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## The Altay Mountains environmental disaster (Eastern Kazakhstan)

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**The research object:** The Kazakh part of the Altay Mountains - fall zone of the second stages (fuel tanks, more 150 tonn) of the carrier rockets (Vostochno-Kazakhstanskaya oblast, the Republic Kazakhstan). The coordinates of the research area: 83°00'-83°15' east longitude and 50°42'-50°55' north latitude. The natural landscapes: the clumsy oak low mountains and middle ridge-mane mountains with the fir forests.

**The research purpose:** An ecological estimation of soils, plant, water objects, settlements on the territories impact of separable parts of the carrier rockets starting from space center "Baykonir". The ecology-hygienic control of the areas subjecting to possible pollution of the asymmetrical dimethylhydrazine (ASDH) and its disintegration products.

**The research tasks:** The route investigation of the region with selection of the soil, plant, water, bottom sediments samples on presence ASDH and its disintegration products. Definition of gamma-background level in the sample places. Electronic ecological maps of soil, plant with secretion of the dirty sites

## **The research results:**

1. The modern state estimation of the soil, plant, surface water in the research region has shown break them under the influence of the anthropogenic factor
2. The point route inspection of the research area at local (3 points) and the area level (64 points) with soil, plant, water and bottom sediments sampling has revealed presence **ASDH** in **soil** samples from total 113 in 94 not more than MPC (maximum permissible concentrations), 17 - with excess MPC in 1,1-3,3 times; in **plant** -from 125 plant samples in 110; in **ground water** - pollution is not detected; in **bottom sediments** - with excess MPC from 6 up to 35 times in Yba, Beloporozhnya Uba and Solonovka rivers; in **settlements** -the presence of the ASDH in small concentrations in soil and plant samples.

**Background radiation:** The mean value was found to be 0.14 micro-zivert per hour. That is permissible for human activity.

**The resume.** As a result of carrier rockets launches such as "Proton" from Space Center "Baykoniyr", the unique nature of the mountain-forest landscapes of the Kazakhstan part of Altay Mountains has been subject to pollution by ASDH during the many years. Pollution over Vostochno-Kazakhstanskaya oblast has a local character. The detected facts of space activity influences on the environment of the Kazakhstan part of Altay Mountains are confirmed by these research results over Russian Altay Mountains (15 MPC in soil, 5 MPC– in water).

A landscape photograph showing a dense forest of evergreen and deciduous trees. The sky is filled with dark, heavy clouds, and a faint rainbow is visible in the upper left portion of the sky. The text "Thanks for attention" is overlaid in the center of the image.

Thanks for attention