Also, $\frac{(g+g_1)}{r} = \cos\frac{\theta}{2}$

$$\Rightarrow \quad \frac{3.125 g_1}{r} = \cos\frac{\theta}{2} \quad \text{or} \quad g_1 = \frac{1.405 \times \cos(51.5)}{3.125}$$

$$= 0.28\overset{0}{A}; \quad g = 0.595\overset{0}{A}$$

Use SI units

$$m_F = \frac{0.017}{6.023\times10^{23}}\text{kg} \quad m_0 = \frac{0.016}{6.023\times10^{23}} = 2.66 \times 10^{-26}\text{kg}$$

$$I_{yy} = \sum m_i y_i^2 = 2.82\times10^{-26} kg \times 1.1^2 \times 10^{-20}\ m^2 + 2.82\times10^{-26} kg \times 1.1^2 \times 10^{-20}\ m^2$$

= 6.82 * 10^{-46} kgm^2

$$I_{xx} = \left(2.82*10^{-26}*0.28^2*10^{-20} + 2.82*10^{-26}*0.28^2*10^{-20} + 2.66*10^{-26}*0.595^2\times10^{-20}\right)\text{kgm}^2$$

= 1.38 * 10^{-46} kgm^2

$$I_{zz} = \left[2.82*10^{-26}*\left(h^2+g_1^2\right)*2 + 2.66*10^{-26}*g^2\right]\text{kgm}^2$$

$$= \left(2.82*10^{-26}*\left(1.1^2+0.28^2\right)*10^{-20}*2 + 2.66*10^{-26}*0.595^2*10^{-20}\right)\text{kgm}^2$$

$$= 8.21*10^{-46}\text{kgm}^2$$

All the three principal moments of inertia are different, indicating that F_2O is an asymmetric top.