**P3** 

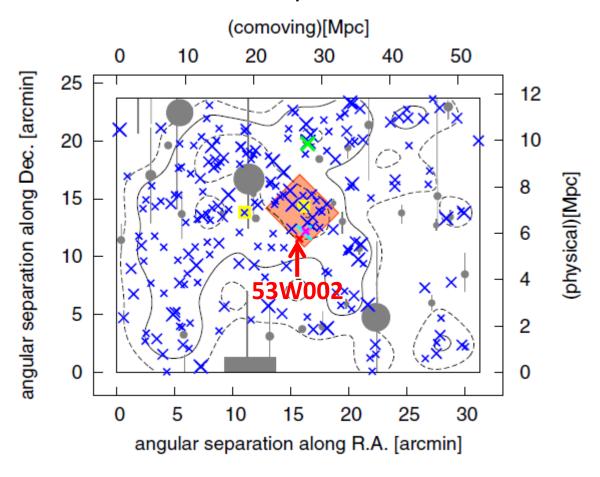
# A NIR Search for Massive Galaxies in a Proto-cluster near 53W002 at z~2.4

Masaru Kajisawa, Yu Aida (Ehime University) Ken Mawatari, Toru Yamada (Tohoku University)

### A Proto-cluster near 53W002 at z=2.39

#### Distribution of Lyman $\alpha$ emitters

Large-scale high-density region of LAEs at z~2.4



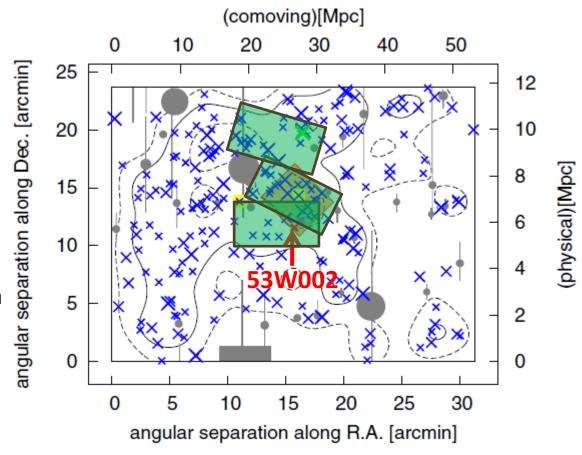
## A Proto-cluster near 53W002 at z=2.39

Distribution of Lyman  $\alpha$  emitters

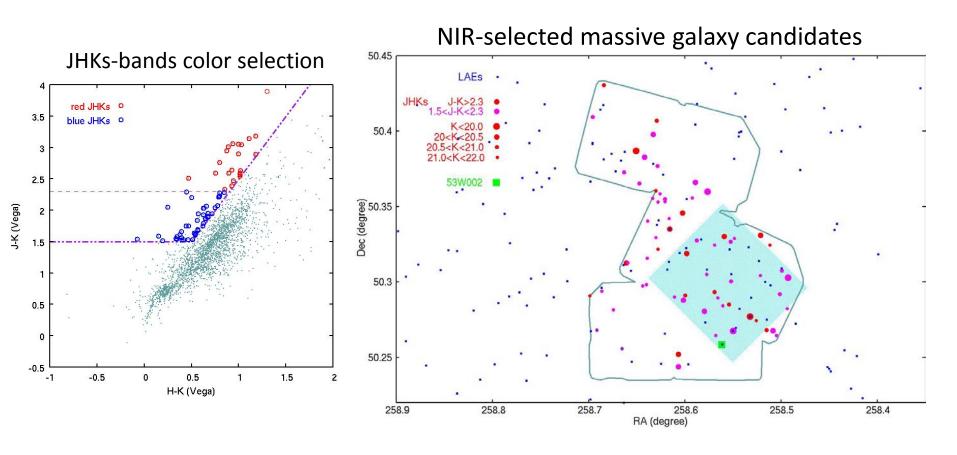
Large-scale high-density region of LAEs at z~2.4

#### **MOIRCS** imaging

3 pointings of MOIRCS cover the high-density region

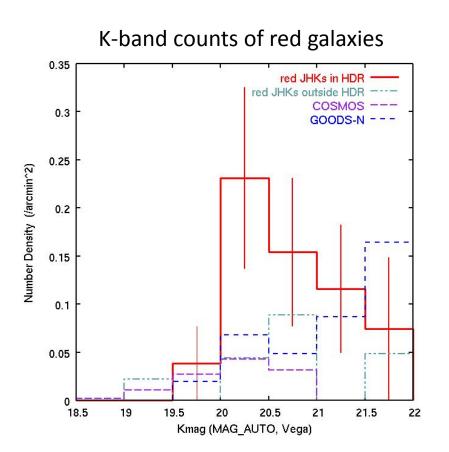


# Massive galaxy candidates at z~2.4



NIR-selected galaxies trace the high-density structure of LAEs.

# Red galaxies



J-K color-magnitude diagram JHKs in HDR JHKs outside HDR quiescent JHKs 3.5 53W002 3 J-K (2xFWHM, Vega) 2.5 1.5 0.5 16 17 19 20 21 22 Kmag (MAG\_AUTO, Vega)

Number density excess!

Red sequence of passive galaxies?