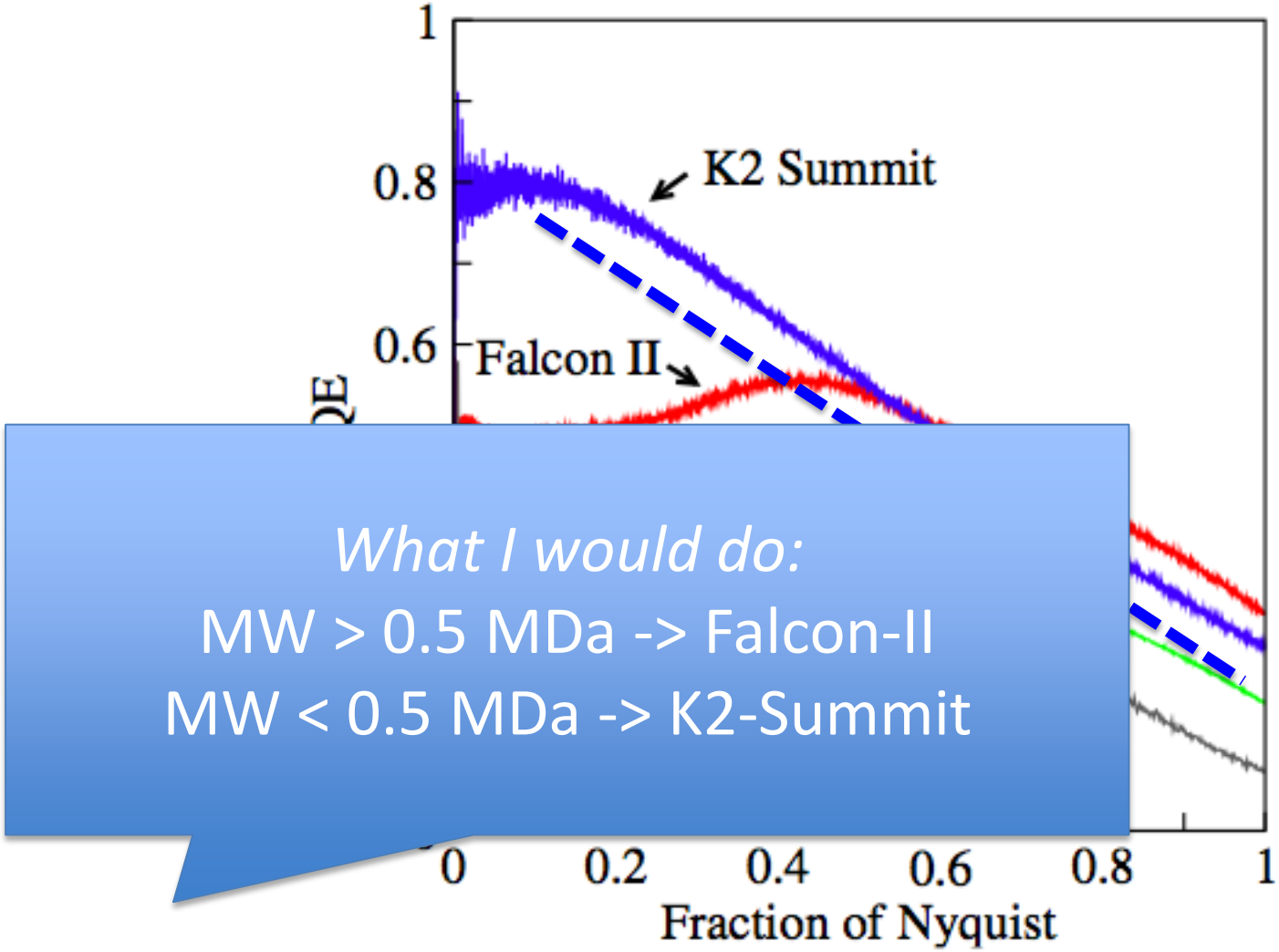
Panel discussion on detectors

Sjors H.W. Scheres

Comparing cameras



What I would do:

MW > 0.5 MDa -> Falcon-II

MW < 0.5 MDa -> K2-Summit

Greg McMullan

Richard Henderson

http://arxiv.org/abs/1406.1389

What we typically do

- On Falcon-II:
  - Greg McMullan hacked our Falcon-II:
    - We get access to all 17 frames/s
  - EPU data collection
    - Large data sets, lots of sleep, lots of junk…
  - Manual data collection
    - Smaller data sets, less sleep, less junk
    - Only save images without much (beam-induced) drift
    - Move away from areas with a lot of drift

What we typically do

- On K2:
  - Manual data collection
    - Smaller data sets, less sleep, less junk
    - Only save images without much (beam-induced) drift
    - Move away from areas with a lot of drift

Processing (I)

- Step 1: whole-frame alignment
  - MOTIONCORR
  - Monitor Thon rings

- Step 2: RELION-processing with particles from re-aligned movie averages
  - 2D classification & sorting (remove most junk)
  - (some) 3D classification
  - 3D auto-refinement

Processing (III)

- Step 3: per-particle RELION movie refinement
  - 80S ribosome or bigger?
    - With rotations & translations
    - With reconstruction from movie-frame particle
  - Smaller particles?
    - Only translations
    - Without reconstruction from movie-frame particle
    - Particle polishing (see tomorrow)
    - REMOVE MOVIES FROM EXPENSIVE HARD DISC!
    - More 3D classification & refinement

Results

g-secretase