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ASTRONOMY OBSERVATORY IN STRATOSPHERE

Abstract

"The need for science in stratosphere is increasing each year with broad wiev of applications as astronomy, meteorology, global navigation systems, maritime applications and earth observation. Between these applications astronomy from stratosphere is the one that could benefit most from such observatory becouse there is no place on eart that can provide such a uniqe conditions for solar system and space observation. Many astronomers, solar physicists and planetary scientists desire to be above nearly all of the atmosphere, either to reduce atmospheric absorption of signals, or to avoid turbulence that degrades imaging capabilities. Even with todays technological advances it is very competitive challenge to put any scientific instrument to stratosphere and fix it there at specific height and coordinates for period of time that is long enough to enable competitive astronomy science observation. This presentation will cover technological and economical obstacles that must be overcome to successfully deploy and operate scientific observatory in stratosphere that can carry various payloads for astronomy science use. The focus of this presentation will be on energy system, vertical engine propulsion, horizontal and vertical stabilization, aerodynamics, weather challenges in stratosphere, solar and thermal conditions and operations and service of the observatory. During the presentation blueprint of engineering design and computer visualisation of 3D in scale model of observatory will be presented."