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Abstract:

We propose to extend our previous FAST mapping of the Stephan's Quintet to about 0.5 Mpc away to the south. Our previous FAST observation reveals a large diffuse HI emission at the south of SQ, with no clear optical counterparts (down to an r-band magnitude of ~ 25 AB). We also found HI emissions from the edge of the previous observation beams (about 0.3 Mpc from SQ center), implying a continuous emission from a larger scale, which might be a hint of the cold stream. To understand the origin of the diffuse feature, and trace the cold gas at a larger scale, we propose 21.9 hour FAST observation to trace the edge of the extended HI emission of SQ in the south direction to obtain the complete HI emission map, and identify the origin of the diffuse HI emission and find the possible hint of cold stream.