Indexing of these reflexions gave space group P622 with a unit cell related to the Mn_5Si_3 cell by cδ = 3c, aδ = a-b, bδ = a+2b. Intensities were collected on Lu_5Ir_3 single crystal. Fourier maps have shown disorder along the c axis. Using the fact that hko data did not contain any superstructure reflexions, atoms should be split with different z values as it has been made for Eu_5As_3 (Wang, Calvert, Gabe and Taylor, Acta Cryst. (1978) B34, 2281).

08.3-06 FRAMEWORK DESCRIPTION OF INTERMETALLIC COMPOUNDS LIKE α-Mn, γ-BRASS, Ni_2Ti. By E. Hellner, E. Koch and A. Reinhardt, Institute of Mineralogy, University of Marburg, Lahnberge, D-3550 Marburg/L., Germany.

The cluster concept of Bradley and Jones (J. Inst. Met. <1933> 51, 131) applied e. g. by Pearson et al. (Z. Krist. <1976> 143, 387), and by Chabot et al. (Acta Cryst. <1980> B36, 2202) hinders the recognition of three-dimensional connected basic frameworks which are important for the discussion of relations between structures of intermetallic compounds. $W^*[4t_c]$, the framework of the oxygen atoms in sodalite $Na_4(AlSiO_4)_3Cl$, is also the basic framework of α-Mn, γ-brass, Tl_7Sb_2, Ag_8Ca_3, and with its 8. order of Cu_4Sn_{11}, $Li_{22}Si_5$, Mg_6Pd, Na_6Tl, and $Sm_{11}Cd_{45}$. The large voids in $W^*[4t_c]$ are filled up by different sets of "nested polyhedra" in different structure types to form heterogeneous frameworks. Several other frameworks appear as well in structures of intermetallic as in those of inorganic compounds. Examples are: D[6o], the framework of the fluorine atoms in $RbNiCrF_6$, is the basic one of $NiTi_2$ and F_3W_3C. In $Mn_{23}Th_6$ and Ir_4Sc_{11} a heterogeneous framework is built up by F(6o), F(8c), and F'(8c). F[12co], and F'[8c] together are the heterogeneous basic framework in $Cr_{23}C_6$, and also the framework of fluorine atoms in KTb_3F_{10}.
(4t), (6o), (8c), and (12co) stand for tetrahedron, octahedron, cube and cuboctahedron, respectively.

08.3-05 $Ce_2Ga_{10}Ni$ - A MEMBER OF $R_mX_{4m+2n}X_n$ SERIES OF NONHOMOGENEOUS LINEAR STRUCTURES. By Ya.P.Yarmolyuk, Yu.N.Hryn, O.A.Usov, A.M. Kuzmin, I.V.Rozhdestvenskaya, V.A.Bruskov, E.I. Hladyshevsky, Physical Technical A.F. Ioffe Institute, 194021 Leningrad, USSR.

The crystal structure study of $Ce_2Ga_{10}Ni$ compound is part of investigation of some crystallographic properties of nonhomogeneous linear structure series $R_mX_{4m+2n}X_n$. The structure is tetragonal (I4/mmm, a=4.262, c=26.391, Z=2). Atomic coordinates are as follows:

	4Ce	4Ga	8Ga	4Ga	4Ga	2Ni
x	0.	0.	0.	0.	0.	0.
y	0.	0.5	0.5	0.	0.	0.
z	0.3539	0.25	0.4509	0.1065	0.1968	0.5

The coordination numbers of atoms are: Ce-20, Ga-9, Ni-8. The structure is solved by means of crystallographic relationships with known structures and by direct methods (MULTAN - XTLM10) and refined in anisotropic approximation to R=0.11 for 408 reflections (SYNTEX $P2_1$, MoKα) using XTLM10 crystallographic program system (O.A. Usov et al, Abstracts of 6th Europ. Cryst. Meeting, Barcelona, 1980, p.150). The $Ce_2Ga_{10}Ni$ structure consists of layers of structure types $BaAl_4(RX_4)$, $CaF_2(X_2X)$ and is a real member of $R_mX_{4m+2n}X_n$ series with m=4, n=2. The $BaAl_4$ and CaF_2 fragments enter also the structures of $R_{m+n}X_{4m+2n}$ series; $HfCuSi_2$ (m=n=1), $SrZnSb_2$, $SrZnBi_2$ (m=n=2), but CaF_2 fragments have RX_2 composition.

08.3-07 Gd_3NiSi_2 - A NEW TERNARY SILICIDE WITH BRANCHED Ni-Si CHAINS. By K. Klepp & E. Parthé, Laboratoire de Cristallographie aux Rayons X, Université de Genève, 24, quai Ernest Ansermet, CH-1211 Geneva 4, Switzerland.

Ternary silicides of the rare earths with the late transition metals are attracting an increasing interest because of their peculiar structural features. In contrast to the great diversity of phases which is generally found in these ternary systems only a few compounds have so far been reported for the pseudobinary sections RSi-RT. Gd_3NiSi_2, which is part of a study of these sections is orthorhombic, Pnma with a = 11.398, b = 4.155, c = 11.310 Å, Z = 4. The crystal structure is characterized by Ni and Si centered trigonal prisms. The arrangement of the Gd and Si atoms is related to that of Hf and P in the structure of Hf_3P_2. While the P-atoms are isolated in the latter structure, the occupation of a further trigonal prismatic site in Gd_3NiSi_2 gives rise to the formation of isotactic -Si-Ni(Si)- chains with an average Ni-Si distance of 2.45 Å. The relationship with $Ce_7Ni_2Si_5$ and $R_{10}Co_7Ga_3$ will be discussed.