

# On the Interaction Between Tectonic Processes of the Earth and the Moon

Published online by Cambridge University Press: **07 February 2017**

N. A. Kozyrev



Article contents

## Abstract

At present seismographs are operating on the Moon as well, installed there owing to the successful Apollo missions. However these data are insufficient for detailed statistic investigations. That is why in case of the Moon we are to use indirect indications of its activity, such as the data on transient light phenomena from the catalogues by Miss B. Middlehurst. Among the great number of earthquakes there were chosen only the strong earthquakes (magnitude 6.5) with focuses deeper than 70 km. According to these characteristics 630 earthquakes were selected from 1904 to 1967. In the Middlehurst catalogue during the same period about 370 transient events on the Moon are registrated. A distribution of lunar events on the days of an anomalistic month gives evidence of the influence of the Earth's tidal forces (the Middlehurst effect). It appears that the distribution of earthquakes gives a similar curve. Thus the tidal interaction of the Earth and the Moon establishes certain synchronism in tectonic activity of these planets. The further statistic analysis reveals some more causal relation between the processes of the Earth and the Moon. Strongly pronounced maximum of lunar events is observed with the interval of 2–3 days after the earthquakes and the maximum of earthquakes – with quite the same interval after the lunar events. The peaks of these maxima exceed the mean number of events by a factor 3. The Moon Earth system is the astronomical example of a direct interaction of the processes in the neighbouring celestial bodies.

The corresponding experiments, made at the Pulkovo Observatory, confirm the possibility of immediate interactions of irreversible processes due to the change of physical properties of time. Thus we can form a chronology of orogenesis on the Moon judging from the data on the history of the Earth. Tectonic processes of the Earth and the Moon seem to be in such a close interaction as if the Moon were in direct contact with the Earth, i.e. in other words, were its seventh continent. These conclusions give evidence of the extreme importance of regular seismic observations on the Moon.

---

**Type**

Part II: Scientific Papers

**Information**Symposium - International Astronomical Union, Volume 47: The Moon, 1972, pp. 220 - 225DOI: <https://doi.org/10.1017/S0074180900097552>**Copyright**Copyright © Reidel 1972

---

**References**

Gutenberg, B. and Richter, C. F.: 1949, *Seismicity of the Earth and Associated Phenomena*, Princeton. [Google Scholar](#)

---

Kozyrev, N. A.: 1967, *Colloquium on the Evolution of Double Stars*, Uccle. [Google Scholar](#)

---

Middlehurst, B.: 1967, An analysis of Lunar Events, *Rev. Geophys.* [Google Scholar](#)

---

Middlehurst, B. and Burley, J.: 1966, *Chronological Listing of Lunar Events*, NASA, Maryland. [Google Scholar](#)

---

Middlehurst, B., Barley, J., Moore, Patrick, and Welther, B.: 1968, '*Chronological Catalogue of Reported Lunar Events*', NASA. [Google Scholar](#)

---