

THE ASTRONOMICAL OBSERVATORY AS A SOURCE OF SPACE HIGHWAYS

At the end of 2020, the American magazine *Science Advances* published an article entitled «*The arches of chaos in the Solar System*», illustrating the previously unknown structure of chaos caused by gravitational interactions between the Sun and the planets. At the same time, these structures are sources of very fast transport routes, a kind of "space highways". Using these routes, we could explain the origin and unusual behavior of certain comets. Also, they could potentially be used for spacecraft navigation, which could reach unimaginable speeds along them. Here we will first describe the way in which the first results were obtained at the Astronomical Observatory in Belgrade in 2017, how the collaboration with co-authors from the United States came about, and then the long and arduous journey of the paper before its publication. Finally, we will look at the repercussions that this article had in the domestic and world media.

Key words: Solar System, chaos, fast transport, invariant manifolds