



Fig. 5. Accommodative change in subjects viewing moving stereoscopic images on an LCD and a CRT (Experiment 2). X-axis shows time: 0–60 sec, Y-axis shows diopter: 0–4 diopter.

gence. When the target was virtually most distant, accommodation was equivalent to a screen distance of about 1.7 D in subject C and about 1.4 D in subject D. A tendency was thus seen to focus on a place more distant than the actual screen.

On the LCD, the subject's accommodative amplitude also changed when the target moved from the near to far point (Figs. 5(b) and (d)). In subject C, accommodation was smaller than with the CRT. In subject D, a tendency was seen for accommodation to decrease at the near point with each cycle of the target.

Thus, it was shown that accommodation is strongly influenced by angle of convergence when subjects gaze at a stereoscopic image. It was also shown, regardless of the whether or not liquid crystal shutter glasses were used, that accommodation was easy and comfortable when focusing on virtually distant movements on both the LCD and CRT.

Experiment 3. Measurement of accommodation when still stereoscopic image moved from far to near

Figure 6 shows the results when accommodation was measured as subjects gazed at near and far still stereoscopic

images for 30 seconds.

The far point was about 0.5 D in subject E, shown in Fig. 6(a). This suggests that the point of focus was at a distance of about 2 m, indicating a tendency for focus to be at a point more distant than the actual screen. The maximum accommodation for the near point was about 2.6 D, suggesting accommodation was for a distance 38 cm in front of the subjects' eyes. However, young people have been shown experimentally to have an accommodation range of 0.3 D or 0.5 D from the actual distance. Therefore, the accommodation of subject E was probably 3.1 D, or 32 cm in front of the subject's eyes.

Subject F (Fig. 6(b)) had accommodation of the far point of about 1.6 D, which was equivalent to the visual distance of the screen, but accommodation of the near point was a maximum of 4.6 D, a distance of 21 cm from the eyes. Consequently, focus was on a distant point with still pictures also. Moreover, accommodative focus was on a near point even with the still stereoscopic image. This suggests that with still stereoscopic images accommodation is greater with near images than with distant images.