Fig1. Distribution of the 921 OH maser sources detected with ATCA at 1612 MHz. 774 (84.0%) of them are confirmed to be evolved stars (ES), with 407 maser sources exhibiting double peak spectra whose centre velocity indicates the systematic velocity of the circumstellar envelop. Here we assume these 407 maser sources to be OH/IR stars. The area surrounded by green lines is the SPLASH field. The OH maser sources inside of the yellow square was used for our statistical analysis.

Fig2. Toy model of a Galactic maser distribution constructed to compare with the sky distribution of the observed masers sources.

Fig3. Schematic work flow to determine a scale height of the OH maser sources along Galactic latitude. We used Kolmogorov-Smirnov test (K-S test) for evaluating the probability that the each probability density function comes from a same population. The models having p-value from K-S test that is more than 0.77 were considered good models.

Fig4. P-value distribution in the K-S test. High (>0.77) P-value is seen only in the scale height range between 150 pc and 250 pc. A unique peak of P-value is seen around the point of the scale height and the Galactic radius to e 200 pc and 19 kph, respectively.

Fig5. Probability of an OH maser source lifetime in the case where all the 283 observed masers have survived over 22 years.

Fig6. Distribution of OH maser sources in the Galaxy, which is simulated from our best fit model (R = 19 kpc, SCALE HEIGHT = 0.2 kpc). The number of simulated maser sources would be the same as that derived with the ATCA data in the comparing field. This number is also consistent with the number estimated from distribution of OH/IR stars in the solar neighbourhood by R. Ortiz and W.J. Maciel (1996), 1.7 × 10^3.