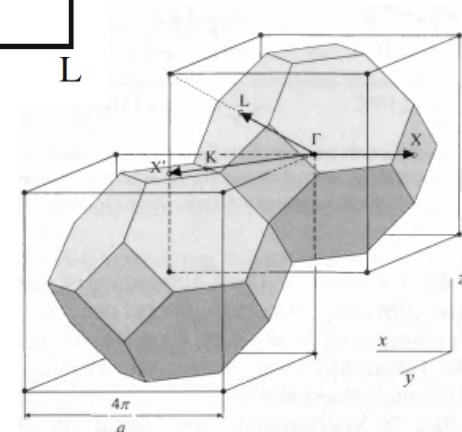
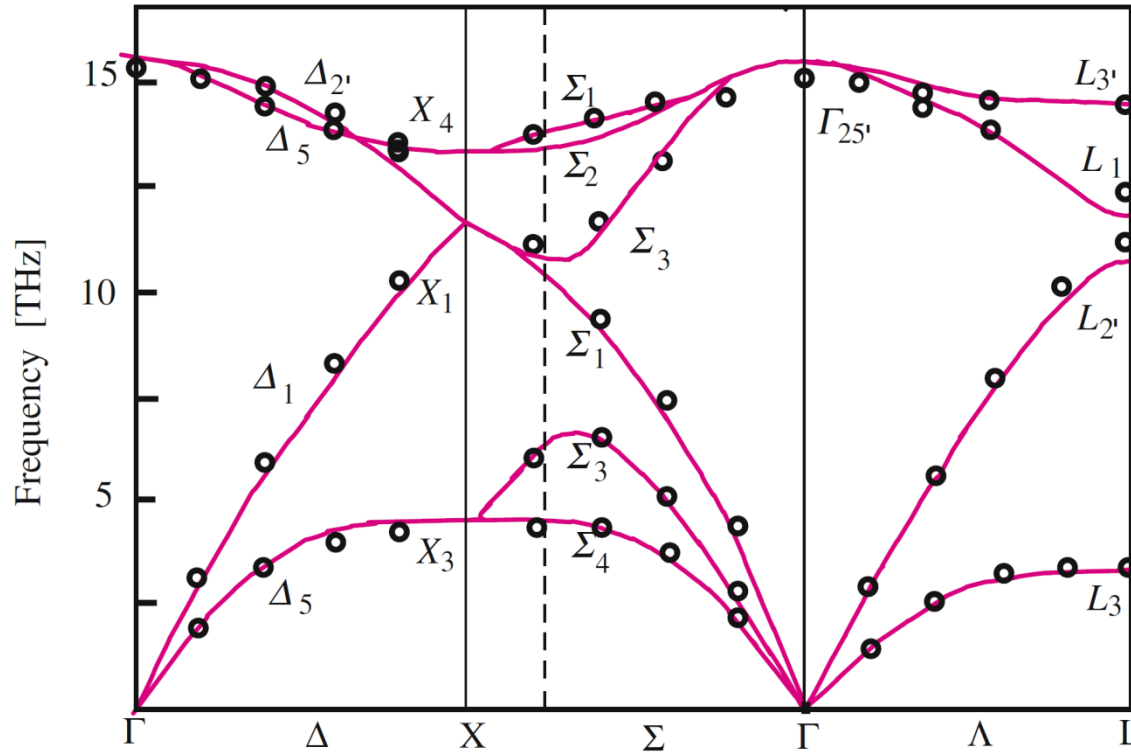
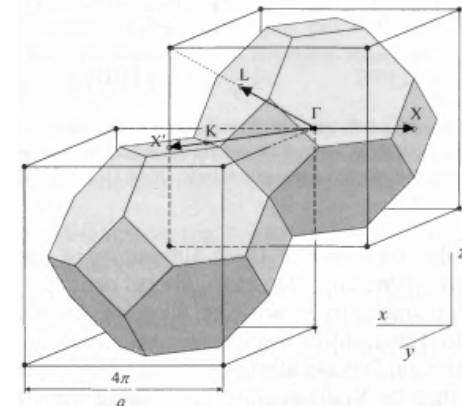
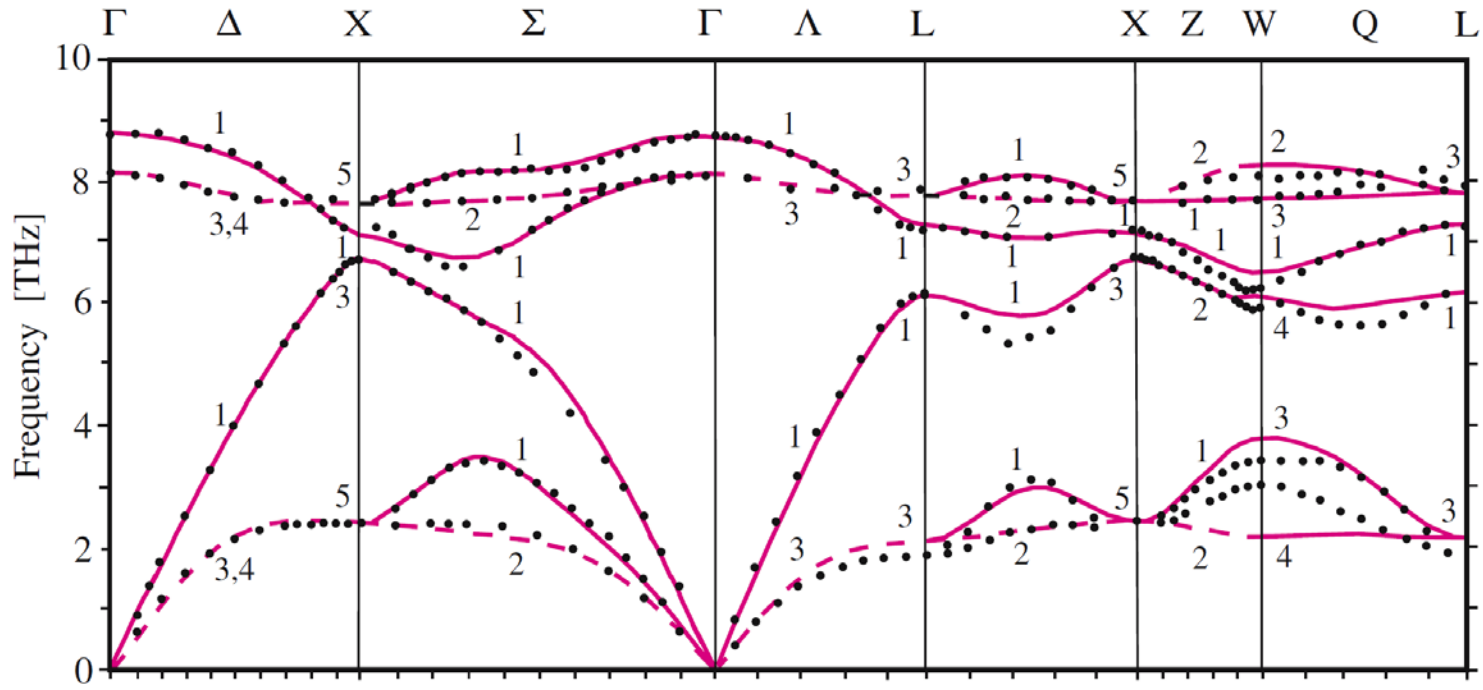


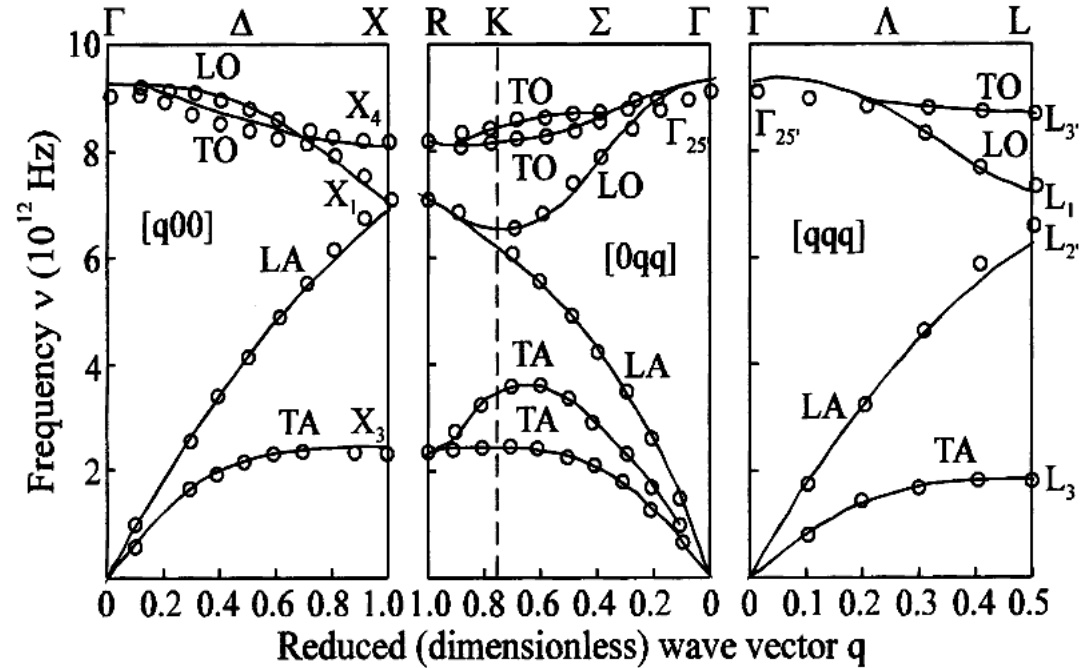
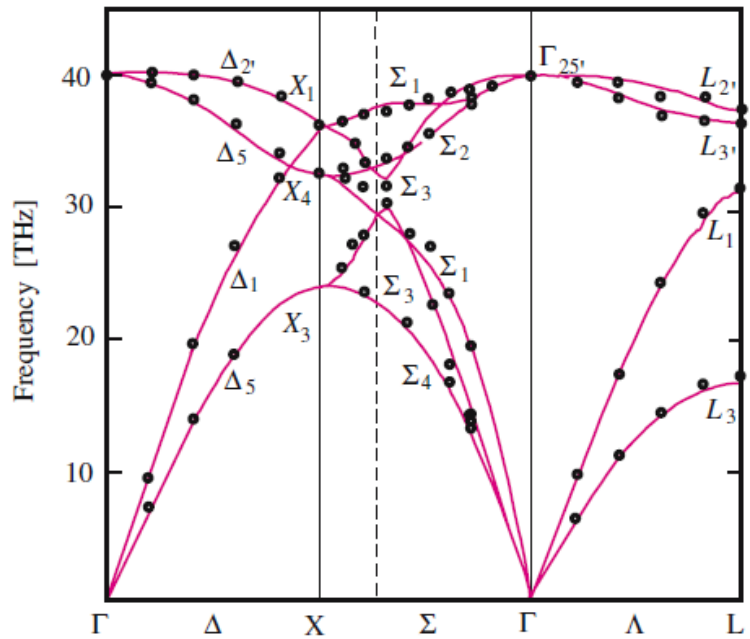
Phonon dispersion Si



Phonon dispersion GaAs



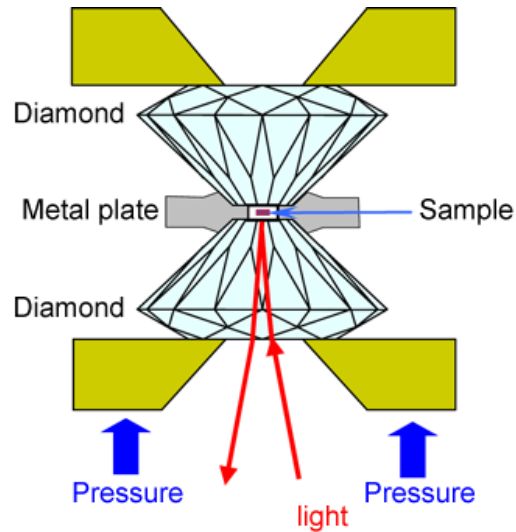
Dispersion curves of diamond & ...



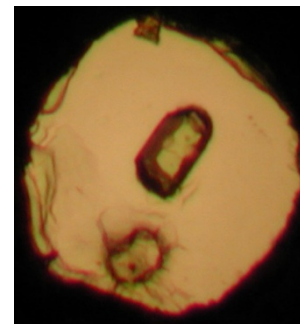
- (a) Graphite
- (b) Germanium
- (c) Boron Nitride
- (d) Impossible to tell

High pressure experiments

Diamond anvil cell

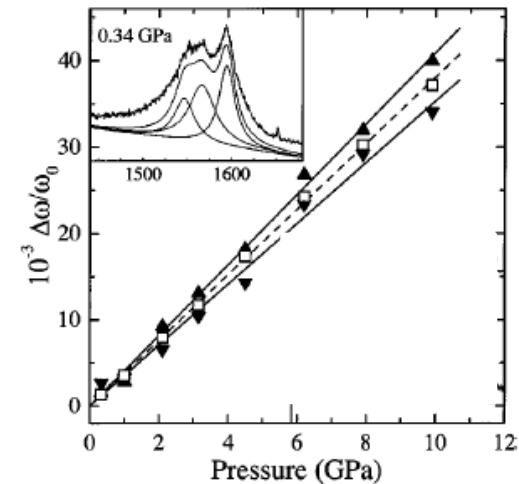
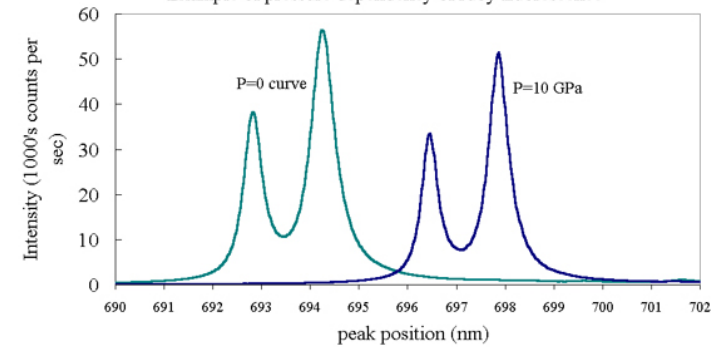


Picture of sample & ruby at 10GPa



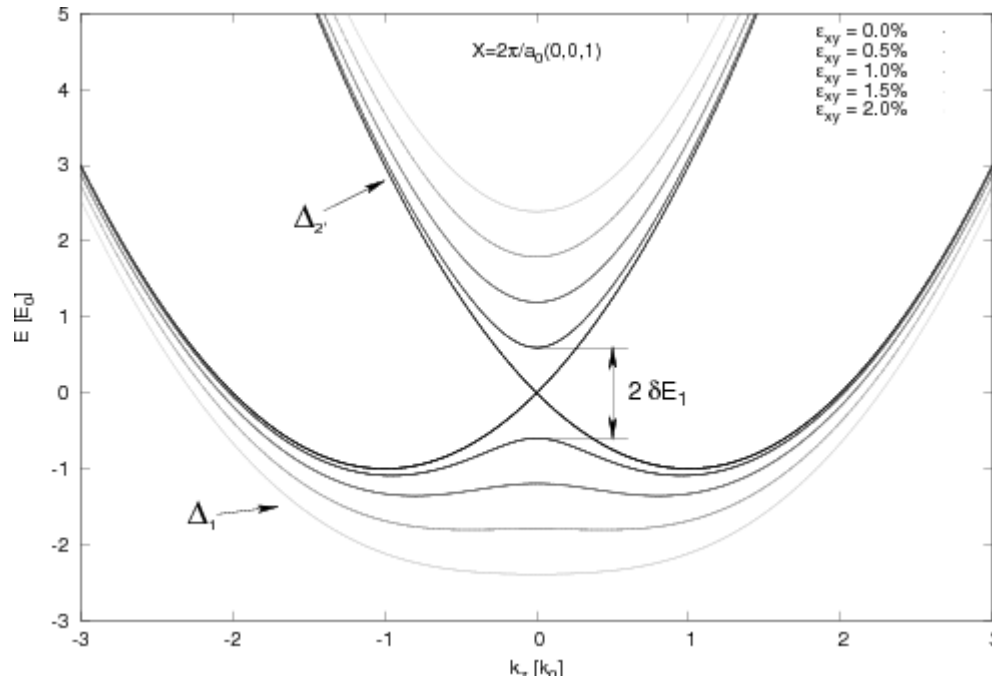
350 μ m

Example of pressure dependency of ruby fluorescence



Pictures: Kobe University, University of Arizona
Data: SR, Phys. Rev. B (2000)

Shear strain splitting



Typical valence bands of tetrahedral semiconductors, shear strain along (110)
Note how effective mass changes

Types of e-ph interaction

Phonon	Si		GaAs	
	Conduction	Valence	Conduction	Valence
TA	DP (Ξ_u)	DP (b, d)	PZ	DP (b, d), PZ
LA	DP (Ξ_d, Ξ_u)	DP (a_v, b, d)	DP (a_c), PZ	DP (a_v, b, d), PZ
TO		DP (d_0)		DP (d_0)
LO		DP (d_0)	Fröhlich	DP (d_0), Fröhlich