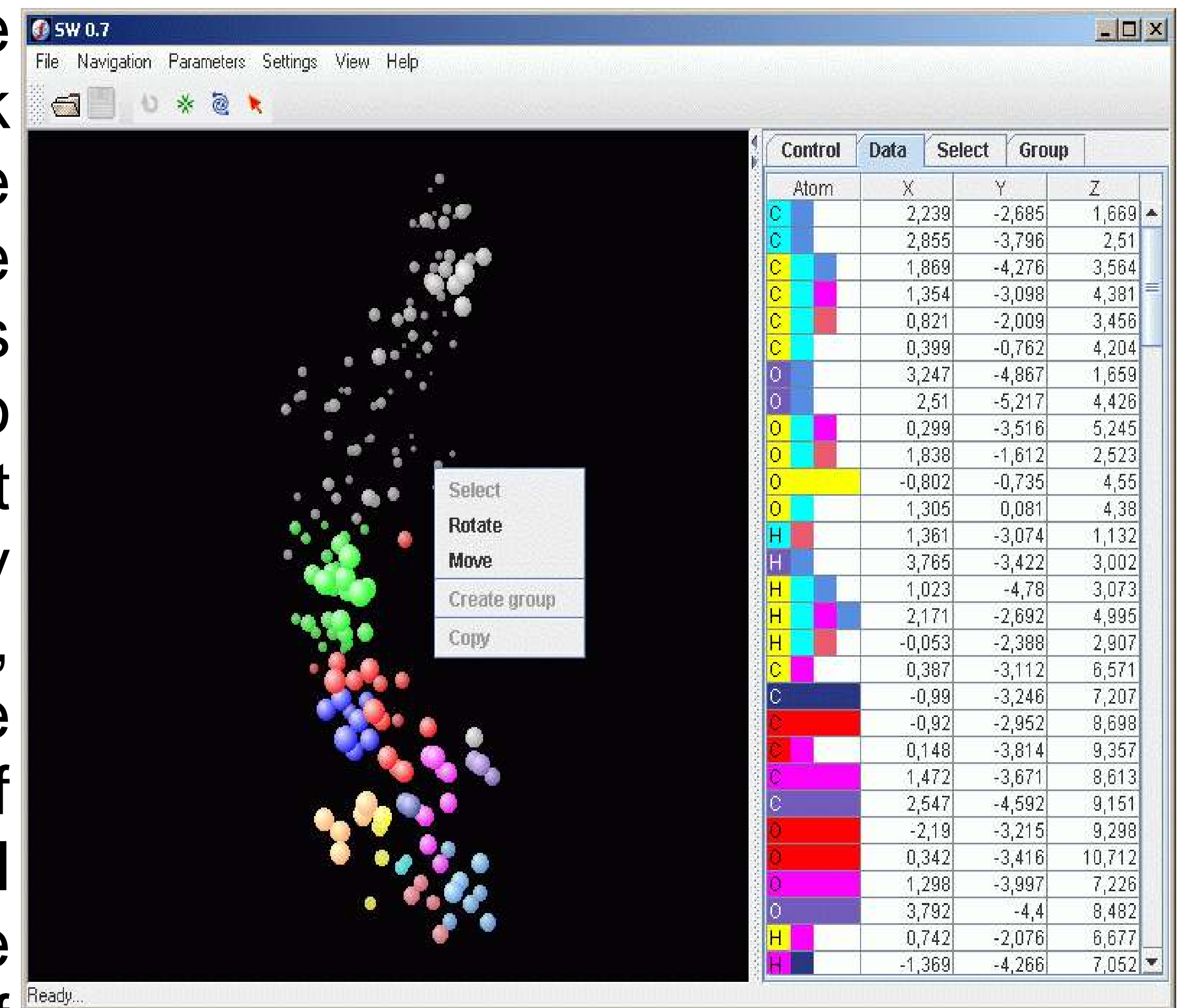
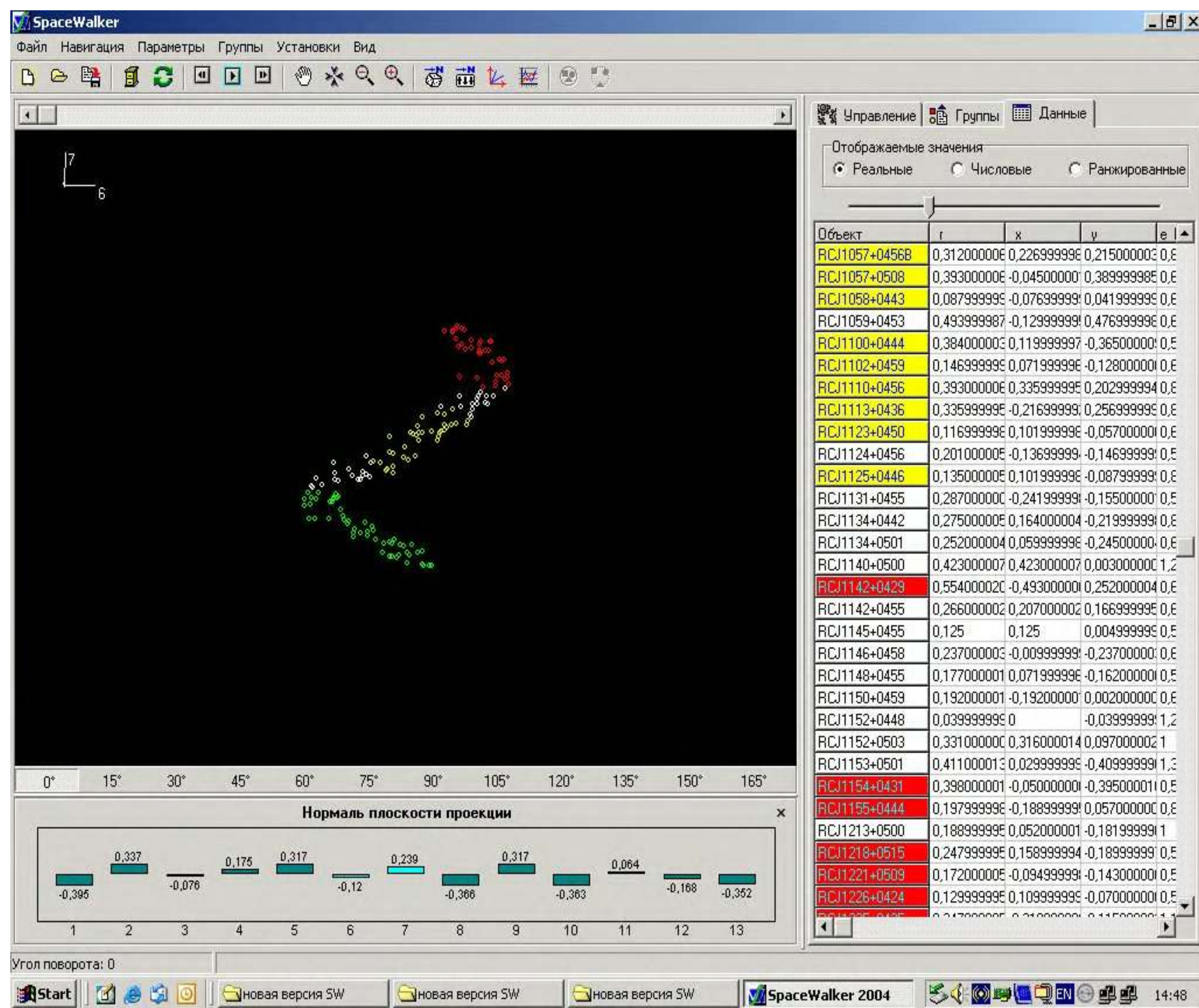


# 6D visualization of multidimensional data by means of cognitive technology

Vladimir Vitkovskiy, *Special Astrophysical Observatory of RAS*  
 Vladimir Gorohov, *ENGECON State University, Sankt-Peterburg, Russia*  
 Serge Komarinskiy, *Special Astrophysical Observatory of RAS*

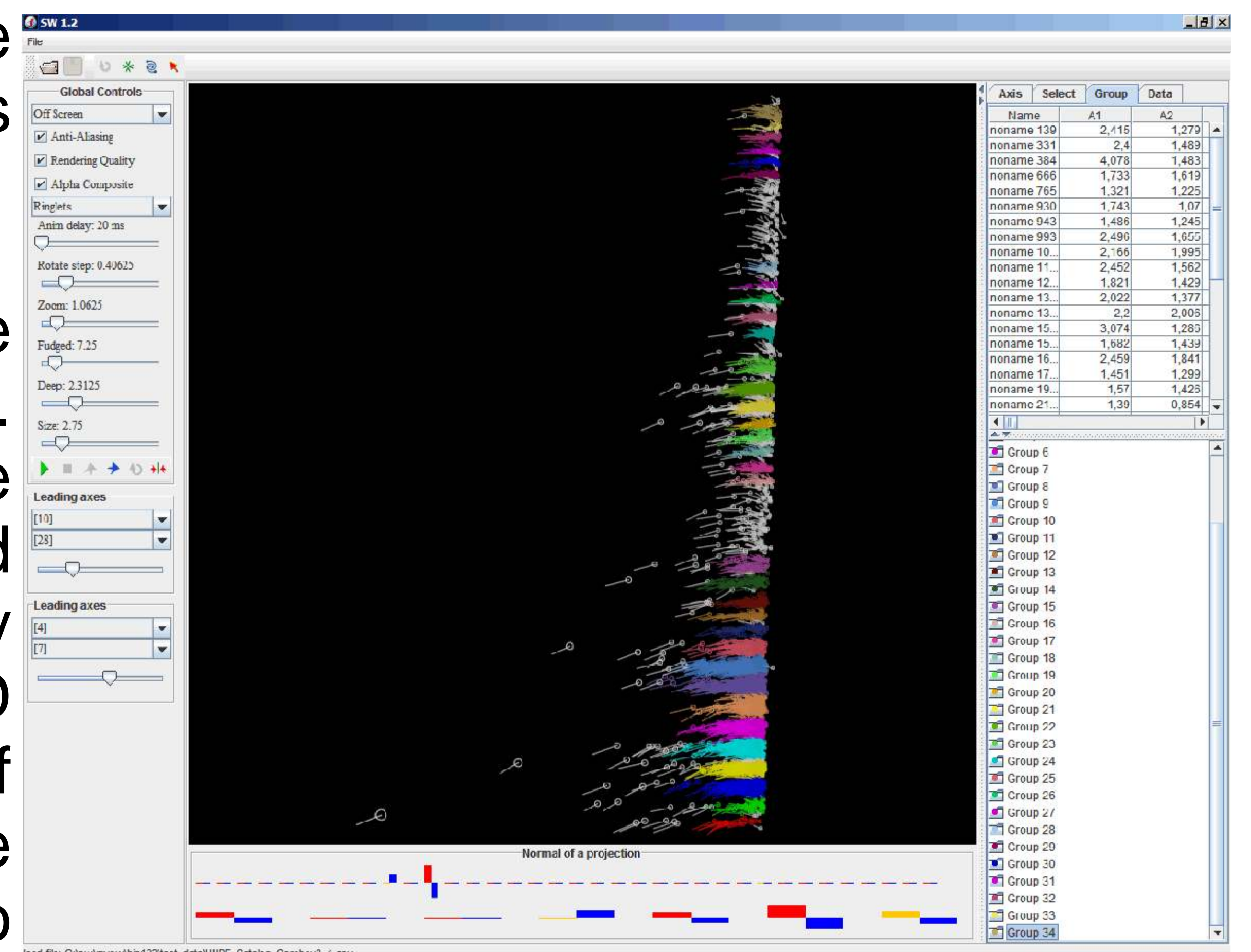
The multidimensional data huge volume analysis problems can be resolved with the help of modern information technologies and, first of all, with the help of the cognitive computer graphics. New methodology must ensure the successful application of software of the visualization of multidimensional data and systems of the visual programming. New procedures and means of work

with the cognitive graphic figures give impetus to the development of fundamentally new algorithmic, software of the visualization of experimental data. The development of cognitive machine drawing for the generation of the visual means of the content of the contemporary bases of given, system archives and the data banks is possible.



On the basis of the cognitive graphics concept, we worked out the **Space Walker** system for visualization and analysis. The system dynamically generates three-dimensional projections of the multidimensional data in the form of mobile three-dimensional images on the computer screen. It allows to train and to aggravate intuition of researcher, to raise his interest and motivation to the creative, scientific cognition, to realize process of dialogue with the very problems simultaneously.

The **Space Hedgehog** system is the next step in the cognitive means of the multidimensional data analyze.



The technique and technology cognitive 6D visualization of the multidimensional data is developed on the basis of the cognitive visualization research and technology development. The Space Hedgehog system allows direct dynamic visualization of 6D objects. It is developed with use of experience of the program Space Walker creation and its applications.

Let us emphasize that in the form of cognitive means the content of terabyte multidimensional massifs can be represented and analyzed.