

Digital Camera Imagery & Movie Notes

The C-130 is flying a forward-looking digital camera located in the cockpit for in-flight image capture. The camera is a Point Grey Research Flea 3 (FL3-FW-14S3C-C) - Color, 1280 x 960 resolution equipped with an Edmund Optics 6mm lens (#67-709). The field of view is 68 x 51 degrees with approximately 6% barrel distortion.

Images are acquired once per second and stored as JPEG-compressed files, roughly 100 kB each. No image processing is performed beyond converting the raw pixel data to 24 bit color images. Applying a sharpening filter as is ordinarily done by consumer digital cameras will considerably improve the appearance. The UTC date and time are encoded in the filename as YYMMDD-HHMMSS.jpg. During the active project period contact one of the persons listed below for access to these images. Once the project is complete all images will be available from the data archive.

As time permits or upon request, H.264 compressed, half-resolution movies (.mp4) can be created of individual flights. For these movies, each 1-second image is processed with the linux ImageMagick toolkit. The image is scaled to 512x384 pixels and a sharpening filter applied [SHARPEN(0.0x1.0)]. Each image is then annotated in the lower left with the time the image was recorded. These 1-second images are then combined into a single MP4 video stream running at 15 frames/s, 1500 kbps data rate.

After the project is complete and the production data set is released, a set of movies consisting of each research flight will be released. Along with the above processing, data values at the image time for a select set of data parameters chosen by the researchers will be appended to the right of each image of the movie.

The movies are playable with Quicktime, Windows media player from Windows 7, mplayer, VLC, and others.

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