

OTREC Digital Camera Imagery and Movie Notes

During OTREC, the NSF/NCAR GV HIAPER flew forward, left, right, and downward facing digital cameras for in-flight image capture.

The forward camera is a Point Grey Research Hi-Res Flea Hi-Color, 1024x768 resolution. The Navitar DO-412 lens has a focal length of 4 mm, and the field of view is about 62 x 48 degrees with some barrel distortion. This camera is located on the right-wing pylon.

The left-facing camera is a Point Grey Research Scorpion SCOR-20SO - Color, 1600 x 1200 resolution equipped with an Edmund Optics 6mm lens (#67-709). The field of view is 75 x 54 degrees with approximately 7%-barrel distortion.

The right-facing 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.

The downward-facing camera is a Allied Scientific ProSilica GT4907 monochrome camera with Zeiss ZF.2 100mm F/2 lens. Field of view is 20 x 15 degree. For OTREC the camera was mounted so that the long dimension is fore-aft to the plane. Most downward-facing images were taken with 3x3 binning giving a resolution of 1620 x 1076 pixels. The images tend to be much larger than the forward/side images because of greater detail on the ground compared to the sky/clouds. (The exception being when flying above thick clouds and when the window iced up. These images are very small, ~10 kB)

Images were acquired once per second and stored as JPEG-compressed files. No image processing was 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.

Flight	Forward	Left	Right	Downward
RF01	OK	OK	OK	OK
RF02	OK	OK	OK	OK
RF03	Not available after 13:47	Not available after 13:47	Not available after 13:47	OK
RF04	Restart 12:39	Restart 12:39	Restart 12:39	Restart 12:39
RF05	OK	OK	OK	OK
RF06	Restart 13:40	Restart 13:40	Restart 13:40	Restart 13:40
RF07	OK	OK	OK	OK
RF08	Restart 16:19	Restart 16:19	Restart 16:19	Restart 16:19
RF09	OK	OK	OK	Restart 13:16
RF10	Restart 12:21	Restart 12:21	Restart 12:21	Restart 12:21
RF11	OK	OK	OK	OK
RF12	Restarts 15:07 and 15:10	Restarts 15:07 and 15:10	Restarts 15:07 and 15:10	Restarts 15:07 and 15:10
RF13	OK	OK	OK	OK
RF14	OK	OK	OK	OK
RF15	OK	OK	OK	OK
RF16	OK	OK	OK	OK
RF17	Camera started after takeoff	Camera started after takeoff	Camera started after takeoff	Camera started after takeoff
RF18	OK	OK	OK	No images for flight
RF19	OK	OK	OK	OK
RF20	OK	OK	OK	No images after 12:27
RF21	OK	OK	OK	OK
RF22	OK	OK	OK	OK

Test Flights:

Only sent images are available for TF04.

Ferry Flights:

On the return ferry flight (FF04) the native resolution of 3232 x 4864 pixels was used so the downward images are up to 2 MB each.

Please direct any questions to:

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NCAR/EOL/RAF