

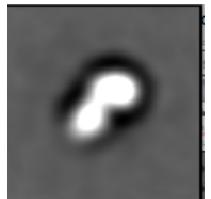
**ISAC**

**ou = 30**

**img\_per\_grp = 50 – 250**

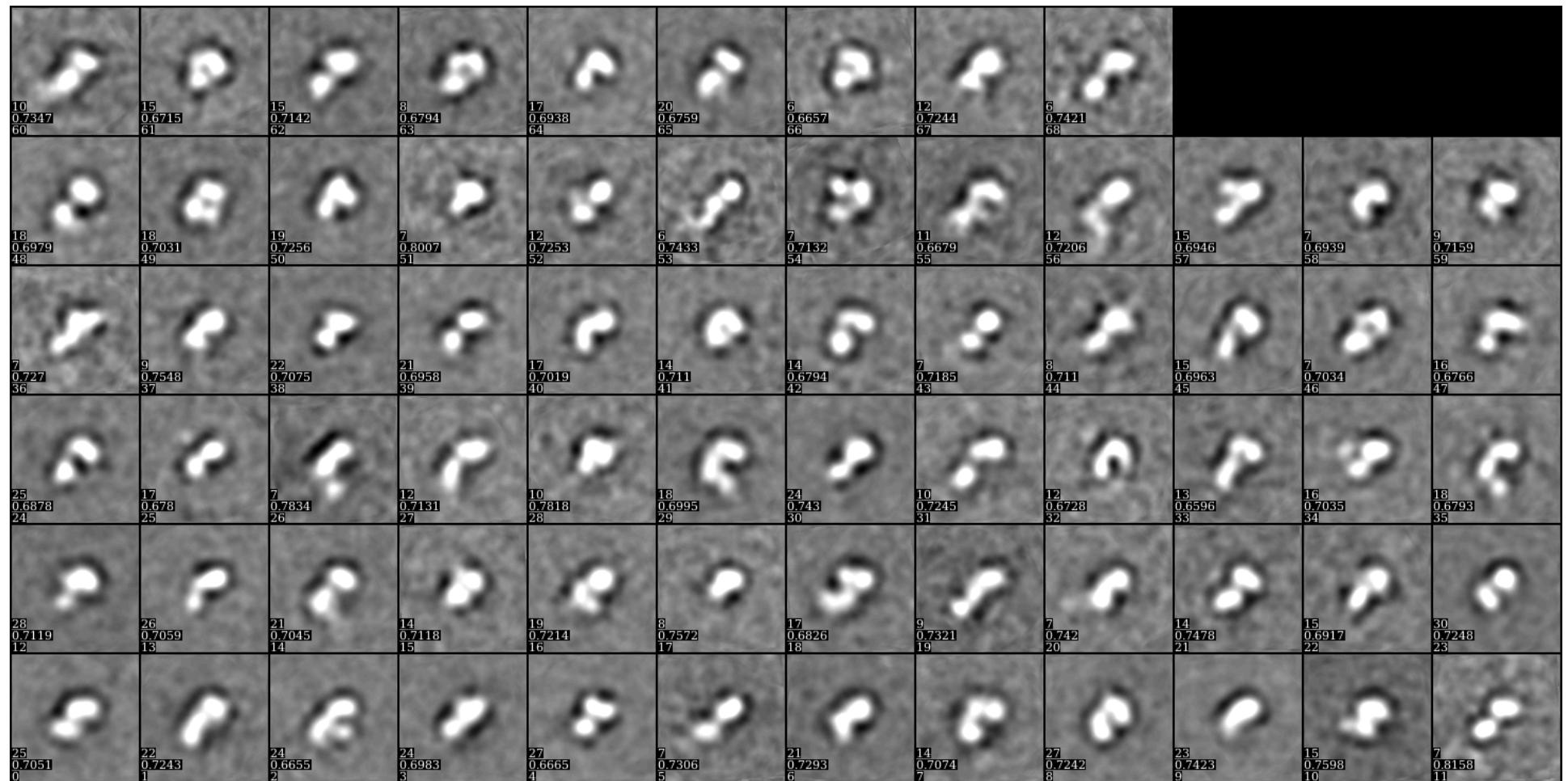
**thld\_err = 1.732**

# ISAC (ou=30, img\_per\_grp =50, thld\_err=1.732)



EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1033 (out of 1976) particles selected. 69 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5 --max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=50 --generation=1 --MPI
```

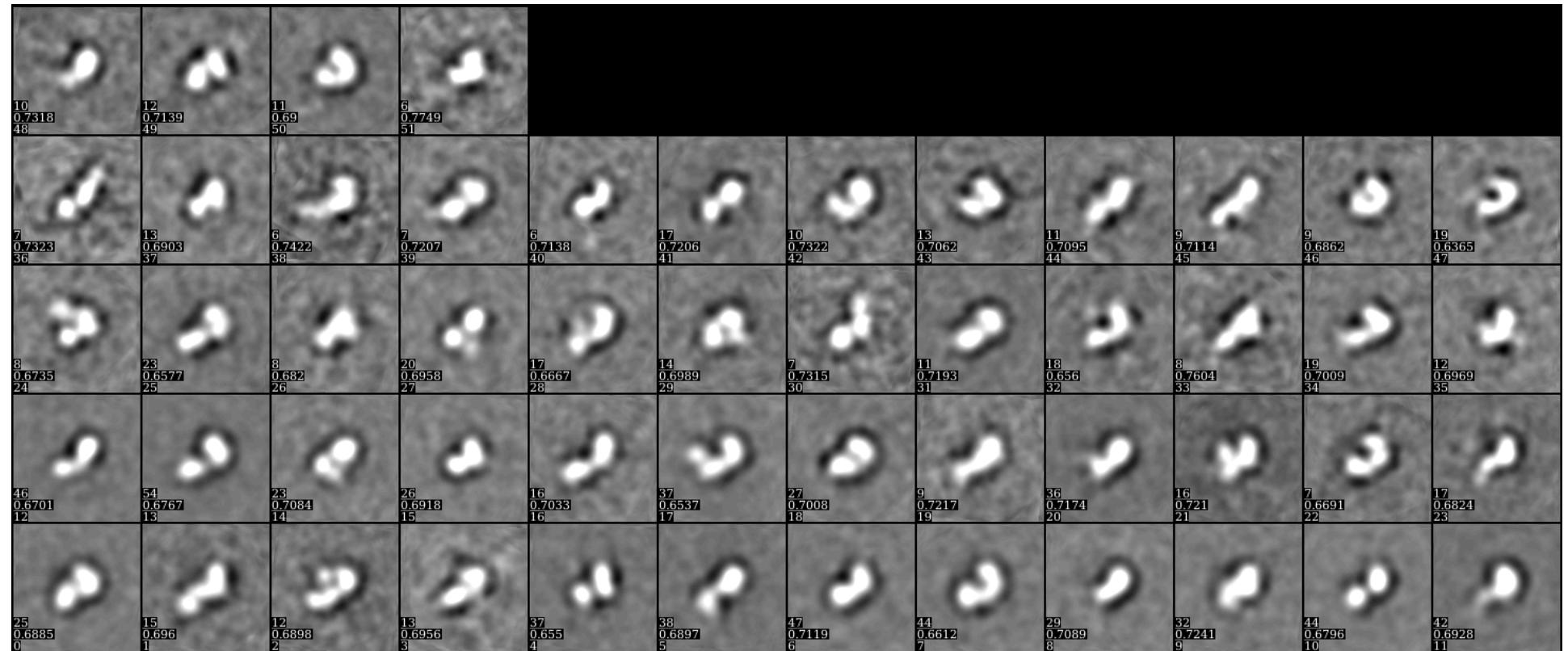


# ISAC (ou=30, img\_per\_grp =100, thld\_err=1.732)



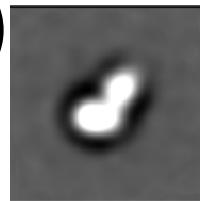
EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1023 (out of 1976) particles selected. 52 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=100 --generation=1 --MPI
```

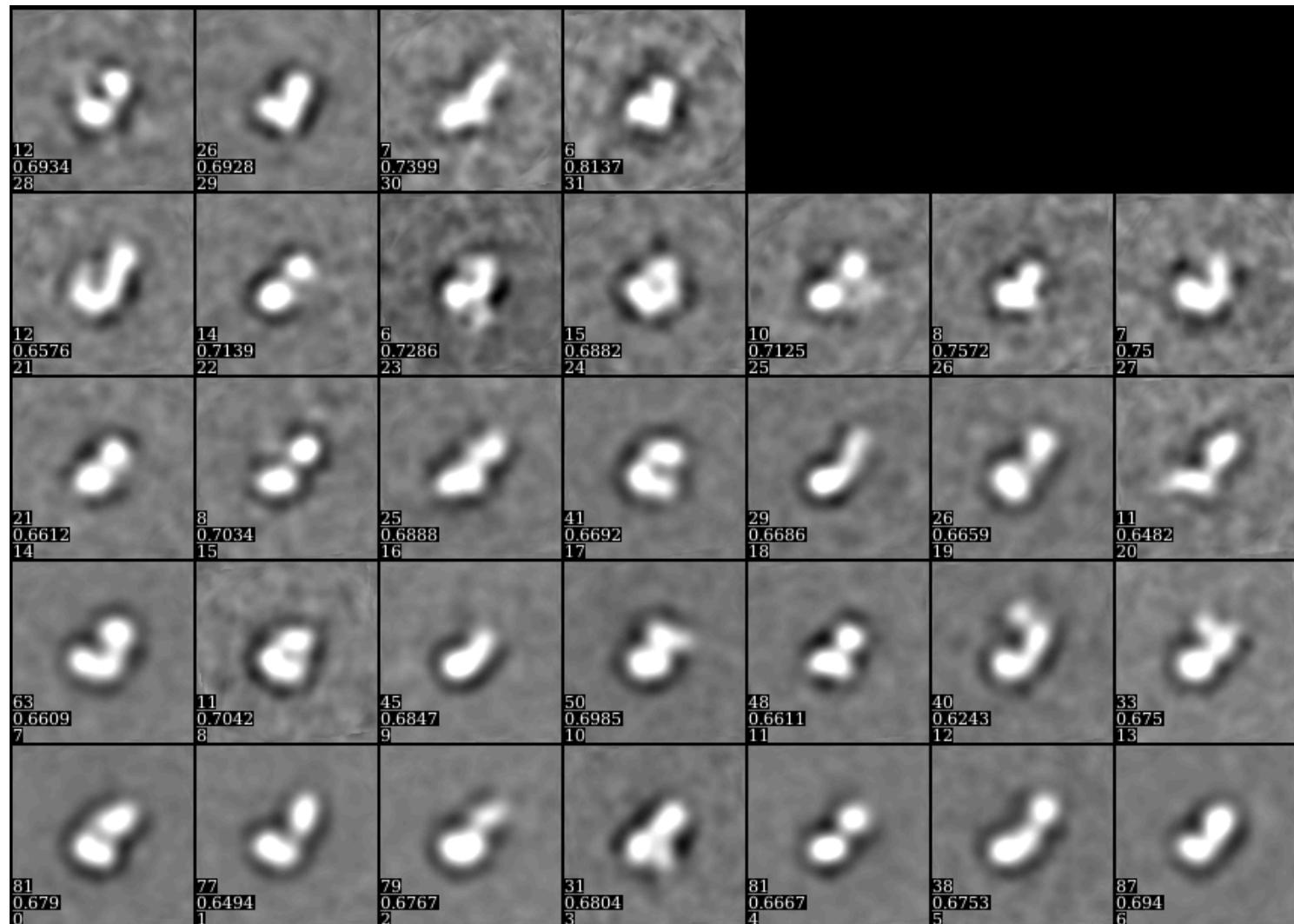


# ISAC (ou=30, img\_per\_grp =150, thld\_err=1.732)

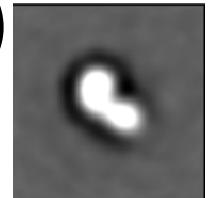
EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1048 (out of 1976) particles selected. 32 class averages



```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5 --max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=150 --generation=1 --MPI
```

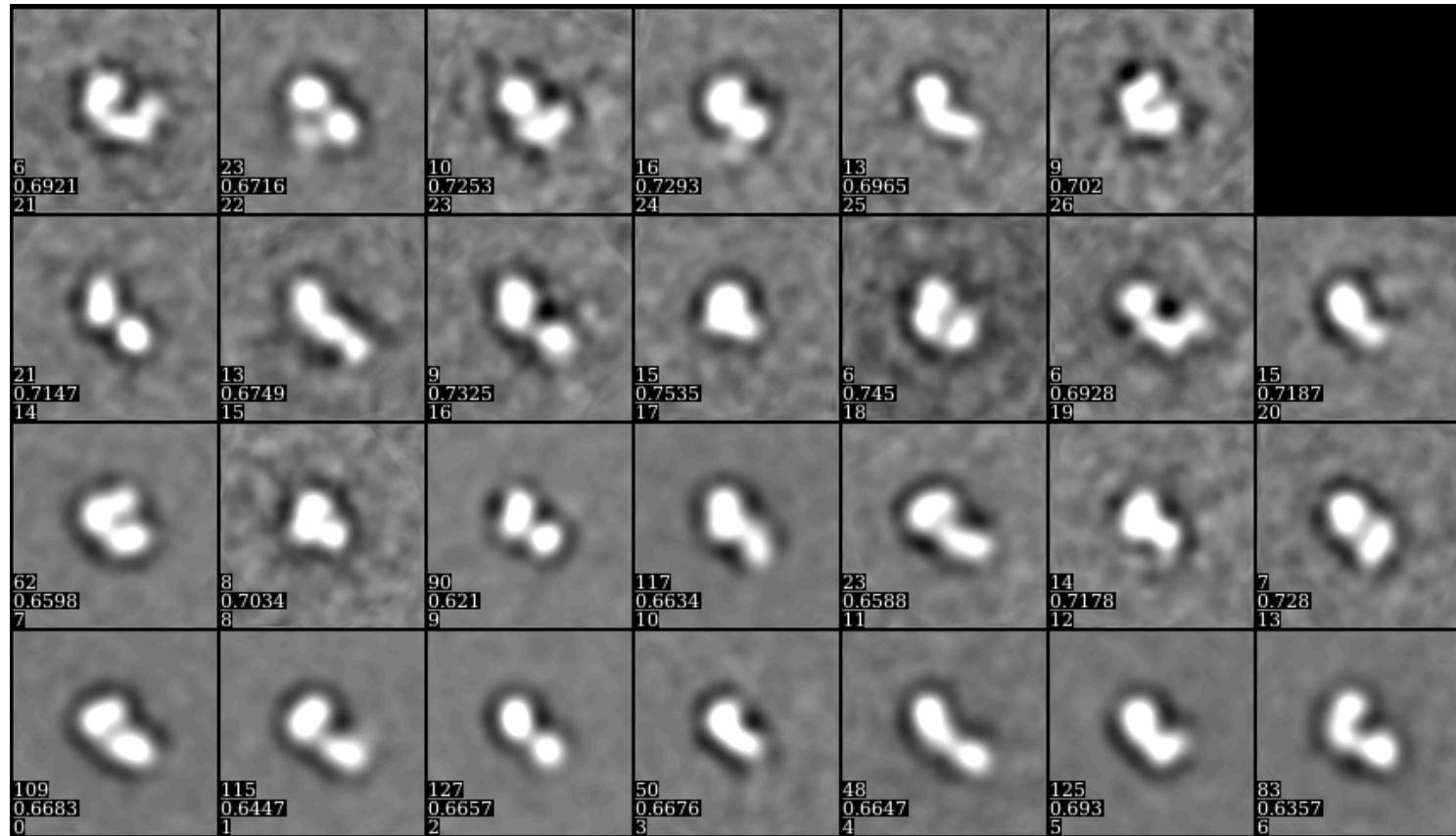


# ISAC (ou=30, img\_per\_grp =200, thld\_err=1.732)

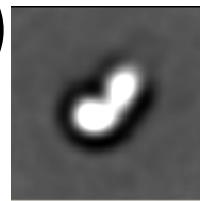


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1140 (out of 1976) particles selected. 27 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=200 --generation=1 --MPI
```

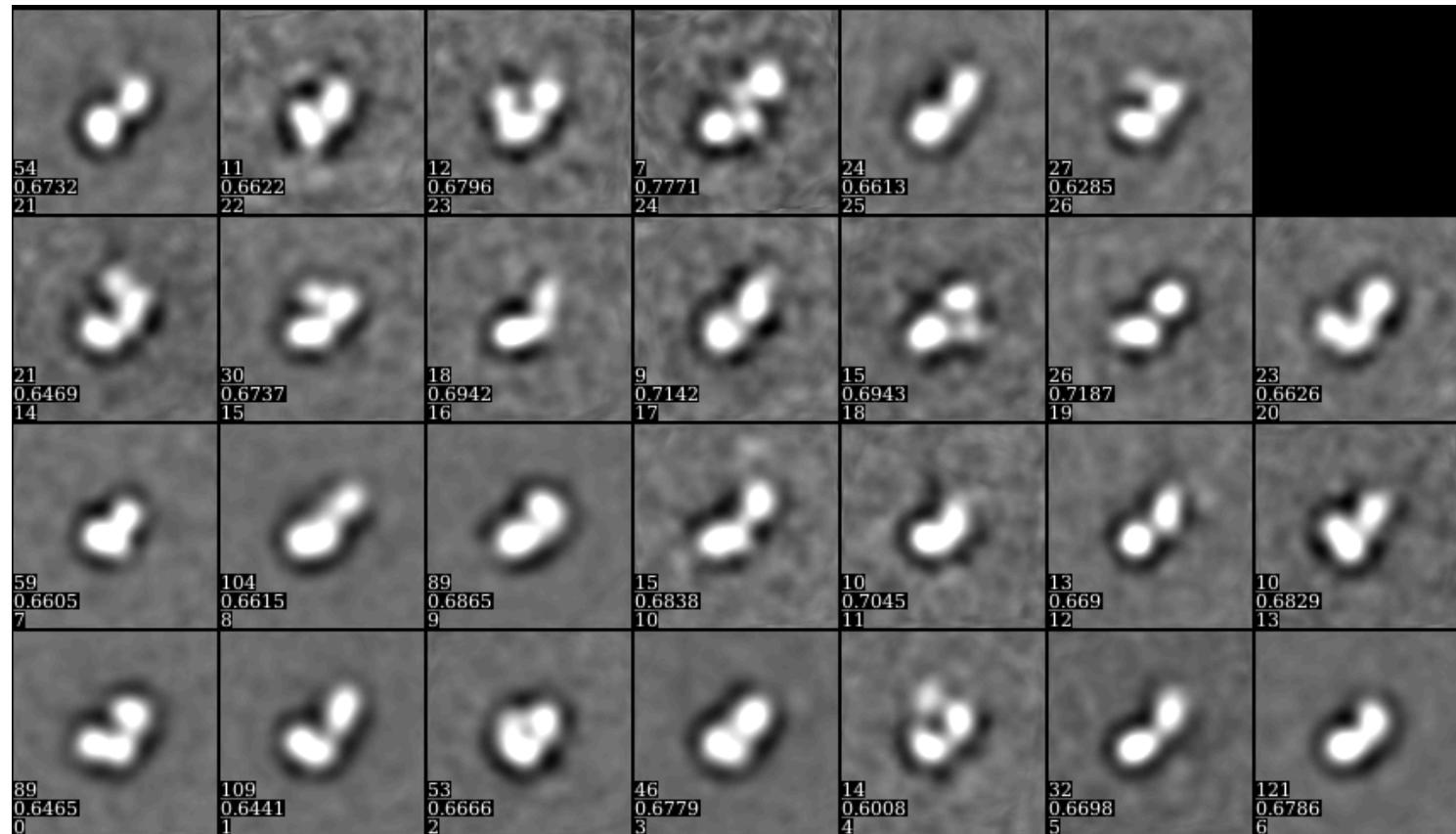


# ISAC (ou=30, img\_per\_grp =250, thld\_err=1.732)

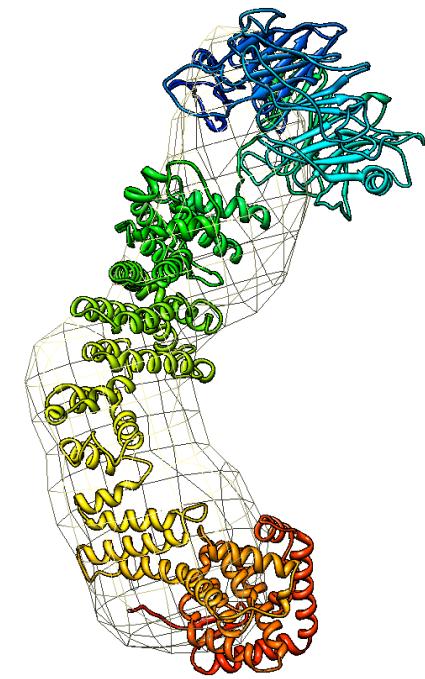
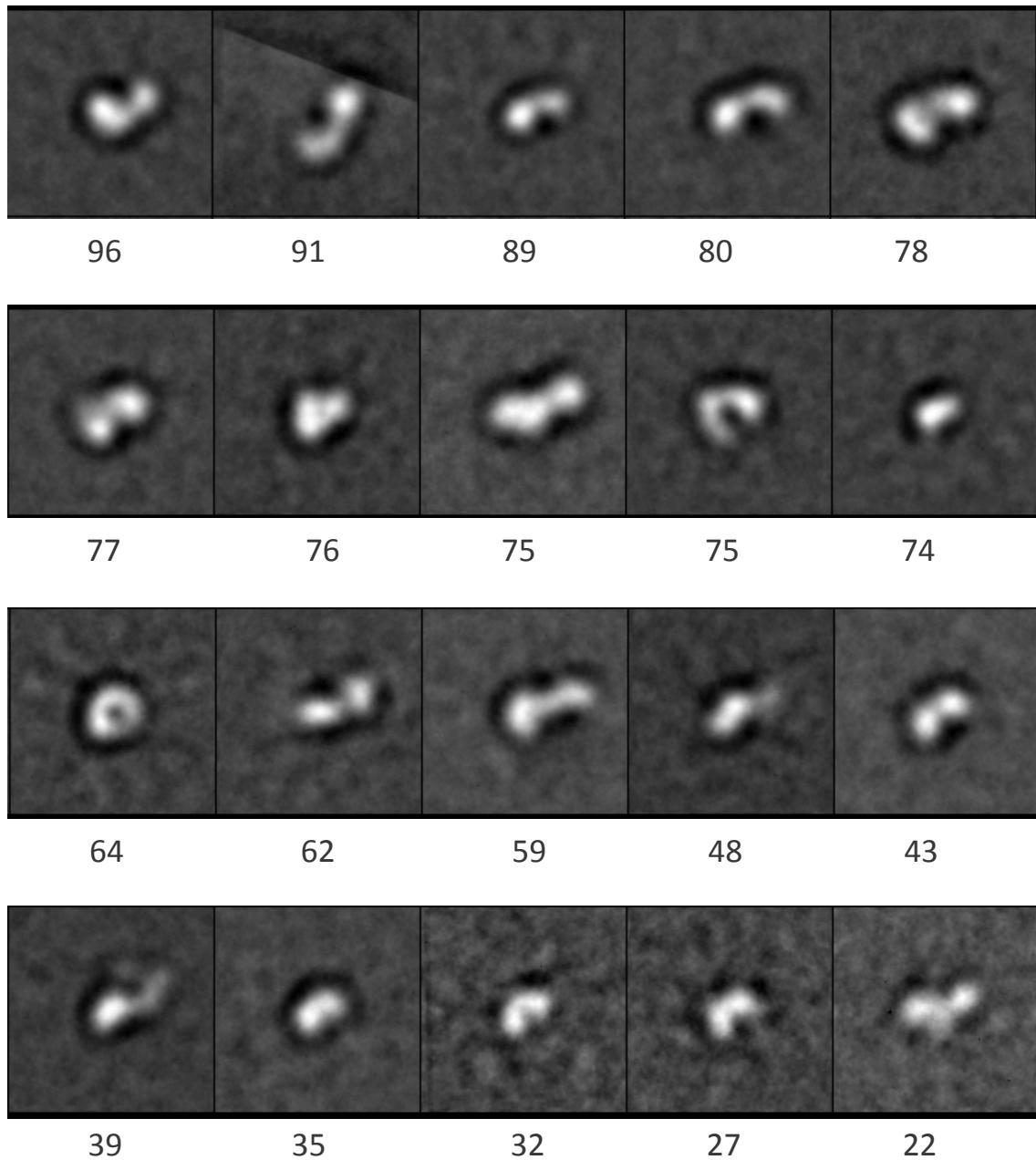


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1041 (out of 1976) particles selected. 27 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=250 --generation=1 --MPI
```



Previous runs (by Spider) - EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml  
2.28739 Angstrom per 1 pixel (~60x40 pixels per particle), out of 1242 particles selected.



Flexible ?  
or  
Heterogenous?

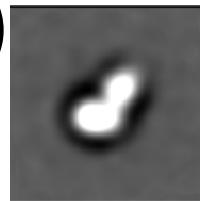
**ISAC**

**ou = 30**

**img\_per\_grp = 150 – 250**

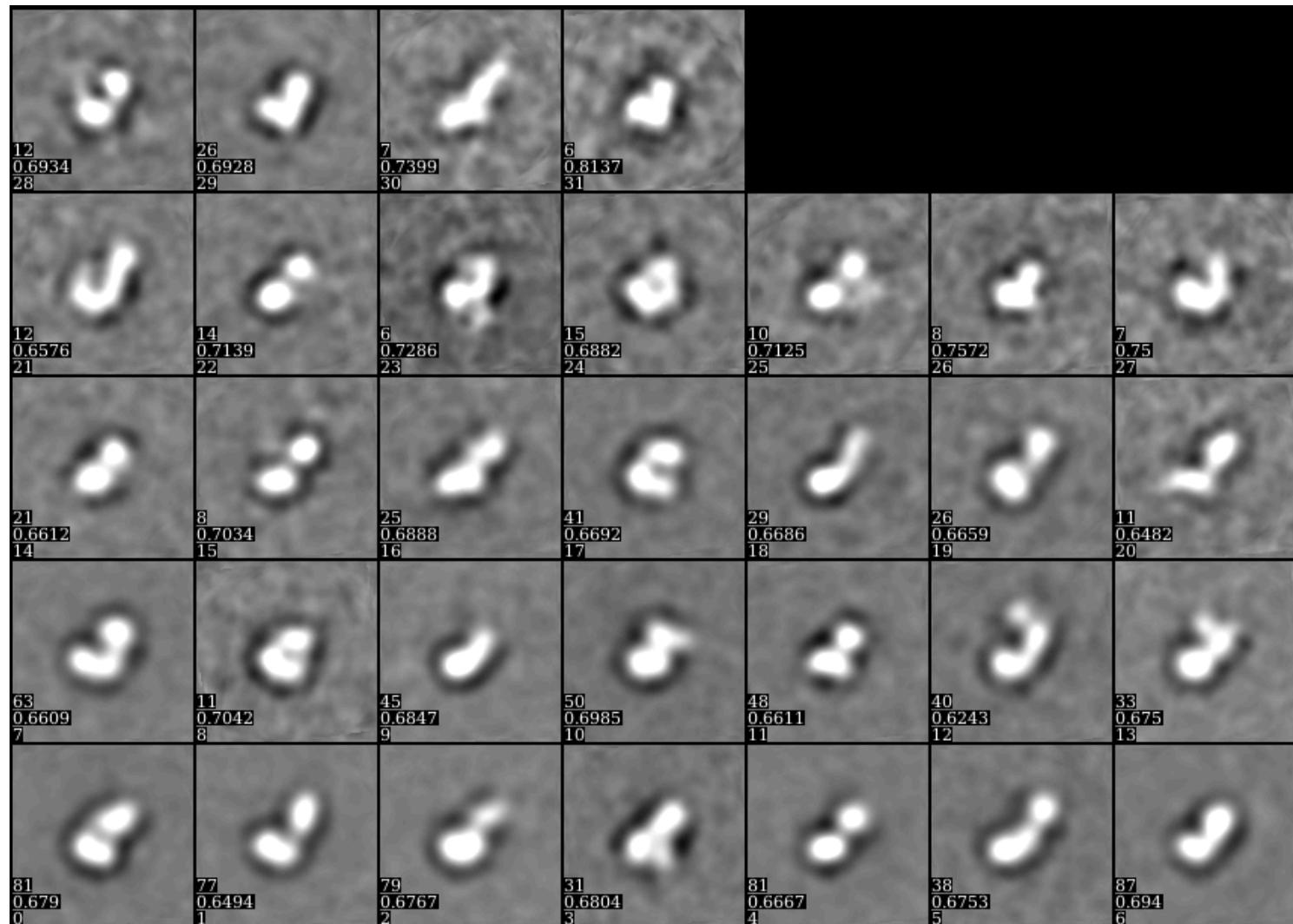
**thld\_err = 1.732**

# ISAC (ou=30, img\_per\_grp =150, thld\_err=1.732)

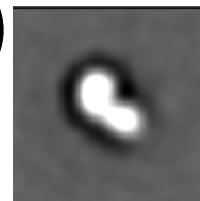


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1048 (out of 1976) particles selected. 32 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=150 --generation=1 --MPI
```

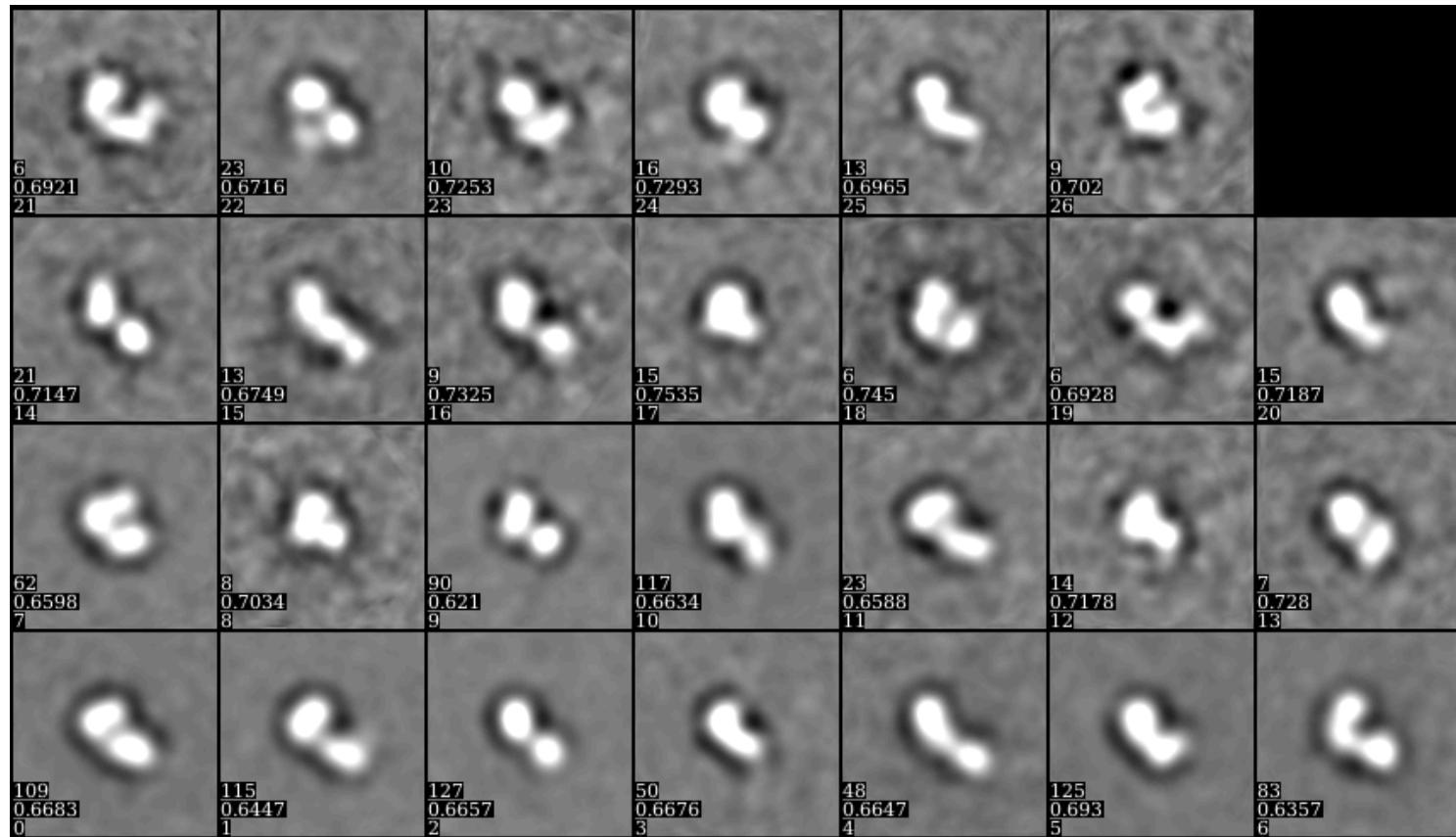


# ISAC (ou=30, img\_per\_grp =200, thld\_err=1.732)

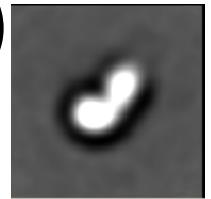


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1140 (out of 1976) particles selected. 27 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=200 --generation=1 --MPI
```

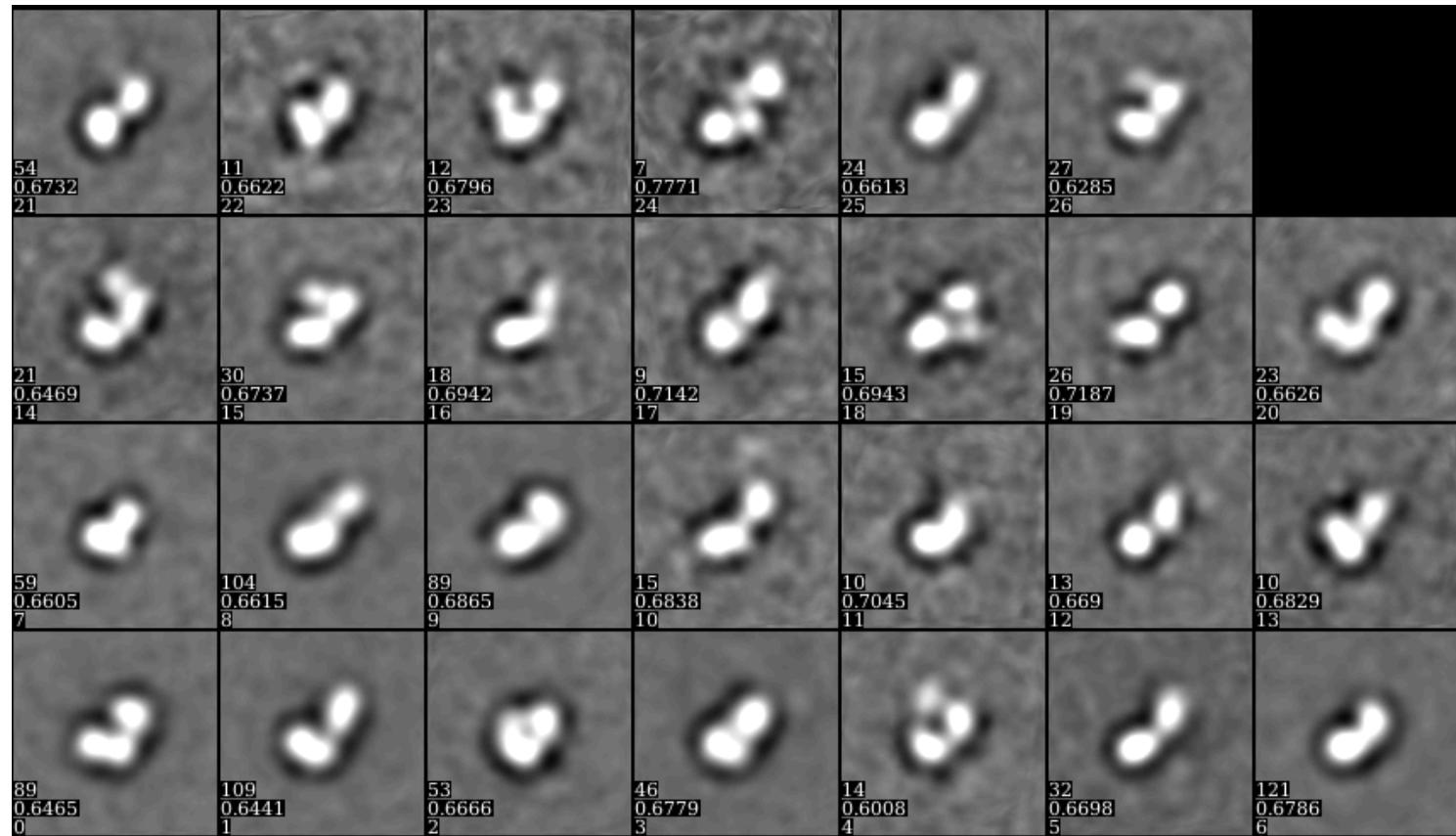


# ISAC (ou=30, img\_per\_grp =250, thld\_err=1.732)



EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1041 (out of 1976) particles selected. 27 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=1.732 --indep_run=4 --thld_grp=5 --img_per_grp=250 --generation=1 --MPI
```



**ISAC**

**ou = 30**

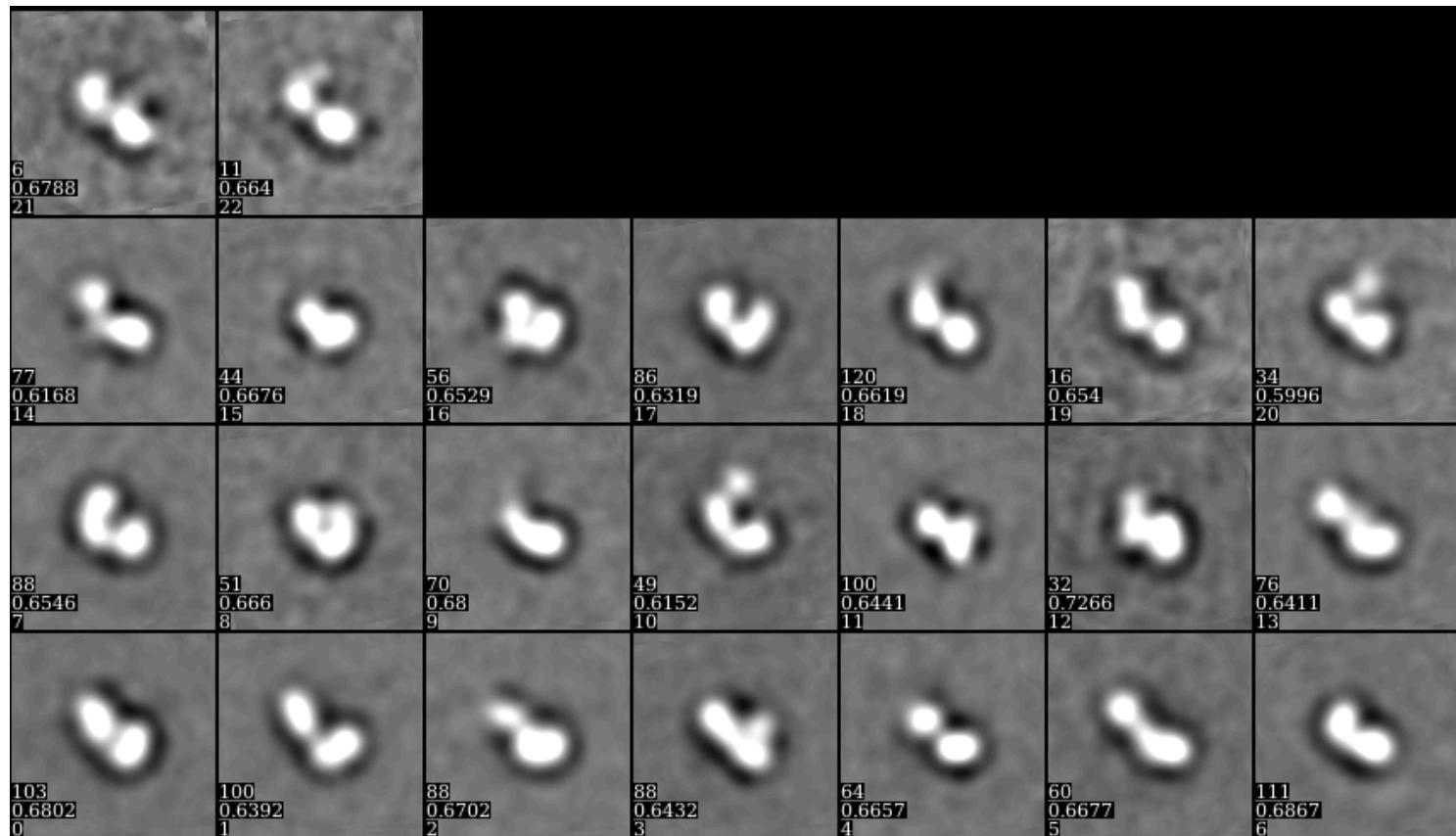
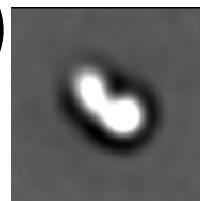
**img\_per\_grp = 150 – 250**

**thld\_err = 3.464**

# ISAC (ou=30, img\_per\_grp =150, thld\_err=3.464)

EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1530 (out of 1976) particles selected. 23 class averages

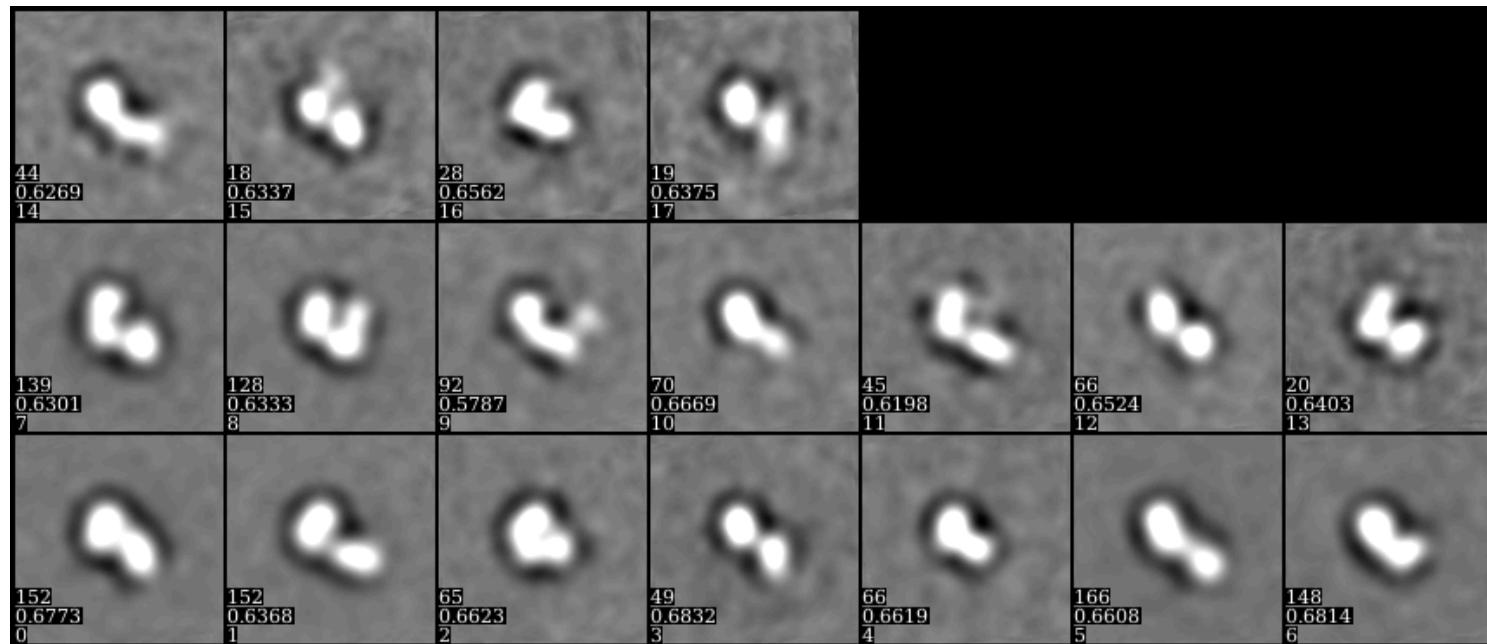
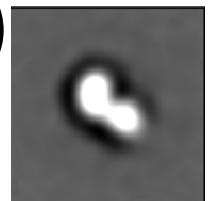
```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5 --max_round=20 --stab_ali=5 --thld_err=3.464 --indep_run=4 --thld_grp=5 --img_per_grp=150 --generation=1 --MPI
```



# ISAC (ou=30, img\_per\_grp =200, thld\_err=3.464)

EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1467 (out of 1976) particles selected. 18 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5 --max_round=20 --stab_ali=5 --thld_err=3.464 --indep_run=4 --thld_grp=5 --img_per_grp=200 --generation=1 --MPI
```

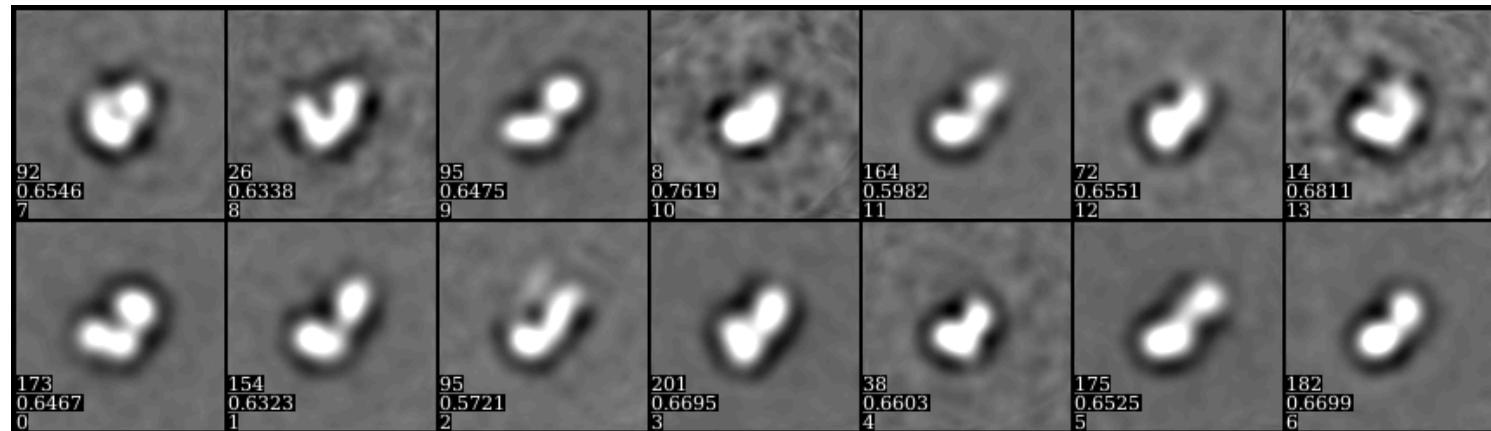


# ISAC (ou=30, img\_per\_grp =250, thld\_err=3.464)



EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1489 (out of 1976) particles selected. 14 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=3.464 --indep_run=4 --thld_grp=5 --img_per_grp=250 --generation=1 --MPI
```



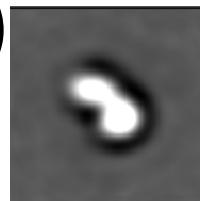
**ISAC**

**ou = 30**

**img\_per\_grp = 150 – 250**

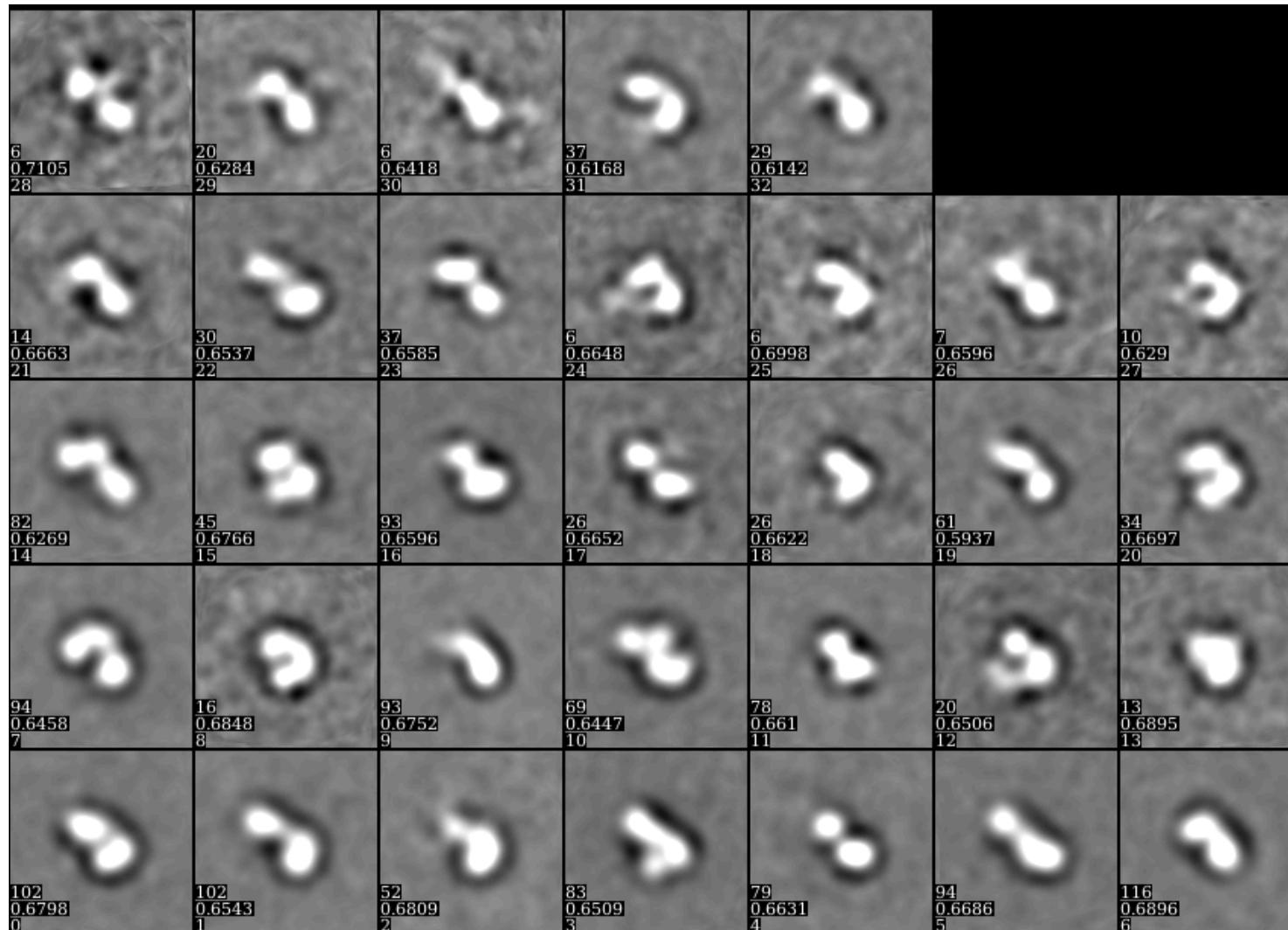
**thld\_err = 5.196**

# ISAC (ou=30, img\_per\_grp =150, thld\_err=5.196)

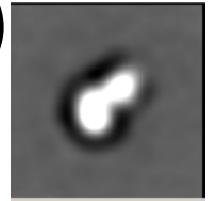


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1586 (out of 1976) particles selected. 33 class averages

```
mpirun -np 8 sxisac.py bdb:nup133_ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=5.196 --indep_run=4 --thld_grp=5 --img_per_grp=150 --generation=1 --MPI
```

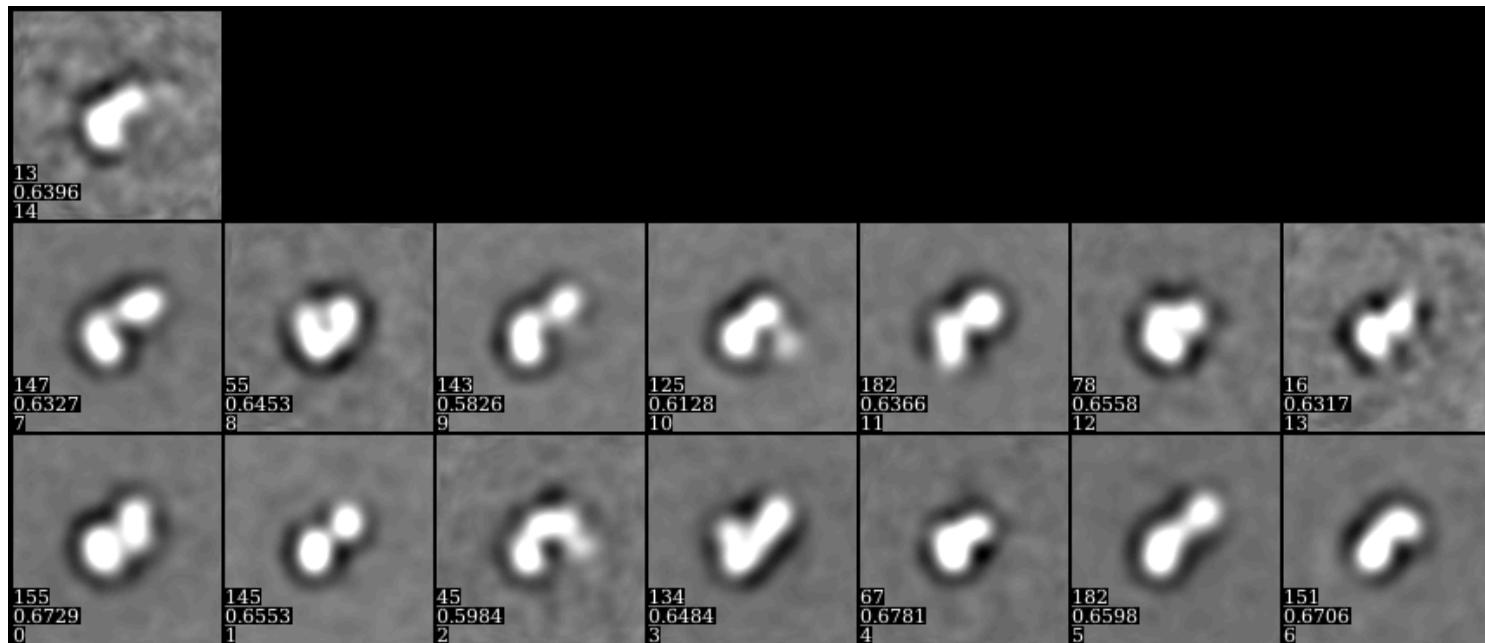


# ISAC (ou=30, img\_per\_grp =200, thld\_err=5.196)

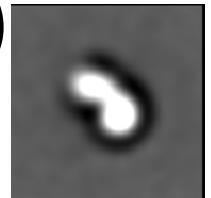


EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1638 (out of 1976) particles selected. 15 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=5.196 --indep_run=4 --thld_grp=5 --img_per_grp=200 --generation=1 --MPI
```



# ISAC (ou=30, img\_per\_grp =250, thld\_err=5.196)



EM class averages of 26882 (Nup133 full length, >90% purity) 0.05 mg/ml. 10 iterations  
2.28739 Angstrom per 1 pixel; 1484 (out of 1976) particles selected. 13 class averages

```
mpirun -np 8 sxisac.py bdb:nup133.ali --ir=1 --ou=30 --rs=1 --xr=1 --yr=1 --ts=1 --maxit=30 --snr=1.0 --dst=90.0 --FL=0.1 --FH=0.3 --FF=0.2 --init_iter=3 --main_iter=3 --iter_reali=1 --match_first=1 --match_second=5  
--max_round=20 --stab_ali=5 --thld_err=5.196 --indep_run=4 --thld_grp=5 --img_per_grp=250 --generation=1 --MPI
```

