Ol Doinyo Lengai

Tanzania, Eastern Africa

2.764°S, 35.914°E; summit elev. 2,962 m

All times are local (= UTC + 3 hours)

Still active in 2012-2013; J.B. Dawson obituary

We recently noted that Frederick Belton’s web site on Ol Doinyo Lengai has been supplemented by a web site from the Ngare Sero Village Council entitled “Oldoinyo Lengai – The Mountain of God.” This new web site has information on climbing, mountain safety, guides, equipment, and fees, as well as activity of the volcano as observed by guides and visitors. According to Belton, Lazaro Saitoti is maintaining the web site from both Arusha and Engare Sero, and it represents a potentially useful source of local information, with an emphasis on tourism.

Abigail Church forwarded to us two aerial photographs of Lengai’s active crater and summit, one taken in June 2013 (figure 1) and the other in 28 July 2013 (figure 2). On 29 July, Church reported that she had flown over Lengai a few times in the last year or so, and that Lengai appeared to have small active vents still emitting lava. In addition, these aerial views recorded little other activity except for slippage off the steep walls. She noted that she was in touch with a number of pilots that are often flying over Lengai and that might contact her if they see anything unusual.
On 10 April 2013, Bonnie Betts climbed Lengai and, on Belton’s web site is quoted as reporting: "We started at midnight in a thunderstorm with light rain, but it cleared up. You could hear the lava sloshing around inside the crater before getting to the top; also dark smoke could be seen coming from the crater while ascending in the night . . . Looking into the crater, you can see the lava sloshing back and forth in the dark, black tunnel, and then some would flow out with a different flowing swishing sound." Local guides expressed concerns to Betts that an extensive crack seen in the crater may be the beginning of a collapse of the inner wall of the pit crater. Figures 3 and 4 show photos taken during Betts’ climb.
Figure 3. A tall spatter cone was formed 10 April 2013 near the crater wall, as seen looking W from the crater rim, located on the W side of the pit. The flank of that cone had also ruptured and an active lava flow exited the cone. Note that the vent is also present in the photo of the same area taken 14-15 September 2012 (see fig. 158 of BGVN 37:11). Photo courtesy of Bonnie Betts.
Figure 4. Photo taken 10 April 2013, looking W from the crater rim. A steaming fissure crossed the photo in mid-ground near the crater rim. Just to the right of center of the photo are the Pearly Gates, cut in the crater rim atop the former climbing route on the W side of the volcano (see figure 154 of *BGVN* 37:11). Photo courtesy of Bonnie Betts.

Belton received some photos and a description by Gian Schachenmann of a visit to Lengai on 17-18 June 2013. Schachenmann noted sloshing lava sounds from the spatter cone and big cracks on the rim where gases escaped (figure 5).
Figure 5. Photo taken 17 or 18 June 2013 (in the same area as figure 3, above), showing that the tall spatter cone no longer has the vent that was present on the photo taken 10 April 2013. Thus, it also appears that there has been only slight growth of the cone during the two months between the photographs. Photo courtesy of Gian Schachenmann.

Death of John Barry Dawson, Lengai Legend. According to the Mitchell (2013), John B. Dawson, Emeritus Professor of Geology, Lakehead University, Thunder Bay, Ontario, Canada, died 2 February 2013. Excerpts from that obituary are found below.

Dawson was known for his extensive knowledge of kimberlite geology. Subsequent to graduation in 1960, Barry joined the Tanganyika Geological Survey, where he was employed to map areas of the then remote Angata Salei region near Lake Natron, a location of an active volcano. “The first ever descent into the crater of this volcano, Oldoinyo Lengai, (the Maasi Mountain of God), was made by Barry and Ray Pickering in October 1960. It was during this visit that he recognized the unique sodium carbonate volcanism and earned himself a permanent place in petrological history with the publication of his paper on these extraordinary rocks in the journal *Nature* (Dawson, 1962). Subsequently, he maintained an active research program on the petrology of Oldoinyo Lengai and other volcanoes in the Gregory Rift Valley.”
“During this work he narrowly survived one violent silicate ash eruption of Oldoinyo Lengai in 1966, and was fortunate enough to observe, some 40 years later in 2007, the return to silicate pyroclastic activity from the quiet effusive natrocarbonatite eruptions. To the time of his death, Barry was actively involved in studies of Oldoinyo Lengai, Kerimasi, Mosonik and other Tanzanian volcanoes. He was especially pleased with the publication in 2009 [sic] of his comprehensive review of volcanic activity in the Gregory Rift” (Dawson, 2008).


**Geologic Summary.** The symmetrical Ol Doinyo Lengai stratovolcano is the only volcano known to have erupted carbonatite tephras and lavas in historical time. The prominent volcano, known to the Maasai as "The Mountain of God," rises abruptly above the broad plain south of Lake Natron in the Gregory Rift Valley. The cone-building stage of the volcano ended about 15,000 years ago and was followed by periodic ejection of natrocarbonatitic and nephelinite tephra during the Holocene. Historical eruptions have consisted of smaller tephra eruptions and emission of numerous natrocarbonatitic lava flows on the floor of the summit crater and occasionally down the upper flanks. The depth and morphology of the northern crater have changed dramatically during the course of historical eruptions, ranging from steep crater walls about 200 m deep in the mid-20th century to shallow platforms mostly filling the crater. Long-term lava effusion in the summit crater beginning in 1983 had by the turn of the century mostly filled the northern crater; by late 1998 lava had begun overflowing the crater rim.

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