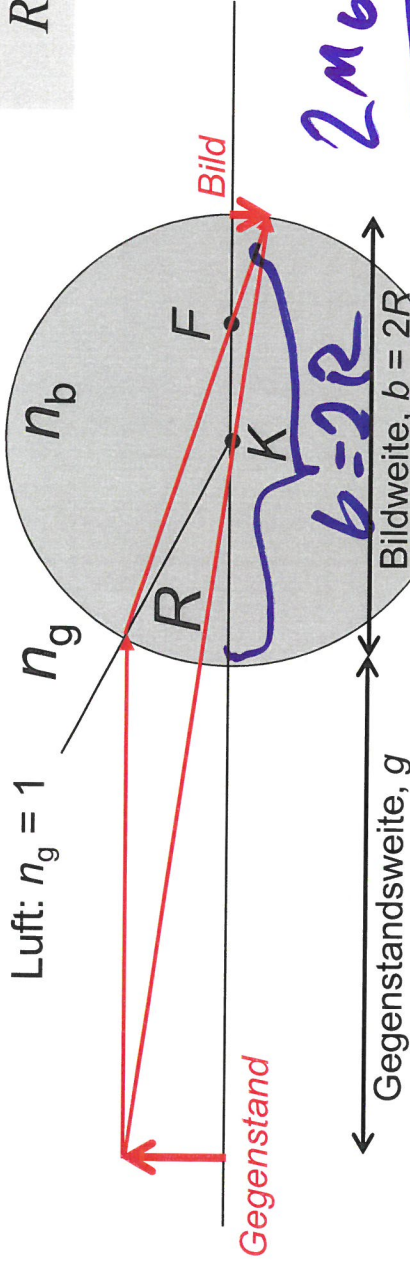


Einfache Kugel als Auge?



$$\frac{n_b - n_g}{R} = D = \frac{n_g}{g} + \frac{n_b}{b}$$

$n_b = ?$

$$\frac{n_b - 1}{R} = \frac{1}{g} + \frac{n_b}{b}$$

$$\frac{1}{g} = \frac{n_b - 1}{R} - \frac{n_b}{b} > 0$$

$b < 2R$

$$\frac{2n_b - 1}{2R} > \frac{n_b}{2R}$$

$$2n_b - 2 > n_b$$

$$n_b > 2$$

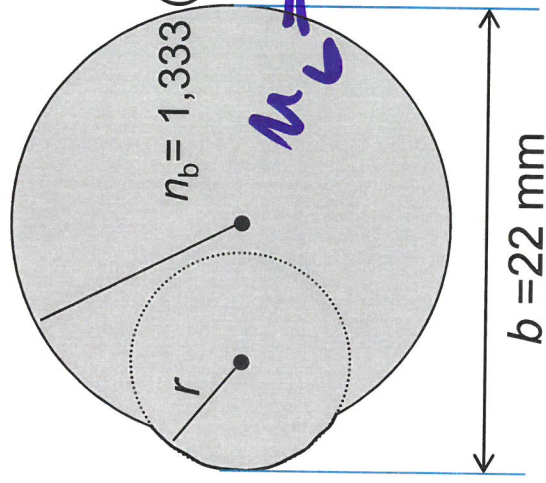


n_b müsste größer sein als 2! Diamant vielleicht?



2 Kugeln!

$$n_g = 1 \text{ (Luft)}$$



$$\frac{n_b - n_g}{R} = D = \frac{n_g}{g} + \frac{n_b}{b}$$

$$= \frac{4}{3}$$

$$n_b = n$$

$$r =$$

$$\frac{n-1}{R} = \left(\frac{1}{g} \right) + \frac{n}{b}$$

$$\frac{\frac{4}{3} - 1}{R} = \frac{\frac{4}{3}}{22 \text{ mm}}$$

$$R = \frac{1}{4} \cdot 22 \text{ mm} = 5.5 \text{ mm}$$

Vorteile:

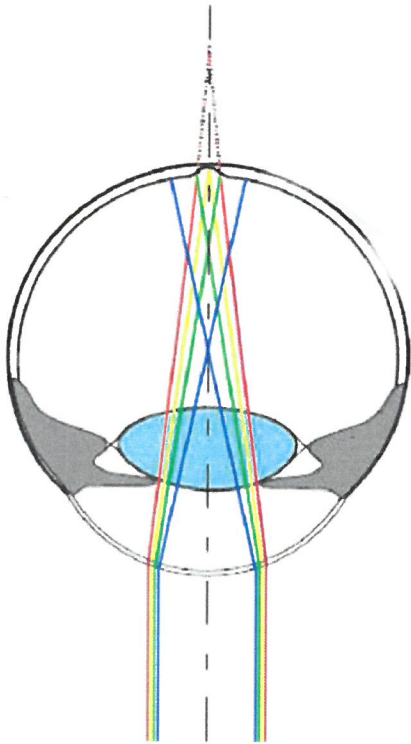
- Geschlossen \Rightarrow weniger verletzungsanfällig
- Gute räumliche Auflösung
- Bild entsteht innerhalb der Kugel

Nachteile:

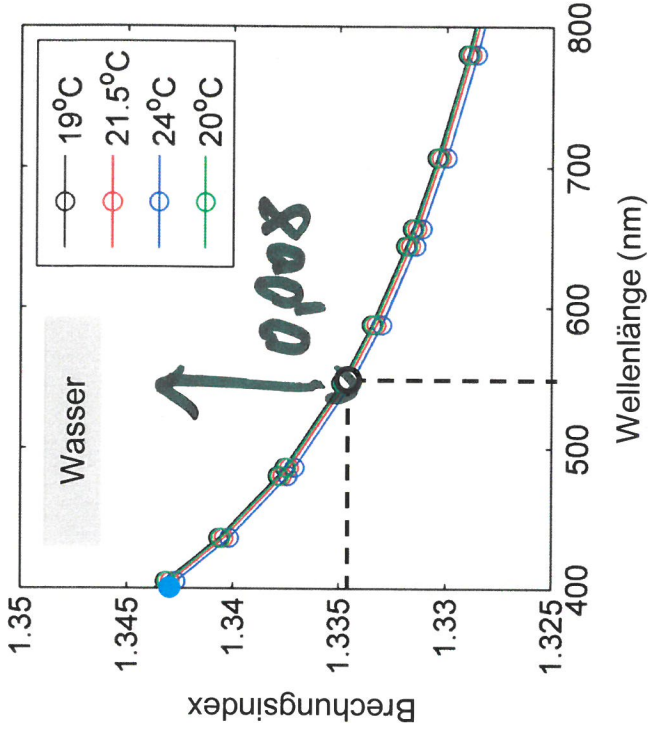
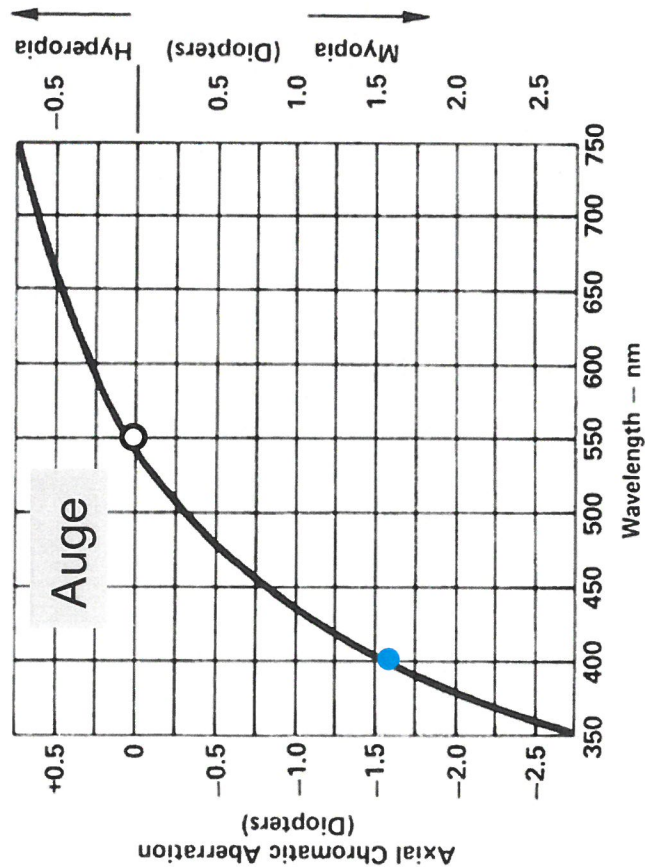
- Keine Akkomodationsfähigkeit



Chromatische Aberration (Fortsetzung)



Chromatische Aberration: ● ● ● ● ●



$$\frac{0.008}{1.335} = 0.6\%$$

$$\frac{1.5 \text{ Dptr}}{62 \text{ Dptr}} = 2.4\%$$

$b \uparrow$

$g \downarrow$

$$D = \frac{1}{g} + \frac{u_0}{b}$$

$b \uparrow$

Konstante

$D \downarrow$

$$\left(\frac{u_0}{b} \right) \downarrow$$

$b \downarrow$

$g \uparrow$

$$D = \frac{1}{g} + \frac{u_0}{b}$$

$b \downarrow$

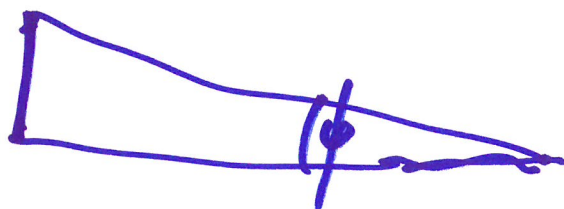
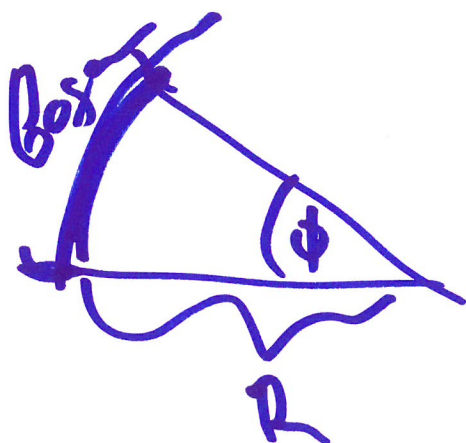
$$\left(\frac{u_0}{b} \right) \uparrow$$

Konstante: $D \uparrow$



$$\phi^g = \frac{a_3}{g} = \frac{G}{g}$$

$$1' = \frac{1^0}{60}$$



$$\alpha = \frac{3 \mu\text{m}}{17 \mu\text{m}} = 1,7 \cdot 10^{-4} \text{ rad} \approx 0,6'$$

$= 0,01^\circ$