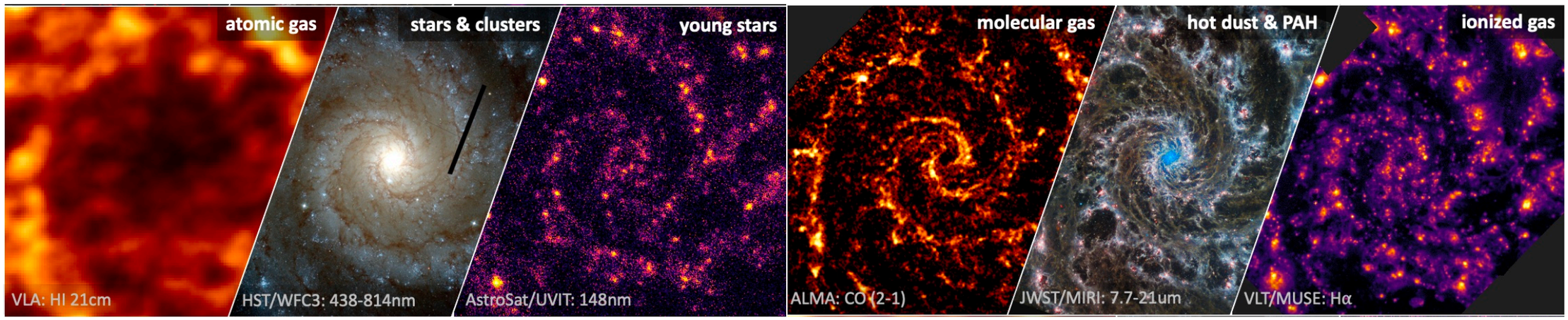
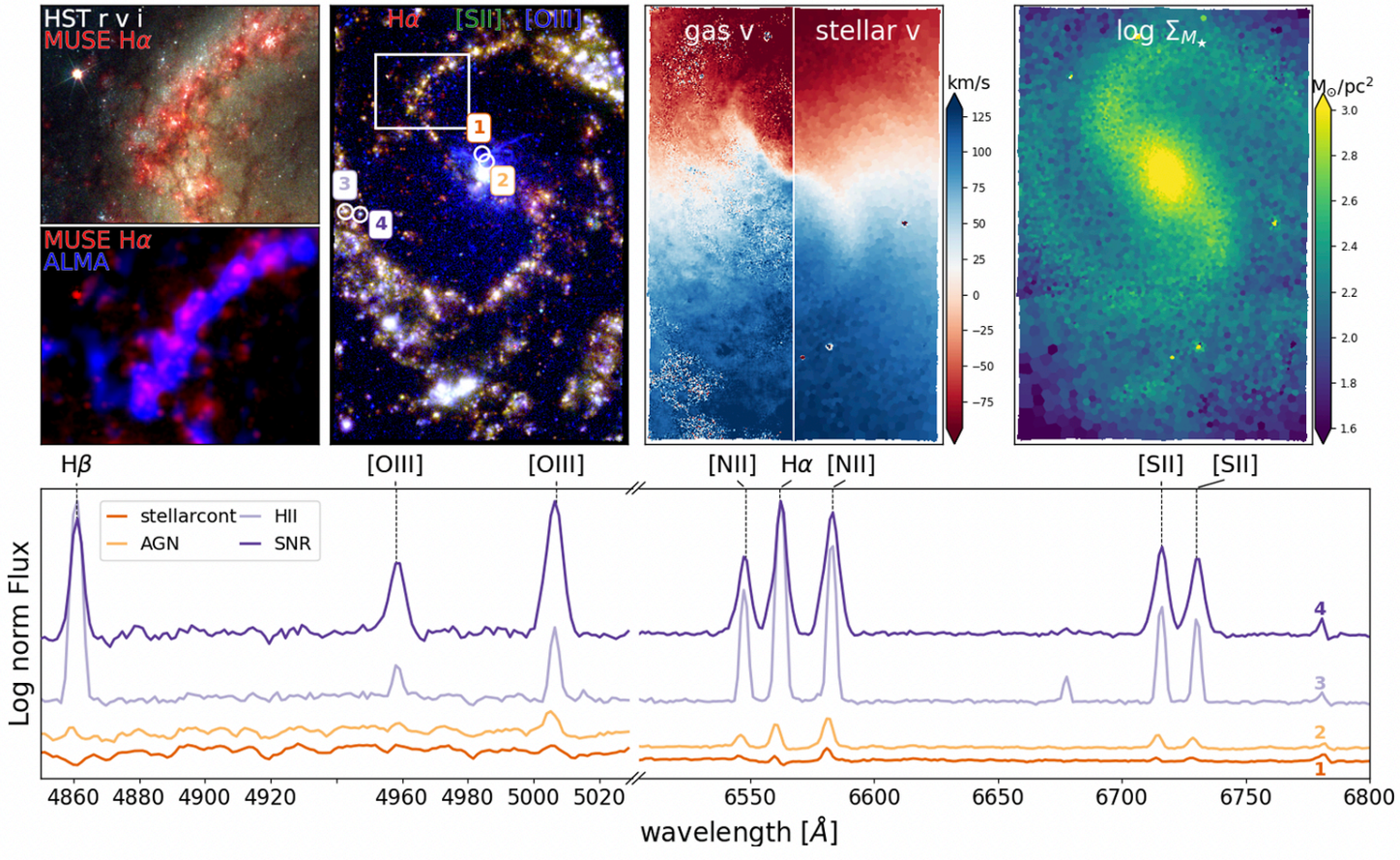
Dimensionality Reduction of the PHANGS MUSE dataset



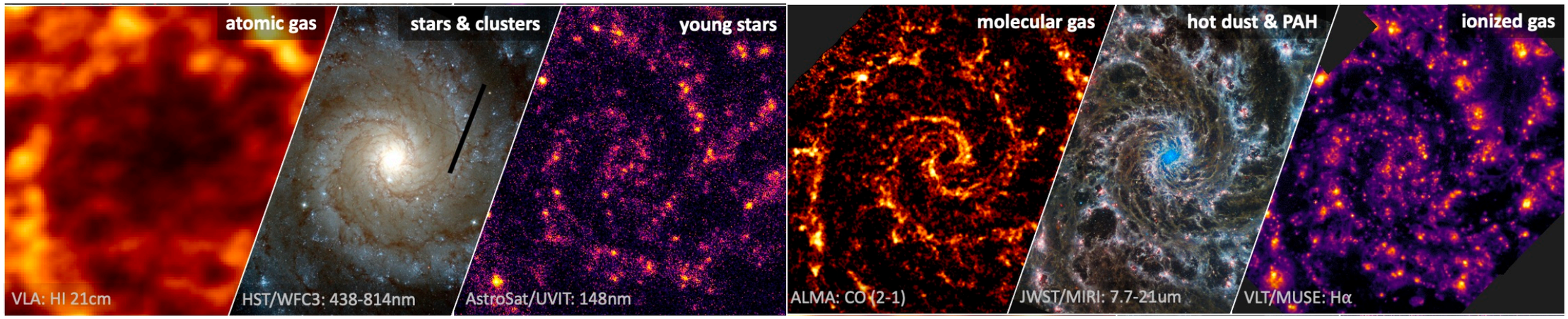
By J. Sun

PHANGS MUSE:

- 19 galaxies mapped with the optical IFS on VLT, MUSE.
- Each galaxy has between 10^6 to 10^7 spectral pixels with a full optical spectrum.

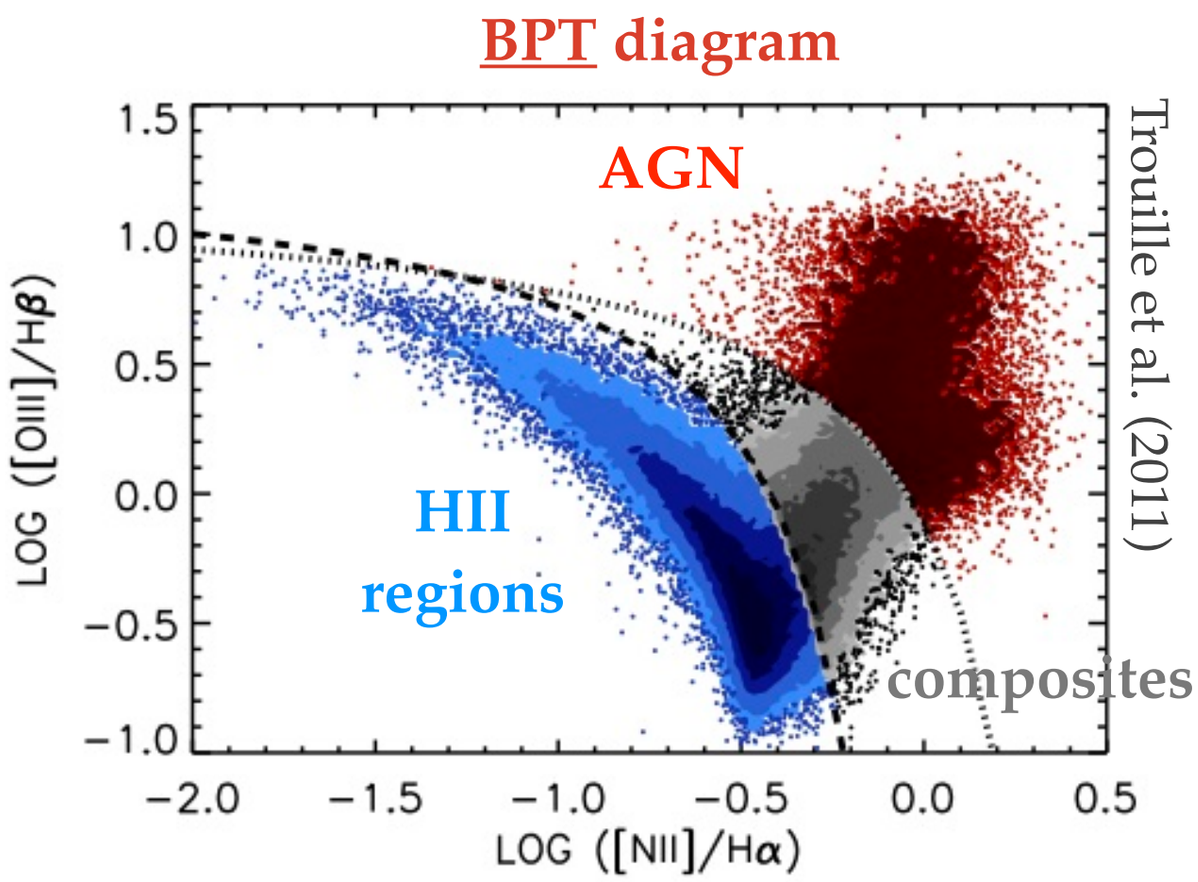


Dimensionality Reduction of the PHANGS MUSE dataset



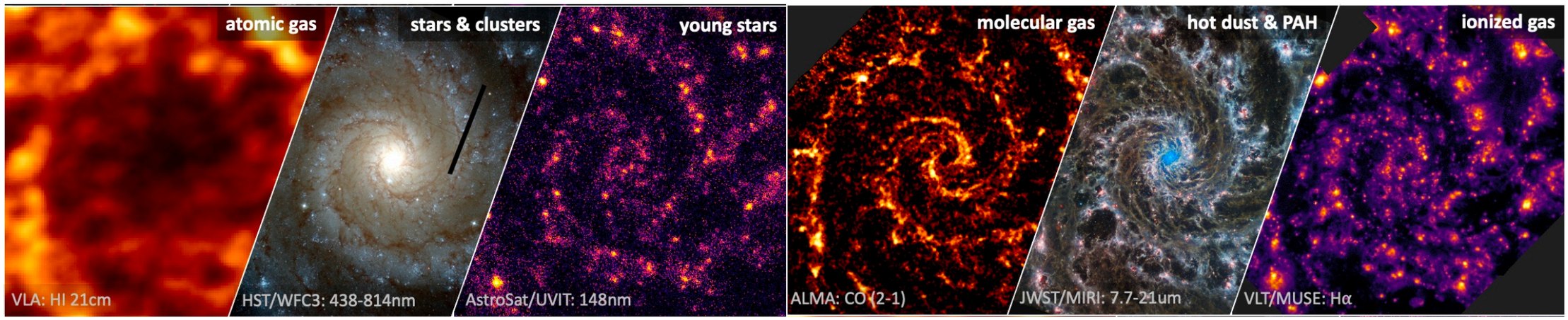
By J. Sun

Project 1:
Apply dimensionality reduction and clustering algorithms on the derived maps from PHANGS MUSE to find a generalized BPT diagram.



Trouille et al. (2011)

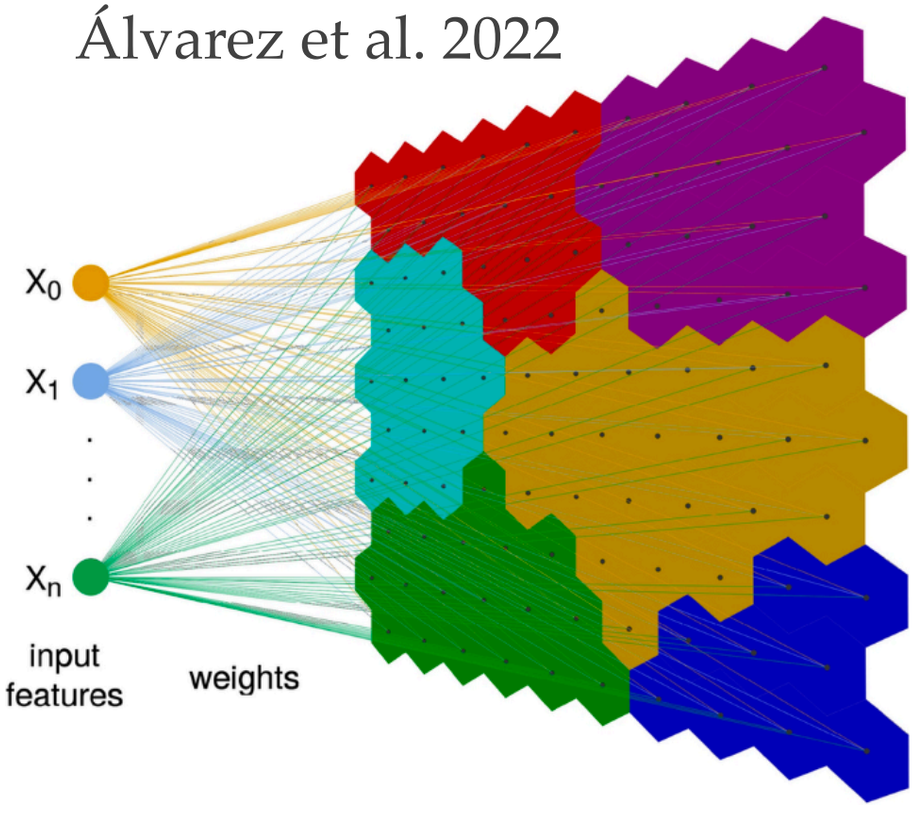
Dimensionality Reduction of the PHANGS MUSE dataset

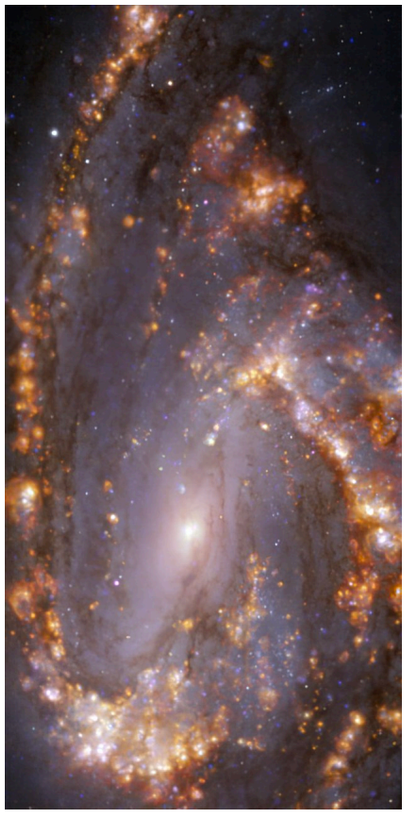


By J. Sun

Project 2:
Use Self Organizing Maps (SOM) to map the spectra into a 2D plane, thus obtaining an efficient dimensionality reduction of the spectral cube onto two dimensions.

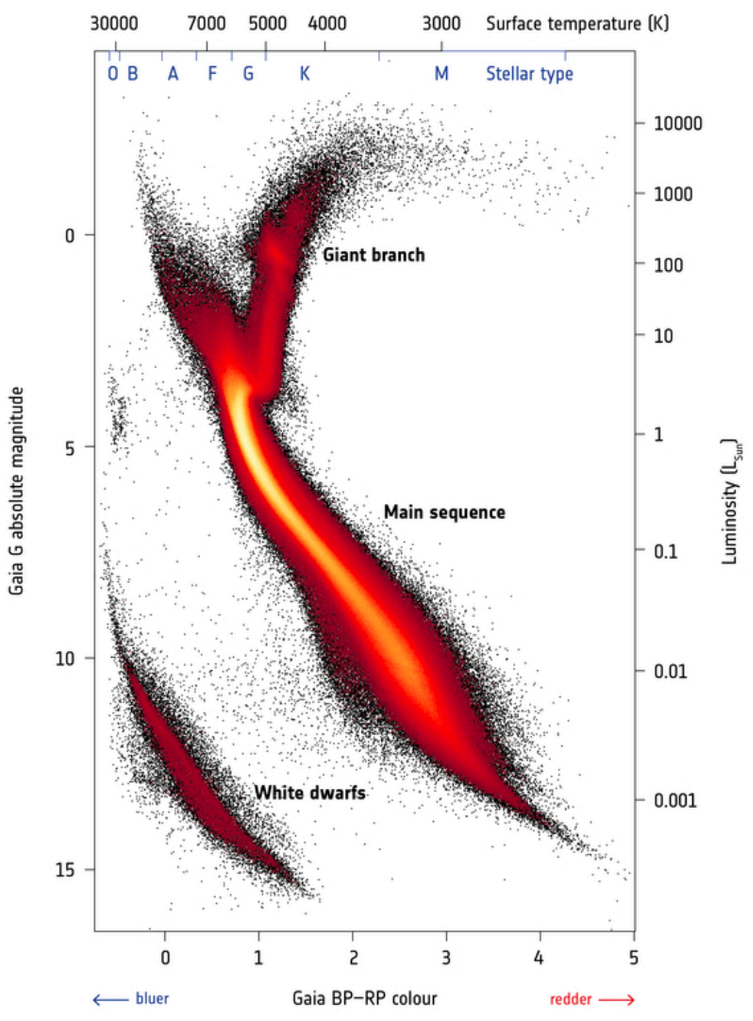
Álvarez et al. 2022





Project 3: Apply dimensionality reduction of white dwarf spectra from SDSS

Project 3:
Apply dimensionality reduction and/or clustering algorithms to thousands of white dwarf spectra from SDSS.



Fussilo et al. 2015