

Earth science, planetary vision——A foreword to *Earth and Planetary Physics* (EPP)

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During the current interglacial period, conditions on Earth, the homeland of humankind, fostered the emergence of large-scale human cooperation, the unique phenomenon that we call civilization. Since then, humans everywhere on Earth, standing under the vast starlit sky, have thought about and explored our planet ceaselessly. From civilization's earliest days, that curiosity has extended to the space that surrounds us. Among the crowning achievements of civilized mankind are the sciences, including systematic studies of Earth and space.

However, the deeper we think, the more questions we get. How was the Earth formed? How has it evolved? How do the Earth's systems work? Why is our home so different from other planets? The answers to these questions are deeply intriguing, and have been explored with great effort and enthusiasm by generations of scientists.

Since the beginning of the twentieth century, Earth science has developed progressively into quantitative studies, based on a growing range of measurements of the composition and movement of the Earth's surface and interior. Increasingly detailed and precise seismological, geomagnetic, geoelectric, and gravity observations have shed light on the interior structure of the Earth from many aspects. The new fields of geodynamics and plate tectonics have made great contributions for understanding the evolutionary mechanism of the Earth.

The first International Geophysical Year was 1957, a time of ambitious Earth studies planned with international cooperation. Sixty-seven countries, including China, participated in geophysical studies, including coordinated global joint observations. In October of that same year, the first man-made satellite was launched into space. Since then, humankind has been able to gather information not just on Earth but also in space, opening an entirely new window to explore the Earth and its surrounding space. Based on the new information, geoscientists began in 1957 to re-study the Earth from a global view and turned from individual local studies to cooperative global research. Man-made spacecraft have now visited all the planets in the solar system, and even many satellites, comets, and asteroids; scientific instruments have already landed or will soon land on the Moon, Mars, and other celestial bodies, to make direct observations. Consequently, geophysics has expanded to include planetary physics, thus reaching a new stage of development.

Now, in 2017, sixty years later, two tiny but unusual events build a new milestone in the development of earth and planetary sciences in China. First, at its seventieth anniversary the Chinese Geophysical Society (CGS) established a new special committee on planetary physics, the first dedicated organization of planetary physics in China. This action signals that the formerly individual, scattered, conventional studies of planetary physics will progressively enter a state of comprehensive, systematic, and in-depth re-

search under the flag of geophysics. Second, the new English journal, *Earth and Planetary Physics* (EPP), starts publishing. The contents of this journal will not be limited to the traditional geophysical domain, but will also include studies of the composition and evolution of various planets and satellites of the solar system as well as planets outside the solar system. It will provide a high-quality academic communication platform for geophysical and planetary physics research.

In recent years, the quantity and the quality of research papers on Earth and planet physics has increased significantly. But internationally top-class periodicals are still lacking in China. Against this background, the CGS cooperated with the Institute of Geology and Geophysics, Chinese Academy of Sciences and Science Press, to found the EPP journal with additional support from six major government departments. In 2017, a domestic register number (CN 10-1502/P) and an International Standard Serial Number (ISSN 2096-3955) are successfully applied. The EPP's electronic version will be distributed by the American Geophysical Union and Wiley. The founding of EPP is an epoch-making event of Earth science in China. It marks the beginning of a Chinese geophysical journal that aspires to first-class international standards.

The development law of a scientific discipline and the deep-Earth, deep-space strategy of our country have set clear orientation for this new periodical. Studies in China of deep Earth structure and evolution have been achieving a series of breakthroughs. In the meantime deep-space and planetary studies are also vigorously growing. A series of Chang'E Lunar missions yielded significant results. The first Chinese Mars mission was officially approved by the state in 2016. More deep-space missions, such as comet and asteroid exploration, Mars sampling and returning, and Jupiter exploration, are on the way. EPP is born at the right time and will certainly make important contributions in serving the state's key research strategy and by providing a top-class academic exchange platform.

Without accumulating each short step, one cannot cover a thousand miles (XUN Zi, 313 - 238 B. C.). The new-born EPP is the first English journal in China intended to publish high-level achievements in Earth and planetary studies, and will grow well with the advancement of national scientific strategy and development of the discipline. The new-born EPP depends on the support of the Earth and planetary research community, and serves researchers in international academic exchange. We expect that in the not distant future EPP will join the ranks of first-class international periodicals of Earth science, and become a new flagship journal of Chinese Earth science.

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