

# Hawaiian Volcano Observatory Record Book 1929

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Wednesday	January 2, 1929
Friday	" 4, "
Sunday	" 6, "
Monday	" 7, "
Tuesday	" 8, "

January 2  
10 a.m.

Tai On says no changes.

January 4  
9:40 a.m.  
10:05 a.m.

Avalanche SE wall made noise and dust (Tai On)

Thin dust from avalanche on N wall.

January 6  
4:45 p.m.

Thin dust seen over pit most of the day.

January 7  
7:40 a.m.  
8:30 a.m.

Loud avalanche heard at HVO and hotel.

9:30 a.m.

Mr. Clark of Honolulu (hotel guest) brought news of new cracks on SE side of Halemaumau. Buckingham, Tai On, and Hodges went to pit. Found whole of SE tourist outlook area dangerously cobwebbed with cracks of all sizes. Floor of pit is half covered by a landslip from the south, and S rim is indented by caveins. S. station gone. Slides no not appear to have occurred under SE cracked area.

11 a.m.

Numerous avalanches have occurred, making thin dust all from S. wall.

R.H.

January 7

(Supplemental to notes of R.H.)

Sunday night Mr. Douglas told me of cracks near Tourist Stand. Almost continual avalanches from the south wall, originating about 1/3 the distance down from the top of wall. Large block under SSE rim cracked away from wall.

E.M.B.

January 8  
11 a.m.

Pit much the same, with avalanches nearly continuous from S wall. A large avalanche cloud observed from HVO at 10:15 a.m.

R.H.

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Day	Wednesday	Date	January 9, 1929
	Thursday		" 10, "
	Sunday		" 13, "
	Wednesday		" 16, "
	Friday		" 18, "
	Saturday		" 26, "
	Thursday		" 31, "

January 9                      Some avalanche and sliding SE under cracked area. None of  
3:30-4:20 p.m.            any great size.

January 10                      Loud avalanche SE (HY)  
7:40 a.m.  
12 noon                      100 feet of SE ledge fell, preceded by many small avalanches.

R.H.

12 noon                      19th hole-tourist station- went at noon today.

E.M.B.

January 13                      Occasional small falls from below Tourist Stand. Otherwise  
no change. Balance of S. wall seems to have become stabilized,  
except near top.

January 16                      Very small falls from S.

11:08

11:15

Slide from N wall . Very small slide SE. Frequent very small  
falls.

E.M.B.

January 18                      SW rain storms. No slides occurring. More of SE ledge has  
11 a.m.                      fallen, also a strip E of it.

No. 1 crack has widened about two feet since January 8, and  
over three feet since December 4.

R.H.

January 26                      Crack #1 3.55 feet. No change in pit.

January 28                      Occasional small falls from N. No change.  
Large spot of bright green moss (?) near top of west talus.

January 31                      No apparent changes except fresh slide from N. rim. Dust  
2:30 p.m.                      seen this morning.

E.M.B.



## JOURNAL

Day	Wednesday	Date	February 2, 1929
	Thursday		" 3, "
	Friday		" 4, "

February 2  
2:30 p.m.

Visiting pit first time after the southern avalanches of January 5 to 9, note that a large area of rim from SE to S is gone apparently from 5 to 10 feet back or more. Old S. station gone and all the pinnacle slabs next east of it. These were upright slabs with steam about their bases, just inside rim of pit. The U.S.G.S. bronze plate bench mark at SE station (tourist viewpoint formerly) is now on cracked unstable ground at extreme edge of pit. The olivine rock and old burned boards of the 1918 outhouse S of former SE station have fallen in. The entire SE rim remaining, where tourists formerly approached the pit, is cracked and dangerously overhanging and is roped off.

A new tourist terminal has been constructed by the National Park just south of the East station and work is in progress to extend the road to the tourist shelter and sign.

The notch removed by the recent avalanching extends from the SE station to a point somewhere E of the tunnels of the SW rift. The south talus was struck by the great avalanches and set in motion as a landslide to cover the whole S half of the floor. This is much like what happened just a year ago January 11, 1928.

The only steam is high on the south talus, up the SW talus, and in the hole of the central lava cone. Besides, there are minor wall cracks steaming. The SE rim cracks are steaming and show fresh soil breaks back from the rim to the big crack that the tourist trail crosses.

It looks as though the wall rock between E and SE stations were particularly unstable and a different color from the stripped wall rock of the rest of the pit. Perhaps this will fall away back to the clefts and cracks that here steam 20 to 30 feet back from the rim.

There are blue green algae in a wet place East of the SW tunnels. If the top of SW talus is 350 feet down, the top of the S talus is about 650 feet down. Inspection of the SW rim seemed to indicate that much of that rim has fallen and changed the landmarks.

Rocks were trickling a little on the lower S wall.

February 3  
2:30 p.m.

Nothing new was observed. Dust was seen rising at 2 p.m. at north corner of rim. Rocks were heard sliding a little south.

February 4  
8:20 a.m.

At 8:20 a.m. dust rose at N corner of rim.

T.A.J.

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Day	Date	February 5, 1929
Tuesday		
Thursday		" 7, "
Friday		" 8, "
Wednesday		" 13 "
Wednesday		" 20 "

February 5  
2:45 p.m.

Nothing new was observed as result of the strongish earthquake of 2:25 a.m. that woke everybody and was felt strongly in Hilo and in Kohala. No avalanches were heard at the time of the earthquake. The pit appears just the same as when last seen.

T.A.J.

February 7

No change.

February 8

Two quakes on February 8 at 11.17 a.m. and 6:48 p.m. Both had distances of 18 miles.

Seismograph shows moderate SSE tilt. Bubble checks S component.

Microseisms faint.

February 13

7 wf. earthquakes and one short period of spasmodic tremor(?) on February 9 at 12:52 p.m.

February 20

Pit seismograph. First tremor 10:27 p.m. 19th; continuous to 12:44 a.m. of 20th.

Strong tilt away from pit; beginning with first tremor.

17 earthquakes wf. One at 10:08 p.m. 13th, distance 24 miles.

From 10:47 p.m. 19th to 12:28 a.m. 20th, 14 quakes.

Continuous tremor began 12:46 a.m. of 20th.

Microseisms blight.

Tilt 3 mm. E 19 mm. N.

E.M.B.

February 20

New outbreak of Halemaumau began about 12:30<sup>±</sup> a.m. (midnight) and was notified by a bugle from Volcano House watchman. Yasunaka notified me about 1:15 a.m. Bright glare over Halemaumau.

Note: The newspaper reports that the watchman at volcano House saw first a black cloud rise from pit about 12:45 a.m., then white steam, then glow began. Then he gave the alarm.

Arrived at pit about 2 a.m. Line of fountains over a crack trending SW and parallel to NW wall tangent to base of NW talus. Big fountain of Mauna Loa type jets eastward 200-225 feet high at north end of live rift. Here the rift, which is straight for 1000 feet from NW base of W talus to NE base of NW talus, in a NE direction, bends a little to the E, and the big fountain is in the bent portion.

A line of perpetual fountains spraying up 50 feet or more occupies SW end of rift. This rift makes an angle slightly with the rift of July 1927, but is nearly || with it.

Whole bottom filled with large lake estimated 1500 feet long NE and 800 feet wide NW. Shape like a map of Australia as seen from S: the live rift crosses NW corner of map. Buckingham was mapping here a.m. yesterday, saw a few rocks fall N, and noticed the steam was a little bluish NW steaming patch of lava bottom.

The old central cone of 1927 makes a crescent mound through this lake with horns turned SE and this served as measure of the rapid rising of lake. By 4:30 a.m. this peak of central cone was much smaller. Also the lava lake edge everywhere was making glowing toes and pushing out as the lake rose up the talus slopes. The old lava floor was entirely covered. By 4:30 a.m. the lake was touching the NW wall. The high south cone of 1927 was laved at its base by the edge of the lake and this cone will, with the central cone, be a gauge of rising measured on Wilson's map.

There was almost no avalanching. The pit seismograph showed tilt and tremor. The HVO seismogram, show tremor from the onset of the eruption. The big north fountain and its outliers and the next fountain SW were making cones and grottoes at 4:30 a.m. Cascades poured from the northern built up smaller vents. Blue fume, salmon colored clouds, pumice and Pele's needles falling to leeward. Wind NE. Steady roar of surf, and rumble audible at Observatory.

A few small fountains broke the lake surface occasionally, but it was mostly an even bright line pattern. By 4:30 a.m. there were concentric breaks near the southwestern fountain line, surrounding the fountaining, and showing that the fountains were wholly within the deepening lake. One avalanche at NE corner.

Returned to HVO 5 a.m. and prepared Ensign camera. Pit bright with pink transparent veil of fume. When daylight appeared this was seen to be blue-brown (blue in reflected, brown in transmitted light) and surmounted by high gray cumulus of water vapor sucked in convectionally and rising rapidly in an imposing pile of billows. Fume mostly from NW side of pit.

After 8 a.m., to 11 a.m., at pit. Buckingham with Tai on recording starts plane-table work about 10 a.m. Find Pele's needles and pumice, SO<sub>2</sub> fume, SW of pit, becoming more normal Pele's hair, but coarse, off to the SW a quarter mile from pit. Collected some material.

Big fountain heavier melt and only 100 feet high: spatter instead of pumice. SW fountain line almost as big fountaining. Central cone of 1927 only a heap of new crust. By 9:30 a.m. the Central Cone was drowned. Wide piece of lake shore against NW wall S of NW talus. Ramparts now forming West and SE and lake overflowing the ramparts in toes. Pronounced grottoes near big fountain North.

Fountain next SW of big fountain now a big spatter cone with glow hole in top. Hiatus with no fountains between the big fountain and line of SW fountains: at first last night the line of fountains was nearly continuous. Wide river-like stream from big fountain out to lake has been so from the beginning. Lake climbing its shores very rapidly. Grotto W of SW fountain line near wall. Big whirlwinds at S edge of pit with stringing lava lapilli. Small fountain in NE cove of lake.

The big fountain built at first a large bank of pumice W of it. This is now caving in continuously and becoming coated with glistening heavy glass.

## PHOTOGRAPH RECORD

Day Friday

Date February 20, 1929

time	sta	subject	no	pl	scr	stop	ex	cam
<u>February 20</u>								
3-4:30 a.m.	SE	Night Photos				f/6.3		P
	SE SE	Zeiss Anastigmat South SSW	1 2	Panch "		f/5.6 "	1min	6½ x 8½ "
8-11 a.m.	S	Pit Zeiss Tessar lens		Panch		f/2.7		Ensign (3¼ x 4¼)
12 noon	HVO	Pit	1					

T.A.J.

Day	Wednesday	Date	February 20, 1929
	Thursday		" 21, "

Long rampart at lake edge base of W talus. Small rampart SSE. Lake surface cracks and founders occasionally.

As a whole a gray-black satiny rocky pattern. 3 fountaining centers of blue fuming, the N big fountain, the W line of fountains and the spatter cone NW. As the lake rises the big fountain becomes more and more drowned: at 10:30 its flings are heavy and appear not more than 75 feet high. The action from the first has been a steady vertical jet upward like a hose at the N, and a big doming jet next to it, with minor jets up the talus farther NE: this is the description of the major N fountain as a whole.

Line of spatter cones up the talus above the big fountain. White steam above edge of lake along shore of S talus. Lake is lead colored. Crusts sucking in to the line of SW fountains with elliptical cracking.

Between 6:30 and 7:30 p.m. the situation remained as before but the big north fountain had a high spatter wall against the northeast side of the large northern jet and an oven on the NW side. The lake had spread out against the NW wall in a line that completely buried the small talus there. The rampart appeared to have a small grotto line under it west.

The rumbling thud of the fountains both N and W was deep and heavy, like detonations occasionally. The window in top of middle new cone was gone. The pattern of bright lines was elliptical concentric around W fountain belt and radial from there to E, SE and S. The action seemed as heavy as ever and spray fully 100 feet at times from the N fountain.

February 21

3 a.m.

12 noon

Earthquake felt around 3 a.m.

Activity of W line of fountains has entirely ceased without leaving a scar. Avalanches sent up dust at NNE corner of pit 10 a.m. N fountain continues grotto fountaining in an armchair niche made by caving in of its cone. The spatter conelet next SW is entirely absent. The crust pattern is coarse blocky, no radiation of cracks like last night. Fresh avalanche debris on new floor NNE only. Cracking and foundering crusts in a few places. Rampart all around with overflow margin outside. Lake down 7 feet inside rampart.

8:30 p.m.

The fountaining and the tremor ceased at 1:15. Tai On says pit seismograph ceased tremor earlier. Observatory and Uwekahuna show cessation of tremor markedly. Hodges visited pit 1:30 p.m. and found no fountain.

Now by night there is a long oval glow area trending N and S at the west and a crescent of glow east. These look like subordinate pools inside the crusted lake. A little cracking and foundering around their edges. The rest of the lake a dull glow-crack pattern like aa in appearance, like a dull ~~of~~ coal bed, though the surface appears pahoehoe in daylight. A grinding noise

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Day	Thursday	Date	February 21, 1929
	Friday		" 22, "
	Saturday		" 23, "

like cracking and foundering crusts. Very little fume. One avalanche NW at 8:50 p.m.

Dull glow on clouds over Halemaumau diminished during the night. The pit seismograph showed pronounced pit-ward tilt as the vibrations ceased.

T.A.J.

11:30 a.m.

West end of long crack has expired. Some activity at east end of crack but much diminished.

Large fountain somewhat diminished. Has begun to build steep sided cone.

11:40 a.m.

Long crack expired (dying reported to have started about 10:30). Lava receding. White stain on walls.

1:10 p.m.

Activity ceased in fountain.

1:13 p.m.

Slide from NE.

February 22  
a.m.

Lake entirely crusted over and sunk below previous level, leaving crust on original shore.

Some thin fumes.

N.E. talus now above sill.

E.M.B.

An earthquake bigger than the one of previous morning around midnight felt here and felt strongly at Pahala.

No fume rises over pit though fume hangs under the distant SW clouds with brownish aspect.

Some glow cracks remain according to evening reports. At 2 p.m. lava lake surface fairly flat, 8 foot rampart all around, appears to be fresh avalanche debris on E talus.

February 23

Buckingham surveys pit in forenoon. No clouds of fume, only diffused fume, arising. He reports still lake crust, no important changes. No dust clouds seen. Hot air rising from lava surface makes pronounced moisture cumulus with flat bottom over pit during moist afternoon weather; and in evening coolness a cumulus with one or two long tails leading down to the steam at edge of pit.



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Day	Sunday	Date	February 24, 1929
	Monday		" 25, "
	Tuesday		" 26, "

February 24  
4 p.m.

Pit is motionless and walls are dark red, wet with rain. No fresh avalanche debris on the new lava. Steam at top and bottom of south talus and along N edge of new floor. There is denser steam along NW edge of Halemaumau than elsewhere on Kilauea floor.

There are 15 spots on the flat lava crust of the lake where lumps of lava occur, apparently representing the last toes or heaps where spatter or melt welled up.

T.A.J.

February 25  
a.m.

Park laborers blasting this morning. No apparent changes in pit. Small slides heard from north. Thin fume still visible from floor.

February 26  
a.m.  
11 a.m.

Two blasts at terminan near Halemaumau at 11:07 $\frac{1}{2}$  a.m.

E.M.B.

Lake surface mostly level and even rampart all around with cracks between it and lake. Arm-chair cove where big fountain was and pahoehoe festoons mark stream out into lake. The rest of lake more a shark-skin lava in appearance. Quite wide overflow margin outside of the rampart. Talus overlaps the new punice bank NW of armchair cove. Fresh debris on E talus, E end of sill.

T.A.J.

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Day	Date
Friday	March 1, 1929
Saturday	" 2, "
Sunday	" 3, "
Monday	" 4, "
Tuesday	" 5, "
Wednesday	" 6, "

March 1  
11 a.m.

Fresh debris east side from NNE to SE  
A little fresh debris on N talus and S talus  
Slide heard, junction of S and W talus. Sulphur increasing on 1929 cone. New patch at toe S talus.  
Crack in floor near line of fountains. S side settling relatively.  
White stain on large red rock near bottom, E.  
Columnar structure of S. End East sill very pronounced, with fluted appearance. Steam from S end sill.  
White stains on floor increasing.

E.M.B.

March 2  
10-11 a.m.

Halemaumau is quiet. The earthquake about 10:20 a.m. made small slide at SE wall.

March 3  
11 a.m.

A little sliding heard. Yellow stain and steam are increasing at edge of lake SE. Fresh avalanche debris has fallen at the E. talus. A spot in the flat bottom of gravel between the bases of the NE and E taluses appears to be a yellow-stained solfataric hole beside a boulder.

There is a line of steaming up and down the upper part of the S. talus.

T.A.J.

March 4  
a.m.

Numerous small slide from N and NE.  
About noon, soldiers started slide from NNE which put numerous white rocks on talus and caused red scars on wall.

March 5

Occasional small falls from north and SE.

March 6

Teleseism.

If chromatic rate is accepted:

P - 3-11-22.6 p.m.

S - 3-16-54.1 p.m.

If clock rate is accepted:

P - 3-11-14.5 p.m.

S - 3-16-46.0 p.m.

Local earthquakes only 4. Tilt 7 mm.W and 16 mm.S.

Bubble shows  $\frac{3}{4}$  seconds.

E.M.B.

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Day	Wednesday	Date	March 6, 1929
	Thursday	"	7, "
	Friday	"	8, "
	Tuesday	"	12, "
	Friday	"	15, "

March 6

Week ending March 6, 1929

Only six earthquakes for week. Two on March 2, at 10:19 a.m. and 10:24 a.m. showed distance of 17 miles. The second was felt locally, intensity III R.F. scale. Apparently between Kilauea and Mauna Loa. Tilt for the week moderate to north. 2 mm. W, 12 mm. N. Microseism normal.

March 7

Visitors started slides on north wall 1:30 p.m.  
Wind loosening dirt from wall below Tourist Stand.

E.M.B.

March 8

Sliding at the north in Halemaumau.

March 12

Sliding, but not so much as March 8.

March 13  
11:08 a.m.

Fresh red debris on east talus (East end of big sill) from a newly stripped portion of the wall 1/3 of way up from top of talus on the sill side. A little steam from the wall at the top of this talus.

Weather sunny, no vapor whatever detectable from any portion of the new lava floor: none from the N spatter cone nor the stained spot at the south edge.

A little steam rises from the talus near the southeast edge of the floor and from a wet spot at the top of the south talus. There is also steam and moist ground at a projecting ledge of the wall SE, most of the talus slopes appear comparatively dry.

There is very little sliding today. A few stones were heard slipping only once in a 30 minute visit. No other talus slopes show fresh debris except the east. A few stones have rolled onto the lava edge SE.

There is hot vapor inside the pit near the top of the south wall. (Where pinnacles used to be)

T.A.J.

March 15  
9 a.m.

Heard small slide about 9 a.m. Seemed to be from north. Pit very quiet all morning. Only a few small falls.

E.M.B.

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Day	Date
Saturday	March 16, 1929
Monday	" 18, "
Tuesday	" 19, "
Wednesday	" 20, "

March 16  
a.m.

Occasional small slides. Pit quiet, no apparent changes.  
Very little steam in pit.

E.M.B.

March 18  
9 a.m.

Pit still and sunny. A very little sliding NW. Yellow sulphur in cracks of stained whitish spots at edge of new lava N and S. The downfaulted bench all around the edge of lake is in steps like the downfaulting in front of V.H. A little steam shows occasionally at N sulphur spot as tho nucleated by invisible gas. Steam high on W talus, S talus lower E talus, top of talus NNE.

March 19  
6 p.m.

Dust from slides over Halemaumau.

T.A.J.

March 19  
5:30 p.m.

Mr. Gandy reports much dust-red and gray- rising from an avalanche.

R.H.

17 earthquakes for week all very feeble. one at 9:05 a.m. March 13, distance 2 miles and one at 11:14 a.m. March 19, distance 10.9 miles.

Prolonged tremor on 15th, 17th, 18th, 19th, and 20th, distinct from above.

Tilt for week 19 mm. W 2.3 s, 4 mm. S .5; strongish WSW

Several quakes of March 17 to 4:14 p.m. show W tilt.

Tremor beginning 9:57 p. E tilt; 18th, E tilt.

Microseisms normal

E.M.B.

March 20  
3:10 p.m.

Avalanche dust NE side of pit.

T. A. J.

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Day	Date	March 23, 1929
Saturday		
Monday	" 25,	"
Wednesday	" 27,	"
Friday	" 29,	"
Saturday	" 30,	"
Sunday	" 31,	"

March 23                      Apparently fresh scar on north wall. Very few small slides this morning.

March 25                      Pit quiet except slide from above N end of large E sill about 1 p.m.

E.M.B.

March 27  
8:40 a.m.                      Pit still. Steam E,N, NW and W outside of pit. Wind light S and part cloudy but pit is very dry. No fresh avalanche debris and no steam on bottom visible. Usual steam on taluses. The seeming hole in red debris near bottom E looks different. No hole now and no white lining. No rock falls heard.

Dust seen in forenoon about eleven at Halemaumau.

T.A.J.

March 29  
2:30 p.m.                      Measured cracks with EMB on report from Park Superintendent that #8 had widened greatly. Found that little or no change had occurred since January 18. Largest movement is at No. 1, which shows change (widens) of 0.13 ft. This is at the old tourist stand near where so much avalanching took place in January.

Heard no slides in about a half hour. Fresh debris lies on N and NE taluses, and scars can be seen above, in mid-wall in both cases. Ranger J. Christ says the NE slide occurred about 2:30 p.m. March 27.

March 30  
8:30 a.m.                      Small slide from E rim. Report by ranger.

R.H.

March 31  
10 a.m.                      Everything quiet.  
3:45 p.m.                      Avalanche made visible dust.

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Day	Thursday	Date	April 3, 1929
	Saturday		" 6, "
	Tuesday		" 9, "
	Wednesday		" 10, "
	Thursday		" 11, "

April 3  
10:30 a.m.

A cloud of steam, of the full size of the pit orifice, rises from Halemaumau after several hours of light rain and southerly airs.

R.H.

April 6  
10:30 a.m.

Small slide N wall.

E.M.B.

April 9  
8:05 a.m.

Avalanche dust (light) NE.

R.H.

3:15 p.m.

Nothing whatever in motion at Halemaumau. Much white salt on walls and talus after 2 dry days following rain. No talus on new floor. New floor remarkably fresh as it was the day it cooled. Very little vapor top of S and W taluses. No stones falling. Bright NE weather.

At 2:30 p.m. set up new pendulum. 30 day clock at pit seismograph.

T.A.J.

April 10  
9:30 a.m.

No change whatever in Halemaumau, no motion and a little moisture from rain has removed the whiteness from the salt covered talus blocks.

T.A.J.

April 11  
3 p.m.

Steam at a point below Tourist Stand is staining rocks yellow, and the steam itself appears bluish.

Mr. Christ reports having seen yellow fumes from sulphur patch on north edge of floor.

3:07 p.m.

Small avalanche from S. Fresh red debris on NNE, just above 1929 cone. Almost continual very small slides from south. Wind seems to be loosening dust on wall.

E.M.B.

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Day	Saturday	Date	April 13, 1929
	Monday		" 15, "
	Tuesday		" 16, "
	Wednesday		" 17, "
	Friday		" 19, "

April 13  
10:15 a.m.

New red scar and debris below at E wall above E end of big sill.

Ranger has story that yellow steam jet came out two days ago. There is a small sulphurous patch at the place, at the upper bank of the February lava north, just west of the big arm-chair grotto. This place steams when it rains and has had sulphur stain from the first. There is a little sulphur stain in talus, with steam, at the old place ESE, at the lava edge.

4:35 p.m.

Watched the new shock recorder write a small unfelt local earthquake. Very pronounced swings of the arm, a distinct tail, and minor tremor afterwards. The large pendulums of course wrote it well for over two minutes. This is a fine test and a good gram to study.

April 15, 16, 17  
9 a.m.

Halemaumau visited daily. Nothing whatever was observed that was new, the walls were quiet.

2:40 p.m.

Thin avalanche dust arises across nearly the whole pit area. This was followed soon by more concentrated whitish dust at the north.

With field glasses can see that several men are on the NNE rim, possibly dropping rocks.

T.A.J.

3:15 p.m.

Dust has been more or less steady at the north, but there still visitors on the NNE rim.

R.H.

April 19  
2:30 p.m.

Cleft above N talus somewhat enlarged. Fresh scar to west of cleft. Slides of 17th seem to have been the fall of a thin layer from comparatively large surface.

Occasional falls heard, seem to be from north. Fair sized single rocks, no dust or sliding seen.

2:35 p.m.

Dust from cleft above NNW talus.

E.M.B.

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Hawaiian Volcano Observatory

JOURNAL

Day	Date
Monday	April 22, 1929
Wednesday	" 24, "
Thursday	" 25, "
Monday	" 29, "

April 22  
10 a.m.

Quiet. No change. Dry and sunny.

April 24  
9 a.m.

No change. Avalanches at the north occasioned by soldiers.

T.A.J.

9:30<sup>±</sup>  
1:10 p.m.

Tai On saw big avalanche north caused by soldiers dropping rocks. No other changes. Steam very little. Reddish dust thick N. Natural, apparently.

R.H.

April 25  
9-10 a.m.

No change in pit. Soldiers make slides N and NW.

T.A.J.

April 29  
8:30 a.m.

No change. Pit very quiet and dry.

??

## PHOTOGRAPH RECORD

Day Thursday

Date April 25, 1929

time	sta	subject	no	pl	scr	stop	ex	cam
<u>April 25</u>		E rim to S half floor.	1	WP cut fm.	G	f/22	1 $\frac{1}{2}$	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$
		E rim to N half floor	2	" " "	"	"	"	"
		S rim to whole floor	3	" " "	"	"	"	"
		S rim to whole floor w edge cut off.	4	" " "	"	"	"	"
		E rim to big sill & N talus (overexposed)	5	" " "	"	"	"	"
		S rim to NE & E taluses. (fog streak)	6	WP glass plate	"	"	"	5 x 7

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Wednesday	May 1, 1929
Monday	" 6, "
Wednesday	" 8, "
Tuesday	" 14, "
Wednesday	" 15, "
Friday	" 17, "

May 1  
11 a.m.

Thin avalanche dust rose N.

R.H.

May 6  
7 a.m.

Slight increase in white stain at foot of South talus.  
Fresh red scars North.

May 8  
9 a.m.

Avalanche from north wall near top striking talus, at its lowest point of contact with wall.  
Yellow stain at West end of 1929 S patch is increasing.

May 14  
6:16 a.m.

Earthquake very close to Observatory. Intensity 3 R.F. scale.

E.M.B.

May 15  
9:30-10 a.m.

Pit is quiet. Little steaming except a vigorous area on the S talus. The N wall appears more freshly peeled than the others., but no slides have been observed during the week.

Cracks measured. All 11 points along E rim show very slight widening since March 29, the greatest movement amounting to 0.11 inch. This was at Point No. 14, near where the crack runs into the pit.

R.H.

5:30 p.m.

Sun just off pit and bottom in shadow. Heard a sharp ringing snap in the bottom like deep cracking due to cooling after sundown. Have not heard this before recently.

6 p.m.

Noted a cloud over Mauna Loa with sunset light below, normal rain cloud. Then over the top there appeared a veil in one place that resembled blue-brown fume.

May 17  
8 p.m.

Telephone central in Kona reported smoke on Mauna Loa. Called up John Gouveia of Honomalino ranch. He said the mountain now clear, but there has appeared to be smoke from the Puu o Keokeo direction. He will investigate.

T.A.J.

4 p.m.

Ranger J. Christ reports slide from E rim making considerable dust and having a scar. (Report through Sup't Allen)

R.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date
Saturday	May 18, 1929
Sunday	" 19, "
Monday	" 20, "
Tuesday	" 21, "
Friday	" 24, "
Sunday	" 26, "

May 18  
8 p.m.

John Gouveia of Honomalino reports by telephone he has been to Puu o Keokeo. The sulphur patch of 1926 at 8000 feet is fuming a little. The smoke all appeared to be coming from Mokuaweoweo.

Honomalino felt a sharp earthquake about 6:15 a.m. Tuesday May 14.

The HVO seismographs show 2 earthquakes with about 35 mile distance near midnight 14-15 May, and 30 mile distance about 6 a.m. 14th. These check with Puu o Keokeo distance.

May 19  
2:30 p.m.

Nothing new in pit. One very small rockfall heard. Dust at north corner this morning 9 a.m. probably soldiers.

Mrs. Ruddle called up saying small flow at Honomalino. This the old rumor. Called John Gouveia. Nothing happening. Says flow is all nonsense.

May 20  
9 a.m.

No change in pit, but notice that the gulches at head of N and NW taluses are deepening in upper half of pit wall. This may lead to a big avalanche some day of the wall face between them.

May 21  
5 p.m.

No change. Some stones now lie on the east side of the 1929 floor.

T.A.J.

May 24  
2:20 p.m.

New (?) rock on floor below Tourist Stand.

Fresh patch of debris at top of talus North. Rocks somewhat larger than those in surrounding portions of talus. Wall directly above maintains its fresh red appearance. Several small rocks well out on new floor SE.

E.M.B.

May 26

Teleséism:

P	12-17.33.6 p.m.	
S	12-25.43	distance km.
	81.09.4 p.m.	6610
Kona S-P	8'22"	6865
Hilo S-P	8'17"	6765

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Monday	May 27, 1929
Tuesday	" 28, "
Thursday	" 30, "

May 27

10 a.m.

12:05 p.m.

1:35 p.m.

No apparent changes since Friday. Scars on N wall still fresh. Mr. Gandy reports an avalanche from North wall at 12:05 p.m. today.

E.M.B.

Avalanche dust drifting away at the N side.

R.H.

May 28

4:07 a.m.

Earthquake, distance 21 miles. Felt in Hilo and Papaikou.

E.M.B.

May 30

5:50 p.m.

Whole NW talus covered with new gray debris that overlaps the 1929 lava floor.

Tai On yesterday saw an avalanche at North talus.

There is fresh scar on wall above NW talus clear up to the rim. This is the largest fall that has occurred since the lava of February.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	June 3, 1929
	Wednesday		" 5, "
	Saturday		" 8, "
	Sunday		" 9, "
	Wednesday		" 12, "
	Thursday		" 13, "
	Tuesday		" 18, "

June 3  
8:45 a.m.

Large dun-colored dust cloud, from an avalanche, covers nearly NW half of Halemaumau orifice.

R.H.

June 5  
2 p.m.

Tai On at pit. Reports the effect of renewed slides at NW talus and larger boulders on floor.

T.A.J.

June 8  
9:20 a.m.

Small slide on large S talus. Pit very quiet. No noticeable changes except those on NW talus noted in last Volcano Letter.

E.M.B.

June 9  
3 p.m.

Pit quiet. No new features.

T.A.J.

June 12  
10 a.m.  
1:30 p.m.  
2:15 p.m.

Small rock fall N reported by guide Alex.

Tai On reports no changes.

Thin dust from slide rose N.

June 13  
12 noon

Strong wind, P.C. day, N wall is dusty, with fresh red and gray areas. Debris of NW talus is still fresh looking. Fresh red debris from NE midwall on talus below.

June 18  
8:42 a.m.  
9:31 a.m.

Strong felt earthquake at HVO, dismantled EW component.

Stronger earthquake felt, dismantling both components and causing avalanches in Halemaumau. This was plainly felt in Hilo, where articles were dislodged from store shelves.

Slides from Uwekahuna Bluff were noticed.

R.H.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Tuesday	Date	June 18, 1929
	Thursday		" 20, "
	Monday		" 24, "
	Wednesday		" 26, "
	Saturday		" 29, "

June 18  
cont'd

Reports of Komagatake in eruption in Japan, disastrous earthquake Wellington. Stiff earthquakes here 8:43 and 9:30 a.m. Second the biggest: felt in Kau Desert near Halfway house with rumble and waving trees by I.P. Jaggard and party. Long EW swaying at HVO. Both earthquakes well registered by shock recorder. Went to Halemaumau at 11:40 a.m. Gouge down W wall of fresh rim rock fallen. Rocks heard falling NW and S: small trickles. Fresh avalanche scar W wall Kilauea Crater N of Uwekahuna.

Both the earthquakes dismantled the Bosch instruments.

T.A.J.

June 20  
3:45 p.m.

Everything quiet. One or two rocks falling S. Nothing new in bottom or walls.

R.H.

June 24  
11:45 a.m.

Bright sun and stiff NE breeze. Dust blowing from walls NE and S. Some rock falls start S and SW. No changes. Whirlwinds of dust on edge of pit and in desert.

11:55 a.m.  
5:10 p.m.

Dusty slide NE.

T.A.J.

Thin dust visible in pit from HVO. Very strong trade wind blowing.

June 26  
2:45 p.m.

There has been sliding from midway the NNE wall, shown by a streak down to a pile of new grey debris at the foot of the wall. Recent caving has occurred at the rim cracks SE. Pit interior shows no changes.

June 29  
9 a.m.

White dust cloud from an avalanche rose NE(?). At first the dust had the appearance of steam because of its whiteness.

R.H.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	July 1, 1929
	Wednesday		" 3, "
	Sunday		" 7, "
	Monday		" 8, "
	Tuesday		" 10, "
	Saturday		" 13, "

July 1  
10 a.m.

In rain and fog pit was too much obscured for visibility. All quiet and no sounds heard. (HY)

July 3  
2:30 p.m.

Light avalanche dust seen but too small to be located. (Tai On approaching pit)

July 7  
12:30 p.m.

Much dust from an avalanche covering whole of pit orifice. Other slides making dust followed, one about 2 p.m., and a larger one between 2:30 and 3 p.m.

R.H.

July 8

Top fourth of north talus covered with fresh stuff from Sunday slides. Seems to have been the only site of avalanching. Pit was clear this a.m., no sliding yet. NE breeze gusty.

H.A.P.

July 10  
11:30 a.m.

Steam is rising thickly from Halemaumau, after several hours of good rain. This follows a prolonged dry spell at Kilauea. Thickest at east side.

3 p.m.

Yasunaka says there are many active steam jets in the Halemaumau bottom, making a pretty sight as they project straight upward. A south rain storm in progress.

R.H.

July 13  
5:15 p.m.

Pit quiet. A semicircle of moisture was noted at the top of the big west talus. This was like an arch just under the uppermost point of the talus, which as a whole is shaped like an inverted V. The effect is as though a crescent-shaped crack--which emits some vapor, by the way--marks a deep break in the talus cone. There are steaming spots in the middle of the talus below.

The south talus shows a linear up-and-down fissure steaming at its top.

T.A.J.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Wednesday	Date	July 17, 1929
	Wednesday		" 24, "
	Thursday		" 25, "

July 17  
3 p.m.

Quiet at pit. No signs of recent sliding. Slight increase of steam at center of W talus.

July 24  
11:15 a.m.

Pit seems quiet. Is dry and not one single vapor jet is active. Hardly any change in the bottom since February activity, and there have been few rim changes. Stones have rolled onto floor floor SE and NW, one or two falls of rocks heard.

Old 1927 SW cone is quite reddish in contrast with the 1929 lava, which comes well up the cone's N base.

Note very faint odor of sulphur dioxide.

July 25  
6:10 a.m.

Tai On Au, machinist at HVO discovers fume cloud rising from N corner of Halemaumau. Notified Yasu, Gandy, me, thence direct to pit.

Au return to HVO reported two fountains just above lower edge of W. talus.

7:20 a.m.

Radio sent to inform T.A.J. Mrs. Jaggar has detailed notes.

7:40 a.m.

I took photo from HVO.

10:20 a.m.

Photo from SE rim Halemaumau. Noted strong action at three localities. Center fountain very noisy with gas rushes. Detonations. Returned to write new Kilauea Report.

Mrs. Thom states that last evening the koae flew around K.M.C. calling loudly; they must have been disturbed by fumes, as before.

4:40 p.m.

Lake rises and spreads out. White-stained areas S and N are covered, and now only the steepest sides of the old SW cone shows.

Activity at pit center has diminished to a very small bubbling.

The active W fountains have built high grottoes on their W sides. They do not appear quite so vigorous as this morning.

Some yellowish fumes with the blue.

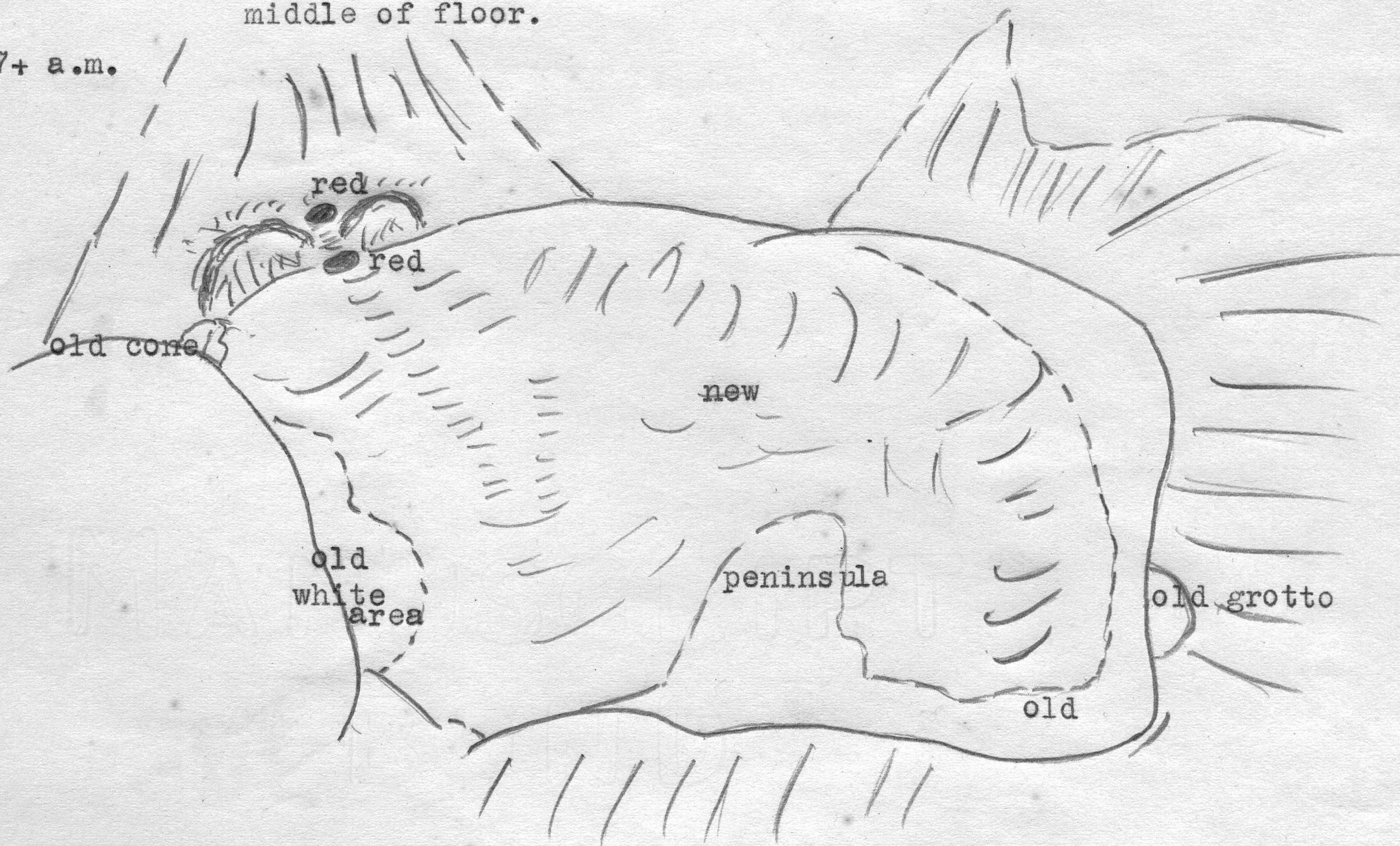
R.H.

July 25  
7:20 $\pm$  a.m.

Halemaumau. Two groups of pumiceous fountains at base of WSW talus with high blue smoke and occasional spurts brown fume. Fountains at times perhaps one to 200 feet high. Southern group most vigorous. It was the later one to develop, Tai On said. Lava oozing up through talus and trickling down to floor between 2 groups; eventually developed into a cascade which later crusted over, leaving a glowing hole at top and a bright cavern at foot from which a steady stream emerged.

About  $\frac{2}{3}$  floor covered. White area S, all along base of northern rock slopes and a large "peninsula" just below tourist station uncovered at arrival at pit. Two places on old floor with outrush of curly steam jets. Ridge on S edge new floor with small flows festooning down to rocks. Blue fume developed E side middle of floor.

7+ a.m.



7:45 a.m.

Steady gas blasts to be heard above pounding of fountains sounds like the gas rushing through small hole in top of a spatter cone. (Gas under crust? Coming through cracks?) Very loud. Steam dried up soon after roaring began, leaving white cracks.

8 a.m. plus

With roar sputtering lava fountains broke through cracks at edge of old floor "peninsula". Line of fountains WSW lowered slightly, and got more fummy.

Crack fountains look as if they might have flames above. Each burst sends up brown, hot-looking fume. Loud roars at times. Fountains about  $\frac{1}{3}$  or  $\frac{1}{2}$  as high. Some brown fume also above

July 25

cont'd

8:16 a.m.

8:35 a.m.

WSW fountains, but mostly blue.

Crack through center of "peninsula" which is getting smaller and is almost an island surrounded by new lava.

Change of wind and fragments from big fountains falling forward on new floor instead of on slope.

Lava flows under old crust, and can be seen in crack. Finally fountains spent through upper end of this crack. Fes-ton flows spreading both sides fountaining crack new lava. Spatter edges being built. Bos'n birds flying around in pit.

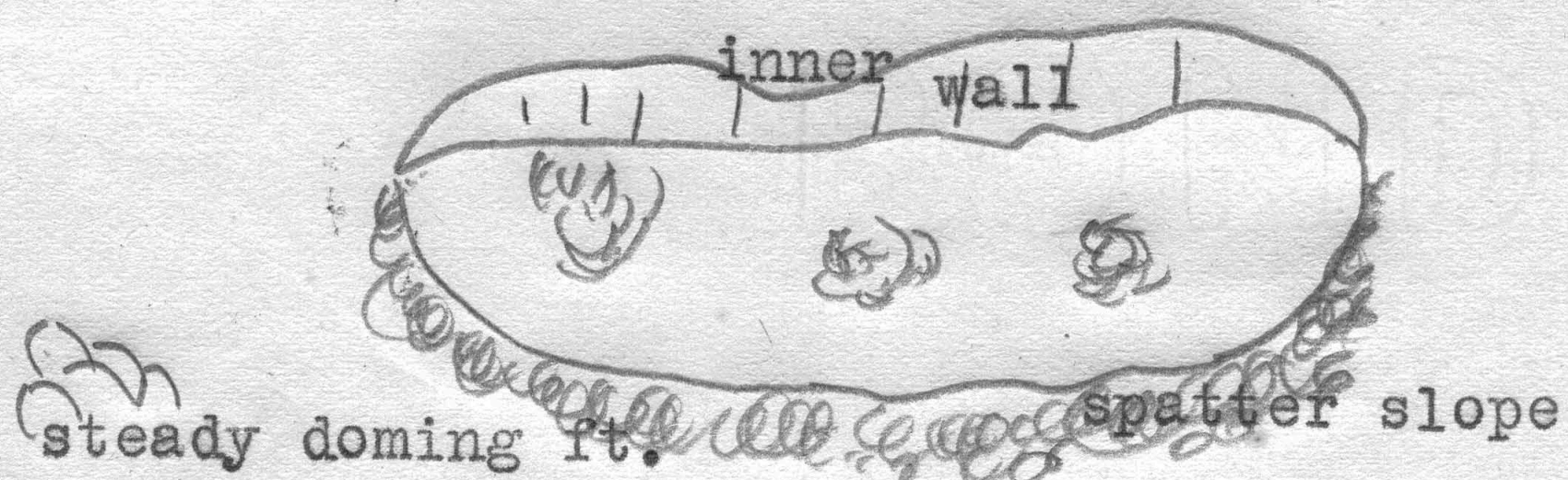


9:45 a.m.

New lava pushing into old grotto N, (Feb. 1929). Big fountains lessened and then increased height.

12:45 p.m.

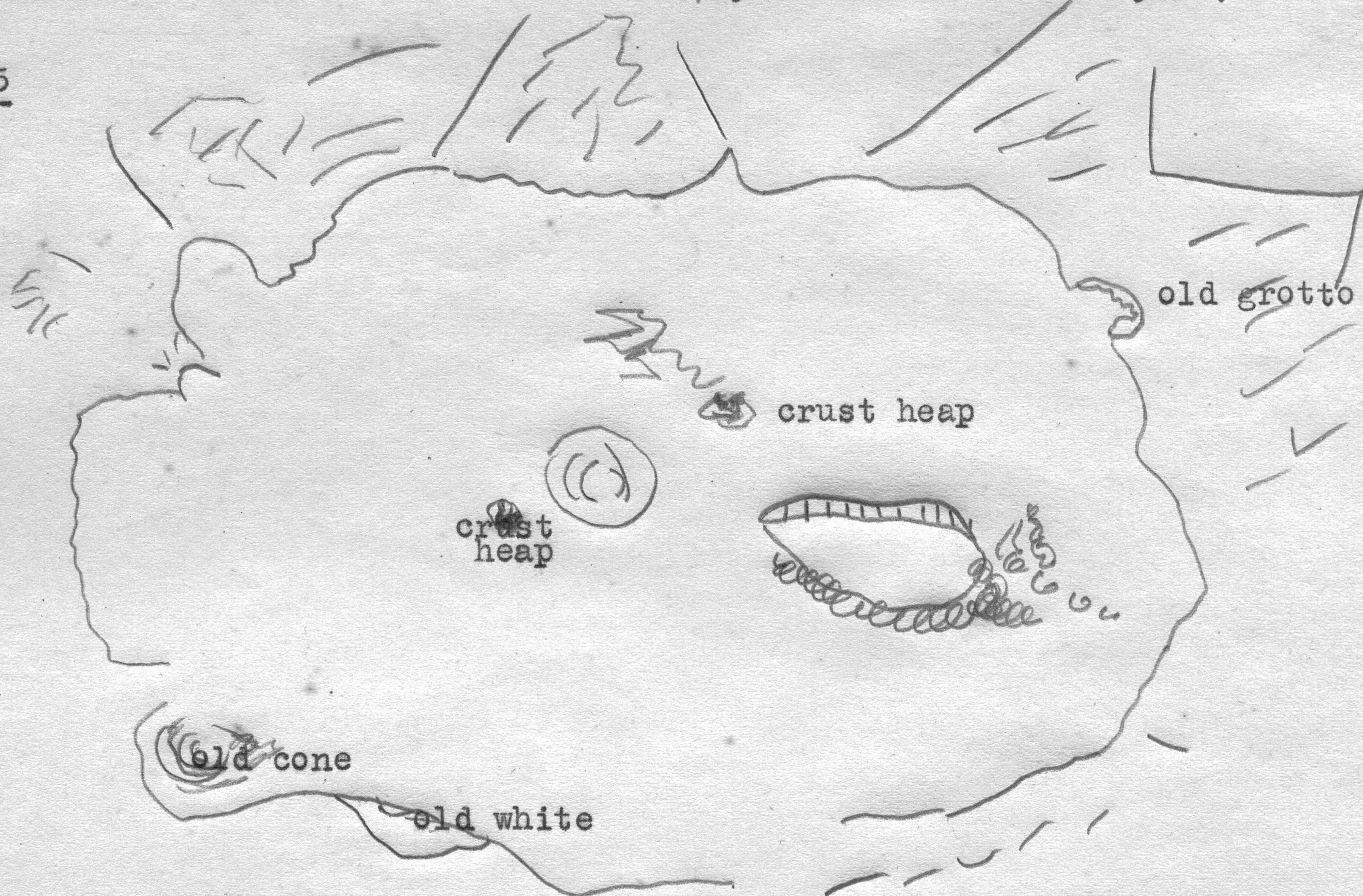
Old floor nearly covered. Just part of white area. S remaining. Whirlwinds edge pit. Over crack near center, small bean-shaped lake developed with high margin and fountains more doming and only occasionally sputtering. Little brown fume now and no more blasts, just ordinary fountain roar.



Cascades down S rim of floor on to talus base. Steady roar at WSW source fountains. Occasional blowing at center source. Grottoes being formed by WSW fountains. Horseshoe grotto around northernmost fountain and spatter walls around other group.

Small spatter cone with fountain in round hole at base of wall between two areas.

July 25  
cont'd  
1 p.m.



1:30 p.m.  
1:45 p.m.  
1:50 p.m.

Cracking and foundering.

Bos'n bird burned up.

Hat lost

Walked around pit by south. Strong fume on upper rim. Continuous fall of pumice (small pieces) and Pele's hair on our hats. From different points on edge pit SW, W and NW could see broad spatter banks back of WSW fountains.

2:50 p.m.  
W sta.

Saw big chunk of spatter bank fall in. white area now covered.

3 p.m. NW sta.

Center bean lake almost full. Sputtering fountain SW end of it only. Dome fountain out in center still playing steadily. Live small fountains on crack NE of bean lake shortened.

3:13 p.m.

Center lake overflowing toward (toward SW) for first time.

3:16 p.m.

Another piece bank fell into southernmost group border fountains. High fountaining. Crack fountains NE of lake pan.

3:45 p.m. N sta.

Small center lake (bean) almost obliterated by rising lava. Just faint horseshoe of rim left toward E. Doming fountain pan also, but new one nearer big source fountains.

Further around N: could see now 3 distinct big fountains WSW. One in grotto N side, 2 in broad grotto S side.

4 p.m.

Rock fall just below stick (N. sta.?) Hat rescue.

4:25 p.m.

From here 4 grottoes could be seen. Smaller one, at southern end of line with much smaller fountain. Floor so swollen that lava was cascading down toward base of talus. Left at 5 p.m.

NE

## PHOTOGRAPH RECORD

Day Thursday

Date July 25, 1929

time	sta	subject	no	pl	scr	stop	ex	cam
<u>July 25</u>		Several snaps by Powers to show height of lava on talus on N half of Pit.						

July 25

cont'd

6:30 p.m. Kualono Fume much less. Cloud.  
 6:45 p.m. Faint glow in pit. Cumulus above.  
 8:20 p.m. Roar audible from pit at Observatory.  
 9:00 p.m. Glow dull.  
 9:35 p.m. Seen through mist, very dull.

I.P.J.

6 p.m.

Several snaps to show height of lava on talus on north half of pit at 6 p.m. A little after 6:00 rising of lava was very noticeable which continued all night. Rise seemed to pulsate somewhat. Fountains at west talus seemed very constant in their display all night. A few small rock slides were noticed from the north walls; several at 11 p.m. and more at 1:00 a.m.

July 26

Round of shots at 9:30 a.m. July 26. East side of lake seemed to spread more rapidly than rest during morning, several large tongues extended up the east talus about 10:30 a.m. to 11 a.m. Fountains showed constant activity all morning.

H.A.P.

9 a.m. to 10 a.m.

Lava surrounds 1927 cone ; half surrounds February cone. Cascades E. Fountain jets. Pattern. Pumice and hair. Fume. Crusts in patches.

T.A.J.

2:20 p.m.

Glowing rim around edge of low Northern fountain at base WSW talus and concentric cracking of crust streaming into fountain. But cascade NE over floor margin noticed  $\frac{1}{2}$  hour before continuous vigorously.

Stalac. hanging from remains of built-out point of fresh lava between the two fountaining areas. (Saw 8 bos'n birds at once)

2:50 p.m.

More cascades NE making festoon flows N and S in depression at foot of talus.

2:57 p.m.

Chunk of wall of northernmost fountain niche fell, leaving glowing spot.

3 p.m.

A little cracking and foundering, and cascades and toes over margin W.

I.P.J.

## SURVEY RECORD

Day Friday

Date July 26, 1929

time	sta	point	hor	vert	lev	dist	elev	h. i.
<u>July 26, 1929</u>								
2:30 p.m.	Buck N	to Buck NW	00					
		S corner new floor (near 1927 new cone)	L 43.18	21.38				3 ft
		Base center big ft.	L 38.04	25.14				
		Mean height topmost jets	L 38.04	22.21				
		Pt. bet fts at lake level	L 37.30	-25.54				
		NW pt bounding NW ft niche	L 35.32	-28.00				
		Pt SE of biggest ft	L 38.06					
		Floor cor. under lowest bare wall SE	L 62.36	-24.17				
		Buck Tou boulder stake	L 86.46					
		Buck. Hi (SSW)	L 41.48					
		Finish N 3:45 p.						
3:45 p.m.	Tourist Station	to Buck. N	00					4.5 ft
		S cor. new floor (near 1927 new cone)	L 69.58					
		Base center big ft.	L 57.05					
		Mean ht topmost jets						
		Pt bet fts at lake level	L 53.04					
		NW pt bounding NW ft niche	L <del>48.14</del>					
		Pt SE of biggest ft	L 59.20					
		Floor cor under lowest bare wall SE	L 65.23					
		Buck Hi (SSW)	L 82.33					
		Finish 3:54 p.m.						

## SURVEY RECORD

Day Saturday

Date July 27, 1929

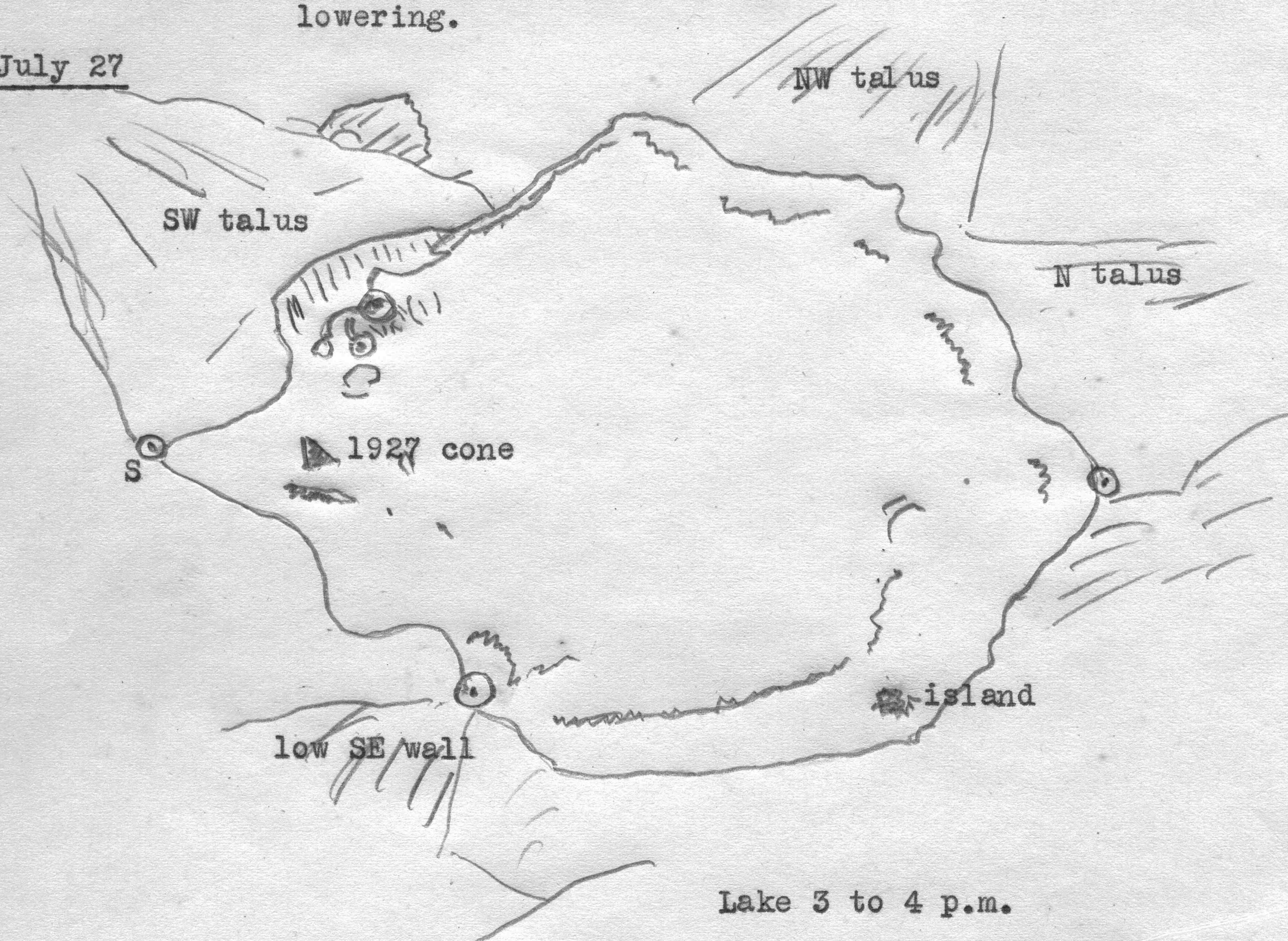
time	sta	point	hor	vert	lev	dist	elev	h. i.
<u>July 27, 1929</u>								
3 p.m.	Tou.	to Hi	00					4½ ft
		Lava lev in pt of S cove	R 10.43	- 26.15				
		Pt bet 2 ft niches (lake level)	R 30.28	- 26.14				
		Bottom big ft.	R 26.50	- 25.54				
		Topmost jet average ft.	R 26.50	- 22.56				
		NEmost cove under valley bet N talus & talus middle big sill.	R 80.59	- 32.20				
		Cove under lowest wall SE	R 15.45	-43.19				
4 p.m.	N to	Hi	00					4½ ft
		Lava level in pt of S Cove	L 1.22	- 22.50				
		Pt bet 2 ft niches (lake level)	R 4.46					
		Bottom big ft.	R 5.07					
		NEmost cove under valley bet N talus & talus middle big sill	L 42.31					
		Cove under lowest wall SE	L 21.16	-23.34				
		stop 4:15 p.m.						

July 26  
cont'd  
2 to 4 p.m.

At 8 p.m. fountains the same, radial bright lines, sluggish overflows around E border. Glow to extreme edge. No central fountains. Some cracking and foundering. No appearance of lowering.

T.A.J.

July 27



8:30 p.m.

Fountains are now three separate and distinct groups, the one on the left is in a small grotto, the central one is much the highest, but its grotto does not roof over, and the right fountain although it throws out trajectories is more like swelling bubblings than fountaining.

8:50 p.m.

Much cracking and foundering back of S cone as lava works into the depression between S and W taluses.

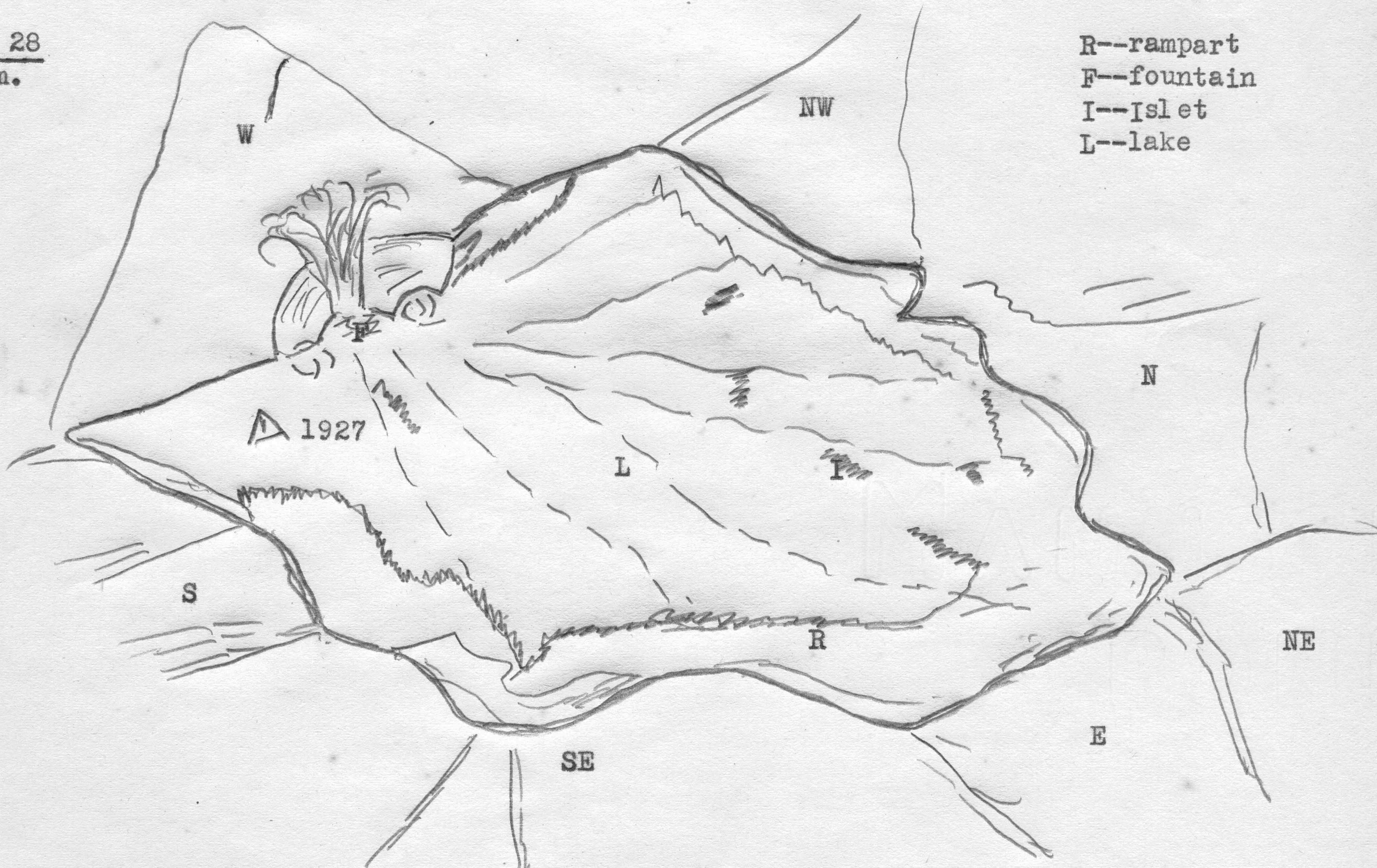
R.H.

July 27  
cont'd

Big fountain was spouting almost continuously to heights of 200 feet plus between 7:00 and 8:00 p.m. Strong filling of lake on south shore during this time. By 8:30 the vigor of the big fountain had decreased. About 9:15 a strong flow spread around the 1927 cone. Between 9:30 and 10:00 the north fountain began more vigorous spouting and threw a jet higher than during the past 48 hours. About 10:00 several huge slabs spilled off from the inner part of the cone around the large fountain. Foundering was most noticeable on the south shore during time from 7:00 to 10:30.

H.A.P.

July 28  
8 a.m.



8 a.m.

Floor 2200 feet x 1800 feet

Fill 84 feet deep

2630

Depression 1010 feet below lowest rim at tourist sta.

2546

Bottom 2630 feet above sea

84

Rim 3640 feet above sea

2630

3640

1010

Fountains in spurts 200 to 300 feet high;  
intervals 15 minutes.

T.A.J.

July 28  
cont'd  
8:20 a.m.

The big fountain base of W talus making individual jets more than  $\frac{1}{4}$  height of W wall, therefore about 300 feet. These jets alternate with lower spells. Small fountain in grotto next to S. Moderate fountain Kilauea type in niche next to N spatter bank shows lines of breakdown and big fountain is playing against a rounded elephant's back continually bombarded and continually sluffing off. Pumice beds up the talus 250 feet above lake.

Broad stream straight across lake from fountain to E talus. Peak 1927 cone still about 10 feet or more high. Ramparts of piled slab well defined SE and NE. Point of islands protruding into lake area NE. Bank lower NW. General effect like 1915 with fountain replacing the W pond and lobated fronts like a flow at the E. Cracking and foundering E and NE. Around borders lava encroaching on talus by flows through the ramparts. Such encroachment has obliterated boulder landmarks used yesterday for survey at S cove, SE cove and N cove.

Biggest rampart of piled slabs directly up the source fountains at E side of bottom.

S, SE and NNW talus sags within 100 feet of floor.

8:35 a.m.

Big fountain lowers so that it is only slightly larger than the one next N. Same was observed at 8 a.m. while a high maximum was reached about 8:15. Gas evidently accumulating in pulsations. (See whether microtremors pit seis. record these pulsations).

White steam in talus at edge of floor 2 places E and SE, some fume SE rampart and NE rampart. White milky stain on crust of lake NE.

One isl. NNE shows small crag, and yellow stain.

There is the usual steam on the upper talus slopes.

Marked contrast between present situation and 1915 lakes is that in 1915 source pool was quiet and fountaining grottoes occupied all the lobes of opposite end of lake; now the only fountaining is a gigantic emission of gas of Mauna Loa type at source end and only quiet cracking and foundering with overflow elsewhere. The lake within its rampart shaped somewhat like ivy leaf with stem at fountains. The small fountain N of big one is like the fling fountains photographed in 1917. The bank back of big fountain glistens with fresh glass, builds out during the lower spells and there breaks down when a fresh high spurt develops so that it is continuously forming and destroying itself. The bank shows a cherry red wall like hot coke with angular breaks where it caves in. The material which caves in must be worked over or thrust out into lake making part of the clotted gas-free material that perhaps piles into the islands, like the rafts in Mauna Loa flows.

July 28  
cont'd  
9 a.m.

Low period following a high one about 8:45. Low fountain at this time frequently less than 50 feet high.

Streaming from large fountain toward the smaller fountain N which latter puffs up yellowish sulphur smoke and sucks in crusts from all sides. The smallest grotto (S) has blue fume rising from bank above and sends a continuous festooned stream off to the E.

I.P.J.

3:15 p.m.

Left and right fountains look smaller on account of rise of lake level.

Central area of activity is as strong as ever. At times detonations are very loud.

4:23 p.m.

Activity of center fountain died down nearly as low as others. Allen says last night same thing occurred about 8 p.m.

Now show 4 fountains all about equal, the one at the left staying the same, the other three varying.

4:27 p.m.

Former large fountain partially recovers for a moment and quiets again

4:31 p.m.

Large fountain again partly recovers.

4:37 p.m.

Big fountain at center is now smallest area of activity and right fountain is greatest.

4:39 p.m.

Very small movement at site of big fountain, and large grotto behind cascades in large and small masses at intervals.

4:44 p.m.

Center fountain seems to be slowly and gradually recovering.

4:46 p.m.

Fountain shoots high again and spatter falls over grotto. Right fountain lessens action.

4:50 p.m.

Fountain at center remains steady.

R.H.

7:20 p.m.

From Observatory fume greatly decrease and light dull.

8 p.m. Pit

Large fountains out of action. Park ranger reports their their action ceased 7:45 p.m.

Small double fountain playing occasionally at site of northern big fountain. At times it could be heard. The material appeared very stiff.

A little bubbling at base of built-out black point between sources and sometimes in cracks of lake crust.

Cracking and foundering going on sluggishly at intervals but only at bright lines and at edges. Bright line pattern changed not at all during an hour. One small cascade toward base talus N.

Very little fume.

1927 cone peak still showing.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	July 28, 1929
Sunday	
Monday	" 29, "
Tuesday	" 30, "
Wednesday	" 31, "

July 28  
cont'd

About 8:15 the spatter material on wall of large niche which had glowing spots began falling off in trickles of small red and black fragments and once or twice larger masses fell. These broke through crust of lake. This sluffing off lasted only a few minutes, but some glowing spots remained in wall an hour afterwards.

10:30 p.m.

Dull light on pit wall and on cloud seen from Kualono.

I.P.J.

July 29  
4 a.m.

No glow.

I.P.J.

7:15 a.m.

All quiet again at Halemaumau. No slides have yet occurred throwing debris on new lava floor. Some glow visible where the floor is in shadow.

Peak of 1927 cone just shows in contrast to new lava, and much of the vicinity of fountain areas is heaped. One crust-heap nearest W wall emits vapor, as do other broken surface spots of floor. Another steaming area is at floor edge of S talus, and there are the usual talus vents.

Occasional cracking of floor heard.

R.H.

July 30  
10 to 12 a.m.

Small rock slide during night from NW cliff face had scattered few boulders on surface of new lava. Cooled lava surface still cracking occasionally with slumping of material from the in-facing scarps around the margins formed by settling of center of lava lake.

No important avalanching from the walls of Halemaumau.

H.A.P.

July 31  
11:15 a.m.

Pit is very clear and sunny. Sounds of cracking or rocks falling occasionally heard. Parts of floor have settled considerably.

No steam on floor, but there is the line of steam at edge of S talus.

R.H.

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

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## JOURNAL

Day	Friday	Date	August 2, 1929
	Saturday	"	3, "
	Sunday	"	4, "
	Wednesday	"	7, "
	Thursday	"	8, "
	Friday	"	9, "
	Sunday	"	11, "

August 2  
3:05 p.m.

Gray dust covered about half of pit opening on the N side.

T.O.A.

August 3

Yesterday's slide was probably from E wall on some new debris lies on talus.

H.A.P.

August 4  
2 p.m.

Much dust seen by Superintendent Allen on N side about this time.

R.H.

August 7  
3:15-3:45 p.m.

Pit quiet and no changes noted. Measured cracks.

R.H.

August 8  
8:40 a.m.

Dust from an avalanche rose and drifted away to the west. All a.m. dust rose at different times, but these were believed caused by persons dropping rocks as several were seen on N rim.

August 9  
4:30 p.m.

Report about 10 a.m. from Keauhou ranch states that a light was seen in the direction of Makaopuhi at this time.

R.H.

August 11  
3:30 p.m.

Slumping since the eruption leaves a terraced fault bank high along west where the deeper conduit was. There the deeper withdrawal was.

The east side of bottom looks little different from what it did when flowing. Twenty or more hummocks at W. One of these is open and round like a true mold, and stands up like a huge pipe 20 feet across.

3 distinct crescent niches at the fountain locality W. Hummock rampart N and E

T.A.J.

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## JOURNAL

Day	Wednesday	Date	August 14, 1929
	Saturday	"	17, "
	Monday	"	19, "
	Wednesday	"	21, "

August 14  
8 a.m.

Earthquakes for the week ended August 14, 8 a.m. None felt. 28, of which two were of the continuous tremor type. One of the latter was 12:45-12:47 p.m. August 7; the other 10:43-10:53 p.m. August 10.

Tilt occurrence slight NW. Microseismic motion slight, with a slight increase August 10.

R.H.

August 16  
9:40-9:55 a.m.

Small puka near SE edge of lava floor still smoking. Very little steam visible at 9:40 but, while there, cold wind passed over and steam on W, SW, N and NE taluses became very noticeable. About 9:45 the northern arm of the small north grotto began to yield blue smoke from a line along the crest.

Fresh scar on the north wall made by avalanche reported to have happened about 3 p.m. yesterday.

August 19  
9:30 a.m.

Still smoking, and considerable steaming. No scars from slides noted and no slides heard.

H.A.P.

August 21  
10:15 a.m.

Tai On states less blue fume at large grotto. No other changes noted.

At the NE this has a scarped crag dipping to the N. Several large frozen islands N of center. (5)

Avalanche rocks on steep downfaulted terrace edge of floor under NW talus. Deepest part of slump appears to be at the NW- in the floor surfaces.

No slides heard. A little blue smoke from E rampart. Usual steam W and S taluses. Red talus debris E looks fresh.

R.H.

August 21

Earthquakes for the week number 20. All were very feeble except one slightly perceptible shock at 12:38 p.m. August 14. Its indicated distance to origin is 30.5 miles.

Microseismic motion increased slightly during the nights of August 15-16 and 19-20; tilt accumulated moderately NNE.

R.H.

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

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## JOURNAL

Day	Date	August 24, 1929
Saturday	August 24,	1929
Sunday	" 25,	"
Wednesday	" 28,	"
Thursday	" 29,	"
Friday	" 30,	"
Saturday	" 31,	"

August 24  
8:10 a.m.

A spherical convection cloud hanging over the pit during the night still reforms after repeated disappearings in the bright morning sunlight, finally fading altogether as the air got warmer.

R.H.

August 25  
2 p.m.

Pit. Rainy. Rain appears to develop steam at hot places in the wall above NE and SW taluses, on the taluses, and blue steam on northern fountain niche of July 1929.

T.A.J.

August 28  
8 a.m.

1:45 a.m.

Earthquakes week ending August 28, 8 a.m.  
Several spells of spasm. tremor August 21, mostly during the hour afternoon.  
One tremor 9:07-9:08 a.m. August 21.  
Strong, distance 4 miles.  
15 vf.  
Microseism slight except a very slight increase night of August 21-22.

R.H.

August 29  
1:30 p.m.

Dust rising from pit at 1:30 p.m. Two small clouds about one minute apart.

H.A.P.

August 30  
12:05 p.m.

Large dust cloud from an avalanche rose from pit, concentrated mostly on E side. Cloud had upward projecting tails, and the pinkish dust hung visibly for many minutes.

R.H.

August 31  
10 a.m.

Avalanching yesterday noon has dusted the N side of floor and is still sliding.

Blue smoke at north fountain niche appears as though puffing? Soldier says no glow at night. Small stained places, milky, on floor base of S talus and floor between N and NW taluses.  
Much fresh rock on NE talus.  
E smoke on floor has stopped. Talus vapor as usual.

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## JOURNAL

Day	Monday	Date	September 2, 1929
	Wednesday		" 4, "
	Sunday		" 8, "
	Tuesday		" 10, "
	Wednesday		" 11, "

September 2  
6 p.m.

Cloud rises in three puffs over N side of Mokuaweoweo. Probably mere convection cloud of ordinary moisture. Sunset behind makes it look brown. Nothing on seismogram.

Many thunderheads over Mauna Loa last few days. Some spectacular anvil clouds. One day of thunder showers.

T.A.J.

September 4

Week ending September 4.

Earthquakes-15 very feeble, no others.

No day records August 30 and September 3, as workmen were busy in cellar.

Micros. motion slight throughout the week.

Tilt not computed as the instrumets disturbed to such extent as to render computations of no value.

R.H.

September 8  
3 p.m.

Nothing new at Halemaumau. The 2 notches in wall N and NW made by avalanche erosion are deepening, and the buttress between them is likely to fall in a big avalanche some day.

A visit to the large 1919 desert chasm SW of Kilauea revealed large surface patches of Pele's hair and tears from the July and February eruptions on the sand. Patches 2 feet long, accumulated at the sides of hollows in the sags of the filled rifts.

T.A.J.

September 10  
1:00 p.m.

Dust from small avalanche. Others around 2:30 p.m.

H.A.P.

September 11  
2 p.m.  
3:10 p.m.

Very quiet at Halemaumau and very little steam. One vent active on S. talus. None of the former smoke at the grottoes. Dust from an avalanche seen.

Tai On

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## JOURNAL

Day	Wednesday	Date	September 11, 1929
	Thursday		" 12, "
	Saturday		" 14, "
	Monday		" 16, "
	Wednesday		" 18, "

September 11  
cont'd

Week ending September 11, 1929.

4 earthquakes all very feeble. Day records not run September 5 and September 10, 8:14 a.m. to 3:20 p.m.

Micros. increased slightly September 6 and remained without change until September 9, when micros. again became very slight.

(Tilt is very probably not sufficiently reliable to record, but the figures indicate mod. NE)

September 12  
2:55 p.m.

Dense gray dust cloud of moderate size hung in a fine mass over NE rim of Halemaumau for a few minutes, and then drifted across to the SW gradually thinning.

3:00 p.m.

More of the same fine stuff rises NE, though not so high, and the pit opening is full of dust. With field glasses no visitors can be detected. The dust filled the air many minutes.

R.H.

September 14  
9 a.m.

Fresh debris on N talus, but no scar visible. Slid from rim? S talus steaming.

September 16  
9:15 a.m.

All quiet. Little steam. No changes.

Tai On

September 18

Week ending September 18, 1929

9 earthquakes, 8 very feeble, 1 feeble September 16 7:31 p.m., distance 5 miles.

Also 1 tel. beginning September 17, 9:04 a.m. and emerging immediately into L. End 9:56 a.m.

Tilt mod. WSW but imperfect. Micros. slight.

R.H.

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## JOURNAL

Day	Thursday	Date	September 19, 1929
	Saturday		" 21, "
	Sunday		" 22, "
	Monday		" 23, "
	Tuesday		" 24, "
	Wednesday		" 25, "
	Thursday		" 26, "

September 19  
11:50 a.m.

Small dust cloud NE.

September 21  
2:30 p.m.

Strong gusty NE wind. A few stones fell NE. Very slight smoke at N grotto at intervals.

September 22  
3:30 p.m.

There is a new line of sulphur at floor edge north of grottoes of July.

6 p.m.

Stain is slight on W talus and normal S talus.

Dust from avalanche seen from K.V.H.

September 23

Many shocks recorded yesterday and today. T.A.J. in Kona counting them and otherwise observing, and states they are felt frequently on NW flank of Hualalai.

September 24  
9 a.m.

No change at Halemaumau. New debris on N talus.

3:00 p.m.

An avalanche occurred, sending up dust; probably set off by an earthquake about this time.

3:30 p.m.

Koae birds have come from pit.

4:15 p.m.

Large dust cloud, buff colored; another preceding.

September 25  
2:30 p.m.

Red scars of new appearance can be seen on the S wall from HVO.

3:00 p.m.

One or two avalanches at this time indicated by dust.

6:22 p.m.

Note two red scars on S wall, from HVO.

8:30 p.m.

Largest shock. Felt on Maui.

Quiet at Halemaumau and no glow within or on Mauna Loa.

A light trickle of rocks heard falling N.

The 6:22 p.m. shock caused an avalanche in the pit.

September 25-26  
night

Mrs. Young, 28 miles, felt shocks after midnight, 3:30 a.m., two about 3:30 a.m. All were plainly felt, but did not waken some of the household. One felt 9:30 p. 25th.

R.H.

## JOURNAL

Day	Thursday	Date	September 26, 1929
	Saturday	"	28, "
	Sunday	"	29, "
	Monday	"	30, "

September 26

cont'd

6 a.m.

10:23 a.m.

11:15 a.m.

12 noon

Slide in Halemaumau made dust N.

Several earthquakes felt locally during the night.

Strong shock dismantled pens. Slides N and NW observed by H. Yasunaka at this time.

Gray dust drifted S from slide on N wall.

Much dust has been rising for several minutes from N side of Halemaumau.

September 27

5 a.m.

Mrs. Young felt shock 5 a.m.

September 28

9 a.m.

Avalanche dust N., spreading and thinning, strong shock 7:10 a.m.

September 29

7:20 a.m.

12 noon

3 p.m.

Mountains clear and no signs of fume. Not so many shocks last night, although one at 5:35 a.m. dismantled, ringing bell. Two or three very thin clouds of dust seen about this time. Earthquakes are diminishing on the seismograms.

Pit is quiet. Christ reports more fume at N grotto. (Not visible in afternoon shade.) Some light dust seen at foot of N wall.

September 30

11:49 a.m.

A perceptible shock dismantled both Bosch pens and E-W of Hawaiian set. A few minutes later (about 12:20 p.m.) another shock rang the annunciator but only partially dismantled Bosch E-W component.

The first shock caused a slide in NNE corner of Kilauea near the Military Camp, also thin dust seen in Halemaumau about noon.

R.H.

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## JOURNAL

Day	Thursday	Date	October 3, 1929
	Saturday	"	5, "
	Sunday	"	6, "
	Monday	"	7, "

October 3-  
9:44 a.m.  
7:45 a.m.

Felt shock at H.V.O. rang annunciator and partly dismantled N-S Bosch-Omor. Kona states the shock was of long duration. A good clear view of Mauna Loa and the whole panorama from HVO disclosed no fume or vapor clouds. Navy airplane circled over Kilauea at this time returning from TAJ's air reconnaissance over west Hawaii.

10:15 a.m.

Some thin dust clouds have risen above Halemaumau rim from time to time this forenoon, one just now.

October 5  
11 a.m.

Considerable salmon-colored dust has been rising for about 10 minutes, but no earthquake, apparently was recorded which might cause the shock.

4:45 p.m.  
9:20 p.m.

Another slide made a little dust later.  
Small dust cloud N side.  
Great earthquake, largest of this series.

October 6  
10:00 a.m.

Large slide just occurred N, much dust. Christ says large avalanche W. during night making great scar. Also say fresh cracks SE.

10:15 a.m.  
10:30 a.m.

Dust still rises.  
Dust rises more thickly and appears more or less continual.

October 7  
9:15 a.m.

Slides have occurred recently W, NW and SE. Slides have all been from the rims. W wall is streaked here and there. The July lava floor is dust coated nearly halfway across.

At the SE a rather long strip of rim has fallen, taking the benchmark which was rendered useless last January when there was much avalanching here.

Stones are falling N where some fresh areas appear, and air has much fine dust in a strong NE breeze.

A general widening of small cracks noted SE.

R.H.



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## JOURNAL

Day	Thursday	Date	October 10, 1929
	Friday		" 11, "
	Saturday		" 12, "
	Monday		" 14, "

October 10  
8:30 a.m. Many steam tails rising from crater vents and in and about Halemaumau after a night of rain.

R.H.

1:40 p.m. Telephone call from Mr. Armstrong states that Mr. DeMello went up Mauna Loa southwest near Alike source reports seen smoke.

October 11  
1:23 p.m. A good size avalanche on N wall. View from H.V.O. cover half of crater with dust cloud.

Tai On

October 12  
9:01 a.m.  
~~1:23 p.m.~~ Steaming very little on S. talus. The avalanche occur at 1:23 p.m. October 11 was on the NW talus. Notice fresh scar above NW talus.

(?)

October 14  
4 p.m. Halemaumau. W talus. Several wet patches - a rounded top of wetness under a dry crescent. Stones on the floor at N side of base of talus. 3 crescent niches in floor edge, scars of the 3 July fountains.

S talus - line of steam and wet up top. White and yellow stain on floor at base. Cracks at edge of floor all along SE. White stains on wall above.

SE talus - Small ledge almost reaches floor. A few stones on floor.

E talus - White stained boulders on top. Sweep of recent slide streaking on ledges above. Red debris near the top.

NE talus - point rises clear above the sill. No streaking above.

N talus - About 30 boulders on floor edge. Patch of white stain on floor edge W of base of talus. Clear cut cross section of (fo ) gray talus cone above sill, the W end of which rises in a light colored point like prow of canoe above the top of the present day talus. Deep gulch east side of buttress above. Rocks falling here and NE and S. Streak of recent slide down face of buttress.

NW talus - 3 big streaks up and down wall next S of it. Top of talus hooks to the N. A few stones on floor at its base. The recent dust stain on floor but toward center of pit has been

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Day	Monday	Date	October 14, 1929
	Saturday	"	19, "
	Saturday	"	26, "
	Thursday	"	31, "

October 14  
cont'd

washed away. 9 little taluses at base of wall nest S of it and these lap out over floor with a considerable apron of pebbles. These are fine grained purplish taluses.

There is an echelon of cracks back of the tourist stand.

Except for occasional stones falling the pit is very still, lifeless and unchanged. There is steam SE with grass, along SW rim, a big steam crack W and two smaller ones NW, along edge.

The above is a description of general condition of pit at this time. The floor is black field of lava with 20 or more island lumps and except for the stones mentioned, quite like the July photos.

Avalanche NE 4:10 p.m. starts 1/3 way down by one big block? quake?

T.A.J.

October 19  
9 a.m.

Very little steam from W talus. S talus showed normal amount of steam but wet streaks have extended 3/4 way up to rim above talus. Small apron of boulders at base of NW cliff from rim-slide. No smoke from floor.

H.A.P.

October 26  
10:00 a.m.

Rocks on crater floor between NW and W talus. Very little steam on South talus.

October 31  
1:30 p.m.

A considerable avalanche dust rose up over about 3/4 of crater. Report by Mr. Gandy; Mr. Allen reported 2 avalanches about 3 o'clock.

tai on

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## JOURNAL

Day	Date	
Saturday	November 2,	1929
Monday	" 4,	"
Tuesday	" 5,	"
Wednesday	" 6,	"
Saturday	" 9,	"

November 2  
8:50 a.m.

Thursday's avalanche took place on NE talus; scar noticed above talus.

Tai On

5:15 p.m.

New dust on NE edge of lava floor from a whitish pink slide fresh on E talus. Lump left in relief on E red boss in wall.

T.A.J.

November 4  
9:30 a.m.

All walls of crater were wet due to heavy rain. Lots of small steam puffs coming out from cracks of crater floor but no smoke noticed.

The sulphur stain on crater floor has unusually strong steam from various spots.

A few rocks falling on North talus.

Tai On

November 5  
2:30 p.m.

Felt shocks reported by Hilo Memorial Hospital:

Nov. 1, 1 p.m., slight

" 4, 9 p.m., 8

" 5, 2:45 a.m. mod. 5 sec.

" 5, 2:58 a.m. " 5 "

November 6  
10:15 a.m.

Slight avalanche dust rose N.

R.H.

November 9  
9:15 a.m.

A few more rocks on NW edge of floor.

Tai On

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## JOURNAL

Day	Sunday	Date	November 10, 1929
	Saturday		" 16, "
	Monday		" 18, "
	Tuesday		" 19, "
	Wednesday		" 20, "

November 10  
3:30 p.m.

Nothing new at Halemaumau. Not a sound of rock falling. Dust has washed away from NE floor. A pink streak up NW wall and fresh Purple dust below may be new.

Circuit of pit by S - W. Much steam up middle and across top of W talus. Steam up the S talus goes on up wall along a curved dyke apparently vertical, and arcuate in plan, as though an old pit boundary headed toward the E sta.

About 4 p.m. 2 small rock falls W and NW.

T.A.J.

November 16  
8:50 a.m.

No changes notice.

November 18  
9:25 a.m.

All walls of crater are wet due to heavy rain. Lots of steam notice coming out from cracks on crater floor.

Tai On

November 19  
5 p.m.

Pit walls wet. Air still. No sounds. No changes.

November 20  
7 a.m.

Remarkable pair of pine-tree clouds over Mokuaweoweo and NE rift. Only rain clouds. Gone 7:20 a.m.

T.A.J.

3:30 p.m.

No changes notice.

Tai On

8:28 p.m.

Slight rattle heard in house, thought to be caused by a rat, but at the same time pheasants were heard squawking, denoting a possible earthquake.

(later: Above was a shock at 8:29 p.m. HVO time)

R.H.

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

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## JOURNAL

Day		Date	
Thursday		November 21,	1929
Sunday		" 24,	"
Monday		" 25,	"
Tuesday		" 26,	"

November 21  
5:30 p.m.

The earthquake slightly felt last night 8:29 p.m. and more strongly felt in Hilo and at Kilauea Summer Camp, distance 12 miles, has not made breaks in Halemaumau.

Halemaumau quiet and wet. Steam S, SW, NW. NE, E, and SW walls and taluses. All idle inactive vapor. Still air. No sounds.

T.A.J.

November 22  
9:30 a.m.

Nothing new. Not a sound of rock falling.

Tai On

November 24  
12:08 p.m.  
at H.V.O.

Rock fall heard at Halemaumau, southwest wind, no trace of dust seen.

Thunder last night, snow now on M.L. down to 10,500 feet. Much snow on Mauna Kea . Kona storm.

T.A.J.

November 25  
1:30 p.m.

Much steam rising from Halemaumau due to rain storm.

November 26  
7:45 a.m.

A great avalanche noise was heard by Yasunaka.

Tai On

4:40 p.m.

Road washed out near Keanakakoi.

After 7 inches of rain last night and yesterday, pit floor shows many vapor tails.

About 20 or 30 of them clustered in front of the vent of July at base of W. talus.

Many scattered ones near edge of floor northeast. Big steaming places at the stained areas of floor edge S and NW.

Walls of pit steaming S, SE, NE and NW. Usual places in the talus steaming.

A big avalanche heard about 7:45 a.m. this morning. Probably W, where there is a fresh scar and higher debris between W and NW taluses.

T.A.J.

## JOURNAL

Day		Date	
Wednesday		November 27,	1929
Saturday		" 30,	"

November 27

3:10 p.m.

Avalanche heard on Tuesday by Yasunaka occurred at E talus. After heavy rain, there was only one spot with strong steam. That is the sulphur stain on SE of crater floor. An avalanche was heard while at pit making reports. It was below the Tourist Stand. A fresh scar noticed on the E wall.

November 30

9:30 a.m.

Lots of steam coming out of cracks. More on the SW of crater floor where the stain spot is.

Tai On

MANUSCRIPT  
BOUND

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## JOURNAL

Day	Monday	Date	December 2, 1929
	Wednesday		" 4, "
	Saturday		" 7, "
	Tuesday		" 10, "

December 2  
9:30 a.m.

The place where the stain is is still steaming.  
Small avalanche over top of North talus.

Tai On

December 4  
11 a.m.

Measured cracks.

At pit with Powers and Tai On taking pictures. Sky dandy and wind moderate south.

Small rocky slide fell from N rim, sliding down niche at end of big sill. This part of the pit shows by scars that it has more slides than other sections.

Two other small rockfalls occurred in about a minute. Two other small rock falls occurred in about a minute.

Two fresh areas under NNE rim. Little steam.

Cracks of lava floor are stained brown giving them clear outline. Green and white stains are on the floor edge of S talus.

R.H.

December 7  
8:40 a.m.

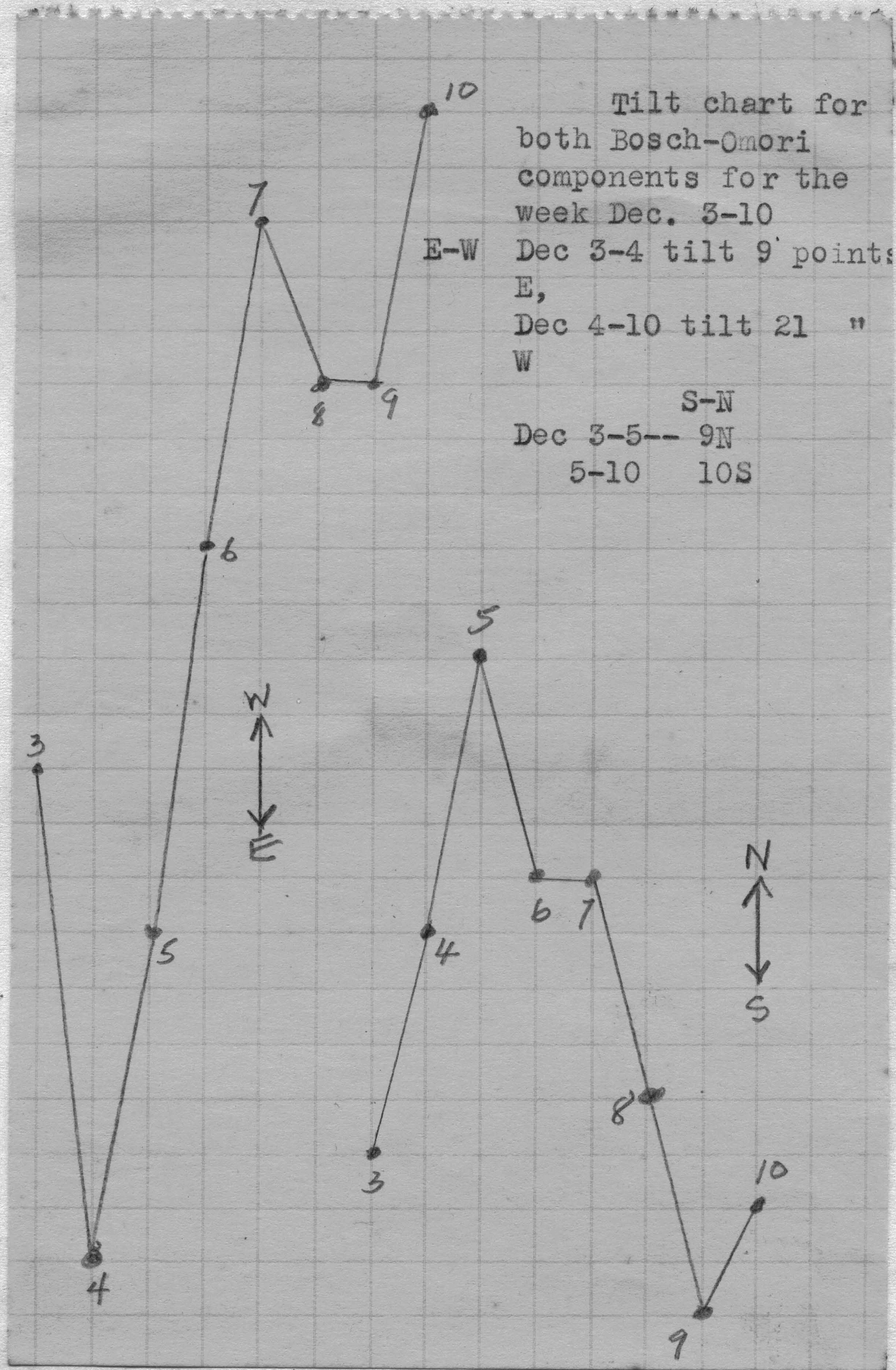
No change notice.

Tai On

December 10  
11:05 a.m.

Slide on U.O. side of Halemaumau made a small dust cloud. Noisy on crater floor.

R.H.



PHOTOGRAPH RECORD

Day **Wednesday**

Date **December 4, 1929**

time	sta	subject	no	pl	scr	stop	ex	cam
<u>December 4</u>								

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## JOURNAL

Day	Wednesday	Date	December 11, 1929
	Thursday		" 12, "
	Monday		" 16, "
	Tuesday		" 17, "

December 11  
12:00 noon

An avalanche occurred at 12:00 noon.

Tai On

8:00 a.m.

Earthquakes for the week ending December 11, 1929  
Total of 17 disturbances, viz.

9 tr., 8 vf.

Average distance of 5 vf. --46.6 m.

Duration of longest tr. 2 min.

Tilt: Accum. Mod. W.

Micros. motion sl.

December 12  
1:19 p.m.

A steady roar at first resembling wind was heard, but the air was still, so an avalanche was known to be the cause. The sound, heard plainly at the Observatory because of a south breeze, lasted several seconds.

It was followed in about a minute by dust rising at the east and drifting toward the north Kilauea rim.

A tremor was registered on the seismographs at the same time as the same time as the slide, the Hawaiian set showing greater amplitude. Later: tr. reg'd as vf.

The dust did not seem of as great volume as one might suppose from the strength of the sound.--(rocks?)

December 16  
9 a.m.

A driving rainstorm from the southwest is flooding all the surrounding district. Rain comes through the west porch wall and under door of main entrance.

At clear intervals much steam can be seen rising from the pit and from Kilauea vents, though most the time a dense cloud obscures all view.

There was a strong, gusty southwest wind all yesterday, but it was not accompanied by rain until after midnight this morning.

Too stormy to attempt changing the Halemaumau seismograph record.

10:05 a.m.

H.V.O. weather vane fell down in a series of very strong wind gusts.

December 17  
8 a.m.

Steam rises somewhat thickly from Halemaumau, but soon ceased when the air cleared. The wind changed to N.E. during the night.

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Hawaiian Volcano Observatory

December 17, 1929

Day Wednesday Date

December 18, 1929

December 17  
cont'd  
11 a.m.

Mrs. Young states an earthquake was felt at 2:10 a.m. shaking the ground so as to arouse her sufficiently to turn on the light. No shock recorded at this time.

Capt. Woods called with data from his instrument concerning the distant shock of 12:37 a.m.

Duration E-W about 2 hours

" N-S about 3/4 hour

His E-W pen showed a big tilt. I told him this was possibly instrumental.

R.H.

December 18  
8 a.m.

Earthquake Report, week ending 8 a.m. Dec. 18, 1929  
(Tel. not recorded in detail)

4 tremors

9 vf. earthquakes

1 tel. Dec. 17, P 12.37 a. Dis. 4,500 km.

14 disturbances recorded

Shock distances: 42

62

51

48

39

5 | 242

48 av. dist. of 5

Tilt Mod. SSW. Micros. motion slight to the 16th, when it became slightly stronger (storm is cause?)

R.H.

12:15 p.m.

Pit quiet. Rainy weather but almost no steam on S talus. Fresh debris on N talus and E talus shows red debris from a very red oxidized series of layers above the large NE sill.

T.A.J.

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

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	December 23, 1929
	Tuesday		" 24, "
	Wednesday		" 25, "
	Thursday		" 26, "
	Monday		" 30, "

December 23  
9 a.m.

No noticeable changes. Pit is very quiet. There is no fresh spot on talus which indicates a slide. Only a few rocks were heard. There is a white spot on wall at top of NW talus.

Tai On

1:00 p.m.

Much steam rising from pit. Day is damp and cloudy.

4:25 p.m.

Convection cloud hangs over Halemaumau low down, big, and spread out. Fed by steam rising up S wall.

R.H.

December 24  
Noon

Halemaumau. Walls dark, wet. No changes. Very little steam.

December 25

Teleseism of Dec. 17 located near Attu by Science Service and the Coast Survey. W end of Aleut Deep.  
Microseism slight. Tilt stationary.

11:45 a.m.

Pit still and walls dark and moist. Remarkably little vapor on S. talus. White stain in wall cavity top of NW talus.

T.A.J.

December 26

Pit is very quiet. There is no sign of any fresh avalanche having taken place.

December 30

Part of the big July grotto has slightly fallen at its center. After the spell of rain, there is no steam coming out from the crater floor, nor at the stain spot.

Tai On