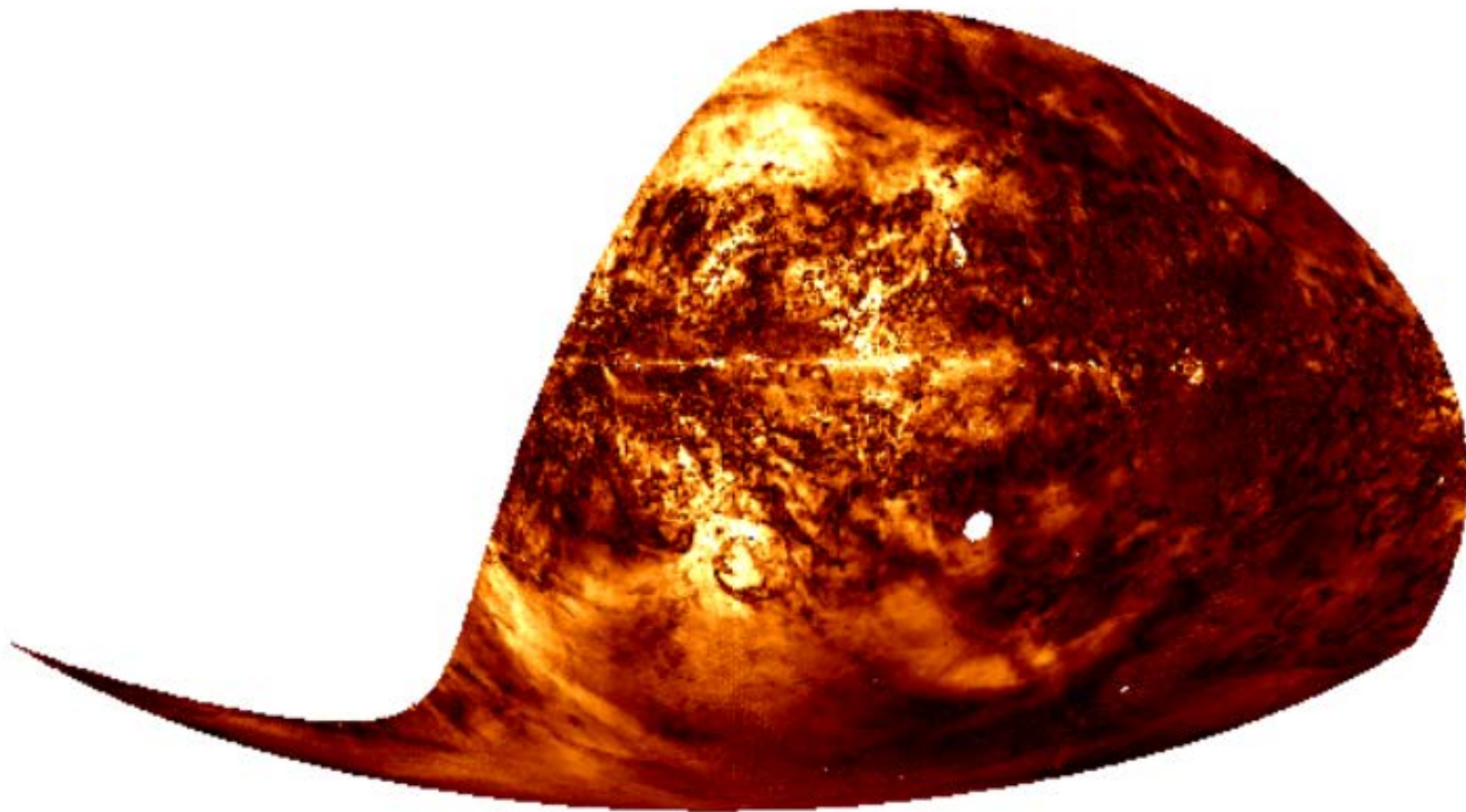




# POSSUM diffuse



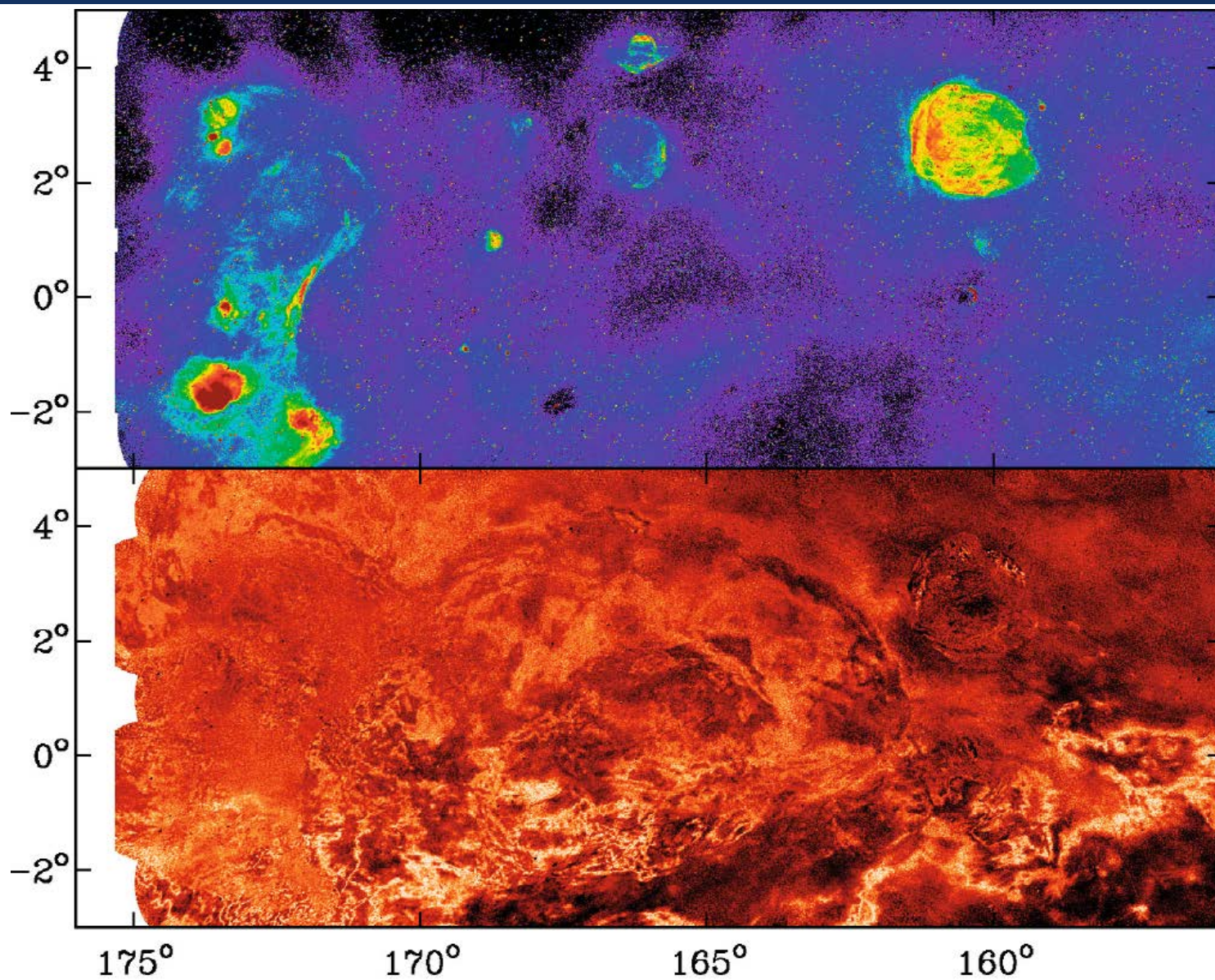
Xiaohui Sun



	Wide	Deep	Diffuse
ISM and its Components	● ●	●	● ● ●
Large-Scale Milky Way	● ● ●		● ●
Galaxies, AGN, Clusters, IGM	● ● ●	● ●	●
Evolution with Cosmic Time	● ●	● ● ●	

**DIFFUSE POSSUM:** The diffuse polarised sky is not well characterised. We know that it does not resemble the total-intensity sky as a result of Faraday rotation in the ISM (see Fig. 3). However, existing data do not permit a comprehensive description of polarisation “objects” because of **poor angular resolution, absence of single-dish data and insufficient frequency coverage.** To address this situation, we propose an all-sky ( $\delta < +30^\circ$ ), wide-band survey of diffuse polarisation that will surpass all existing surveys of the polarised sky, thereby transforming our understanding of the role of magnetic fields in ISM processes. Crucial to this experiment will



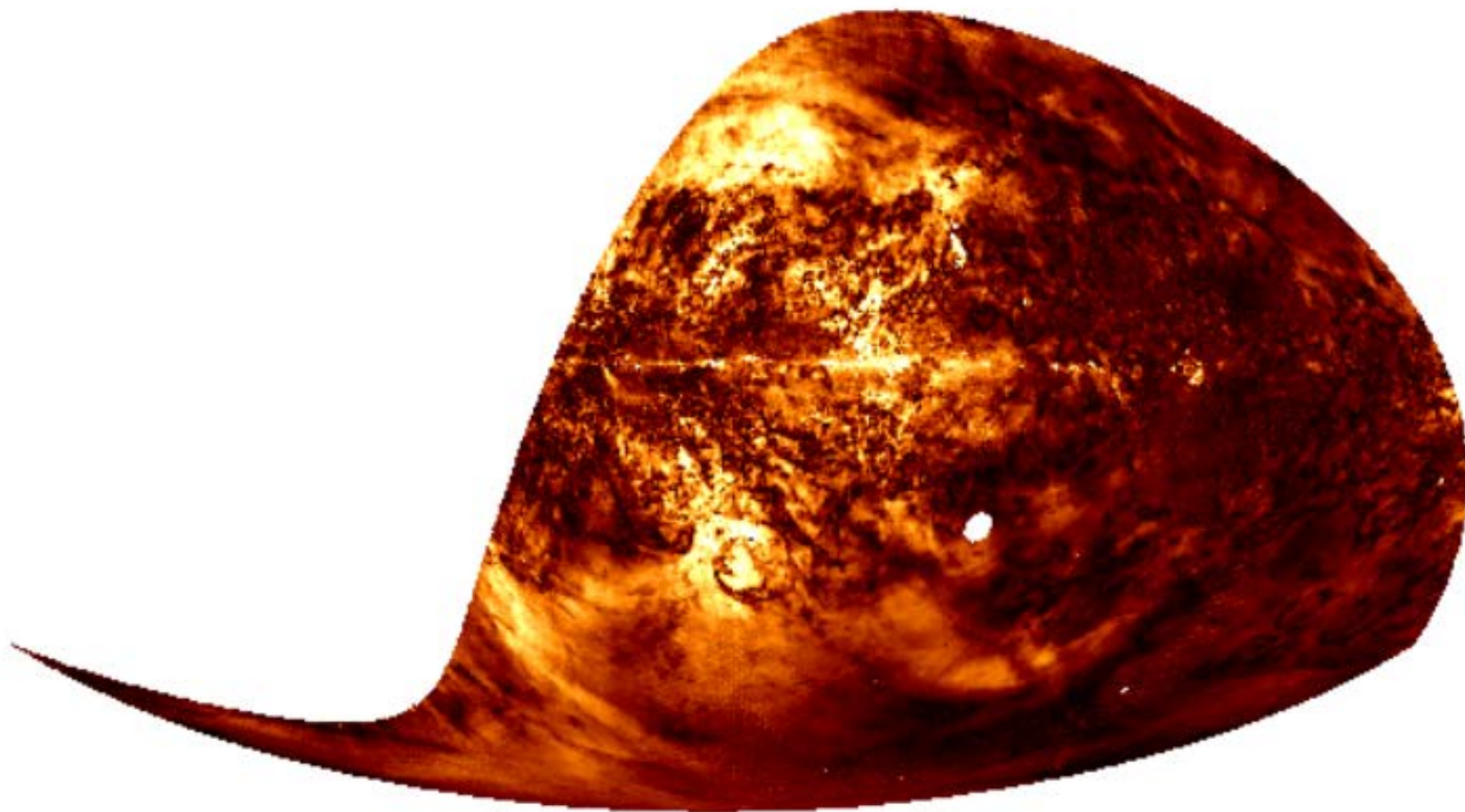


1 arcmin resolution, from CGPS Landecker et al. 2010



- Resolution: arcmin
- frequency coverage:  
800-1088 MHz (EMU), 1152-1440 MHz (POSSUM)
- Single dish data:  
STAPS: 1.3-1.8 GHz, there is an overlap  
*Parkes UWB observations?*

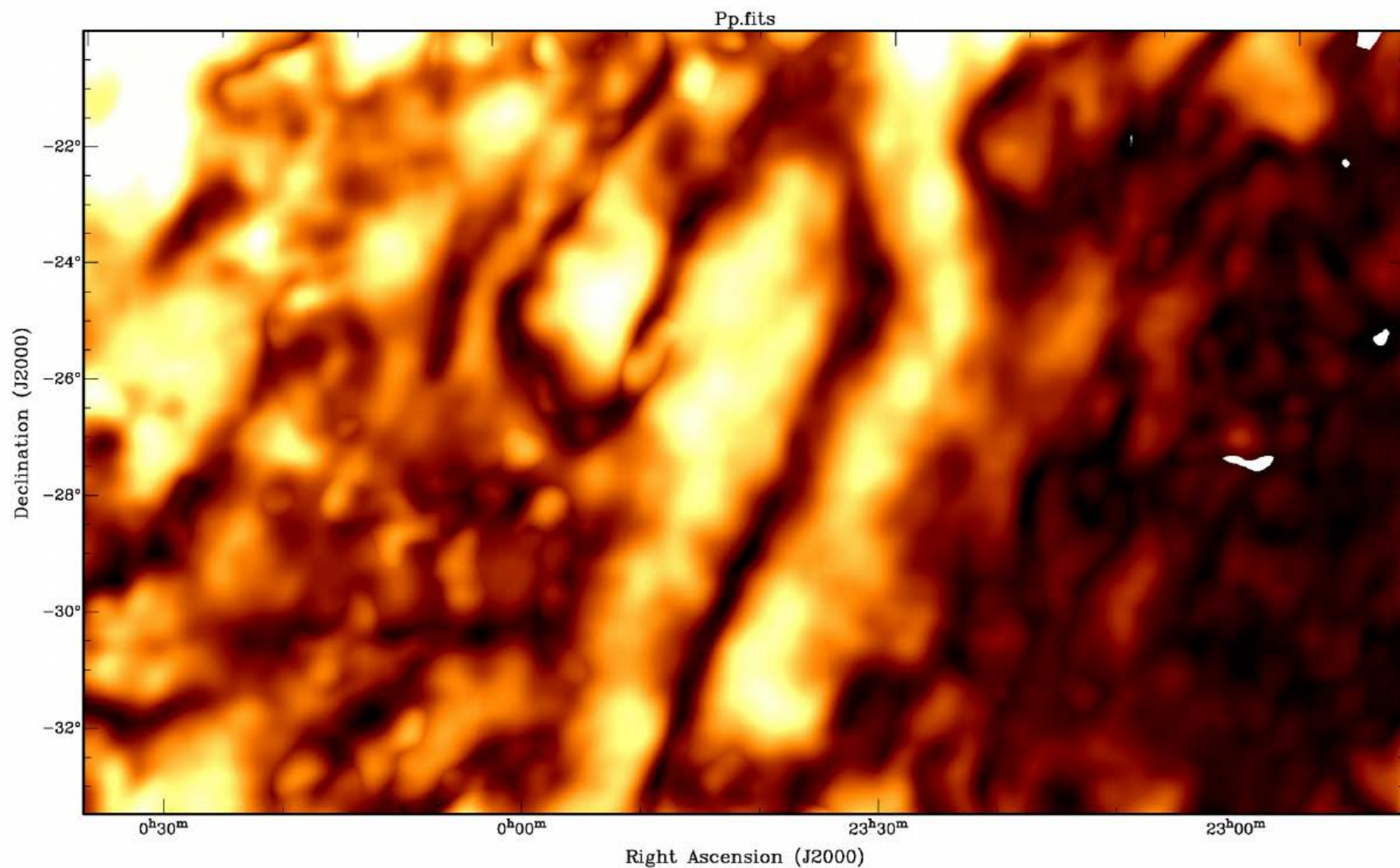




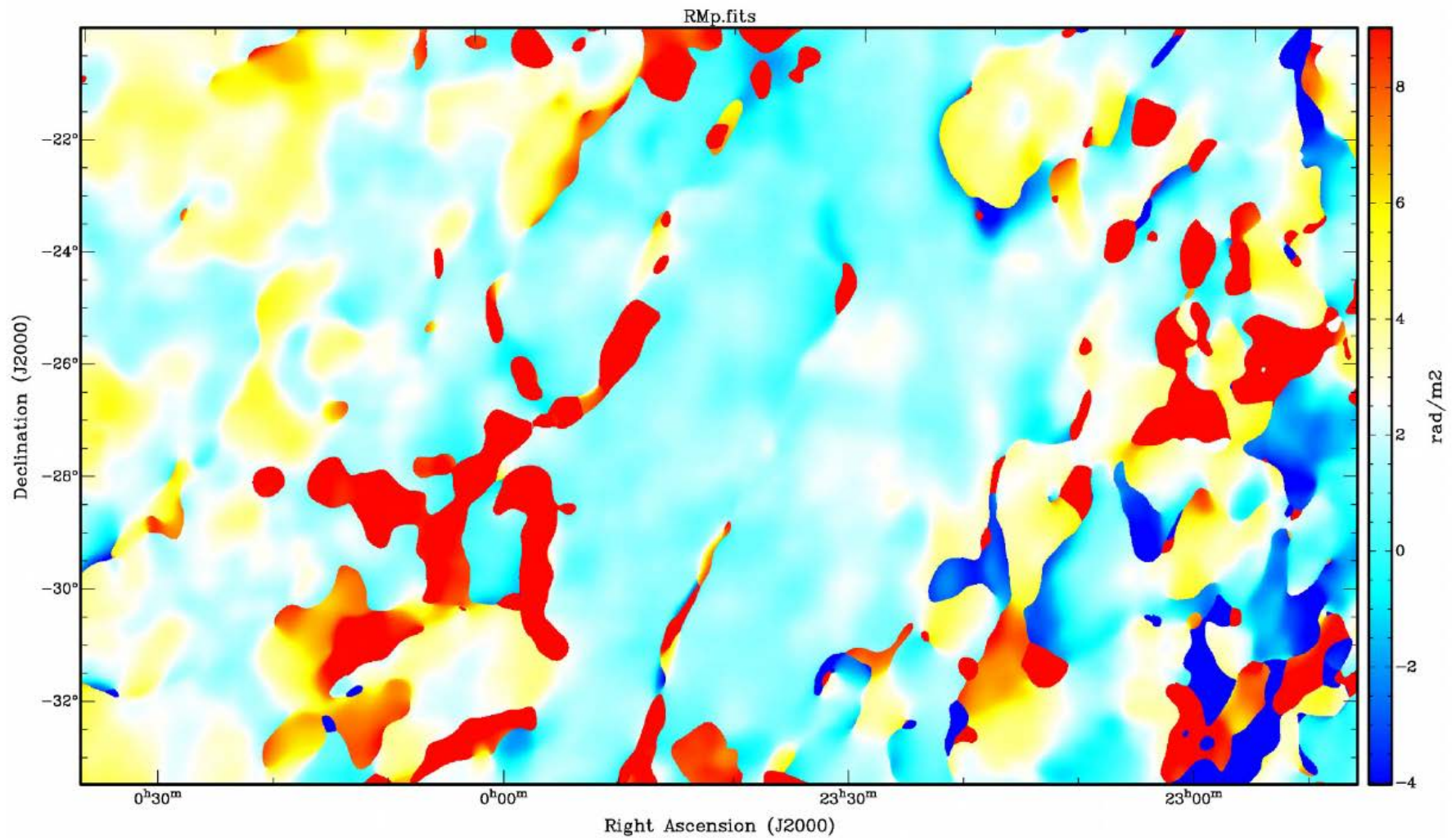
1.4 GHz PI (Sun et al. in prep.)



- **(Re)image to optimize large-scale structures:**
  - uv-tapering, naturally weighting?
  - linmos-like for the moment, anything pmosmem-like?
  - add single dish?











- **(Re)image to optimize large-scale structures:**
  - uv-tapering, naturally weighting?
  - linmos-like for the moment, anything pmosmem-like?
  - add single dish?
- **If feasible, tests can be done at China SKA Regional Centre Prototype at Shanghai Astronomical Observatory**