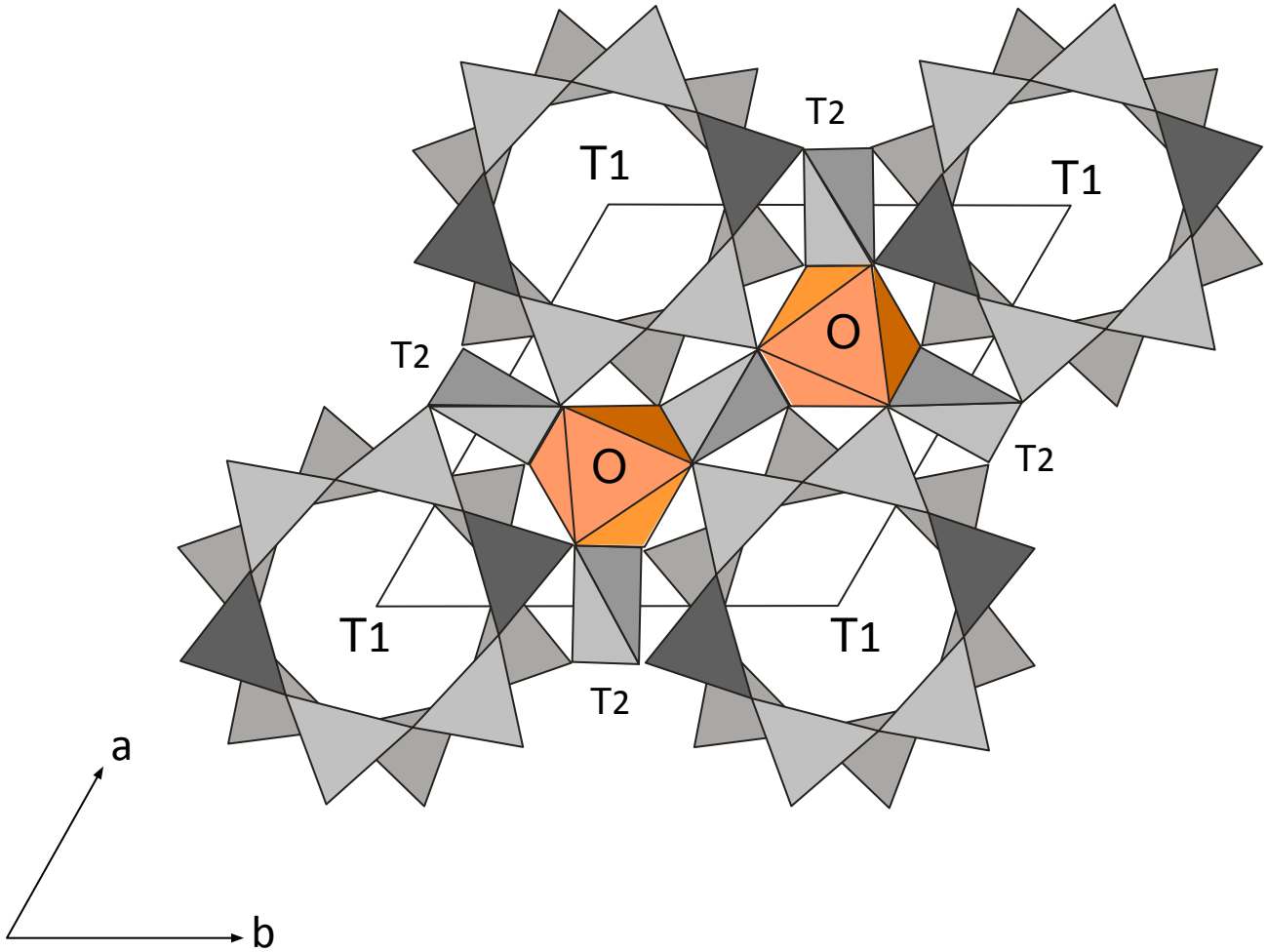
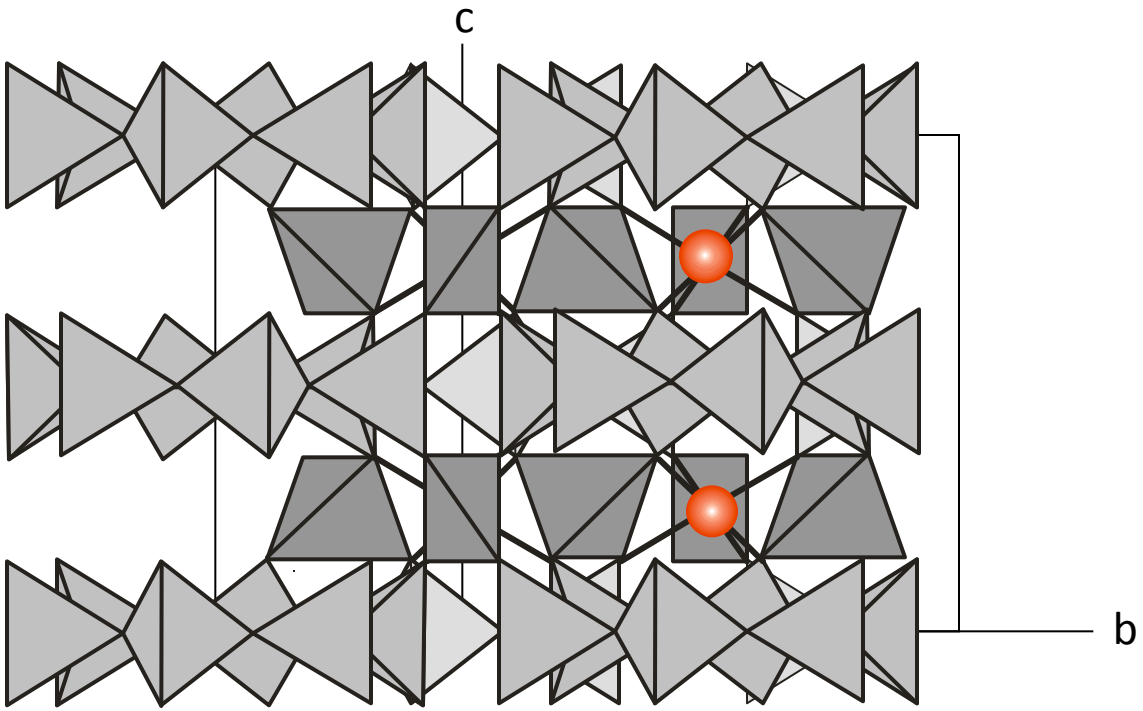
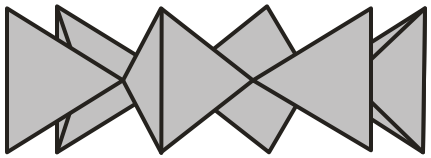
Структура кордиерита

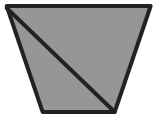


Структура кордиерита





$[Al_2Si_4O_{18}]^{14-}$

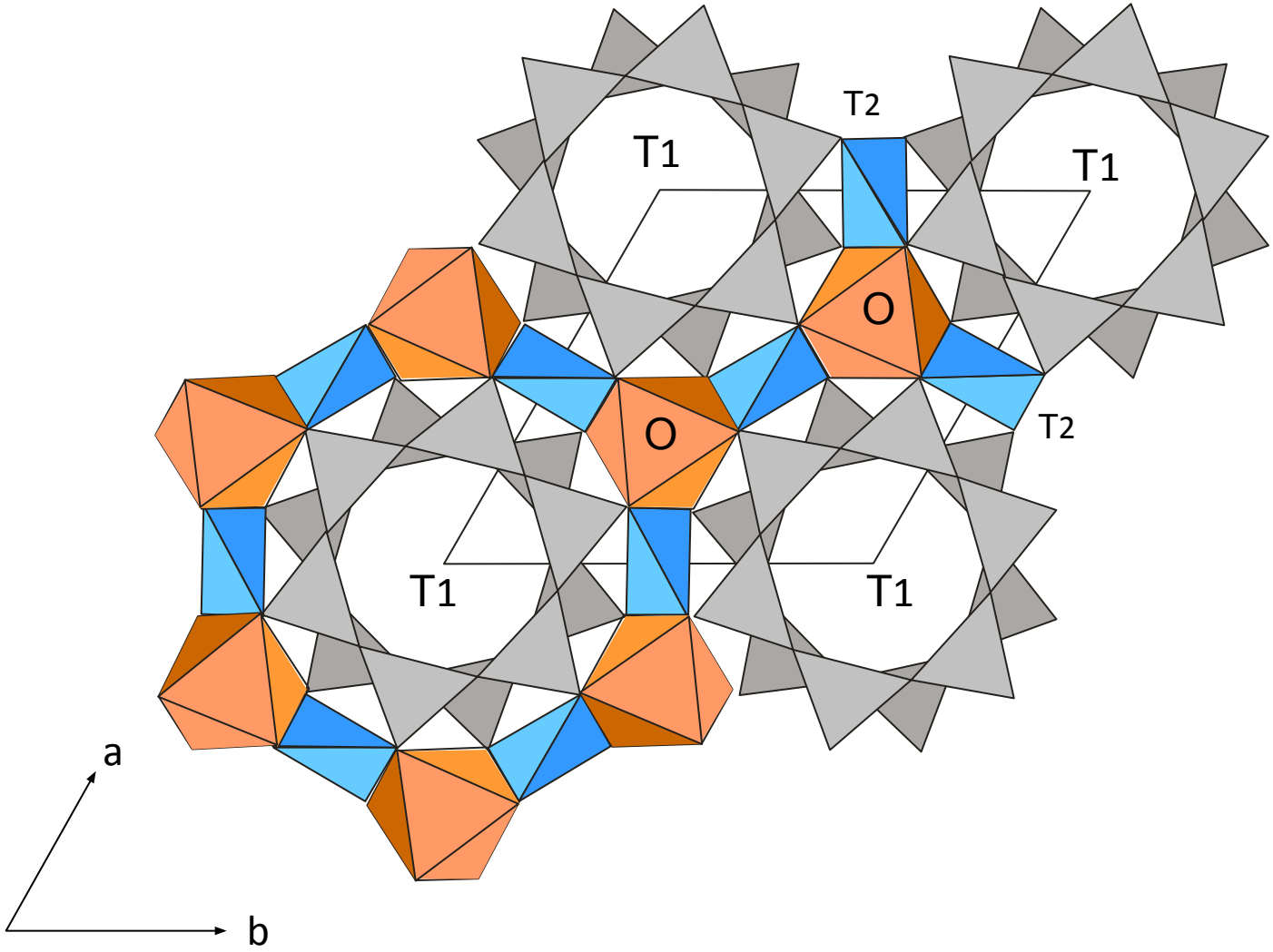


$[AlO_4]^{5-}$ и $[SiO_4]^{4-}$

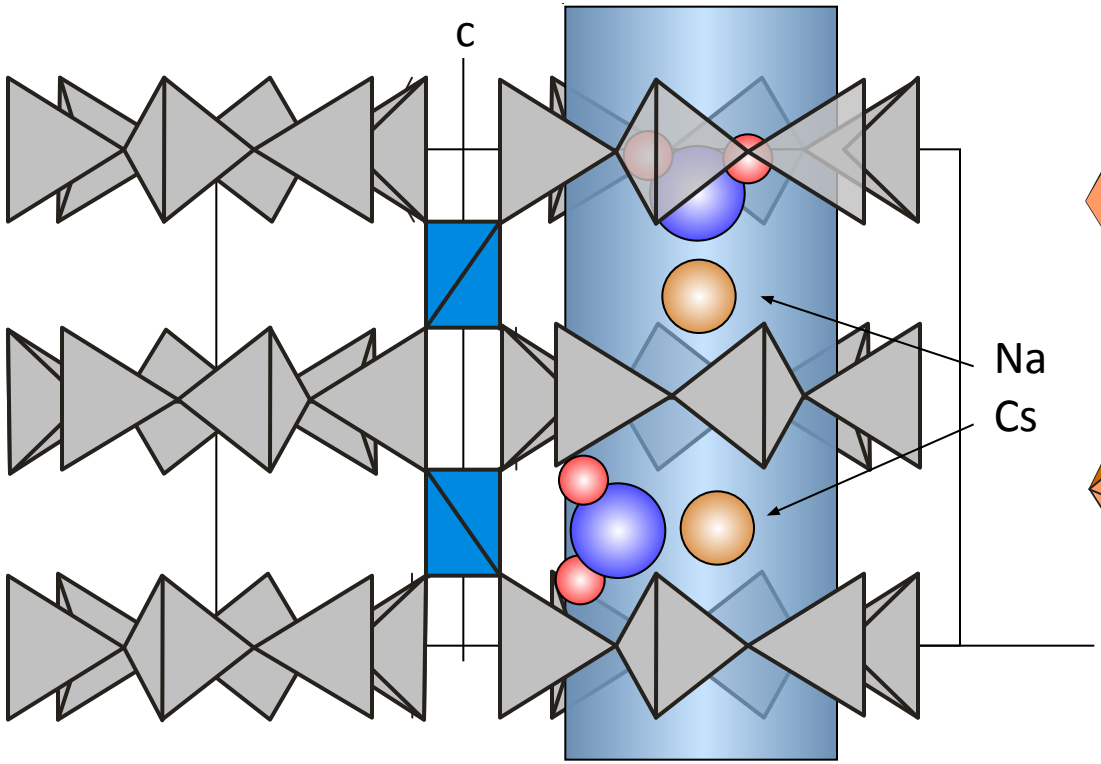
Mg^{2+}, Fe^{2+}

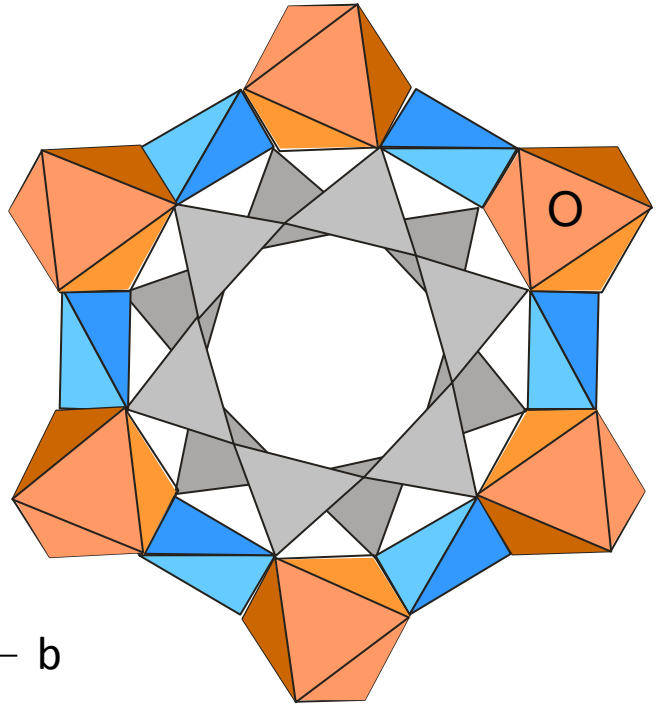
$$Mg_2[Al_2Si|Al_2Si_4O_{18}]$$

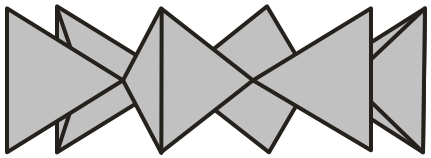
Структура берилла



Структура берилла

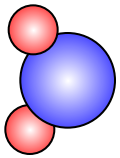






$[Si_6O_{18}]^{12-}$

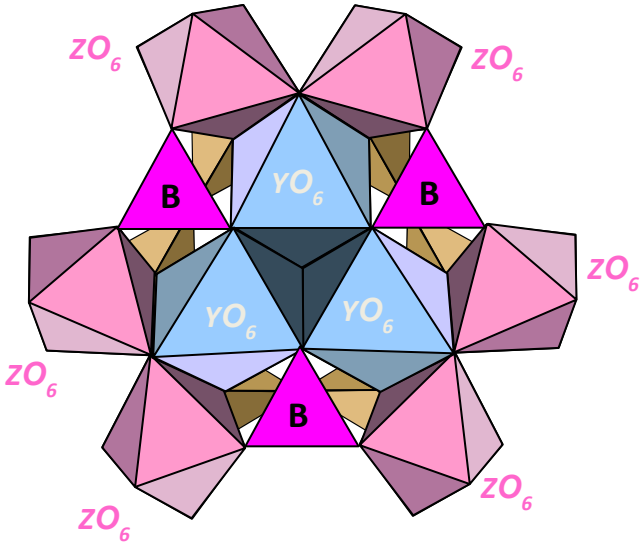
$[BeO_4]^{6-}$

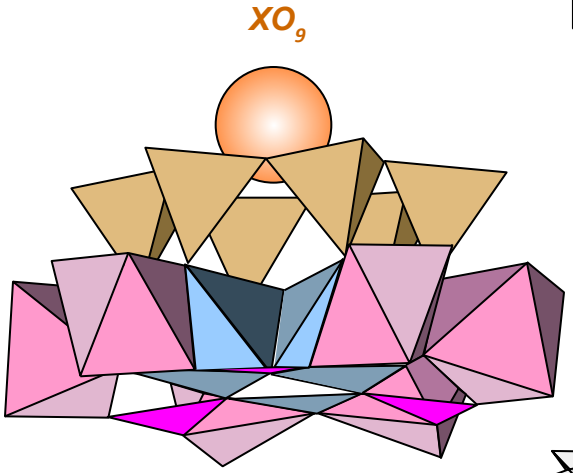


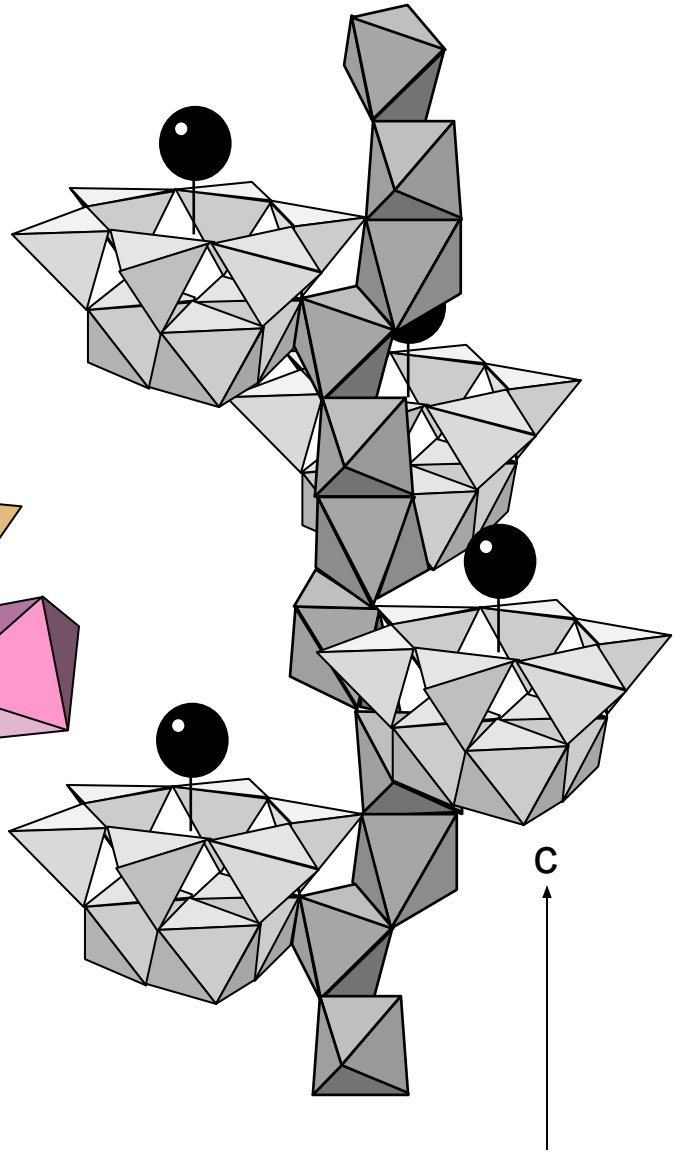
H_2O

Структура турмалина

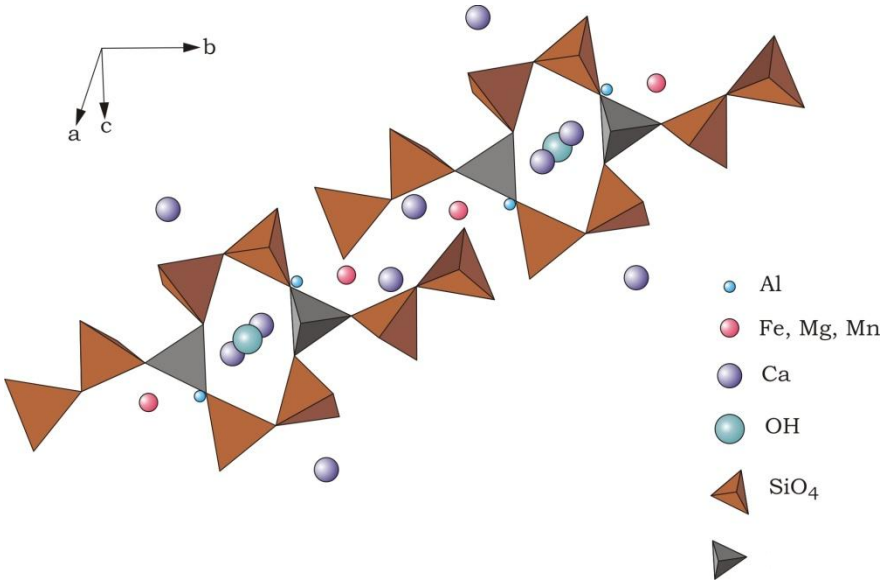
антигоритовый остров

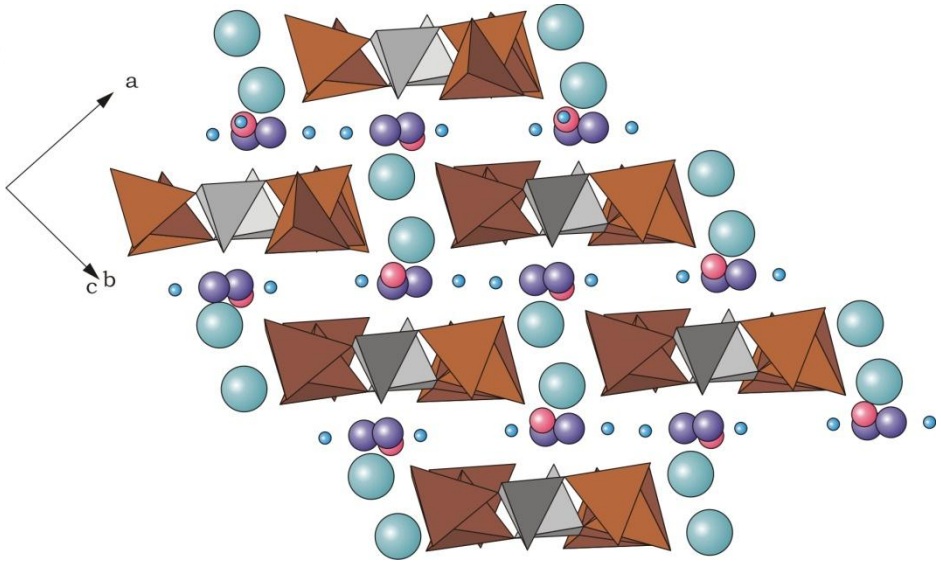




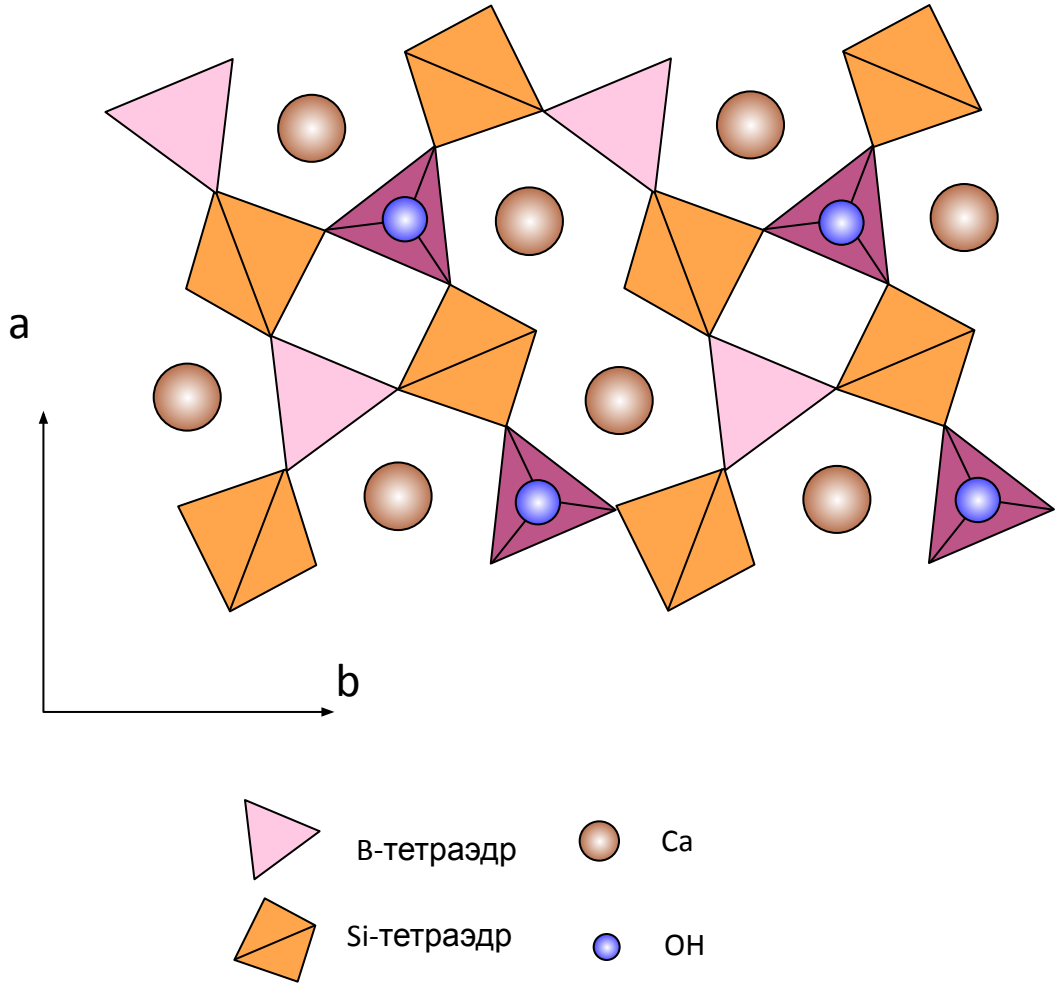


Структура аксинита

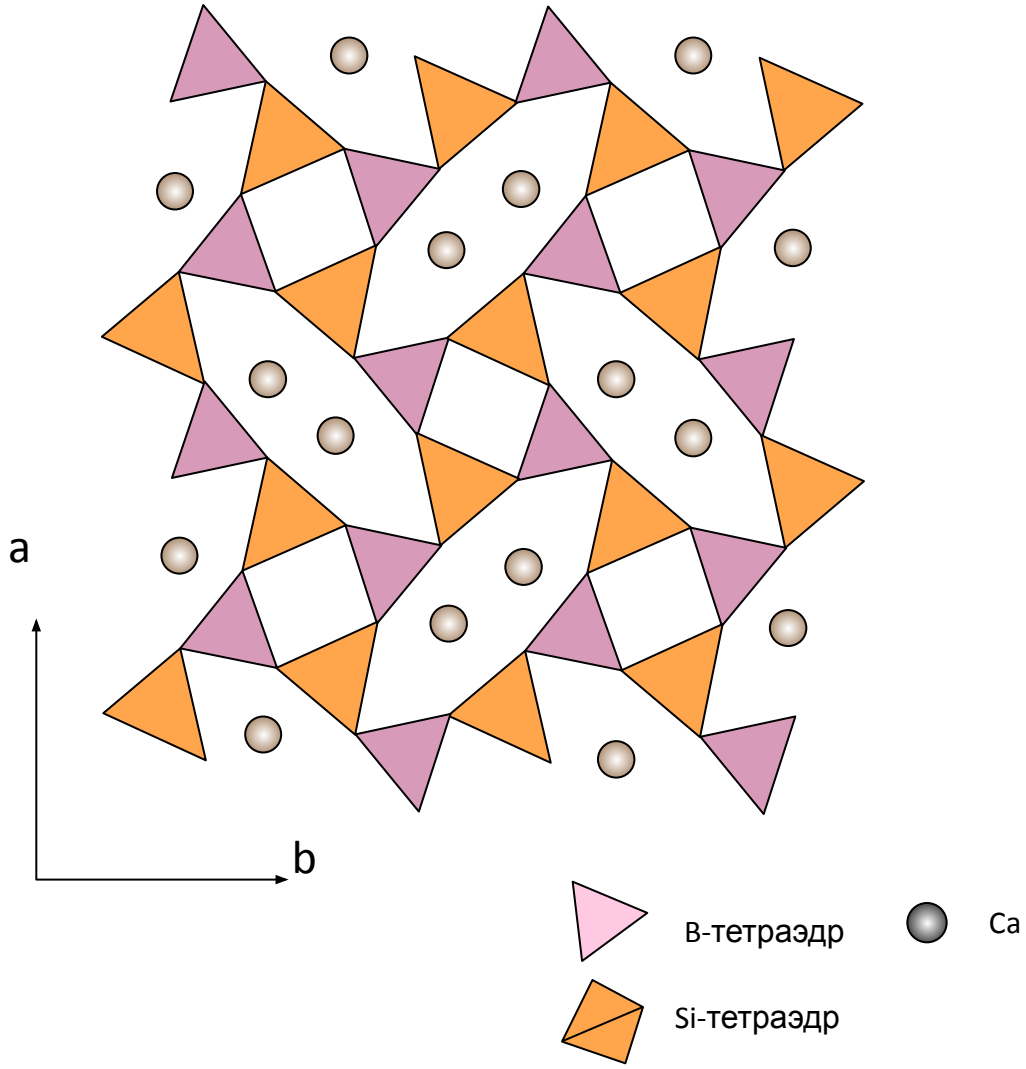




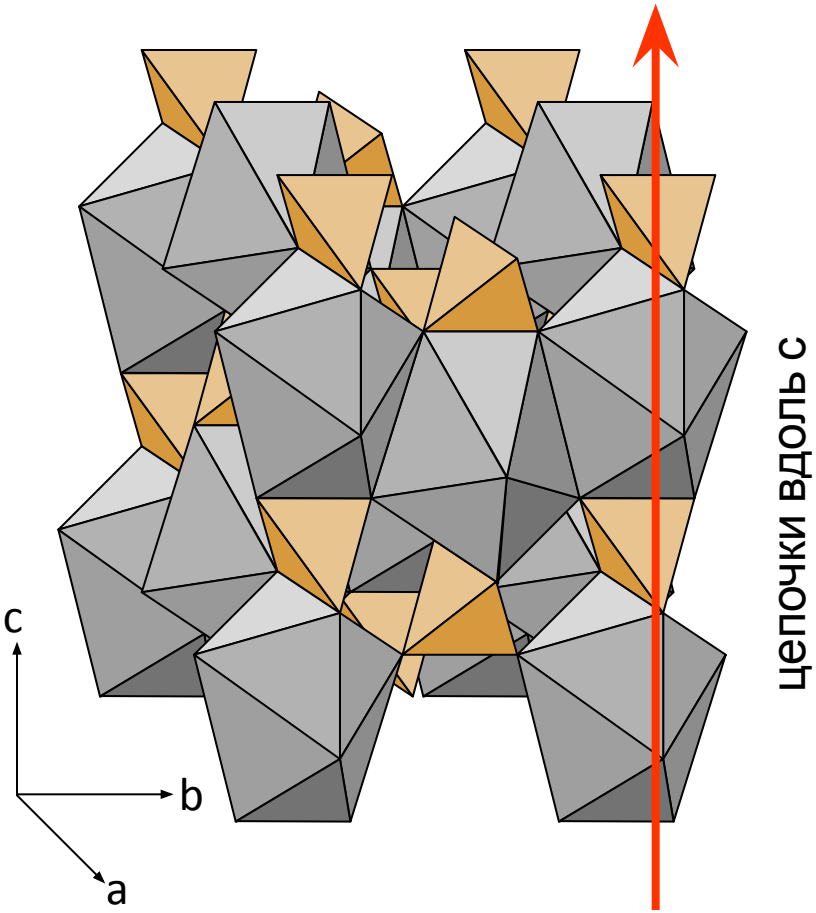
Структура датолита

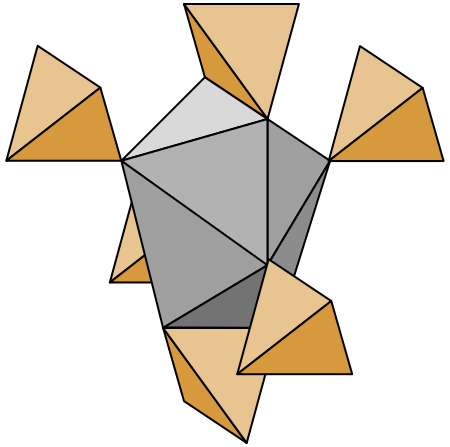


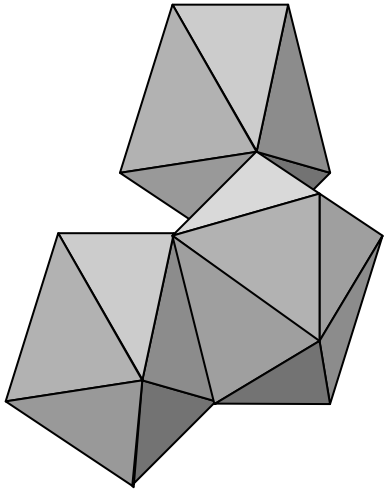
Структура данбурита



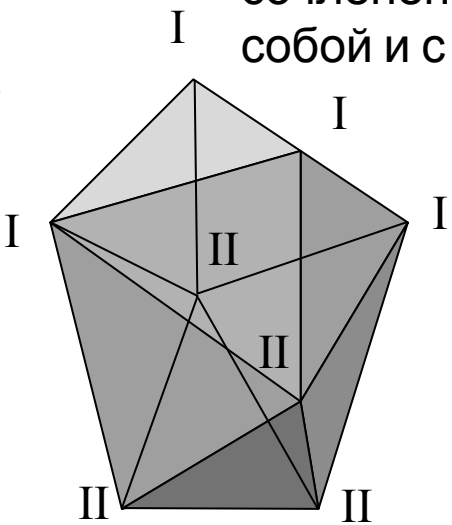
Структура циркона







сочленение Zr полиэдров между собой и с SiO_4 тетраэдрами

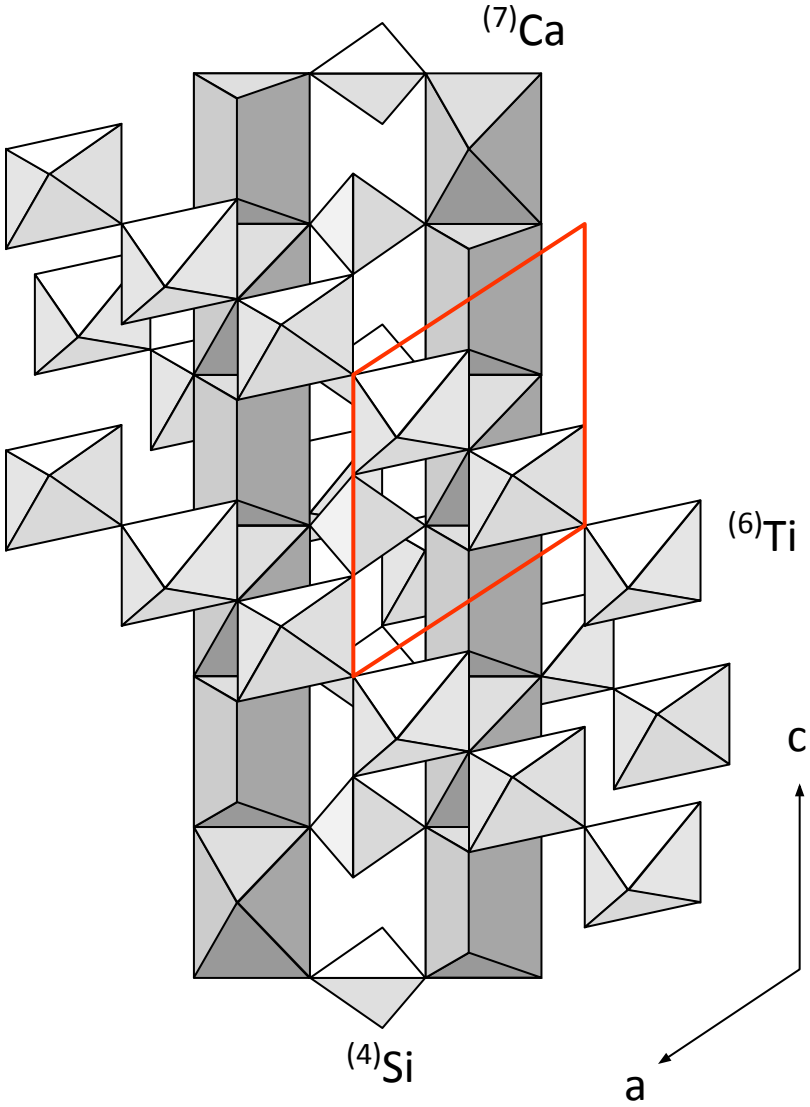


Zr восьмивершинник

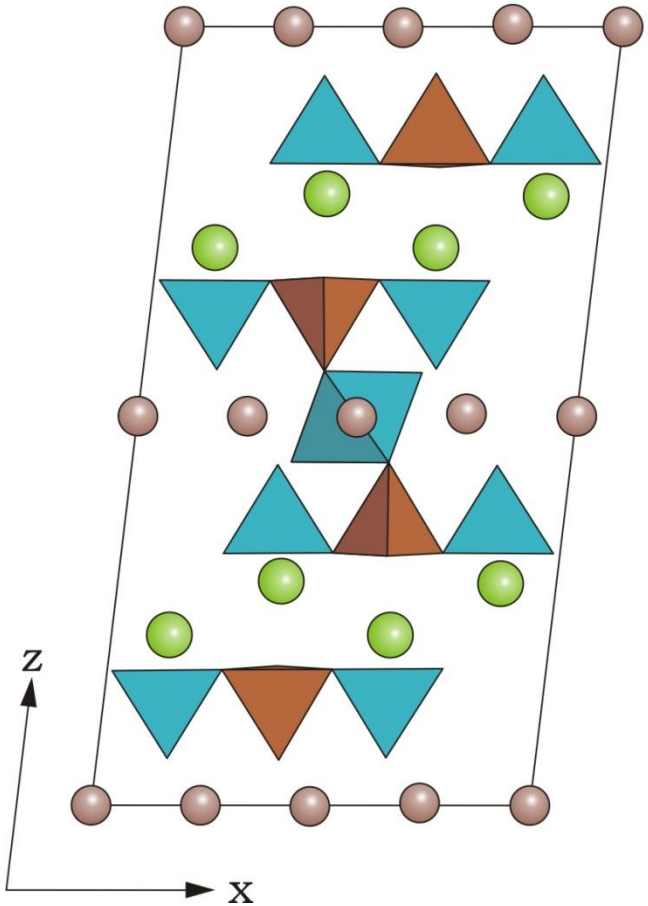
$КЧ_{Zr}$ = 8 – 6

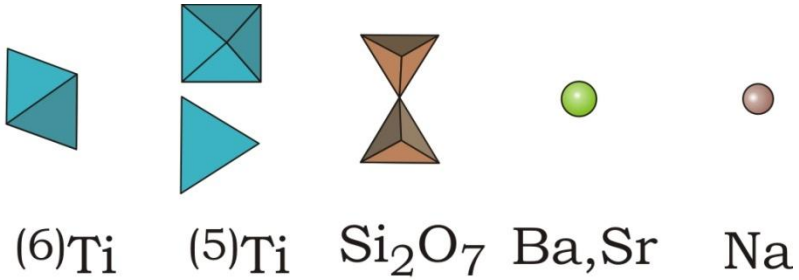
Zr смещен к вершинам I

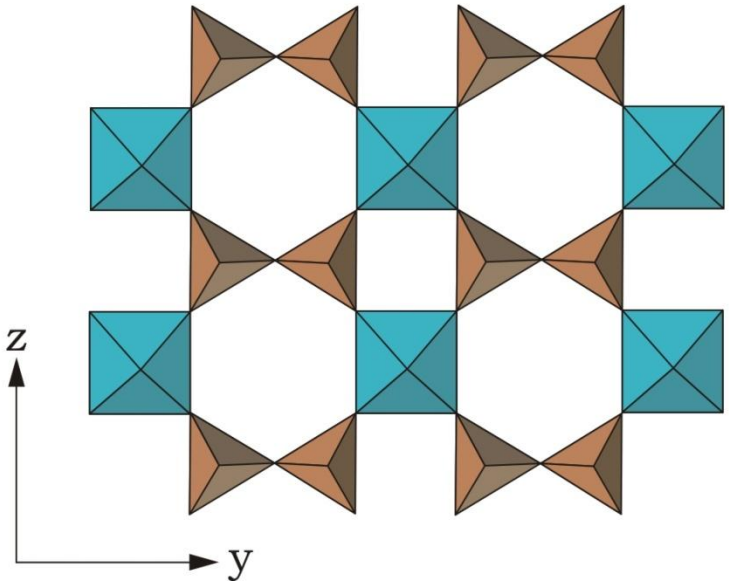
Структура титанита C2/c



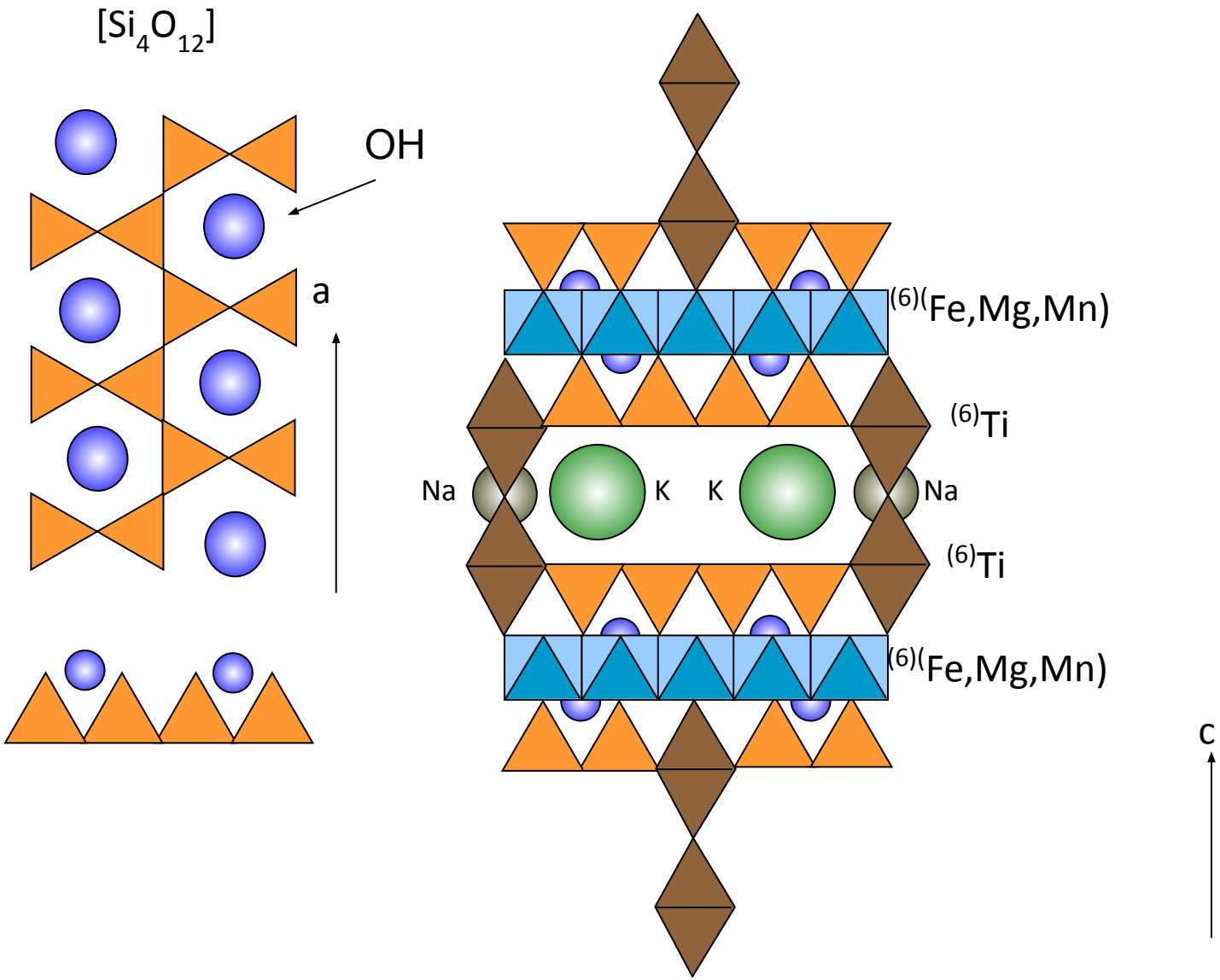
Структура лампрофиллита



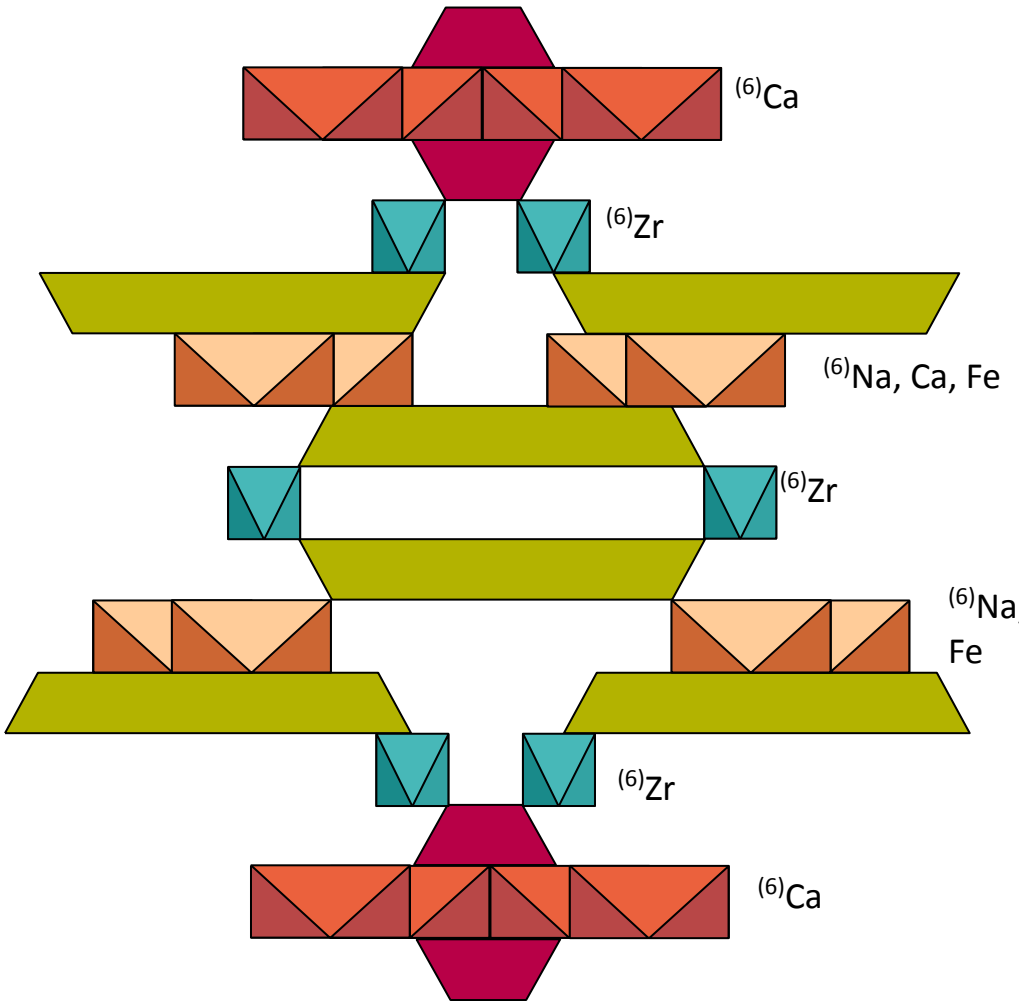




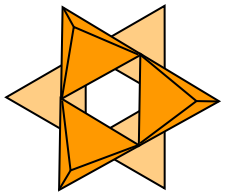
Структура астрофиллита

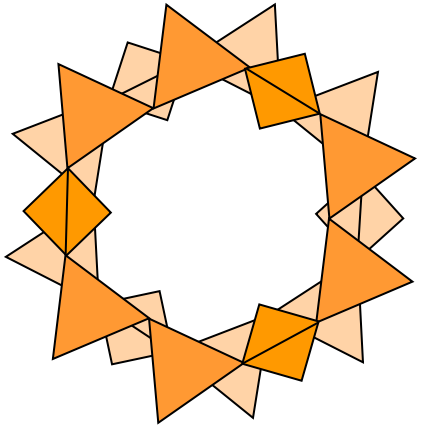


Структура эвдиалита



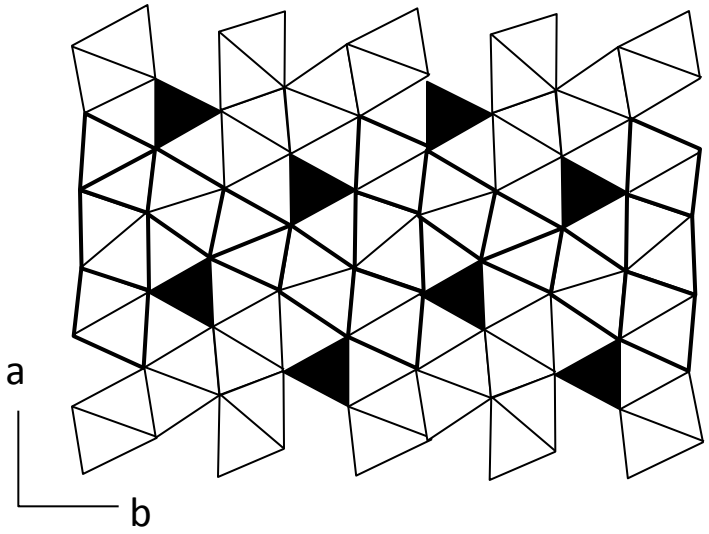
$[Si_3O_9]$



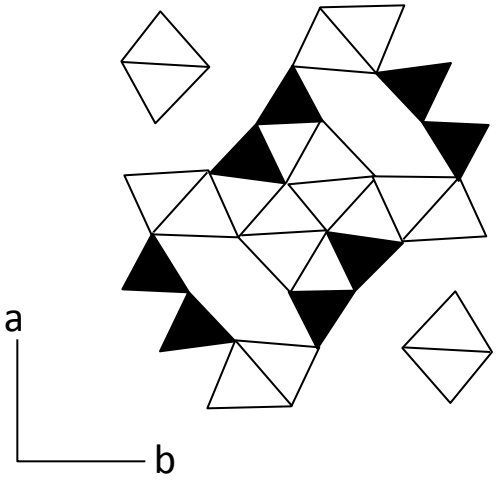


$[Si_9O_{27}H_{<3}]$

Островные мотивы в боратах

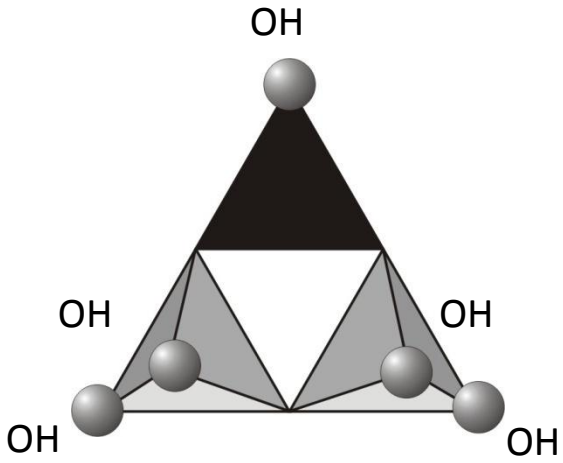


одиночные $[BO_3]$ группы в структуре *людвигита* $Mg_2FeO_2[BO_3]$

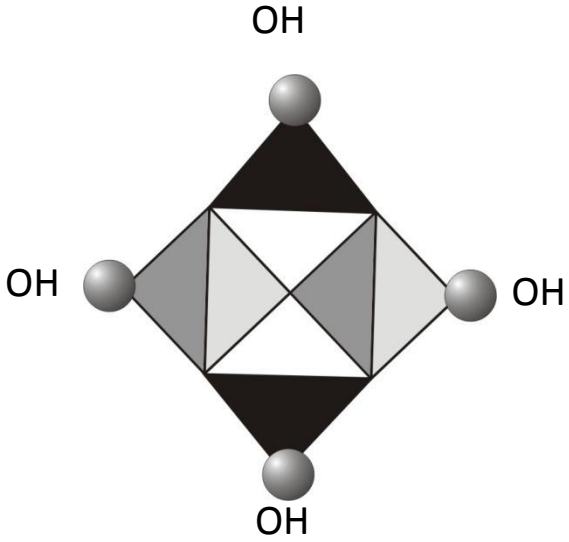


сдвоенные $[BO_3]$ группы в структуре *ссайбелиита* $Mg_2(OH)[B_2O_4(OH)]$

Кольцевые мотивы в боратах

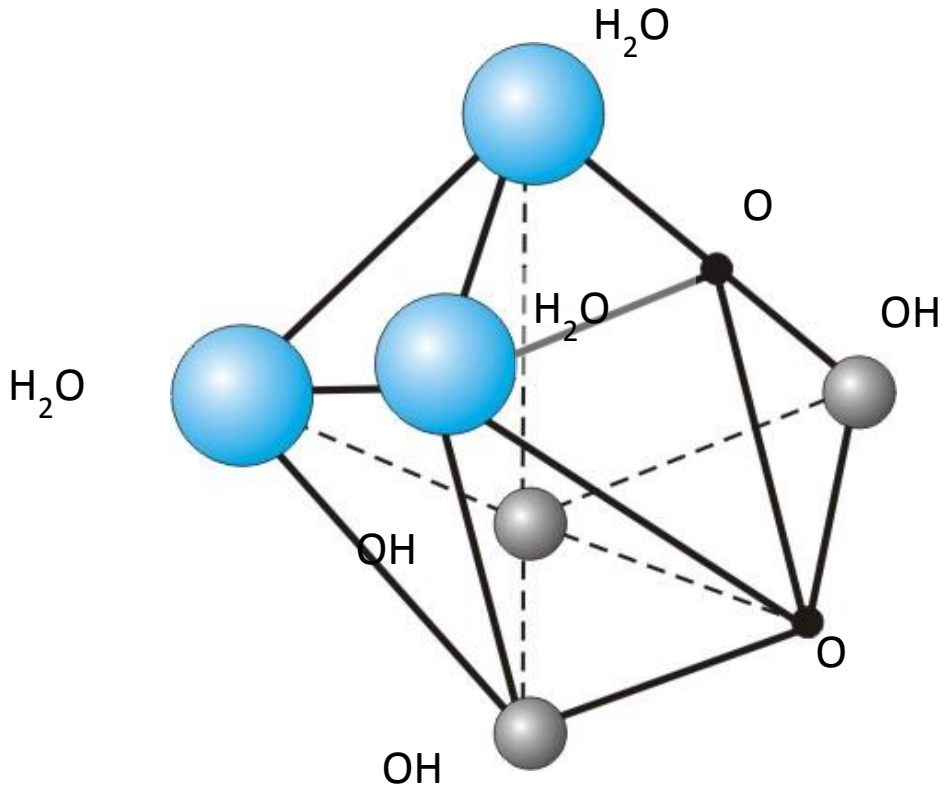


3-членное кольцо *иньоита*
(2t+1Δ)
$Ca(H_2O)_4[^{(4)}B_2{}^{(3)}BO_3(OH)_5]$



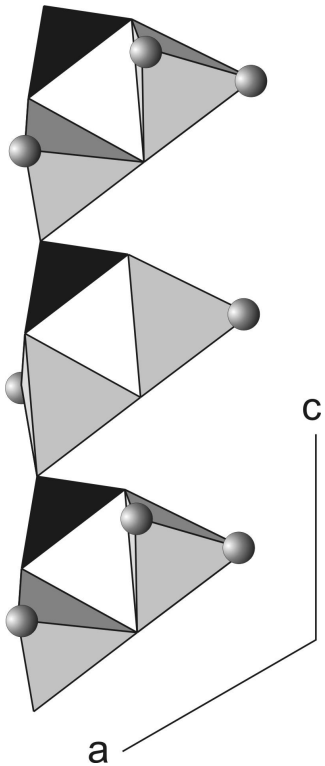
4-членное кольцо *буры*
(2t+2Δ)
$Na_2(H_2O)_8[^{(4)}B_2{}^{(3)}B_2O_5(OH)_4]$

Вода в боратах

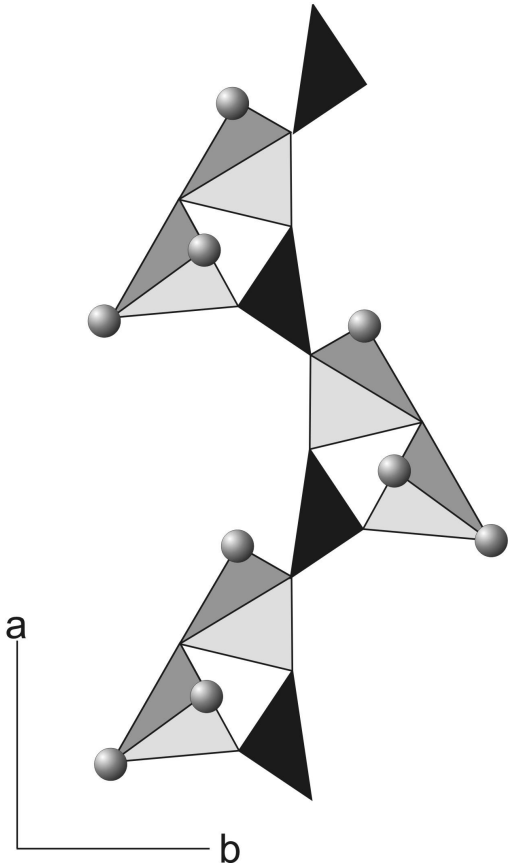


Полиэдр Ca в структуре **иньоита** КЧ=8 $CaO_2(OH)_3(H_2O)_3$

Цепочечные мотивы в боратах

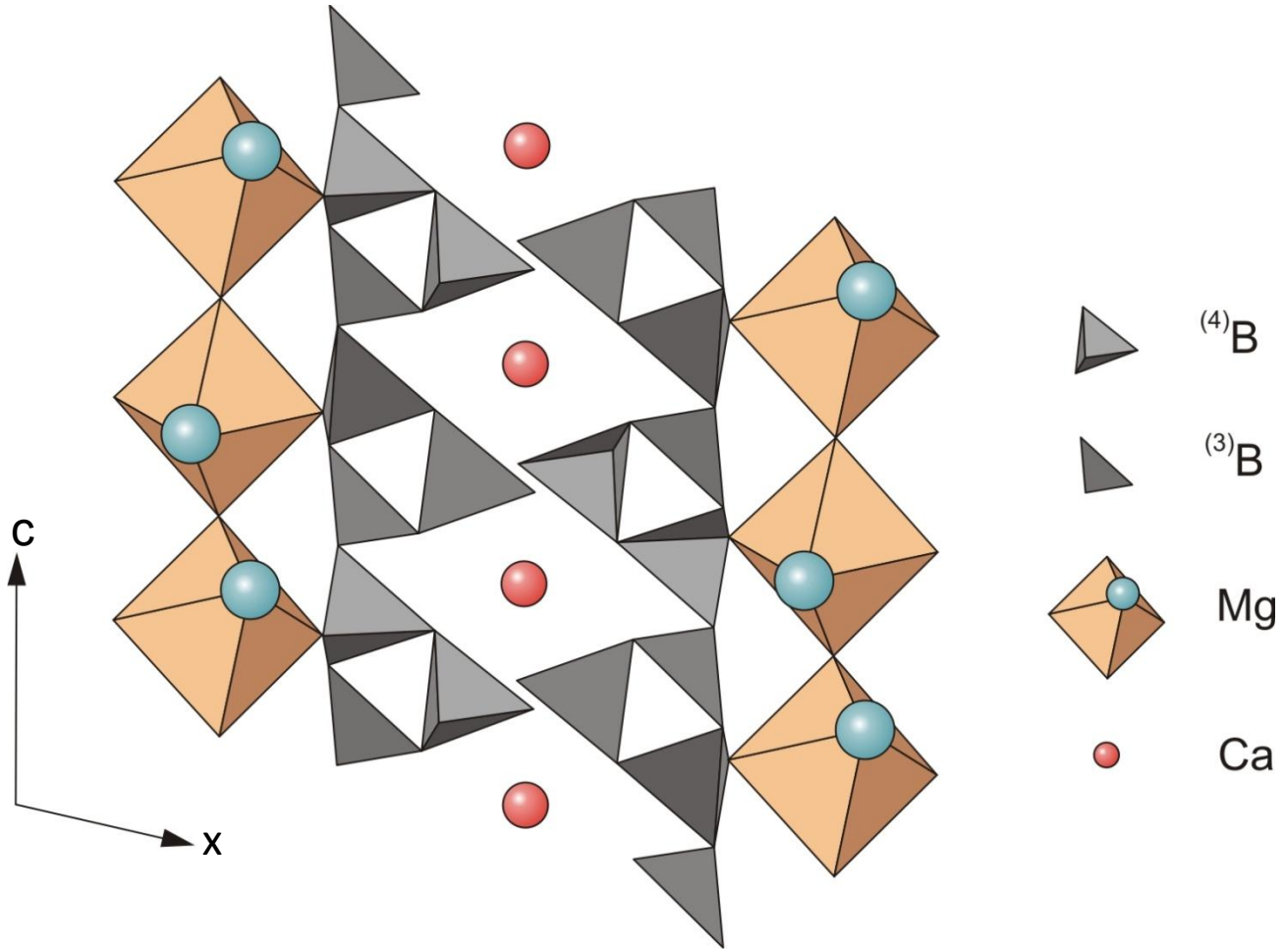


гидроборацит
$CaMg(H_2O)_3[^{(4)}B_2{}^{(3)}BO_4(OH)_3]_2$



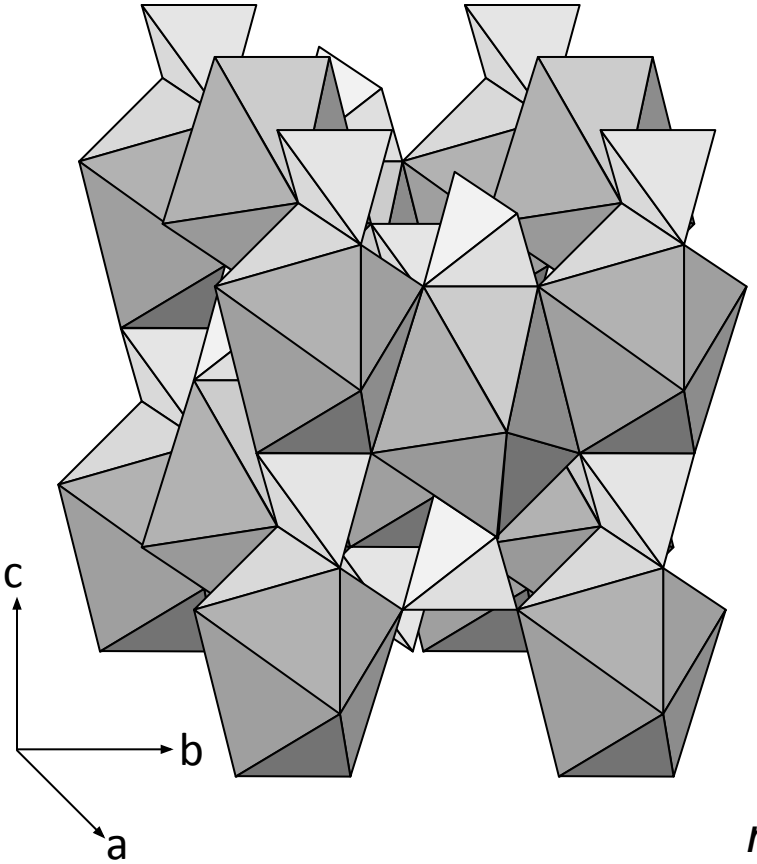
колеманит
$Ca(H_2O)[^{(4)}B_2{}^{(3)}BO_4(OH)_3]$

Структура гидроборацита



Структуры ксенотима и монацита

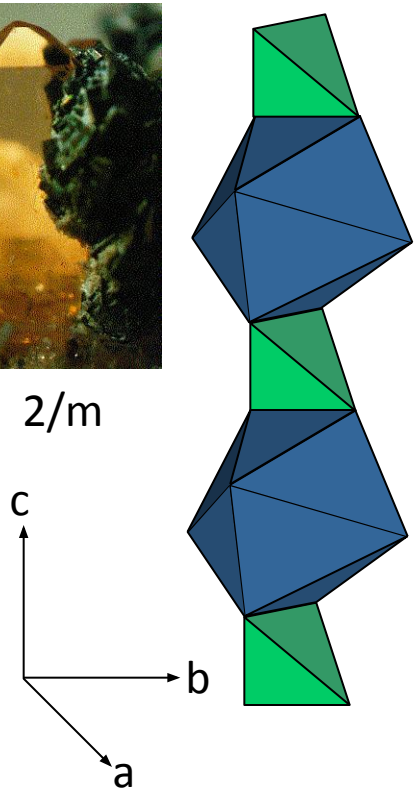
Структура ксенотима



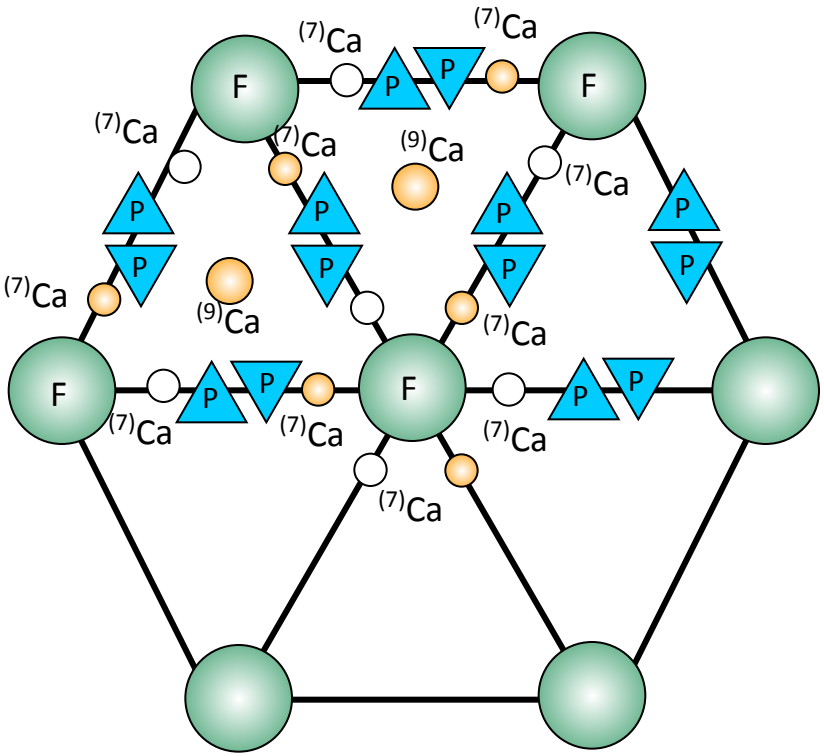
тетр., 4/mmm

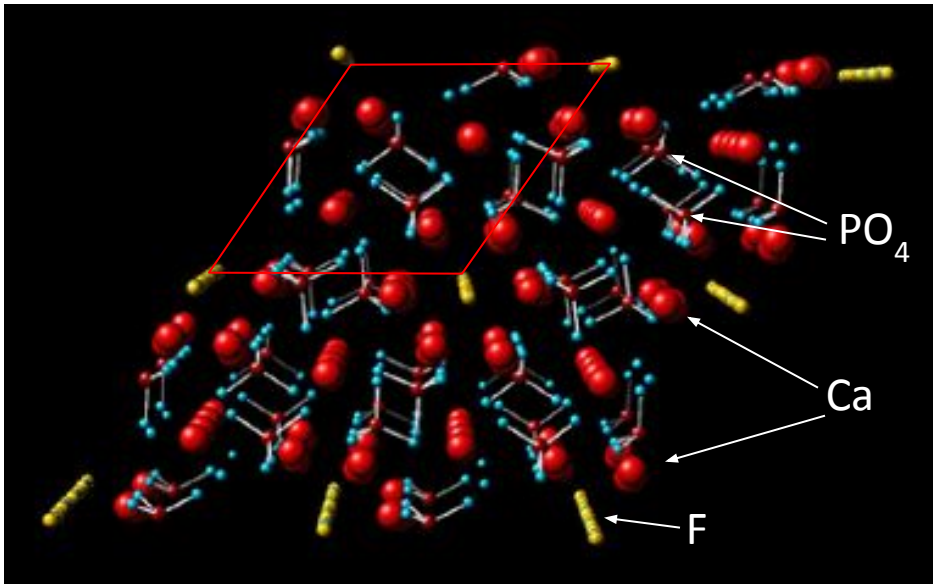
Искаженные полиэдры CeO_8 и PO_4 в структуре монацита

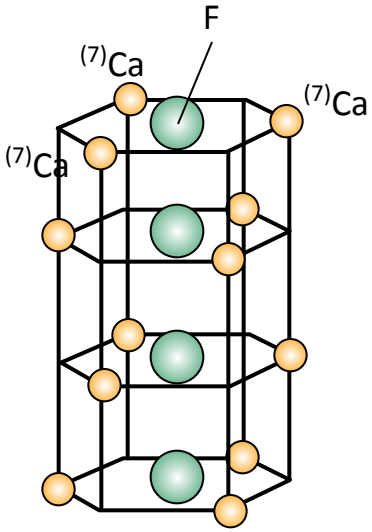
мон., 2/m

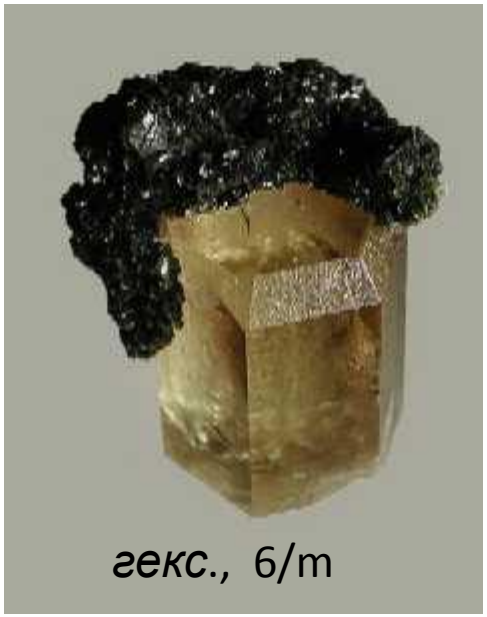


Структура апатита

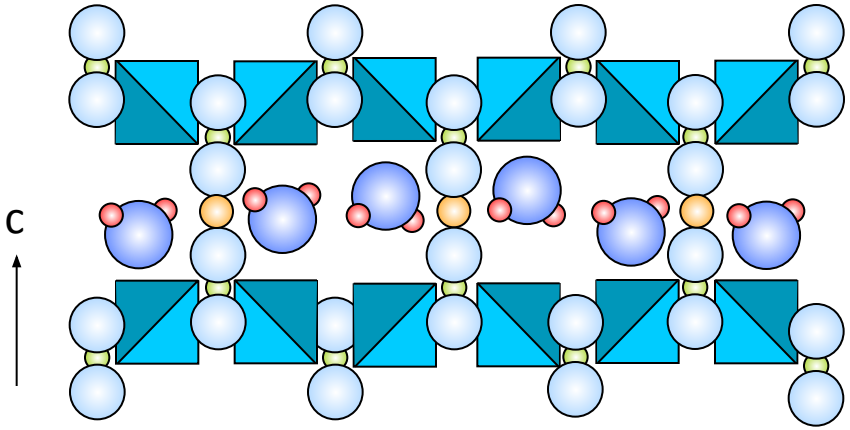


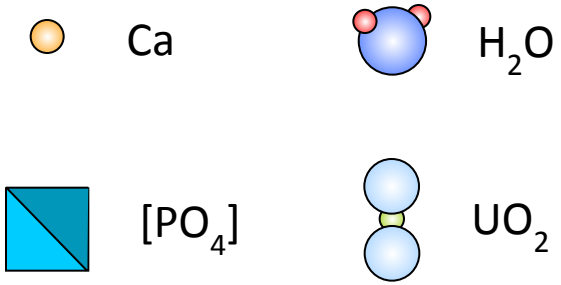


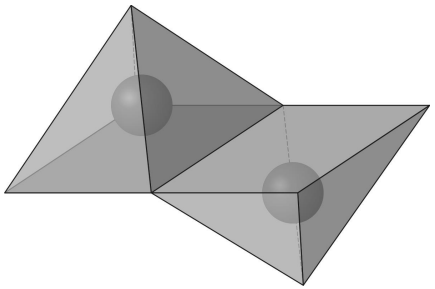




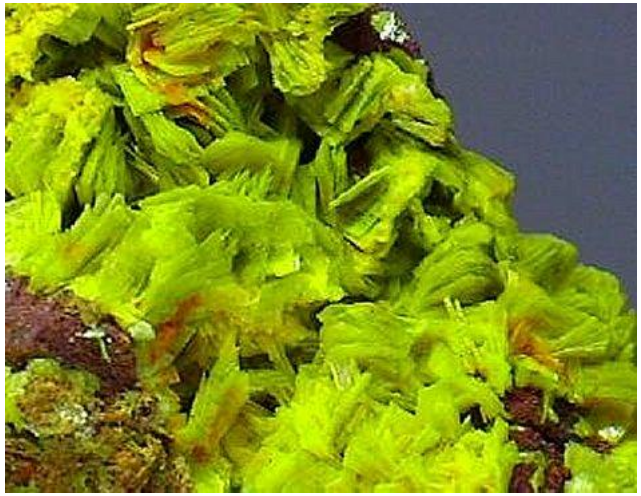
Структура отенита







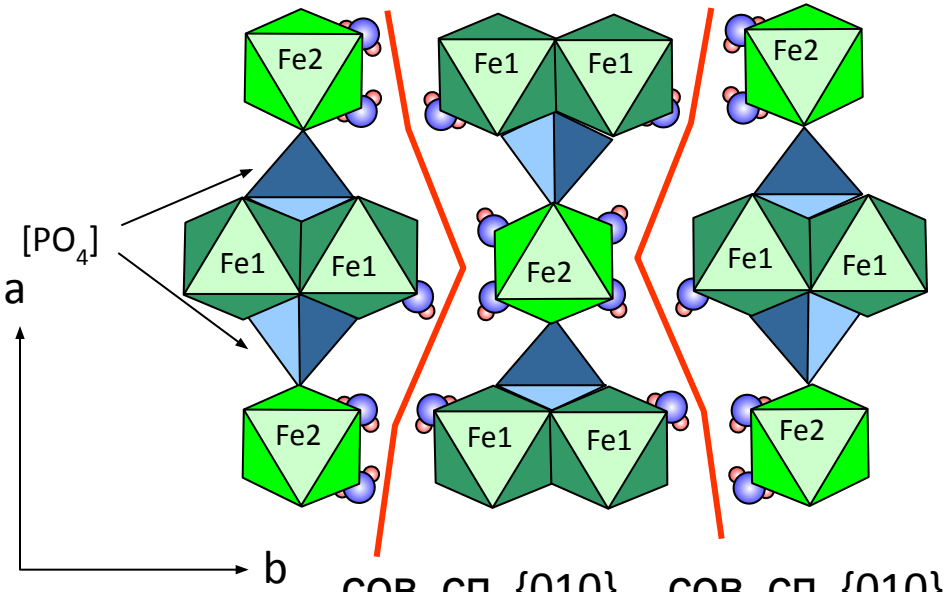
V_2O_8



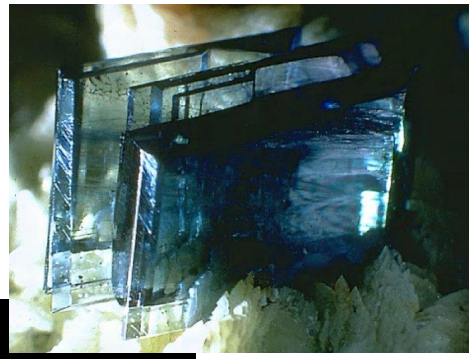
отенит $Ca\{(UO_2)_2[PO_4]_2\}\cdot 10H_2O$

торбернит $Cu\{(UO_2)_2[PO_4]_2\}\cdot 10H_2O$

Структуры фосфатов Fe, Co, Ni

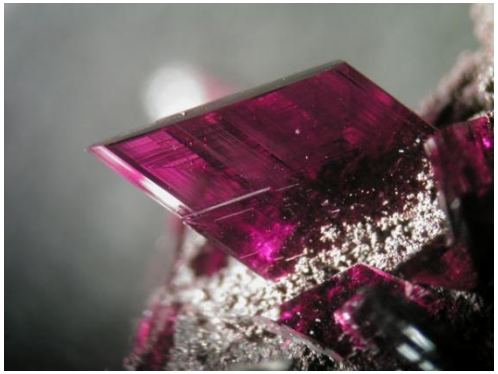


сов. сп. {010} сов. сп. {010}



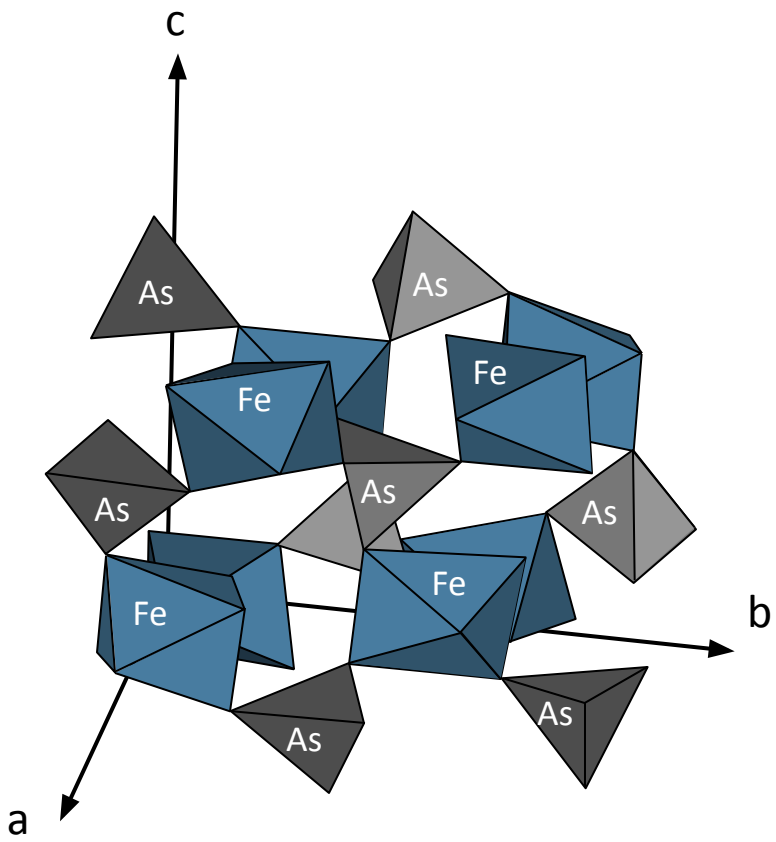
вивианит
$Fe^{2+}{}_3(H_2O)_8[PO_4]_2$
высокая доля Fe^{3+}
- керченит

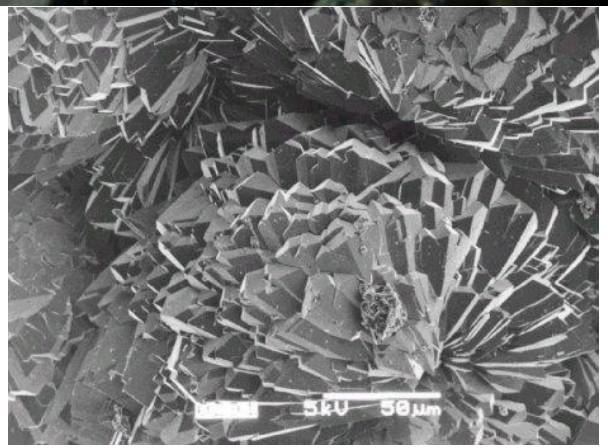
***мон.* 2/m**



эритрин $Co^{2+}{}_3(H_2O)_8[AsO_4]_2$

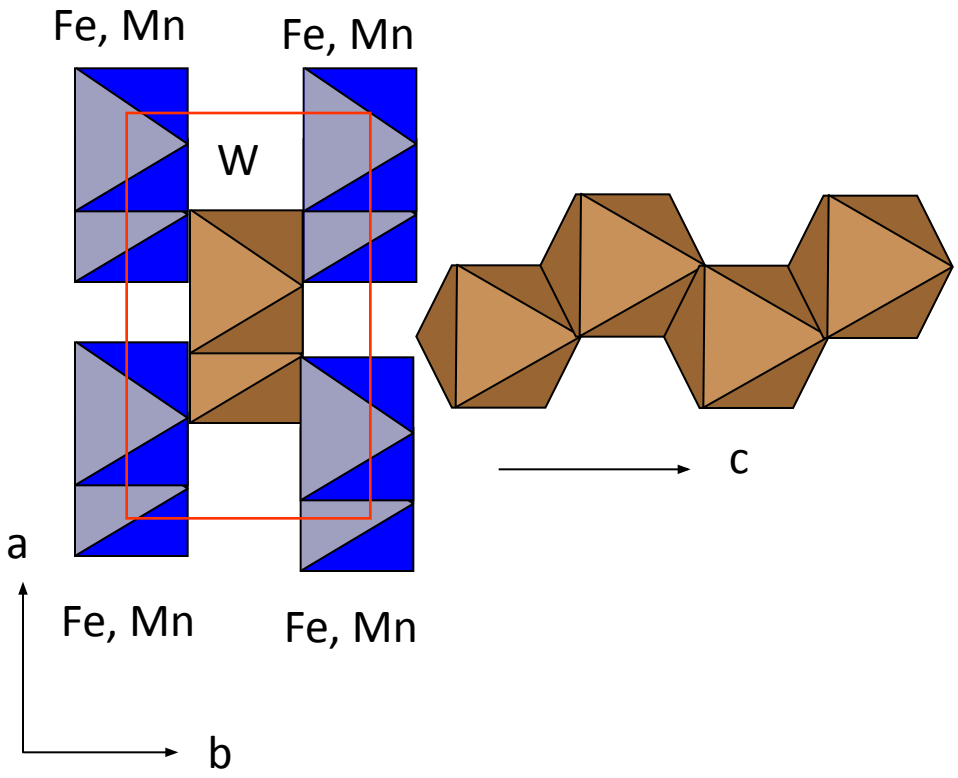
Структура скородита



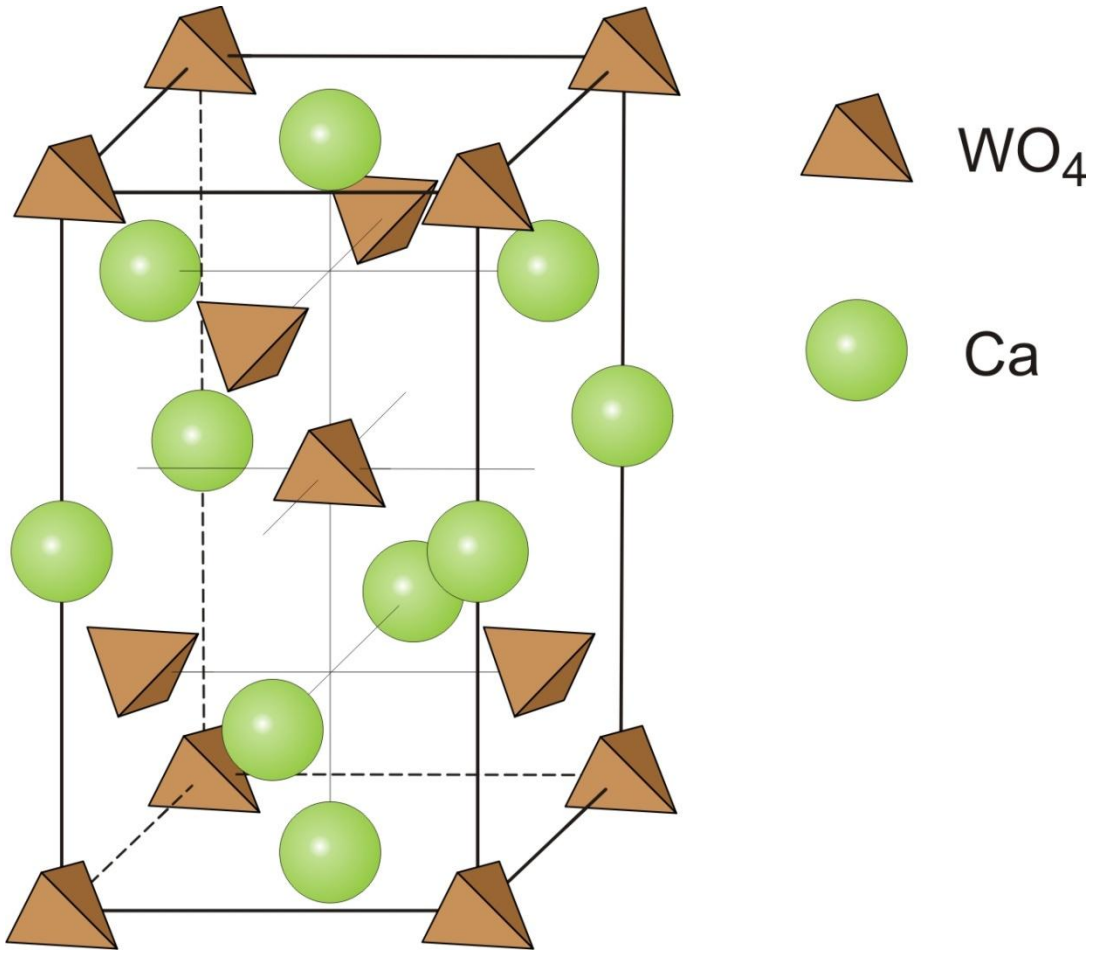


- субкаркасная структура скородита $Fe(H_2O)_2[AsO_4]$

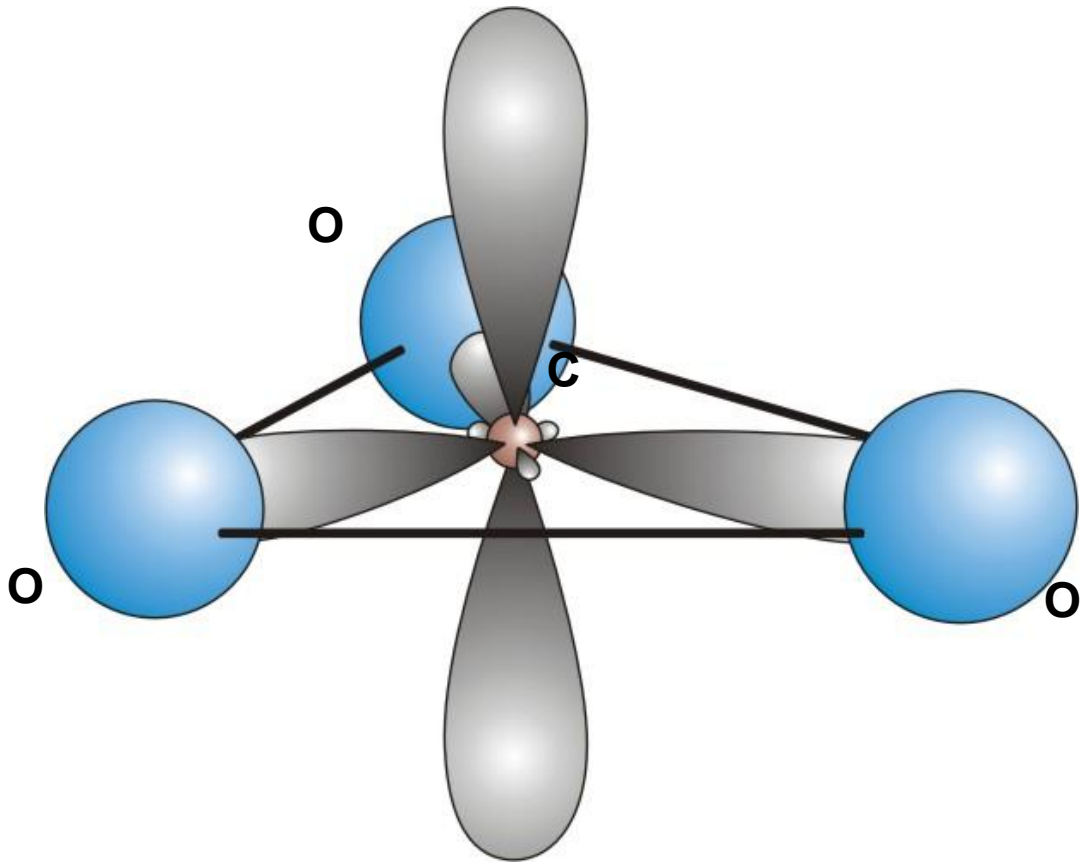
Структура вольфрамита



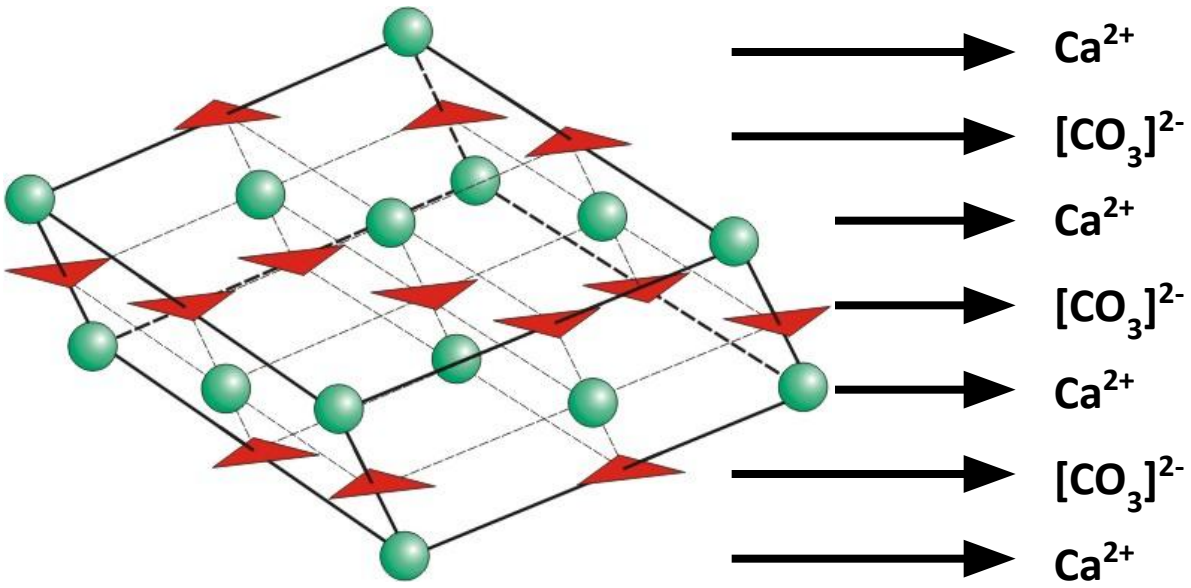
Структура шеелита



Структурные особенности карбонатов

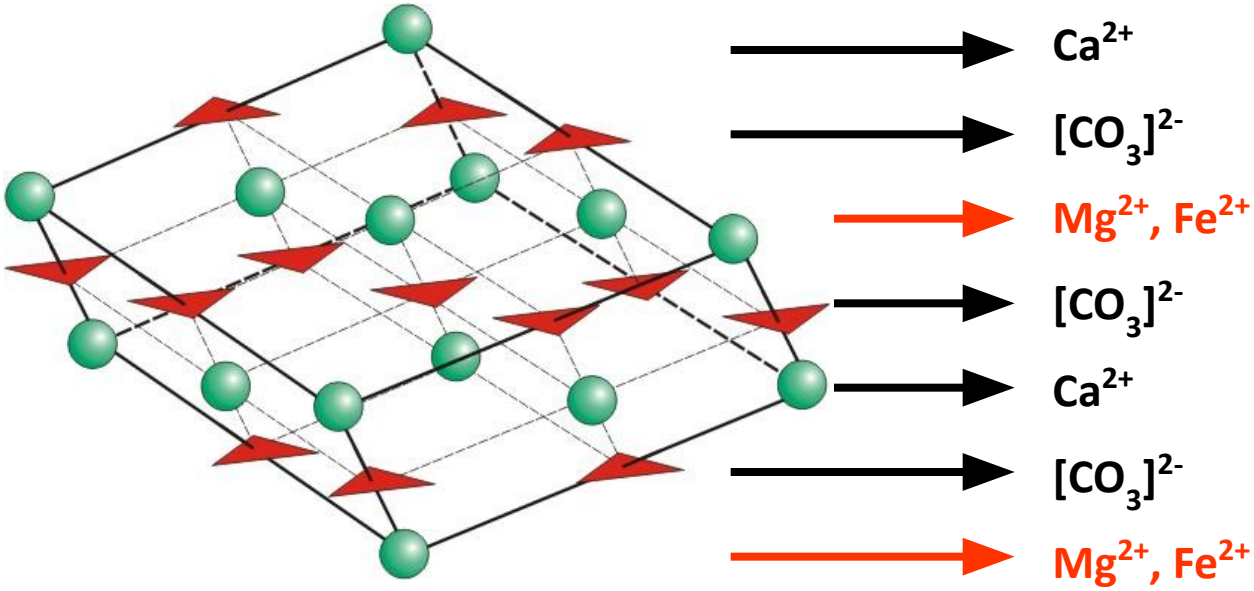


Структурный тип кальцита

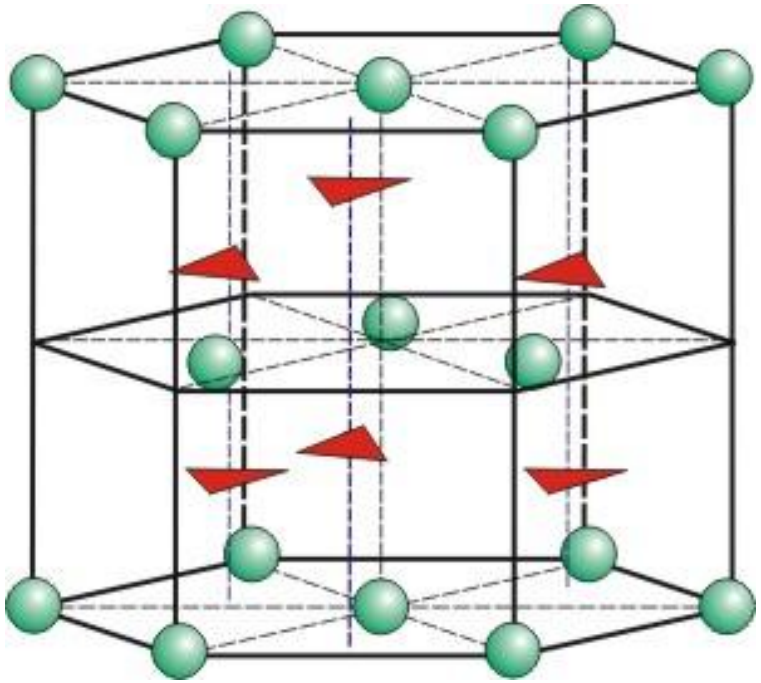


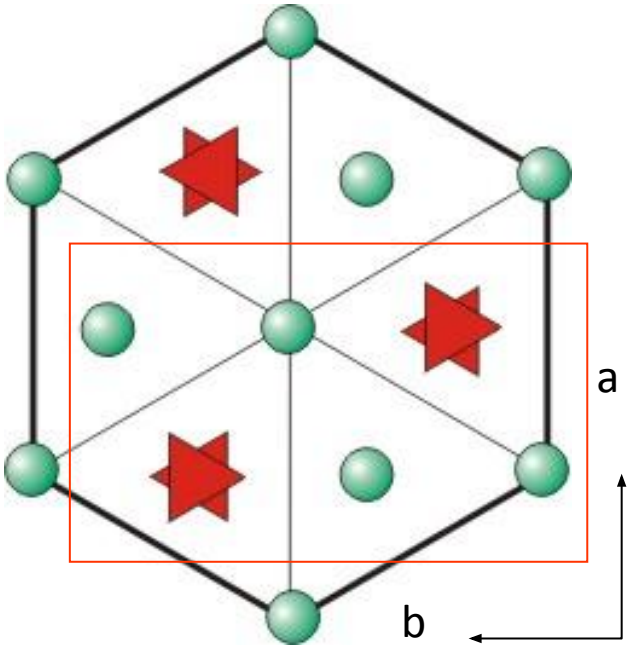
- Структура является производной от структуры NaCl

Структуры двойных карбонатов

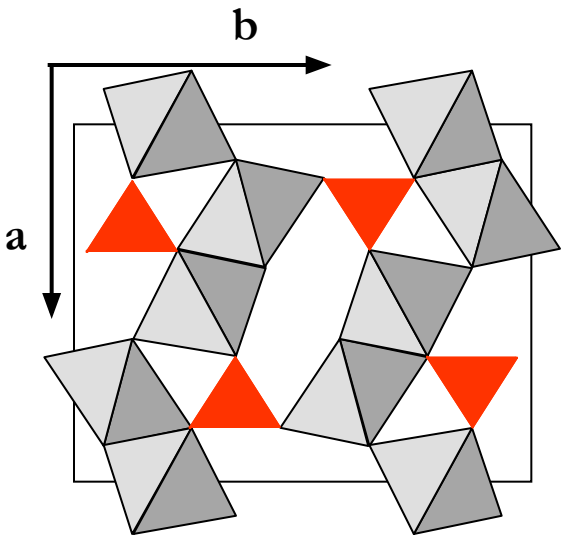


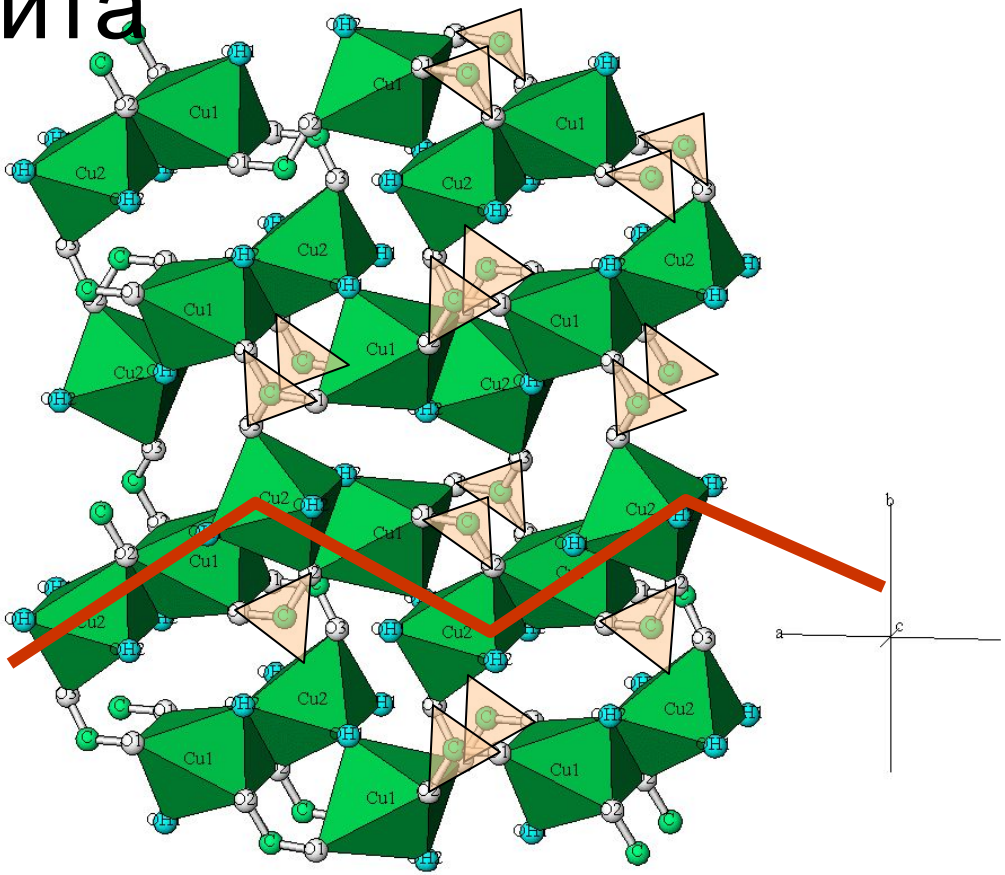
Структурный тип арагонита

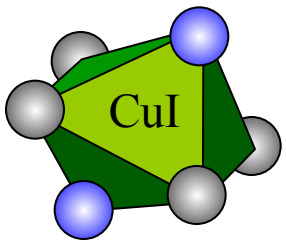


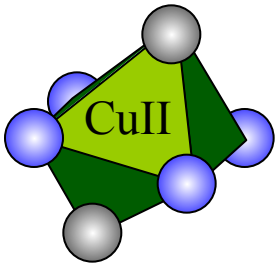


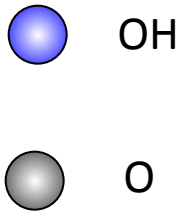
Структура малахита



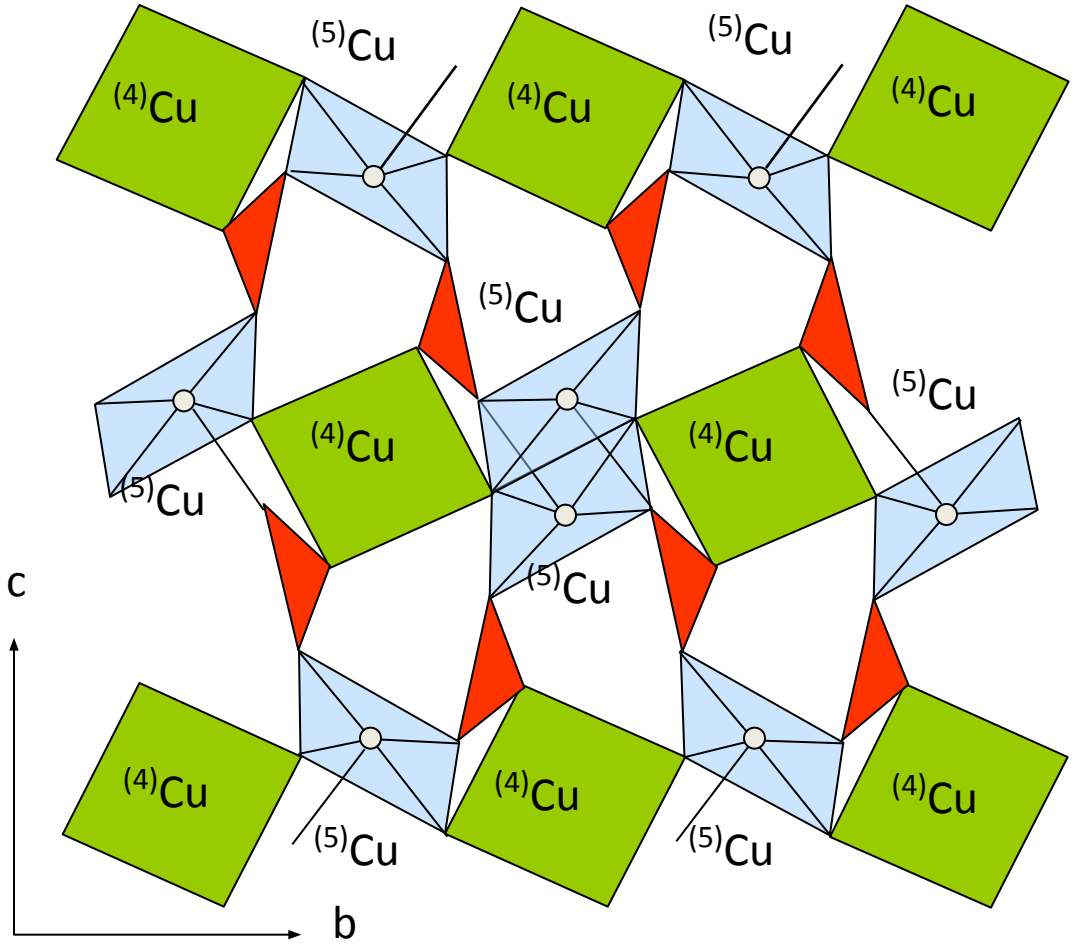






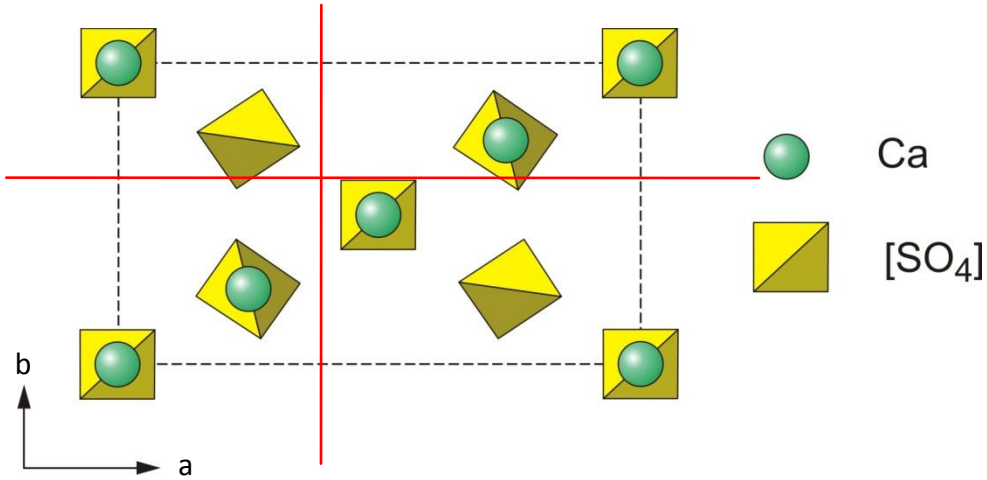


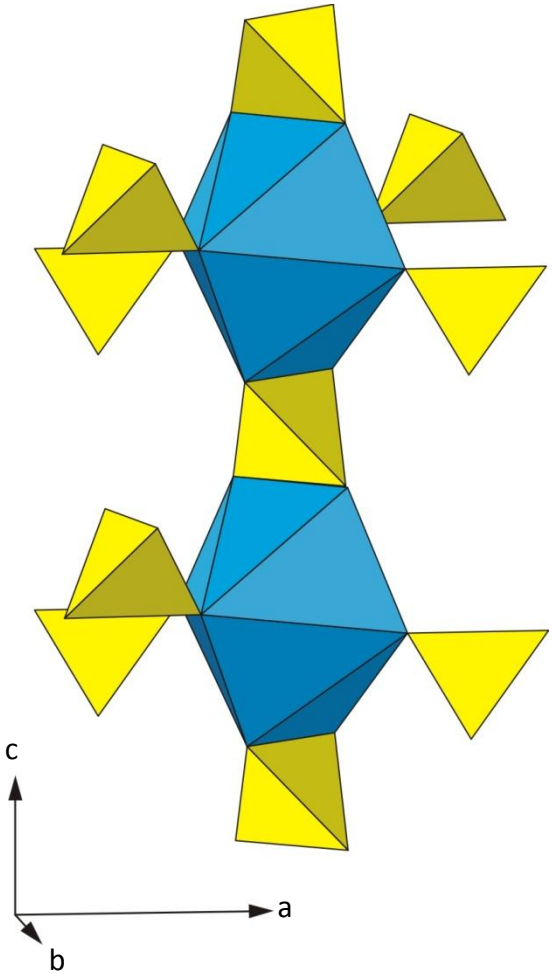
Структура азурита



Структуры безводных сульфатов

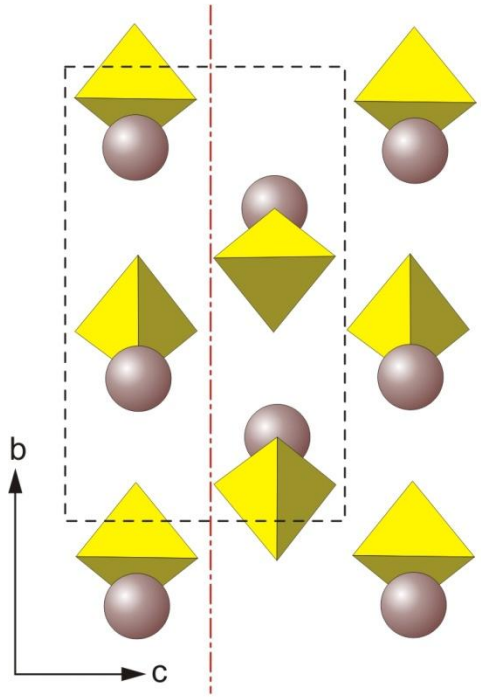
ангидрит $Ca[SO_4]$



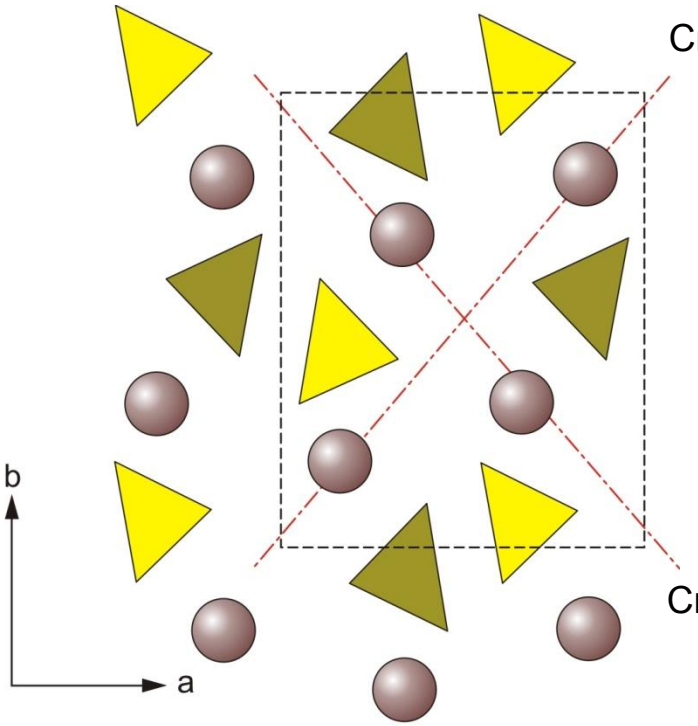


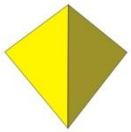
Структуры безводных сульфатов

барит $Ba[SO_4]$ – целестин $Sr[SO_4]$



Сп по {001}





$[SO_4]$

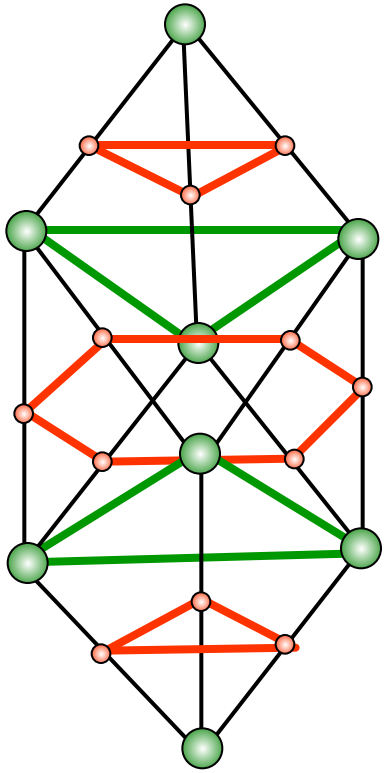
Ba, Sr

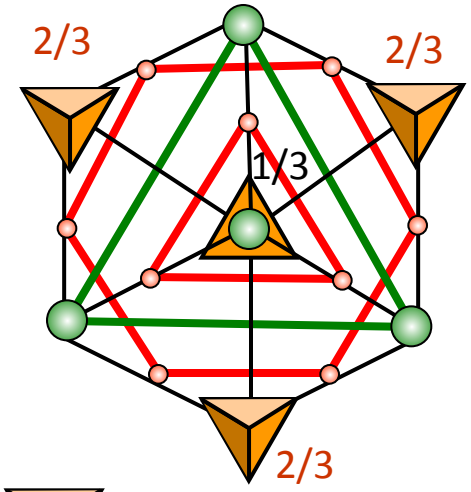
Структура алунита

Алунит $KAl_3[SO_4]_2(OH)_6$

Ярозит $KFe_3[SO_4]_2(OH)_6$

триг. $\bar{3}$m

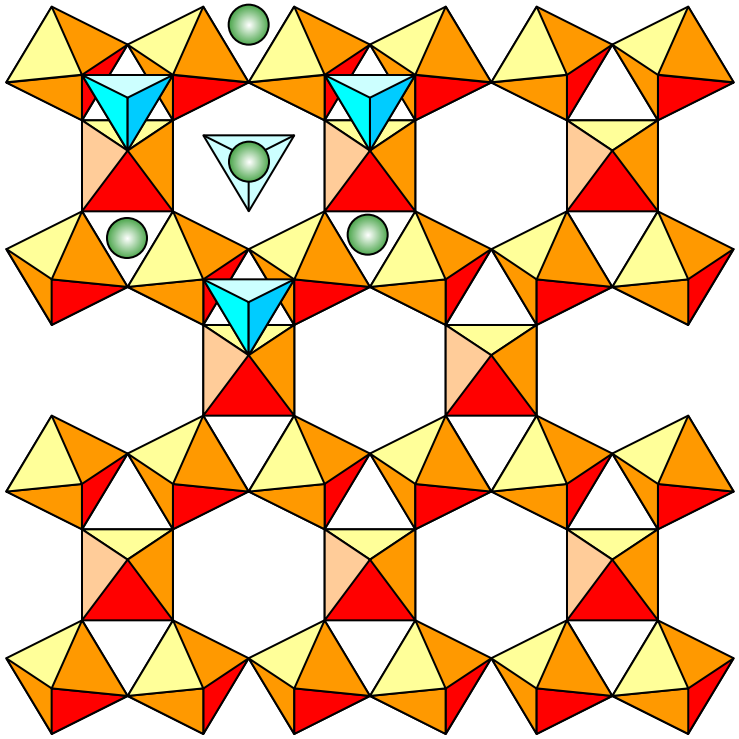




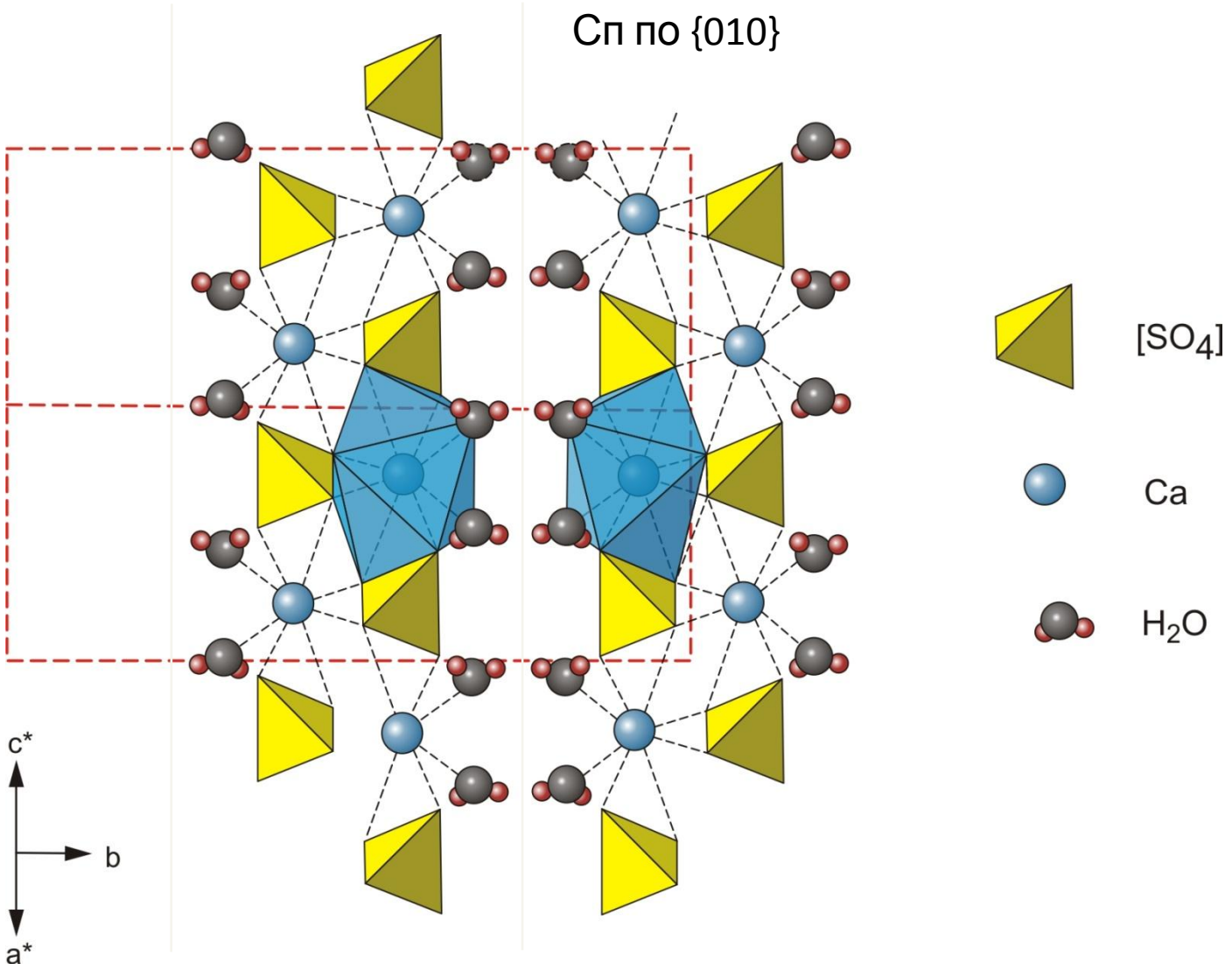
$[SO_4]$

K

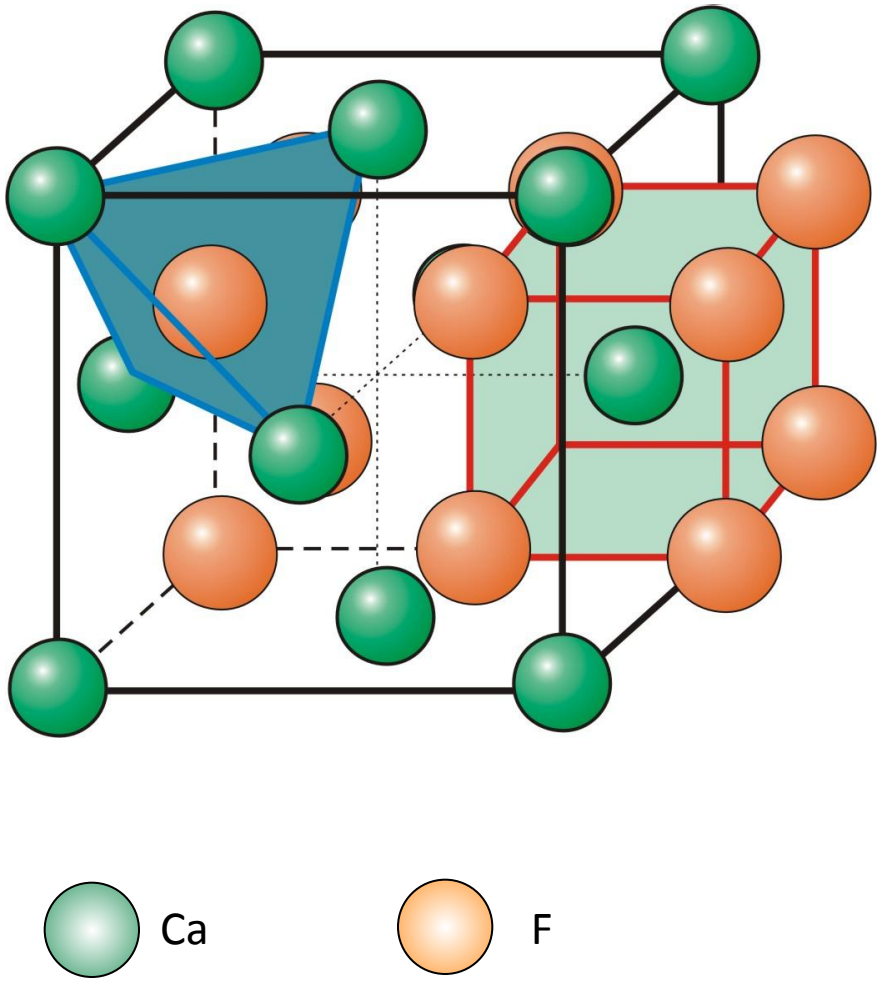
Al, Fe

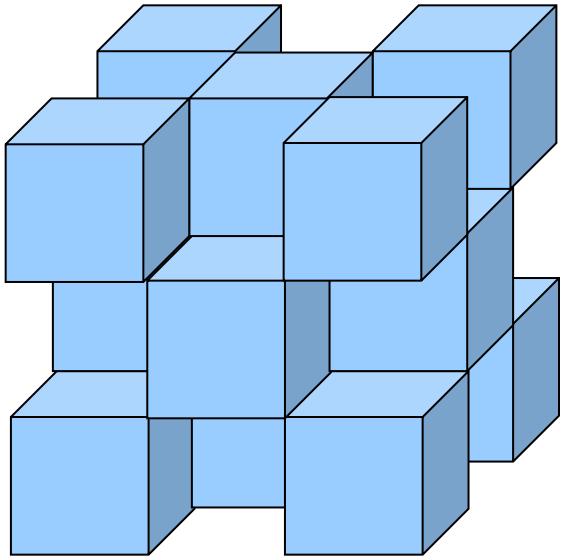


Структура гипса

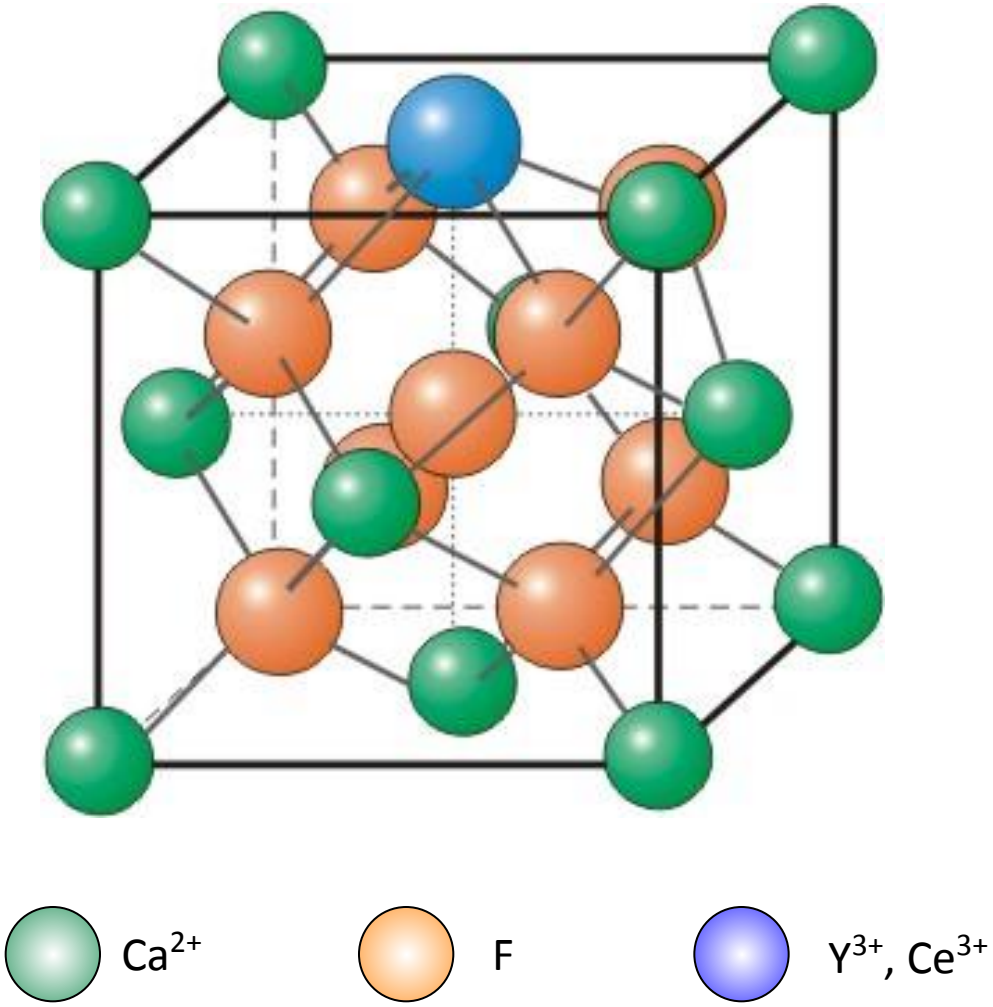


Структура флюорита CaF_2, m3m

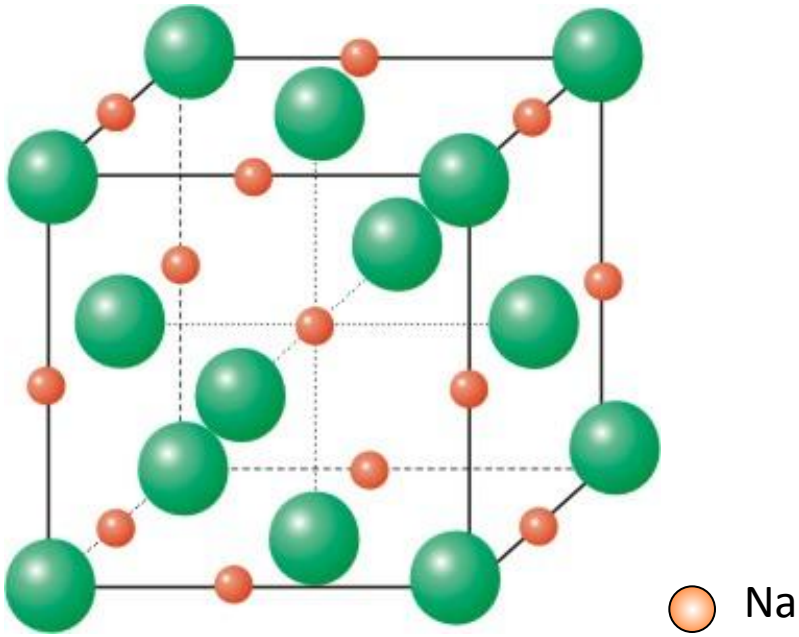


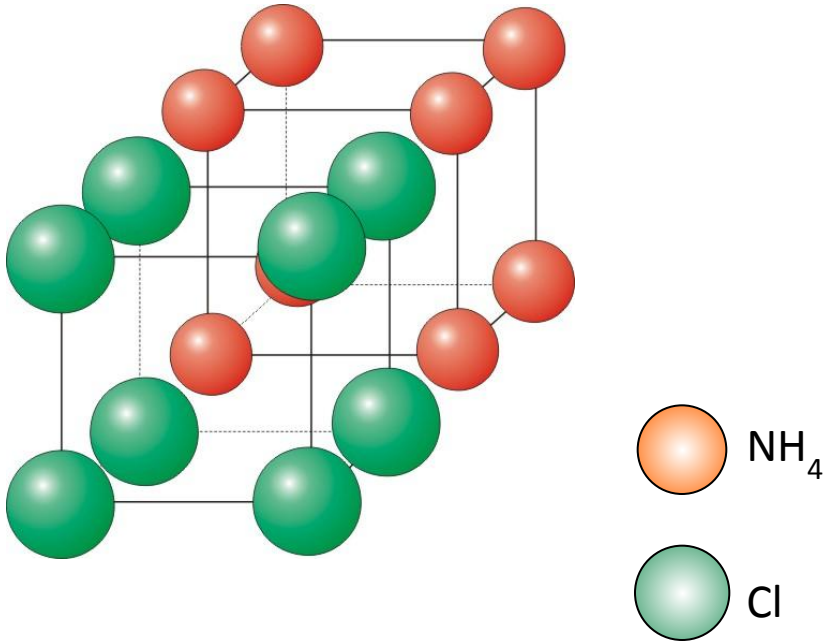


Структура иттрофлюорита $(Ca,Y)F_{2-3}$



Структуры хлоридов K, Na и NH_4^+

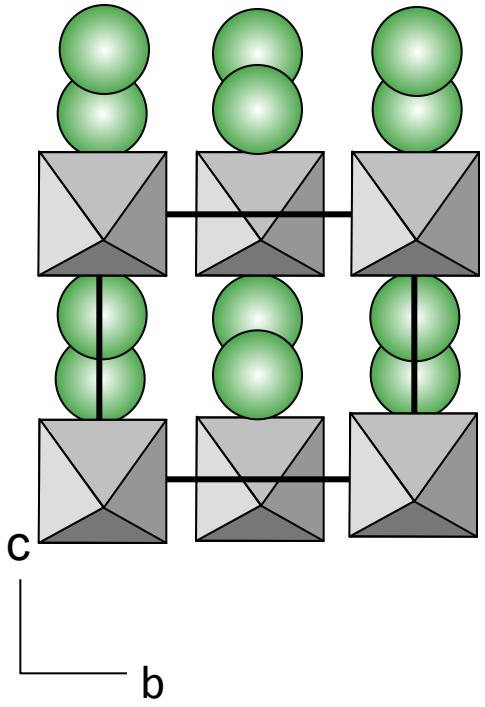


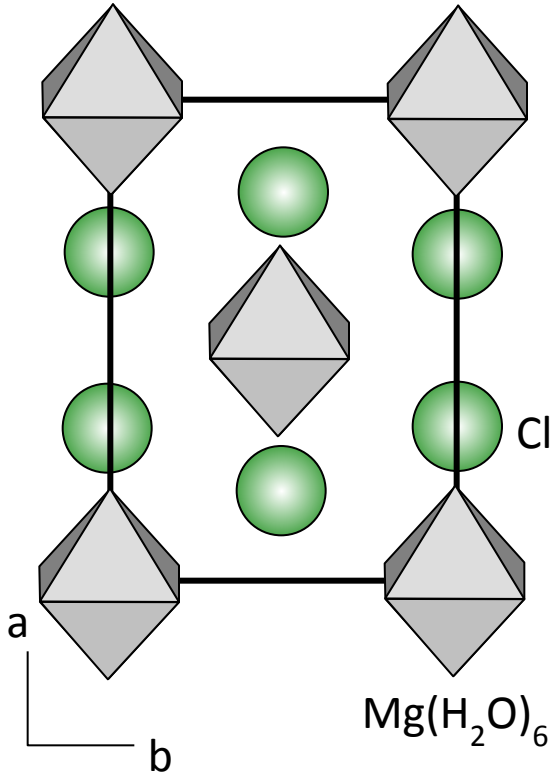


- Галит NaCl, *куб*. m3m
  Сильвин KCl, *куб*. m3m
- структурный тип NaCl

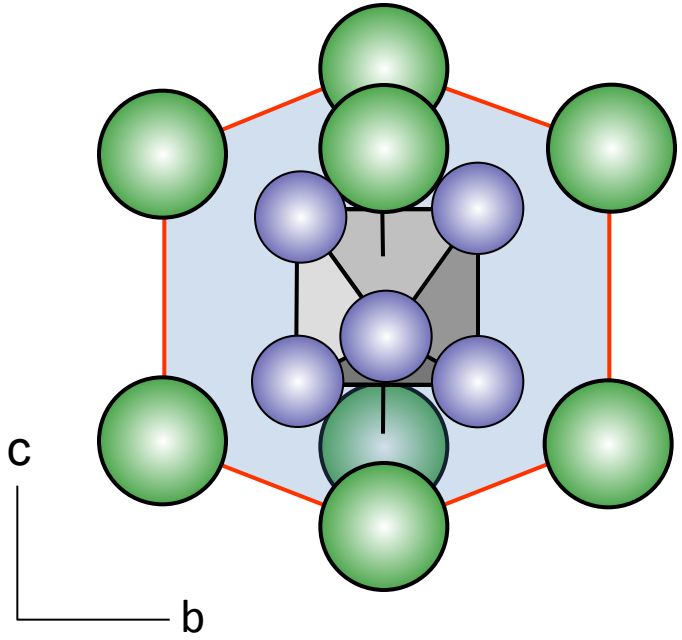
- Нашатырь NH_4Cl, *куб*. m3m
- структурный тип CsCl

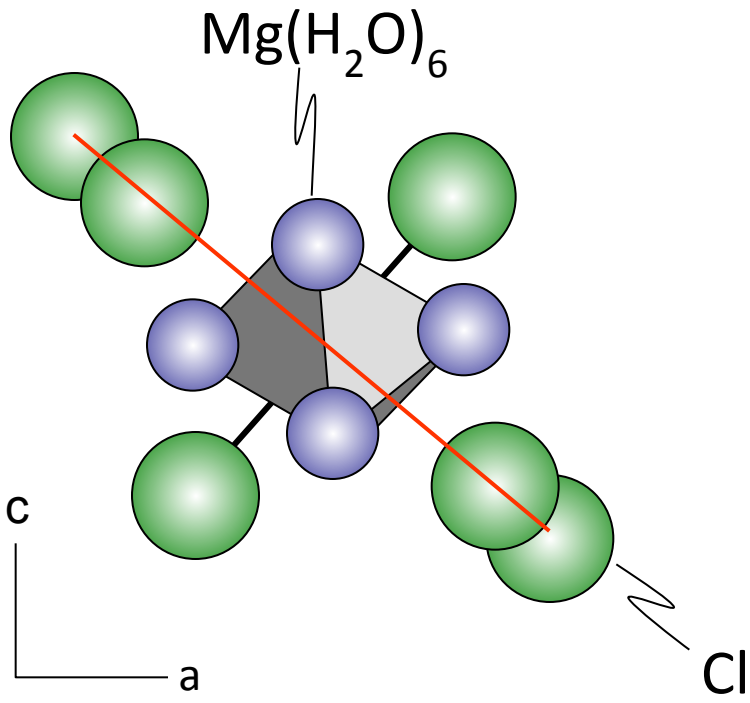
Бишофит $MgCl_2 \cdot 6H_2O$ *мон.*, 2/m



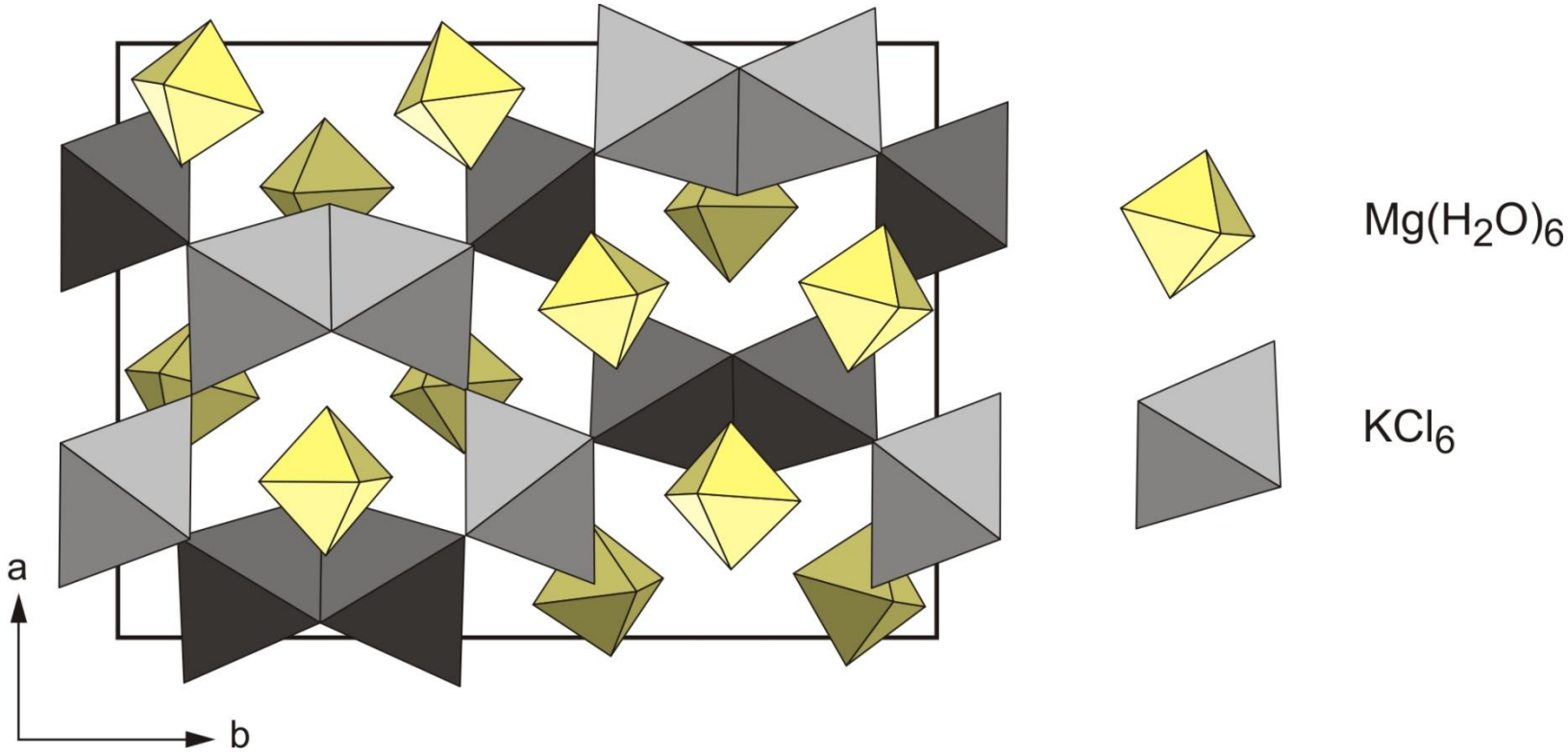


Структура бишофита $MgCl_2 \cdot 6H_2O$





Карналлит $KMgCl_3 \cdot 6H_2O$, *ромб*. mmm



темные полиэдры образуют нижний субслой, светлые - верхний