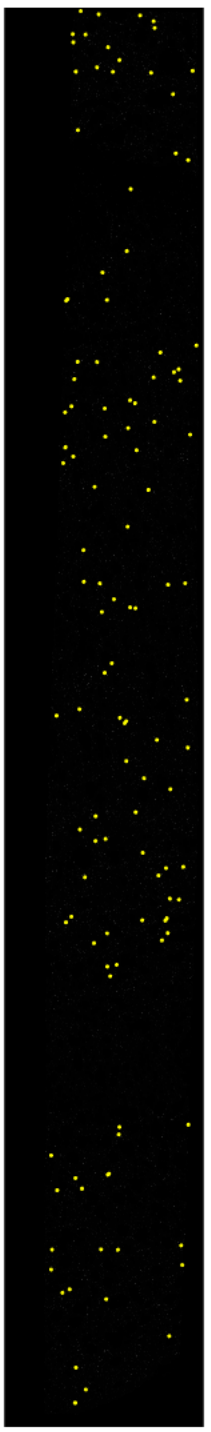
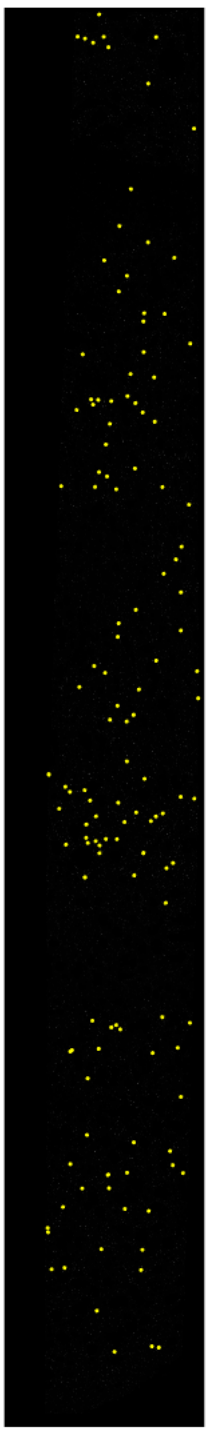
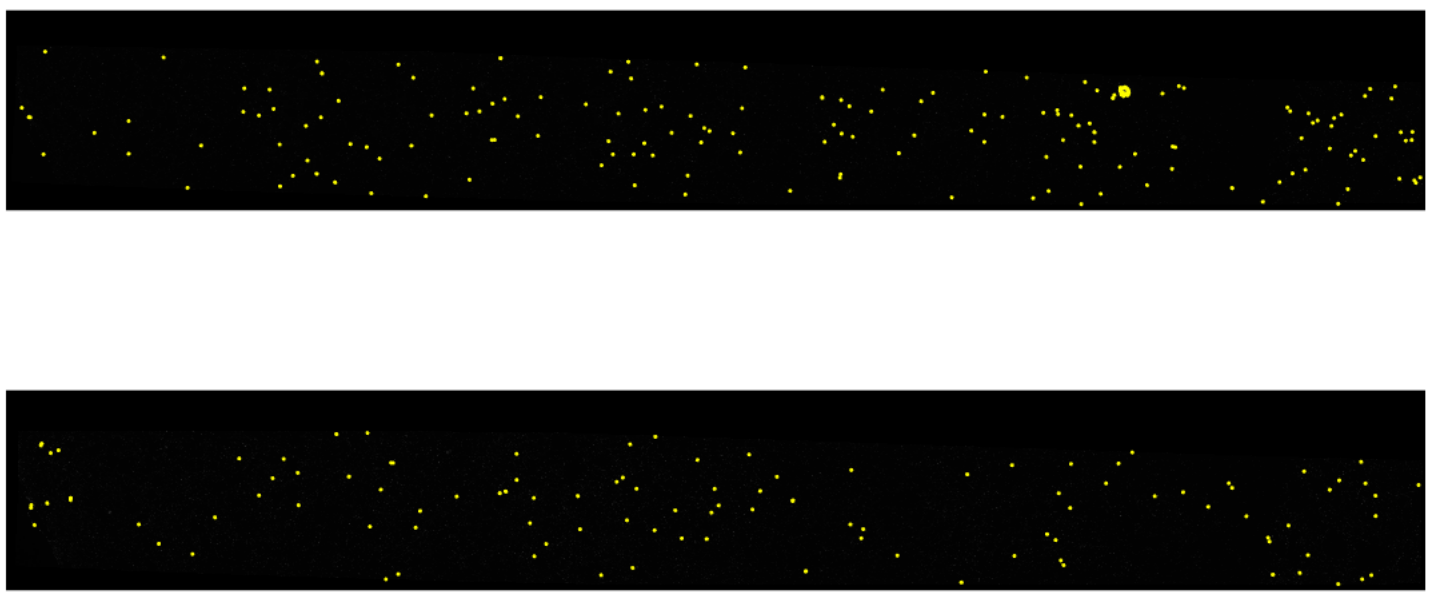
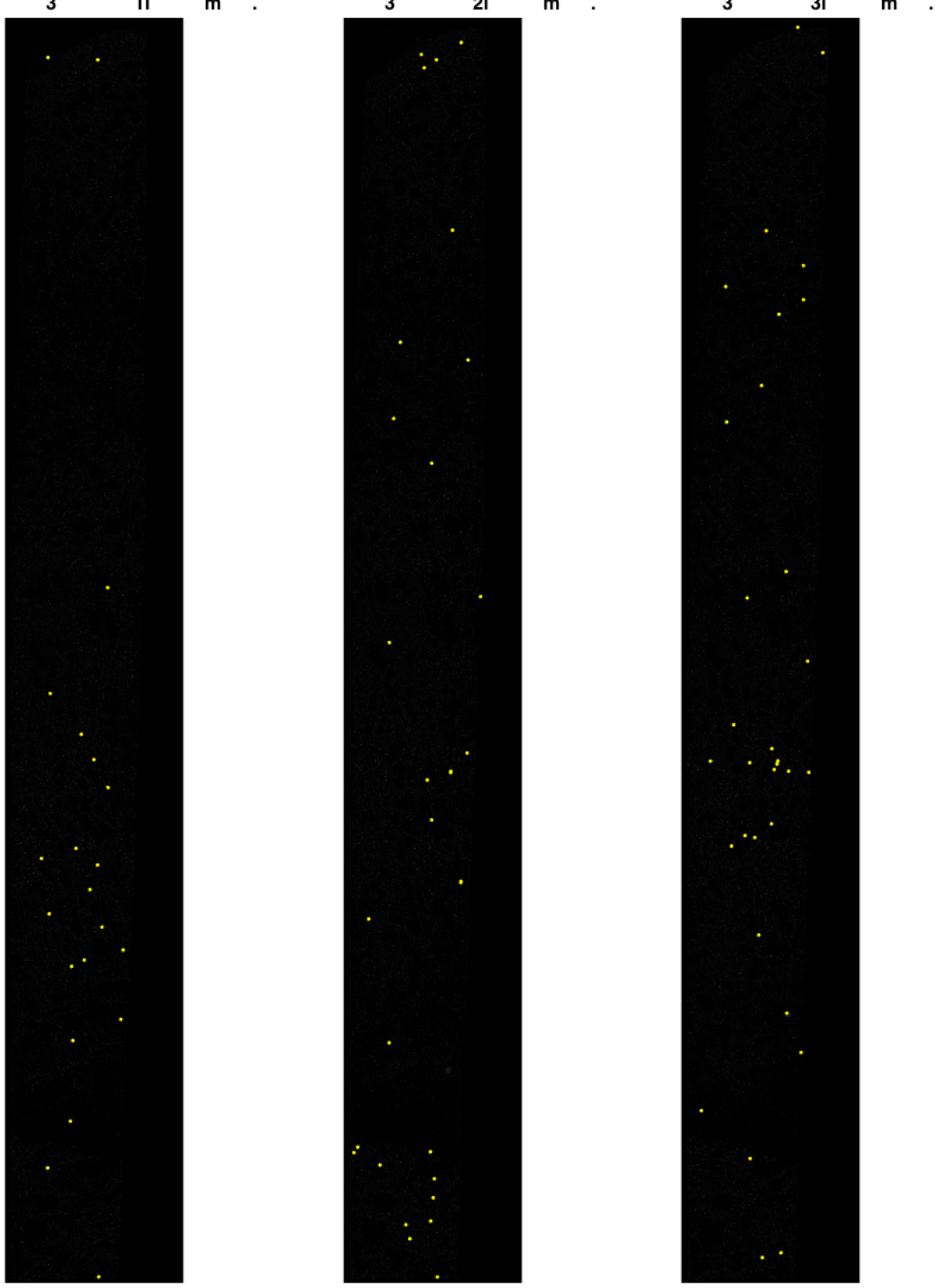
```
% for deriving and displaying the local max for each marker across all 41
% stacks
% only showing a few sample images due to the huge memory size of the
% output images.
%file directory : https://www.dropbox.com/sh/zijowsqbaojr37x/AACYiMFXrqTKdxifd37c9Aiya?dl=0
stacks = {'-01-synapsinR_7thA.tif', '-02-synapsinGP_5thA.tif', '-03-VGluT1_3rdA.tif', '-04-VGl
uT1_8thA.tif', '-05-VGluT2_2ndA.tif',...
    '-06-VGluT3_1stA.tif', '-07-psd_8thA.tif', '-08-GluR2_2ndA.tif', '-09-NMDAR1_6thA.tif', '-
10-NR2B_9thA.tif'...
    '-11-GAD_6thA.tif', '-12-VGAT_5thA.tif'};
%first 3 stacks of the first 3 markers
k = 0;
for j = 1 : 3
    file = stacks{j};
for i = 1 : 3
    %counter for publishing purposes
    k = k + 1;
%read in each stack
[X,map] = imread(file,i);
a = X;
original = a;
%find local hotspots
BW = imregionalmax(a);
a(~BW) = 0;
%set theshreshold to eliminate low-intensity signal from the local hotspots
m = mean(a(a~= 0));
s = std2(a(a ~= 0));
a ( a < m + 10 * s) = 0;
%deriving the coordinate for each hotpsot left
CC = bwconncomp(imfill(a, 'holes'));
s = regionprops(CC,'centroid');
centroids = cat(1, s.Centroid);
%display the stack and each local hotspot
gcf = figure(k);
imshow(original);
hold on;
title([file, '_', num2str(i),'_local_max_','.tif']);
plot(centroids(:,1),centroids(:,2), 'y.')
f = getframe(gcf);

%save handle
imwrite(f.cdata,[file, '_', num2str(i),'_local_max_','.tif'] )
hold off;
end
end
```






5
31
5
21
5
11
5
31
7



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