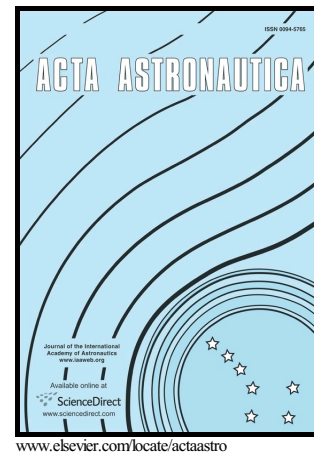


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Ups and downs of space tourism development in 60 years from moon register to spaceshiptwo CRASH

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**UPS AND DOWNS OF SPACE TOURISM DEVELOPMENT IN 60 YEARS  
FROM MOON REGISTER TO SPACESHIP TWO CRASH**

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**ABSTRACT**

In human imagination, dreams and expectations, the sequence of “space tourism” has most likely been Moon tourism, Earth orbital tourism and then suborbital tourism. But the sequence in actual development is the reverse: first Earth suborbital tourism, then orbital tourism, and finally Moon tourism. In 1954, three years before the successful launch of the first human artificial satellite, the world’s oldest travel company, Thomas Cook in Britain, initiated the “Moon Register.” Enthusiasts could sign an option for a commercial trip to the Moon and the company guaranteed to provide tickets at the earliest possible date. Sixty years later on 31st October 2014, the first SpaceShipTwo (SS2) of Virgin Galactic developed for commercial suborbital space tourism (SST) and scientific research crashed at the Mojave Desert in California during test flight. Although the first privately paid space tourist had travelled to the International Space Station in 2001, this was only for millionaires and not the general public. In 2004, although SpaceShipOne won the Ansari X prize and shed the first light on SST, the commercial SST operations originally planned to be realized in 2008 are now long overdue. The SS2 has been just one of the reusable suborbital launch vehicles developed for SST and other purposes, with others including the Lynx, Spaceplane and Dream Chaser. However a tragedy in which the SS2 crashed and caused the sacrifice of one senior test pilot alerted tourists that the long overdue of SST might still be a few years away. The purposes of this paper are to review and discuss the ups and downs of space tourism development in the 60 years from 1954 to 2014, and to look forward to get more clear future from the unveiling of second SS2 on 19th February 2016 and the continuous development of Lynx Mark I. However in any case, there are still many constraints including economy.

Keywords: suborbital space tourism, Spaceplane, Lynx, Dream Chaser, SpaceShipTwo

**ACRONYMS**

EASA European Aviation Safety Agency  
ESA European Space Agency  
ESTEC European Space Research and Technology Centre  
EU European Union  
FAA Federal Aviation Administration  
FAA/AST Federal Aviation Administration’s Office of Commercial Space Transportation  
FESTIP Future European Space Transportation Investigation Programme  
GCTC Gagarin Cosmonauts Training Centre  
HEO high Earth orbit  
HIS humans in space  
HOTOL horizontal take-off and landing  
HTHL horizontal takeoff and horizontal landing  
IAA International Academy of Astronautics  
ISCOPS International Space Conference of Pacific-basin Societies  
ISS International Space Station

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