

Research of Pluto: Now it goes into high gear

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“Pluto has a heart!” In July 2015, TV, newspapers, and Internet report news with such headlines. Pluto was veiled in mystery until then; However, New Horizons, a NASA’ s spacecraft, approached Pluto and successfully observed its surface and atmosphere in detail. The spacecraft saw: a white heart-shaped region, a black whale-shaped region, and faults all around Pluto. Why and how are these features formed? Such investigations reverse a previous speculation for the evolution of Pluto. In this talk, I review recent advances in research of Pluto.

Keywords: Pluto, Planetary exploration, New Horizons

The Earth made the first life

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The first life was most likely flourished on the Earth by 4.0 billion years ago. My research group is synthesizing amino acids, nucleobases, peptides, and nucleotides by simulation experiments of the early Earth conditions. These results indicate how suitable the early Earth was for the prebiotic organic synthesis. The early Earth became habitat for micro-organisms, and such life's activities are recoded in ancient rocks. Our group is also searching traces of life in ancient rocks. In this presentation, our finding of traces of life in >3.7 Ga Isua Supracrustal Belt will be introduced.

Keywords: the first life, early Earth