

Q01a The Location of the Western Part of the Galactic Center Lobe

M. Tsuboi (ISAS), T. Tsutsumi (NRAO), Y. Kitamura (ISAS), R. Miyawaki (J.F. Oberlin Univ.), A. Miyazaki (JSF), and M. Miyoshi (NAOJ)

The Galactic Center Lobe (GCL) is a famous peculiar object apparently protruding from the Galactic plane toward the positive Galactic latitude, which had been found in the early days of the radio observation of the Galactic Center (GC). The peculiar shape has been expected to have some relation with historical events in the GC, for example, the large explosion making “Fermi Bubble”. However, the issue whether the GCL is a single large structure located really in the GC region has not yet solved conclusively. In the previous observations, the silhouette against the low frequency emission was found only in the western part of the GCL (WPGCL). This suggests that the part is located at least on the near side of the GC region. On the other hand, the LSR velocity of the radio recombination line was reported to be $\sim 0 \text{ km s}^{-1}$. These results alone cannot determine the real position on the line-of-sight. The WPGCL can be just in the near side area of the GC region or can be neighboring us. In order to distinct these possibilities, we compared these results with the visual extinction map toward the GC and found that the distribution of the visual extinction larger than 4 mag clearly corresponds to the low frequency silhouette of the WPGCL. Therefore the WPGCL must be located at most within a few kpc from us and not in the GC region. In the case, the WPGCL would be a giant HII region in the Galactic disk.