

# Search for new very low metallicity galaxies in the Local Universe, study of their diversity and speculations on its origin

Pustilnik S.A., Egorova E.S., Kniazev A.Y., Perepelitsyna Y.A., Chengalur J.N.

**Simon Pustilnik**

Special Astrophysical Observatory of the Russian Academy of Sciences, Russia

We define Very Low Metallicity (VLM) dwarfs with  $Z_{\text{O}}/30 < Z(\text{gas}) < Z_{\text{O}}/20$ , and eXtremely Metal-Poor (XMP) dwarfs, with  $Z_{\text{O}}/50 < Z(\text{gas}) < Z_{\text{O}}/30$ . We overview an on-going project to search for new XMP/VLM galaxies in the Nearby Void Galaxy sample and its preliminary results. To date we found 17 new XMP and VLM void dwarfs in addition to 12 XMP and VLM objects found earlier in the Lynx-Cancer void. Examination of main properties of all known 27 XMP and 48 VLM galaxies gives us a clear evidence for their diversity. This, in turn, should be connected with different evolutionary paths of studied galaxies. We separate several prototype XMP and VLM dwarfs and their probable counterparts in the whole sample. Based on the known properties of each prototype XMP or VLM group, such as mass fraction of stars, degree of metallicity deficiency, colors of the oldest stellar population, interaction status, type of environment, and others, we discuss their most probable origin and evolutionary path.