Why CanVen?

• Looking for minihalo candidates detectable in HI in other galaxy groups
  – HI masses of $10^5 \, M_{\text{sun}}$

• CVnI is about 4 Mpc away
  – Doable but necessitates a deep survey

• What else will we see?
Fig. 3. Radial velocity distribution of 223 galaxies in the CVnI region.

Fig. 4. The distribution of 72 galaxies with corrected radial velocities $V_{\odot} < 550$ km s$^{-1}$ in the Canes Venatici constellation in equatorial coordinates. The galaxies with $V_{\odot} < 400$ km s$^{-1}$ and $>400$ km s$^{-1}$ are indicated by filled circles and crosses, respectively. The two brightest galaxies, NGC 4736 and NGC 4449, are shown by filled squares.
Full CanVen Region

CanVen, $\text{dec}=20-50$
$N=22042$
Full CanVen Region

• 190 clusters in full region
  – 0-5000 km/s: 24
  – 5000-10000 km/s: 74
  – 10000-18000 km/s: 92

• 331 groups in full region
  – 0-5000 km/s: 111
  – 5000-10000 km/s: 184
  – 10000-18000 km/s: 33
\[ cz=6000-9000 \text{ km/s} \]
40-50 degrees

N (groups) = 39
N (clusters) = 37

Abell 1314

CanVen, dec=40–50
N=5181
30-40 degrees

N (groups) = 121
N (clusters) = 66

Abell 1228
25-30 degrees

N (groups) = 117
N (clusters) = 57

Abell 1185
Abell 1213
Coma Cluster
20-25 degrees

N (groups) = 54
N (clusters) = 30

Abell 1367

CanVen, dec = 20–25
N = 3685
Where to Look?

Fig. 3. Radial velocity distribution of 223 galaxies in the CVn I region.

Fig. 4. The distribution of 72 galaxies with corrected radial velocities $V_{LSR} < 550$ km s$^{-1}$ in the Canes Venatici constellation in equatorial coordinates. The galaxies with $V_{LSR} < 400$ km s$^{-1}$ and $>400$ km s$^{-1}$ are indicated by filled circles and crosses, respectively. The two brightest galaxies, NGC 4736 and NGC 4449, are shown by filled squares.
Where to Look?

- Coma
- Abell 1185
- Abell 1213
Where to Look?

- Coma
- Abell 1185
- Abell 1213
Where to Look?

- Coma (little)
- Abell 1213
Primary Distances in CanVen

- 63 Total
- Max $d = 19$ Mpc ($cz = 1350$ km/s)
- Matches Hubble at $d < 5$ Mpc
- Huge deviations above this

Straight Line indicates pure Hubble flow
The Flow Model

- Close to matching line at $d < 5$ Mpc
  - Usually nearby galaxies have large uncertainties from the flow model
  - Difference $\sim 10$-20%
- Very large scatter for $d > 5$ Mpc
- Similar Trends to Hubble Flow
  - Flow Model doesn't work well here
- Later Plots in range $0 < d < 260$ Mpc

Straight line where Flow Model = Primary Distance
Current Distance Information
(<2000 km/s)
$+27^\circ \ (\pm 1^\circ) < 2000 \text{ km/s}$
$+29^\circ \ (\pm 1^\circ) < 2000 \ \text{km/s}$
Conclusions

• The 27 and 29 degree strips contain more interesting structures to probe than the 31

• Nearby ($d < 5$ Mpc) the flow model matches primary distances well in CanVen, but becomes terrible further away