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[EE] Evening Poster | B (Biogeosciences) | B-AO Astrobiology & the Origin of Life

## [B-AO01]Astrobiology

convener:Hikaru Yabuta(Hiroshima University, Department of Earth and Planetary Systems Science), Seiji Sugita(Department of Earth and Planetary Science, Graduate School of Science, The University of Tokyo), Misato Fukagawa(名古屋大学, 共同), Fujishima Kosuke(Tokyo Institute of Technology, Earth-Life Science Institute)

Tue. May 22, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Twenty years have passed since when the field of Astrobiology, which aims to unveil the origins, evolution, and habitability of life by integrating multidisciplinary fields, was established. Origins of Life are currently being re-conceptualized via expansion of prebiotic chemistry to systems chemistry and chemical space. Besides their relationship to life's building blocks, it is expected to demonstrate the significant roles of organic molecules in the history of planetary formation. The linkages among the variations in chemical compositions of deep-sea hydrothermal environments, geological settings, and ecological systems were systematically investigated. Cassini, which accomplished in the long-term explorations of the planets bearing liquid, had "Grand Finale" this year. Discoveries of extrasolar planets have been dramatically increased to date.

Originally, Astrobiology does not need a specific science category. We therefore aim to make this session so that Earth and Planetary scientists from all the categories join for discussing 'where we came from and where we are going' and for making novel integrated researches.

For the next stage of Astrobiology, presentations on the instrument development in space explorations, comparative studies of solar system and exoplanets, etc, will be very much welcome.

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## [BAO01-P06]A scenario of chiral amino acid evolution initiated with chiral alanine

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Keywords:homochirality of amino acids, chemical evolution, alanine

DNA encoding amino acids except of glycine have L-form homochiral structure. The chemical evolutionary process for amino acids to reach the homochiral structure has not been elucidated in detailed. However, considering in structural analogy among DNA encoding amino acids will give an insight us about the root from a simple chiral amino acid: L-alanine. The research proposes a chemical evolutionary tree of chiral amino acids from L-alanine. Some reasons will be shown from the viewpoints of chemical reactivity and the combination of codon bases.