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Los Alamos National Laboratory examined meteorite fragments originated from the atmospheric explosion over Chelyabinsk, Russia 02/15/2013. Nondestructive tests -proton and neutron radiography of two fragments have been performed in order to examine its structure. The results can provide valuable information about the near-Earth Apollo asteroids group, from which the meteor originated. Classic Inverse Abel Transform method allows for density and shape reconstruction of axially symmetric objects from their radiograms. The generalization of Abel transform, proposed by the authors at previous AMS Sessions allows for similar investigation of non-axially symmetric objects. Reconstruction of a 3D object from its 2D radiogram requires an additional assumption to make it unique; in case of missing axial symmetry, other information has to be provided. Sufficient information makes this type of reconstruction unique. In complex cases like the meteor fragments examination, estimated assumptions lead to the results which are also known within an experimental uncertainty. A short summary of the method and its validation on a radiogram of a steel sphere with known dimensions and density is presented. After this, an application of the method to the Chelyabinsk Meteorite images is discussed. (Received February 07, 2014)