Substructures Revealed from the World of Very Metal-Poor Stars

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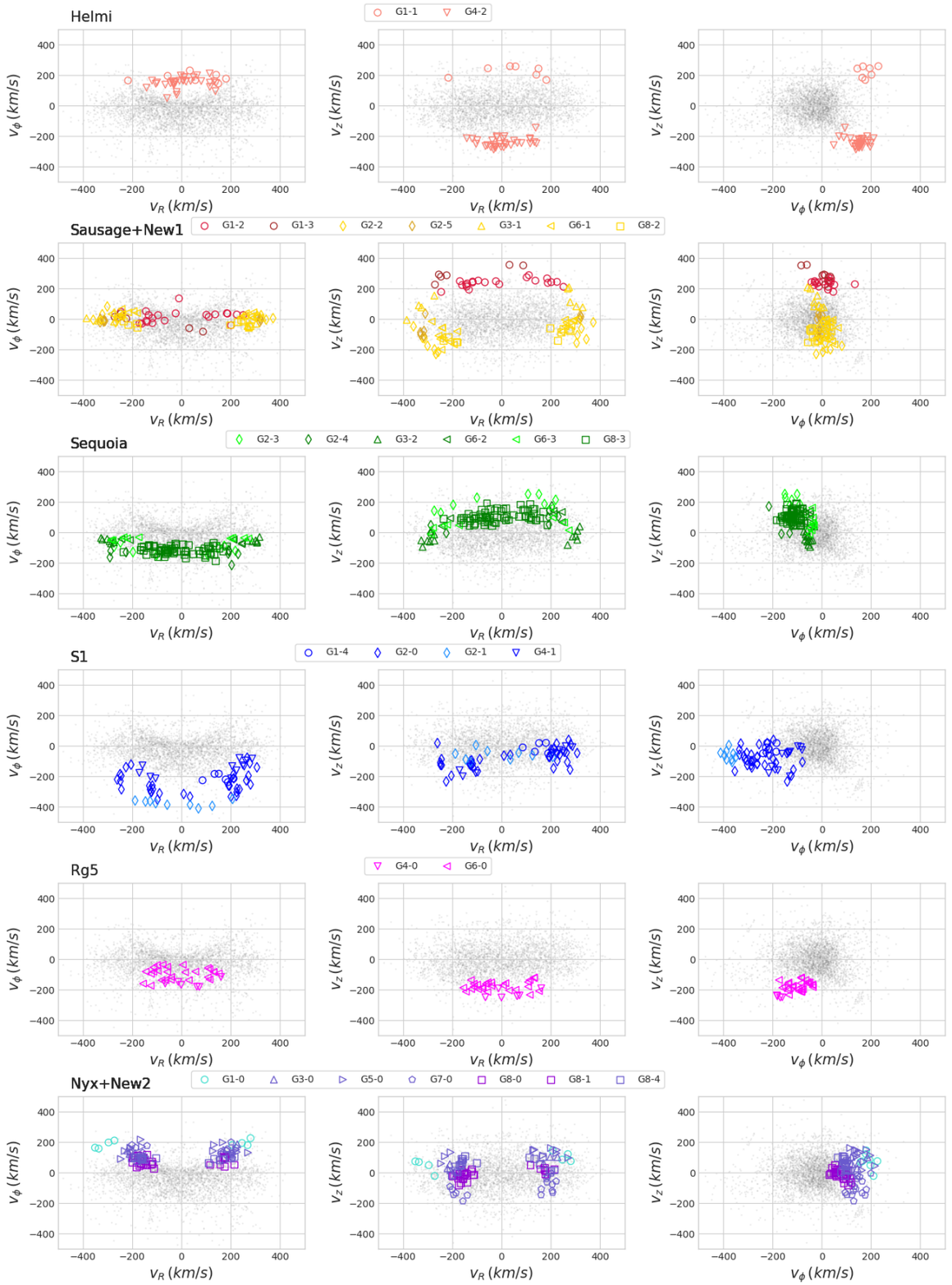
Data: The Largest Bright Very Metal-Poor Star Catalog, LAMOST DR3 VMP ([Fe/H] < -2)

Method: StarGO (neural network unsupervised learning based on self-organizing map)

https://github.com/salamander14/StarGO

Result: We are able to recover almost all of the existing substructures with ~ 3000 VMP stars, because Clusterings are more significant in the VMP region.



Dynamical Relics Associated with R-process Enhanced Stars from Mergers of Small Galaxies

S1, Rg5, and Sequoia are found to be dynamically associated with four r-II stars from the literature. S1 and Rg5 have mean metallicities below -2 (Myeong 2018). Their progenitors are very likely **low mass dwarf galaxies**, which are contaminated by **neutron star merger** events.