CLAIMS:

1. A headset for use in optical examination of a user, the headset comprising:

a headset body configured to be worn on the face of a user, the headset having a front user-facing face side and a back side opposite the face side, left and right sides, a top and a bottom;

the face side having a forward edge configured to rest on the user's face when the headset is worn, an concavity extending back from the forward edge and defining an open region having a surface with a rear portion and a surrounding side, the open region adjacent a user's eye when the headset is worn;

a fundus camera comprising an imager and optics within an elongated housing, the optics comprising a camera objective, the fundus camera having a field of view extending outwards from the camera objective along an imaging axis, the optics configured to direct light entering the camera objective to the imager;

a mounting assembly rotatably coupling the housing to the headset body to allow rotation of the housing about a pivot axis, the housing extending laterally from the pivot axis into the open region, wherein the objective and imaging axis therefrom is laterally displaced from the pivot axis, the fundus camera positionable so the camera field of view extends outward from the open region;

wherein rotation of the fundus camera housing about the pivot axis moves the camera objective along an arc within the open region, said rotation allowing adjustment of a position of the camera objective relative to an eye of a user when the headset is worn.

2. The headset of claim 1, the mounting assembly further comprising a motor which, when activated causes rotation of the fundus camera.

3. The headset of claim 1, the housing having first and second ends, a front side and a back side, the camera objective positioned in the front side adjacent the first end, of the housing, the mounting assembly comprising first and second portions rotationally coupled to each other, the first portion of the mounting assembly connected to the housing adjacent the

second end of the housing, the second portion of the mounting assembly connected to the surface of the open region.

4. The headset of claim 3, the second portion of the mounting assembly is connected to the headset body substantially midway between the left and right sides of the body, the fundus camera being rotatable from a first position suitable to image a left eye of a user wearing the headset to a second position suitable to image a right eye of the user when the user is wearing the headset.

5. The headset of claim 1, the fundus camera comprising a left fundus camera rotationally mounted at a left side of the open region and a right fundus camera rotationally mounted at a right side of the open region, the left and right fundus cameras configured to image the left and right eye respectively of the user when the headset is worn by the user.

6. The headset of claim 1, the fundus camera further comprising a light source internal to the housing, the light source configured to generate a light beam that exits the camera objective and can illuminate a retina of the user's eye when the light beam passes through the pupil of the eye.

7. The headset of claim 6, the fundus camera further comprising an exit mirror directing the light source through the camera objective, the exit mirror movable on at least one axis to change a direction of the light beam exiting the objective.

8. The headset of claim 1, the mounting assembly comprising first and second portions rotationally coupled to each other;

the first portion of the mounting assembly connected to the housing;

the second portion of the mounting assembly slidably mounted in a track formed in the headset body, and movable between a first track position and a second track position,

wherein motion of the second portion within the track provides lateral motion of the fundus camera within the open region.

9. The headset of claim 1, further comprising a plurality of eye tracking cameras configured to capture images of the eyes of the user when the user is wearing the headset, each eye remaining visible to least one eye tracking camera as fundus camera is moved within the open area.

10. The headset of claim 1, further comprising a display situated behind the fundus camera relative to the front side of the headset, the display configured to present images visible to the user of the headset when the headset is worn.

11. The headset of claim 10, wherein the fundus camera is movable between an imaging position in which the fundus camera obscures a first portion of the visual display from the user and a storage position in which an amount of the visual display obscured from the user by the fundus camera is less than when the fundus camera is in the imaging position.

12. The headset of claim 10, wherein the fundus camera is removably mounted within the headset body.

13. The headset of claim 12, wherein the headset comprises an outer frame and an optics module removably mounted within the outer frame, the fundus camera mounted to the optics module.

14. A computer controlled method for fundus imaging of a retina of a patient's eye comprising the steps of:

providing a headset comprising a headset body having a face side configured to rest on the user's face when the headset is worn, a concavity extending back from the forward edge and defining an open region adjacent a user's eye, , and a fundus camera mounted within

the headset and rotatable along a pivot axis, and having a camera with a field of view along an optical axis extending from a camera objective towards the face of the user, the optical axis being laterally displaced from the pivot axis, wherein rotation of the fundus camera about the pivot axis moves the camera objective along an arc within the open region and thereby changes a horizontal and vertical position of the camera objective relative to the user's eye;

mounting the headset on the head of a user;

capturing a first image of the eye of the user with the fundus camera;

adjusting the rotational position of the fundus camera based on the first image by rotating the fundus camera about the pivot axis to change alignment of first camera objective with a pupil of the eye; and

capturing a first retinal image of the eye with the fundus camera after the step of adjusting the rotational position of the fundus camera based on the first image.

15. The method of claim 14, wherein the step of adjusting the rotational position of the fundus camera based on the first retinal image comprises the steps of displaying the first image on a computer display of a computing device external to the headset and receiving in the headset from the computing device control signals operative to rotate the first fundus camera.

wherein the step of adjusting the rotational position of the fundus camera based on the first retinal image comprises the steps of displaying the first image on a computer display of a computing device external to the headset and receiving in the headset from the computing device control signals operative to rotate the fundus camera.

16. The method of claim 14,

the step of capturing the first retinal image of the eye comprising capturing a plurality of retinal images of the eye, each retinal image being of a respective portion of the retina of the eye;

the method further comprising the step of mapping each of the plurality of retinal images of the eye captured by the first fundus camera to a respective position in a retinal image map,

the position of a respective retinal image in the retinal image map based on the respective portion of the retina of the eye imaged in the respective retinal image.

17. The method of claim 16, wherein, the headset further comprising an eye tracking camera, the method further comprising the steps of:

capturing using the eye tracking camera within the headset a plurality of images of the eye during the step of capturing the plurality of retinal images of the eye with the first fundus camera;

analyzing images captured by the eye tracking camera to determine a gaze direction of the eye; and

determining the respective portion of the retina of the eye imaged in that respective image based on the determined gaze direction and the position of the camera objective relative to the pupil of the eye at the time a respective image was captured by the first fundus camera;

the position of retinal images mapped to the retinal image map being a function of the determined portion of the retina of the eye imaged for each of the respective plurality of retinal images.

18. The method of claim 17, wherein the step of mapping further comprises matching image features in captured retinal images, the mapping of retinal images to the retinal image map being a further function of said feature mapping.

19. The method of claim 16, further comprising the step of determining based on predefined imaging criteria that a predefined minimum portion of the retina has been imaged,

the step of capturing the plurality of retinal images being terminated after such a determination.

20. The method of claim 19, further comprising the steps of automatically identifying a portion of the retina that has not been successfully imaged and automatically instructing the

patient to alter a direction of gaze so as to bring the portion of the retina that has not been successfully imaged into the field of view of the fundus camera.

21. The method of claim 16, further comprising the step of stitching the mapped retinal images into a combined retinal image and storing the combined retinal image in a computer memory.

22. The method of claim 16, further comprising the step of instructing the patient to change a direction of gaze during the step of capturing the plurality of retinal images.

23. The method of claim 22, wherein the headset further comprises a plurality of visible light sources arranged around an internal periphery of the open region; the step of instructing the patient to change the direction of gaze comprising illuminating at least one of the plurality of visible light sources to indicate a desired gaze direction.

24. A computer controlled method for fundus imaging of a respective retina of a user's first and second eye comprising the steps of:

providing a headset comprising a headset body having a face side configured to rest on the user's face when the headset is worn, a concavity extending back from the forward edge and defining an open region adjacent the first and second eyes, the headset further comprising first and second rotatably mounted fundus cameras in the open region, the first fundus camera adjacent to the first eye and the second fundus camera adjacent to the second eye, each fundus camera rotatable along a respective pivot axis and having a camera with a field of view along a respective optical axis laterally displaced from the respective pivot axis and extending from a respective camera objective towards the face of the user, wherein rotation of a respective fundus camera about its respective pivot axis moves the respective camera objective along a respective arc within the open region and thereby changes a horizontal and vertical position of the respective camera objective relative to a respective eye of the user ;

mounting the headset on the head of the user;

adjusting a rotational position of the first and second fundus cameras based on an interpupillary distance between a pupil center of the first eye and a pupil center of the second eye; and

capturing a plurality of retinal images with the first and second fundus cameras, each retinal image being of a respective portion of the retina of the respective eye.

25. The method of claim 24, wherein the step of adjusting the rotational position comprises the steps of:

receiving images of the first and second eyes; and

adjusting the rotational position of each respective fundus camera based on the received images of the respective eye.