About the cause of the emergency situation with the Russian spacecraft «Phobos-Grunt»

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During the last decade there has been the significant increase of emergency situations when launching the Russian spacecraft. Finding the causes of emergency situations with Russian spacecraft is one of the most important tasks for the further development of the rocket and space industry. Based on the conclusion of the Interdepartmental Commission "Roscosmos" the causes of the emergency situation with the Russian spacecraft "Phobos-Grunt", delivered into the geocentric orbit by launch vehicle (LV) "Zenit-2SB" from Baikonur on November 9, 2011 were analyzed. The study showed that 1 hour mistiming between on-board time set in the spacecraft volatile clock, and the daylight saving time, according to which a part of the cyclorama was made, could be the cause of the emergency situation. This part of the cyclorama was not adapted to the changed calculation of time, as in accordance with the Federal Law "On the Calculation of Time" in the autumn of 2011 on the territory of the Russian transition to winter time was not carried out, and daylight saving time has been canceled. The study revealed that mistiming can be up to 60 minutes.

Keywords: emergency situation, the satellite "Phobos-Grunt", spacecraft, daylight saving time.

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