A New Map of our Galaxy in Atomic Hydrogen Reveals its Flocculent Nature

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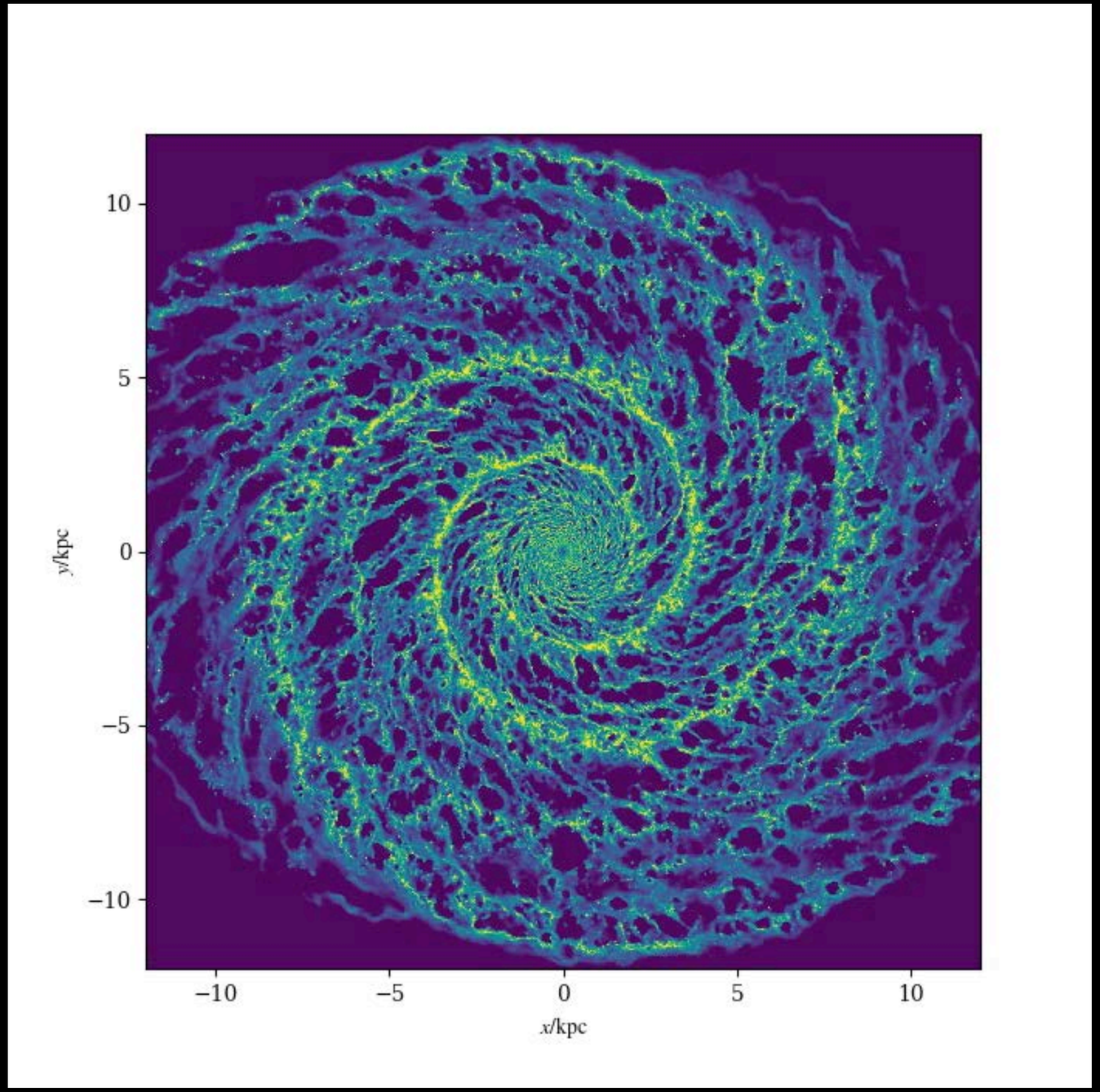
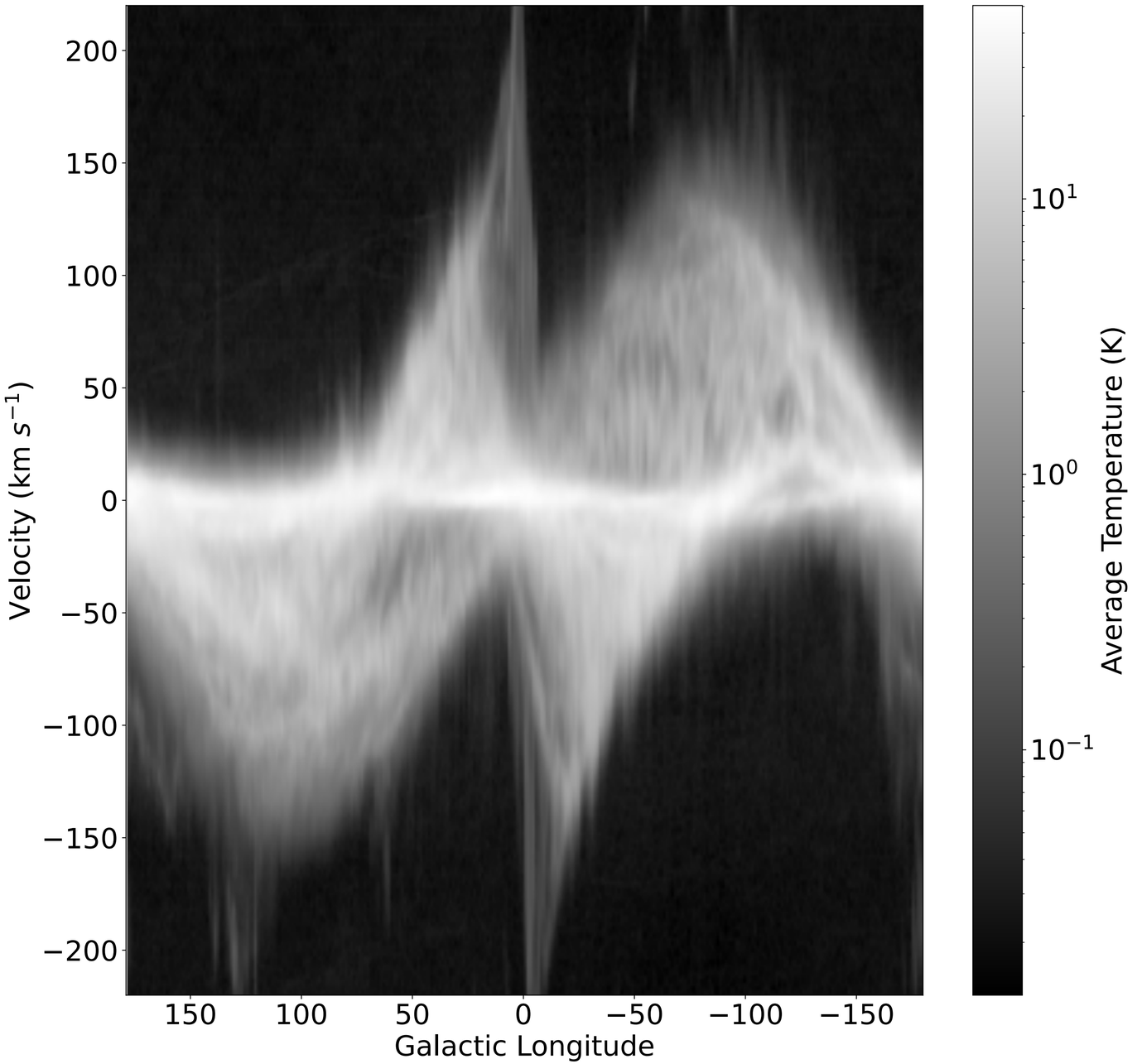
Simulated Gas Map



Animation / Simulation
Credit: Alex Pettitt

What we see in the Milky Way

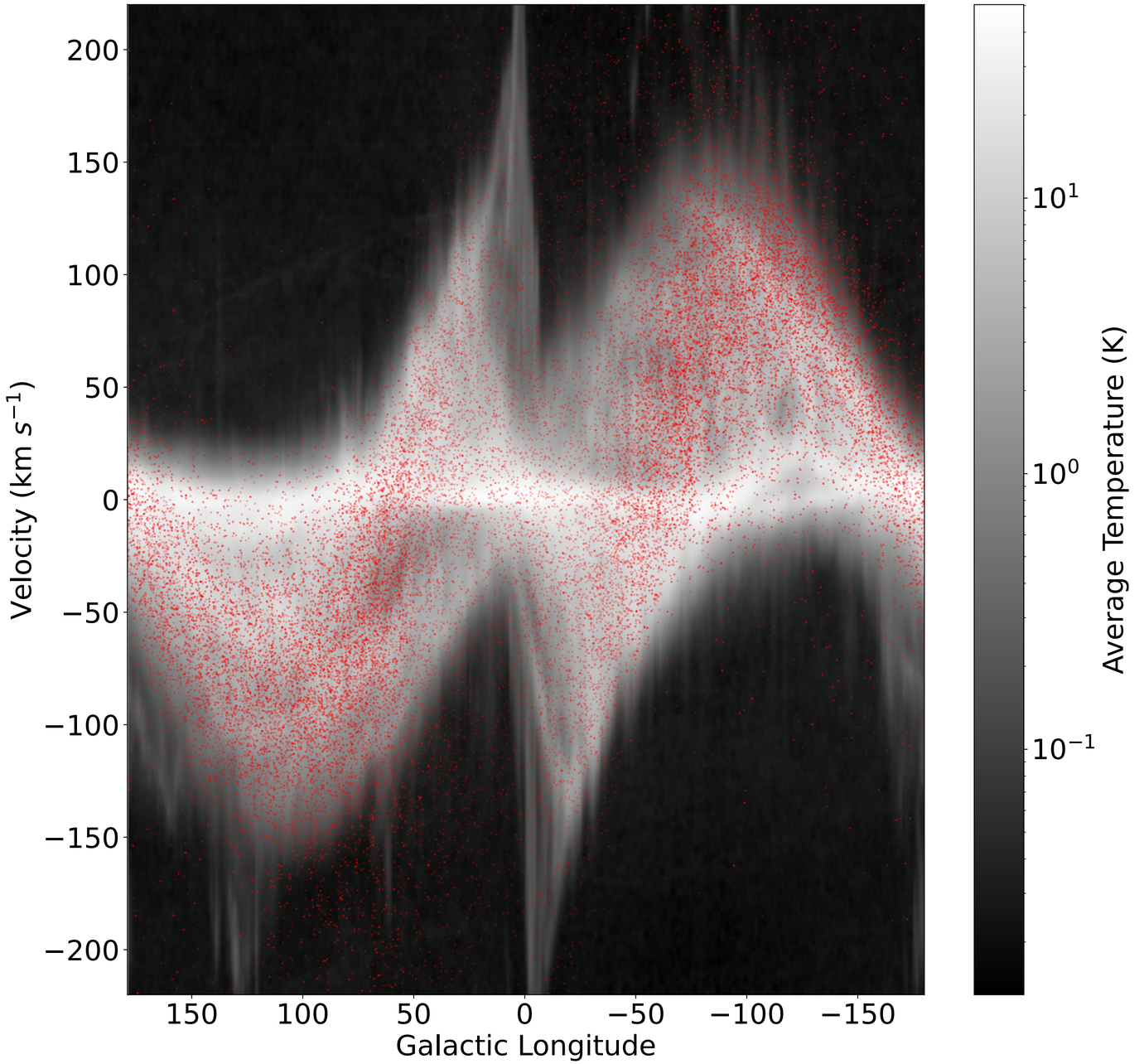
- We live inside the disk, so there's no top down view
- Instead, we can measure the motion of the gas



Data from LAB 21 cm survey Kalberla 2005

Stars Trace the Gas

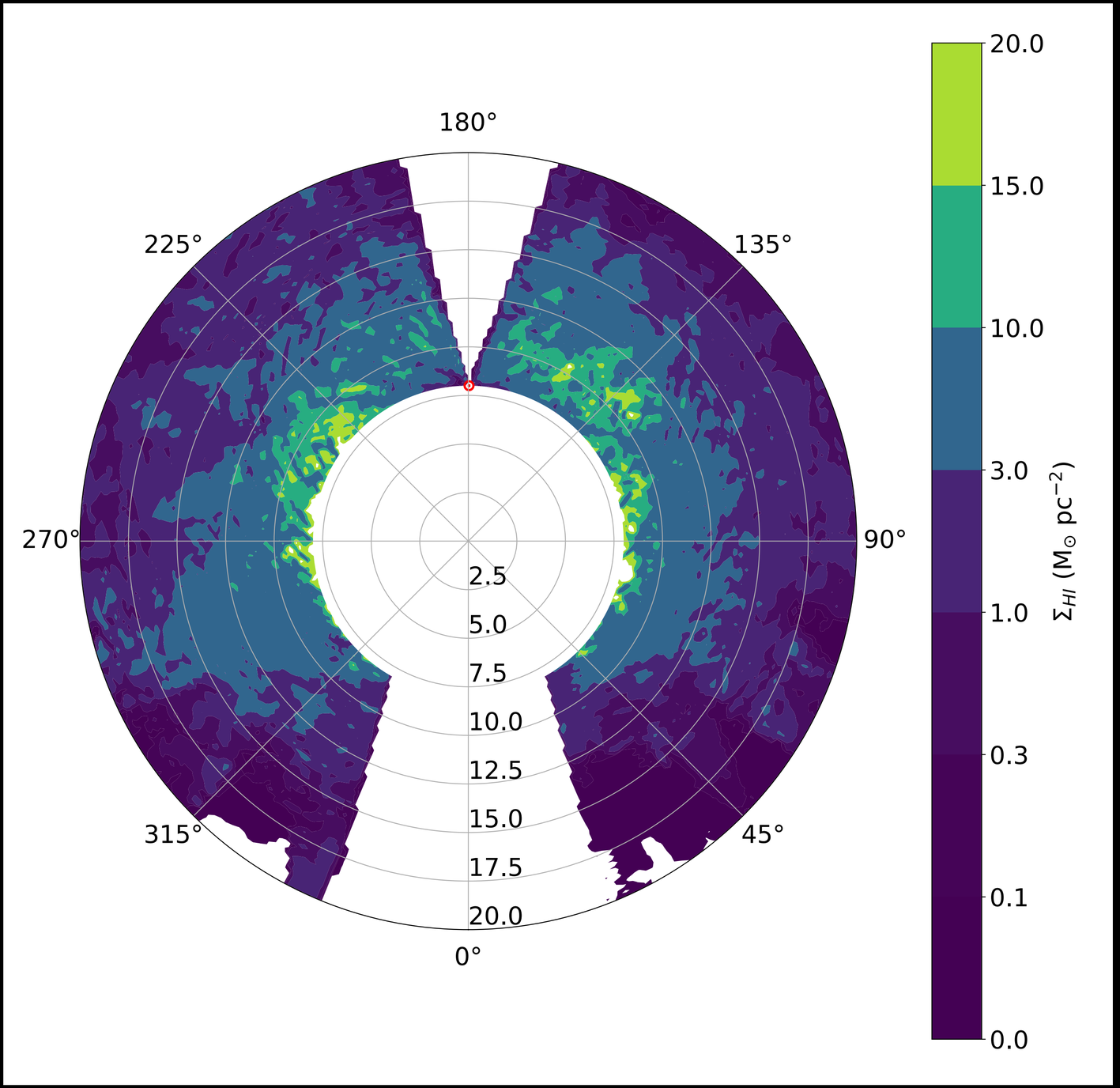
- Young stars in the Galaxy follow similar patterns to the gas
- So, we use their distances to measure the distances to the Galactic hydrogen



Data from LAB 21 cm survey
Kalberla 2005

HI Maps

- Our new, more accurate maps identify spiral structure in the HI disk
- This structure is flocculent compared to maps generated with other methods
- Spiral structure in the gas disk is likely a lot more flocculent then the stellar disk



Conclusions

- We can better understand the Milky Way's Structure
- Allows for characterization of dark matter
- If you have questions, feel free to contact me at craigpe1@msu.edu or 518-524-5579