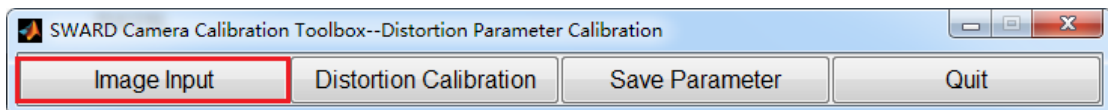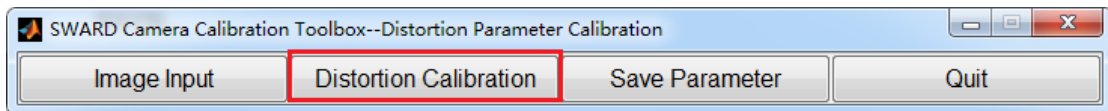# Simple User's Guide

This is a fully automatic radial distortion correction program, and the SWARD Camera Calibration Toolbox can be divided into two parts. The first part of the toolbox (the start script is 'main_gui_calibration.m') is used for radial lens distortion calibration from a single image of a planar pattern. The second part of the toolbox (the start script is 'main_gui_correction.m') is used to correct a new distortion image with the same camera.

1. Radial lens distortion calibration (start script: 'main_gui_calibration.m')
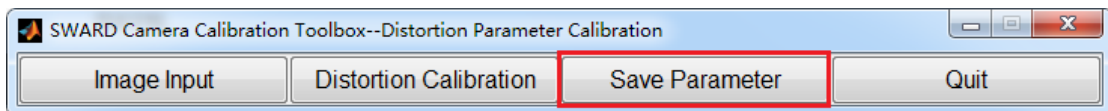
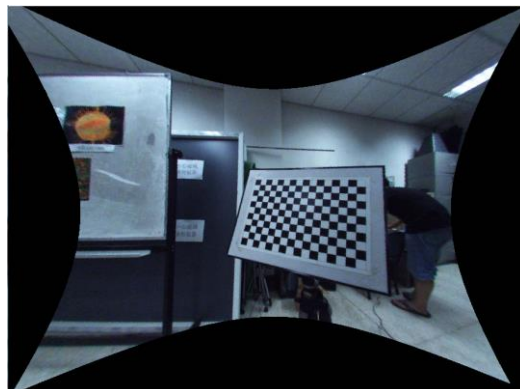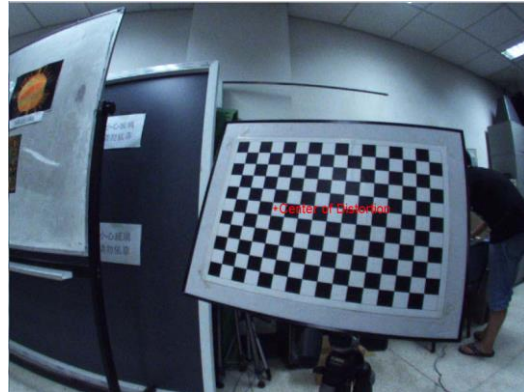First, click the '**Image input**' button to choose a distortion image.

Then, click the '**Distortion Calibration**' button for distortion calibration and wait a moment.......
Through this step, we can obtain the camera distortion parameter, include Camera distortion center, distortion parameter and focus length.

Finally, click '**Save parameter**' button to save the camera distortion parameter and the corrected image.

Notice: the camera distortion parameter is saved in the file of './output/ camera_parameter.txt'.

2. New distortion image correction(start script: 'main_gui_correction.m')

Through radial lens distortion calibration, we obtain the camera distortion parameter. So we can use the parameter to correct a new distortion image with the same camera.

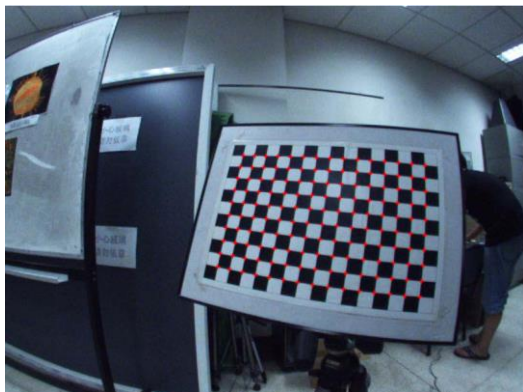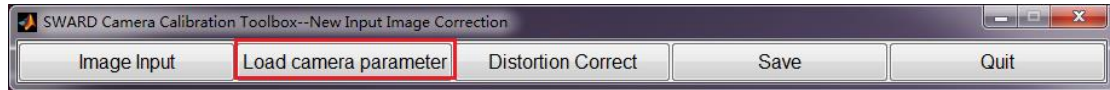First, click the '**Image input**' button to choose a distortion image.

SWARD Camera Calibration Toolbox--New Input Image Correction				
Image Input	Load camera parameter	Distortion Correct	Save	Quit

Then, click the '**Load camera parameter**' button to load obtained parameter.s

SWARD Camera Calibration Toolbox--New Input Image Correction				
Image Input	Load camera parameter	Distortion Correct	Save	Quit

Then, click the '**Distortion correct**' button to correct the new input distortion image.

SWARD Camera Calibration Toolbox--New Input Image Correction				
Image Input	Load camera parameter	Distortion Correct	Save	Quit

Finally, click '**Save**' button to the corrected image.

SWARD Camera Calibration Toolbox--New Input Image Correction				
Image Input	Load camera parameter	Distortion Correct	Save	Quit

Any questions please contact with us: xhying@cis.pku.edu.cn.