$Na_3Lu[Si_2O_7]$	*hP*78	(176) $P6_3/m$ – $i^5hfdcba$

$Na_3LuSi_2O_7$ [1]
Structural features: Units of two vertex-linked SiO_4 tetrahedra, LuO_6 octahedra and LuO_6 trigonal prisms share vertices to form a 3D-framework. See Fig. IV.81.

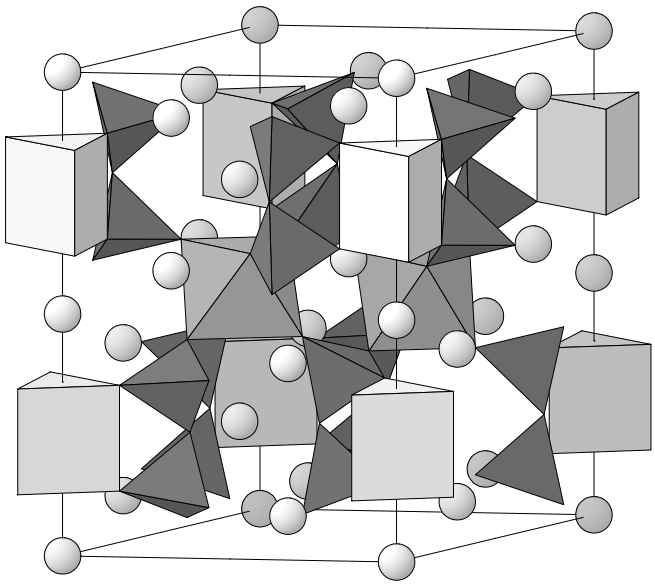

Fig. IV.81. **$Na_3LuSi_2O_7$**

Arrangement of LuO_6 octahedra (medium), LuO_6 trigonal prisms (light), SiO_4 tetrahedra (dark) and Na atoms.

Tamazyan R.A. et al. (1988) [1]
$LuNa_3O_7Si_2$
a = 0.9385, c = 1.3716 nm, c/a = 1.461, V = 1.0462 nm^3, Z = 6

site	Wyck.	sym.	x	y	z	occ.	atomic environment
O1	12*i*	1	0.0441	0.1967	0.1407		single atom Si
O2	12*i*	1	0.1266	0.513	0.1187		single atom Si
Na3	12*i*	1	0.3169	0.3308	0.0921		tetrahedron O_4
Si4	12*i*	1	0.3468	0.0181	0.1412		tetrahedron O_4
O5	12*i*	1	0.4427	0.171	0.066		single atom Si
O6	6*h*	*m*..	0.4218	0.0996	$^1/_4$		non-colinear Si_2
Lu7	4*f*	3..	$^1/_3$	$^2/_3$	0.0182		octahedron O_6
Na8	2*d*	-6..	$^2/_3$	$^1/_3$	$^1/_4$		coplanar triangle O_3
Na9	2*c*	-6..	$^1/_3$	$^2/_3$	$^1/_4$		trigonal prism O_6
Na10	2*b*	-3..	0	0	0		octahedron O_6
Lu11	2*a*	-6..	0	0	$^1/_4$		trigonal prism O_6

Transformation from published data: *y*,*x*,-*z*
Experimental: twinned crystal, diffractometer, X-rays, R = 0.031

Remarks: Space groups (11) $P2_1/m$, (20) $C222_1$ and (63) *Cmcm* were tested and rejected.

References: [1] Tamazyan R.A., Malinovskii Y.A., Sirota M.I., Simonov V.I. (1988), Sov. Phys. Crystallogr. 33, 668-671 (Kristallografiya 33, 1128-1133).