# Star Trail Timelapse Challenge

Community member Gerlando Lo Savio takes amazing pictures with the RICOH THETA V. Your challenge is to take the existing RICOH Plugin Camera API Sample and modify it to take dual-fisheye timelapse pictures with long exposure. A starter guide and video are available here.

Gerlando is spending the summer at an astronomy observatory, let's send him off with a plug-in.

## Challenge

Single plug-in with 3 modes.

Plug-in Mode 1 day to night sequence

- Shoot dual-fisheye image every 30 seconds
- auto exposure
- Unlimited shots

Plug-in Mode 2

- Shoot dual-fisheye image every 30 seconds
- 25 second exposure
- 400 ISO

Plug-in Mode 3 - night sequence

- Shoot dual-fisheye image every 62 seconds
- 60s long exposures
- 400 ISO
- Unlimited shots

Image number

- Take as many images as possible - passing clouds are not predictable and can affect the final result, so the photographer needs a lot of shots to be sure to have all the data needed

Stopping Plug-in

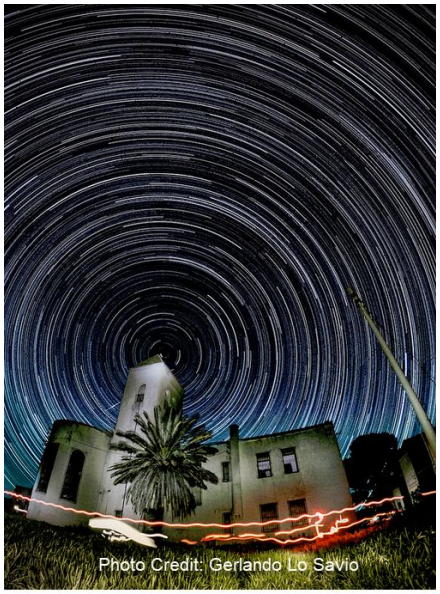
- Manually stop the camera
- Manually stop plug-in with button press
- Disk storage maximum is exceeded (assume camera is empty and you can use the full 19.3GB)

Power

- Camera will be powered by an external power bank and USB cable. Battery life will not be a problem.

File Name

- Filename suffix  pattern like 2018-11-21_04.35.02-theta-tl





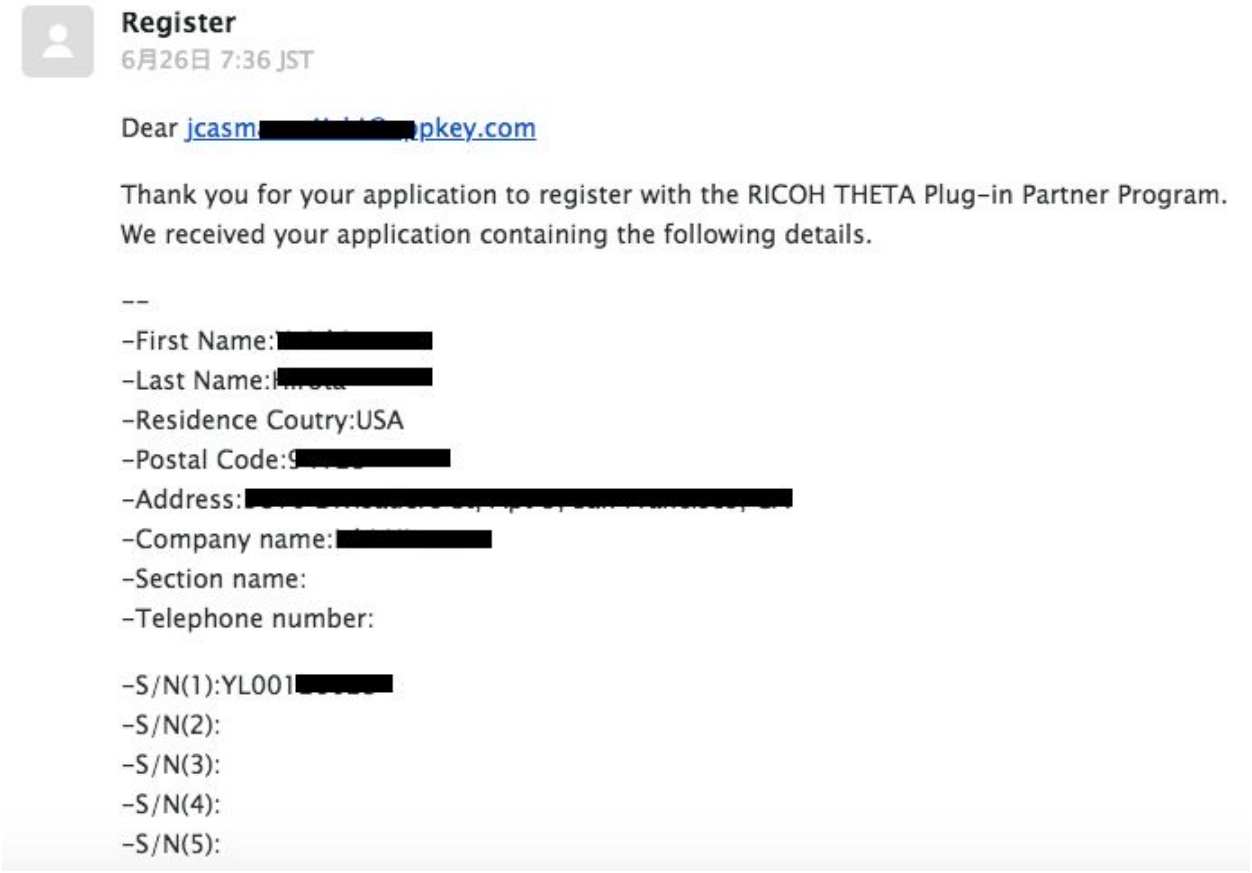
# Advantage of Dual-Fisheye in Star Trail Timelapse

The photographer faced a problem with the camera's automatic stitching "moving" features on the stitch line from one shot to another. When the photographer merged several equirectangular images he got distortions on the stitch line. His workaround so far has been to shoot images with the camera horizontal so that the seam line is along the horizon. Using this technique, the tripod is too visible. An example of the problem is shown in the following picture.

# First Step

To participate in the Star Trail Timelapse Challenge, you must first complete the free registration for the RICOH THETA Partner Program. The main link is here: https://www8.webcas.net/db/pub/ricoh/thetaplugin/create/input

You must complete registration, including uploading the Serial Number from your THETA camera. Please submit a screenshot of the email with the subject line: “[RICOH THETA Plug-in Partner Program] : Thank you for your registration” that shows completion of registration.




Email the screenshot of registration email to jcasman@oppkey.com

# Submitting Your Challenge

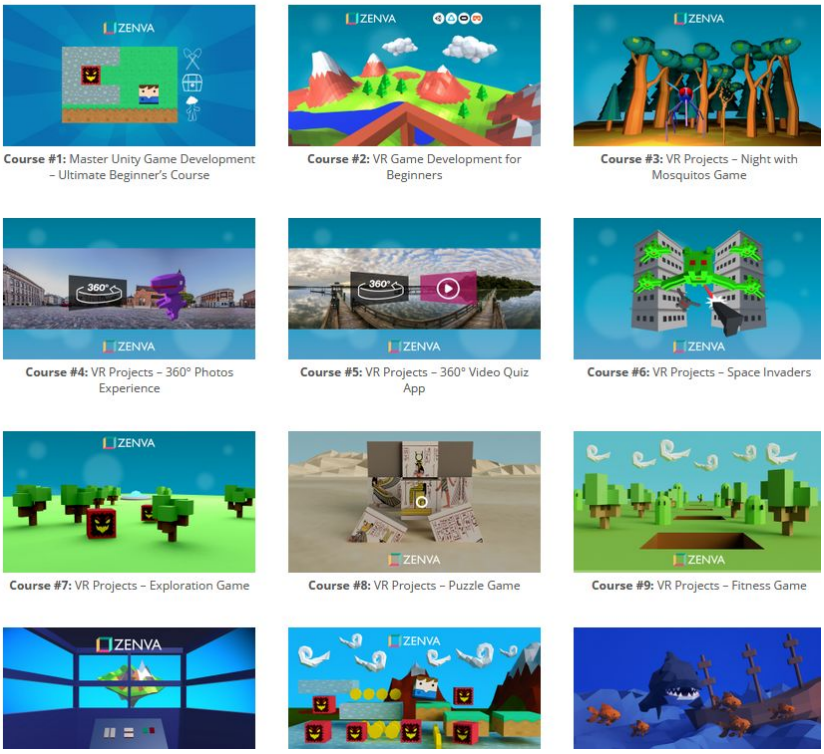
Upload the apk to your plug-in to Dropbox, Google Drive, or other file sharing service. Email the link to the file and any usage instructions to jcasman@oppkey.com

We will test the plug-in as follows:

- Install on THETA V with adb install yourplugin
    - The THETA V will have the newest firmware available from RICOH
- Run timelapse plug-in for 5 minutes in each mode
- Verify dual-fisheye images were saved to camera storage by downloading images using a USB cable with adb pull filename

The first 10 people to complete the challenge will get this awesome Virtual Reality Mini-Degree online course with 237 lessons, 40 hours of video and eligibility for certificate of completion.

## Curriculum




# THETA Stitcher

Community member Ichi Hirota has built the THETA Stitcher for Android. You can use this application on your Android phone to convert dual-fisheye images into equirectangular.