



Supplementary Figure 2. Scanning Laser Ophthalmoscope images of the left eyes of MD1 and MD2 showing examples of both static and dynamic perimetry. (a) SLO dynamic perimetry of Subject MD1. The subject fixated the white cross fixation target while square stimuli were moved from non-seeing to seeing regions of the retina (see Methods). The open white square marks the general non-seeing area of the retina (the scotoma side). The black squares mark the locations where the subject first reported being able to see the stimuli and thus mark the outer edge of the damaged retina. The subject fixated the white cross with his PRL and the former fovea was approximately 12.5 degrees below the PRL. Compared with the diagram shown in Fig. 1, the PRL appears closer to the edge of the scotoma because in dynamic perimetry the reaction times of the subject and experimenter result in a larger estimate of scotoma size. The optic disc is visible on the lower left of the image. For scale, the optic disk is approximately 5 degrees wide. (b) SLO static perimetry of Subject MD2. The subject fixated the white cross fixation target with his PRL while square stimuli were presented

for 180ms. The subject was asked to report if the stimulus was visible. Black crosses are samples of the retinal location of the fixation targets during presentation of the stimuli, illustrating shifts in stimuli retinal location due to eye movements. The cluster of these crosses is the position of the PRL. Filled squares represent retinal positions (corrected for eye movements) at which the stimuli of the size shown were seen, and unfilled squares represent positions at which the stimuli were not seen. Thus, only the crescent shaped darker area of the fundus on the left (nasal side) of the optic disk was functioning. There are additional functioning areas further nasally and also in the far temporal field. However, this is the least eccentric functioning retinal location and the one the subject uses to examine targets (and includes the subject's PRL).

Note that by convention these SLO images show the optic disk on the side that it would appear on the visual field with the superior retina (corresponding to the lower visual field) at the top of the image and the inferior retina (corresponding to the upper visual field) at the bottom of the image. MD2's SLO is reproduced from figure 5a in Nugent et al. (2003), *Vision Res.*, **43**, 2427-2437.