$$BC = CO = d;$$

$$BO = Sin[\alpha_2] \frac{BC}{Sin[\frac{\pi}{2} - \frac{\alpha_2}{2}]} = \frac{2 d Sin[\alpha_2]}{Cos[\frac{\alpha_2}{2}]} = \frac{2 d Sin[\frac{\alpha_2}{2}] Cos[\frac{\alpha_2}{2}]}{Cos[\frac{\alpha_2}{2}]};$$

BO = 2 d Sin
$$\left[\frac{\alpha_2}{2}\right]$$
;

$$AB = \frac{BC}{Sin[\gamma]} = \frac{d}{Sin[\gamma]};$$

$$\frac{BO}{Sin[\phi]} = \frac{AB}{Sin\left[\frac{\pi}{2} - \frac{\phi}{2}\right]} = \frac{AB}{Cos\left[\frac{\phi}{2}\right]};$$

$$\frac{2 \operatorname{d} \operatorname{Sin}\left[\frac{\alpha_2}{2}\right]}{2 \operatorname{Sin}\left[\frac{\phi}{2}\right] \operatorname{Cos}\left[\frac{\phi}{2}\right]} = \frac{\frac{\operatorname{d}}{\operatorname{Sin}[\gamma]}}{\operatorname{Cos}\left[\frac{\phi}{2}\right]};$$

$$\frac{\sin\left[\frac{\alpha_2}{2}\right]}{\sin\left[\frac{\phi}{2}\right]} = \frac{1}{\sin[\gamma]};$$

$$\operatorname{Sin}\left[\frac{\phi}{2}\right] = \operatorname{Sin}\left[\frac{\alpha_2}{2}\right] \operatorname{Sin}[\gamma];$$

$$\phi = 2 \operatorname{ArcSin} \left[\operatorname{Sin} \left[\frac{\alpha_2}{2} \right] \operatorname{Sin} [\gamma] \right];$$

$$\alpha_2 = 2 \operatorname{ArcSin}\left[\frac{\operatorname{Sin}\left[\frac{\phi}{2}\right]}{\operatorname{Sin}[\gamma]}\right];$$

$$B0 = 2 \, \mathsf{CO} \, \mathsf{Sin} \Big[\frac{\alpha_2}{2} \Big];$$

$$\theta = \frac{\phi}{2}$$
;

BE = BO
$$Sin[\theta]$$
;

$$E0 = B0 \cos[\theta];$$

F0 = C0 Cos[
$$\gamma$$
];

DE = FC = CO Sin[
$$\gamma$$
];

$$DC = EF = \sqrt{BC^2 - BD^2};$$

Simplify
$$\left[\frac{\text{FO}^2 + \text{EO}^2 - \text{EF}^2}{2 \text{ FO EO}}\right]$$
;

$$\eta = \operatorname{ArcCos}\left[\frac{\operatorname{Sin}\left[\frac{\alpha_{2}}{2}\right] - \operatorname{Sin}[\gamma] \operatorname{Sin}\left[\frac{\phi}{2}\right]}{\operatorname{Cos}[\gamma] \operatorname{Cos}\left[\frac{\phi}{2}\right]}\right]$$

$$\varphi=\pi-\eta-\alpha_1;$$

$$\alpha_1=\pi-\eta-\varphi;$$