%EkmanFaces.m
%replicate iMap results for Observing 9 Faces (single subject only)
%read-in iMap smoothed Fixation Duration Map (sigma=10)
%data from single subject
%smoothpic = 1024 x 768 double
load('data999smoothpic.mat'); %load smoothpic matrix
Ci = smoothpic;
%read-in face searchspace mask (Full image selected)
%binary image mask: assume 0.0=reject; 1.0=accept for search)
load('facemask999.mat');
searchmask = facemask;

%collect all Ci pixels specified by 'searchmask' and queue in 'searchpix'
searchpix = Ci(eq(searchmask,1));
%compute mean of Ci searchspace
meanCi = mean(searchpix(:));
%compute std of Ci searchspace
stdCi = std(searchpix(:));
%normalize Ci (Z-scored classification image)
ZSCi = ZScoreSCi(Ci,[meanCi, stdCi]);
%mask-out the background pixels
ZSCi = ZSCi.* searchmask;

sigma = 10; %std of gaussian smoothing filter
p = .05; %p-value
tC = 2.4; %threshold (for Cluster test), right eye N.S. at tc=2.7
Res = StatThresh(ZSCi, p, sigma, tC, searchmask), clc;
background = double(imread('EkmanBackground768x1024b.tif'));
tCi = DiplayRes(Res, background);