

Diffuse radio emission in CIZA J0649+18

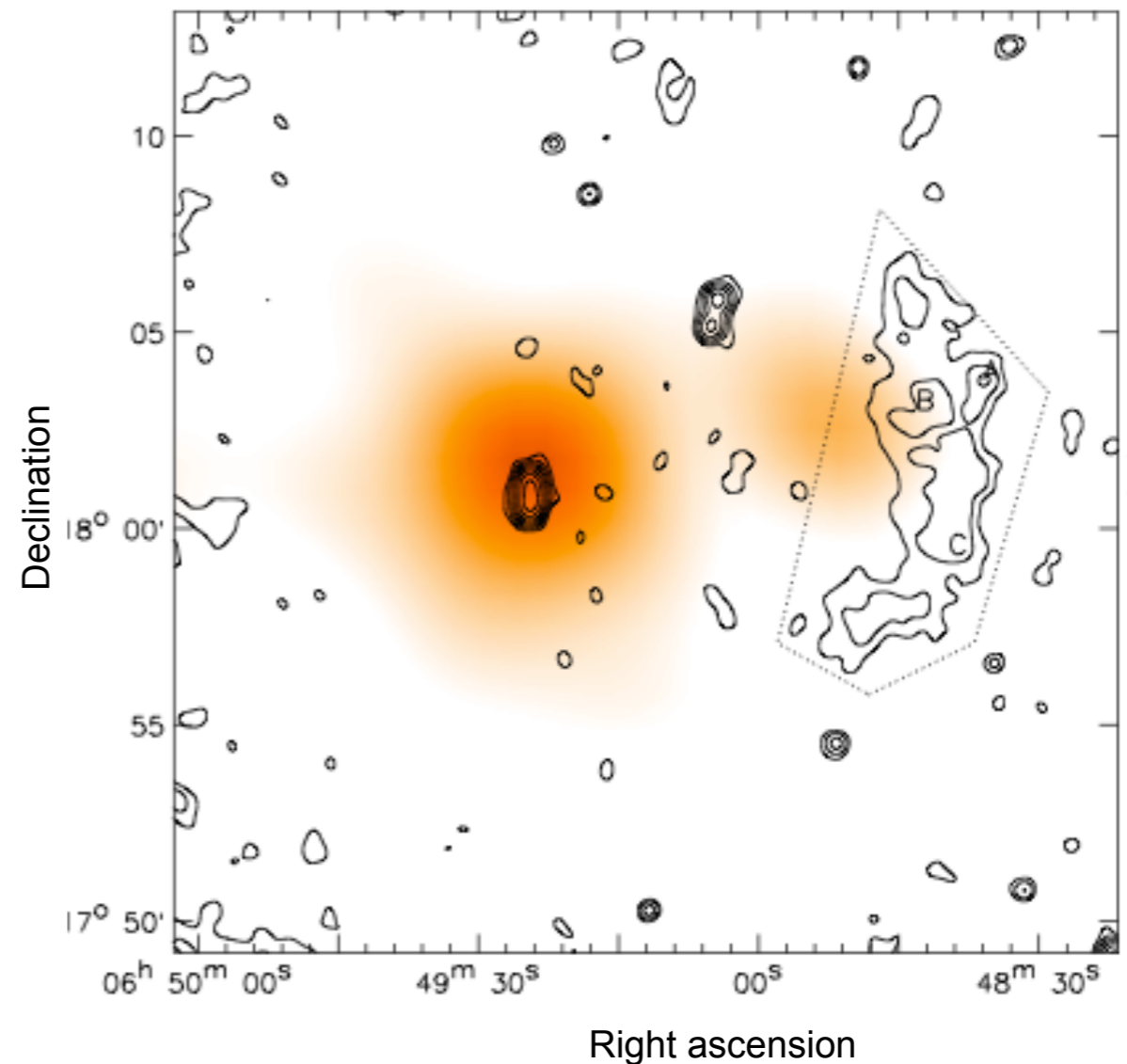
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¹ Thüringer Landessternwarte Tautenburg, Germany

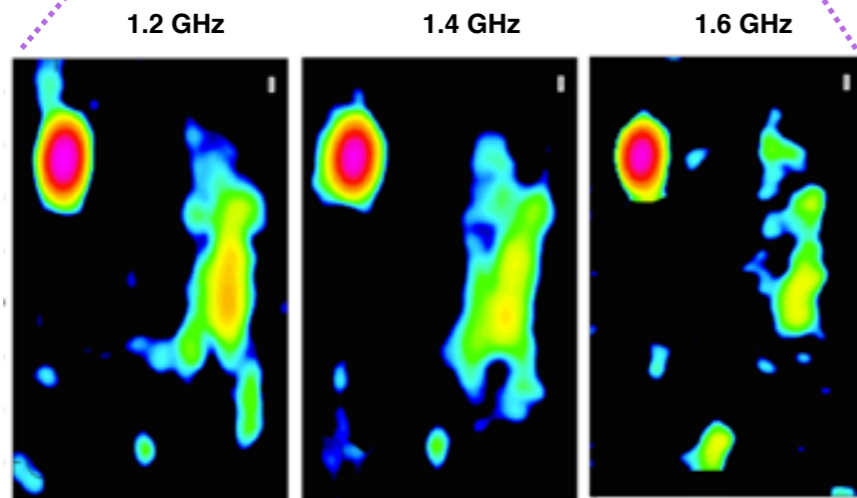
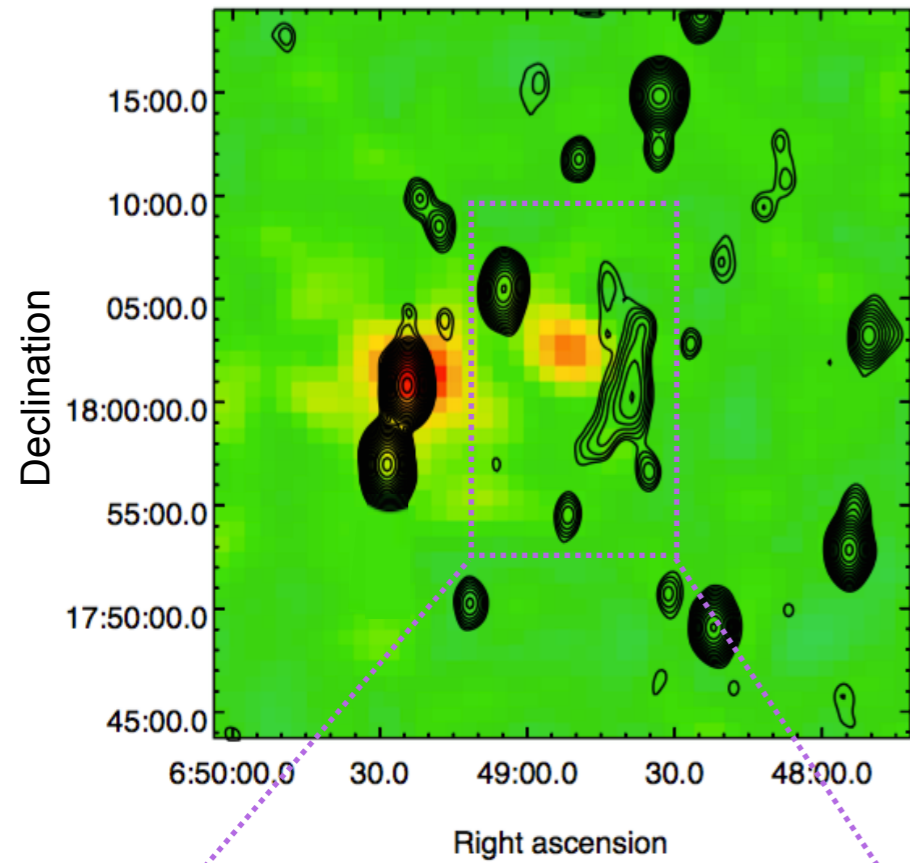
² Harvard-Smithsonian Center for Astrophysics, USA

van Weeren et al. 2011

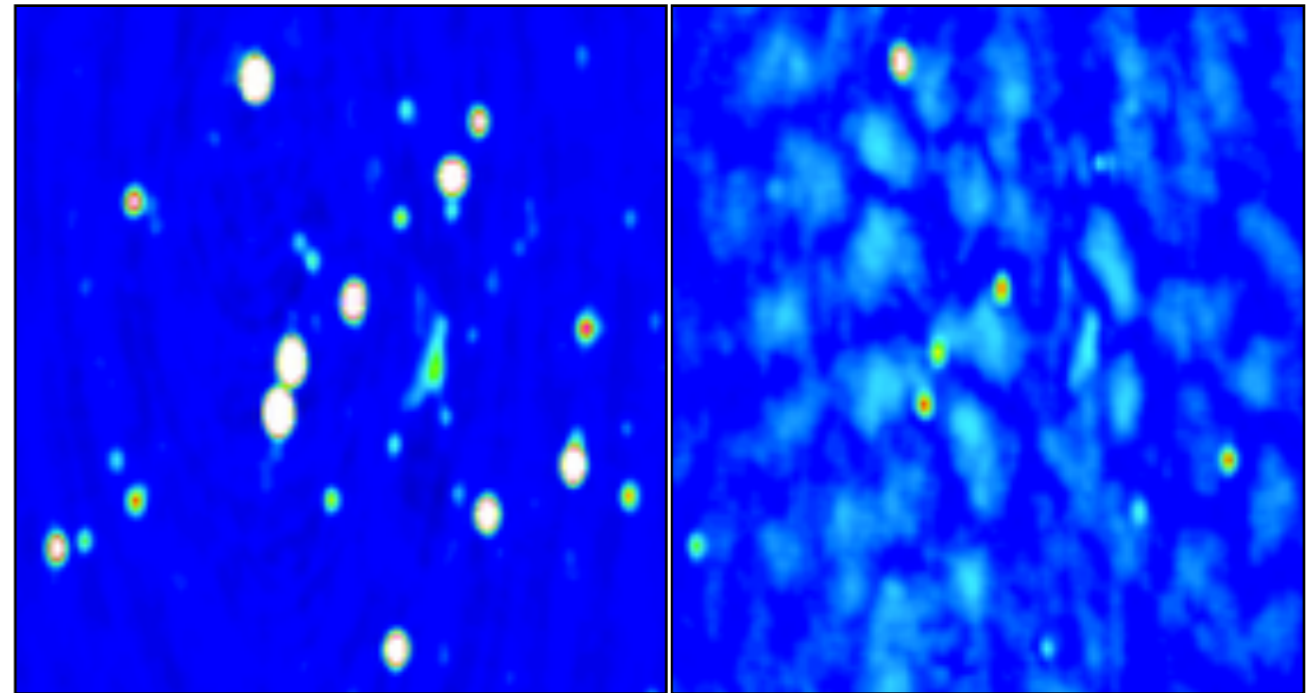
- Cluster is located in the **Zone of Avoidance**
 - radio emission is difficult to understand
- Galactic coordinates : **latitude = 7.66°** and **longitude = 196.57°**
- Diffuse extended source is located at periphery, classified as **radio relic** (van Weeren et al. 2011)
- Radio relics origin and structure is still enigmatic
 - **polarization** : highly polarized (10-60%)
 - **magnetic field** : micro-gauss level



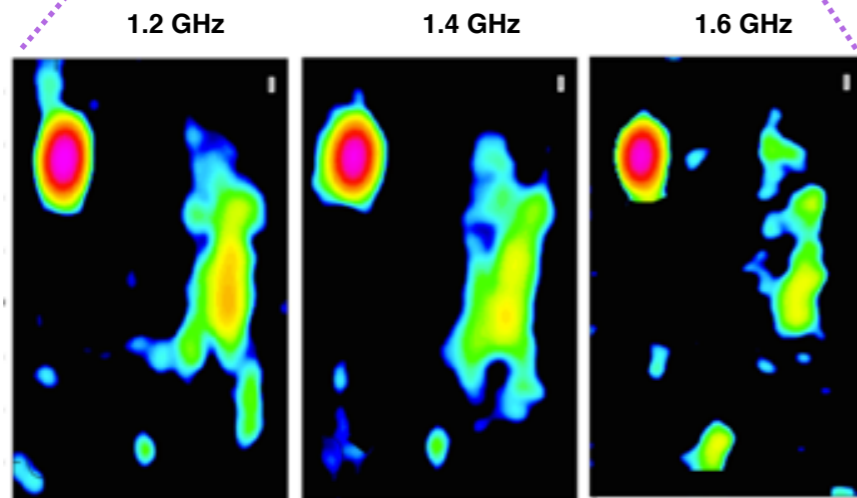
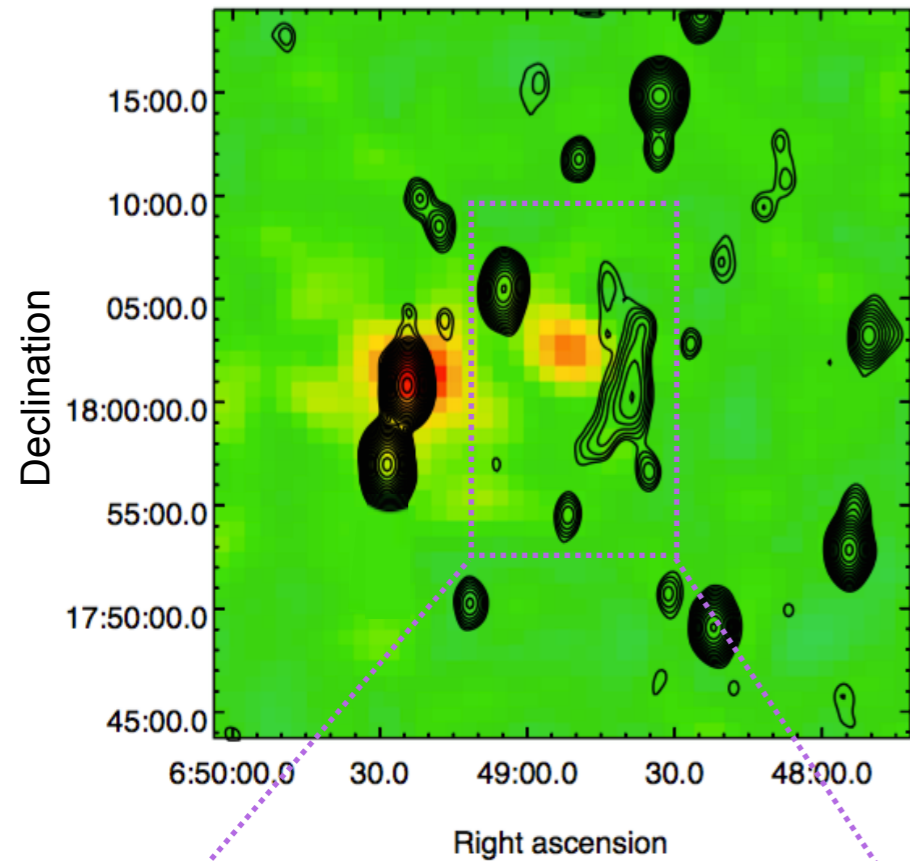
ROSAT X ray(orange) + GMRT 610 MHz (black contours)



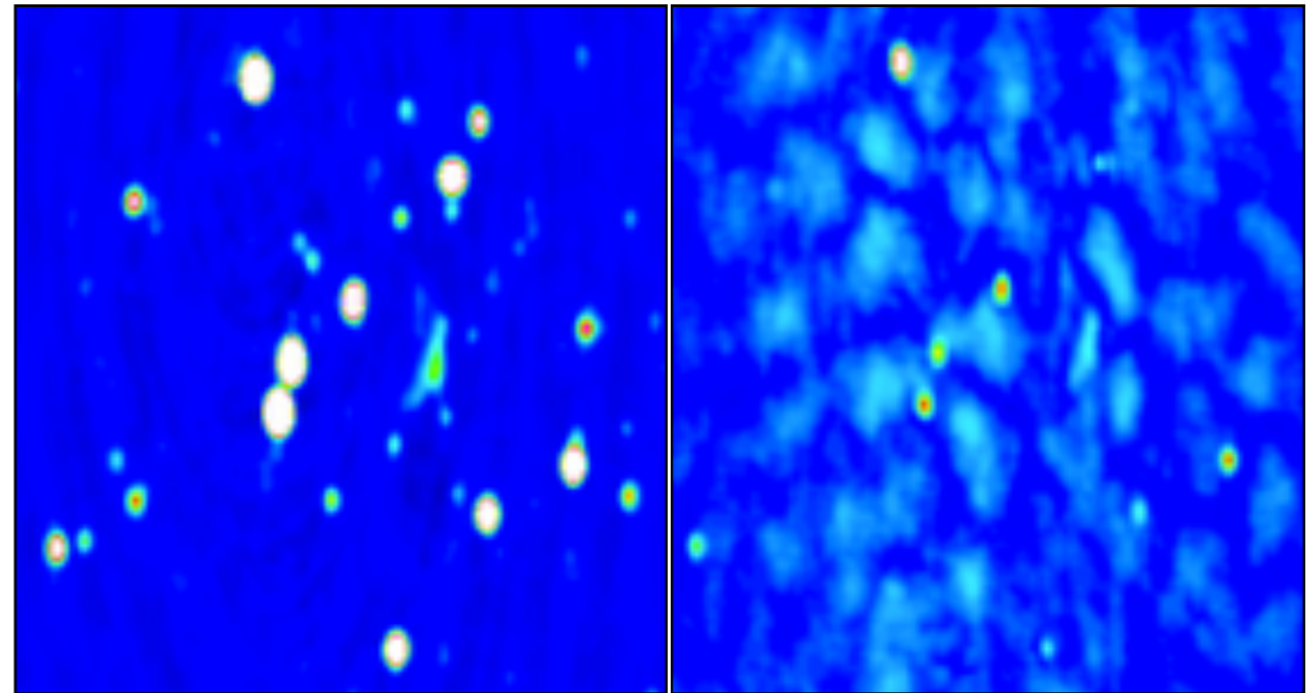
Top- panel : Total intensity image of CIZA J0649+18 - ROSAT + WSRT (black contours starts from $3\sigma_{\text{rms}}$). **Bottom-panel -** zoomed view of diffuse source at three different frequencies



Comparison between the total intensity (left-panel: r.m.s = $\sim 130 \mu\text{Jy beam}^{-1}$) with that of polarised intensity (right-panel: r.m.s= $\sim 60 \mu\text{Jy beam}^{-1}$)



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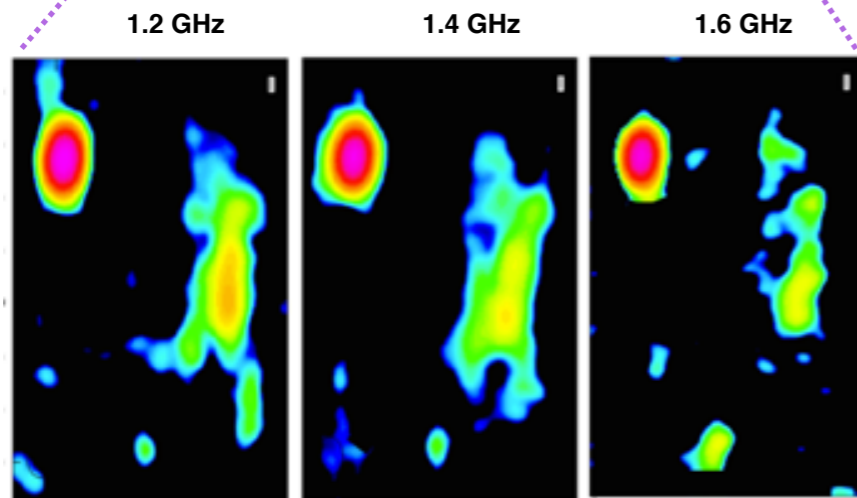
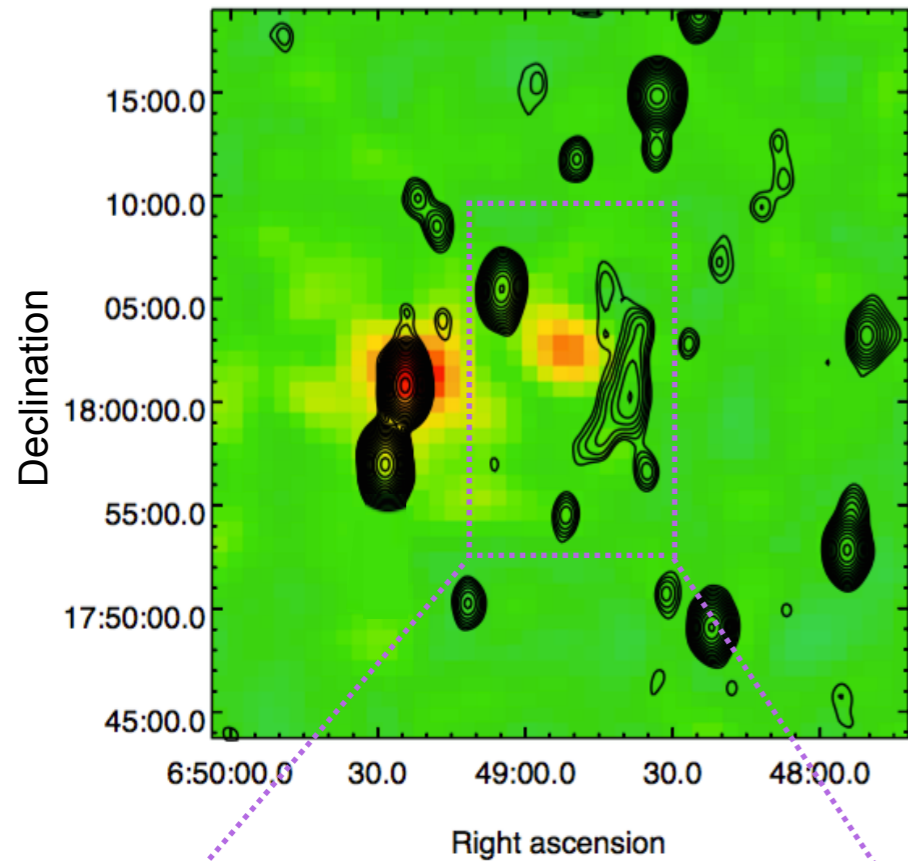
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Nature \longrightarrow Radio relic ?

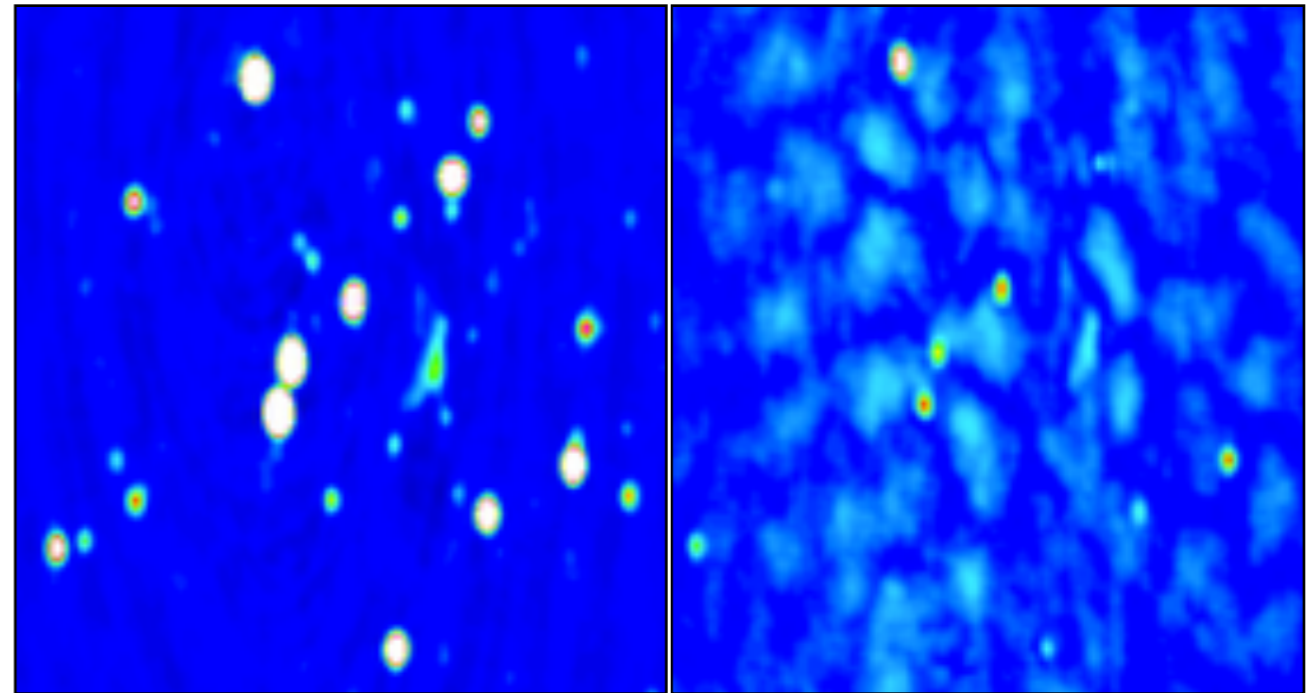
Diffuse source is polarized or not ?

Magnetic field orientation ?

Possible origin of galactic foreground ?



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for answers \longrightarrow poster