

'Eternal flames' of ancient times could spark interest of modern geologists

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“Pillars of Fire” near Baku, Azerbaijan. © Guiseppe Etiope

Seeps from which gas and oil escape were formative to many ancient cultures and societies. They gave rise to legends surrounding the Delphi Oracle, Chimaera fires and "eternal flames" that were central to ancient religious practices - from Indonesia and Iran to Italy and Azerbaijan. Modern geologists and oil and gas explorers can learn much by delving into the geomythological stories about the religious and social practices of the Ancient World, writes Guiseppe Etiope of the National Institute of Geophysics and Volcanology in Italy. His research is published in the new Springer book [Natural Gas Seepage](#).

"Knowing present-day gas fluxes from a seep and knowing that a seep

was active and vigorous two thousand years ago, we can estimate the total amount of gas that has been released to the atmosphere thus far. What can be measured today is probably also valid, at least in terms of orders of magnitude, for the past," writes Etiope. "Such information may not only be relevant for atmospheric methane budget studies but may also be important for understanding the leaking potential of petroleum systems, whether they are commercial or not."

Gas-oil seeps have been the source of mythological tales, and many a Biblical and historic event. The observations of ancient naturalists and historians such as Pliny the Elder, who lived two millennia ago, helped to chronicle many of these occurrences, especially in the Mediterranean area. For example, he wrote about Chimaera, a large burning gas seep in modern day Turkey. In ancient times, the temple of Hephaestus, the Greek god of fire, was built next to it.

Similar "eternal fires" integrated [gas](#) and flame emissions into ancient [religious practices](#) in many cultures. For instance, the Zoroastrians worshiped the "Pillars of Fire" near modern Baku in Azerbaijan. In Iraq, the Baba Gurgur seep was probably the "burning fiery furnace" into which King Nebuchadnezzar cast the Jews. A legend of ancient Rome reports a stream of crude oil issuing from the ground around 38 BC. It became a meeting spot for the first Roman converts to Christianity, and is now the site for the Basilica of Santa Maria in Trastevere. The sacred Manggarmas flame in Indonesia, which has been active at least since the 15th century, is still used in an annual Buddhist ceremony.

"Knowing that a certain 'eternal fire' observed today was already active in Biblical times indicates that it was not triggered by the recent drilling and production of petroleum," adds Etiope.

Etiope writes that hydrocarbon seeps also influenced the social and technological development of many ancient populations. It not only

contributed to global civilization, but was often the source of wars. The first evidence for petroleum usage comes from Syria, where the Neanderthal used natural bitumen on stone tools some 40,000 years ago.

More information: Etiope, G. (2015). Natural Gas Seepage: The Earth's Hydrocarbon Degassing. Chapter 9: Seeps in the Ancient World: Myths, Religions, and Social Development. [DOI: 10.1007/978-3-319-14601-0_9](https://doi.org/10.1007/978-3-319-14601-0_9)

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