rwater volcanoes could be melting West Antarctic Ice
t -- study

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of volcanoes under the West Antarctic Ice Sheet are helping melt the formation already under s
ing air and water temperatures, according to research released yesterday.

y, published in the journal *Nature Geoscience*, found evidence of two major seismic events in an
est Antarctic Ice Sheet in 2010 and 2011. The events, known as "earthquakeswarms," indicate t
moving in the crust beneath the underwater volcanoes

vement could be releasing heat that's contributing to melting of the underside of the ice sheet, sa
Lough, a Ph.D. candidate at Washington University inSt. Louis and lead author of the study.

dded that the ocean around the ice sheet has probably been adapting to the heating for millions o
uption could lead to additional heat stress that causes faster melting

not an immedate danger, but every time you have an eruption you're going to have an increase i
e said

s still magma movement underneath the ice sheet, and that means it could erupt sometime in the
obably will.'

nt' but threatening

tumbled upon the finding while trawling through Antarctic seismological data for one of her
ion projects

nt through the data, I kept finding earthquakes located in the exact same spot," she said

focused on those areas using two years of data from a set of instruments located nearby. Seismi
re fairly normal in the Antarctic, but Lough was surprised by the frequency

tion she studied usually experienced around 40 seismic events each day, but from theend of Jan
the beginning of February 2010, it saw hundreds each day. Another location, which would norm
o events each day, had 10 times that number in March 2011

anoes are "quiescent," Lough said, meaning they're not extinct but they're also not actively erupt

cano, possibly of many

dy is one of the first pieces of hard evidence of active volcanism in the region, according to John
t, a senior research associate at the University of Colorado, Boulder, who has been researching
in Antarctica for years

ile he said he believed the volcanism is contributing to melting of the underbelly of the ice sheet
t, who wrote an accompanying commentary article on the study, still thinks rising ocean temper
rincipal cause

the ice sheet] is already melting, as it appears to be in some places in West Antarctica," he added
activity could have some bearing on that and accelerate it, possibly.'

ore, Behrendt said, it is likely there are many more of these formaions under the West Antarcti

uitous that maybe they just happened to find some in this area," he said. "If you had an array [of
nts] at that spacing across the whole West Antarctic Ice Sheet, you'd probably find clusters in m

ca's overall contribution to global sea-level rise is still unclear. In its fifth assessment report relea
er, the U.N. Intergovernmental Panel on Climate Change projected that Antarctica's contributio
e inthe 21st century could even be negative because of a projected widespread increase in snowf
d with rising air temperatures

ile Lough acknowledged that volcanic ocean warming is probably a factor in Antarctic de-glacia
the activity of her formation, at least, is unlikely to be a defining one.

sheet is huge and it has so many things contributing to it," she said. "One volcano is not going
the ice sheet.'