

10:20 a.m. Slide occurred from W wall of Halemaumau. Can be seen from  
 Museum.  
 11:25 a.m. Dust slide NW wall of Halemaumau.  
 11:44 a.m. Dust slide NW wall of Halemaumau.  
 12:27 p.m. Slide NW wall of Halemaumau.  
 1:27 p.m. Slide NW wall of Halemaumau.  
 1:30 p.m. Slide N wall of Halemaumau.

XX

5:00 p.m. Heavy cloud of dust indicating slides in NE or N portion  
 of Pit.

H.H.W.

April 7

7:45 a.m. Slide occurred on the W wall of Halemaumau.  
 8:05 a.m. Slide W wall of Halemaumau.  
 8:10 a.m. Slide NW wall of Halemaumau.  
 8:15 a.m. Slide NW wall of Halemaumau.  
 8:24 a.m. Slide W wall of Halemaumau.  
 8:40 a.m. Slide W wall of Halemaumau.  
 10:16 a.m. Slide W wall of Halemaumau.  
 10:25 a.m. Slide W wall of Halemaumau.  
 11:00 a.m. Slide W wall of Halemaumau.  
 11:40 a.m. Slide W wall of Halemaumau.

April 17

12:17 p.m. Rocks could be heard falling from NW wall of Halemaumau.

XXX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	April 21, 1938
	Saturday		" 23, "
	Sunday		" 24, "

April 21

12:45 p.m.

Dust slide occurred from W wall of Halemaumau; can be seen from Museum.

M.K.

April 23

9:15 a.m.

Dust slide NW wall of Halemaumau.

11:11 a.m.

Dust slide N wall of Halemaumau.

11:12 a.m.

Dust slide N wall of Halemaumau.

11:15 a.m.

Dust slide N wall of Halemaumau.

April 24

8:22 a.m.

A slide occurred on the N wall of Halemaumau. Large volumes of dust could be seen from the Museum.

9:00 a.m.

Continuous slide from N wall of Halemaumau.

9:10 a.m.

Dust slide N wall of Halemaumau.

9:18 a.m.

Dust slide N wall of Halemaumau.

9:21 a.m.

Dust slide N wall of Halemaumau.

9:31 a.m.

Slide from N wall of Halemaumau.

10:05 a.m.

Slide from N wall of Halemaumau.

10:06 a.m.

Slide from N wall of Halemaumau.

10:12 a.m.

Slide from N wall of Halemaumau.

10:13 a.m.

Slide from N wall of Halemaumau.

10:16 a.m.

Slide from N wall of Halemaumau.

10:31 a.m.

Slide from N wall of Halemaumau.

11:02 a.m.

Slide from N wall of Halemaumau.

11:08 a.m.

Slide from N wall of Halemaumau.

11:22 a.m.

Slide from N wall of Halemaumau.

11:23 a.m.

Slide from N wall of Halemaumau.

12:09 p.m.

Slide from N wall of Halemaumau.

12:15 p.m.

Slide from N wall of Halemaumau.

12:25 p.m.

Slide from N wall of Halemaumau.

2:00 p.m.

Slide from N wall of Halemaumau.

3:06 p.m.

Slide from N wall of Halemaumau.

3:12 p.m.

Slide from N wall of Halemaumau.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Monday	Date	April 25, 1938
	Thursday		" 28, "
	Friday		" 29, "

April 25

11:02 a.m.	Slide	from the N wall of Pit.
11:05 a.m.	"	" " " NW " " "
11:14 a.m.	"	" " " N " " "
12:25 p.m.	"	" " " N " " "
1:16 p.m.	"	" " " N " " "
1:25 p.m.	"	" " " NW " " "
2:28 p.m.	"	" " " N " " "

W.P.

April 28

1:45 p.m. A slide occurred from the W rim of Halemaumau. Seen from Museum.

XX

April 29

10:50 a.m. There was a big slide from the N wall just below the hot crack. This slide recorded on pit instrument.

H.Y.

2:30 p.m.

Slide occurred from W side of Halemaumau. Seen from Museum.

M. K.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	May 1, 1938
Sunday		
Monday	" 2, "	
Saturday	" 7, "	
Sunday	" 8, "	
Monday	" 9, "	
Wednesday	" 11, "	
Thursday	" 12, "	

May 1  
12:25 p.m.

Slide from N wall of Pit.

May 2  
3:00 p.m.

Slide occurred from W rim of Halemaumau. Seen from Museum.

XX

May 7  
9:35 a.m.

Slide from N wall of Halemaumau. Dust cloud seen above N. Observed from Uwekahuna.

H.Y.

May 8  
3:54 p.m.

Noticed from H.V.O. a moderate-sized dust cloud rising over N rim of Halemaumau.

S.S.

May 9  
10:25 a.m.

Slide from N wall of Pit.

W. P.

May 11  
5:40 p.m.

Thick dust cloud rising from N edge of Pit. Seen from my house.

H.Y.

May 12  
9:52 a.m.

Small continuous slides this morning from N wall of Halemaumau.

H.Y.

11:30 a.m.

Slide occurred from N rim of Halemaumau. Seen from Museum.

M.K.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Sunday	May 15, 1938
Wednesday	" 25, "
Friday	" 27, "
Saturday	" 28, "

May 15

12:30 p.m.

Slide from N rim of Halemaumau.

XX

May 25

9:50 a.m.

Large slide from N wall of Pit this morning. Recorded on Pit instrument.

H.Y.

9:45 a.m.

Slide from N rim of Halemaumau.

XX

May 27

10:36 a.m.

A few rocks were heard falling from the NNE wall.

10:46 a.m.

A few rocks were heard falling from wall at W.

1:15 p.m.

Moderate-sized dust cloud seen from Observatory, rising from N side.

S.S.

May 28

1:33 p.m.

Large dust cloud indicating slide from N wall pit observed from Observatory.

1:40 p.m.

Same

H.H.W.

Day	Date
Sunday	May 29, 1938
Tuesday	" 31, "

May 29

4:55 p.m.

The following slides were recorded in Pauahi Crater the forenoon of May 29, 1938 reports slide at 4:55 p.m.

9:55 a.m.

One slide occurred on the northeast wall.

10:09 a.m.

One slide, larger than the first, occurred on the northwest wall at 10:09 a.m. This slide appeared to be followed by tremor which was felt about one minute after the sound of the slide reached us.

G.E.O.

4:55 p.m.

Major Billing reports slide.

H.H.W.

May 31

10:00 a.m.

Slide from N rim of Halemaumau.

C.K.

12:20 p.m.

Large dust cloud seen over Pit from Volcano House.

H.H.W.

12:29 p.m.

Slide from NE rim of Halemaumau.

XX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	June 2, 1938
	Sunday		" 5, "
	Monday		" 6, "

June 2

One shock recorded at 10:35 at June 2nd.

Minter

June 5

Mrs. Jaggard felt this morning's earthquake.

H.Y.

June 6

11:20 a.m.

Slide from N rim of Halemaumau.

XX

Ranger Olsen reports sliding from Rim of Devil's Throat most of which was E and S rims.

Recorder 1-2-3-5 at 10:30 a.m.

Widening of cracks at Ainahou road  $3/16$ " increase since June 3. About 6"

2nd crack opened  $1/16$ " on C of C road.

H.H.W.

2:30 p.m.

Rock fall heard in Devil's throat about 2:30 p.

Dribbling of small rocks at Devil's Throat.

A large section to the left of the lookout had dropped in probably between the time of 10:30 a.m. and 2:30 p.m. New cracks were noted in Cockett's Trail to the rear of the Pit and new cracks on the lookout side.

The shock recorder at Pauahi was checked--no record.

The road cracks were measured but showed no widening.

G.E.O.

5:35 p.m.

Slide at Halemaumau. Dust cloud showing from NE edge of pit.

H.Y.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Wednesday	Date	June 8, 1938
	Thursday		" 9, "
	Friday		" 10, "
	Sunday		" 12, "

June 8

9:20 a.m.

Slide in Halemaumau. Heard from SE station.

H.H.W.

June 9

8:45 a.m.

Slide occurred from NE rim of Halemaumau.

8:50 a.m.

Ditto

3:15 p.m.

Slide from N rim of Halemaumau.

XX

June 10

12:45 a.m.

This morning at approximately 12:45 a.m. I felt a small quake while sitting down reading at home. The motion was more of jolt than a shake and apparently was in a NW-SE or ~~N~~-W direction. Some glasses and chinaware rattled.

E.G.W.

2:30 a.m.

Earthquake felt at approximately 2:30 a.m. Friday morning at C.C.C. Camp.

9:55 a.m.

Slide occurred from NW rim of Halemaumau.

10:45 a.m.

Noise of slide in pit.

10:58 a.m.

Moderate slide from N rim.

XX

June 12

12:35 p.m.

Slide from NE rim of Halemaumau.

1:25 p.m.

Ditto

1:40 p.m.

Ditto

XX

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date
Friday	June 17, 1938
Saturday	" 25, "
Sunday	" 26, "

June 17  
5:20 p.m.

Dust from slide N rim of Pit-seen from HVO.

H.H.W.

June 25  
9:55 a.m.

Moderate slide from N edge of Halemaumau.

H.Y.

June 26  
12:45 a.m.

Mrs Jaggar felt this morning's earthquake.

H.Y.

12:52 p.m.

Large slide from NE rim of Halemaumau.

XXX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Friday	Date	July 1, 1938
	Saturday		" 2, "
	Sunday		" 3, "

July 1

8:58 a.m.	Slide from N rim of Halemaumau.
9:17 a.m.	Ditto
9:41 a.m.	Ditto
9:54 a.m.	Slide from NE rim of Halemaumau.
10:00 a.m.	Dust trickle from W wall.
10:19 a.m.	Slide NW wall.
10:20 a.m.	Moderate slide from NW wall
10:55 a.m.	Small slide from N rim.
10:57 a.m.	Small slide from NW .
11:07 a.m.	Moderate slide from NW wall.
11:08 a.m.	Small slide from NW wall.
11:18 a.m.	Slide from N rim of Halemaumau.
12:58 p.m.	Ditto

C.K.  
S.S.

July 2

9:32 a.m.	Slide from N rim of Halemaumau.
9:58 a.m.	Ditto
10:08 a.m.	Ditto
10:19 a.m.	Ditto
10:27 a.m.	Ditto
10:30 a.m.	Ditto
10:37 a.m.	Ditto
10:45 a.m.	Ditto
10:59 a.m.	Ditto
11:37 a.m.	Ditto
11:45 a.m.	Slide from NE rim of Halemaumau.
12:58 p.m.	Slide from N rim of Halemaumau.
1:05 p.m.	Ditto
2:47 p.m.	Ditto

July 3

10:08 a.m.	Slide from NE rim of Halemaumau.
1:03 p.m.	Slide from N rim of Halemaumau.
1:46 p.m.	Slide from NE rim of Halemaumau.

C.K.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Monday	July 4, 1938
Tuesday	" 5, "
Wednesday	" 6, "
Thursday	" 7, "

July 4

1:05 p.m.

At 1:05 p.m. July 4, there was a small slide from the north wall of the pit high up where a new crack has quite recently developed. Rocks trickled from the SW and N walls during a half hour visit.

E.G.W.

July 5

12:57 p.m.

Slide from N rim of Halemaumau.

C.K.

July 6

9:33 a.m.

Slide from NE rim of Halemaumau.

3:29 p.m.

Ditto

C.K.

3:37 p.m.

A moderate sized dust cloud was seen to rise over the N rim of Halemaumau. Observed from H.V.O.

S.S.

3:41 p.m.

Slide from N rim of Halemaumau.

July 7

10:49 a.m.

Slide from NE rim of Halemaumau.

11:19 a.m.

Ditto

C.K.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Saturday	July 9, 1938
Monday	" 11, "
Wednesday	" 13, "

July 9

9:45 a.m.	Slides occurred from NE rim of Halemaumau.
10:45 a.m.	Ditto
1:07 p.m.	Ditto
1:30 p.m.	Ditto

C.K.

2:00 p.m.	Ditto
2:50 p.m.	Ditto

Shaver

C.K.

4:16 p.m.	Ditto
4:22 p.m.	Ditto

Shaver

July 11

9:00 a.m.	Slide from N rim of Halemaumau.
9:28 a.m.	Slide from NE rim of Halemaumau.
9:35 a.m.	Slide from E rim of Halemaumau.
10:00 a.m.	Slide from NE rim of Halemaumau.
10:11 a.m.	Slide from E rim of Halemaumau.
11:03 a.m.	Slide from E rim of Halemaumau.
11:11 a.m.	Slide from E rim of Halemaumau.

R.F.

6:47 p.m.

Big slide on N side of Halemaumau. Cloud lasted for about ten minutes.

H.Y.

July 13

8:50 a.m.	Slide from NE rim of Halemaumau.
9:10 a.m.	Slide from N rim of Halemaumau.
9:20 a.m.	Ditto
9:34 a.m.	Ditto
9:35 a.m.	Slide from NE rim of Halemaumau.
9:35 a.m.	Slide from E rim of Halemaumau.
9:45 a.m.	Slide from NE rim of Halemaumau.
9:55 a.m.	Slide from N rim of Halemaumau.
10:00 a.m.	Slide from N rim of Halemaumau.
10:15 a.m.	Ditto
10:20 a.m.	Slide from NE rim of Halemaumau.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Wednesday	Date	July 13, 1938
	Friday		" 15, "
	Sunday		" 17, "
	Monday		" 18, "

July 13

(cont'd)

10:23 a.m.	Slide from NE rim of Halemaumau.
10:25 a.m.	Slide from N rim of Halemaumau.
10:35 a.m.	Ditto
10:45 a.m.	Ditto
10:50 a.m.	Ditto
11:10 a.m.	Slide from NE rim of Halemaumau.
11:50 a.m.	Slide from N rim of Halemaumau.
12:05 p.m.	Ditto

July 15

10:00 a.m.

Ditto

R.F.

Friday, July 15th on an inspection trip of the telephone line up Mauna Loa, **three** (3) new cracks about four inches wide, were noticed crossing the trail. The first one was about **one** and one half mile above the rest-house and the others around 12,000 elevation.

J.H.Christ

July 17

1:13 p.m.

Slide, Halemaumau.

H.H.W.

July 18

10:40 a.m.

Ranger Shaver reports slide in Halemaumau at 10:40 a. July 17.

E.G.W.

3:43 p.m.

Slide from NE rim of Halemaumau.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Wednesday	Date	July 20, 1938
	Thursday		" 28, "

July 20  
9:45 a.m.

Slide from N rim of Halemaumau.

C.K.

July 28  
9:10 a.m.  
9:50 a.m.  
10:05 a.m.

Slide from NE rim of Halemaumau.  
Slide from N rim of Halemaumau.  
Big slide from N rim of Halemaumau.

XX

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Monday	August 8, 1938
Wednesday	" 10, "
Sunday	" 14, "
Friday	" 26, "
Tuesday	" 30, "

August 8

10:00 a.m.

Slide from NW rim of Halemaumau.  
Slide from N rim of Halemaumau.

August 10

11:05 a.m.

Slide from NE rim of Halemaumau.

2:28 p.m.

Slide from N rim of Halemaumau.

2:31 p.m.

Slide from NE rim of Halemaumau.

August 14

12:18 p.m.

Slide from N rim of Halemaumau.

C.K.

August 26

9:50 a.m.

at 9:50 a.m.

Large slide from rim of extreme west end of Pauahi Crater  
Crashing noise heard very plainly at Ainahou Park boundary  $2\frac{1}{2}$  miles  
away.

G.E.O.

August 30

11:15 p.m.

Noise of falling rocks in direction of Halemaumau heard  
from H.V.O.

T.A.J.

Day	Date
Sunday	September 4, 1938
Wednesday	" 7, "
Friday	" 9, "

September 4

On the afternoon of September 3, 1938, I observed three rock falls above the same talus slope on the North rim of Kilauea Crater. The time was from 1:00 p.m. to 2:30 p.m. The first slide was a small one but caused a rumble audible a quarter of a mile away. The second was considerably larger, and I saw several rocks two or three feet in diameter bounding down to the talus at the base of the cliff from a point at least one hundred and fifty feet above the floor of the crater. Numerous small rocks and pebbles came down with the large rocks. The third fall was the smallest, and I heard only one large rock as it struck the cliff at a number of points.

This particular talus slope had a distinctly fresh appearance, in that the color of the rocks was lighter than that of the other talus slopes, owing to lack of weathering and to the presence of dust upon them. While I did not venture on to this talus slope to make certain, I believe that there were no lichens and ferns growing in the chinks between the rocks. However, I climbed to the top of two other talus slopes, neither of which looked much, if any, older than the average talus slope in that region of the crater walls. On both of these slopes lichens and a few Amaurus and Ohias had started their growth.

The fresh slope was in a peculiar position. It was forming at the left border of a portion of the cliff which jutted out a short ways from the remainder of the wall. On the right border (East border) of this piece of cliff another talus slope was found. The latter slope may also have been new, or had stones recently added to it (I'M no geologist).

P.B.

September 7

8:31 a.m.

Large slide in Halemaumau.

G.E.O.

9:35 a.m.

Slide from NE rim of Halemaumau.

9:40 a.m.

Ditto

September 9

11:53 a.m.

Slide from N rim of Halemaumau.

11:56 a.m.

Ditto

J.K.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	September 15, 1938
	Friday		" 16, "
	Thursday		" 22, "
	Friday		" 23, "

September 15

On Thursday, September 15, 1938, Chief Ranger Christ, Ranger Minter and Asst. to Superintendent Moomaw, while on an inspection trip through Mauna Loa area and trail, examined the new cracks in the trail between the 10,000 foot rest house and the summit rest house. The first crack at elevation 10,500 feet was apparently a new crack but older than the last repairs that were made to the trail. The fill across this crack showed several inches of settling due to recent movement and fresh breakage was apparent on either side of the trail at this crack. The second area examined at approximately 11,000 feet was an area of new cracks discovered by Chief Ranger Christ July 15th, 1938, appeared to have had recent movement as there was no mineralization on either side of this crack whatsoever. Mr. Moomaw does not remember these cracks and is willing to state that they are new because of this lack of mineralization and the evident freshness of the fracture zone. The third series of cracks at elevation of approximately 12,200 feet is a series of old cracks with fresh movement as the freshness of the fracture is just as evident there as it is at 11,000 feet.

The upper 1935 center cone is still fuming and depositing sulphur around the sides of the vents, although Mr. Christ reports that there is less fume from this cone than there was at his previous inspection in July. The vents that were fuming and reported by Mr. Moomaw and Mr. Williams in July 1937, to the south of the 1935 cones and approximately  $\frac{1}{2}$  mile away from this cone, are still fuming but due to light and weather conditions as compared to those conditions a year ago, Mr. Moomaw does not give a visual comparison to his observation a year before. Where last year they were fuming and steaming with a continuous stream, on this observation they were puffing similar to the pull of a pipe when it is being smoked normally. Both steam and fume were evident to the naked eye and through dark glasses. On the return, this vent was observed fuming just at sundown from elevation 8,000 feet.

B.F.M.Jr.

September 16

10:08 a.m.

Slide from NE rim of Halemaumau.

10:10 a.m.

Ditto

C.K.

September 22

11:20 a.m.

Slide from NE rim of Halemaumau.

J.K.

3:20 p.m.

Observed one slide on N side Pauahi at 3:20 p. Fairly large.

September 23

New crack on east side of Devil's Throat was developed on September 23rd sometime in the p.m. Also the lookout point on S end of Pauahi shows signs of settling, as new cracks are developing on trail to Hui-o-Pele shelter, since Sept. 20. Have put wire barricade completely around Devil's Throat.

Minter.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Tuesday	Date	October 4, 1938
	Thursday		" 6, "
	Friday		" 7, "

October 4

10:31 a.m.	Slide from NW rim of Halemaumau.
10:33 a.m.	Slide from N rim of Halemaumau.
10:46 a.m.	Ditto
10:48 a.m.	Ditto
10:50 a.m.	Ditto
11:10 a.m.	Slide from NW rim of Halemaumau.
11:12 a.m.	Slide from N rim of Halemaumau.
11:14 a.m.	Ditto
2:08 p.m.	Ditto
2:10 p.m.	Ditto
2:12 p.m.	Ditto

C.K.&amp;W.K.

October 6

Between 11 and 11:20 this morning I noticed two small rock slides from the south or southwest rim of the crater (Hal) and one slide of large rocks from the NE wall.

E.G.W.

October 7

10:19 a.m.	Slide from N rim of Halemaumau.
10:30 a.m.	Slide from NW rim of Halemaumau.
10:50 a.m.	Slide from N rim of Halemaumau.
10:54 a.m.	Slide from NE rim of Halemaumau.
11:21 a.m.	Slide from NW rim of Halemaumau.
11:41 a.m.	Ditto
12:15 p.m.	Slide from N rim of Halemaumau.

C.K.

Fresh scars at SW rim and dust streaks on face of wall immediately below indicating sizable slide sometime within past 24 hours.

H.H.W.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date
Sunday	October 9, 1938
Saturday	" 22, "
Thursday	" 27, "

October 9

1:00 p.m.

1:35 p.m.

Slide from N rim of Halemaumau.

Ditto

October 22

Slide from NW rim.

C.K.

October 27

6:00 p.m.

Quake made cracks North-South clear across floor in Naalehu stables and dairy concrete floor. Two distinct shocks.

Christ

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Wednesday	November 2, 1938
Thursday	" 3, "
Thursday	" 10, "
Friday	" 11, "
Thursday	" 17, "
Friday	" 18, "

November 2

1:20 p.m.

Small rock slide from N wall of Kilauea crater.

H.H.W.

November 3

5:05 p.m.

Slide near N end Uwekahuna wall. Reported by Christ.  
Leaves fresh talus.November 10

4:50 p.

5:12 p.

5:35 p.

Sampan harbor Hilo Range 1 foot.

Out survey

Out survey

Out survey

Fishermen say 4 p.m. swings were higher.

T.A.J.

November 11

9:25 a.m.

Slide from NE rim of Halemaumau.

J.K.

November 17

10:15 a.m.

Slide from SW rim of Halemaumau.

November 18

9:47 a.m.

Rocks heard trickling from NW wall.

S.S.

10:45 a.m.

Slide from NE side of Halemaumau.

3:25 p.m.

Ditto

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Saturday	November 19, 1938
Monday	" 21, "
Wednesday	" 23, "

November 19

8:55 a.m.	Slide on N side of Halemaumau.
9:00 a.m.	Slide on NW side of Halemaumau.
9:35 a.m.	Slide on N side of Halemaumau.
9:35 a.m.	Slide on NW side of Halemaumau.
11:40 a.m.	Slide on NE rim of Halemaumau.
11:48 a.m.	Ditto
11:55-12noon-12:40	Series of small slides on NE.
12:20 p.m.	Slide on NE rim of Halemaumau
12:25 p.m.	Ditto
12:28 p.m.	Slide on NNE rim of Halemaumau.
12:54 p.m.	Slide from NE rim of Halemaumau.
1:04 p.m.	Ditto
1:24 p.m.	Ditto
1:25 p.m.	Slide from N rim of Halemaumau.
2:09 p.m.	Ditto
2:28 p.m.	Ditto
2:28 p.m.	Slide from N rim of Halemaumau
2:45 p.m.	Slide from NE rim of Halemaumau.

November 21

10:04 a.m.	Slide from N rim of Halemaumau.
10:11 a.m.	Slide from NW rim of Halemaumau.
10:43 a.m.	Slide from N rim of Halemaumau.
10:49 a.m.	Ditto
10:55 a.m.	Ditto
11:19 a.m.	Ditto

November 23

10:53 a.m.	Slide from N rim of Halemaumau.
11:55 a.m.	Slide from NW rim of Halemaumau.
12:19 a.m.	Slide from NW river of Halemaumau.
1:00 p.m.	Slide from N <del>KIVAKKA</del> rim of Halemaumau.

November 24

9:03 a.m.	Slide from NW rim of Halemaumau.
9:08 a.m.	Slide from N rim of Halemaumau.
9:11 a.m.	Ditto
9:14 a.m.	Ditto
9:16 a.m.	Ditto
9:19 a.m.	Ditto
9:20 a.m.	Slide from NW rim of Halemaumau.
9:21 a.m.	Slide from N rim of Halemaumau.
9:22 a.m.	Slide from NW rim of Halemaumau.
9:29 a.m.	Ditto
9:31 a.m.	Ditto
9:32 a.m.	Slide from N rim of Halemaumau.
9:35 a.m.	Slide from NW rim of Halemaumau.
9:36 a.m.	Ditto
9:56 a.m.	Slide from N rim of Halemaumau.
9:57 a.m.	Ditto
9:58 a.m.	Ditto
9:59 a.m.	Ditto
10:03 a.m.	Ditto
10:06 a.m.	Ditto
10:06 a.m.	Slide from NW rim of Halemaumau.
10:07 a.m.	Ditto
10:08 a.m.	Slide from NW rim of Halemaumau.
10:08 a.m.	Slide from NW rim of Halemaumau.
10:12 a.m.	Slide from N rim of Halemaumau.
10:13 a.m.	Slide from NW rim of Halemaumau.
10:15 a.m.	Ditto
10:39 a.m.	Slide from N rim of Halemaumau.
10:51 a.m.	Ditto
10:51 a.m.	Slide from NW rim of Halemaumau.
10:54 a.m.	Slide from N rim of Halemaumau.
11:21 a.m.	Slide from NW rim of Halemaumau.
11:22 a.m.	Ditto
11:29 a.m.	Slide from N rim of Halemaumau.
12:09 a.m.	Ditto
1:03 p.m.	Slide from NE rim of Halemaumau.
12:30 p.m.	Slide from N rim of Halemaumau.
1:08 p.m.	Slide from NE rim of Halemaumau.
2:15 p.m.	Slide from NW rim of Halemaumau.

November 25

8:45 a.m.	Slide from W rim of Halemaumau.
9:10 a.m.	Slide from NW and W rim of Halemaumau.
9:12 a.m.	Slide from N rim of Halemaumau.
9:15 a.m.	Slide from NW rim of Halemaumau.
9:20 a.m.	Slide from W rim of Halemaumau.
9:35 a.m.	Ditto
9:40 a.m.	Slide from NW rim of Halemaumau.
9:40 a.m.	Slide from SW rim of Halemaumau.
9:45 a.m.	Slide from N rim of Halemaumau.
9:55 a.m.	Slide from W rim of Halemaumau.
9:55 a.m.	Slide from NW rim of Halemaumau.
9:57 a.m.	Slide from SW rim of Halemaumau.
9:58 a.m.	Slide from NW rim of Halemaumau.
9:58 a.m.	Slide from W rim of Halemaumau.
9:58 a.m.	Slide from SW rim of Halemaumau.
10:07 a.m.	Slide from W rim of Halemaumau.
10:07 a.m.	Slide from SW rim of Halemaumau.
10:20 a.m.	Slide from W rim of Halemaumau.
10:21 a.m.	Slide from NW rim of Halemaumau.
10:26 a.m.	Slide from W rim of Halemaumau.
10:29 a.m.	Slide from N rim of Halemaumau.
10:30 a.m.	Ditto
10:40 a.m.	Slide from W rim of Halemaumau.
10:45 a.m.	Slide from W rim of Halemaumau.
10:55 a.m.	Slide from N rim of Halemaumau.
10:59 a.m.	Slide from NW rim of Halemaumau.
11:55 a.m.	Slide from N rim of Halemaumau.
12:10 p.m.	Slide from NW rim of Halemaumau.
12:55 p.m.	Slide from W rim of Halemaumau.
1:00 p.m.	Slide from N rim of Halemaumau.
1:15 p.m.	Slide from NW rim of Halemaumau.
1:15 p.m.	Slide from W rim of Halemaumau.
1:45 p.m.	Ditto

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date
Saturday	November 26, 1938
Sunday	" 28, "
Monday	" 29, "
Tuesday	" 30, "

November 26,

9:55 a.m. Slide from W rim of Halemaumau.  
 10:24 a.m. Ditto  
 10:40 a.m. Ditto  
 10:50 a.m. Ditto  
 10:58 a.m. Ditto  
 11:12 a.m. Ditto  
 12:55 p.m. Slide from N rim of Halemaumau.  
 2:20 p.m. New slide at N end of Uwekahuna cliff over the new talus.

November 27

10:55 a.m. Slide from NW and W of Halemaumau.  
 12:45 p.m. Slide from N rim of Halemaumau.  
 1:50 p.m. Ditto

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Devil's Throat reported sliding this a.m.

B.F.M.

November 28

11:04 a.m. Slide from NE rim of Halemaumau.  
 12:20 p.m. Ditto

XXX

4:00 p.m. Slide observed at 4:00 p.m. from Pali near Puu Kaone.

H.H.W.

November 29

11:50 a.m. Slide from NW rim of Halemaumau.  
 11:53 a.m. Slide from N rim of Halemaumau.

November 30

11:30 a.m. Slide from NW rim of Halemaumau.  
 1:08 p.m. Ditto

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	December 4, 1938
Sunday		
Tuesday	" 6,	"
Thursday	" 15,	"
Sunday	" 18,	"
Friday	" 30,	"

December 4

9:40 a.m.	Slide from N rim of Halemaumau.
10:20 a.m.	Ditto
10:30 a.m.	Ditto
10:50 a.m.	Ditto
11:10 a.m.	Ditto
1:10 p.m.	Ditto
1:40 p.m.	Ditto

December 6

3:31 p.m.	Slide from NW rim of Halemaumau.
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December 15

10:10 a.m.	Slide from NW rim of Halemaumau.
11:14 a.m.	Ditto

December 18

11:15 a.m.	Ditto
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December 30

10:07 a.m.	Moderate slide from N wall about 300 feet below the edge.
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H.Y.