# Data Files Readme

All data files are matlab .mat data files. Each file contains one or more 3D views of an object. Inside the mat file, there are three cell arrays of size N – XYZ, I and Mask, where N is the number of views(poses).

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| --- | --- | --- |
| **Cell Array** | **Size** | Comment |
| XYZ | 2048x2048x3 | XYZ images are recorded in each plane. Some data are invalid. |
| I | 2048x2048 | Intensity data recorded. All data points are valid. |
| Mask | 2048x2048 | The validity of each data point in XYZ. If an element is 1 the corresponding XYZ elements will be valid. |

An example matlab script is given below to visualise one view(pose).

% select a view number from data set

pose = 3;

% To show the intensity as an image

imagesc(I{pose});

% To extract each coordinate

X = XYZ{pose}(:,:,1);

Y = XYZ{pose}(:,:,2);

Z = XYZ{pose}(:,:,3);

% image Z coordinate image

imagesc(Z);

% create xyz matrix of valid points

xyz = [X(Mask{pose}), Y(Mask{pose}), Z(Mask{pose})];

% scatter 3D of xyz points

scatter3(xyz(:,1), xyz(:,2), xyz(:,3));