

Collecting High-resolution Varve Images - Light Box with Full-Spectrum Fluorescent Bulbs

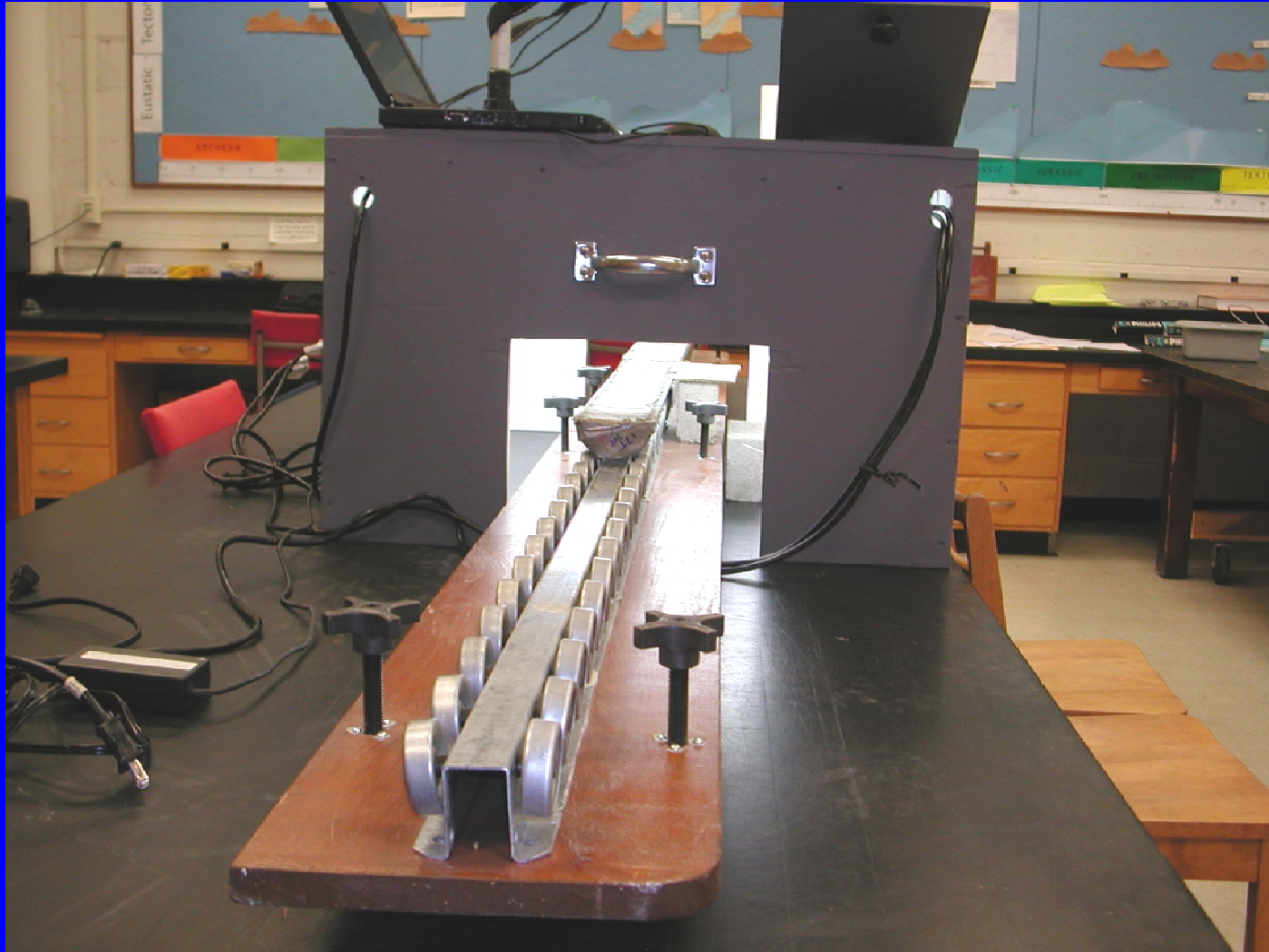
Rollers are to pass cores through light box for successive image collection. The box has a camera port on the top and has been painted on the inside with flat (non-gloss) white paint. Inside there are eight 2-ft full spectrum fluorescent bulbs to illuminate the cores.



Front view from left side.



View in end of box showing core roller system. The scale is set up on a brick even with the core surface on its right side.



View into box through access doors and camera port.



COLLECTING DIGITAL IMAGES

An example image is shown below. Some suggestions and hints:

All digital images should be collected at a high resolution and must include a scale. As explained below copied sets of digital images with their resolution changed in a program like Photoshop can be used if a particular program needs images of a lower resolution.

We recommend that full spectrum bulbs be used to illuminate the core when images are collected.

Cores should be partially and evenly dried to accentuate the contrast between layers of different grain size.

Images are generally collected with the long axis of the core parallel to the long (horizontal) dimension of the images and with the bottom of the core section on the left side of the image. In our set up this means that the bottom of the core is fed from left to right through the box since the camera is rotated 180° on the stand at the far side of the box. Our computer programs automatically rotate the images to vertical on your computer screen.

Bedding in the varve sequence should be lined up, as much as is possible, so that it is parallel to the shorter dimension of the image.

IF YOU INTEND TO USE THE VARVE MEASUREMENT AND GRAY-SCALE PROFILE SOFTWARE PROVIDED PLEASE READ THE INSTRUCTIONS FOR COLLECTING IMAGES FOR THESE PROGRAMS IN THE INSTRUCTION MANUALS FOR SETTING UP THE PROGRAMS AND USING THEM.

All images must have a scale as standard practice and because computer programs using the images have calibration routines that take advantage of scale bars on the images. The scale bar should be placed along the side of the image perpendicular to bedding. If you are collecting images specifically for gray-scale profile analysis it may be convenient to have the scale parallel to bedding across the bottom of the core section.

If images are going to be used in a computer measurement program a marking system should be developed, such as marks placed on the core liners, which show the bottom of the first varve that will be measured on an image and the top of the last varve to be measured on an image. The mark for the top of the last varve will appear as the bottom of the first varve to be measured on the next image and so on in a sequence of core images.

High Resolution Digital Images: High resolution image of varves from Kelsey Ferguson brick yard, Redland Brick Co., South Windsor, Conn. Up is to the right. Scale is in cm. Starting and ending marks for computerized varve measurement are indicated on the core liner in red ink and the images are numbered.

