Extinction of A_R and A_V

$$A_R = \frac{1}{b}(\log N_0 - \log N)$$

where b = 0.3 and N_0 is the mean number of stars in the reference field.

$$A_V = 1.21\, A_R$$

In Excel sheet "A_R" , A1 cell, type in =1/0.3*(LOG N_0 −LOG(N!A1))

Column density of H_2

$$N(H_2) = 1.25\times10^{21} A_V \quad [cm^{-2}]$$

Surface area of the mesh

$$S=[200pc\times3'\times60"\times(1.5\times10^{13}cm)]^2 \quad [cm^2]$$

Mass in the mesh

$$M=S\times N(H_2)\times(1.6735\times10^{-24})\times2.4 \quad [gram]$$

$$=\frac{S\times N(H_2)\times(1.6735\times10^{-24})\times2.4}{2\times10^{33}} \quad [Mo]$$