Optical aberrations we will be targeting:

1. **Myopia** (close objects are clear, and distant objects are blurry)
   * Also known as nearsightedness, myopia is usually inherited and often discovered in childhood. Myopia often progresses throughout the teenage years when the body is growing rapidly.
   * This is due to axial elongation of the eyeball, so is caused by a long eyeball.
   * Typical range: 0 🡪 -8.00. -8.00 would be pretty high myopia (very poor vision) and not very common. I would be impressed if we could accurately measure to -8.00D.
   * [www.govisibly.com](http://www.govisibly.com) says they can accurately measure 0 🡪 1.00D
2. **sHyperopia**(close objects are more blurry than distant objects)
   * Also known as farsightedness, hyperopia can also be inherited. Children often have hyperopia, which may lessen in adulthood. In mild hyperopia, distance vision is clear while near vision is blurry. In more advanced hyperopia, vision can be blurred at all distances.
   * This is due a small eyeball
   * Typical range: 0 🡪 +8.00. Once again, +8.00 is a high prescription. Hyperopia is also quite difficult to measure in young people as they can accommodate over their prescription. I would be impressed if we could measure up to +5.00D.
   * [www.govisibly.com](http://www.govisibly.com) says they can accurately measure 0 🡪 +3.50D
3. **Astigmatism.** 
   * Astigmatism usually occurs when the front surface of the eye, the cornea, has an asymmetric curvature. As you are aware this is both axis (location) and power (scale).
   * Normally the cornea is smooth and equally curved in all directions, and light entering the cornea is focused equally on all planes, or in all directions (no asg. In astigmatism, the front surface of the cornea is curved more in one direction than in another. This abnormality may result in vision that is much like looking into a distorted, wavy mirror. Usually, astigmatism causes blurred vision at all distances
   * Astigmatism in Australia (and most countries) is written in negative form (so a minus sign appears ahead of the power). Typical range: 0 🡪 -5.00. Anything over -5.00 is very large. It would be ideal if we could accurately measure to -3.00D
   * [www.govisibly.com](http://www.govisibly.com) says they can accurately measure 0 🡪 -3.00D
4. **Presbyopia**(aging of the lens in the eye)
   * After age 40, the lens of the eye becomes more rigid and does not flex as easily. As a result, the eye loses its focusing ability and it becomes more difficult to read at close range. This normal aging process of the lens can also be combined with myopia, hyperopia or astigmatism.
   * Typical range is 0 🡪 +2.50D. Sometimes we do as high as +3.50 but that is considered to be pretty high.
   * [www.govisibly.com](http://www.govisibly.com) says they can accurately measure 0 🡪 +4.50