Twitter Thread by Dr. Jazmin Scarlett (wear a mask!)



Dr. Jazmin Scarlett (wear a mask!)
@scarlett_jazmin



Okay, let's get this show on the road. I will begin by sharing research related to the 1971-1972 effusive eruption which is similar to what is happening now. I will be sharing old photos and crediting sources so not to confuse everybody that it's not related to today's activity.

> Hello! So, after 41 years, the volcano I have been researching, La Soufri\xe8re on St. Vincent and the Grenadines, is erupting in the form of non-explosive lava activity (Drone footage from @uwiseismic Facebook page). I\u2019m here to answer questions BUT...(1/2) pic.twitter.com/TemOGjEE7Q
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> — Dr. Jazmin Scarlett (wear a mask!) (@scarlett_jazmin) December 29, 2020

To begin: the type of volcanologist I am is a "historical and social" volcanologist, which means I research how past and present activity impact the people who live with volcanoes. A lot of my data are old written records, interviews, photographs, newspapers etc.

This is important to note and acknowledge there are multiple ways to research volcanoes. I therefore know less about the geology BUT knowledgeable in volcanic hazards and how people live with these hazards.

Photos taken by Arnold Da Silva and donated by Vincentian geologist Lance Peters, all taken sometime before the 1971 activity. Important context for 1971-1972 in relation to today's activity: there was a crater lake. A lot of water was present...

...Water is a key ingredient in making volcanic eruptions explosive BUT sometimes it isn't. 1971-1972 had no explosions and little to no seismic activity associated. Photos in the 1970s by Arnold Da Silva and donated by Lance Peters.

The exact date of the beginning of the 1971 is uncertain, however 21st Sept 1971 was last visited by an expert where all was seen to be "normal", no increased signs of changes in the crater lake by aerial photos on the 28th Sept. But, by 31st October, an airplane noticed changes.

The changes were discolouration of the water and steam. Experts from the University of the West Indies investigated on the 1st November and confirmed the changes. Tourists on the 17th October also noted the sulphurous smell and steam but was not reported.

Estimates conclude that the water level was 13 metres above normal from early photos. By 3rd Nov surface temperatures of the water were 81.5C (178.7F) and the water level 26 metres above normal. The entire lake was shrouded by steam and now mustard-yellow instead of clear blue.

Key thing to note how important a crater lake is to notice changes in activity from background levels. This is why certainly current activity was not immediately picked up. Because also like 1971, there was not intense increased seismic activity that is also an indicator of...

Changes in activity above background levels as it shows the migration of magma and fracturing the surrounding rock. HOWEVER, not every increase in seismic activity and magma movement means an eruption (effusive or explosive) will occur. Volcanoes will do what they want ■■■■■

All photos by Arnold Da Silva and donated by Lance Peters taken likely post 1971-72 activity. This is what resulted in the gentle lava effusion, similar to now. Note how there is an absence of explosive activity. Sometimes there is a violent interaction, sometimes there isn't!

Near the beginning of activity, the local authorities did authorise evacuation, due to knowledge of the previous highly destructive eruption of 1902 (more on that later). @VolcanoJenni please feel free to provide more info on 1971-72 when you have the chance!

Interestingly, by 1976, 3 years before the explosive eruption of 1979, the crater lake was absent. Photo by David Mart and donated by Lance Peters. Also note the change in colours around the lava dome: the vegetation had died back. The white plume is localised fumarole activity.

This following on the 1971 effusive activity is sourced from Aspinall et al. (1973) Eruption of Soufrière Volcano on St. Vincent Island, 1971-1972. Science. Vol. 181(4095). Pg. 117-124. More info on the geology, petrology, geochemistry and so forth found within.